European Securities and Markets Authority

Feedback Statement

Feedback Statement on the Consultation Paper on the Regulatory Technical Standard on the European Single Electronic Format (ESEF)

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Abbreviations and acronyms

AFR	Annual Financial Report
CBA	Cost-Benefit Analysis
CP	Consultation Paper
CESR	Committee of European Securities Regulators
EBA	European Banking Authority
ECB	European Central Bank
EC	European Commission
ECCBSO	European Committee of Central Balance-Sheet Data Offices
EDGAR	Electronic Data Gathering, Analysis, and Retrieval system (US)
EEA	European Economic Area
EEAP	European Electronic Access Point
EECS	European Enforcers Coordination Session
EIOPA	European Insurance and Occupational Pensions Authority
EU	European Union
ESEF	European Single Electronic Format
ESMA	European Securities and Markets Authority
FINREP	Financial Reporting
FRC	Financial Reporting Council
GAAP	Generally Accepted Accounting Principles
HTML	HyperText Markup Language
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IOSCO	International Organisation of Securities Commissions
ITS	Implementing Technical Standard
Inline XBRL	Inline Extensible Business Reporting Language
NCA	National Competent Authority
OAM	Officially Appointed Mechanism
PDF	Portable Document Format
RTS	Regulatory Technical Standard
SEC	Securities and Exchange Commission
SME	Small and Medium Enterprises
SMSG	Securities and Markets Stakeholder Group
TD	Transparency Directive 2004/109/EC
TDA	Amended Transparency Directive 2013/50/EU
XBRL	Extensible Business Reporting Language
XHTML	eXtensible HyperText Markup Language
XML	Extensible Mark-up Language

1 Executive Summary

Reasons for publication

The European Securities and Markets Authority (ESMA) issued on 25 September 2015 a Consultation Paper (CP) on 'Draft Regulatory Technical Standard (RTS) on European Single Electronic Format (ESEF)'[1] in order to fulfil certain requirements of the Transparency Directive 2004/109/EC (TD) as last amended by Directive 2013/50/EU published in the Official Journal of the European Union (EU) on 6 November 2013 and which entered into force on 27 November 2013. Based on article 4(7) of the TD, ESMA is required to develop a draft RTS specifying the electronic reporting format in which issuers should prepare their annual financial reports (AFRs) from 1 January 2020 and to make due reference to current and future technological options.

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This Feedback Statement provides an overview of the feedback received from stakeholders and the ESMA Securities and Markets Stakeholder Group (SMSG) to the CP on the ESEF as well as the ESMA response to it.

ESMA welcomes the feedback received on the draft RTS supporting the scope of the requirement for structured electronic reporting. ESMA proposed in the CP to limit, at least in the first step, electronic reporting in a structured format to the consolidated financial statements prepared under IFRS.

ESMA further welcomes respondents' broad support regarding its proposal to make use of the IFRS Taxonomy published by the IFRS Foundation. ESMA considered and addressed the concerns of the respondents that expressed their opinion that mandating the IFRS Taxonomy without any extensions would not yield the envisaged results.

ESMA noted that the feedback received did not explicitly point to a clear preference for ESEF to make use of either Inline XBRL or XBRL. Yet, ESMA considered the feedback to all questions and concluded that iXBRL would be the most suitable technology for ESEF. The suitability of Inline XBRL was also confirmed by a cost-benefit analysis. As the Inline XBRL's human-readable representation could be opened by standard web browsers, ESMA further concluded that having the AFR in a separate PDF document would be redundant.

Proposed approach for the ESEF based on the conclusions from the consultation

In its draft RTS, ESMA will set out that AFRs for all issuers in the EU shall be prepared in the Extensible Hyper Text Markup Language (XHTML) format. A document in XHTML format can, if properly formatted, be consumed by standard browsers without the need of specialised tools and be prepared and displayed by the issuer as intended.

Where AFRs contain consolidated financial statements drawn up in accordance with the International Financial Reporting Standards (IFRS), the issuers shall label the information contained in these consolidated financial statements using the Extensible Business Reporting Language (XBRL). The IFRS Taxonomy, issued by the IFRS Foundation has been specifically developed to mark-up IFRS financial statements in a structured electronic format. It is therefore appropriate to base the taxonomy used for consolidated financial statements drawn up in accordance with IFRS on the IFRS Taxonomy. This will facilitate comparability of IFRS financial statements in a structured format on a global level.

By marking-up the information with XBRL it can be processed by software for analysis and thus becomes machine-readable and 'structured'. The mark-up (or 'tag') shall be applied in a way that it reflects and matches the corresponding information contained in the XHTML format part of the AFR. The issuers shall embed the XBRL data directly into these XHTML documents through a format known as Inline XBRL. This technology is freely licensed and made available by XBRL International, a not-for-profit consortium. As the XHMTL document is human readable with standard web browsers, there is no need to require from the issuer to file the AFR in a separate PDF document.

Structured electronic reporting using Inline XBRL requires the existence of a taxonomy, which is a given hierarchical structure used for the classification of financial information. The individual financial statements of issuers in many Member States can be drawn up in accordance with the respective national financial reporting framework but not for all of them taxonomies exist. This is also the case for the management report and the other parts of the AFR. Therefore, ESMA, at least in a first step, does not intend to require issuers to mark-up the individual financial statements, the management report and the other parts of the AFR. However, Member States shall be able to permit or require to mark-up individual financial statements of the issuers in a structured electronic format if a national taxonomy for the respective reporting framework exists.

Third country issuers with securities listed on a regulated market in the EU drawing up their financial statements according to GAAPs deemed equivalent to IFRS should not be required to prepare their AFR in structured electronic format. This is, because not for all financial reporting frameworks deemed equivalent to IFRS taxonomies exist and the number of such issuers is relatively limited. Therefore, the AFR of these issuers shall be prepared using the XHTML format.

To facilitate the implementation of structured electronic reporting, the draft RTS will foresee a two-year implementation phase during which the marking-up would only be required for the primary financial statements, however voluntary marking-up of the notes of the consolidated IFRS financial statements shall be allowed. Afterwards, the full consolidated financial statements drawn up in accordance with IFRS will have to be marked-up using XBRL.

Following the publication of this feedback statement, ESMA will continue to work on the detailed technical specifications.

[1] https://www.esma.europa.eu/sites/default/files/library/2015/11/2015-1463_esma_consultation_paper_on_esef.pdf

2 Background

Legal Mandate

1. Article 4(7) of the TD as last amended on 6 November 2013 assigns ESMA with responsibilities in drafting a RTS in relation to the specifications of the electronic reporting format in which all annual financial reports of issuers listed on regulated markets shall be prepared from 1 January 2020. ESMA is required to:

    i. make due reference to current and future technological options;

    ii. carry out an adequate assessment of possible electronic reporting formats;

    iii. conduct appropriate field tests.

Consultation Process

2. Article 10 of the ESMA Regulation[2] requires ESMA, where appropriate, to conduct open public consultations on draft technical standards, analyse the potential related costs and benefits, and request the opinion of the SMSG.

3. ESMA's Consultation Paper (CP) on 'Draft Regulatory Technical Standards on European Single Electronic Format (ESEF)' was published on 25 September 2015 and the consultation period closed on 18 January 2016. ESMA received 161 responses, from accounting bodies and auditors, preparers, regulators, OAMs, statistical offices, service providers, users and representative bodies of these groups, as well as the SMSG. However, slightly more than half of the responses (88) are based on a common template, contain the same exact wording and do not specifically answer the questions in the CP. For more details on these responses and how they were taken into account, please refer to section 3.

4. The respondents to the CP mainly originated from France, the Netherlands and Germany, however a number of responses originated from other Member States and even from outside the EU. A detailed list of the respondents is provided in Annex II. The answers received on the CP are available on ESMA's website unless respondents requested their answers to remain confidential.

5. The SMSG is a key ESMA stakeholder consultative body composed of 30 individuals from 17 Member States and representing academics, consumers, financial institution employees, financial market participants, small and medium sized enterprises as well as users of financial information. This group facilitates consultation with stakeholders in areas relevant to ESMA's tasks such as the development of technical standards and guidelines. Article

[2] Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority)

37(1) of the ESMA Regulation provides that ESMA shall require the SMSG to give its advice on any consultation related to RTSs. The SMSG 'Position Paper' on this CP on ESEF is included in Annex III.

6. The CP included 19 questions on various sections of the CP and the draft RTS. ESMA is most grateful to all those who took the time to bring their contribution to the consultation process. Some answers were more general, while many of them were specific to the questions asked. For each question, ESMA included in the feedback statement a summary of the main messages from the comments received on the CP and ESMA's answers.

7. The draft RTS has been developed on the basis of the requirements of the TD, and will be adjusted where relevant following the feedback received to the consultation undertaken by ESMA and summarised in this document.

Overall messages

8. Overall, the feedback received indicates mixed positions regarding financial reporting in a structured electronic format. While most accounting bodies, auditors, regulators and service providers were overall supportive of the mandatory introduction of structured reporting for AFRs, many preparers and their representative bodies raised objections. Many considered that as no full impact assessment of this legislative requirement had been performed by the EC, that not sufficient evidence of the need for electronic reporting had been provided. A considerable number of these respondents hold the opinion that the ESEF should require the use of PDF only.

9. Many respondents thought that there would be a need for a human readable text file, which was also proposed by ESMA in the draft RTS. Yet, many respondents were concerned that if there were two separate and disconnected files (e.g. one PDF file and one XBRL instance document) errors could occur and the information contained in the two files might not be identical.

10. A majority of respondents agreed with the approach suggested by ESMA in the CP to only mandate the 'tagging' (i.e. marking-up) of the consolidated IFRS financial statements, at least in a first stage. The scope of mandatory tagging might be extended at a later stage to the individual financial statements, the management report or financial statements prepared under third country GAAP, but this should not be a priority for ESMA.

11. Finally, the vast majority of the respondents agrees that the IFRS Taxonomy should be used at least as a basis for ESEF. However, contrary to what was suggested in the CP, most respondents think that the use of extensions should be allowed. The respondents have divergent views whether the use of extensions should be limited to local and regulatory extensions or whether entity-specific extensions should also be allowed.

12. The SMSG shared ESMA's view that better transparency, availability and comparability of issuers' financial statements should, over time, lead to increased efficiency in capital allocation and hence also to higher ability of issuers to attract capital across the EU, not only from professional but also from retail investors. However, considering the absence of a full impact analysis, the SMSG members are divided in their views of whether the ultimate benefits of structured financial reporting to users, including the issuers, will outweigh the costs. The SMSG noted that the narratives in a financial report are crucial to a full understanding of a company's situation and advised that ESEF should prevent the nuanced information in the narratives from being lost. SMSG therefore believed that the entire AFR should be made available in a human-readable textual file. It therefore agreed with ESMA's proposal in the CP to make use of the PDF technology for this purpose. The SMSG further agreed with ESMA's proposal to limit, at least in a first step, the reporting in a structured format to the consolidated financial statements prepared under IFRS. The SMSG encouraged ESMA to explore whether it would be possible to ensure that all AFRs are available in an English PDF version via a single access point.

ESMA response

13. ESMA cannot amend the policy decision included in the legislation regarding the introduction of ESEF. It can only specify the format and in order to do so, it conducted a CBA on the level of technologies that could be used. ESMA brought the concerns of some respondents about the lack of a formal impact assessment on the introduction of ESEF by the EC to the EC's attention (for further details refer to ESMA's response related to question one).

14. ESMA considered the suggestion of the respondents that oppose structured electronic reporting, to make public the AFR in PDF only. However, ESMA came to the conclusion that a pure PDF format only, does not fulfil the policy objectives of article 4(7) of the TDA as elaborated in recital 26 of the TDA. As such ESMA cannot propose in its draft RTS to mandate a format which does not fulfil the European co-legislators' policy objectives (for further details refer to ESMA's response related to question two).

15. The responses to the CP showed that there is a high demand for an AFR in a human readable format that can be easily consumed without the need of additional tools, and can prepared and displayed in the same way as intended by the issuer. Based on the same reasoning, ESMA initially suggested in the CP that in addition to the part of the AFR that should be prepared in a structured format, the whole AFR should also be prepared in the PDF format. However, many respondents were concerned that having two separate and completely disconnected files, one in XBRL and one in PDF, might give rise to inconsistencies. Furthermore, many respondents pointed out that PDF would be a proprietary standard. Therefore, ESMA concluded that Inline XBRL is the most suitable technology for ESEF. An Inline XBRL instance document is a XHTML document in which XBRL data is embedded, so that the machine readable XBRL tags and the human readable representation are encapsulated within a single document. On the one hand an Inline XBRL

file's human-readable representation in the XHTML format, in essence, fulfils the features and functionalities expected by users of AFRs in PDF. In addition to that, it also delivers additional benefits a pure PDF file might not provide, e.g. search functions that are not available for many PDF documents that were only scanned. On the other hand, it contains the machine-readable XBRL 'tags'. As appropriate software exists to assist preparers in applying the tags to an Inline XBRL instance document correctly, ESMA expects that inconsistencies would be limited, at least compared to a situation where a separate PDF document would be requested in addition to an XBRL document (for further details refer to ESMA's responses related to questions 11 and 14).

16. ESMA welcomes that the majority of respondents agrees with its assessment that extending the scope of mandatory tagging to individual financial statements and the management report should not be a priority. ESMA considers that Member States are in a better position to assess whether the taxonomy for their respective national GAAP is of sufficient quality so that structured financial reporting for the individual financial statements drawn up in accordance with national GAAP can be allowed or mandated. ESMA further believes that, if the decision whether the individual financial statements drawn up in accordance with national GAAP have to be reported in a structured format is left to the Member States, it would be inconsistent to require mandatory structured electronic reporting for individual financial statements drawn up in accordance with IFRS. Otherwise issuers in Member States that allow or require preparation of individual financial statements drawn up in accordance with IFRS would have to follow more stringent rules than issuers domiciled in Member States that require preparation of individual financial statements drawn up in accordance with national GAAP. The scope of mandatory tagging required by ESEF should only be extended to the individual financial statements, the management report and other parts of the AFR once an impact assessment expects this to be cost-beneficial and the relevant taxonomies are developed (for further details refer to ESMA's response related to question 15).

17. ESMA noted that most respondents agreed with its proposal in the CP not to require issuers preparing financial statements under third country GAAP to make them public in a structured format. Bearing in mind that the number of such issuers is relatively limited, ESMA concluded that this issue has only secondary priority. Only once the requirements for ESEF for the consolidated IFRS financial statements are in effect, this issue should be further considered. For the time being, ESMA proposes that issuers preparing their financial statements under third country GAAP are required to make their AFR public in the same human readable XHTML format as all issuers with a registered office in one of the Member States but without any XBRL tags (for further details refer to ESMA's response related to question 17).

18. The vast majority of the respondents agrees that the IFRS Taxonomy should be used at least as a basis for ESEF. However, contrary to what was suggested in the CP, most respondents think that extensions to the IFRS Taxonomy would be necessary. ESMA will

take these responses into account when continuing to work on the detailed technical specifications for ESEF after publication of this feedback statement. In the course of this task, ESMA will, amongst others, assess the available options to extend the IFRS Taxonomy, either through allowing entity-specific extensions based on a framework or by preparing a regulatory extensions taxonomy (for further details refer to ESMA's response related to questions 7 and 8).

19. To facilitate implementation of ESEF and to allow issuers to familiarise themselves with the Inline XBRL technology, ESMA concluded that it would be appropriate to limit the tagging during an implementation phase of two years to the primary financial statements and basic general information about the company and the financial statements. After two years, the tagging will be extended to the notes as well (for further details refer to ESMA's response to question 15).

Date of application of RTS

20. The Regulation shall apply to annual financial reports containing financial statements for financial years beginning on or after 1 January 2020.

3 Responses received that do not specifically answer the questions contained in the CP

21. Among the responses provided during the consultation, ESMA received 88 letters from French preparers and their representative bodies. These letters are based on a common template and contain the same exact wording without specifically answering the detailed questions of the CP.

22. These letters were critical of the ESEF as a whole and considered that the evaluation of the need for a single electronic reporting format performed by ESMA was not adequate, as a preliminary assessment of this legislative requirement had not been performed by the EC and not sufficient evidence of the need for electronic reporting had been provided. These respondents argued that based on their experience, there was no demand for a single electronic reporting format among investors and they pointed out that the CBA carried out by ESMA achieved a very low representativeness.

23. In addition to these general points, the originators of these letters considered that the technical implementation of an ESEF based on the XBRL technology is likely to be unsatisfactory and costly. They brought forward the following main arguments:

    a) The costs of implementation and maintenance would be very high and the fact that the IFRSs are subject to frequent changes would lead to further complexity and additional

costs to maintain a XBRL electronic reporting format. In addition to that, the ESEF would lead to an increase of audit expenses.

b) The XBRL electronic reporting format is in their view a 'closed standard' which does not take into account Alternative Performance Measures (APM) and qualitative and contextual data attached to financial reports which are essential to provide an understanding of an entity's business model.

24. As a way forward to harmonize the reporting format of financial reporting in Europe, those respondents suggested to implement an ESEF by making use of the PDF technology. They believed that this would ensure that the cost of implementation for issuers are limited.

25. ESMA has taken these comments into consideration and refers to them in the sections of this Feedback Statement to which the respective comments relate. Therefore, if these letters refer to one of the questions analysed in the following section, a reference has been included, however they were analysed separately from the other responses.

4 Feedback received on the Consultation Paper and ESMA's response

26. The following section provides a summary of the responses for each question raised, by identifying the main comments from the respondents and ESMA's view on those responses, together with changes to the draft RTS, where appropriate.

27. In view of the requirement to conduct an open public consultation on draft RTS, ESMA has considered the points raised by respondents and addressed them in its response to every question in the feedback statement. ESMA will also take them into account when drafting the final draft RTS.

Q1: The provisions included in the amended Transparency Directive requiring a single electronic format were not subject to a formal impact assessment by the European Commission. While from a legal point of view ESMA could not address in this CP whether there is a need for the provisions included in the amended Transparency Directive, do you believe that a wider assessment should be performed on the requirements of introducing a single electronic reporting format in Europe? Please indicate your opinion and provide arguments.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
54	9	5	14	5	17	3	1

28. The majority of respondents (30) are of the opinion that no further impact analysis is needed. This view is especially expressed by service providers (13) accounting bodies, auditors (8) and regulators, government bodies, OAMs and standard setters (3). Several of these respondents argued that previous experiences with reporting of financial information in a structured electronic format gathered in several jurisdictions provides already sufficient evidence that in the mid- to long term the market participants' benefits exceed the costs. Amongst others, they especially pointed to implementation experiences in Spain and in the Netherlands but also to the fact that regulatory reporting to EBA and EIOPA is also carried out by making use of a structured electronic reporting format. A few other respondents listed perceived benefits delivered by electronic reporting projects in other jurisdictions. Especially they mentioned the easier access to annual financial reports, that structured electronic reporting can lead to a reduction of administrative burden in information supply, reduction of cost of data collection, improved comparability and that it could lead to improved data quality. Another argument brought forward by several respondents is that a wider assessment would lead to undesirable delays in the project.

29. However, a significant group of respondents (16) thought that a thorough impact assessment should have been carried out. Especially preparers and their representative bodies (9) expressed considerable doubts that there is sufficient demand from users for a single electronic reporting format to justify the expected costs, which some fear to be high. Specifically, one of them explained that retail investors do not process massive amounts of financial data and institutional investors already have all necessary means to carry out the analysis they need. Another respondent pointed to a Report by the UK's Financial Reporting Council '*Digital Present*'[3] which summarised the views of several preparers and investors on the use of digital media for corporate reporting. This report concluded that PDF is currently not only the most commonly used but also the most desired technology by most

[3] https://www.frc.org.uk/Our-Work/Publications/Financial-Reporting-Lab/Lab-Project-Report-Digital-Present.pdf

investors. Some respondents also pointed out that additional regulation should always be preceded by a proper impact assessment. Two of them put this in the context of the EC's 'Better Regulation' initiative that foresees that the EC should examine potential consequences of proposed policy choices before the EU takes action. One respondent thought that in light of the 'Capital Markets Union' (CMU) action plan[4] and the desire not to impose unnecessary burdens on businesses, it would be crucial to carry out a thorough evaluation of the costs and benefits.

30. The SMSG also noted that no full impact assessment was undertaken and its members were therefore divided in their views whether the ultimate benefits to users and the issuers, will outweigh the costs of this additional layer of reporting.

31. In addition to the views mentioned above, a few respondents were either undecided whether there is a need for further analysis of costs and benefits of a single electronic reporting format (5) or see only a need for a very limited analysis especially of the experiences from other jurisdictions (2).

32. Three respondents believed that ESMA should undertake educational sessions to inform stakeholders about the expected benefits of the ESEF in order to increase the acceptance of the project.

33. In addition to the elements described above, the letters from the respondents described in paragraphs 21 to 24 call for a new cost-benefit analysis. In their view, the CBA undertaken by ESMA is not representative. They considered that based on their experience there seems to be no demand for a single electronic financial reporting format. Furthermore, they were concerned that the cost of implementation and maintenance of such a single electronic format would be high.

ESMA response

34. ESMA notes that the majority of respondents that answered this question in the CP hold the opinion that no further assessment is necessary, even though this view is especially held by service providers and accounting bodies and auditors who, based on the objectives of the amendment to the TD, were not envisaged to be the primary beneficiaries of the ESEF.

35. Conversely, many preparers amongst the respondents and in addition to that the originators of the letters mentioned in paragraphs 21 to 24 expressed their concern that the ESEF may not be cost-beneficial and that an impact analysis has to be undertaken. ESMA cannot directly amend the policy decision taken by the European co-legislator regarding the introduction of the ESEF. ESMA's mandate is limited to specifying the format of ESEF. However, in order to fulfil this mandate, ESMA has also assessed costs and benefits. This

[4] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=COM:2015:63:FIN&from=EN

cost-benefit analysis is attached as an annex to this Feedback Statement. Furthermore, ESMA informed the EC of the requests received to undertake an additional impact analysis and conveyed the arguments brought forward for further consideration by the EC.

Q 2: Do you agree with the description of the policy objectives as included in this section? Are there any further elements that you believe should be analysed? If yes, please indicate them.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
56	9	6	14	8	15	4

36. Overall, 41 respondents, mostly service providers (15), auditors (8) and regulators (6), agreed with the objectives of electronic reporting presented in the CP. They considered that the policy objectives proposed by ESMA would ensure that the ESEF provides relevant information and facilitates the decision making of investors and the regulators' performance of duties.

37. Seven respondents (mainly service providers) suggested considering the cost savings that in their view will be generated through a standardisation of the preparation of electronic reports and a reduction of manual interferences.

38. A few respondents agreed with the improvement of accessibility and comparability of information contained in annual financial reports but underlined the difficulty to standardise and compare financial statements prepared on the basis of principle based financial reporting standards or individual financial statements drawn up in accordance with different national GAAPs. As such, they advised ESMA to acknowledge that the comparability of financial information should not be limited to a line-by-line comparison and that relevant explanations should also be provided to investors to facilitate their understanding of financial information. Regarding accessibility, respondents considered important that data could be extracted into Excel.

39. Two respondents considered that data quality should be added as a separate objective in order to strengthen the confidence of users in the reliability of the data. In this respect, they expressed the opinion that the auditor should have a legal obligation to verify and audit the data presented in structured electronic format.

40. Regarding the policy objective that electronic reporting should be easier for issuers compared to their current practices, one respondent expressed his opinion that any change introduced by regulators is most commonly perceived as additional burden and is generally

not welcomed compared to existing procedures. This would be especially the case if costs or learning efforts are associated with the change in practice. Therefore, this respondent recommended to either remove this policy objective or to specify conditions of its fulfilment.

41. On the other hand, eight respondents (6 issuers, 1 regulator and 1 service provider) disagreed with the policy objectives presented by ESMA and pointed out that there would be a lack of market demand for structured reporting. In their view, there is a lack of interest from private and institutional investors, and many users do not process a large volume of electronic information. As such, these respondents suggested to better demonstrate that ESEF would be useful and beneficial. These respondents repeated their assessment that the ESEF would entail considerable costs for issuers and that the costs and benefits related to every policy objective should be presented individually in order to demonstrate their relative importance. Some of the respondents also considered that the preparation of structured reporting files would lead to an additional step in the reporting process and could therefore delay the publication of annual financial reports compared to current practices. This would be detrimental to the interest of users.

42. Several respondents expressed doubts that the ESEF would render electronic reporting easier for issuers as the number of issuers seeking a cross-listing of their shares would be limited and pursuant to the Transparency Directive an issuer must file its annual financial report only with the Competent Authority of the Home Member State. Bearing in mind that an AFR in a structured format facilitates to check the completeness of disclosures provided by the entity, one respondent called upon regulators not to restrain their supervision practices to a “check the box” approach. A few respondents mentioned the poor quality of structured financial information produced in the US and the UK, where large scale errors have been reported.

43. As a way forward, some of these respondents advocated the use of PDF technology considering that it would be an easily usable format with limited implementation costs associated for issuers.

44. Finally, three respondents (2 service providers and 1 preparer) recommended ESMA to further assess the synergies between prudential and financial reporting for the banking and insurance sector. Even though these reporting frameworks target a different audience (prudential regulator vs. any user of financial statements for ESEF), some lessons could be taken into account and it could be possible to benefit from economies of scale.

ESMA response

45. ESMA welcomes that the majority of respondents agrees with the policy objectives as set out in the CP.

46. Regarding the suggestion to add cost savings for preparers, resulting from standardisation

and reduction of manual interfaces, as a policy objective for ESEF, ESMA believes that whether issuers stand to benefit from cost savings and a reduction of manual interfaces depends on how structured electronic reporting is implemented at the level of the issuer. Two basic approaches to structured electronic reporting can be distinguished:

a. An integrated approach ('built-in') in which the record-to-report processes and systems are rethought and where the aggregated elements of the financial reports can be traced back to single transactions that are already marked-up with XBRL-tags.

b. A 'bolt-on' approach in which the financial statements are in the first step prepared as it is the issuer's current practice and in a second, additional step process step, the XBRL tags are created (either by the issuer itself or the process step is outsourced to a service provider).

From these two basic approaches, many mixed approaches that use elements of the two basic approaches can emanate. ESMA is of the opinion that an issuer that implements structured electronic reporting by making use of a 'bolt-on' approach will most likely not avail oneself of cost savings and reduction of manual interfaces, as the tagging represents merely an additional process step. In case a 'built-in' approach is applied, higher implementation costs than for the bolt-on approach would be incurred but there might indeed be a reduction in the ongoing costs. However, ESMA notes that the literature does not unambiguously confirm that cost savings can be derived from the implementation of structured electronic reporting. As such, ESMA believes that adding cost savings compared to current financial reporting practices to the policy objectives does not seem appropriate.

47. ESMA shares the opinion of those respondents that underlined the difficulty to standardise and compare financial statements drawn up in accordance with different national GAAPs. In relation to the comparability of different national GAAPs, ESMA recalls that it explained in the CP that even though the Accounting Directive brings some basic harmonisation to the different national GAAPs, full comparability can only exist for financial statements that are drawn up in accordance with the same financial reporting framework. This is one of the reasons ESMA is of the opinion that the benefits of structured electronic reporting are highest for the consolidated financial statements of European issuers as they all mandatorily have to be prepared under IFRS.

48. ESMA also understands the concern of some respondents that the flexibility that IFRS grant the preparers regarding the presentation in the primary financial statements, somewhat limits the potential for standardisation and the line-by-line comparability of financial statements in a structured format. Structured electronic reporting naturally cannot lead to comparability of non-comparable items. However, the use of a standardised taxonomy provides a common terminology for financial reporting which facilitates comparability and software tools can support automated analysis and comparison. The respondents suggested that explanations should still be provided to investors to facilitate their

understanding of financial information. ESMA agrees with this assessment and by choosing the Inline XBRL technology for ESEF, the context which is important for the analysis of the figures is not lost but is contained in its entirety in the human readable representation in the XHTML format so that it can be considered by users. For more information on Inline XBRL and ESMA's reason for proposing its use for ESEF please refer to ESMA's responses to questions 11 and 14.

49. ESMA notes that several respondents (primarily issuers and their representative bodies) oppose the introduction of a structured electronic reporting format as such and believe that the filing of financial reports should be in PDF only. These respondents assert that there would be no demand from users for financial reporting in a structured electronic format. ESMA believes that current demand by users may indeed be limited. This may have several reasons amongst them that many users do not yet have sufficient expertise in the XBRL technology. However, this is linked to the fact that the financial reports are not yet broadly available in the XBRL format and as such there was limited interest of users to acquire expertise in this area. ESMA expects that with availability of financial data in XBRL format, users will have considerable incentive to build up the expertise required to process the data. They would be able to discover that XBRL provides features that are well sought by users such as the possibility to extract tagged data based on the applicable taxonomy which increases accessibility of the data in the financial statements. Furthermore, ESMA believes that the vast pool of financial information in a structured format that would emerge due to ESEF and which will be available free of charge will facilitate technological innovation. It will enable third parties to develop new digital applications and services which could render the financial data in XBRL format more useful for users and thereby increase demand for this data. Regarding the fact that the implementation of structured electronic reporting would be costly for issuers, ESMA refers to the remarks in paragraph 46. ESMA has assessed the expected costs for issuers in its cost-benefit analysis, which is an annex to this Feedback Statement.

50. Furthermore, ESMA came to the conclusion that ESEF making use of a pure PDF format only, would not fulfil the policy objectives of article 4(7) of the TD as elaborated in Recital 26 of the TDA. According to recital 26, the electronic reporting format should make reporting easier, facilitate accessibility, analysis and comparability of annual financial reports. PDF represents the status quo of financial reporting as all OAMs in the EU make available to the public the AFR in a human readable electronic format. As such if the European legislator intended that ESEF should make use of an electronic paper format such as PDF, there would have been no necessity to include article 4(7) in the TD. Furthermore, a pure PDF file does in no way facilitate analysis and comparability of AFRs. In this context ESMA reminds that the draft RTS cannot mandate a technology which does not fulfil the European co-legislators' policy objectives.

51. Concerning the suggestion of some respondents that ESMA should coordinate closely with

EBA and EIOPA, ESMA points to the fact the RTS' development is coordinated with both EBA and EIOPA. Representatives of EBA and EIOPA participate as observers in the process that ESMA undertakes in developing the draft RTS on ESEF to ensure that the ESAs' approach to structured reporting is as consistent as possible.

Q3: Do you believe that the introduction of electronic reporting should serve as a basis for further debate on auditing of electronic structured data? Please explain your reasoning.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
46	9	2	12	5	15	3

52. Most respondents considered that the introduction of an ESEF should serve as a basis for further debate on auditing of structured electronic data. These respondents often argued that stakeholders would want to rely on the accuracy of structured electronic data and therefore thought that there was a demand for assurance on these reports. In order to sustain this debate, these respondents, especially the accounting bodies and auditors, suggested a number of issues that in their view should be addressed in such a discussion. Especially they mentioned that the IAASB's current auditing standards and most other auditing standards do not deal with the auditor's responsibilities relating to XBRL-tagged data.

53. Two respondents explained that the IAASB's (International Auditing and Assurance Standards Board) ISA 720 (revised), *The Auditor's Responsibilities relating to Other Information* explicitly scopes out XBRL tags as, according to the standard, they do not represent 'other information' as defined in ISA 720. Therefore, the requirement of ISA 720 for the auditor to "read" the other information for purposes of identifying material inconsistencies or material misstatements of fact would not be applicable to XBRL-tagged data.

54. Some of these respondents mentioned that generally auditors opine on whether the financial statements of a reporting entity as a whole provide a true and fair view. This is based on a static (paper) document for which there is only one possible format and view. In this context, one respondent referred to Article 32 of the Accounting Directive that lays out that if the annual financial statements and the management report are issued, they shall be "reproduced in the form and text on the basis of which the statutory auditor or the firm has drawn up his/her/its opinion." An ESEF that consists of a combination of an unstructured human readable document and structured data would be a challenge for current audit practices. A few respondents mentioned that in any case the legal status of the taxonomy

used for the purposes of ESEF will have to be clarified as the auditor cannot provide any assurance on the taxonomy. Furthermore, the auditor's responsibility relating to the assessment whether an issuer created an appropriate entity-specific extension will have to be determined. In addition to that they suggested to set up a mechanism that ensures that the audit opinion is based on data which cannot be amended after their publication in structured electronic format.

55. If eventually issuers are mandated to require their auditors to provide assurance on XBRL tags, several questions would need to be addressed, such as the level of assurance to be provided by the auditor (e.g. audit or agreed-upon procedures), whether the report with the XBRL tags would have to be approved by the Board of Directors and what the legal status of the XBRL tags compared to the human readable representation of the AFR would be. Some respondents thought that a broad participation of various stakeholders in this discussion was necessary, especially the users, in order to determine their needs and the IAASB which develops international audit standards.

56. Twelve of these respondents encouraged ESMA to follow ongoing developments in various countries. Most often mentioned were the Netherlands, where the legislation has been modified to require from 1 January 2017 filings in XBRL.

57. Conversely, 6 respondents (mainly preparers and their representative bodies) were reluctant to further discuss the auditing of structured information. They repeated their opposition to the introduction of electronic reporting and considered that, as such, there was no need to impose a mandatory audit of structured reporting. According to them, adding an audit requirement would further increase costs for the issuers without providing sufficient significant benefits. As such, they believed that the decision whether assurance should be provided on structured electronic reporting should be left to the issuer.

ESMA response

58. ESMA agrees with the opinion expressed by respondents that users of the financial statements will wish to rely on the accuracy of structured data and therefore there might be a demand for assurance over the XBRL tags applied. However, ESMA's remit regarding ESEF only covers the development of a draft RTS specifying the electronic reporting format under which the AFR has to be prepared. As such, determining the practicalities of auditing financial statements in a structured electronic reporting format is not in ESMA's remit.

59. Yet, ESMA welcomes that the majority of respondents shares ESMA's view that there is a need for further discussion on this topic. ESMA has already brought the issue to the EC's attention for its consideration. ESMA further calls on the standard-setting bodies of the audit profession to deliberate on how assurance can be provided on a financial report in the Inline XBRL format that contains a human readable representation and certain information that is marked up using XBRL tags, or even more generally on auditing structured electronic

reporting format. In this respect, ESMA notes that in the Netherlands there was already work undertaken to develop an audit assurance framework for financial statements reported in XBRL and encourages the standard setting bodies of the audit profession to leverage on that work.

Q4: Are you aware of any further elements which are necessary to provide an accurate picture of the current reporting for the purpose of this CP?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
47	9	3	12	4	15	4

60. Most respondents considered that ESMA provided an accurate picture of the current ways of reporting of AFRs in Europe, even though a few suggested completing this assessment with some additional elements.

61. Some respondents provided further details on current practices of reporting financial statements in XBRL/Inline XBRL in Europe, most notably in the Netherlands and the UK. As these practices do not refer to the AFRs of entities with securities listed on regulated markets, they were not included in detail in the description of current reporting practices in the CP. Regarding the Netherlands, the respondents pointed out that the Dutch Chamber of Commerce receives more than 100,000 voluntary electronic filings per year in XBRL format and that in the near future PDF filings would be prohibited for all companies and also the statutory audit would be performed on the XBRL file. In addition to that some respondents pointed out that the Dutch example would be especially instructive as it was broader in scope and created a comprehensive architecture for standard business reporting in order to simplify information exchange and processing.

62. Concerning the UK, respondents mentioned that reporting for tax purposes in Inline XBRL is mandatory. Furthermore, around 1.9 million companies report to Companies House, the UK's registrar of companies in Inline XBRL, even though it is not mandatory to report in Inline XBRL.

63. A few respondents commented on the description of the accepted and required formats in the different Member States for preparing the AFR. Two respondents pointed out that in Germany issuers would not be required to submit the AFR in an XBRL format, and one respondent explained that in Luxembourg the AFR could not anymore be filed in a paper format since 2012.

64. Two respondents referred to the European Multi-Stakeholders Platform on ICT Standardization (MSP-ICT), convened by the EC which is promoting XBRL (among other specifications) as “Identified Standard”, according to the Regulation (EU) No 1025/2012. In addition, these respondents elucidated that the European Committee for Standardization (CEN) convened the CEN Workshop 'WS XBRL' (Improving transparency in financial reporting) to standardize the usage of XBRL within the European and National Supervisory Authorities community. The final results were adopted by the CEN, and officially published[5].

ESMA response

65. ESMA notes that the large majority of the respondents believes that it provided in its CP an accurate picture of the current reporting practice.

66. ESMA is aware of the developments in the Netherlands and in the UK and the fact that XBRL and Inline XBRL are extensively used in these jurisdictions, albeit not for the purposes of the TD. ESMA engaged with representatives of the Dutch SBR initiative and the UK’s FRC to leverage from their experience in the field of structured financial reporting.

67. Regarding the comment that paper filings have not been accepted in Luxembourg since 2012, ESMA notes that there is currently no requirement for electronic filing in Luxembourg. ESMA acknowledges that German issuers are not required to file their AFR in XBRL. They can file it in XBRL but also in other formats such as XML or even in PDF, which is subsequently converted by the OAM in a structured format. However, this correction is small in scope and does not impact the overall assessment.

68. ESMA is also aware of the importance of standards and technical specifications in order to increase interoperability in the realm of information and communication technology (ICT). It therefore welcomes the work of the European Commission and the European Multi-Stakeholder Platform on ICT Standardisation and the Workshops on Standardisation convened by the European Committee for Standardisation in this field. ICT specifications are primarily used to maximise the ability for systems to work together. This is essential to ensure that markets remain open, allowing users and preparers of financial statements to have the widest choice of products possible and giving software providers the benefit of economies of scale. Standardisation and specifications are thus important tools to promote European competitiveness. Specifications ensure that products are interoperable, and that users have the chance to pick and mix between different suppliers, products or services. In the digital society standardisation deliverables become indispensable to ensure the interoperability between devices, applications, data repositories, services and networks. The European Commission identified XBRL 2.1 to be a technical specification for digital business reporting, managed by a global not for profit consortium, XBRL International. The goal of

[5] The documents can be accessed on European Committee for Standardisation’s webpage under: https://www.cen.eu/work/areas/ICT/eBusiness/Pages/WS-XBRL.aspx

this consortium is to improve electronic reporting in the public interest. As the machine readable representation in Inline XBRL is based on the XBRL 2.1 standard, ESMA considers its proposed RTS to be conducive to interoperability and standardisation and therefore to be in line with the European Commission's efforts described above.

Q5: Do you agree with the description of the technologies included in the CP?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
47	9	3	11	8	14	2

69. A relative majority of the respondents (21) agreed with the description of the technologies without qualifications.

70. Yet a group of respondents (11), while mostly agreeing with the description of technologies, did not agree with the description of Inline XBRL. Many of these respondents point out that the use of Inline XBRL is simpler than described in the CP. Some of them elucidate that Inline XBRL and XBRL are the same technology and that Inline XBRL only provides a presentation format as the XBRL tags are included within an ordinary, human-readable XHTML document. This avoids the need for separate means of converting XBRL data in a human-readable form. Some respondents also pointed out that Inline XBRL would allow regulators to define a specific layout. Two of them pointed out that it is widely used in the UK even though not for reporting under the Transparency Directive. One of the respondents holds the opinion that while Inline XBRL would be a derivative from XBRL, the processes for preparing an Inline XBRL and a XBRL document would be different as XBRL lends itself better for automation whereas Inline XBRL would be more suitable for manual tagging at the end of the reporting process.

71. Three respondents recommended to procure a technical study to further underpin the assessment of the relevant technologies to ensure that the decision on the appropriate technology for the ESEF is well founded.

72. Other three respondents are of the opinion that the description of technologies should also have contained an assessment of the applications or software available that enable users to access XML or HTML instance documents and of their costs.

73. Finally, one respondent expressed his belief that the RTS should be clear as to which type of files the approved taxonomy would encompass as for instance the IFRS Taxonomy as published by the IFRS Foundation does not only consist of element schemes, but also of linkbases containing the components of the taxonomy that provide information about relationships between the elements.

ESMA response

74. ESMA welcomes that many respondents agreed with the description of the technologies in the CP, however ESMA acknowledges that the description of the Inline XBRL technology could give rise to some misunderstandings. Nevertheless, ESMA has studied the technology in detail before developing its proposal to make use of it for the purposes of ESEF. Furthermore, as suggested by some of the respondents, ESMA has undertaken an additional cost-benefit analysis to assess, amongst others, the compliance of the technology with the objectives of the TD. This cost-benefit analysis is attached as an annex to this Feedback Statement. Therefore, ESMA is confident that its decision is well founded.

75. Regarding the comment of three respondents that in describing the technologies ESMA should also have explored the software available to consume instance documents, ESMA considers that this would have expanded the scope of the description too far. Nevertheless, ESMA points out that, as further explained in the ESMA response related to question 11, the human-readable representation of the AFR in the Inline XBRL document can be opened by standard internet browsers and thus does not lead to any relevant incremental costs.

76. Regarding the comment, that ESMA should be clear as to which type of files the approved taxonomy would encompass, ESMA refers to the remarks in ESMA's response related to question 7.

Q6: Do you agree with the choice of the technologies to be further analysed as part of the CBA? If not, please indicate which other technologies you would propose for further analysis.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
49	9	5	14	5	14	2

77. The majority (34) of respondents from a broad range of stakeholders agreed with the choice of technologies that were analysed in the CBA performed by ESMA.

78. Several of them (9) explicitly pointed out that XBRL or Inline XBRL would be most suitable technologies for the purposes of ESEF. The arguments mentioned were that already more than a decade of effort has gone into developing and refining the XBRL standard for business reporting. Several of them pointed out that these are proven standards that are already applied internationally and as such it was appropriate to assess them in the CBA. Some of these respondents expressed the concern that it would be difficult and very

expensive to develop ESEF on the basis of options 3 (XML) and 4 (HTML/XHTML), even though a few of them mentioned that they either lacked time or knowledge to analyse these options in detail. One respondent pointed out that it would increase costs for companies throughout Europe, as they would have to familiarise themselves with a new standard rather than an existing one, to which some already have exposure to. One regulator pointed out that some jurisdictions already have made significant investments in the XBRL/Inline XBRL technology and that this should be taken into account.

79. Some of the respondents that in principle agree with the selection of technologies to be analysed (4) think that only XBRL, Inline XBRL and XML should be considered as technologies for ESEF while HTML would not be suitable. In their view HTML/XHTML is not providing the necessary level of support for understanding data and therefore should not be further analysed.

80. Two respondents are of the opinion that only XML should be analysed.

81. Several respondents (8), mainly preparers and their representative bodies, disagreed with ESMA's conclusions on the choice of technologies and repeated their opposition to the introduction of structured reporting. Two of them pointed out that the main objective of ESEF should be to harmonise the current reporting formats and ensure an effective enforcement of the provisions of the Transparency Directive in terms of dissemination of regulated information. Regarding the mark-up PDF technology that was not selected for further assessment as it is not yet a mature technology, they acknowledge that it is still under development. However, contrary to ESMA's conclusion, they believe that future developments of the mark-up PDF technology should be followed. Another respondent holds a similar opinion namely that abandoning a technology because it is not fully developed would be the wrong approach. This respondent argued that it would be better to wait a few years until the technology is further developed instead of accepting XBRL/Inline XBRL now which would be in this respondent's view the weaker alternative. One respondent draws ESMA's attention to ISO standard 19005 PDF/A-3, the archival subset of the PDF specification to implement ESEF.

82. One respondent recommended to use the format for electronic publication 'EPUB', considering that a number of management reports are e-books and that this format could be operated through various devices to extract automatically some data and to transform reports into PDF. In his view, EPUB could be an optional non-structured format.

83. Two respondents did not express an explicit opinion on the technologies selected for analysis by ESMA but recommend involving experts in a working group to perform the technical analysis and to review the existing experience in EU Member States.

ESMA response

84. ESMA welcomes that the majority of respondents agree with the technologies selected for further analysis. It further notes that many of these respondents also in this context pointed

out that in their view XBRL and/or Inline XBRL are the relevant technologies for ESEF, which confirms ESMA's conclusion to select the Inline XBRL technology for ESEF.

85. Regarding the suggestion of two respondents to select the XML technology for ESEF, ESMA notes that XBRL and Inline XBRL are already XML-based and were specifically designed for business reporting. Developing a new standard on the basis of XML for the purposes of ESEF would be costly and would most likely require significant time. Expecting it to be operational on a like-for-like basis by 1 January 2020 would be unrealistic.

86. ESMA also considered the comments that the mark-up PDF technology could be the basis for ESEF even though it is not yet a mature technology. However, the European co-legislators set a specific effective date for the application of ESEF. As the implementation requires lead time, ESMA has to discard all technologies that are not yet mature.

87. Concerning the suggestion of some respondents to make use of plain PDF, ESMA refers to its response to question 2. This assessment also extends to the EPUB format as it is also an unstructured format. ESMA further notes that one respondent recommends the use of PDF/A-3, however this again is not a structured reporting format. It would make it possible to package XBRL data together with the PDF content as a unified deliverable. However, this does not relieve from the necessity to decide which structured reporting format should be selected. Furthermore, ESMA notes that PDF is a proprietary format owned by a single software company which is a significant drawback for proposing it for mandatory use.

Q 7: Do you agree with ESMA's proposal to use the IFRS Taxonomy as issued by the IFRS Foundation for reporting under IFRS, subject to formal endorsement in the European Union?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
52	9	4	15	8	13	3

88. Most respondents (47) agreed with the proposal to use the IFRS Taxonomy as issued by the IFRS Foundation for reporting under IFRS. Several considered it to be the natural and obvious choice and some respondents expressed their opinion that it is the most developed taxonomy for IFRS financial statements. They considered it to be a crucial factor for the successful implementation of ESEF. One of the respondents indicated that the IFRS Taxonomy is multilingual which is important for the purposes of ESEF. Two respondents mentioned that there is a need for a single global taxonomy for IFRS financial reporting, as the introduction of multiple taxonomies would lead to additional tagging costs for issuers and

would restrain the capacity of analysis of information by users and therefore the IFRS Taxonomy would be most appropriate for the purposes of ESEF.

89. However, 17 of those respondents (amongst them 5 accounting bodies and auditors and 10 service providers) underlined that the IFRS Taxonomy could only serve as a basis for the ESEF. In their opinion, in its current form, the IFRS Taxonomy cannot be fully useful without additional extensions. It would have to be complemented to ensure that IFRS financial information and other data required under national legal and other requirements can be properly represented in XBRL. Several of these respondents believe that the IFRS Taxonomy should be complemented with a regulatory extension taxonomy. One regulator explained that it had extended the IFRS Taxonomy in its jurisdiction to make it more flexible and better reflect the reporting practices of issuers in its country. It thinks that considering the extensive investment already made by some countries regarding the development of a complementary taxonomy, the responsibility to complement the taxonomy could be a Member State responsibility. Another suggestion was that an alternative to extending the taxonomy would be to create a specific template report using the IFRS Taxonomy to give the filers stricter guidance.

90. Four respondents recommended that ESMA or the IFRS Foundation consider how to develop adequate guidance to help issuers better understand the objectives of the IFRS Taxonomy and how it links with the IASB's Disclosure Initiative. In their view there is an important trade-off between the granularity and specificity of a taxonomy and the efforts of standard setters and regulators to encourage the issuers to 'tell their story' in a clear and concise way.

91. Only two respondents (1 issuer, 1 service provider) considered that the use of the IFRS Taxonomy would not ensure the successful implementation of the ESEF. According to them, the frequent changes to the IFRS would make the maintenance of the IFRS Taxonomy very complex and increase the cost and workload of issuers. In addition, the absence of APMs in the IFRS Taxonomy prevents it from providing information of great use to investors.

92. Seven respondents raised comments on the formal adoption of the IFRS Taxonomy in the EU. Some of them (3) believed that a formal adoption would not be necessary as the IFRS Taxonomy is only a mechanic applying the principles of already endorsed IFRS standards. In addition, the frequent changes of IFRS make it difficult to adopt a Taxonomy which represents faithfully the information required at a particular point in time.

93. On the contrary, four other respondents believed that a specific system of adoption of the IFRS Taxonomy would have to be set up to provide the taxonomy to be used with a legal statute and to guarantee the comparability of financial information among listed issuers. One statistical body specifically recommended the adoption of a compulsory subset of elements of the IFRS taxonomy at EU level, while the adoption of additional elements should be left for decision at either Member State or company level, thus giving flexibility to the national

regulators and companies. Given that the RTS did not yet specify how the adoption of the Taxonomy would work, the respondents advised ESMA to further consider this issue.

94. In addition to the responses described above, the letters by the respondents described in paragraphs 21 to 24 express concerns relating to the IFRS Taxonomy. In the view of these respondents the frequent and significant changes to the IFRS would lead to an increase in complexity of financial reporting and increase the costs to be borne by issuers.

ESMA response

95. As the vast majority of respondents agreed with the use of the IFRS Taxonomy issued by the IFRS Foundation as basis for the structured electronic reporting of IFRS consolidated financial statements, ESMA is assured of its position as described in the CP. We believe that having in place multiple codes and systems across the world to be used in tagging IFRS financial statements would weaken the benefits of structured electronic reporting and lead to increased costs to analyse data for users and cost of reporting for preparers listed on several markets.

96. ESMA took note that many respondents suggested that the IFRS Taxonomy would not be fit for use without allowing or requiring extensions. This is also in line with the answers received on question 8, in which the majority of respondents expressed the opinion that as the IFRS are non-prescriptive and allow flexibility in the presentation of the financial statements, extensions would be necessary to structure entity-specific elements. ESMA agrees with this assessment and decided therefore to take it into account in the final RTS. For further explanation, please refer to ESMA's response to question 8.

97. ESMA is aware that there might be some divergence between the objective pursued under the IASB's Disclosure Initiative to encourage issuers to present their financial position and performance in a clear and concise way on one hand and the provision of the necessary granularity and specificity of a machine readable taxonomy on the other hand. However, as the Inline XBRL format that ESMA proposes for ESEF (for further details on Inline XBRL and the reasons for selecting it for ESEF, please refer to ESMA's responses related to questions 11 and 14), allows the issuer to prepare a human readable document without prescribing a specific format of presentation, ESEF does not limit the ability of the preparers of the AFR to 'tell their story' or to present APMs in the AFR, if they deem necessary.

98. ESMA agrees with the assessment of several respondents that it is necessary to provide the taxonomy to be used with a legal statute. As structured financial reporting using the Inline XBRL technology format requires a taxonomy, it is clear from the mandate that ESMA not only has the power but in fact the obligation to refer in its RTS to a specific taxonomy that shall be applicable. Otherwise the legal mandate would not be fulfilled as a taxonomy is a prerequisite for structured electronic reporting using the Inline XBRL technology. In addition, the taxonomy would have to reflect the endorsement status of IFRSs in the EU.

99. Regarding the legal form of this referral, the EU accounting regime foresees a systematic endorsement process of all IFRS by the EC. In the established endorsement process, the EC decides if the proposed IFRS standards meet the criteria of Article 3(2) of the IAS Regulation (Regulation 1606/2002) for endorsement in the EU. However, the IFRS Taxonomy is not in itself an accounting standard, but a given hierarchical structure which allows input data to be transferred into structured data and thus does not fall within the scope of Article 3(2) of the IAS Regulation and thus cannot follow the established endorsement process under the IAS Regulation. ESMA concluded that the appropriate way to refer to the respective taxonomy is to add the elements schemes of the taxonomy as an annex to the RTS. This would also be consistent with EBA's and EIOPA's approach. They add the specifications for the regulatory reporting in structured format as an annex to their respective ITSs. ESMA will give further consideration to the question on how the linkbases containing the components of the taxonomy that provide information about relationships between the elements, should be given legal statute, in the course of the development of the detailed technical specifications. This work will be undertaken after publication of this feedback statement.

100. ESMA understands the concerns expressed by a few respondents that frequent changes to IFRSs might make the adoption of amendments to the IFRS Taxonomy difficult. However, in order to have structured reporting aligned with the basis of the preparation of the financial statements under IFRS and to ensure consistent implementation of the IFRS Taxonomy at EU level, the applicable taxonomy would have to be regularly updated to incorporate changes in the endorsed standards. When amending a RTS, a public consultation is necessary, however according to Article 10(1) of the ESMA Regulation a consultation is not required when a public consultation and analysis would be disproportionate in relation to the scope and impact of the amendment of the RTS. As most amendments to the applicable taxonomy would be small in scope, a public consultation is expected not to be regularly necessary.

Q8: Do you agree with ESMA's preliminary conclusions not to use regulatory and entity specific extensions? Please provide arguments in your answer in relation to the impact on issuers and users.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
46	9	2	12	7	13	3

101. The majority of respondents (35), amongst them the IFRS Foundation, expressed reservations about the approach suggested in the CP to not allow the use of regulatory and entity-specific extensions. In their view, ESMA should develop a new approach in which at least some extensions were allowed. Only five respondents agreed that no extensions should be allowed. The other respondents expressing an opinion saw benefits and disadvantages of the approach proposed in the CP.

102. The respondents that think that the use of extensions should be allowed, had diverging views on the extent to which extensions should be allowed. On the one hand, 11 respondents (amongst them especially service providers (5) and accounting bodies and auditors (3)) thought that if ESMA were to mandate the IFRS Taxonomy, extensions would be necessary but should be limited to European, regulatory or local extensions and that entity-specific extensions should not be allowed. They generally pointed out that some national reporting requirements might lead to a need for local or regulatory extensions. Others suggested that these extensions used shall be published by recognised bodies and be specifically authorised by ESMA. Some mentioned that ESMA should mandate extensions that facilitate identification of the entity.

103. The IFRS Foundation pointed out that XBRL International would be in the process of setting up a task force under their Best Practices Board to which the IFRS Taxonomy team will be an active participant. This group is tasked with investigating the best way to manage entity-specific elements within an XBRL filing to make it easier for preparers and users to communicate and analyse entity-specific elements within a structured electronic report. Therefore, it would prefer that ESMA does not prohibit the use of XRBL extensions to structure entity-specific elements.

104. The respondents that agreed with the approach suggested in the CP mostly argue that extensions negatively affect comparability and two of them also pointed out that the preparation of extensions puts considerable burdens on preparers.

105. On the other hand, 22 respondents (especially accounting bodies and auditors (6), service providers (5) and preparers and their representative bodies (4)) think that entity specific extensions should also be allowed. The underlying rationale is that IAS 1 *Presentation of Financial Information* gives the reporting entity considerable leeway when presenting its financial information and that this is not compatible with a closed taxonomy that cannot be extended. A lack of flexibility regarding the taxonomy could lead to excessive standardisation and would thereby mandate a uniform presentation which would in the view of these respondents undermine the principle-based approach to financial reporting under IFRS. One respondent specifically explained that use of the IFRS Taxonomy without national or entity specific extensions may force the companies to undertake reclassifications in the presentation of their financial statements in order to cater for a fixed taxonomy structure. Others pointed out that the lack of entity-specific extensions could lead preparers to not tag information relevant for users.

106. It has to be noted that most of the respondents (13) explicitly call for a mechanism to avoid the proliferation of extensions. They argue that extensions amend the basic content and relationships defined in the taxonomy and thereby reduce comparability across entities. Regarding the way to prevent the proliferation of entity specific extensions, three respondents recommended to take notice of the work undertaken in the Netherlands by the Dutch SBR Taskforce *Private Extensions*. One respondent recommended that company specific extensions should be anchored to an existing element in the IFRS Taxonomy to address the concern that extensions are not comparable across companies and are not easily identified by software. Another respondent recommended to set up a taskforce between ESMA and the IFRS Foundation to devise a governance process for incorporating taxonomy changes. One of the respondents thinks that the choice of allowing or not allowing entity specific extensions should be made at the level of the Member States.

107. Four respondents pointed out that the choice of Inline XBRL technology for the ESEF would reduce the need for extensions since a full set of financial statements could be delivered regardless whether all information is being represented by XBRL tags.

108. Another respondent expressed his concern that endorsement of IFRSs under the IAS Regulation does not encompass any accompanying material of the standards, such as Illustrative Examples, Application or Implementation Guidance and the Basis for Conclusions. Since part of the proposed IFRS Taxonomy is derived from this material, a taxonomy approval process under the RTS will cover more specific requirements than the endorsement of the underlying IFRSs themselves under the IAS regulation and could be perceived as endorsing these materials for obligatory use in Europe.

ESMA response

109. ESMA took note of the critical feedback provided by the majority of respondents to the proposal in the CP to not allow extensions of the IFRS Taxonomy. ESMA's reasoning for this proposal was that while extensions allow preparers to accurately represent their disclosure, they also make it harder to analyse and compare the resulting data.

110. ESMA will assess the available options to extend the IFRS Taxonomy, either through allowing entity-specific extensions based on a framework or a regulatory extension taxonomy. ESMA welcomes that the XBRL Best Practices Board has set up a task force to identify best practices for handling entity specific disclosures in XBRL. This task force is striving to address the reported problems that users and regulators face when working with entity specific disclosures. ESMA intends to leverage on the experiences gathered by that forum.

111. ESMA disagrees with the view that the adoption of the IFRS Taxonomy for ESEF could be perceived as endorsing the accompanying materials to the IFRS standards (e.g. Illustrative Examples or Implementation Guidance). The IFRS financial statements of EU issuers have

to comply with the endorsed IFRSs. Unlike the IFRSs which set out recognition, measurement, presentation and disclosure requirements dealing with transactions and events that are important in general purpose financial statements, the IFRS Taxonomy is merely a tool to transform these IFRS financial statements in a machine readable format. Therefore, the approval of a version of the IFRS Taxonomy by ESMA does not set a requirement for an issuer to recognise, measure, present or disclose a transaction or event in a specific way. It merely enables the issuer to make its chosen accounting treatment machine-readable.

Q9: Do you agree with the proposed approach in relation to the taxonomies of third countries GAAPs deemed equivalent to IFRS?

Q17: Do you agree that a single electronic format should not be required for financial statements under third country GAAP?

The questions 9 and 17 were analysed together as there are overlaps in the feedback received and in the ESMA response related to these two questions.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
33	9	3	4	4	12	1

112. The majority of respondents to question 9 (32) agreed with the proposed approach not to require the use of the taxonomies of third countries GAAPs deemed equivalent to IFRS (third country GAAP thereafter). Most of them did not provide additional comments. Two service providers and one standard setter considered that this issue constituted a secondary problem and that the focus of ESMA should be on European issuers.

113. One accountancy firm suggested allowing Member States to accept filing in a structured format where a third country GAAP taxonomy was available.

114. The feedback to question 17 is consistent with the feedback related to question 9. The majority of respondents to question 17 (18, amongst them especially 9 service providers and 5 accounting bodies) agreed in general with the proposal of ESMA not to require structured electronic reporting of financial statements prepared under third country GAAP. This was justified on the basis of the non-availability of taxonomies and/or the lack of influence on the due process of the development of a taxonomy carried out in a different jurisdiction. Some of the respondents considered that ESMA's approach was appropriate in

terms of cost and benefits. One respondent considered that such requirement could only be considered in a second phase, once the ESEF will be fully implemented for IFRS consolidated financial statements.

115. Six respondents agreed that if no taxonomy for third country GAAPs exists, structured electronic reporting should not be required for the annual financial reports of these issuers. However, if a taxonomy for the respective GAAP would exist, it could or should be used for filing purposes in Europe. Another respondent considered that financial statements prepared under third country GAAP should be required to file the AFR in Europe with the same level of information and technical format they report elsewhere, if the applicable taxonomy were accepted by ESMA.

116. Only two respondents expressed the opinion that structured electronic reporting should be required for all issuers preparing their financial statements under third country GAAP.

117. In addition, a few other respondents considered that ESMA was not entitled to make specification for legislation applicable in third countries and that the question would therefore be irrelevant.

ESMA response

118. ESMA welcomes the agreement of a majority of respondents with its proposal not to require issuers preparing financial statements under third country GAAP to make them public in a structured format for the purpose of fulfilling the requirements of the TD.

119. However, ESMA also takes note that several respondents are of the opinion that if a taxonomy for the relevant GAAP under which the financial statements are prepared exists, they should be required to publish them in a structured format. ESMA agrees that this is indeed a possibility that could be considered, as some taxonomies exist for some third country GAAPs, most notably, but not only, for the US GAAP. However, ESMA would like to point out that the extent, level of development and maintenance of the respective taxonomies for third country GAAP remains variable. Therefore, considering that there is a need for a thorough due process for the existence and maintenance of a taxonomy which would need to be assessed before the relevant taxonomy can be mandated in the EU, ESMA decided to study this issue further once the requirements for ESEF for the consolidated financial statements prepared in accordance with IFRS will be finalised. This analysis should take into account the development and maintenance of taxonomies for these third country GAAPs and the process of governance which is in place in their respective jurisdiction.

120. Until then, issuers preparing their financial statements under third country GAAP will be required to make their AFR public in the same XHTML format as all issuers with a registered office in one of the Member States but without any XBRL mark-up. However, if a Member

State intends to require an issuer to make public its financial statements prepared under third country GAAP in a structured format, ESMA does not restrict this.

121. Regarding the concern of a few respondents that ESMA cannot make specifications for third countries, ESMA reminds that issuers with a registered office in a third country have to file and make public their AFR in the relevant home Member State. As such, the scope of the ESEF also extends to the AFR including the financial statements prepared under 3rd country GAAP of issuers with a registered office in a third country.

Q10: Do you agree that a taxonomy shall be developed for other parts of the AFR (outside financial statements)? If yes, please indicate which ones and explain why

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
48	9	4	12	6	14	3

122. Respondents had mixed views with about half (25) of them pointing to a need for taxonomies for other parts of the AFR outside the financial statements. Especially service providers (10), accounting bodies and auditors (5) and statistical bodies (3) favour this approach. Of these respondents that are in favour of developing a taxonomy for the parts of the AFR outside the financial statements, 10 hold the opinion that the taxonomy should cover all parts of the AFR. If respondents only suggest developing a taxonomy for some parts of the AFR, the audit report (mentioned by 4 respondents) and the management report or parts of it (mentioned by 4 respondents) were most often mentioned.

123. On the other hand, 17 respondents hold the opinion that there is no need to develop a taxonomy for the other parts of the AFR apart from the financial statements. Especially prevalent is this opinion amongst preparers and their representative bodies (10), regulators and OAMs (2). One argument brought forward was that it would be feasible to develop such a taxonomy only by expanding considerable efforts. Furthermore, it was argued that it would lead to undue standardisation and some respondents were not convinced of the value of tagging purely narrative information in the AFR.

124. Other respondents (5) think that a taxonomy for other parts of the AFR apart from the financial statements might be useful, however it should not be a priority and might be developed at a later stage.

ESMA response

125. ESMA's response to this question has to be read in conjunction with the feedback received on question 15 and ESMA's response to it. As explained there, ESMA suggested in the CP to limit the scope of structured financial reporting to the consolidated financial statements and this approach was also supported by a relative majority of respondents. ESMA is of the view that an effect assessment should be undertaken before the scope of mandatory structured financial reporting is extended beyond consolidated financial statements. Only if it is positive, a further extension of the requirement should be undertaken at European level and only then a taxonomy for the other parts of the AFR would need to be developed.

Q11: Do you agree that non-structured electronic reporting should be required for the entire Annual Financial Report? Do you agree that the format used shall be PDF? If you disagree, please explain your opinion by providing arguments on the policy objectives and impact on the CBA.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
55	9	5	13	7	17	3	1

126. Respondents, and amongst them also the users, had mixed views about the suggested requirement to make public the entire AFR in a non-structured electronic reporting format. On the one hand, about half (25) of them either expressed concerns regarding this approach or dismissed it outright. This view was especially prevalent amongst service providers (13), accounting bodies and auditors (4) and statistical bodies (3) that generally have a strong preference for the presentation of the whole AFR in a structured format. In addition to that also two international user representative bodies expressed this view. The most frequently mentioned argument was that having two separate disconnected files, one in a textual format, and the other in a structured format, could lead to inconsistencies in the information contained. If the two information contained in the two files differs, stakeholders might be confused which of the two versions would be the correct and official one. This could give rise to potential legal claims. Another argument brought forward was that only a structured data format allows automated processing of data and that the filing of certain parts of the AFR in two different files would be burdensome for preparers. Finally, respondents pointed out that EBA and EIOPA already require certain information necessary for supervisory purposes to be submitted in a structured format. Therefore, these respondents are of the opinion that ESMA should follow this approach. In the view of these respondents, this is an argument for requiring that issuers make public their entire AFR in a structured format only.

127. Regarding the need for financial reporting that is also human-readable, some of the respondents express the opinion that this could be addressed by providing a rendering

mechanism that would allow the transformation of structured data into human readable format.

128. Several respondents pointed out that by making use of the Inline XBRL technology would not require another separate file with a textual format, as an Inline XBRL file would already be human-readable and would also contain the tagged information to the extent required.

129. All respondents who rejected the suggested requirement to make public the entire AFR in a non-structured electronic format also reject the suggestion of the use of PDF. Several comments received pointed out that PDF is a proprietary format owned by a single software company and that it would therefore not be a suitable format for mandatory use in the EU.

130. On the other hand, about the other half of respondents (26 including the SMSG) agreed that there is a need for a separate textual file. Almost all of the respondents (21) agreed with the suggested approach to make use of the PDF technology. This opinion is especially widespread amongst preparers and their representative bodies that all but one agrees with the suggested approach but was also expressed by two user representative bodies The most common argument brought forward was that PDF is currently the most widely desired and used medium for investors to review financial information. Some of the respondents note that already the requirement to file AFRs in PDF format would present an improvement to the status quo, as several member states still permit paper filing. Three respondents underlined that it is in their opinion important that a searchable PDF file should be mandated. Two of them specifically mention the PDF/A-3 format which allows Inline XBRL and XBRL files to be embedded in PDF files as a unified deliverable, thereby creating a clear and persistent association between structured and unstructured information. The SMSG further noted that reporting in a structured format might lead to standardization of financial reports and could lead to the loss of critical nuances for some sections of the AFR.

131. In addition to the responses described above, the originators of the letters described in paragraphs 21 to 24 call on ESMA and the EC to harmonise electronic reporting formats by making use of the PDF technology. In the view of these respondents, this would represent a simple and inexpensive choice that would be easy to put in place and satisfy all users.

ESMA response

132. ESMA takes note of the concerns regarding the preparation of two separate disconnected files, one in a textual format, and the other in a structured format, and agrees that this could lead to some inconsistencies in the information contained and, as such, might potentially give rise to legal claims. In addition, ESMA agrees that PDF is a proprietary standard, whereas XBRL and Inline XBRL are non-proprietary open standards.

133. ESMA also notes that about half of the respondents agreed with its assertion that there is a need for a human readable file. However, it assumes that these respondents do not

necessarily require a separate PDF file, but the features and functionalities that a PDF file provides, especially

a. it is easy to access;

b. it is easy to read (display and navigation);

c. it is easy to print;

d. it is a data set with clear boundaries and published at a particular moment in time.

134. It can be assumed that a file prepared in an Inline XBRL format can also be easily accessed without the purchase of a specific technology. An Inline XBRL instance document is an XHTML file in which XBRL data is embedded, so that it can be viewed with common web browsers which are widely and freely available. XHTML allows good presentation and display of the AFR, and publishing features such as infographics, tables, etc. can also be supported. For example, if the file is formatted as a filing in a single browser webpage, then the entire document can be searched using a search function similar to PDF. It can be printed well, even though it has to be said that the quality of the printability depends on the formatting of the document and may in many cases not achieve the same quality as printing of a PDF document, as PDF was specifically designed with printing in mind. XHTML can be packaged that it has clear boundaries just as a PDF. Therefore, ESMA is of the opinion that an Inline XBRL file broadly fulfils the features and functionalities expected from a PDF format. But in addition to that it also delivers additional benefits that a pure PDF file might not provide.

135. As an Inline XBRL instance document contains the whole AFR in a human readable document and embeds in it the machine readable XBRL tags, there would not be two different disconnected documents. Even though, inconsistencies between structured data and human readable data would still be possible due to errors in tagging, the tags applied to reports can be easily viewed and checked in an appropriate software. ESMA expects that this significantly reduces the potential for inconsistencies compared to having two separate disconnected documents.

136. In its assessment of the technical functionalities, ESMA reached the conclusion that inconsistencies could only be entirely avoided if the ESEF would consist of a machine readable XBRL instance document only. However, ESMA rejected this option and choses Inline XBRL for the ESEF for the reasons described in further detail in ESMA's response related to question 14.

137. Some respondents observed that EBA and EIOPA already require certain information to be submitted for supervisory purposes in a structured format, which is entirely and only done in an XBRL format. On this basis, they draw the conclusion that ESMA should also require issuers to make public the entire AFR in a XBRL format only. However, ESMA notes the

different scope of the structured reporting of EBA and EIOPA in comparison with the ESEF. Whereas the information requested by EBA and EIOPA is predefined in detail by them and the presentation format of the reporting cannot be amended by the preparer ('closed reporting'), all AFRs have a common structure, however the preparers have a lot of leeway in presenting the required information. Therefore, no two annual financial reports are necessarily similar same ('open reporting'). Requiring issuers to make public their AFRs in XBRL only without the human readable representation in XHTML that is provided by Inline XBRL is likely to lead to considerable difficulties of the issuers to present their AFRs in exactly the same way as they intended them to look like. ESMA is of the opinion that the ESEF needs to use that technology that preserves the flexibility allowed by the IFRS in the presentation of the financial information in order to allow a faithful representation of relevant information to users.

Q 12: Do you agree with the solution of a single electronic format composed of structured and non-structured data (option B)? If not, please explain your opinion as well as the impact on the CBA.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
52	9	5	13	5	17	2	1

138. Forty respondents from a large range of sectors, mainly preparers and their representative bodies (8), service providers (12) and accounting bodies and auditors (6) disagreed with option B because the preparation of financial information under two different formats would be burdensome and might give rise to inconsistencies, errors and delays in the publication of the financial information. However, those respondents did not have one common position. Eleven respondents (9 preparers and their representative bodies, one accounting body and one service provider) proposed to implement option A "full unstructured format for all parts of the AFR" in PDF-format only, as it would be the most cost-effective solution, would respond to the desire of the users and provide a "single electronic format" in line with the requirements of the TD. Some of them considered that the current requirement for PDF filings in 13 Member States and its acceptance in 14 other Member States would facilitate the implementation at European level. One of those respondents suggested ESMA to investigate the potential use of PDF/A-3 technology, as it contains the functionalities necessary to meet the objectives of the TD. In addition to that, the originators of the letters described in paragraphs 21 to 24 suggest that PDF should be the sole technology used for ESEF. In the view of these respondents, PDF would represent a simple and inexpensive choice that would be easy to put in place and satisfy all users.

139. Among the respondents which disagreed with option B, 22 respondents (amongst them 11 service providers and 4 accounting bodies) proposed to implement option C “Full structured data format” and use either XBRL or Inline XBRL data as the single electronic format. Some argued that the provision of an XBRL or Inline XBRL filing which includes all the information prepared for filing and storage would be the most cost-effective solution. In addition, some respondents mentioned that in some countries, the presentation of non-structured information as an image or a footnote facilitates the inclusion of narrative information and could be considered by ESMA, as well as the need to provide a mechanism to render the financial statements in a human readable format.

140. Contrary, 11 respondents, amongst them mainly service providers and the SMSG, agreed with option B namely that the AFR in the ESEF would be composed of structured and non-structured data. They considered that this solution was appropriate considering the current evolution of technologies and the fact that the narrative content of several sections of an AFR cannot be processed in a structured format. Some of these respondents considered that ESMA should further assess the human readable format in which financial statements will have to be presented.

ESMA response

141. ESMA notes the mixed views on this matter and the concerns that an ESEF that would consist of two separate documents could give rise to inconsistencies. As explained in ESMA’s response to the question 11, ESMA agrees with this assessment and concluded that mandating the filing of a single Inline XBRL instance document for the ESEF would reduce potential inconsistencies between the human readable information and the embedded XBRL tags.

142. As explained in detail in ESMA’s response to question 2 building ESEF on PDF is not a viable option.

143. ESMA thinks that the suggested approach strikes a good balance between making available the AFR in a human readable format but also providing useful machine readable data for analysis while keeping the risks of inconsistency to a minimum.

Q13: Do you agree that Inline XBRL and XBRL are the most relevant options available for the ESEF?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
57	9	6	16	7	16	2	1

144. A large majority of respondents (41 including the SMSG) agreed that Inline XBRL or XBRL are the most relevant options available for the ESEF. The arguments brought forward are especially that these are proven technologies for tagging business information which are currently in use in several jurisdictions and that the conducted CBA confirmed that these would be the most suitable options for ESEF.

145. Eleven respondents – most of them (9) preparers or their representative bodies - do not agree with that and Almost all of them would prefer the sole use of the PDF technology for the ESEF.

ESMA response

146. ESMA welcomes the support received on its assessment which was based on the CBA and the experiences made in other jurisdictions. XBRL and Inline XBRL are the most relevant technologies currently available for ESEF.

Q14: Could you please indicate what your preferred solution between Inline XBRL and XBRL is? Please explain the reasons.

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
51	9	5	14	5	16	2

147. Seventeen respondents, especially service providers (9) and preparers (3) indicated in their answer that they would prefer the application of XBRL, because it is an unambiguous format which communicates only one version of truth which can be consumed by computers and humans (however requiring a rendering tool). Inline XBRL adds a human-readable representation that might include XBRL facts but not necessarily does so and could thus include additional information such as text, numbers or formatting which is not machine-interpretable. Two of the prepares based their preference on the fact that they already use

XBRL for regulatory purposes. One service provider explained that he preferred XBRL because it provides more options for automation of tagging than Inline XBRL. Another service provider thought that XBRL is more useful if information should be rendered in a uniform way, whereas Inline XBRL is better if the rendering layout is defined by each issuer and this service provider prefers a uniform rendering. One statistical body preferred XBRL because an Inline XBRL file contains un-tagged data which cannot be used in a statistical process.

148. Fourteen respondents – amongst them accounting bodies and auditors (5), service providers (5), preparers and their representative bodies (2) and user representative (2) bodies preferred Inline XBRL. Most of them stressed that Inline XBRL is human readable and thus enables the preparation of a human-readable filing that is an exact reflection of the 'paper' or 'electronic paper' (e.g. PDF) AFR that issuers currently prepare and publish. Inline XBRL was specifically designed to handle reports which appear in flexible format and may contain unstructured data. Some of these respondents pointed out that an Inline XBRL file can include all text, graphs, images or other content contained in a typical annual report, as well as XBRL tags, thus allowing to file the whole AFR in a single document and therefore making the PDF file that was suggested in the CP redundant. This also allows the presentation of the AFR in a flexible format defined by the preparer. Three respondents explained that Inline XBRL is based on the HTML format and therefore can be rendered by standard web-browsers. Furthermore, the HTML format is well understood and commonly used by software developers. Therefore, many 'off-the-shelf' software components for HTML are available, reducing the cost of implementation further. A few respondents also pointed out that Inline XBRL would allow ESMA to flexibly set the scope of XBRL tagging. Inline XBRL could therefore promote easy phasing of the implementation of structured electronic reporting.

149. In addition to that, a significant number of respondents (11) neither expressed a preference for one of the two technologies nor rejected them. Several (6), amongst them one user representative body are undecided and think that both options might be equally suitable for ESEF whereas the others (5), amongst them one user representative body either do not have an opinion or do not see themselves in a position to take a position

ESMA response

150. ESMA came to the conclusion that the ESEF should make use of the Inline XBRL format. As substantiated by the responses received to question 11, ESMA considers that there is a high demand for an AFR in a human readable document that can easily be consumed without the need of additional tools and be prepared and displayed in the same way as intended by the issuer. Users need a rendering tool to consume XBRL data and issuers need considerable efforts to prepare an XBRL file that is rendered in exactly the same way as intended by them. This was the reason why ESMA initially suggested in the CP that, in addition to the part of the AFR that should be made public in a structured format, the whole

AFR should also be made public making use of the PDF technology. However, many respondents expressed in their response to question 11 concerns that two separate and disconnected files might give rise to inconsistencies.

151. Inline XBRL which is based on the XHTML technology can be viewed with common web browsers which are widely and freely available. XHTML furthermore allows good presentation and display of the AFR and publishing features such as infographics, tables, etc. Given that there is appropriate software that assists preparers to apply the tags to an Inline XBRL instance document correctly, ESMA expects that the risks for inconsistencies would be limited, at least compared to a situation where in addition to the XBRL format a separate PDF document would be requested. ESMA acknowledges that inconsistencies between the human readable representation and the machine readable XBRL data could only be entirely avoided if the ESEF would consist of a machine readable XBRL document only. However, ESMA considers that the advantages of Inline XBRL weight more than its disadvantages.

152. ESMA is aware that an ESEF that would mandate issuers to make public their AFR in a XBRL format only, would provide more options for the automation of tagging than the Inline XBRL format which is often tagged manually. However, ESMA considers that if ESEF makes use of the Inline XBRL technology, the level of detailed tagging can be limited, whereas an ESEF based on XBRL would require detailed tagging of the entire AFR. This would require taxonomies for all parts of the AFR, which are currently not yet available and would have to be developed in a very short timeframe. ESMA identified the following additional advantages of Inline XBRL over XBRL:

    a. with Inline XBRL, tagging can be limited to the data which is most useful for analysis, rather than all data in the report, which simplifies the process for preparers;

    b. as the Inline XRBL format contains already a human readable presentation layer, there is no need any more to require issuers to make public the AFR in a separate PDF document and therefore the information in structured format and in the unstructured human readable format would be contained in a single instance document;

    c. IFRS gives the preparers of financial statements considerable flexibility to present their financial reports. While this may facilitate that entities present their performance in a meaningful way, it brings challenges to transform the financial reports to a structured format. The financial reports often contain entity-specific information which cannot always be reflected by standard taxonomies. To be able to transform entity specific information to XBRL, an entity-specific tag would be necessary. Whereas an AFR in the Inline XBRL format would in any case contain the entity specific information in the human readable XHTML presentation, this would be the case for an AFR in a pure XBRL format only if extensions were allowed. Therefore, the human readable

presentation layer that Inline XBRL provides, limits the need for entity-specific extensions;

d. Inline XBRL allows issuers to prepare an AFR that looks exactly as intended by the issuer and allows to add the XBRL tags into the human readable XHTML document at a later stage;

e. retail investors may not be as easily able to render and access data that is available in an XBRL format only.

153. With large and complex financial statements, a single Inline XBRL file may be too large for a web browser to handle. This happens more often when the company report, which may contain many graphics, is combined with the accounts in a single Inline XBRL document. However, the Inline XBRL specification allows for a set of Inline XBRL documents to be treated as a single document set.

Q15: Do you agree that structured reporting format should in a first stage be required for consolidated IFRS financial statements and eventually in a second stage for individual financial statements?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
45	9	3	11	6	13	2	1

154. Nineteen respondents (including the SMSG) thought that if ESMA would require issuers to make public their AFR or parts of it in a structured format, ESMA should limit the requirement of presenting financial information in a structured electronic format to the IFRS consolidated financial statements. Several of them argued that the consolidated financial statements are most relevant for users. A few respondents argued that due to the differences in reporting practices across Member States and especially as taxonomies do not exist for all reporting standards used in the EU, it would be overly complex to require the structured reporting of individual financial statements. Eight of these respondents think that this requirement should be extended in a second stage to cover also individual financial statements. Three respondents held the opinion that issuers who do not prepare consolidated financial statements should be required to make public the individual financial statements in a structured format.

155. Three respondents believed that the scope should only be limited to the consolidated financial statements as long no taxonomy for the respective GAAP would be available.

156. Further six respondents thought that if the individual financial statements of the issuer's parent company are prepared under IFRS, both individual and consolidated financial statements should be made public in a structured format.

157. Several respondents (9) thought that the requirement to report financial statements should not be limited to the consolidated financial statements but should cover also the individual financial statements. This view is especially held by service providers (4) and accounting bodies and auditors (2). Most of them argue that it would be more efficient for all stakeholders to introduce the chosen electronic format for both the individual financial statements and the consolidated financial statements at the same time. Some of them furthermore argue that almost all filers use accounting software and therefore already have the data in some form of structured format and that they should therefore be capable to transform this structured data to the mandated single electronic format.

158. A number of respondents (5 amongst them 3 preparers and their representative bodies) disagreed with the question and repeated their concern that structured reporting is of no benefit to preparers or investors and that, as such, it should be required in none of the stages.

ESMA response

159. ESMA welcomes that a relative majority of respondents support the approach suggested in the CP to limit the scope of structured electronic reporting to the consolidated financial statements. A few amongst these respondents think that the requirement of the scope of structured financial reporting could or should be extended in a second step. ESMA is of the view that before the scope of mandatory structured financial reporting is extended beyond the consolidated financial statements, an impact assessment should be carried out. Only if it is positive, a further extension of the requirement should be undertaken.

160. ESMA further notices that several respondents argue that the scope of structured electronic reporting should only be restricted to consolidated financial statements if no taxonomies were available and that some other respondents hold the opinion that ESMA should mandate that the individual financial statements prepared under IFRS are in any case made public using a structured electronic format. ESMA reminds that it suggested in the CP that in case structured data format reporting was already in place or would be allowed by a Member State at national level, the ESMA RTS should not limit the possibility of using it. ESMA reiterates its opinion that Member States are in a better position to assess whether the taxonomy for their respective national GAAP is of sufficient quality that structured financial reporting for the individual financial statements based on this GAAP can be allowed or mandated. ESMA further believes that if the decision whether the individual financial statements drawn up in accordance with national GAAPs should be reported in a structured format is left to the Member States, it is consistent to leave the decision whether the

individual financial statements drawn up in accordance with IFRS should be reported in a structured format also to the Member States.

161. ESMA does not agree with the assessment that it would be more efficient for all stakeholders to introduce the detailed tagging beyond the consolidated financial statements for all parts of the AFR at the same time. It believes that the introduction of a requirement to prepare the other parts of the AFR in a structured format would bring additional complexity, as the AFR very often contains financial statements that are prepared under different GAAPs and in addition to that the management report and some additional statements for which no taxonomies exist yet. Instead, ESMA believes that limiting the tagging requirement to the parts of the AFR that can be best compared across companies and are usually considered to be most relevant for users, namely the IFRS consolidated financial statements, would be more efficient and cost-beneficial than requiring from the outset to have the whole AFR prepared in a structured format.

162. ESMA notes that many respondents, especially issuers, expressed strong reservations about mandating a machine readable structured electronic reporting format. ESMA believes that this is in part due to the fact that they are not familiar with the XBRL technology and are concerned about the implementation. ESMA further noted that other regulators from large jurisdictions that implemented structured electronic reporting requirements, notably the US SEC and the Japanese FSA required in the first phase the detailed tagging for the primary financial statements only. Therefore, ESMA considered it appropriate to only require the detailed tagging of the primary financial statements and basic general information on the company and financial statements for an implementation phase of two years. After two years, tagging will be extended to the notes as well. This approach would allow preparers and users to familiarise themselves with the technology, while already providing some of the benefits that can be expected from the ESEF. The chosen Inline XBRL format facilitates the careful tailoring of the requirement to tag certain financial information in a structured electronic format and to amend this requirement in a later stage, as the whole AFR of all issuers on regulated European markets would be made public in any case in the same human readable format by using the XHTML protocol.

Q16a: Do you agree with a different approach for the financial statements under national GAAPs compared to IFRS on the grounds of the existence of a taxonomy?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
40	9	4	9	5	11	2

163. Thirty-one respondents agreed that as currently taxonomies do not exist for all national GAAPs, ESMA should, at least in the first step, not require financial statements drawn up in accordance with national GAAP to be made public in a structured electronic reporting format. A few respondents considered that any decision regarding individual financial statements should be left to each Member State.

ESMA response

164. ESMA welcomes the respondents' support regarding the approach suggested in the CP. ESMA also noted that the respondents do not object to ESMA's suggestion in the CP that if a Member State of the EEA already requires or allows making public the individual financial statements in a structured electronic reporting format, this should not be limited by the RTS.

Q16b: Do you agree with the proposed approach in terms of potential development of a EU core taxonomy to be used for national GAAPs in the future?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies
38	9	3	10	4	11	1

165. Twenty-four respondents (amongst them 9 accounting bodies and auditors and 8 service providers) agreed at least in principle with the development of an EU core taxonomy for the reporting of financial information drawn up in accordance with national GAAPs. Several expressed the opinion that it would be a logical step when setting up structured reporting for individual financial statements in the context of the ESEF. Some of them considered that it would improve the comparability of financial information across Europe.

166. However, 14 of those respondents (amongst them 7 accounting bodies and auditors, 2 regulators, 4 service providers), believed that a lot of complexity may be encountered in its development and that it cannot be considered as an immediate priority. As such, it could only be implemented at a later stage, once ESMA will have explored the diversity of national GAAP and disclosure requirements as well as assessed in a technical study the costs and benefits. In their views, the EU core taxonomy should be sufficiently flexible to accommodate the specificities of each national GAAP. As such, it could be set up as a minimum core taxonomy including key elements to be reported consistently at European level, which could help each Member State develop the specificities of their own taxonomy on the basis of the specificities of the national GAAP. A few service providers suggested to take into account the result of a pilot project developed by XBRL Europe on 'Cross border rendering of financial statements', as it created a basic European taxonomy called xEBRD CRT (Europe Business Registers Core Reference Taxonomy). That shall be accompanied by a specific due process for the creation and maintenance of the EU-core taxonomy.

167. Eight respondents (amongst them 3 preparers and 2 service providers) pointed out that as national GAAP taxonomies mainly represent national GAAP requirements and relate to national laws they should only be developed by national regulators. As some Member States already have undertaken work in this area, they considered that any additional work on an EU core taxonomy would lead to additional costs and complexities for the countries which already prepared a national GAAP taxonomy and would have to revert to a European core taxonomy.

168. Finally, five respondents (3 preparers, 1 service providers, 1 user) repeated their opposition to any form of structured reporting and are therefore of the opinion that ESMA should not undertake any work in this area.

ESMA response

169. ESMA notes that the majority of the respondents considered that if the financial statements drawn up in accordance with national GAAP were to be made public in a structured format, one EU core taxonomy should be developed. This taxonomy could be based on the Accounting Directive. In order to cater for the options provided by this Directive, national authorities could be given the flexibility to extend the EU core taxonomy to accommodate specific national reporting and disclosure requirements.

170. However, ESMA further notes that the majority of these respondents holds the view that the development of a taxonomy for the national GAAPs firstly poses significant implementation challenges and secondly should not be an immediate priority for the implementation of the ESEF. This is consistent with the responses received on question 15 where a relative majority of respondents considered that the structured reporting should, at least in the first step, be limited to consolidated financial statements. This is further fully in line with ESMA's assessment as laid out in the CP, where ESMA elucidated that there would be limited benefits of making public the financial statements according to national GAAP in a structured electronic format. Even though the Accounting Directive provides some basic harmonisation of national GAAPs, there are still limitations regarding comparability and analysis for users because of the differences in the principles applied under the different national GAAPs. Therefore, full comparability would be limited to the national level. In addition to that, as also pointed out in the CP, ESMA shares the respondents' concerns that the development of an EU core taxonomy might be challenging and therefore suggested in the CP that before it would embark on such a mission, a technical study should be carried out to assess how this could be achieved.

171. Therefore, as explained in its response on question 15, ESMA is of the view that the scope of structured electronic reporting should, at least in the first step, be limited to consolidated financial statements. Before extending the scope of tagging to the individual financial statements, an impact assessment should be undertaken and If positive, an assessment of the technical feasibility of an EU core taxonomy should be undertaken.

Q17: This question was analysed in conjunction with question 9. Please refer to the respective section.

Q18: Would you be in favour of a phased approach for SMEs, if it would be allowed under the legal mandate? Would it be relevant in the context of the development of the Capital Markets Union?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
39	9	3	8	4	13	1	1

172. Twenty-five respondents (especially service providers (9) and accounting bodies and auditors (8)) disagreed with the introduction of a phased approach for SMEs, arguing that reporting requirements should apply to all listed entities in a similar way and that different reporting requirements for SMEs are likely to confuse stakeholders. Several respondents considered that a large scale implementation of the ESEF is likely to generate economies of scale among software vendors and reduce the individual cost borne by issuers for preparing their financial statements in a structured electronic format. A few respondents feared that a phased approach would signal that the ESEF implementation is too expensive for SMEs, which was, in their view, not the case. Some respondents also pointed out that the experiences of structured electronic reporting in several jurisdictions demonstrated that its implementation can be done at a reasonable cost for SMEs and is unlikely to be too burdensome for them. Several respondents further pointed out that a longer transition period would mean that the users of financial statements would to wait have a longer period for structured data. Three of these respondents linked their answer to the CMU, as they believed that the ESEF requirements should apply similarly to all companies in order to facilitate the comparability of their financial statements and their rapid access to capital funding. One user representative body also pointed out that having SMEs filing in structured format allows automated analysis of these companies by investors who invest across companies big and small. The availability of financial information in a structured format would thus also benefit SMEs g to increase their attractiveness for investors.

173. On the contrary, eleven respondents (amongst them preparers and their representative bodies (4), service providers (3) and the SMSG) were in favour of a phased approach for SMEs because they considered that SMEs have fewer resources and capacities than large companies for implementing additional regulatory requirements. With a phased approach, SMEs would be able to benefit progressively from the implementation experience of larger companies and the ESEF requirements would achieve a better acceptance among issuers. Considering on one hand the proposal of the EC for the development of a CMU supporting

the creation of jobs and growth through long-term investment in Europe and on the other hand the current difficulties of SMEs to access equity funding, three of these respondents believed that the implementation of the ESEF will strengthen the objectives of the CMU. As the EC did not specify the detailed implementation of the CMU, these respondents considered that a phased approach for SMEs will be beneficial and relevant as it would ultimately improve the exposure of SMEs to the market while the phased approach would give them sufficient time to adapt to the regulatory requirements.

174. A few respondents raised comments on the eventual extension of the requirements of the ESEF to SMEs outside the scope of the TD, and strongly recommended that this should not be pursued. Finally, 6 respondents (amongst them 5 issuers and 1 user) repeated their concern that structured reporting will not be sufficiently beneficial for preparers or investors to justify its cost of implementation. In their view, it would neither enhance the visibility of SMEs nor facilitate their access to equity funding. In this respect, two of them considered that this additional burden on issuers would counteract the objectives of the CMU. Therefore, they believed that the draft RTS should only mandate the use of PDF.

ESMA response

175. ESMA took notice that the majority of respondents reject a phased approach for SMEs under the scope of TD. ESMA agrees with these respondents' assessment that a large scale implementation of the ESEF is likely to generate economies of scale among software vendors and could thus reduce the cost borne by the individual issuers for preparing their financial statements in an electronic format. In addition to that, ESMA expects user interest in financial statements in a structured electronic format to be higher when they are available for all issuers.

176. Conversely, ESMA also has sympathies for the argument that SMEs have fewer resources and capacities than large companies to implement regulatory requirements. With a phased approach, SMEs would be able to progressively benefit from the implementation experience of larger companies. Nevertheless, ESMA also notes that the Transparency Directive does not include an exemption for SMEs.

177. ESMA is of the opinion that two factors attenuate the implementation challenges for SMEs. Firstly, as the draft RTS only suggests to mandate structured electronic reporting for the consolidated financial statements according to IFRS, many SMEs that only need to prepare individual financial statements are anyway initially not covered by the requirement to prepare financial statements in a structured format. Secondly, the implementation phase that ESMA intends to stipulate (for further details refer to ESMA's response related to question 15) should ease implementation for all issuers and as such for SMEs. As in the implementation phase voluntary full 'tagging' would be allowed, knowledge on the practical application of Inline XBRL would be generated by the voluntary early adopters and could then dissipate to SMEs until they are required to full tagging of their IFRS financial statements themselves.

178. ESMA noticed that some respondents were concerned that ESMA would contemplate to require SMEs that have not issued securities in a regulated market in the EEA prepare their financial statements in a structured format. These concerns are clearly unfounded as ESMA's mandate relating to ESEF only covers issuers on regulated markets. In this respect ESMA clarifies that extending the application of ESEF beyond the scope of the TD was first of all not in its remit and secondly not in its intention.

Q19: Do you have any other comment to make?

Number of respondents	Accounting bodies and auditors	Users and user re-presentative bodies	Preparers and their re-presentative bodies	Regulators, government bodies, OAMs, standard setters	Service providers	Statistical bodies	SMSG
27	5	2	3	4	11	1	1

179. Most of the responses to this question related to previous questions or reiterated comments previously made. These issues are not repeated in the following summary and are addressed by the ESMA response to the respective questions. However, a number of additional matters were suggested by them.

180. Five respondents (amongst them 2 accounting bodies and 2 users or user representatives) requested an extension of the requirements of the ESEF to the interim financial statements. One user representative body pointed out that investors require a repeatable process whereby they can compare the interim and annual information in the same format. In addition to that these respondents also think that other regulated information should be prepared in the same format as ESEF. Specifically mentioned were 'inside information' and 'reports of payments to governments' which are required to be disclosed under Article 6 of the TD. In addition to that some of the respondents think that also financial information in press releases, other market announcements and carbon emission reports should be prepared under ESEF format. One respondent suggested that the ESEF could represent a mandatory minimum reporting format and that Member States could require more extensive publications of issuers under the same electronic reporting format at their initiative.

181. Three respondents suggested that ESMA should consider and clarify the granularity of tagging it would be required under the RTS.

182. Two respondents recommended that ESMA incorporates the Legal Entity Identifier (LEI) system for the purposes of ESEF. This would enable unambiguous identification of entities and their financial reports

183. Two respondents advised to give due consideration to the question in which languages the applicable taxonomies will be provided.

184. Further comments raised were that ESMA should consider which due process would be devised when updating the taxonomy, that it should deliberate how the authenticity of information is confirmed and whether test filings will be possible.

185. The SMSG considered that it would be very beneficial to ensure that all AFRs are available in an English version (in PDF format), to be made accessible through a single access point.

ESMA response

186. ESMA notes the interest of several respondents to extend the scope of ESEF beyond the AFR to interim financial reports, other regulated information and even information not required by the TD. ESMA is aware that, in analysing the financial information of issuers, many investors and analysts develop models which incorporate the information contained in the interim financial statements in the form of time series, and that interim financial statements in ESEF would facilitate their efforts. Furthermore, ESMA believes that structured reporting would be well suited for some information such as the that contained in the reports of payments to governments and carbon emission reporting which primarily consist of quantitative data. Having this information in a structured format would facilitate analysis and transparency. However, ESMA's mandate is limited to the scope defined in article 4.7 of the TS and therefore ESMA cannot take these suggestions into account for the purpose of the draft RTS. However, Member States could require more extensive publications of issuers under the same electronic reporting format at their own initiative.

187. ESMA believes that in order to increase comparability of the AFRs in a structured format, guidance regarding the expected granularity of tagging should be given and takes this suggestion on board and will continue working on the preparation of such guidance following the publication of this feedback statement.

188. ESMA agrees that a unique entity identifier enables unambiguous identification of an issuer which is of considerable benefit in the EU where a multitude of languages and several scripts are used. ESMA is broadly supportive of the LEI which is an identification code that enables consistent and accurate identification of all legal entities that are parties to financial transactions, including non-financial institutions. It is a global and unique entity identifier which was endorsed by the G-20 group of nations and is consistent with the specifications put forward by the International Organization for Standardization (ISO 17442:2012) in May 2012. The LEI will also be used for the purposes of the European Electronic Access Point (EEAP) which was designed to ensure an easy access and search of regulated information. The EEAP will provide end users with a two-step access to the regulated information, so that in a first step end users will use the search facility on the EEAP website to look for an

issuer and type of regulated information, and in a second step end users will have access to the documents containing regulated information through the websites of the respective OAM. As such it would be consequent to identify the issuer filing its AFR in a structured format with the LEI. In the course of the development of the detailed technical specifications ESMA will further assess how to incorporate the LEI for the purposes of the ESEF.

189. Regarding the languages, the applicable taxonomy would be made available as explained in ESMA's response relating to question 7, ESMA plans to add all element labels of the applicable taxonomy as an Annex to the RTS. As such, they will be, as the whole RTS, translated in all official languages of the Union. ESMA noted the SMSG's remark that it would be beneficial if all AFRs were available in English. ESMA does not have the remit to mandate this, but considers that ESEF could be beneficial in the multilingual European environment. The mark-ups contained in an AFR prepared in a given language could be consumed more easily by a user not proficient in that language. Software would be able to recognise the mark-ups and display the respective marked-up information with the label in the language used by the user.

190. ESMA considered also the due process to be followed for the approval of any future changes to the applicable taxonomy. In the case of substantial changes, a public consultation will be held. However, it is expected that in most cases, such as when amendments to the IFRS Taxonomy prepared by the IFRS Foundation are merely incorporated in the applicable taxonomy, a public consultation will not be necessary.

191. ESMA will give due consideration to the questions on how to confirm authenticity of filed information and whether test filings should be made possible.

ANNEX I - Legislative mandate to develop regulatory technical standards

1. Regulation (EU) No 1095/2010 (ESMA Regulation) establishing the European Securities and Markets Authority empowers ESMA to develop draft regulatory technical standards where the European Parliament and the Council delegate power to the Commission to adopt regulatory standards by means of delegated acts under Article 290 TFEU.

2. Directive 2013/50/EC of the European Parliament and of the Council of 22 October 2013 amending Directive 2004/109/EC (the Transparency Directive) of the European Parliament and of the Council on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market, Directive 2003/71/EC of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading and Commission Directive 2007/14/EC laying down detailed rules for the implementation of certain provisions of Directive 2004/109/EC inserted the following paragraphs into Directive 2004/109/EC conferring powers on ESMA to draft an RTS regarding the format of annual financial reports:

3. Article 4.7

   'With effect from 1 January 2020 all annual financial reports shall be prepared in a single electronic reporting format provided that a cost-benefit analysis has been undertaken by the European Supervisory Authority (European Securities and Markets Authority) established by Regulation (EU) No 1095/2010 of the European Parliament and of the Council.

   ESMA shall develop draft regulatory technical standards to specify the electronic reporting format, with due reference to current and future technological options. Before the adoption of the draft regulatory technical standards, ESMA shall carry out an adequate assessment of possible electronic reporting formats and conduct appropriate field tests. ESMA shall submit those draft regulatory technical standards to the Commission at the latest by 31 December 2016'.

ANNEX II – List of respondents

Respondents to the Consultation Paper

	Accounting bodies and auditors
1.	Compagnie nationale des commissaires aux comptes et Conseil de l'Ordre des experts comptables
2.	Deloitte
3.	Ernst and Young
4.	Federation of European Accountants (FEE)
5.	Grant Thornton
6.	ICAEW
7.	KPMG
8.	Netherlands Institute of Chartered Accountants
9.	PricewaterhouseCoopers
	Credit institutions
10.	Association of Cyprus Banks
11.	Dutch Banking Association
12-15.	4 confidential responses
	Issuers
16.	AFEP/CLIFF/MEDEF/Middlenext
17.	Business Europe
18.	Confederation of Finnish Industries
19.	Confederation of Swedish Enterprises
20.	Deutsche Aktieninsitute
21.	Dutch Association of Listed Companies (VEUO)
22.	Elring Klinger AG
23.	European Issuers
24.	GC 100
25.	Nederland ICT (trade association)
26.	Polish Association of Listed Companies
27.	Quoted Companies Alliance
28.	The 100 Group
29.	UPM the Biofore Company
30-31.	2 confidential responses
	Regulators, standard setters, OAMs and Governmental bodies
32.	Accounting Standard Committee of Germany
33.	Autorité des normes comptables

34.	Federal Gazette (DE)
35.	Financial Reporting Council
36.	IFRS Foundation
37.	Instituto de Contabilidad y auditoria de cuentas
38.	Standard Business Reporting (Logius)
39.	Statistics Denmark, the Danish FSA, Danish Business Authority
40.	Swedish Companies Registration Office
	Service providers
41.	Amana
42.	Batavia XBRL
43.	Business Reporting Advisory Group
44.	European Business Process Institute (EBPI)
45.	Labrador
46.	Merrill Corporation
47.	Nederland ICT
48.	PDF Association
49.	SBR Poland Association
50.	SBRL Spain
51.	Second Floor
52.	Semansys Technologies
53.	Thauris
54.	XBRL Europe
55.	XBRL Netherlands
56.	XBRL UK
57-59.	3 confidential responses
	Statistical bodies
60.	Erica WG of the ECCBSO
61.	Statistics Netherlands
62.	Statistics Sweden
63.	1 confidential response
	Users
64.	Association of Investment Companies
65.	CFA Institute
66.	Corporate Reporting User Forum (CRUF)
67.	EFFAS
68.	Individual Investors Association
69.	Institute of Chartered Secretaries and Administrators

70.	Publish what you pay UK
71.	Société Française des Analystes Financiers
72.	1 confidential response
	Common template letters from French preparers and their representative bodies
73.	Actia Group
74.	Adomos
75.	Altamir
76.	April
77.	AST Groupe
78.	Ausy
79.	Coheris
80.	Compagnie lebon
81.	Digigram
82.	Egide
83.	Esker
84.	Fiducial Office Solutions
85.	Fiducial Real Estate
86.	Fleury Michon
87.	Guillemot Corporation
88.	Haulotte Group S.A.
89.	HF Company
90.	Lanson-BCC
91.	Le Tanneur & Cie
92.	Les hotels Baverez
93.	LISI
94.	Mecelec
95.	Millet innovation S.A.
96.	Mr Bricolage S.A.
97.	Neopost
98.	Neurones
99.	Orapi
100.	Poulaillon
101.	Precia S.A.
102.	Robertet S.A.
103.	Rougier S.A.
104.	Séché Environnement
105.	SMTPC
106.	Société de la Tour Eiffel

107.	Societe Des Produits Marnier Lapostolle
108.	SODIFRANCE
109.	Solucom
110.	Tipiak
111.	Toupargel Groupe
112.	Transgene
113.	Unibel
114.	VDI Group
115.	VDI Group
116.	Vetoquinol S.A.
117-161.	45 confidential responses

Respondents to the CBA

1.	ElringKlinger AG
2.	Siemens AG
3.	Statistics Sweden
4-9.	6 confidential responses

ANNEX III – SMSG advice to ESMA on its CP on the Regulatory Technical Standards on the European Single Electronic Format (ESEF)

1. The SMSG shares ESMA's view that better transparency, availability and comparability of issuers' financial statements should, over time, lead to better efficiencies in capital allocations and hence a l-so to issuers' ability to attract capital across the EU, and not only from professional investors but also from retail investors. However, lacking a full cost-benefit analysis ("CBA"), the SMSG members are divided in their views of whether the ultimate benefits to users, including the issuers, will outweigh the costs of this additional layer of reporting. While an analysis of the different technological options available has been undertaken by ESMA in preparation of the CP, ESMA is also including some questions in relation to the scope in the current CP. ESMA further notes that there is a possibility that the CBA may reach conclusions which are not in favour of establishment of the ESEF, but simultaneously also notes that it has no powers to amend the legislative policy decision.

2. The SMSG notes the relatively low response rate to the CBA regarding the preferred technical option and related cost, with e.g. only one issuer each from Germany and the UK responding (the two markets account for 35% of all issuers).

3. The SMSG's conclusion against this background is that it currently can only offer very general ad-vice on the subject and the reasoning followed by ESMA in leading up to the CP.

4. The SMSG fully agrees with ESMA that all companies' entire Annual Financial Reports should be made available in PDF format and ideally also be accessible via one single access point. The SMSG also appreciates the general reasoning of ESMA to distinguish between structured (i.e. numbers like e.g. P&L, Balance Sheet and cash-flow statements and non-structured data (e.g. narrative of Directors' and Auditors' reports) when concluding that initially only the structured information (including the local language notes in PDF) be made available in a standardised electronic format (filed at the NCAs but accessible also via a central point at ESMA).

5. At the same time the SMSG notes that the non-structured data, i.e. the narratives, are crucial in order to arrive at a more comprehensible understanding of a company's historic, current and future performance, its markets, its competitive situation as well as risks, and further notes that there is a huge risk that without this data the information to be submitted in a structured format will be of less use to the users. The SMSG further notes the dangers of critical nuances being lost when, in a next step, one would look at trying to standardize also this unstructured data according to set formats.

6. In the same spirit the SMSG acknowledges the merits of starting with IFRS companies only and to use XBRL or Inline XBRL for the reporting of the structured data, as these seem to

be the more generally preferred options according to the CBA – also when, over time, looking at international comparability. The SMSG is also supportive to undertaking this exercise in a phased approach so that e.g. SMEs (as per the State Aid definition) are only included at a later stage and, when there is sufficient evidence of active use by investors of the standardized structured data.

7. The SMSG further notes that the EC's recently launched proposal for a Prospectus Regulation envisages the introduction of a standardised Universal Registration Document ("URD"). While this URD in the current proposal is optional, it introduces yet another element of standardised reporting describing the issuer's organisation, business, financial position, earnings and prospects.

8. The SMSG would thus like to advise ESMA to consider all of these initiatives to standardize reporting and see how these could best be addressed as a whole rather than cumulatively so that the costs of subjecting all issuers to any extra layer of reporting, in addition to the statutory, stock market and regulatory reporting already undertaken are minimized. In addition, the SMSG advises that there may be other (simpler) alternatives to moving towards reporting in single electronic format, like ensuring that all annual financial reports be available also in an English PDF version (and sorted by e.g. sector) via a single access point, which could provide the same benefits as those currently envisaged by the ESEF, but without losing the unstructured data and its nuances.

ANNEX IV – The Cost-Benefit Analysis for the Regulatory Technical Standard on the European Single Electronic Format

Introduction

1. Under the requirements of the Amended Transparency Directive (TDA), the European Securities and Markets Authority (ESMA) is obliged to provide a Cost-Benefit Analysis (CBA) of the draft Regulatory Technical Standard (RTS) related to the establishment of the European Single Electronic Format (ESEF). In addition to that, Article 10 of the ESMA Regulation6 requires ESMA, where appropriate, to conduct open public consultations on draft technical standards, analyse the potential related costs and benefits, and request the opinion of the Securities and Markets Stakeholder Group (SMSG), a key ESMA stakeholder consultative body.

2. Before publishing the Consultation Paper (CP) on 'Draft Regulatory Technical Standards on European Single Electronic Format (ESEF)', ESMA conducted a CBA (CBA 2015, Appendix III of this CBA) to assess the costs and benefits of four different technologies. The purpose of this analysis was to determine which of the four technologies that were identified to be suitable for the implementation of ESEF would be most appropriate. The results of this CBA indicated that XBRL or Inline XBRL would be the most cost-beneficial technologies for the implementation of ESEF. Therefore, ESMA proposed in its Consultation Paper to make use of one of the two technologies. However, while the response rate of the CBA was very high for National Competent Authorities (26 out of 28) and Officially Appointed Mechanisms (16 responses), the CBA achieved a low response rate from issuers, as only 14 out of 220 targeted issuers provided a response. ESMA therefore deliberated that further input would be necessary to come to final conclusions on the cost and benefits associated with ESEF in general and with the respective technologies in particular.

3. On 25 September 2015 ESMA published a consultation paper to which the CBA 2015 was attached as an annex. The consultation period closed on 18 January 2016. In order to further underpin its analysis of costs and benefits, ESMA posed, in addition to the questions related to the consultation paper, a number of questions on to the CBA 2015. ESMA received 161 responses relating to the consultation paper, from accounting bodies and auditors, preparers, regulators, OAMs, statistical offices, service providers, users and representative bodies of these groups, as well as the SMSG. However, it has to be pointed out that, slightly more than half of the responses (88) were based on a common template, contained the same exact wording and did not specifically answer the questions in the CP. Nevertheless, the consultation paper received a satisfactory amount of responses but no more than 9 respondents also provided answers to the questions posed in relation to the CBA. Furthermore, many of the questions were answered by even less respondents and only two of the respondents indicated that they already would have carried out an analysis to implement structured electronic reporting. The summary of these responses to the CBA is attached to this CBA as Appendix II.

4. After analysing the responses to the consultation paper ESMA concluded that Inline XBRL would be the most appropriate technology. Nevertheless, ESMA was not convinced that the CBA 2015 and the

[6] Regulation (EU) No 1095/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Securities and Markets Authority)

analysis of the responses to the questions related to the CBA 2015 provided sufficiently strong evidence to estimate the issuer's costs associated with the implementation. This concern was based, firstly, on the low response rate achieved in the CBA and, secondly, on the fact that the results of the CBA 2015 were in stark contrast to the costs incurred by issuers observed in markets where structured electronic reporting using XBRL or Inline XBRL has already been implemented[7]. However, ESMA was less concerned regarding the quality of the analysis of the costs incurred by National Competent Authorities and Officially Appointed Mechanisms in the CBA 2015, as the response rate was high and as many of these organisations already had significant knowledge of, and experience with, the XBRL/Inline XBRL technology.

5. ESMA analysed what led to the issuer's low response rate and the inexplicably strong deviation of the expected costs for issuers according to the CBA with the costs actually observed in markets where issuers already prepare their financial statements in a structured format. ESMA reasoned that it was very difficult for issuers to estimate the cost of implementation of a technology with which they are not yet familiar. Based on this conclusion, ESMA deliberated that, in order to come to a realistic estimate of the actual costs issuers would incur when implementing ESEF based on the Inline XBRL technology, an additional study (CBA 2016) should be commissioned. This study (CBA 2016) is attached to this CBA as Appendix I.

6. To overcome the problems observed in the previous CBA, ESMA in coordination with BR-AG, which on behalf of ESMA prepared the CBA 2016, considered it most suitable to change the methodology of the analysis compared to the CBA 2015. It was deemed appropriate to focus on markets where structured reporting in XBRL and/or Inline XBRL has already been implemented. A survey specifically targeted to companies that already have actually prepared financial statements in XBRL or Inline XBRL was expected to provide a significantly better basis to quantify the expected costs of implementation than estimates from issuers which have limited or no experience with the respective technology. To corroborate the evidence received from the survey directed to the issuers, another survey was directed to intermediaries, providing services or software products to issuers to prepare their consolidated financial statements in Inline XBRL. To mitigate the risk of low participation of issuers in the survey, a reference model was developed to estimate the effort necessary for an issuer to prepare its consolidated financial statements in Inline XBRL. For this reference model a technical extension taxonomy to the IFRS Taxonomy was prepared and the consolidated financial statements according to IFRS of a European issuer were transformed to an Inline XBRL instance document using two different implementation approaches. In addition to this quantitative analysis of expected costs also a qualitative analysis of expected benefits was prepared. The focus of this analysis was to determine whether the Inline XBRL technology would be conducive to achieving the ESEF's policy objective.

7. ESMA is of the opinion that this amended approach in the CBA 2016 improves the evidence base for the costs of the issuers associated to the ESEF compared to the CBA 2015. However, it has to be pointed out that the response rate of the surveys regarding the costs for issuers in the CBA 2016 was

[7] E.g. in the survey for the CBA 2015 for which 12 issuers provided valid answers related to the expected costs, the average reported implementation costs per issuer were EUR 1.1m and the average reported annual on-going costs were EUR 0.7m per issuer. This is completely at odds with the results of a study by the American Institute of CPAs that surveyed the actual costs for US issuers (with receiving data on about one third of all US issuers) to fulfil the requirement to file the financial statements in XBRL format. The conclusion of this study was that the median costs per issuer per XBRL report are between USD 5,000 and USD 10,000 and that none of the issuers spent more than USD 50,000 per XBRL filing.

again relatively low. Only 10 responses from filers and 18 responses from intermediaries could be obtained. Therefore, a certain degree of uncertainty regarding the expected implementation costs related to ESEF remains. Whereas the reference model and the market research in CBA 2016 seem to indicate that the costs can be even somewhat lower than the average costs determined by the survey, the evidence from international case studies indicates that the costs could also be somewhat higher. But, while acknowledging that an exact quantification of the costs is difficult, ESMA concluded that the evidence from the survey conducted in the course of the CBA 2016, together with the international case studies, represent the best evidence available to ESMA to estimate the costs borne by issuers. Therefore, the results from the survey in the CBA 2016 and the international case studies were used in the following analysis to quantify the costs borne by issuers.

Analysis of costs and benefits associated with the proposed technical option

8. Recital 26 of the Transparency Directive Amending Directive 2013/50/EU, explains that *'a harmonised electronic reporting format would be very beneficial for issuers, investors and competent authorities, since it would make reporting easier and facilitate accessibility, analysis and comparability of annual financial reports.*'

9. Therefore, the policy objectives of the ESEF are to:

   a. make reporting easier,

   b. facilitate accessibility and to

   c. facilitate analysis and comparability

   of annual financial reports (AFRs).

10. As explained above, after analysing the responses to the consultation paper, ESMA came to the conclusion that Inline XBRL would be the most appropriate technology for the European Single Electronic Format. Inline XBRL is a technology that allows to embed XBRL labels in a human readable XHTML document so that both representations are encapsulated within a single instance document. By marking-up the information with XBRL it can be processed by software for analysis and thus becomes machine-readable and 'structured'. The Inline XBRL technology is freely licensed and made available by XBRL International, a not-for-profit consortium. The XHMTL document is human readable and can be opened with standard web browsers.

11. The Inline XBRL technology is already in use in several jurisdictions[8] to report financial information in a structured format. Moreover, there is already a substantial number of software tools available that are built around the Inline XBRL technology. As such the technology can be considered mature and fit for the purpose of ESEF.

12. The costs and benefits associated with Inline XBRL are described in more detail in the following table. For further details on the identified benefits, please refer to the Feedback Statement on the Consultation Paper on the Regulatory Technical Standard on the European Single Electronic Format

[8] E.g. UK and Ireland (for tax purposes), also the Australian Securities and Investments Commission and the US Securities and Exchange Commission allow filing in Inline XBRL

and the CBA 2016 (most notably the section 'Compliance Evaluation'). The expected costs for National Competent Authorities (NCAs) or Officially Appointed Mechanisms (OAMs) for storing and making available the AFRs to the public in Inline XBRL are derived from the CBA 2015.

	Qualitative description	Quantitative description
Benefits	*Inline XBRL can make reporting easier:* - A simplification of the reporting process compared to the status quo can be achieved, however only if record-to-report processes are rethought. In this case the process of data collection for producing business reports can be automated. Yet, this can require significant effort and the benefits might only materialise over time. If an issuer prepares the AFR first and only afterwards attaches the XBRL labels, the reporting process will not be simplified, as the XBRL tagging will represent only an additional process step. - In any case, reporting in Inline XBRL can be expected to be easier compared to reporting in XBRL, as no additional mechanism is required to convert an XBRL filing into a human-readable form, thus saving complexity and cost. *Inline XBRL can facilitate accessibility of AFRs:* - Inline XBRL instance documents can be easily accessed without the purchase of specific technology as the XHTML file in which the XBRL data is embedded can be viewed with common web browsers which are widely and freely available. - The marking up of financial information in the AFR with XBRL meta-data makes it easier for users to find relevant facts as the user can utilise the labels to locate the searched information.	not applicable

	Qualitative description	Quantitative description
	- XBRL Taxonomies can contain labels in several languages. If this is the case, users can compare line items in the primary financial statements across issuers even though the issuers prepare their financial statements in different languages. - A variety of software products offer conversion of the XBRL information in the Inline XBRL instance document to other formats frequently desired by users such as SQL or Microsoft Excel. *Inline XBRL can facilitate analysis and comparability of AFRs:* - As the Inline XBRL documents contains the machine-readable XBRL labels, software can be used to analyse large amounts of the labelled financial information without extensive and burdensome manual processing. This allows investors, analysts, and regulators to access and manipulate the financial data, to compare disclosures across issuers, and to make comparisons against previous disclosures from the same issuer. - For example, individual data points can be analysed to observe trends, or can be combined to create ratios or other derived outcomes. Even if the information in the notes to the financial statements is block tagged, Inline XBRL can be useful for text analytics or manual comparisons of narrative disclosures. Users could, for instance, compare how different issuers are describing a particular issue. Software can also be used to enhance the readability of structured data by, for example, providing a standardised interface	

	Qualitative description	Quantitative description
	that links various sections of the disclosure.	
Costs to ESMA	The Amended Transparency Directive tasked ESMA with developing a regulatory technical standard specifying the European Single Electronic Reporting Format. This task requires investments in training and knowledge transfer, software licences, man-days of internal staff working on the implementation and maintenance and costs of external service providers involved in implementation and maintenance.	In the course of the CBA 2016, a survey directed to regulators that already implemented structured electronic reporting in the XBRL or Inline XBRL format was carried out. Based on this survey a wide range of implementation costs ranging from EUR 70,000 to EUR 2,200,000 was observed. According to the survey, the average implementation costs are slightly above EUR 800,000 and the median of reported implementation costs is slightly above EUR 600,000. The annual maintenance costs range between about EUR 40,000 and about EUR 400,000 with average costs of about EUR 150,000 and median costs of about EUR 90,000.
Costs to Officially Appointed Mechanisms	The Transparency Directive requires every Member State to appoint an Officially Appointed Mechanism that is responsible for the storage of regulated information which also includes the issuer's AFRs. The OAMs have to comply with quality standards of security, certainty as to the information source, time recording and easy access by end users and they shall enable filing by electronic means. The OAMs are therefore crucial for the current system of filing and storing regulated information and thus also the AFR and incur costs when storing AFRs in the Inline XBRL format.	According to the CBA 2015 the average expected implementation cost of ESEF based on Inline XBRL for each OAMs is around EUR 1.1m and the expected annual ongoing cost is around EUR 0.1m. Therefore, extrapolating these figures to all 28 Member States results in **aggregated implementation costs of EUR 31.9m** and **annual ongoing costs of EUR 3.3m**.
Compliance costs for issuers	The cost for the issuers depend on the way the issuer creates the Inline XBRL instance document containing the AFR. - If the issuer **produces** the AFR in the Inline XBRL format **internally**, it will incur training costs, one-off costs for the first-time filing, costs for internal staff working on subsequent filings, costs for the purchase of the software licences	Based on the CBA 2016, the average cost for issuers were determined as follows: - The survey to intermediaries and issuers indicates that the average cost to outsource the creation of the first XBRL/Inline XBRL filing would be about EUR 8,200 and EUR 2,400 for each subsequent filing. - According to the survey, the issuers'

	Qualitative description	Quantitative description
	and costs for the maintenance of the software tool. - If the issuer **outsources** the **production** of the Inline XBRL instance document, the majority of costs will be the service provider's fees as it will incur only limited costs for training and internal personnel and no costs for the software licence and maintenance. - The stated costs would occur in addition to the costs already incurred by issuers to prepare their annual financial reports.	average cost for producing the first financial statements in Inline XBRL in-house can be expected to be around EUR 13,000. The costs for the preparation of each subsequent financial statement in Inline XBRL would be EUR 4,600. - The survey is partially based on jurisdictions where the tagging requirements are limited to block tagging for the notes and to taxonomies that do not require extension by issuers. - In the US, where detailed tagging of the entire financial statements is required and extension of the taxonomy by issuers is the norm, higher average costs for the outsourcing the preparation of financial statements in XBRL format were observed, namely between EUR 9,000 and EUR 19,000 for each filing. Considering that ESMA proposes that all AFRs containing consolidated financial statements according to IFRS have to be prepared in the Inline XBRL format, about 5.300 issuers have to prepare their AFR in Inline XBRL. Therefore, if the results of the survey in the CBA 2016, are extrapolated, the **aggregated issuers' costs** for the preparation of the **first financial statements in Inline XBRL** would be between EUR **43.5m** (5,300 x EUR 8,200; in case the preparation is outsourced) and **EUR 68.9m** (5.300 x EUR 13,000; in case the instance document is prepared in-house). This would represent a scenario in which **the tagging requirements and the need to extend the base taxonomy is limited.** Furthermore, if the results from the survey regarding the preparation of **financial statements in Inline XBRL in the following years**, are extrapolated, the **aggregated annual issuers' costs** would be between **EUR 12,7m** (5,300 x EUR 2,400; in case the preparation is outsourced) and **EUR 24,4m** (5.300 x

	Qualitative description	Quantitative description
		EUR 4,600; in case the instance document is prepared in-house). Based on the studies of actual costs encountered by US issuers mentioned in the CBA 2016, the **annual aggregated costs for issuers in case detailed tagging and extension of the base taxonomy by issuers are required** can be expected to be between **EUR 47.7m** (5,300 x EUR 9,000) and **EUR 100.7m** (5,300 x EUR 19,000), with most likely significantly higher costs for the preparation of the first financial statements in an Inline XBRL format.

Appendix 1 CBA 2016
Appendix 2 Summary of responses to the questions on CBA 2015
Appendix 3 CBA 2015

European Securities and Markets Authority

ESMA/2016/1668

ESMA Feedback Statement on the Consultation Paper on the Regulatory Technical Standard on European Single Electronic Format (ESEF)

Appendices 1-3 to Annex IV – The Cost-Benefit Analysis for the Regulatory Technical Standard on the European Single Electronic Format

Appendix 1	CBA 2016
Appendix 2	Summary of responses to the questions on CBA 2015
Appendix 3	CBA 2015

Qualitative, quantitative and technological assessment of the appropriateness of the iXBRL technology for the ESEF

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Index

Executive summary

The Directive 2013/50/EU of the European Parliament and of the Council of 22 October 2013 requires the European Securities and Markets Authority (ESMA) to prepare by 31 December 2016 the draft Regulatory Technical Standards (RTS) specifying the European Single Electronic Format (ESEF) for mandatory use by issuers for the publication of their annual financial reports (AFR) from 1 January 2020.

ESMA conducted a public consultation on the RTS on the ESEF from 25 September 2015 to 24 December 2015, to assess the potential technologies to be used for the establishment of the ESEF in order to comply with the requirements set out in the amended Transparency Directive.
While the majority of respondents agreed with the general choice of technologies selected for further analysis, mixed views were provided on the costs and benefits and on the technical formats proposed to constitute the ESEF. A relatively large number of responses indicated Inline XBRL as the best matching option to comply with the Transparency Directive requirements, combining the capabilities of structured data with visualisation of XHTML. However, several responses indicated low maturity of these standards and potentially high costs of implementation of these formats as the ESEF.

To address disparities arisen from the consultation, ESMA commissioned an extended cost and benefits analysis (CBA), in relation with the potential selection of Inline XBRL as the European Single Electronic Format, included in this document. The analysis embraces: the analysis of the nature and current use of Inline XBRL through the evaluation of its implementation across several international jurisdictions, together with the assessment of software's maturity, and of iXBRL compliance with the Transparency Directive principles and recommendations for a feasible implementation scenario.

This document is organised in three main parts:

The first part presents an overview of the current state of the Inline XBRL technology. It explains how the Inline XBRL Specification[1], combines the features of data structured using XBRL and visualisation and accessibility of XHTML. This chapter explains the process through which a Specification is developed (under rigorous consultation, including public review stages and a proof of usability in the form of implementation by several software vendors). Description of the maturity of specifications is concluded with an explanation of the governance process and the control of changes for further amendments to the Inline XBRL standard. Thereupon, several examples of the global adoption of Inline XBRL are presented, including:

- UK (HMRC and Companies House), jurisdiction in which over 1,6 million issuers using Inline XBRL;
- United States (Securities and Exchange Commission), in which Inline XBRL has been implemented in 2016;
- Ireland (Office of the Revenue Commissioners), where implementation of Inline XBRL is mandatory since 2014.
- Denmark (Danish Business Authority), where the majority of issuers use XBRL and Inline XBRL since 2012;
- Japanese Financial Services Agency, jurisdiction in which 4500 listed companies and 3500 investment funds use Inline XBRL; and

[1] Inline XBRL Specification refers to a set of documents defining business reporting technology addressed to users. Each specification must undergo a thoroughly predefined process before being recommended to the community.

- Australian Securities and Investments Commission.

These projects demonstrate that the technology is internationally tested for electronic annual financial reports publication. Finally, the chapter concludes by discussing the availability of software products helping issuers to prepare Inline XBRL reports using variety of taxonomies. The research has confirmed global availability of at least 55 diversified products.

The second part presents the outcome of the Inline XBRL compliance analysis in relation with different criteria extracted and interpreted from the Transparency and the Prospectus Directives[2]. As such the section assesses the benefits that could be expected if Inline XBRL is selected as the technology for ESEF.

The approach undertaken for analysis of compliance of Inline XBRL with the requirements of the respective legal acts is founded on the key principle to avoid qualitative statements and focus on objective, measurable, quantitative evidence confirming or disproving compliance. Therefore, the authors avoided, to the extent possible, repeating the anecdotal evidence and qualitative arguments, if these are not supported by quantitative data. Such arguments state, among other, that:

- Because Inline XBRL is an electronic format, therefore it will allow for faster processing and search for information in Annual Financial Reports,
- Validation capability of XBRL taxonomies will significantly increase data quality levels across data sets submitted by issuers,
- Availability of multilingual labels in XBRL taxonomies will increase accessibility to data across EU jurisdictions,
- Automatic search through Inline XBRL reports together with use of the IFRS XBRL Taxonomy will significantly increase comparability of data across issuers located in various EU Member States.

While the above statements are not invalid, the confirmation of compliance of Inline XBRL with the listed requirements is, in this report, based on evidence rather than expectation. Such approach is dictated by the large extent of subjectivity, conditionality and relativity of assessment of measures such as “easier”, “comparable”, “accessible”, “beneficial”, “automated” or “strengthened reuse”. Examination of evidence form international projects confirms that perceptions of “ease” is heavily dependent on the approach undertaken by the regulator for implementation of Inline XBRL including related aspects such as extensibility of taxonomies, availability of software provided by the regulator and other.

Evidence presented in this study confirms that Inline XBRL, combined with the IFRS XBRL Taxonomy, has differing levels of compliance towards the identified legislative requirements:

- **Full level of compliance** with regards to 5 out of 18 specified criteria, related to: Inline XBRL being a standard; facilitation of automated retrieval of data for preparation of financial reports; facilitation of accessibility to issuers’ information; facilitation of operational governance and control of changes; and strengthening opportunities to reuse data.

[2] Directive 2013/50/EU of the European Parliament and of the Council of 22 October 2013 amending Directive 2004/109/EC of the European Parliament and of the Council on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and the Commission Directive 2007/14/EC laying down detailed rules for the implementation of certain provisions of Directive 2004/109/EC; and the Directive 2003/71/EC of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading.

- **Significant compliance** with regards to 11 out of 18 specified criteria: format allowing harmonised implementation across the EU; contribution to Inline XBRL development and implementation by all stakeholders; the standard being beneficial to investors and competent authorities; standard enabling easier reporting; standard supporting the process of preparation of the annual financial reports; facilitation of analysis and comparability of annual financial reports; and feasibility to be implemented operationally across the European Union.
- **Partial compliance** was evaluated to apply to the Inline XBRL being beneficial to issuers and making reporting easier as it heavily depended on the XBRL implementation scenario.

The third part of the study analyses implementation costs of Inline XBRL based on: survey-based evidence (backed up by the external desk research conducted by BR-AG); analysis of international case studies; and the proof-of-concept exercise on the reference model. Such complementary approaches constituted a reliable set of estimates of the costs of implementation of Inline XBRL. Due to relatively low level of issuer responses, an additional process -called the Reference Model- was established to simulate the creation of Inline XBRL reports by an issuer. All costs mentioned in this document represent costs that issuers incur in addition to the costs they already currently face for the preparation of the AFR in an unstructured format. Therefore, it is important to point out, that traditional accounting or auditing costs or benefits related to the AFR are not included in the analysis. Furthermore, for approaches such as “cloud” or “integrated” and to certain extent for “bolt-on”, the services offered by providers embrace more than preparation of XBRL reports, for instance may include support in structuring the AFR or sign-off process. In consequence costs indicated for these approaches may provide value-added services on top of Inline XBRL report preparation and validation. Similarly, it is important to point out that costs and benefits will depend on the size of entities and consolidation of financial statements procedures. While size of entities was partially taken into account, complexity of consolidation procedures were not analysed.

Based on the survey results, the total cost for an issuer to outsource the first XBRL filing ranges between 400.00 EUR and 31,033.33 EUR with calculated average of about 8,200 EUR and median of about 4,300 EUR. The process involves, on average, one person trained in iXBRL and around 4 man-days on preparation of the first filing. In case of subsequent filings, the cost of outsourcing services ranges from 340.00 EUR to 6,600.00 EUR with average on the level of around 2,400.00 EUR and a median of 1,750.00 EUR. However, it has to be noted that the cost of preparing financial statements in the XBRL and/or Inline XBRL format depends on the tagging requirements and the taxonomy’s scope. Respondents from the US, a jurisdiction in which detailed tagging is required and extension of the base taxonomy by the filers is assumed, tended to give a higher cost estimate than respondents from the UK, where many small companies do also file their relatively short and simple financial statements using a taxonomy that does not require extensions by the filers.

A market research was carried out by us to corroborate the results of the survey. Based on information available online, the price for outsourcing XBRL tagging for a 50 page long starts from the level of 400.00 EUR. This amount however does not include any taxonomy extension activities or any effort on the issuer side, such as training of employees in order to actively participate in the tagging process and support the service provider, which, combined with the tagging cost, would result in similar amounts.

The expected costs resulting from the survey are slightly below the costs identified in two US studies that tried to determine the costs to be faced by issuers in preparing financial statements in XBRL in order to fulfil the US-SEC’s filing requirements. According to one of these studies, the average cost of outsourcing XBRL tagging amounted to around 9,000.00 EUR (with median at the level of 7,200.00 EUR) while the other survey indicated average costs in a range of 9,000.00 to 19,000.00 EUR (depending on the size of the issuer) and median costs varying between 2,000.00 and 9,000.00 EUR.

These higher numbers identified by these studies may be related to the fact that the analysed studies relate to a reporting scenario that requires taxonomy extension by issuers, which results in additional efforts.

In case a report is created internally by an issuer using a bolt-on approach (i.e. preparing the financial statements first and preparing the XBRL/Inline XBRL instance document as an additional step in the process) or with an integrated solution, the total cost related to production of the first filing -according to the survey- varied between around 2,700.00 EUR and slightly over 40,000.00 EUR, with an average of about 13,000.00 EUR and the median amounting to 11,500.00 EUR. Subsequent filings involve internal cost between 100.00 and 1,000.00 EUR with average and median of around 500.00 EUR. These numbers exclude the yearly maintenance cost of the software solution. Including those expenses raises the costs to the range of 200.00 to 18,250.00 EUR, with average costs of about 4,600.00 EUR and median costs of 1,700.00 EUR. Should the issuer decide to apply the integrated solution, there is additional effort of 1 to 200 man-days with average level of a bit over 33 man-days (which translates to 6,600.00 EUR) and a median of 10 man-days (2,000.00 EUR).

In the course of the market research carried out by us regarding the bolt-on/cloud/COTS[3] and integrated solutions, we noticed that even if prices are in general not disclosed on the vendors' websites, indications found through our research, seem to back up the responses provided by issuers and intermediaries in the survey, with costs of simple bolt-on applications or cloud Software as a Service (SaaS)[4], starting from under 1,000.00 EUR up to 40,000.00 EUR or more for integrated Disclosure Management Systems and Regulatory Filing solutions (excluding any expenses related to training or integration). Similarly, according to a study by the Financial Executives Research Foundation in the US, the necessary effort to produce the first filing amounts to around 3 man-days (for small companies) and up to 6-8 man-days (in case of large issuers) by a team of 3-4 people of which usually only one person has more expertise with XBRL, tagging process and the tools involved.

The estimates of the proof-of-concept exercise conduced on the reference model lean toward the lower end of the survey results with cost assessed at the level of 3,300.00 EUR for the first filing and the ongoing cost of 1,000.00 EUR per report. Importantly, these numbers refer solely to the tagging process itself and do not include subsequent review necessary to ensure the quality of the filing or involvement of more human resources to mitigate the risk of employee fluctuation. Additionally, the reference model reporting scenario did not assume taxonomy extension and expected (in general) block tagging for notes. In case of a detailed tagging requirement and a taxonomy that requires extensions by the issuers, the cost would most likely be higher.

Overall, the total cost for an issuer may start from 400.00 EUR in case of an outsourced approach and run up to 40,000.00 EUR or more when the production of reports, including XBRL tagging, is fully integrated. As stated above, the cost of preparing financial statements in the XBRL and/or Inline XBRL format depends on the tagging requirements and the taxonomy scope. While the first number may underestimate the actual costs, considering the ESEF project assumptions and requirements (scope and complexity of data exchanged, tagging coverage, etc.), the latter seems to be a reasonable amount required to fully automate the reporting process based on the IFRS or a similar XBRL taxonomy. Production of subsequent filings should remain on a slightly lower level comparing to the creation of the first filing in case of outsourced or bolt-on/cloud approach, while it may be much lower in case an

[3] Bolt-on refers to a desktop application enabling extending taxonomies and data tagging. Cloud refers to a web based solution similar to bolt-on in terms of available functionalities. COTS refers to a generic commercial off the shelf application enabling loading of any taxonomy or enabling data import from various formats.
[4] SaaS refers to Software as a Service type of products, typically web-based solutions.

integrated solution is used to create the Inline XBRL/XBRL instance document and the integrated solution is set up and running.

According to the answers gathered in the survey the cost of implementing XBRL reporting infrastructure for regulators, ranges from 70,000.00 EUR to 2,200,000.00 EUR, depending on the functionalities of the system, decisions on supporting or not taxonomy extensions, number of issuers and reports, etc. The average and median amounted slightly over 800,000.00 and 600,000.00 EUR respectively. Yearly maintenance costs vary between 42,000.00 and 411,000.00 EUR with around 150,000.00 EUR on average and 88,300.00 EUR median. The expenses to be incurred by the OAMs in case of the ESEF project shall not exceed the average numbers resulting from the survey. Nevertheless, the final cost may vary depending functionalities of the acquired/developed solutions or extensions to the reporting scope that may be considered by individual countries (e.g. applying available national or third-county taxonomies).

Overview of the current state of the Inline XBRL technology

1. Introduction

The European Securities and Markets Authority (ESMA) has launched between 25th September 2015 and 18th January 2016 a public consultation on its Regulatory Technical Standards (RTS) on the European Single Electronic Format (ESEF). As stated by ESMA, "*The amended Transparency Directive requires issuers listed on regulated markets to prepare their Annual Financial Reports (AFR) in an ESEF from 1 January 2020, with the objectives of making submission easier for issuers and facilitating accessibility, analysis and comparability for investors and regulators. The consultation paper includes an assessment of current electronic reporting and explores ways forward with regard to the establishment of an ESEF.*" ESMA received 161 responses on the Consultation, most of which provided views and opinions supported by qualitative evidence rather than quantitative input.

One of the options stated in the ESMA paper, and often referred to in responses, includes XBRL and its XHTML-compliant version, called InlineXBRL. Since the selection of electronic format carries significant consequences for all market participants, including especially financial costs of implementation, ESMA has requested to perform quantitative Cost and Benefit Analysis (CBA) related to introduction of InlineXBRL.

This part of the study focuses on the current state of Inline XBRL technology, with particular interest in: the readiness of the technical specifications, its global application and best practices, as well as the maturity of the software products available on the market.

2. The XBRL Standard

The eXtensible Business Reporting Language (XBRL), is a technical standard for description of metadata and exchange of data. It enables defining information requirements in so-called taxonomies and further exchange of data (referring to definitions from taxonomies) in reports called Instance Documents.

The underlying technology is the eXtensible Mark-up Language (XML) together with the derived specifications. The XBLR standards make special use of the XLink specification(s), which enables replacing nested structures (as commonly applied in classic XML schemas and instances) with more flexible linking mechanism that is also responsible for conveying various semantics.

Application of XBRL is very wide and its scope is not explicitly defined hence it can be used for remittance of various types of data. Moreover, taxonomy authors as well as creators of instance

documents are equipped with a large number of customization options defined as part of the extensibility of the XBRL. Despite its potential flexibility, there are few fundamental XBRL constructions that apply in every reporting scenario:

- XBRL taxonomy: contains definitions of concepts that describe the requested data. The definition of a concept must, at least, contain its unique identifier (name), determine the expected type/format of value (data type) and provide the time context for which the value of a concept is expressed or measured (either at a point of time or in duration of time). For documentation purposes, as well as to bring forward more semantics, concepts may be associated with human readable labels, reference to source materials (e.g. legal acts or standards) or be linked with one another in various types of relations.

- XBRL Instance Document: It is an electronic report that contains facts. A Fact carries a value for a concept defined in a taxonomy. It refers to a context identifying an entity and period for which it is reported. Numeric facts refer also to a unit of measure and contain information on precision of value (data accuracy).

XBRL instance document may contain many facts for a single taxonomy concept (for example, values for different periods or in different units such as currencies, etc.). Also not all taxonomy concepts need to be represented by facts in an instance document (i.e. companies may not conduct all business activities that are addressed by taxonomies).

Implementations of XBRL may also include the Dimensions add-on. In such a case an XBRL taxonomy, apart from concepts (that are later represented by facts in instance documents as described above), may also define artefacts serving as properties detailing or further describing the concepts. These take form of dimensions which may be of two kinds: explicit and typed.

- Explicit dimensions have their values (so called domain members) defined in the taxonomy; while,
- typed dimensions are restricted by expected format of allowed values.

Taxonomy may clearly define which concepts are associated with dimensions and their values using hypercubes. In XBRL instance documents, dimensional properties (i.e. dimensions and their values, that are either domain members or following the defined format) describing a fact, are included in the definition of a context to which it refers.

2.1. Inline XBRL and its relation to XBRL

With worldwide adoption of the standard, machine-readable XBRL data has become of interest to a large number of external stakeholders, not necessarily equipped with the knowledge or technical capabilities of understanding its syntax. InlineXBRL provides a mechanism of making XBRL facts accessible to everyone, in a human readable format. The concept behind iXBRL is based on the idea of micro formats. It is "*designed for humans first and machines second, […] a set of simple, open data formats built upon existing and widely adopted standards*[5]*".*

Inline XBRL (or iXBRL) is an open technical standard for data exchange based on the XBRL (eXtensible Business Reporting Language) standard. It enables the display of financial and business information (originally stored in XBRL format) by embedding the fact values, in form of tags (annotations), within HTML/XHTML document. This annotation makes it possible to automatically extract the tagged data from the reports. As a result, content of a report is linked to the XBRL taxonomy concepts which explain the meaning of figures or statements. As the set of concepts applied across all reports is shared,

[5] See http://microformats.org/about

information becomes comparable in space and time. The facilitator in this case is a standard web browser, which reads the inline XBRL syntax and provides the end-user with its visual representation. As a “webpage”, it may contain textual and tabular information, links to graphics, other pages, etc. It is printable, scalable and searchable (if the browser allows it). Annotations may be applied to any part of its content. Formatting transformation routines enable converting numbers of dates to the standard representation. Such way of transferring the data is meeting the requirements of stakeholders that benefit from the standardized reporting format, and the stakeholders which are more interested in the information itself.

3. Analysis of the current state of iXBRL standard

Due to the international recognition of the iXBRL standard and its frequent referencing in the consultation paper responses, analysis of the current state of the iXBRL standard was conducted. Following subsections describe the main investigated aspects, including:

- Readiness of technical specifications;
- Global implementations of the standard;
- Maturity and availability of software solutions.

3.1. Readiness of technical specifications

3.1.1. Governance of the iXBRL standard

The official body responsible for the eXtensible Business Reporting Standard is the XBRL International organisation (hereinafter referred as XII). It is a global not-for-profit consortium committed to improving business reporting in the public interest, supported by over 600 member organizations from both the private and the public sector. The XBRL International Standards Board (ISB), comprised of leading members of the technical community, is in charge of the oversight of the XBRL Standards. At the same time, the ISB develops and maintains individual XBRL specifications and sets the direction for the technical working groups.

3.1.2. Publication process

A specification is a set of documents defining business reporting technology addressed to the users of the standard. Each specification must undergo a thoroughly predefined process before being recommended to the community. New specifications are initially discussed internally (by the consortium and the working groups) and are labelled as “Working Group Working Drafts” or “Internal Working Drafts” before being released for a public review as a “Public Working Draft". After the review process, if all requirements are met, the specification is published as “Candidate Recommendation” and a “Call for Implementations”. Once the working software implementations are confirmed by the XII, the specification is released as a “Proposed Recommendation” with the final “Call for Review”. If no further necessary amendments are identified during the review process, the specification is released as a “Recommendation”. Recommended specifications are a stable set of rules and mechanisms for the described technological approach, and could only be updated with errata corrections. Each XBRL specification is complemented with a set of testing scenarios in form of a conformance suite assuring the standard compliance and correct implementation of a particular mechanism within the software solutions. Moreover, the Working Group members are complementing the particular Recommended Specifications with working group notes that explain particular aspects of the Recommended Specification, and are treated as best practices principles.

All the Recommended Specifications published by XBRL International are designed in a manner that promotes consensus, fairness, public accountability and quality.

3.1.3. Control of changes and updates on Recommended Specifications

The XBRL ISB maintains a repository[6] of all published Recommended Specifications with historical information regarding its different versions during the publication process, publication dates and statuses. For each version, the document contains detailed information about the changes made to the content as well as the errata corrections provided, with indication of the author and the date of the comment.

Backward-compatibility is supported between versions, therefore, the risk of using outdated Recommended Specifications (which no longer support particular functionalities), is almost inexistent.

3.1.4. Inline XBRL specification overview

The first Public Working Draft of the iXBRL technical specification was released 23 January 2008, and became a Recommended Specification after two years, 20 April 2010. It was officially published as InlineXBRL 1.0[7], including Part 1: Specification (with errata corrections[8] introduced on 17th of August 2011) and Part 2: Schema[9]. An amended version of the Inline XBRL specification was published by XII 18 November 2013, known as 1.1. This new version retains the functionalities in the Recommended Specification 1.0. and has introduced three substantive new features: an extended mechanism for splitting text content within a document; nesting of elements to allow multiple tagging; and updated mechanism for structuring footnotes. Apart from other minor changes made to the grammar and layout of the specification, it has remained unchanged semantically from InlineXBRL 1.0. For each specification version, a set of conformance suite tests was provided for the vendors to test their solutions.

Within five years of presence in the XBRL community, Recommended Specifications seems mature, comprehensively describing its contents and addressing specific requirements gathered from different global implementations. The majority of the recognized software providers have already incorporated the iXBRL functionality in their offerings, and therefore, the market is considered prepared.

3.2. Global implementation of the iXBRL standard

Standardization of financial and business reporting is considered as a common goal for the majority of the regulatory authorities worldwide. For the purposes of this analysis, a selection of six markets that have introduced (or that are evaluating the use) of XBRL technology, was chosen with research purposes and in order to align their capabilities to improve business information exchange.

3.2.1. United Kingdom

With almost 2 million reporting entities registered within the territory of the United Kingdom, the Companies House administration had been searching for an appropriate, cost effective and at the same user-friendly way of collecting the data. The growing popularity of the XBRL standard and the increase of local presence and of globally recognized experts and advisors, represented an opportunity for the UK Companies House administration to enable companies to digitally report their data using XBRL since 2007. Whilst reporting to Companies House in digital format has remained a voluntary option for companies, it is now used by over 75% reporting entities in UK. Subsequently, Her Majesty's Revenue and Customs (HMRC) also saw an opportunity to gain from the benefits of XBRL data in a way that is

[6] See https://specifications.xbrl.org
[7] See https://specifications.xbrl.org/work-product-index-inline-xbrl-inline-xbrl-1.0.html
[8] See http://www.xbrl.org/specification/inlinexbrl-part1/rec-2010-04-20/inlinexbrl-part1-rec-2010-04-20+corrected-errata-2011-08-17.html
[9] See https://www.xbrl.org/Specification/inlineXBRL-part2/REC-2010-04-20/inlineXBRL-part2-REC-2010-04-20.html

easily accessible for stakeholders; for this purpose, InlineXBRL was developed in 2010 as a way of delivering and receiving financial reporting in both XBRL and in human readable form.

Companies House and HMRC announced a common approach to the online filing of company accounts enabling HMRC to receive company tax returns, including financial accounts and computations, in iXBRL format. In October 2010, a joint filing service was launched, enabling small companies to submit their accounts online using a "one-stop" facility. Initial roll out of the iXBRL reporting by HMRC, set a "minimum tagging requirement" which was designed to enable reporting entities to become used to digital reporting, and not to be too onerous at initial requirements. With the revision and redesign of the UK Taxonomies in 2014 to enable digital reporting of new UK GAAP and IFRS, full tagging of the financial statements is now required for all entities reporting to HMRC, since digital reporting in the UK is not an onerous requirement and is relatively easy and low-cost for reporting entities to comply with.

HMRC has introduced iXBRL on 1 April 2011 as the mandatory format for submitting companies' reports for the purposes of corporate tax, for accounting periods after 31 March 2010. Mandatory filing of accounts in the UK began with two major taxonomies, UK GAAP (followed by the majority of the companies) and UK IFRS (recognized by the publicly quoted organizations). Taxonomies were developed by the XBRL UK jurisdiction with the support of the HMRC and Companies House. The ownership of those taxonomies was transferred in January 2013 to the Financial Reporting Council (FRC), the standard setter for the UK and Republic of Ireland. With the introduction of New UK GAAP in 2013, a project began to enable digital reporting with the new UK accounting standards. In September 2014, a new set of taxonomies were released by the FRC.

As of current, there are three main taxonomies (sharing the common financial reporting core dictionary) to be followed:

- Full IFRS – for all consolidated accounts of listed companies prepared under EU-adopted IFRS,
- FRS 101 – for subsidiaries and parents of listed organizations
- FRS 102 – for all other companies. In December 2015, FRS 102 taxonomy was updated to enable Micro entities to report using it.

In addition, a Charities Taxonomy – designed for the reporting of Charities reporting under the FRS102 Charities SORP was jointly released by the FRC and the Charities Commission in February 2016.

The taxonomies (described in the above bullets) are designed to be able to be used by all reporting entities in the UK and are comprehensive in their design to enable any entity to fully tag their financial statements. The FRC is planning on updating the taxonomies annually to accommodate changes to standards, be they UK or IFRS derived and is open to cooperating on the development of other taxonomies for UK if the market suggests a need.

The UK taxonomies are designed to be comprehensive and enable full tagging because after consultation and redeliberation, it became apparent that this would provide the UK with a cost-effective, user friendly way of digital reporting that would facilitate better comparability of the data for users and enable software companies to design products based on the taxonomies which would have a durable life, be relatively low cost and effective to report using.

Note that this decision to build comprehensive taxonomies eliminated the need for companies to create extensions to cover unusual company-specific data as is required for entities reporting using

the IFRS taxonomy. This was achieved by building flexibility into taxonomies to cover predictable variations in company reporting (e.g. introduced "analysis items" and "generic dimensions").

From the process perspective, submitting company tax returns in United Kingdom can be facilitated by either sending an iXBRL report or via HMRC's free filing services. For small unrepresented companies with straightforward affairs a downloadable PDF software is available (until 31 December 2016) that will soon will be replaced by the new online service for submitting the tax returns. For all other companies accounts, tagging of the data to iXBRL is required, either manually or using accounting/tax software with the iXBRL capabilities, known as automatic tagging products. Although, HMRC and Companies House are not endorsing any software solution available on the UK market, there is a list of 86 commercial software and service suppliers (maintained by the authorities) that provide evidence of compliance with the UK XBRL Taxonomies. The software solutions available are iXBRL taggers or converters that allow for either manual tagging or automated tagging of the information from the companies' accounts into iXBRL format**.**

3.2.2. Ireland

The Office of the Revenue Commissioners (hereinafter referred as The Revenue), has initiated the discussion on the proposed implementation of electronic filing of Financial Statements and Tax Computation using iXBRL by publishing a consultation document in December 2011[10]. A sub-committee of Tax Administration Liaison Committee (TALC) was established in January 2012 to bring together tax practitioner interests and The Revenue in preparing for the changeover. On April 2012 an electronic Tax Briefing[11] was published stating the implementation timeline for the introduction of iXBRL and scheduled XBRL Roadshow 2012, a nationwide awareness and education campaign aimed at practitioners. In parallel, the XBRL Ireland has published a new Irish GAAP Taxonomy (June 2012), that was built in accordance to the UK GAAP, specifically serving as its extension, bridging the gap between UK and Irish accounting principles. The taxonomy was finalized early 2013 and constituted as a base for the planned roll out.

With the initial stage effective from 1 October 2013, the first group of tax payers (under Large Cases Division) were required to file iXBRL Financial Statements in respect of all Corporation Tax Returns for accounting periods ending on or after 31 December 2012. Next phase was initiated on 1 October 2014 and extended iXBRL mandatory filing to all corporation tax payers in respect of accounting periods ending on or after 31 December 2013. The Revenue allowed for exclusion from iXBRL filing obligation for all issuers which reported the balance sheet total not exceeding €4.4 million, turnover below €8.8 million and with average number of persons employed not exceeding 50. The last phase is planned to involve all remaining corporation tax payers, however the roll out date is not yet communicated by the authority. Companies not yet subject to mandatory filing may still submit their iXBRL accounts voluntarily.

In order to provide the entities with a suitable way of submitting the computations, The Revenue has updated its own electronic platform, Revenue On-line Service (ROS), to assure iXBRL capabilities. Smooth transition to the new standard was ensured by establishing a test facility allowing the customers to check in advance whether the new requirements are satisfied. Additionally, The Revenue allowed for a separate filing of the CT1 (Pay and File Corporation Tax Return) and associated financial statements, not to disrupt the original filing process.

[10] See http://www.revenue.ie/en/online/ros/ixbrl/efiling-financial-statements-tax-computations.pdf
[11] See http://www.revenue.ie/en/practitioner/tax-briefing/archive/2012/no-042012.html

3.2.3. Denmark

In 2010, Danish Business Authority (hereinafter referred as DBA) started development of the first XBRL taxonomy for the Danish GAAP in order to enable reporting Annual Reports in a standardized format. In parallel, the works on the new on-line reporting platform were commenced to provide the entities with the ability to submit their filings in XBRL. As part of the transition process into the XBRL standard, a new Bill was introduced in the Danish Parliament, with the purpose to formalize the new requirements of the DBA. Law was enacted on 7th of April 2011, allowing the entities to submit their reports electronically to the DBA via on-line platforms: Regnskab Basis (template-based) and Regnskab Special (XBRL and PDF submission for the Annual Reports).

Starting from January 2012, XBRL reporting was mandated for the majority (approximately 95%) of the companies in Denmark with a first deadline set to June. After the first phase, all remaining entities reporting in compliance with the Danish GAAP were included into the mandate. In parallel, the DBA commenced the works on the Danish extension to the IFRS taxonomy, with a plan to include the Class D companies (i.e. listed companies) in the XBRL reporting process in the following years. In 2014, starting from January, all companies preparing financial statements under IFRS (approximately 200) were obliged to comply with the XBRL reporting requirement.

From the submission perspective, the entities reporting their annual reports are required to fill in a form (applicable to smaller entities) or provide both XBRL instance document and PDF version of the annual report or a single inline XBRL file, as approved by the general assembly. The required information includes financial statements and information which is in part non-financial (the auditor's report and the management report). All information is required to be tagged to the Danish XBRL taxonomy (block tagging allowed for the explanatory disclosures) with no specific audit requirements. Apart from the XBRL/PDF mandate, the DBA allows for submission of Inline XBRL for the small companies.

In 2015, Denmark decided to enhance the data dissemination process by providing free access to all reports submitted to the DBA (including both PDF and XBRL formats). Currently about 240.000 annual reports are filed each year in in XBRL and made available to the public.

3.2.4. United States

On June 13, 2016 The U.S. Securities and Exchange Commission has issued an order[12] under the Securities Exchange Act to allow companies to file (on a voluntary, time-limited basis) structured financial statement data using iXBRL format through March 2020. Purpose of this program is to assess the usefulness of the new filing format and also to possibly facilitate the development of technological tools to support the standard. Permitting filing in Inline XBRL is intended to improve the XBRL data quality, which at present may be error-prone, specifically due to re-keying of data submitted in several documents within the filing. The authority believes that iXBRL will contribute to the wider use of XBRL data by market participants and may enhance the benefits that are associated with XBRL in general. The Securities and Exchange Commission (SEC) has noted that the program will not affect the taxonomy or the information scope required to be tagged.

In addition, the U.S. SEC has updated the EDGAR system to enable the users to view information in the iXBRL format, and for the period of the program, is planning to provide issuers with an XBRL extraction tool, making available the XBRL tags from Inline XBRL documents.

[12] See https://www.sec.gov/rules/exorders/2016/34-78041.pdf

3.2.5. Japan

With the project started in 2004, Japanese Financial Services Agency (JFSA) is globally considered as one of the pioneers of XBRL implementation. The objective was to establish a technical environment and create valuable, exchangeable information by using XBRL, so that the companies could directly provide the market with administration information and the investors could directly use the disclosures. The scope of the project involved the development of a taxonomy and establishing a reporting platform.

Since June 2008, JFSA has mandated XBRL filing of Annual, Semi-annual and Quarterly Securities Reports and Securities Registration Statements for the Japanese listed companies and investment funds. Data submission, validation and storage is facilitated by the EDINET (Electronic Disclosure for Investors' NETwork) platform, which was prescribed by the Financial Instruments and Exchange Act. In 2013, JFSA provided companies with the ability to submit the filings using Inline XBRL (replacing standard XBRL), by introducing a next generation EDINET[13]. With a new platform, JFSA started the expansion of mandatory reporting to include material facts as well as financial information. Apart from the financial statements, the expansion included extraordinary securities, large volume holdings and Tender Offers. Introduction of iXBRL did also help with extending the tagging requirements, specifically focusing on sub-classifications and comments, segment information, summary of business results and disclosure of major shareholders.

As of current, approximately 4500 listed companies and 3500 investment funds are using iXBRL for reporting obligations in Japan.

3.2.6. Australia

Since the initiation of the Standard Business Reporting programme in Australia in 2010, companies were equipped with the possibility of voluntary filing of financial reports to the Australian Securities and Investments Commission (ASIC) using XBRL format. As XBRL information, while consumable by computers for analysis purposes, could not be viewed in a human readable format, ASIC was requesting a PDF or paper version of the report for the viewing purposes. With approximately 27000 entities subject to the dual-format reporting, ASIC decided to improve the communication of financial information to the authority by introducing Inline XBRL. Application of iXBRL format removed from the companies the need for separate lodgement of PDF/paper reporting and assisted in dealing with the complexity of submitting financial information.

3.3. Maturity and availability of software solutions

With almost two decades of its existence, XBRL has developed a substantial software support from a wide range of vendors and solution providers. Global implementation of the standard has strengthened the local industries and equipped both issuers and regulators with a comprehensive set of tools helping with the transition into the new reporting reality.

Functionality-wise, software vendors are offering a variety of software products covering different aspects of the standard, including (but not limited to) validation, creation and addition of reports and taxonomies, collection and storage of data, as well as processing and parsing. Latest developments in the specifications are often discussed with the market representatives and technical experts. Furthermore, a call for implementation (i.e. confirmed and tested implementation of the specification in a few processors) is also part of the recommendation process for the new standards. A number of software providers are updating their tools on a timely basis, in order to ensure the efficiency and completeness of their offerings, as well as compliance with the latest versions of technical

[13] See http://www.fsa.go.jp/search/20130917.html

specifications. It is also important to mention that with the release of new specifications, vendors may require additional licenses to be purchased, therefore the OAMs should secure a clear production of updates agreement.

A substantial number of the available tools is built around the Inline XBRL technology. With the implementations in UK or Ireland, and plans in the U.S., the local markets adapted well to the standard and are offering a mature set of iXBRL-capable solutions, including converters (tools transforming data from other formats such as SQL or Excel to XBRL), mappers (applications defining links between internal data sources and XBRL tags) and taggers (solutions enabling marking data of reports in formats like Word with corresponding XBRL tags). Apart from the standalone iXBRL applications, the standard capabilities were built in the local accounting software, often used by the issuers. With that approach, the small or medium entities are not required to gain technical XBRL knowledge before submitting reports. Regulators often provide the companies with a list of acknowledged commercial software suppliers and their products that provided an evidence of compliance with the local taxonomies and the standard.

We identified in the course of a detailed analysis, more than 300 licensed tools available on the market (excluding filing agencies and their internal solutions) with over 150 software vendors present. Those numbers are complemented with approximately 40 open source solutions covering the XBRL basics.

An exemplary list of open source XBRL libraries and programs can be found on www.sourceforge.net.

Compliance with Transparency Directive

4. Introduction

The Directive 2013/50/EU of the European Parliament and of the Council of 22 October 2013, in recital 26 specifies that:

> *A harmonised electronic format for reporting would be very beneficial for issuers, investors and competent authorities, since it would make reporting easier and facilitate accessibility, analysis and comparability of annual financial reports. Therefore, the preparation of annual financial reports in a single electronic reporting format should be mandatory with effect from 1 January 2020, provided that a cost-benefit analysis has been undertaken by ESMA. ESMA should develop draft technical regulatory standards, for adoption by the Commission, to specify the electronic reporting format, with due reference to current and future technological options, such as eXtensible Business Reporting Language (XBRL). ESMA, when preparing the draft regulatory technical standards, should conduct open public consultations for all stakeholders concerned, make a thorough assessment of the potential impacts of the adoption of the different technological options, and conduct appropriate tests in Member States on which it should report to the Commission when it submits the draft regulatory technical standards. In developing the draft regulatory technical standards on the formats to be applied to banks and financial intermediaries and to insurance companies, ESMA should cooperate regularly and closely with the European Supervisory Authority (European Banking Authority) established by Regulation (EU) No 1093/2010 of the European Parliament and of the Council (13), and the European Supervisory Authority (European Insurance and Occupational Pensions Authority) established by Regulation (EU) No 1094/2010 of the European Parliament and of the Council (14), in order to take into account the specific characteristics of those sectors, ensuring cross-sectoral consistency of work and reaching joint positions. The European Parliament and the Council should be able to object to the regulatory technical standards pursuant to Article 13(3) of Regulation (EU) No 1095/2010, in which case those standards should not enter into force.*

The following criteria stem from the above recital and should be applied to the ESEF.

The proposed ESEF:

A. should be harmonised across Member States;
B. should be beneficial for issuers, investors and competent authorities;
C. should make reporting easier;
D. should facilitate accessibility to issuer information across the EU;
E. should facilitate analysis of annual financial reports;
F. should facilitate comparability of annual financial reports;

Additionally, ESMA has indicated the following criteria to be applicable for assessment of XBRL/iXBRL standards, with regards to compliance with the Transparency Directive:

A. Implementation feasibility;
B. Governance and control of changes and extensions;
C. Opportunities to reuse data

4.1. Methodology

The following methodology was applied to evaluate compliance of the XBRL/iXBRL standard with the respective provisions of the Transparency Directive.

Picture 1: Methodology for compliance assessment

Interpretation – in this part the qualitative criteria are detailed, specified and interpreted in a way to facilitate, as much as possible, a neutral and objective compliance assessment. Interpretation is provided together with indication of the expected range and types of responses (e.g. scale, Boolean). Interpretation can result in specification of further detailed sub-criteria in order to provide for measurable responses.

Analysis – this stage embraces the activity of matching international evidence with the criteria specified in the *Interpretation* part and critical review of the matching outcome.

Conclusion – this part collects the evidence presented for compliance in earlier sections weighted against the criteria and provides the final evaluation of compliance.

The process of interpretation, analysis and conclusion has been conducted by a group of experts and involved peer-review of each stage.

The following overall compliance level definitions are used across the document and specifically in the *Conclusion* part:

Level	Description
Neutral or not applicable	The technical format does not seem to demonstrate any link, impact or dependency on the criteria analysed.

No compliance	Evidence does not allow to observe any level of compliance with the requirement specified or indicated specific areas which are incompliant.
Partial compliance	While it is difficult to quantify the level of compliance, certain evidence demonstrates partial or conditional level of compliance in selected areas related to the criteria specified.
Significant compliance	High level of compliance can be observed, however, certain caveats or conditions prevent from stating full compliance level.
Full compliance	Evidence and analytical process indicate high level of compliance and do not demonstrate any reasonable objection preventing from stating full compliance.

Table 1: Overall compliance definitions

5. Compliance evaluation

5.1. The proposed ESEF should be harmonised across Member States

5.1.1. Interpretation

For the purpose of this document harmonisation in the European Union (EU) law is defined as follows:

> "Harmonisation seen through the lens of the founding Treaties is conscious, intended, and requires the volitional setting of a European standard by a European institution, to which the Member States adapt their legal orders."[14]
>
> and
>
> "The parameters [of harmonisation] are (I.) conscious setting of a standard, (II.) contribution by the Member States, (III.) actors involved, (IV.) objectives, (V.) object and standard, and (VI.) result."[15]

The substance of this criterion refers to the principles underlying the EU and its treaties and especially refers to the ongoing and planned initiatives related to Internal Market, the Digital Single Market, the Capital Market Union and the operational efficiency of the Transparency Directive. However, it is necessary to observe that this criterion is affected by other laws, for instance Regulation (EC)1606/2002 of 19 July 2002 introducing the International Accounting Standards / International Financial Reporting Standards as mandatory across the EU Member States, as well as the Directive (EC) 2014/95/EU, amending Directive 2013/34/EU, as regards disclosure of non-financial and diversity information by certain large undertakings and groups.

Therefore, in order to provide for a neutral possibility of assessment of compliance of the XBRL/iXBRL with this criterion, the following detailing questions are proposed:

I. Is the XBRL/ iXBRL standard a neutral reference model to which Member States can refer?
II. Are Member States and their National Competent Authorities (NCAs) able to contribute to the introduction of XBRL/iXBRL in the EU?
III. Can all key stakeholders be involved in establishing the XBRL/iXBRL in the EU?
IV. Is it possible to implement XBRL/iXBRL as the ESEF in a standardised manner across the EU Member States without significant differences?

The first point above refers to the general status of the XBRL/iXBRL technology. The two next criteria address the participatory nature of any harmonisation activity with the possibility to suggest changes

[14] M. Andenas, C.B. Andersen, Theory and Practice of Harmonisation, Cheltenham, Edward Elgar Publishing, 2012, chapter 16
[15] op. cit.

and recommend improvements. The last criterion relates to the potential risk of diversification of national implementations of ESEF.

5.1.2. Analysis

This item presents the discussion on XBRL/iXBRL compliance with each criteria specified in the interpretation section.

I. Is the XBRL/ iXBRL standard a neutral reference model to which Member States can refer?
   a. The XBRL/iXBRL language is an international standard facilitating electronic reporting of structured data following specific reporting requirements developed and governed by a non-profit organisation, XBRL International Inc., established in the United States under the laws of Delaware.
   b. The Inline XBRL (iXBRL) is a sub-specification of the XBRL language that allows users to combine non-tagged information, represented in form of a W3C Consortium's XHTML[16] format, with XBRL, tagged structured data in one file (iXBRL report). The inline XBRL (iXBRL) is freely available[17].
   c. On 28 January 2016 the European Commission issued a communication "on the identification of the extensible Business Reporting Language 2.1 for referencing in public procurement"[18] recognising the XBRL specification among the standardisation efforts that should help realise "Europe 2020: A strategy for smart, sustainable and inclusive growth".
   d. In 2014, the CEN-CENELEC has conducted a series of workshops under the work stream 'WS XBRL' (improving transparency in financial reporting) in order to standardise the usage of XBRL within the European and National Supervisory Authorities community. The workshop concluded with establishment of a framework of use of XBRL recommending its use for improved transparency in financial and business reporting[19].
   e. The European Parliament resolution of 21 May 2008 on a simplified business environment for companies in the areas of company law, accounting and auditing, calls for EU-wide use of technology such as XBRL to make information more easily accessible for investors, creditors, employees and public authorities throughout the EU[20].
   f. Neither XBRL, nor iXBRL prescribes itself the content of reports that are expected to be prepared by issuers under the ESEF requirements. These taxonomy requirements correspond to the accounting or business standards that need to be applied in conjunction with the XBRL/iXBRL format. In case of ESEF, the accounting standards applicable are the International Financial Reporting Standards (IFRS). Since 2001, the International Accounting Standards Board (IASB) publishes annually its IFRS reporting requirements in the corresponding IFRS Taxonomy expressed using the XBRL language[21].

[16] https://www.w3.org/TR/xhtml1/
[17] https://specifications.xbrl.org/specifications.html
[18] http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016D0120&from=EN
[19] http://www.cen.eu/work/areas/ICT/eBusiness/Pages/WS-XBRL.aspx
[20] http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2008-0220+0+DOC+XML+V0//EN&language=EN
[21] http://www.ifrs.org/XBRL/IFRS-Taxonomy/Pages/IFRS-Taxonomy.aspx

g. On 20 December 2011, the European Banking Authority (EBA) released a consultation paper on draft Implementing Technical Standards (ITS) on supervisory reporting requirements for institutions (CP50, CRD IV). The EBA proposed two components to complement to be introduced on a Pan-European scale for the CRD IV reporting requirements: Data Point Model and corresponding XBRL taxonomy. The format has been applied mandatorily on level 2 (NCAs to EBA) and voluntarily on level 1 (reporting entities to NCAs). Despite the lack of mandate at level 1, the EBA XBRL Taxonomy is currently used across over 53% of the EU Member States for level 1 collection of the harmonised CRD IV data[22].

h. The European Insurance and Occupational Pensions Authority (EIOPA) Board of Supervisors has published a decision on mandatory use of the XBRL format for submission of information by NCAs to EIOPA for prudential and financial stability quantitative reports. This decision was preceded by a preparatory and implementation phase launched in 2014 and conducted through 2015 with test collection and validation of information submitted in XBRL. The EIOPA Board of Supervisors' decision constitutes a Pan-European implementation of the XBRL reporting standard for collection of the specified Solvency II information[23].

II. Are Member States and their NCAs able to contribute to the introduction of XBRL/iXBRL in the EU?

a. Unless prohibited by their bylaws or national rules, the European NCAs have an unrestricted possibility to contribute directly to the development and maintenance of the technical specification of XBRL/iXBRL through participation in the XBRL International Working Groups[24].

b. Introduction of XBRL/iXBRL requires establishment of operational implementation rules (e.g. filing rules). The XBRL/iXBRL specifications do not prevent development of these rules in a participatory manner. The XBRL International guidance recognises that multi-stakeholder consultation of the filing rules contributes to increase standardisation efficiency and to lower market resistance[25]. Establishment of the operational rules for XBRL/iXBRL implementation as the ESEF is necessary to be conducted by ESMA and the NCAs.

c. Independently from the XBRL/iXBRL compliance considerations, the IASB and its respective European constituencies conduct consultations on the implementation of the IAS/IFRS in the EU.

III. Can all key stakeholders be involved in establishing the XBRL/iXBRL in the EU?

a. Unless prohibited by their bylaws or national rules, any European entity has an unrestricted possibility to contribute directly to the development and maintenance of the technical specification of XBRL/iXBRL through participation in the XBRL International Working Groups[26].

b. The XBRL/iXBRL standard does not determine which stakeholders should be consulted or involved in the development and implementation of the ESEF in the EU.

[22] http://eurofiling.info/201606/Presentations/2016-06-02%2010h40%20Owen%20Jones%20-%20EBA%20release%20plan%20and%20future%20considerations%20-%20Eurofiling%202016.pdf
[23] https://eiopa.europa.eu/Publications/Other%20Documents/EIOPA-15-198%20Decision%20on%20collection%20of%20information%20under%20SII%20%28GBE%29.pdf
[24] https://www.xbrl.org/the-consortium/join/
[25] https://www.xbrl.org/guidance/
[26] https://www.xbrl.org/the-consortium/join/

IV. Is it possible to implement XBRL/iXBRL as the ESEF in a standardised manner across the EU Member States without significant differences?

a. Several levels of standardisation may be considered for the potential implementation of the XBRL/iXBRL as the ESEF:

i. At the technological level, selecting XBRL/iXBRL as the ESEF, imposes a single and unified technical syntax, and excludes the possibility of divergent application of this language (or syntax). Files which syntaxes differ from the one prescribed by the XBRL/iXBRL specifications will not pass the standard checks introduced by XBRL-compliant validators.

ii. At the architectural level, the extent to which divergent adoption scenarios can occur across the EU Member States, depends heavily on the choices applied during the preparation of the ITS. For instance, the introduction of the IFRS XBRL Taxonomy jointly with the XBRL/iXBRL standard as the ESEF, should significantly increase harmonisation ratio because the IFRS XBRL Taxonomy prescribes architectural rules recommended for its adoption. However, the possibility to extend the IFRS XBRL Taxonomy by the NCAs and OAMs may potentially reduce harmonisation levels.

iii. At the business level, the accounting content of the report depends on the specifics of IFRS application and accounting choices made by the reporting entity within the framework of IFRSs as adopted by the EU. The application of XBRL/iXBRL does not interfere with the accounting disclosure obligations.

iv. At the operational level, elements such as: identifiers used by reporting entities in their electronic filings, business rules applied for data validity checks and filenames -among others-, may impact on the level of harmonisation across the EU, unless those elements are standardised consistently at NCAs and OAMs' levels.

5.1.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.1.2.

Criterion	Conclusion	Justification
The proposed ESEF should be harmonised across the EU Member States	Significant compliance	The XBRL/iXBRL syntax itself is standardised and imposes harmonised adoption, a broader understanding of the standard as the ESEF requires to consider auxiliary conditions necessary to be met to demonstrate harmonious implementation of ESEF across the EU Member States.
Is XBRL/ iXBRL a standard, a neutral reference model to which Member States can refer?	Full compliance	All evidence demonstrates the international, public and transparent nature of the XBRL/iXBRL standard and indicate its role as a reference model for variety of entities involved in financial or business reporting.
Are Member States and their National Competent Authorities able to contribute to the introduction of XBRL/iXBRL in the EU?	Significant compliance	No evidence demonstrates any restriction for NCAs or OAMs however participation in the XBRL International Working Groups requires a paid membership. Since the XBRL and Inline XBRL specifications design process, established by the XBRL International, envisages public review of proposed specifications, it is not necessary to be part of the Working Groups, in order to contribute to the development.
Can all key stakeholders be involved in	Significant compliance	No evidence demonstrates any restriction for any entity, however, participation in the XBRL International Working Groups requires a

establishing the XBRL/iXBRL in the EU?		paid membership. Since the XBRL and Inline XBRL specifications design process, established by the XBRL International, envisages public review of proposed specifications, it is not necessary to be part of the Working Groups, in order to contribute to the development.
Is it possible to implement XBRL/iXBRL as the ESEF in a standardised manner across the EU Member States without significant differences?	Significant compliance	While XBRL/iXBRL itself does not facilitate divergent adoption scenarios (at the syntax level), the disclosure flexibility of the IAS/IFRS and the corresponding extensibility of the XBRL taxonomy and reports, may impact the degree of harmonisation. Unless it is prescribed or restricted accordingly by ESMA, the possibility of taxonomy extensions at Member States level, may bring about lack of harmonised implementation. Similarly, operational implementation rules may lower the degree of harmonised implementation across the EU.

Table 2: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.1.2.

5.2. The proposed ESEF should be beneficial for issuers, investors and competent authorities

5.2.1. Interpretation

This criterion represents a compound set of requirements, that in certain cases may even be contradictory to each other for the groups of stakeholders indicated. For instance, lower granularity of tagged data may be beneficial for issuers (lower time and cost of report preparation) but less beneficial for investors (lower automated validation and analysis of the report). Furthermore, the criterion may be understood in diversified ways depending on the size of the stakeholder, its operational efficiency, its transformational and change requirements and other aspects.

Therefore, in order to provide for a neutral possibility of assessment of compliance of the XBRL/iXBRL with this criterion, the following detailing questions are proposed:

I. Is Inline XBRL beneficial for issuers?
II. Is Inline XBRL beneficial for investors?
III. Is Inline XBRL beneficial for competent authorities?

This criterion constitutes also a summary observation from evaluation of other criteria specified in this analysis.

Therefore, due to significant diversity of possible understanding of benefits, it is proposed that the focus is on identification of benefits and challenges occurring in previous implementations of XBRL/iXBRL among the selected groups of stakeholders.

5.2.2. Analysis

The following list provides selected evidence assembled for the purpose of this analysis.

I. Is Inline XBRL beneficial for issuers?
    a. The Standard Business Reporting (SBR) project in Australia commenced in 2006 and launched in 2010, estimates cost savings for businesses from harmonised electronic

reporting to reach over 800 million AUD a year[27]. The project harmonises reporting requirements and uses the XBRL standard across the Australian Tax Office, the Australian Prudential Regulation Authority, the Australian Securities and Investment Committee, the Australian Bureau of Statistics and the State and Territory Revenue offices.

b. The Australian Tax Office announced that it expects estimated savings from introduction of SBR in industries like superannuation to reach 1,1 billion AUD for the 2015-2016 period.

c. Researchers from the National University of Singapore concluded that: "XBRL filing reduces investors' information cost. We find that XBRL adoption results in a significant reduction in firms' cost of equity capital and that this effect is stronger in firms with small size, high growth, low analyst coverage and illiquid stocks. We also show that firms experience an increase in analyst coverage, forecast accuracy and a decrease in forecast dispersion after XBRL adoption. Further XBRL adoption improves firms' stock liquidity. Finally, the effect of XBRL adoption on the cost of equity capital, analyst behaviour and stock liquidity is weaker for voluntary issuers than for mandatory issuers. In sum, we provide strong evidence supporting the argument that information processing costs significantly affects the cost of equity capital. "[28].

d. The Financial Executives Research Foundation's (FERF) survey[29] from 2013, indicates that among 401 responses from distinctive US issuers using XBRL for reporting to the US SEC issuers, regardless of their size, indicated the level of concern related to cost-benefit proposition of XBRL under US SEC filing program to be on average at 3,5 where 3 indicates "somewhat concerned" and 4 indicates "moderately concerned".

II. Is Inline XBRL beneficial for investors?

a. The CFA Institute's recent publication *Data and Technology: Transforming the Financial Information Landscape. Investor Perspectives* indicates qualitative benefits for auditors, investors and policymakers from introduction of the XBRL structured data language[30].

b. Among other the qualitative benefits for investors embrace faster search, collection and processing of data, easier comparability of structured data and opportunity to compare outside of specific national implementation.

c. An assessment of Morgan Stanley's 31 December 2013 10-K report (annual financial statement) showed that the report in a structured format provided more useful information to investors as it contained 7015 tagged elements compared to 670 elements available for the same report through Bloomberg database[31].

d. The Danish Business Authority summarised in their European Credit Registers Forum presentation that introduction of Inline XBRL for financial reports means easier access to data and contributed to 5 times higher use of data[32].

[27] http://www.charteredaccountants.com.au/Industry-Topics/Reporting/Current-issues/Standard-business-reporting/News-and-updates/2011-11-XBRL-Making-the-World-Turn-Faster.aspx

[28] Oliver Zhen Li, Yupeng Lin, Chenkai Ni, Does XBRL Adoption Reduce the Cost of Equity Capital, SOURCE MISSING. August 2012.

[29] https://www.secprofessionals.org/sites/default/files/2013%20FERF%20Final%20Report.pdf

[30] http://www.cfapubs.org/doi/pdf/10.2469/ccb.v2016.n7.1

[31] http://www.cfapubs.org/doi/pdf/10.2469/ccb.v2016.n7.1

[32] http://www.ecrforum.org/wp-content/uploads/2015/06/10-kasper-Sengelov-Pr%C3%A6sentation-ECRF-Data-use-and-accessibility-FINAL.pdf

III. Is Inline XBRL beneficial for competent authorities?

a. Standard Business Reporting Netherlands lists increased efficiency, standardisation, increased transparency, increased security, higher quality of data exchange among the key benefits of the SBR Programme, based on the XBRL language[33].
b. The Danish Business Authority points to increased automation as one of key achievements on the regulatory side with regards to benefits of Inline XBRL implementation[34].
c. 85,7 % of respondents to the regulatory survey[35] indicate that use of XBRL / Inline XBRL allowed to introduce new validations that were not possible to be performed with the unstructured data.
d. 85,7 % of respondents to the regulatory survey[36] indicate that use of XBRL / Inline XBRL significantly increases quality of data submitted to regulators.

5.2.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.2.2.

Criterion	Conclusion	Justification
The proposed ESEF should be beneficial for issuers.	Partial compliance	Depending on adoption scenario the XBRL/iXBRL standard may provide benefits for issuers who may benefit from savings and reduction of administrative burdens. The benefits are clear when considered in the context of the entire economy rather than individual issuer (i.e. greater benefits can be expected if XBRL is implemented by more than one government or regulatory organisation). Certain potential benefits appear to relate to cheaper access to capital for issuers. However, from the US SEC issuers survey, the costs arising from XBRL adoption may be perceived as higher than its benefits.
The proposed ESEF should be beneficial for investors.	Significant compliance	Investors benefit from accessibility to information in structured electronic format, which increases comparability of data, improves search capabilities and allows for cross-country comparisons. It is important to note that high level of extensibility of XBRL reports leads to significant decrease of automated data comparability.
The proposed ESEF should be beneficial for competent authorities.	Significant compliance	Evidence from publications of regulators relatively consistently indicates automation, standardisation, harmonisation, increased data availability and increased transparency of data. Among direct benefits regulators most often indicate higher data quality.

Table 3: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.2.2.

5.3. The proposed ESEF should make reporting easier

5.3.1. Interpretation

The criterion of easiness represents one of the most challenging and complex for evaluation due to its inherent subjectivity and contextual dependencies on scenario of implementation.

[33] http://www.sbr-nl.nl/english-site/what-is-sbr/
[34] https://www.bolagsverket.se/polopoly_fs/1.11595!/danmark_xbrl_nordic.pdf
[35] See section **Error! Reference source not found.**
[36] op.cit.

For instance:

- For issuers who, before implementation of XBRL or Inline XBRL, were required to submit their AFRs using PDF or similar format, converted automatically from common editors, introduction of tagging effort will represent a level of difficulty. On the contrary, issuers who were using custom XML-based language to present their AFRs may find the software and application of Inline XBRL as easier compared to their former requirements.
- Issuers who prepare their reports manually will perceive tagging of XBRL data as additional effort and level of difficulty. Conversely issuers who operate internal accounting systems capable of producing data for the AFR, and who choose to integrate and automate the process of production of parts of AFR, may find preparation of AFRs in XBRL or Inline XBRL as easier.
- In these jurisdictions, where accounting software vendors integrated the XBRL taxonomy inside their financial software, issuers may perceive the process of production and submission of the XBRL or Inline XBRL report as easier, compared to the jurisdictions, where conversion of traditional, written AFRs to the XBRL report is considered a last mile effort.
- Perception of easiness depends on external factors, e.g. scope of data requested to be tagged. Issuers requested to detail-tag the explanatory disclosures will perceive the process as more difficult than those who are requested to block-tag the notes to the financial statements.
- Responses depend on the time of survey. Issuers who face the first year of new compliance requirements, especially the corresponding mapping process, may report implementation of a new standard as difficult. Conversely in subsequent years, issuers may report generation of XBRL or Inline XBRL reports based on existing mapping as easy and automated.
- Perception of ease of use of an electronic reporting standard like XBRL or Inline XBRL is highly correlated with the perception of the software applied to produce the reports. As presented in the first chapter of this analysis, a variety of solutions exists, with diversified perception of ease of use[37] due to diversified set of functionalities offered.

Therefore, in order to provide for a neutral possibility of the assessment of XBRL/iXBRL compliance with this criterion, the following detailing questions are proposed:

I. Does XBRL or Inline XBRL allow automated retrieval of data for production of AFRs or parts thereof?
II. Does XBRL / Inline XBRL support the process of preparation of the AFR?
III. What are the immeasurable perceptions or reaction of the issuers faced with requirements to produce XBRL or Inline XBRL reports?

In context of the third question, the quantitative evidence, to justify whether XBRL/iXBRL facilitates ease of reporting, may be provided in two ways. First requires collection of feedback through direct interviews with experts involved in preparation of XBRL/iXBRL files. Second foresees evaluation of time necessary to conduct the preparatory activities, compared to the time necessary before introduction of the standard. Such approach is explored in the Reference Model development conducted for the purpose of this analysis and documented in the cost-benefit analysis part of this study. Additionally, it is also possible to rely on statistics related to voluntary uptake of XBRL/iXBRL obligations by reporting entities since the decision to implement voluntarily a new standard for electronic financial reporting should reasonably be at least partially driven by the factor of ease of use.

[37] https://www.secprofessionals.org/sites/default/files/2013%20FERF%20Final%20Report.pdf

5.3.2. Analysis

The following presents the list of evidence identified in the course of this analysis.

I. Does XBRL or Inline XBRL allow automated retrieval of data for production of AFRs or parts thereof?
   a. The Maryland Association of CPAs demonstrates that it is both possible and beneficial, even for a small-medium size issuer (in this case a non-profit organisation) to easily connect the data from Association Management System to the General Ledger accounting system using the XBRL Global Ledger (XBRL GL). The XBRL GL is a sub-specification of the XBRL language, that allows to map account at general ledger level and connect them to positions in the XBRL or Inline XBRL financial reports[38].

II. Does XBRL / Inline XBRL support the process of preparation of the AFR?
   a. As demonstrated by the software described in the Reference Model development section and in the section describing availability of XBRL and Inline XBRL software products, several "bolt-on" solutions offer support for automatic identification and application of mapping between the AFR and the XBRL taxonomy. Such mapping reduces the effort necessary from users to review of preselected mappings and addition of these not identified by automated algorithms.

III. What are the perceptions or reaction of the issuers faced with requirements to produce XBRL or Inline XBRL reports?
   a. The XBRL UK reports that 70% of UK companies now file their financial statements voluntarily in iXBRL to the Companies House after the 2011 upgrade of its iXBRL system, and this percentage is steadily increasing[39].
   b. The FERF survey[40] indicates that the 439 surveyed US SEC issuers considered XBRL as the biggest bottleneck in the SEC reporting function scoring 3,1; 3,3; 3,3 and 3,0 respectively among issuers divided by size, where 3 indicates "somewhat difficult" and 4 indicates "moderately difficult".

5.3.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.3.2.

Criterion	Conclusion	Justification
The proposed ESEF should make reporting easier	Significant compliance	Despite the fact that analysis and evaluation of detailed questions arising from interpretation of this requirement demonstrate full or significant compliance it was taken into account, that direct evidence collected from the US issuers contradicted other evidence and therefore the final evaluation states significant compliance. It is necessary to indicate that the evidence from the US issuers requires to be viewed in the context of the US SEC XBRL implementation.
Does XBRL or Inline XBRL allow automated retrieval of data for production of AFRs or parts thereof?	Full compliance	Use of XBRL taxonomy allows for mapping of data at the level of the financial report line items or detailed disclosures. In addition, the XBRL GL specification allows to further drill-down the AFR positions and specify general ledger accounts and mapping rules to automate the process of the XBRL or Inline XBRL report preparation.

[38] http://www.journalofaccountancy.com/issues/2012/jun/macpa-xbrl-project.html
[39] http://www.xbrl.org.uk/resources/whitepapers/UKcompanyReporting-XBRL-v1.pdf
[40] op. cit.

Does XBRL / Inline XBRL support the process of preparation of the AFR?	Significant compliance	The support function to ease the reporting processes is not directly attributable to the XBRL or Inline XBRL standard itself however, software operating XBRL and especially Inline XBRL offers such functionalities. Furthermore, accounting software vendors from Australia and the United Kingdom have implemented XBRL and / or Inline XBRL within their software products thus providing for at least semi-automated generation of XBRL / Inline XBRL reports.
Is Inline XBRL / XBRL perceived as making reporting easier?	Partial compliance	Direct evidence from the USA indicates that issuers perceive XBRL as the biggest bottleneck in the US SEC reporting function. Evidence from the UK shows that in case of financial reporting obligations the voluntary uptake at least partially confirms the ease of use of the XBRL/iXBRL standard. As implementation of XBRL differs significantly between the UK and the USA, with the latter obliging issuers to detail-tag the notes and with differing architectures of base taxonomies, it is reasonable to conclude that standardised assessment of perceptions will not provide objective insights, due to the fact, that perceptions depend on the implementation scenario.

Table 4: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.3.2.

5.4. The proposed ESEF should facilitate accessibility to issuer's information across the EU

5.4.1. Interpretation

Recital 13 of the Directive 2013/50/EU of the European Parliament and of the Council of 22 October 2013 requires that the Commission establishes minimum standards for dissemination of regulated information, access to regulated information at Union level and the mechanisms for the central storage of regulated information.

Commission Delegated Regulation (EU) 2016/1437 of 19 May 2016 supplementing Directive 2004/109/EC of the European Parliament and of the Council with regard to regulatory technical standards on access to regulated information at Union level specifies among other the European Access Point, use of the HTTPS syntax, search and visualisation requirements, mandatory use of the Legal Entity Identifier (LEI) by OAMs, common format of delivery of metadata and common lists and classification of regulatory information.

Moreover, accessibility to issuers' information can be understood narrowly as possibility to obtain data or, more broadly, as set of features including, but not limited to: ease of conversion to other desired formats, possibility to view data using common, popular toolkits or multilingual access to rich metadata.

In the context of the above interpretation, the following should detail the understanding of the ESEF facilitating accessibility to issuer information:

I. Does Inline XBRL enable unrestricted time of access to issuers' information?
II. Is Inline XBRL a common electronic format that can be transmitted over HTTP/HTTPS?
III. Does Inline XBRL facilitate visualisation of issuers' information using common, popular toolkits?

IV. Is it possible to convert Inline XBRL to other formats as may be desired by users of issuers' data in the context of ESEF?

V. Does Inline XBRL offer any additional features supporting users of data in accessing contents of the AFRs?

5.4.2. Analysis

The following list presents evidence identified in the course of this analysis.

I. Does Inline XBRL enable unrestricted time of access to issuers' information?
   a. On 13 June 2016, the US SEC announced that it would permit its issuers to report data using Inline XBRL[41]. The SEC, since the project's launch, has been publishing data in form of XBRL reports as well as the corresponding extended taxonomies[42]. The US SEC XBRL data is available 24/7 through a dedicated RSS.
   b. The UK Companies House publishes its XBRL/iXBRL reports collected form UK businesses and prepared according to UK GAAP and IFRS standards, freely available for use by the public[43].
   c. The Danish Business Authority has announced to start making public collected business data with more than 600,000 sets of company accounts, which represents three years' worth of filings from a company population of around 200,000 firms. Data is freely available in XBRL, including more than 1000 IFRS company filings[44].
   d. 85,7 % of respondents to the regulatory survey[45] indicate that use of XBRL / Inline contributed to earlier receipt of data from reporting entities.

II. Is Inline XBRL a common electronic format that can be transmitted over HTTP/HTTPS?
   a. The Inline XBRL specification is designed by combination of XHTML and XBRL specifications. The Inline XBRL reports are XHTML-compliant files that can be transmitted over HTTP/HTTPS[46].

III. Does Inline XBRL facilitate visualisation of issuers' information using common, popular toolkits?
   a. The IASB has been publishing exemplary InlineXBRL reports based on the IFRS XBRL Taxonomy to demonstrate accessibility and visualisation of exemplary IFRS iXBRL reports using common internet browsers[47].

IV. Is it possible to convert Inline XBRL to other formats as may be desired by users of issuers' data in the context of ESEF?
   a. Standard internet browsers allow to print / convert any HTML (including XHTML) page into a PDF format.
   b. The Open Information Model Public Working Draft specification[48] from XBRL International describes a standardised JavaScript Object Notation (JSON) syntax to which any XBRL report may be converted to. JSON is a common syntax used for mobile applications and for easier integration of data between systems.

[41] https://www.sec.gov/news/pressrelease/2016-117.html
[42] https://www.sec.gov/structureddata/rss-feeds-submitted-filings
[43] http://download.companieshouse.gov.uk/en_accountsdata.html
[44] https://indberet.virk.dk/myndigheder/stat/ERST/Regnskab_20?nm_extag=Link%3D%2Cforside%2Cmest%2520anvendte%2520regnskab%252020%2C
[45] See section **Error! Reference source not found.**
[46] http://www.xbrl.org/WGN/inlineXBRL-part0/WGN-2015-12-09/inlineXBRL-part0-WGN-2015-12-09.html
[47] http://www.ifrs.org/XBRL/Resources/Pages/2016-Illustrative-Examples-in-XBRL-.aspx
[48] https://specifications.xbrl.org/work-product-index-open-information-model-open-information-model.html

c. A variety of software products offers conversion of XBRL or Inline XBRL reports to other formats including SQL or Microsoft Excel.

V. Does Inline XBRL offer any additional features supporting users of data in accessing contents of the AFRs?

a. The IFRS XBRL taxonomy is translated into 14 languages with multilingual labels provided for all, numeric, textual and other disclosures. The taxonomy labels provide users of these languages with an opportunity to search for relevant part of the IFRS reports even if contents of disclosures are written in other languages. Importantly line items and parts of the financial report that contain numeric values, can be compared across these languages.

5.4.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.4.2.

Criterion	Conclusion	Justification
The proposed ESEF should facilitate accessibility to issuer information across the EU.	Full compliance	The XBRL/iXBRL is neutral towards time aspect of accessibility to information and, as other similar standards, supports such accessibility on an unrestricted basis, provided that IT infrastructure offering access to the information is available and stable. Evidence from international projects listed above (US, UK, Denmark) demonstrates that the publication of XBRL and especially iXBRL data introduces greater accessibility to financial information prepared by issuers through standard internet browsers including user-friendly visualisation of data. The XBRL/iXBRL, in combination with the IFRSs, constitutes a single common electronic format possible to be applied across the EU. The specification of iXBRL through availability of XHTML tags constitutes an advanced and popular method of visualisation of annual reports including possible embedding of multi-media components.
Does Inline XBRL enable unrestricted time of access to issuers' information?	Full compliance	The XBRL/iXBRL is neutral towards time aspect of accessibility to information and, as other similar standards, supports such accessibility on an unrestricted basis, provided that IT infrastructure offering access to the information is available and stable. Evidence from international projects listed above (US, UK, Denmark) demonstrates that the publication of XBRL and especially iXBRL data introduces greater accessibility to financial information prepared by issuers through standard internet browsers including user-friendly visualisation of data.
Is Inline XBRL a common electronic format that can be transmitted over HTTP/HTTPS?	Full compliance	Evidence demonstrates that Inline XBRL reports are XHTML compliant files that can be transmitted over HTTP/HTTPS and other protocols.
Does Inline XBRL facilitate visualisation of issuers' information using common, popular toolkits?	Full compliance	Evidence demonstrates that it is possible to view in a human-friendly manner the Inline XBRL reports and search across their contents using a basic internet browser.
Is it possible to convert Inline XBRL to other formats as may be desired by users of	Significant compliance	As with any electronic format use of the extract – transform – load (ETL) approach or external software products allow to convert Inline XBRL files into other formats including SQL or MS Excel. XBRL

issuers' data in the context of ESEF?		International Open Information Model initiative allowing conversion of XBRL reports into JSON should further improve such accessibility.
Does Inline XBRL offer any additional features supporting users of data in accessing contents of the AFRs?	Significant compliance	Multilingual labels, that can be developed for any XBRL taxonomy, provide an enhanced accessibility feature for foreign users, allowing them to compare financial figures between reports of two issuers using different languages.

Table 5: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.4.2.

5.5. The proposed ESEF should facilitate analysis and comparability of AFR

5.5.1. Interpretation

Both analysis and comparability of Annual Financial Reports (AFR) constitute compound criteria and analysis specifically embraces the requirement to compare data sets. For the purpose of this report analysis is defined as a combination of the following functions:

- Search for data according to specified criteria related to the data sets;
- Processing of data including preparation, reorganisation, enrichment, calculation or validation;
- Performance of analytical and logical reasoning including drawing conclusions from data.

Consequently, for the purpose of this report the level of comparability of data is defined as a possibility to:

- Reduce the number of mathematical, logical and technological transformations necessary in order to search and process data in order to prepare it for the performance of analytical and logical reasoning;
- Reduce the effort necessary to perform logical and analytical reasoning based on data sets spanning entities, time, ratios and other dimensions applying to financial reports.

It is assumed that in both above requirements the level of comparability of XBRL/iXBRL AFR is directly proportional to the criteria identified, therefore, a higher reduction of the transformations or effort means a higher comparability level.

5.5.2. Analysis

The following presents the list of evidence identified in the course of this analysis.

I. The Accounting and Corporate Regulatory Authority (ACRA) in Singapore has enabled free public data analysis of the financial information it collects from businesses using XBRL in Singapore. The BizFinX[49] portal allows for immediately obtaining a set of ratios for a specific company, compare company's performance and standing against peers and conduct trend analysis.
II. 85,7 % of respondents to the regulatory survey[50] indicate that use of XBRL / Inline XBRL makes it easier for analysts to access data and perform analytical tasks.
III. The CFA Institute 2011 survey[51], conducted among 527 participants shows that across 2007 – 2009 – 2011 survey periods:

[49] https://www.bizfinx.gov.sg/FreeDataAnalysis.aspx
[50] See section **Error! Reference source not found.**
[51] https://www.cfainstitute.org/ethics/Documents/Research%20Topics%20and%20Positions%20Documents/xbrl_member_survey_report_2011.pdf

a. over 66% of participants expected that the XBRL standard would have high effect / improvement on upload of company data into their financial models (2011);
b. over 64% of participants expected that the XBRL standard would have high effect / improvement on making comparisons between companies and / or industries (2011);
c. over 64% of participants expected that the XBRL standard would have high effect / improvement on the timeline for the valuation process (2011); in 2011, the expectation about high effect / improvement to the timeline for valuation factor increased to 64% from 54% (in 2009).

IV. The 2011 survey[52] showed that over 88% of respondents believed that companies would not be able to create new tags or they would have limited ability to create new tags as these new tags may impact comparability.

V. The 2011 survey[53] showed that 79% of respondents stated that companies should also tag data that is not comparable due to differences in its classification or the intent of management that leads to company-specific extensions. The respondents expect that, even if two companies tagged information in a way that does not allow direct comparison, the possibility to search for such information and further process it, validates the need for such data to be required to be tagged by issuers.

5.5.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.5.2.

Criterion	Conclusion	Justification
The proposed ESEF should facilitate analysis and comparability of annual financial reports	Significant compliance	It is reasonable to state that XBRL/iXBRL has positive impact on data availability and that, in the countries where regulators decided to release XBRL data freely to the public, data accessibility, search and download practices have significantly increased. Automatic validation of XBRL data sets against taxonomies and mathematical and logical business rules contained in taxonomies appear to be a strong improvement at data processing stage. Split views exist whether XBRL/iXBRL provides easy to use syntax for data processing, however, availability of commercial and open source products allowing access to XBRL data sets from spreadsheets appears to mitigate concerns over data preparation and processing needs. It appears that users most commonly state that standardised taxonomies, when applied without or with limited extensibility option, provide for enhanced data comparability and, therefore, enable efficient logical and mathematical reasoning process. It is important to note that high degree of extensibility in XBRL reports, even if originating from the principle-driven nature of financial reporting standards, causes concern among users regarding data comparability and may require advanced approaches to enable streamlined comparison of extended financial data sets.

Table 6: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.5.2.

52 https://www.cfainstitute.org/ethics/Documents/Research%20Topics%20and%20Positions%20Documents/xbrl_member_survey_report_2011.pdf

53 https://www.cfainstitute.org/ethics/Documents/Research%20Topics%20and%20Positions%20Documents/xbrl_member_survey_report_2011.pdf

5.6. The proposed ESEF should be feasible to be implemented operationally across the EU

5.6.1. Interpretation

The operational implementation feasibility criteria constitutes a set of requirements which description may provide challenges due to diversity of implementation conditions and ecosystems applicable across the EU. Operational implementation of an electronic standard across the EU should not only be considered from the technical possibility to impose a specific law or regulation, but more importantly should focus on the affected stakeholders' ability to:

- Understand the requirements of the new standard;
- Engage resources with knowledge and capabilities to assist in the course of its implementation process;
- Have access to a choice of tools and solutions necessary for operational implementation.

5.6.2. Analysis

The following presents the list of evidence identified in the course of this analysis.

I. The IASB provides an extensive set of documents including the IFRS Taxonomy Architecture, the IFRS Taxonomy Illustrated, the xIFRSs, the Filing Manual, the IFRS XBRL Reports Illustrative Samples, Versioning Reports and other resources to assist users of the IFRS XBRL Taxonomy[54].
II. The FASB provides extensive set of resources together with the US GAAP XBRL Taxonomy including technical, guide, versioning information and other materials to assist users of the US GAAP XBRL Taxonomy[55].
III. XBRL International provides electronic educational courses focused on the XBRL standard[56].
IV. The UK HMRC provides a list of the international commercial software and service suppliers that have provided evidence that they have developed software or manage a service (or both) that can produce one or more elements of a Company Tax Return including the iXBRL report. According to the list, 23 software products can submit iXBRL instance documents; 24 can produce iXBRL accounts and some iXBRL computations; 52 can provide managed tagging service to produce iXBRL accounts and some for computations; and 33 can provide iXBRL conversion software application.
V. The Eurofiling community lists 21 vendors providing XBRL solutions and services across the European Union[57].
VI. The XBRL International lists 57 entries in their XBRL software and services listing[58].
VII. Several open source and free-to-use tools exist, including Arelle[59] and T4U[60].
VIII. The EBA and the EIOPA have implemented the XBRL standard for their respective supervisory data domains across the EU.

[54] http://www.ifrs.org/XBRL/IFRS-Taxonomy/2016/Pages/default.aspx
[55] http://www.fasb.org/jsp/FASB/Page/LandingPage?cid=1176164131053
[56] https://www.xbrl.org/the-consortium/get-involved/individual-certification/
[57] http://eurofiling.info/portal/xbrl-solutions/
[58] https://www.xbrl.org/the-standard/how/tools-and-services/?pagenum=1
[59] http://arelle.org/
[60] https://eiopa.europa.eu/regulation-supervision/insurance/tool-for-undertakings

IX. The XBRL standard used for financial reporting appears to be present in at least in the following European jurisdictions: Belgium, Switzerland, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Spain, Sweden and the United Kingdom[61].

5.6.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.6.2.

Criterion	Conclusion	Justification
The proposed ESEF should be feasible to be implemented operationally across the EU	Significant compliance	Both free of charge and commercial educational resources are available in abundance from standard-setters, vendors, regulators and other organisations allowing cost-limited education on the XBRL/iXBRL standard. Tools and services availability appears to primarily exist in jurisdictions where XBRL has already been adopted, however a great majority of vendors offer products across borders and regions. Open source, free of charge tools exist that support XBRL/iXBRL standard. Many major consulting companies including small and medium vendors appear to be engaged in development and / or promotion or organisationally present in one of the XBRL – affiliated bodies. Existence of over 14 jurisdictions significantly improves potential accessibility to software and services necessary for operational implementation. Relative low presence of XBRL in other jurisdictions may create additional costs for issuers operating in these environments.

Table 7: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.6.2.

5.7. The proposed ESEF should facilitate operational governance and change control

5.7.1. Interpretation

The operational governance of the future ESEF corresponds primarily, but is not limited to, the requirement to control and manage changes arising from business and accounting standards, regulations and practices. This requirement directly translates into an opportunity to manage and version data models and electronic dictionaries in accordance with changing underlying accounting and reporting requirements. Operational governance can also be interpreted as the extent of control that the receivers of data submitted according to the specific ESEF may exert over the data sets received, in evaluating compliance against predefined rules.

5.7.2. Analysis

The following presents the list of evidence identified in the course of this analysis.

I. The IASB provides, on an annual basis, versioning reports indicating detailed changes to the IFRS XBRL taxonomy stemming from changes in the underlying disclosure and other requirements introduced by changes in the IFRS standards and principles[62].

II. Regulators who implemented XBRL for annual reports provide consistent information on taxonomy changes in form of logs, documentation and versioning resources.

[61] http://www.sciencedirect.com/science/article/pii/S2212567115000647
[62] op.cit.

III. The XBRL International provides an XBRL Versioning specification to assist users of XBRL taxonomies and reports in controlling changes to the XBRL components[63].

IV. The XBRL International provides the XBRL Taxonomy Packages specification to assist adopters of XBRL in controlling release of various versions of XBRL taxonomies[64].

5.7.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.7.2.

Criterion	Conclusion	Justification
The proposed ESEF should facilitate operational governance and control of changes	Full compliance	The XBRL/iXBRL resources including especially the taxonomies offer advanced mechanisms facilitating the control of changes, versioning and governance features. The specifications of versioning and taxonomy packages allow to clearly communicate changes introduced to the dictionaries, while the specification of XBRL Formula allow to define controls and mathematical and logical rules enabling receivers' data quality checks and compliance verification with specific version of XBRL taxonomies.

Table 8: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.7.2.

5.8. The proposed ESEF should strengthen opportunities to reuse data

5.8.1. Interpretation

Reuse of data is defined as an opportunity to submit the same electronic reports to multiple parties, either regulatory or market, in order to realise a diverse functions or fulfil various obligations or to utilise internally the same data set for various purposes. The reuse of data may appear at the level of the reporting entity submitting the same data set to multiple parties or at the level of the receiving parties sharing information without requiring it from the reporting entity twice.

5.8.2. Analysis

The following lists the evidence identified during the analysis.

I. Deloitte Netherlands estimates that between 50-80% of the data needed by banks for their credit reports is similar to statutory accounts data[65]. In the Netherlands reporting entities can submit the same XBRL report that is lodged to the government agencies to the commercial banks for credit scoring. For instance ING started offering form 1st January 2015 discounts on credit applications for firms submitting their electronic filings instead of using traditional channels[66].

II. Issuers in Australia report their financial reports under the Standard Business Reporting Program and data is further shared among the participating agencies including the Australian Tax Office, the Australian Bureau of Statistics, the Australian Prudential Regulation Authority, the Australian Securities and Investment Commission and the Office of State Revenue.

[63] https://specifications.xbrl.org/spec-group-index-group-versioning.html
[64] https://specifications.xbrl.org/spec-group-index-taxonomy-packages.html
[65] https://issuu.com/leap_design/docs/ibr-march2013_lores
[66] https://www.xbrl.org/news/cheaper-loans-for-xbrl-filers/

III. The Finnish Tax Service launched in April 2016 a project to collect XBRL financial reports submitted once to both the Tax Service and the National Board of Patents and Registration[67].

5.8.3. Conclusion

The following provides a summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.8.2.

Criterion	Conclusion	Justification
The proposed ESEF should strengthen opportunities to reuse data	Full compliance	The evidence of Standard Business Reporting projects in Australia and the Netherlands as well as Finland confirms the ability to reuse data prepared using the XBRL/iXBRL standard. Annual reports in XBRL/iXBRL may, among other be reused by: business registers, tax agencies, statistical offices, pensions organisations, bank, insurers and other. It is however necessary to note that the reuse value comes primarily from decisions of the adopters to comply with utilise an existing standard instead of developing of individual solutions.

Table 9: Summary of the analysis of XBRL/iXBRL compliance analysis of compliance of the XBRL/iXBRL with the criteria specified according to item 5.8.2.

6. Summary

The following table summarises XBRL/iXBRL compliance against all specified criteria.

Criterion	Conclusion
The proposed ESEF should be harmonised across the EU Member States	Significant compliance
Is XBRL/ iXBRL a standard, a neutral reference model to which Member States can refer?	Full compliance
Are Member States and their National Competent Authorities able to contribute to the introduction of XBRL/iXBRL in the EU?	Significant compliance
Can all key stakeholders be involved in establishing the XBRL/iXBRL in the EU?	Significant compliance
Is it possible to implement XBRL/iXBRL as the ESEF in a standardised manner across the EU Member States without significant differences?	Significant compliance
The proposed ESEF should be beneficial for issuers, investors and competent authorities.	Significant compliance
The proposed ESEF should be beneficial for issuers.	Partial compliance
The proposed ESEF should be beneficial for investors.	Significant compliance
The proposed ESEF should be beneficial for competent authorities.	Significant compliance
The proposed ESEF should make reporting easier	Significant compliance
Does XBRL or Inline XBRL allow automated retrieval of data for production of AFRs or parts thereof?	Full compliance
Does XBRL / Inline XBRL support the process of preparation of the AFR?	Significant compliance
Is Inline XBRL / XBRL perceived as making reporting easier?	Partial compliance
The proposed ESEF should facilitate accessibility to issuer information across the European Union.	Full compliance
The proposed ESEF should facilitate analysis and comparability of annual financial reports	Significant compliance
The proposed ESEF should be feasible to be implemented operationally across the European Union	Significant compliance
The proposed ESEF should facilitate operational governance and control of changes	Full compliance

[67] http://news.cision.com/fi/verohallinto/r/standardoitu-talousraportointi-automatisoi-yritysten-ilmoittamista,c9863266

The proposed ESEF should strengthen opportunities to reuse data	Full compliance

Table 10: Summary of XBRL/iXBRL compliance against all specified criteria

Based on the above findings it is possible to draw a conclusion that the XBRL/iXBRL is generally compliant with the Transparency Directive requirements, however, if chosen as the ESEF, XBRL/iXBRL implementation should be accompanied by thorough consideration of the adoption scenario, rules and conditions.

Cost-benefit analysis

7. Implementation approaches

Creation of an XBRL/iXBRL report may be achieved in multiple ways with various involvement of issuers' human and financial resources and with use of a variety of existing off-the-shelf tools, customised solutions or services.

Selection of an approach by an issuer depends among others on:

- the type of information requirements being exchanged;
- legacy systems involved in preparation of data to be included in a report;
- requirements of the recipient and the infrastructure it provides.

In terms of the information requirements, the approach for production of a report heavily depends on the amount of data to be transferred, frequency of data exchange and the required set of transformations of internal data needed to produce the expected numbers or textual descriptions. The more data and the more often is required to be sent, the process would most likely need to be automated in order to meet the reporting timelines. Similarly, if the derivation of reported data is not trivial and requires complex transformations, the common strategy is automation of these processes. On the other hand, creation of a report often requires also manual intervention, especially when the information requirements cover vast amount of textual descriptions.

Data to be reported usually comes from multiple systems within an organization. Solutions enabling internal or external reporting are commonly able to reach many data sources and compile reports by applying data transformations and programmed processes. The XBRL tagging could be therefore applied on this specifically prepared output or embedded in the process of data compilation where tags are linked to internal set of accounts. Application of XBRL on certain level in the reporting process depends on the legacy systems and procedures applied by an issuer.

Implementation approach may depend also on the requirements of the recipient which relate in particular to the format of the exchanged file (XBRL instance document or an inline XBRL file) and whether or not an issuer's specific extension to the provided taxonomy is allowed or required. Moreover, an institution collecting data may prepare and contribute to a solution enabling creation of XBRL/iXBRL in a user's interface delivered as part of a reporting platform or as a standalone application. One example is the Danish Business Authority who created a web portal enabling issuers to key accounting data in form in order to produce iXBRL[68]. EIOPA on the other hand created a standalone application enabling importing data from Excel or manual edition of reports in a desktop application with XBRL export function[69].

Various options for the above discussed aspects result in the following approaches for issuers in terms of production of XBRL reports:

- outsourcing of the XBRL report creation process to a specialised third party;
- use of form-based solution offered by a recipient or a third party;
- adding XBRL tags to a report created in other common format (e.g. MS Word, MS Excel, PDF) using off-the-shelf third party tools;
- integrating production of XBRL reports in the existing systems of an issuer using in-house resources or comprehensive disclosure management solutions available on the market.

[68] https://indberet.virk.dk/myndigheder/stat/ERST/Regnskab_20

[69] https://eiopa.europa.eu/regulation-supervision/insurance/tool-for-undertakings

Each of these approaches is described separately in the next sections of this document followed by a comparison of benefits and challenges.

7.1. Outsourcing

One way to comply with XBRL/iXBRL reporting requirements for an issuer is to outsource preparation of a report to a third party. In such scenario, the role of a reporting entity is limited to:

- providing for access to the data (accounts) or a report in some common format (like MS Excel, Word or PDF) to a third party (specialized entity),
- assisting the contracted third party experts in preparation of a report and tagging (including, if applicable, creation of a taxonomy extension).

The level of involvement of the filter depends on the type of data to be exchanged, the functionality of internal operational and reporting systems used by an issuer and cultural preferences.

Financial statements are commonly prepared by issuers using their accounting systems or other dedicated piece of software. In some countries (e.g. US, Japan or Denmark) this task is outsourced to external, specialized companies who use or connect to the high level entries in the accounting systems in order to produce the numbers and prepare a report. This is done in collaboration with an issuer, especially to support the quantitative data with textual descriptions (to cover sections of a financial report that explain accounting policies, company specific events that occurred in the reporting period, etc.). These specialized companies, apart from preparation of a financial statements in paper, PDF or other non-structured format, offer also services related to XBRL tagging.

As a result, the role of the third party, depending on arrangements, is to create a report, prepare a taxonomy extension (if applies) and tag data. The result is a tagged report (XBRL/iXBRL file) associated (if applicable) with a taxonomy extension.

The process of supporting the third party experts in defining extension concept and applying correct tags may take advantage of tools enabling collaboration. This is to ensure effective communication, review and oversight of works. At the end it is the filer who is responsible for the reported data and may be held liable in case the report is invalid.

The outsourcing approach is sometimes applied as an interim solution during the period in which issuers prepare their resources or systems for a more automated creation of XBRL information and when the timeline envisaged by the regulator for the first submissions is short and there is the risk of not meeting the deadline without external assistance.

7.2. Form-based solution

The form-based approach is possible to apply when the content of a report may be standardised and resembled as a template to be completed by issuers. Rendering of the form may be driven by the taxonomy linkbases and XBRL technical constructs applied. This is a common situation in tax, statistics, banking and insurance regulatory environments where public institutions or supervisors define information requirements as a set of templates and guidelines explaining the expected content of each field (row/column/cell) in the forms.

In this scenario data recipients (regulators, supervisors, etc.) may provide a mechanism to manually input the data in the form and produce the XBRL/iXBRL file. This solution may be part of a reporting platform, available after login and authentication with a web-based interface and customised layout for a given reporting scenario and the type of filer.

In case more data is exchanged, a desktop application may be provided instead with possibility to upload larger amount of data from other formats (e.g. CSV or MS Excel) and enable temporary local storage (e.g. in a database) to mitigate the risk of loss of connection and data.

As a result, the XBRL/iXBRL may be fully hidden from the issuers using such solution to create their reports. Application of the XBRL standard helps however the recipient in defining and maintaining metadata as well as imposing quality controls and checks that may be translated and applied on the interface. On the other hand, the recipient is responsible for proper conversion of data to XBRL, maintenance and support of such solution.

Typically, the solution provided by a regulator is aimed at smaller entities with lower capabilities of purchasing tools or developing software components that enable integration with internal systems and automated production of XBRL/iXBRL reports. For larger issuers reporting substantial amounts of data it may not be feasible to manually rekey the values in a form given the reporting timeline (i.e. time after the reference period, when the report is expected to be submitted). Therefore, they need to (at least) partially automate the process, assisted by commercial tools that enable edition of data using similar form based approach (typically the layout of tables is auto-generated, based on metadata in the XBRL taxonomy) and providing technical interfaces (such as ODBC[70] or specific CSVs[71]) to feed larger amount of data.

The solution provided by a regulator is often perceived as a benchmark to evaluate outputs from commercial counterparts providing usually more comprehensive functionalities. Moreover, regulators tend to decommission their tools after a certain period, when market becomes educated and mature enough. On the other hand, to provide a solution from the regulator may meet demand but may reduce the supply, resulting in a very slow or inexistent market evolution.

From the information requirements perspective, the creation of a financial statement using a form based solution is possible when the accounting regulations prescribe a common presentation format. This is a case of several national GAAPs (e.g. German, Polish or Danish) but does not apply to the principle based IFRSs, in which materiality and fair and true representation of the financial situation are the driving factors behind the structure of a report. Nevertheless, a few regulators decided to provide a solution that is both form based and flexible at the same time to enable creating XBRL/iXBRL IFRS reports, where Primary Financial Statements (PFSs) are tagged in detailed while notes are not tagged or are block tagged.

7.3. Annotating report with XBRL tags

Application of XBRL/iXBRL by a regulator may be a consequence of introduction of new reporting requirements or a shift in technology for already exchanged data from a legacy format (paper, PDF, proprietary CSV or XML) to a structured standard solution such as XBRL/iXBRL. In case of the latter, the process and systems that produce the report are established and the tagging exercise may be performed as a last step before the submission.

Such approach is commonly called bolt-on and is supported by a dedicated piece of software that is able to present the content of the taxonomy provided by a regulator next to a report created by an existing system in some other format (usually MS Word or Excel) and adds necessary extension concepts to the taxonomy in order to tag the reports' data. Such application is usually a desktop tool

[70] ODBC (Open Database Connectivity) is a standard application programming interface (with drivers available for most platforms and databases) for accessing database management systems.
[71] CSV (comma-separated values) file stores numeric and non-numeric tabular data in plain text file, where each line if one data record.

but it may be also a SaaS web-based technology (commonly referred to as a cloud solution). The main difference between the two, apart from the maintenance process -which is driven by the technology, is the business model and pricing: desktop bolt-on approach is usually license-based, while the cloud solution enables more flexible charging per filing and per user.

In either case, the tagging (and taxonomy extension if applies) is performed by an issuer. As mentioned above, the input is a report. It may be one or many files. Format commonly consumed by bolt-on/cloud solutions are MS Word, MS Excel, PDF (which is typically converted to MS Word before loading) and HTML. The taxonomy to be used for tagging may be embedded in the tool or it can be the filer who selects a taxonomy folder or an entry file to load its content. This content is presented using metadata stored in linkbases (hierarchical relationships, labels, references, etc.). The other part of the screen is used to display the actual report: its paragraphs, tables, bullet points, etc. The filer marks data in the report and looks for corresponding tags in the taxonomy, based on their placement among other elements or using text search. In case that taxonomy extensions are allowed, an issuer is able to add company specific concepts. Once all data is either detailed or block tagged, a user is able to generate a valid XBRL or iXBRL report (together with corresponding taxonomy extension).

Bolt-on applications and cloud solutions are intuitive tools requiring from users at maximum an intermediate level of understanding of XBRL standard and taxonomies and a few hours of training on the interface and features. The most advanced solutions are able to automatically pre-tag reports by reading the tabular structures and applying sophisticated text matching techniques for finding corresponding taxonomy concepts. They may also learn based on the suggestions and selected tags in order to accelerate the tagging process in subsequent filings.

7.4. Integrated

An ultimate approach for production of XBRL/iXBRL is to integrate the taxonomy extension and tagging in the systems and automated procedures applied in process of aggregating data and producing the report. This means mapping of accounts against the taxonomy concepts (including extensions). Once implemented, this approach enables smooth and seamless production of tagged reports.

Automation covers the quantitative data that may be extracted and transformed from the issuers systems. Descriptive information is usually added manually but the numbers it refers to may be populated automatically.

An IT solution enabling such functionalities may be developed in-house, purchased and integrated in the IT infrastructure of an issuer, or become available as a new functionality to a legacy IT system when the existing software provider enhances its product with XBRL capabilities. Such component is commonly called a disclosure management or regulatory filing system. It enables linking to multiple data sources by providing various technical interfaces. It may be supported with a user interface to define necessary data transformation. As a result, data flows seamlessly from the detailed accounts to the aggregated figures in reports.

7.5. Comparison of approaches

Diagram presented on Figure 1 describes schematically the process, actors and artefacts involved in various approaches explained above.

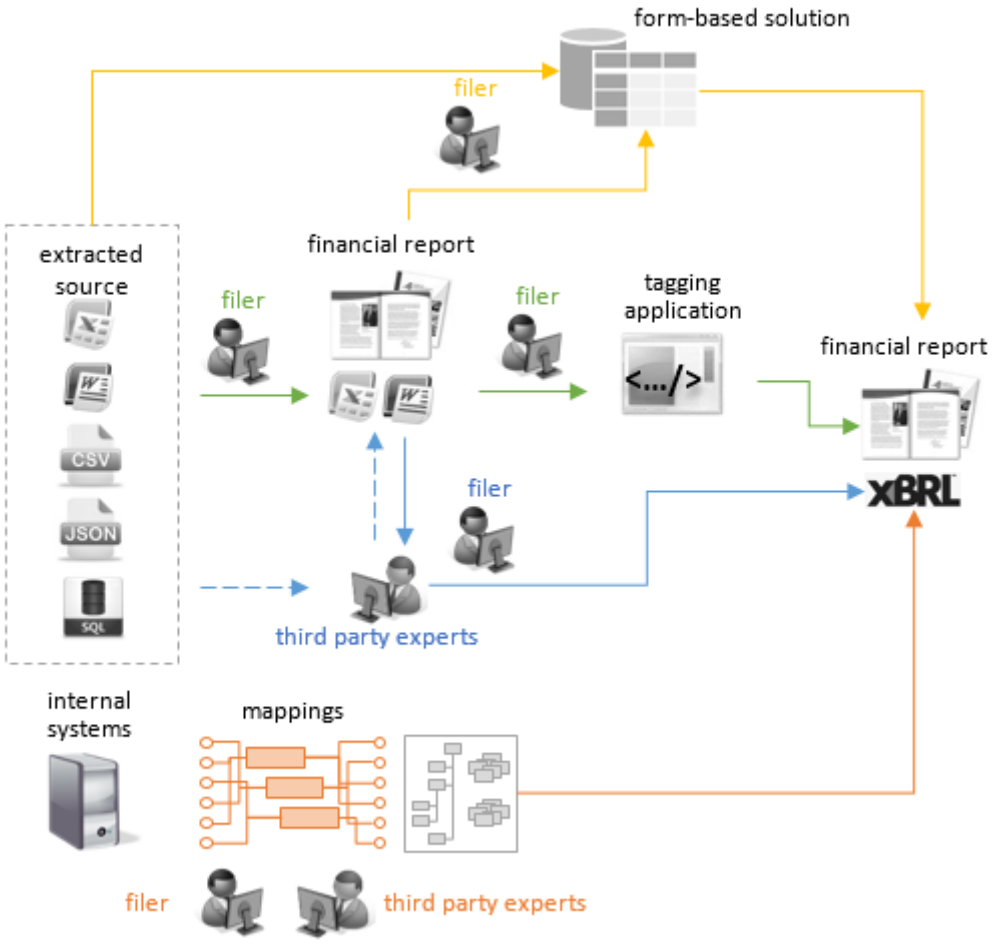

Figure 1: Implementation approaches

Outsourcing approach process is described above using orange colour. As explained in the previous section, contracted third party experts, depending on the arrangement, prepare the financial report and tag it or use a report provided by an issuer to annotate it against the XBRL taxonomy concepts.

Form based approach is marked in yellow colour and presents a process in which an issuer manually keys the values in forms or uploads data in a specified format to an interface provided by a regulator or a software vendor in order to produce a XBRL report.

Bolt-on (including cloud) approach process, presented in green, involves the filer only. A report is tagged using a dedicated piece of software or web-based application on SaaS basis.

Orange colour represents the integrated approach where a filter and third party experts define and develop/generate the extraction layer and transformation mechanism that produces the tagged reports automatically.

Decision on which approach to apply depends on a number of factors, as explained in the previous sections of this document. There is not a best single solution for all issuers or applicable in every reporting scenario. Each approach has advantages, disadvantages and shall be considered from the individual perspective of an issuer, including legacy systems and processes, available resources and willingness to internally or externally seize opportunities that structured data such as XBRL may provide. Table 11 presents a condensed comparison of various approaches from the benefits and challenges perspective.

Approach	Benefits	Challenges
Outsourcing	▪ comprehensive support of knowledgeable third party experts ▪ only basic taxonomy knowledge required to review the tagging ▪ low risk of not meeting reporting obligations ▪ no major investment required on filer side ▪ minimal impact on the existing processes	▪ low control over tagging (limited to review) ▪ limited possibility to reduce the cost of subsequent filings ▪ additional effort at the end of the reporting process and lack of internal capabilities or possibility to leverage the benefits of structured data
Form-based solution	▪ no need for XBRL knowledge by issuers ▪ provision of a solution by a recipient may need smooth implementation process in initial stages ▪ cost may be incurred by a recipient and distributed among many issuers ▪ potential to purchase Commercial Off the Shelf (COTS) solutions with higher level of data integration and additional features	▪ reports layout needs to be standardised or modifications are allowed only in predefined places ▪ additional effort at the end of the reporting process: manual, time consuming and error prone rekeying of data in case no external data integration is possible ▪ risk of limited wider market support for more comprehensive solutions supporting structured data when regulator provides the solution ▪ no benefits outside of this reporting context ▪ supports smaller issuers and reports with lower quantity of data in case no data integration is possible ▪ dependency on a third party solution outside of the filer's control ▪ limited number of predefined features (which may be extended on commercial basis)
Annotating reports with XBRL	▪ limited investment ▪ control over result	▪ requires familiarity with XBRL and the toolkit ▪ additional (potentially time consuming) effort at the end of the reporting process with limited benefits outside of the reporting context ▪ may require additional audit of external party to review correctness of tagging
Integrated	▪ comprehensive approach ▪ cost-saving in mid to long term when subsequent reports may be produced semi-automatically ▪ control over the process and result ▪ enhanced reporting in other contexts (internal or external) ▪ additional analytical possibilities based on structured data ▪ potentially existing solutions applied by an issuer may become XBRL enabled and support the process	▪ significant upfront investment (cost and time) ▪ potentially high level of complication in implementation ▪ potentially more detailed knowledge on XBRL and taxonomies required (unless integration is performed by external consultants)

Table 11: Benefits and challenges of various implementation approaches

In general, implementation of an integrated approach comparing to other alternatives is more expensive and time consuming as a one-time investment (unless the legacy system used by an issuer becomes XBRL enabled at a reasonable cost). The end result, however, is a report produced automatically and instantly at any point of time with a clear drill down to the underlying figures. Maintenance is limited to the updates in information requirements resulting from changes in standards or expectations of regulators. Nevertheless, once the backbone of a solution is set up, new data can be easily derived and tagged resulting in more analytical and decision making opportunities based on the underlying structured data.

Outsourcing, form-based and bolt-on approaches, basically add a last step in the report creation process that covers XBRL tagging and do not enhance the reporting supply chain. The initial investment is relatively lower comparing to integrated approach but the ongoing expenses may stay on the similar level rather than be significantly reduced. Illustrative comparison of one-off and ongoing effort in various implementation scenarios is presented on Chart 1.

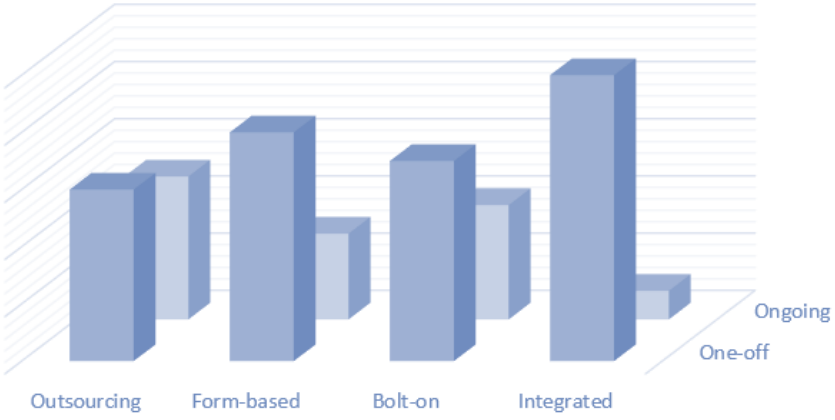

Chart 1. Illustrative example of one-off and ongoing effort in various implementation approaches.

Comparison presented above is an exemplary situation that may vary depending on size of a report, features provided by tools, legacy systems of issuers and other factors. As explained above, the bolt-on solution may offer functionalities such as auto-tagging based on text match, form-based solution may be provided free of charge by a recipient removing the cost components or be a generic commercial off the shelf (COTS) application enabling loading of any taxonomy or enabling data import from various formats. Implementation of an integrated approach may involve in-house developments and/or application of commercially offered software components or more extensive use of legacy systems that may become XBRL aware and offer new set of features to work with structured formats. Therefore, the actual impact may differ in particular cases. The next sections of this report present the numbers gathered through surveys, desk research and the proof of concept exercise for various implementation approaches to support the illustrative example.

Chart 2 presents the opportunities stemming from application of a structured format in various implementation approaches, which result in additional internal and external reporting possibilities and improvements to analytical and decision making processes.

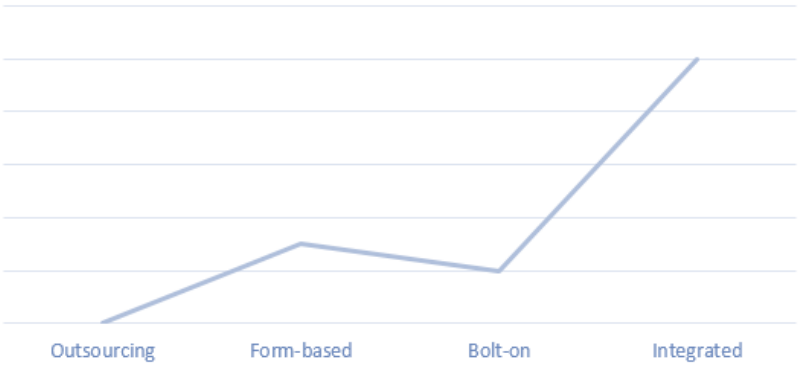

Chart 2. Opportunities from use of structured format in various implementation approaches.

As presented above, and explained earlier in this document, integrated approach offers the most extensive opportunities resulting from application of structured data. Outsourcing brings no benefits in this area while bolt-on and form-based provide on a similar level, which in case of the latter, could be leveraged in case some of the solutions offers extraction of data from the systems of issuers.

8. Research methodology

This research should allow to evaluate, to the extent possible, the effects of the introduction of the ESEF on the stakeholders directly and indirectly affected, as well as the indirect cost or market effects that the implementation of ESEF may create. Below sections describe the methodology used in the preparation of this CBA.

8.1. Data acquiring methods

For the purposes of the analysis, following sources were selected to acquire data necessary to assess the impact of ESEF on all concerned markets participants:

- Online surveys/questionnaires (primary research);
- External desk research including case studies and reports (secondary research);
- Reference model (proof-of-concept based on the work conducted by external experts).

8.1.1. Online surveys/questionnaires

Main objective of the primary research technique was to reach out to international stakeholders to understand what consequences (qualitative and quantitative impacts, costs and benefits) the use of the inline-XBRL and XBRL formats would have on NCAs, issuers and other market participants.

Data was collected through a combination of interviews and questionnaire responses, which collectively formed the ESEF cost-benefit analysis survey. This survey covered three key focus groups, including:

- regulatory authorities which implemented XBRL or iXBRL in their jurisdictions;
- issuers that are providing their financial information in XBRL and/or iXBRL;
- intermediary organizations which are supporting issuers in reporting their XBRL and/or iXBRL reports.

8.1.2. Questionnaire content

The survey scheme, provided in a separate annex, formed the basis for the interviews, as well the questionnaire itself. The questionnaires were divided into a number of conditionally available sections, each corresponding to a different implementation followed by the regulatory authority within a

particular jurisdiction and combined with the tagging requirements for AFRs. General overview of the reportable parts of the survey is provided in the Table 12 below:

Survey type	Section description	Number of questions
Regulatory authorities	Section 3 – *About the respondent* – a set of general questions about the regulator, including the organisation name and credentials of the respondent.	4 mandatory questions (free text)
	Section 4 – *Implementation approach* – selection of the implementation scenario applied within the regulatory authority. Each option chosen by the responded deployed different variations of *Cost of implementation* and *Benefits* sections.	1 mandatory drop-down selection
	Section 5-7 – *Cost of implementation* – a set of questions concerning the resources required or spent for the purposes of implementation of the specific XBRL/iXBRL implementation approach.	14 questions, of which: ▪ 4 mandatory; ▪ 2 single choice selections ▪ 3 numeric value restrictions (greater than zero)
	Section 8-10 – *Benefits* – a set of questions regarding the overall improvement (if any) of the reporting operations within the organisation, achieved with introduction of XBRL/iXBRL standard.	6 questions, of which: ▪ 5 mandatory single choice selections ▪ 1 free text
Issuers	Section 3 – *About the respondent* – a set of general questions about the filer/reporting entity, including company size and credentials of the respondent.	6 mandatory questions, of which: ▪ 3 single choice selections ▪ 3 free text
	Section 4 – *Implementation approach* – selection of the implementation method applied within the company in order to produce XBRL/iXBRL reports. Each option chosen by the responded deployed relevant *Context* section.	1 mandatory drop-down selection
	Sections 5-8 – *Context* – selection of the level of tagging covered in the discussed implementation scenario. Each option chosen by the responded deployed different variations of *Details* section.	1 mandatory drop-down selection
	Sections 9-20 – *Details* – set of questions concerning the resources required or spent for the purposes of production of XBRL/iXBRL reports with the selected implementation scenario.	9 (8 for the *cloud* approach) questions, of which: ▪ 3 mandatory ▪ 1 multiple choice selection ▪ 1 single choice selection ▪ 6 (5) numeric value restrictions (greater than zero)
Intermediary organisations	Section 3 – *About the respondent* – a set of general questions about the software/service provided, including the company profile offerings and credentials of the respondent.	6 mandatory questions (free text)
	Section 4 – *Services or products* – selection of the implementation method applied by the intermediary in order to provide tools or services related to the production of XBRL/iXBRL reports. Each option chosen by the responded deployed relevant *Context* section.	1 mandatory drop-down selection
	Sections 5-8 – *Context* – selection of the level of tagging covered in the discussed implementation	1 mandatory drop-down selection

	scenario. Each option chosen by the responded deployed different variations of *Details* section.	
	Sections 9-20 – *Details* – set of questions concerning the resources required or spent for the purposes of production of XBRL/iXBRL reports with the selected implementation scenario.	7-9 questions, of which: ▪ 2 mandatory single choice selections ▪ 6-4 numeric value restrictions (greater than zero) ▪ 1 free text

Table 12: Content of the ESMA ESEF surveys

8.1.3. External desk research

In the event where the survey responses would not provide sufficient and reliable quantitative estimates, secondary research measures were established. The analysis was complemented by researching the existing resources in order to collect supplementary data from other market participants, originally not involved in the sample interviewed using the questionnaire method. Two key sources were examined during the desk research, including:

a) Online market research
b) International case studies

8.1.3.1 Online market research

For the online market research, web search was carried out to acquire reliable information on the costs and licenses, software and service offerings, as well as implementation aspects endorsed by the particular solution providers, recognized in the local and international communities working with the XBRL and/or iXBRL standard. Part of the research involved dissecting the marketing materials and pricelists published by vendors and intermediaries, contacting sales departments to acquire more detailed information, or analysing the customers' references.

8.1.3.2 International case studies

The other source of evidence was acquiring and analysing the already existing research results and statistics published by different international organisations, academics, governmental institutions and regulatory authorities within the jurisdictions with mature implementations of the XBRL and/or iXBRL standard. That involved reviewing the particular case studies, CBAs or public presentations and statements made by the representatives of the respective organisations.

8.1.4. Reference model (proof-of-concept)

An alternative method for acquiring reliable data in the process of secondary research was to establish a reference model based on the proof-of-concept (PoC) conducted by the external providers with international expertise in the subject of the CBA. For the purpose of this PoC the IFRS Taxonomy (version 2016)[72] was extended with extensible and technical constructs to enable complete tagging of the primary financial statements and selected note. The extension defined in total 84 ESMA-specific concepts, of which 19 were abstract items, 20 string items, 19 monetary items, 1 hypercube, 1 typed dimension, 1 other element and 23 domain members.

The following statements:

- [210000] Statement of financial position, current/non-current
- [220000] Statement of financial position, order of liquidity
- [310000] Statement of comprehensive income, profit or loss, by function of expense
- [320000] Statement of comprehensive income, profit or loss, by nature of expense

[72] See http://www.ifrs.org/XBRL/IFRS-Taxonomy/2016/Pages/default.aspx

- [410000] Statement of comprehensive income, OCI components presented net of tax
- [420000] Statement of comprehensive income, OCI components presented before tax
- [610000] Statement of changes in equity

were extended in presentation and definition linkbases with a hypercube, typed dimension and technical "name" and "value" concepts to enable tagging of additional data related to:

- Other element of assets
- Other element of equity
- Other element of liabilities
- Other element of profit (loss)
- Other element of comprehensive income
- Other element of cash flows from (used in) operating activities
- Other element of cash flows from (used in) investing activities
- Other element of cash flows from (used in) financing activities
- Other element of changes in equity

In case of the "Statement of changes in equity" three additional extended links were added to cover:

- [610001] Statement of changes in equity - other components of equity
- [610002] Statement of changes in equity - other changes in equity
- [610003] Statement of changes in equity - other components of equity and other changes in equity

Disclosure of operating segments component of the *Operating segments* note was extended with 22 domain members for reportable segments and 10 "name" and "value" technical constructs for *Other elements disclosed in operating segment.*

A tagging sample was prepared based on an Annual IFRS Consolidated Financial Statement of a European listed company, consisting of:

- Income Statement,
  Statements of Comprehensive Income,
- Statements of Financial Position,
- Statements of Changes in Equity,
- Statements of Cash Flows,
- Explanatory notes and disclosures.

The *bolt-on* desktop application and *cloud* solution approaches were selected for demonstration and analysis of the tagging process. After contacting several solution providers, three responded positively and were used for the purposes of the reference model (see Appendix A1. Tools selected for the reference model).

8.2 Target sample description

For the primary research, five representative jurisdictions were selected with proven and mature implementations of the XBRL and/or iXBRL format for the purposes of reporting financial information. That initially included Denmark, Chile, Japan, United States and United Arab Emirates.

Table 13 presents the target sample for this study to be contacted in order to receive observations and conclusions:

Group	Target (per jurisdiction)	Target (for all jurisdictions)
Regulatory authority	1	5
Issuers	9 (3 small, 3 medium and 3 large)	45

Intermediary organisations (software vendors and auditors)	3	15

Table 13: ESMA ESEF survey sample description

During the process of survey conduction, United Kingdom and Netherlands were included in the study to better take into account the EU perspective.

8.3 Survey distribution channels

The survey was scheduled to be facilitated mainly using Google Forms, however in the process of gathering feedback from the respective entities, it was communicated, that due to the security measures and policies within the respondents' organisations, the online questionnaire was in some cases inaccessible. Based on the survey scheme, Microsoft Word version of the questionnaire was prepared and distributed with use of electronic mail to those entities without access or permission to contribute via Google Services.

9 Results presentation

Below section compiles findings from the research with regards to the introduction of Inline XBRL as the European Single Electronic Format. Specifically, it contains quantitative estimates of compliance costs and details the analysis conducted with the data received.

9.1 Achieved sample description

The primary research conducted through a combination of interviews and questionnaires did not present a sufficient response rate for all respective groups, as initially planned in the target sample for this study. Below table summarises the achieved number of contributions:

Group	Target (for all jurisdictions)	Achieved
Regulatory authority	5	7
Issuers	45	10
Intermediary organisations (software vendors and auditors)	15	18

Table 14: Data sample achieved for the ESMA ESEF survey

In case of the regulatory authorities and intermediary organisation groups, the sample target was met and exceeded, however difficulties were faced in acquiring responses from the reporting entities which file their financial reports using XBRL and/or iXBRL formats. Table 15 outlines the responses by countries and the respondent groups:

Responses / Jurisdiction	Denmark	Chile	Japan	United Arab Emirates	United States	Other (United Kingdom & Netherlands)
Regulators	1/1	1/1	1/1	1/1	0/1	3
Issuers	1/9	1/9	2/9	0/9	4/9	2
Intermediaries	1/3	1/3	4/3	1/3	3/3	9

Table 15: Break down of survey responses by target group and jurisdictions

Responses were received from all of the initially selected jurisdictions except of one, which declined participation in the survey due to internal policies of the authority. to the sample group was expanded to include United Kingdom and Netherlands, with the valuable contributions from the local authorities.

The Survey that was focusing on obtaining input from the reporting entities submitting their financial statements using XBRL and/or iXBRL format did not reach the expected target sample, therefore it is

not representative statistically. Number of companies from the target jurisdictions were contacted both directly and indirectly with the following response rate:

Country	Number of companies	Facilitator of the contact	Response rate
Chile	37	BR-AG solely; identified during web research	1
UAE	18		0
UK	20+	BR-AG with assistance of local intermediary organisations and regulators	2
US	20+		4
Denmark	10+		1
Japan	10+		2

Table 16: Break down of survey responses by country and contacted reporting entities

Participation of the intermediary organisations exceeded the target sample in total, however the majority of the providers that did provide their responses were outside of the initially selected group of jurisdictions with the XBRL implementations. The target was met for the US and Japan, but a substantial amount of submissions came from United Kingdom (8) and Netherlands (1).

9.2 Online surveys/questionnaires

9.2.1 Survey for the regulatory authorities

Purpose of this survey was to gather evidence on the actual costs required on the regulatory side in order to implement XBRL and/or iXBRL standard to facilitate standardised electronic reporting of the financial information, and to learn from the experience of the successfully conducted international projects. The first set of questions was focused on identifying the maturity and size of the particular implementation in terms of timelines for introduction of the standard on the local market and number of reporting entities exposed. Table 17 presents the overview of submitted responses:

Respondent	Year of XBRL implementation	Total number of reporting entities
Regulator 1	2012	235,000
Regulator 2	2009	456 (of which: 390 securities issuers and 66 insurance companies, all reporting on quarterly basis)
Regulator 3	2011	approx. 1,500,000
Regulator 4	2009	3,000,000 (with voluntary filing of 2.2 million in the current year)
Regulator 5	2013	3,500 (primarily listed companies)
Regulator 6	2015	175
Regulator 7	2016	1700

Table 17: General responses to the survey from the regulatory authorities

From the maturity perspective, Regulators 2 and 4 are considered as pioneers in the selected sample, with the introduction of XBRL dated 2009. Given over six year of experience in working with the standard, the average maintenance costs, described later in the following sections, can be treated as stable and representative, comparing to the relatively new implementations of Regulators 6 and 7. In case of the reporting entities required to file XBRL and/or iXBRL reports, the selected sample presents different perspectives of the size of affected markets, starting from small groups of entities (Regulators 2, 5, 6 and 7), through medium (Regulator 1) to large implementations (Regulators 3 and 4).

Below sections describe in details quantitative responses submitted by the regulatory authorities and summarise the overall implementation and maintenance costs required on the regulatory side.

9.2.1.1 Implementation approach

Examined aspect

Implementation of XBRL/iXBRL is often phased and scoped in terms of tagging requirements. Commonly, this is divided by sections of the report and the level of tagging.

The first division breaks down the financial statement in:

- the primary financial statements [PFSs], typically including the face of balance sheet, income statement, cash flow statement and statement of retained earnings/changes in equity; and
- the set of notes and disclosures [NaDs], containing all other information not included in the PFSs.

The level of tagging determines the coverage and granularity of tagged data in a report. This aspect may be approached in three ways:

- detailed tagging of each individual piece of information (every number, description, date, etc. must be tagged separately);
- block tagging of entire sections of report as one piece; or
- no tagging where parts of the report may be exempted from tagging requirement.

The regulatory authorities were asked to select their current implementation scenario in order to subsequently provide estimates on various costs and benefits involved.

Primary research observation

It was discovered that all of the regulators which participated in the online survey have decided to ensure, at least to some extent, tagging of explanatory notes and disclosures. 71,4% of the respondents require detailed tagging of primary financial statements and notes (all or selected) and 2 out of 7 regulators allow for the block tagging of notes. Figure 2 depicts distribution of responses acquired through the online survey:

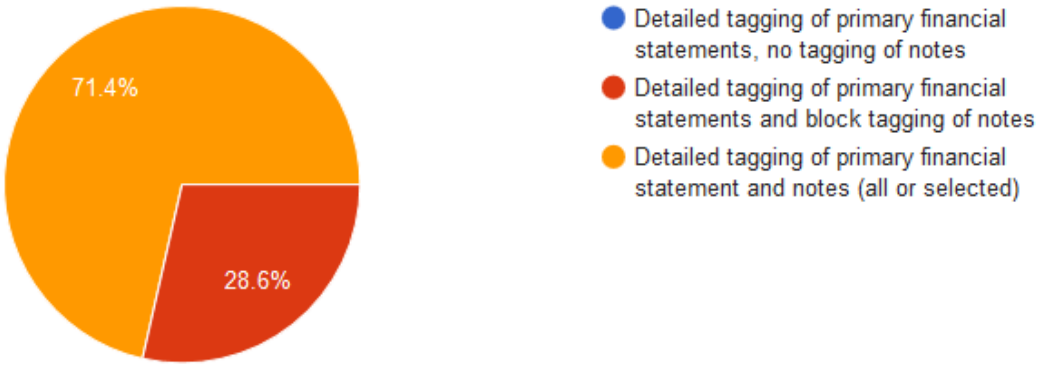

Figure 2: Implementation approach selected by the regulatory authorities

Details of the particular respondents' selections are presented in the Table 18 below:

Respondent	Selected implementation approach
Regulator 1	Detailed tagging of primary financial statements and block tagging of notes
Regulator 2	**Detailed tagging of primary financial statement and notes (all or selected)**
Regulator 3	Detailed tagging of primary financial statement and notes (all or selected)
Regulator 4	Detailed tagging of primary financial statement and notes (all or selected)
Regulator 5	Detailed tagging of primary financial statement and notes (all or selected)
Regulator 6	Detailed tagging of primary financial statements and block tagging of notes

Regulator 7	Detailed tagging of primary financial statement and notes (all or selected)

Table 18: Summary of the implementation approach selection in the online survey

Based on the selected implementation approach and tagging requirements, the regulatory authorities were presented with a number of questions regarding the particular resources required for the implementation of the respective scenario. Below sections present decomposition of one-time costs and maintenance efforts.

9.2.1.2 One-time costs

Examined aspect

Participants were asked if any external entities were involved in the XBRL reporting infrastructure development.

Primary research observation

It was discovered that all of the regulators which participated in the online survey have decided to include external advisors and service providers in the process of development of the XBRL reporting infrastructure. Majority of the respondents indicated that *the external entities were significantly involved in the development* (85,7% of the sample), while Regulator 2 selected *other* option, only stating that they hired the advisors for training and to prepare the XBRL taxonomy in 2008. Figure 3 depicts distribution of responses acquired through the online survey:

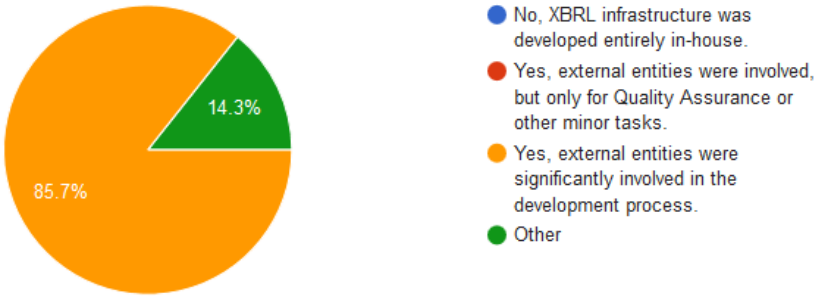

Figure 3: External entities involved in the development of XBRL reporting infrastructure

Details of the particular respondents' selections are presented in the Table 19Table 18 below:

Respondent	Involvement of external entities
Regulator 1	Yes, external entities were significantly involved in the development process.
Regulator 2	In 2008, external advisors were hired for training and to prepare taxonomy
Regulator 3	Yes, external entities were significantly involved in the development process.
Regulator 4	Yes, external entities were significantly involved in the development process.
Regulator 5	Yes, external entities were significantly involved in the development process.
Regulator 6	Yes, external entities were significantly involved in the development process.
Regulator 7	Yes, external entities were significantly involved in the development process.

Table 19: Summary of responses on the involvement of external entities

With respect to the selected implementation approach and tagging requirements, decision on involving the external parties to consult on the development of the XBRL reporting infrastructure was the same for both block tagging and detailed tagging of the notes and explanatory disclosures.

Examined aspect

Participants were asked how many man-days were spent internally (on employees) on the education on XBRL standard and related matters.

Primary research observation

71,4% of the regulators (5 out of 7) provided answers to this question with only 4 quantitative responses for analysis. Highest time dedicated to internal XBRL education and knowledge transfer was spent by the Regulator 7 which stated 200 man-days. Regulators 1 and 4 did not exceed one month spend on education, with a note from Regulator 4 that its employees are continually gaining a lot of experience during the ongoing reporting and maintenance processes. Regulator 2 dedicated 90 man-days to equip its personnel with the required XBRL skills. Regulator 5 did provide the response however stating that they relied fully on the external vendors for XBRL expertise. It is not safe to assume that the remaining regulators did not spent any time for the internal knowledge transfer, in some cases, as mentioned later in the analysis, it was hard for the respondents to calculate the exact numbers for the purpose of this analysis. Figure 4 depicts distribution of quantitative responses acquired through the online survey:

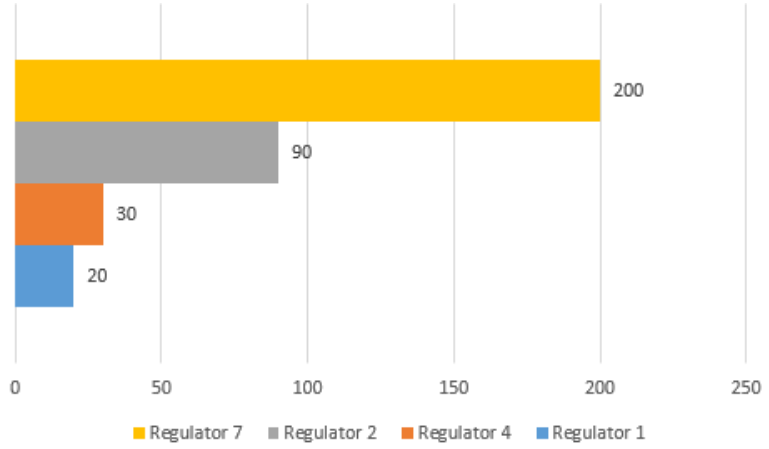

Figure 4: Number of man-days spent internally on XBRL education

Details of the particular respondents' selections are presented in the Table 20 below:

Respondent	Number of man-day spent on internal education
Regulator 1	20
Regulator 2	90 man-days
Regulator 4	One month plus ongoing experience
Regulator 5	N/A as we rely on external vendors for XBRL expertise.
Regulator 7	200

Table 20: Summary of responses on the man-days spent internally on XBRL education

The average number of man-days spent on XBRL education and knowledge transfer, calculated for the sample that provided responses is 68. Median for the sample is 30 man-days.

Examined aspect

Participants were asked how many man-days were spent externally (on stakeholders) on the education on XBRL standard and related matters.

Primary research observation

Similarly, as for the man-days spent internally, external knowledge transfer feedback was received from 5 out of 7 respondents (71,4%). Although not explicitly stated, the highest time dedicated to external stakeholders education was spent by the Regulator 5, which held 30 seminars related to XBRL. In addition to that, a preparer's guidelines were developed containing 500 pages. According to the Regulators 1 and 4, no education for external stakeholders was provided by the authorities. In case of Regulator 7, 20 man-days were spent to educate the market, while Regulator 2 dedicated 6 man-days for knowledge transfer and continuously delivers support to the undertakings. Figure 5 depicts distribution of quantitative responses acquired through the online survey:

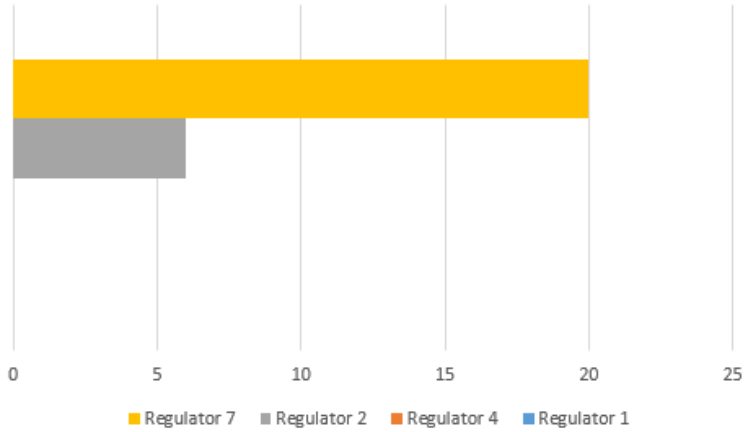

Figure 5: Number of man-days spent externally on XBRL education

Details of the particular respondents' selections are presented in the Table 21 below:

Respondent	Number of man-day spent on external education
Regulator 1	0
Regulator 2	6 man-days, but continuous support is delivered to companies and software undertakings
Regulator 4	None provided by our organisation
Regulator 5	We cannot calculate man-days. FYI, we developed preparers' guidelines (about 500 pages in total) and held seminars 30 times for external stakeholders.
Regulator 7	20

Table 21: Summary of responses on the man-days spent externally on XBRL education

The average number of man-days spent on XBRL education and knowledge transfer, calculated for the sample (57%) that provided quantitative and explicit responses is 6.5. Median for the sample is 3 man-days.

Examined aspect

Participants were asked to estimate the total cost of software licenses required for their XBRL implementation. The figures are presented in Euro.

Primary research observation

85,7% of the regulators submitted their response to this question (no statement from Regulator 3). Range for the evaluated cost of software licenses provided by the respondents was between 0.01 and 4.2 million EUR, therefore considered as substantial. Highest amount was spent by the Regulator 5, however as mentioned in the comments section, this figure covers not only the software licenses but also hardware dedicated for XBRL implementation. Hence, the actual difference between the cost spent only on software licenses (for the 71% sample) oscillates between 0.01 and 1.5 million EUR. In case of Regulator 7 the license fees were evaluated at 10,000.00 EUR and are considered as the lowest for all the regulators that participated in the survey. For the largest XBRL implementation in terms of the market affected (approx. 3 million reporting entities) which is the Regulator 4, the total amount spent on software was 1.5 million EUR. There is no strict correlation observed between the number of entities and the cost of licenses that were purchased for the purposes of the implementation of XBRL reporting infrastructure (e.g. approx. 0.5 million EUR spent by both Regulator 1 and 6 with substantial difference in number of issuers exposed to XBRL filing). Figure 6 depicts distribution of responses (excluding the Regulator 5, as the reported cost is shared with the hardware purchase) acquired through the online survey:

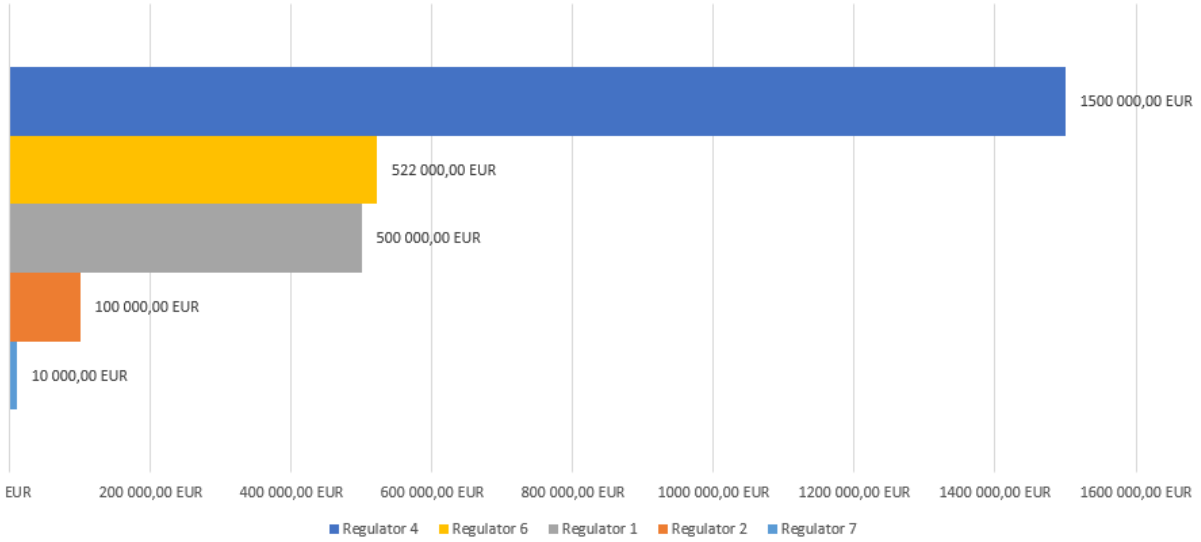

Figure 6: Total cost spent on software licenses by the regulatory authorities

Details of the particular respondents' selections are presented in the Table 22 below:

Respondent	Total cost of software licenses
Regulator 7	10,000.00 EUR
Regulator 2	100,000.00 EUR
Regulator 1	500,000.00 EUR
Regulator 6	522,000.00 EUR
Regulator 4	1,500,000.00 EUR
Regulator 5	4 200 000,00 EUR

Table 22: Summary of responses on the total cost spent on software licenses by the regulators

The average cost to be spent on acquiring the software licenses required for XBRL implementation, calculated for the sample (71,4%) that provide quantitative and explicit responses is 526,400.00 EUR. Median for the sample is 500,000.00 EUR.

Examined aspect

Participants were asked to estimate their total cost of hardware dedicated for XBRL implementation. The figures are presented in Euro.

Primary research observation

71,4% of the regulators submitted their response to this question with only 3 explicitly stated figures spent on the hardware dedicated for XBRL implementation. Range for the evaluated cost of hardware provided by the respondents was between 20 and 500 thousand EUR. In case of Regulator 7 the hardware was purchased for 20,000.00 EUR and is considered as the lowest cost for all the regulators that participated in the survey. Regulator 1 evaluated its costs at 50,000.00 EUR while the highest amount, 0.5 million EUR, was spent by the Regulator 4, with a note that it could be provided as hosted services. Regulator 2 was unable to calculate the cost dedicated for XBRL solely as it is used also for other processes. As mentioned in the licenses section, Regulator 5 spent in total for software and hardware 4.2 million EUR. Figure 7 depicts distribution of responses (excluding the Regulator 5, as the reported cost is shared with the software license purchase) acquired through the online survey:

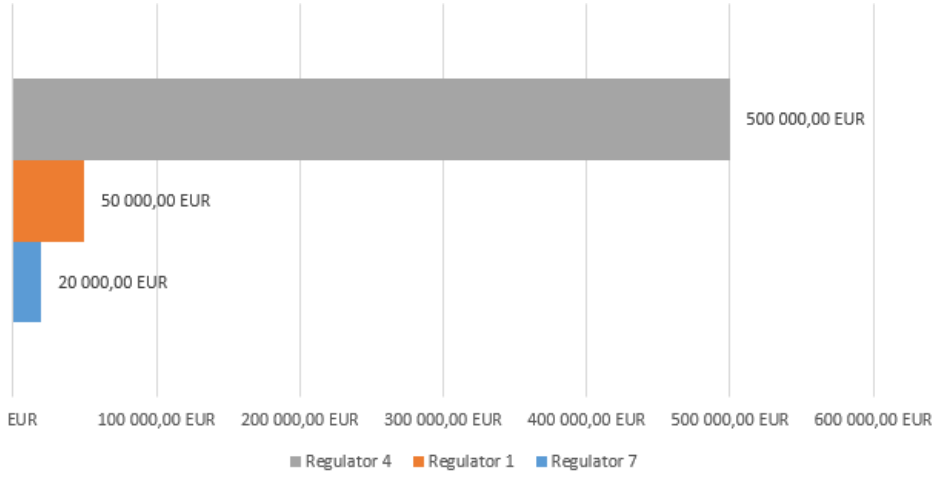

Figure 7: Total cost spent on hardware by the regulatory authorities

Details of the particular respondents' selections are presented in the Table 23 below:

Respondent	Total cost of hardware dedicated for XBRL implementation
Regulator 1	50,000.00 EUR
Regulator 2	There is not a dedicated hardware only for XBRL
Regulator 4	500,000.00 EUR but could be provided as hosted service
Regulator 5	Please see our answer for software licenses. We cannot calculate the separate cost for software or hardware.
Regulator 7	20,000.00 EUR

Table 23: Summary of responses on the total cost for hardware dedicated to XBRL implementation

The average cost to be spent on acquiring the hardware dedicated for XBRL implementation, calculated for the sample (42,8%) that provide quantitative and explicit responses is 190,000.00 EUR. Median for the sample is 50,000.00 EUR.

Examined aspect

Participants were asked how many man-days was internally spent on implementation of XBRL solution for reporting.

Primary research observation

57% of the regulators submitted their responses to this question, with a range of figures oscillating between 200 and 1000 man-days that were spent internally on the implementation of XBRL reporting infrastructure. The highest amount of resources were dedicated by the Regulator 1, with stated 1000

man-days spent internally by the authority's personnel. In case of Regulator 2, 480 man-days were devoted to the XBRL implementation, while Regulator 7 spent 250. The most efficient, in terms of dedicated resources, was Regulator 4, where in order to establish the infrastructure open for 3 million reporting entities, 200 man-days were dedicated for the setup processes. Figure 8Figure 6 depicts distribution of responses acquired through the online survey:

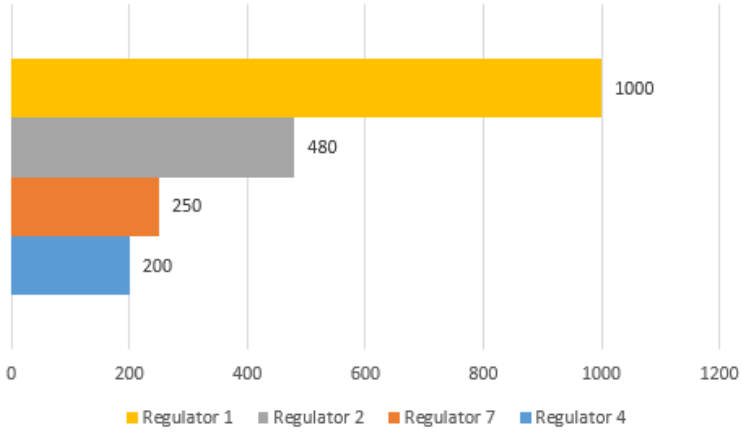

Figure 8: Number of man-days spent internally on XBRL implementation

Details of the particular respondents' selections are presented in the Table 24 below:

Respondent	Number of man-days spent on implementation
Regulator 4	200
Regulator 7	250
Regulator 2	480
Regulator 1	1000

Table 24: Summary of responses on the man-days spent internally on implementation:

The average number of man-days spent internally on XBRL implementation, calculated for the sample (57%) that provided quantitative and explicit responses is 482.5. Median for the sample is 365 man-days.

9.2.1.3 Maintenance costs

Examined aspect

Participants were asked if any external entities were involved in the maintenance of the XBRL reporting infrastructure.

Primary research observation

It was discovered that all of the regulators which participated in the online survey have decided to include external advisors and service providers in the process of maintenance of the XBRL reporting infrastructure, except of Regulator 2 which conducts the maintenance entirely in-house. Figure 9 depicts distribution of responses acquired through the online survey:

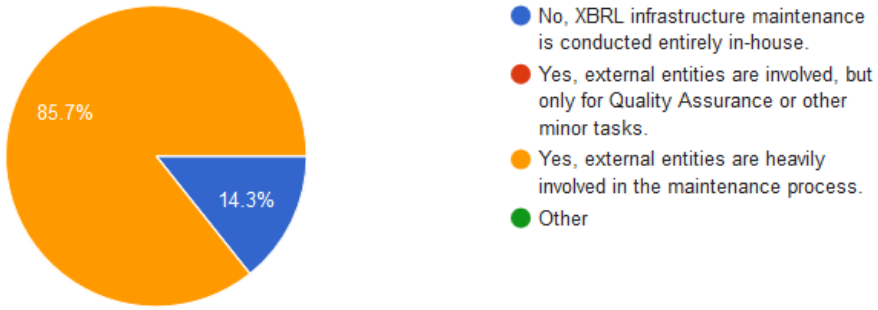

Figure 9: External entities involved in the maintenance of XBRL reporting infrastructure

Details of the particular respondents' selections are presented in the Table 25.

Respondent	Involvement of external entities
Regulator 1	Yes, external entities are heavily involved in the maintenance process.
Regulator 2	No, XBRL infrastructure maintenance is conducted entirely in-house.
Regulator 3	Yes, external entities are heavily involved in the maintenance process.
Regulator 4	Yes, external entities are heavily involved in the maintenance process.
Regulator 5	Yes, external entities are heavily involved in the maintenance process.
Regulator 6	Yes, external entities are heavily involved in the maintenance process.
Regulator 7	Yes, external entities are heavily involved in the maintenance process.

Table 25: Summary of responses on the involvement of external entities in the maintenance process

Examined aspect

Participants were asked how many man-days (on average) are required for yearly maintenance of XBRL reporting infrastructure.

Primary research observation

85,7% of the respondents submitted their response to this question with only 4 explicitly stated number of man-days spent on the maintenance of XBRL reporting infrastructure. Lowest effort for the maintenance processes is dedicated by the Regulator 4, with average 15 man-days required yearly. The figure submitted by the Regulator 6 was 105, however it is only the first year after XBRL was introduced, therefore the reported number of man-days may be subject to change in the upcoming years. Regulator 2 stated that 3 full-time professionals are devoted to the XBRL infrastructure maintenance, although the number of man-days was not disclosed. With reference to Regulator 5, it was mentioned that all the maintenance services (not only related to XBRL systems) are outsourced and cannot be translated into man-days. Figure 10 depicts distribution of responses acquired through the online survey:

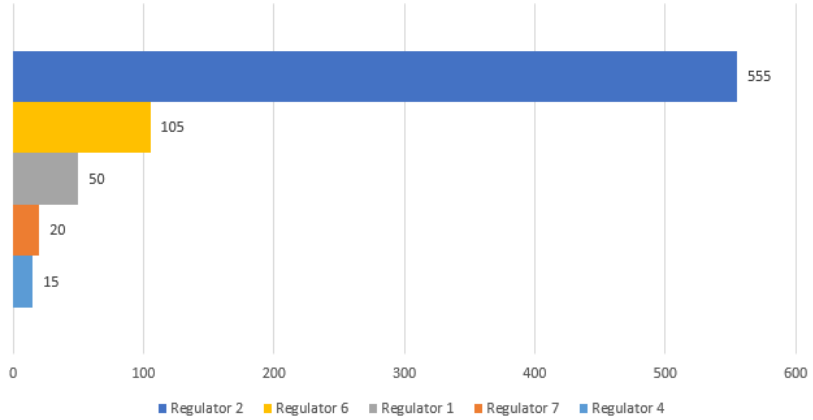

Figure 10: Number of man-days required for the maintenance of XBRL reporting infrastructure

Details of the particular respondents' selections are presented in the Table 26Table 18 below:

Respondent	Man-days required for the maintenance of XBRL infrastructure
Regulator 1	50
Regulator 2	555 (3 full time professionals are in charge of XBRL)[73]
Regulator 4	15
Regulator 5	We cannot calculate man-days. Maintenance is outsourced and the annual outsourcing cost is EUR 2.0 million.
Regulator 6	105
Regulator 7	20

Table 26: Summary of responses on amount of man-days required for XBRL maintenance

The average number of man-days spent on XBRL implementation, calculated for the sample (71.4%) that provided quantitative and explicit responses is 149. Median for the sample is 50 man-days.

Examined aspect

Participants were asked what is the average yearly cost of maintenance of software and hardware dedicated for XBRL implementation. The figures are presented in Euro.

Primary research observation

6 out 7 regulators (85,7% of the sample) submitted their response to this question. The highest amount spent on the maintenance of the systems was stated by Regulator 5, however the figure includes not only XBRL infrastructure but also other services like browser viewing and PDF portal, therefore was not calculated to the average number for the whole sample. Regulator 4 spends yearly 300 thousand EUR for the maintenance of the software and hardware dedicated to XBRL reporting infrastructure while Regulator 1 requires only half of the above costs. The lowest maintenance costs are allocated by Regulator 2, only 39 thousand EUR, due to three XBRL professionals working full-time at the institution. For the relatively new implementations (Regulators 6 and 7), the maintenance costs oscillate between 50 and 78 thousand EUR, however are not treated as stable and may be subject to change. Figure 11 depicts distribution of responses acquired through the online survey:

[73] Calculated for the purposes of the analysis, 1 full time professional translated into 185 man-days.

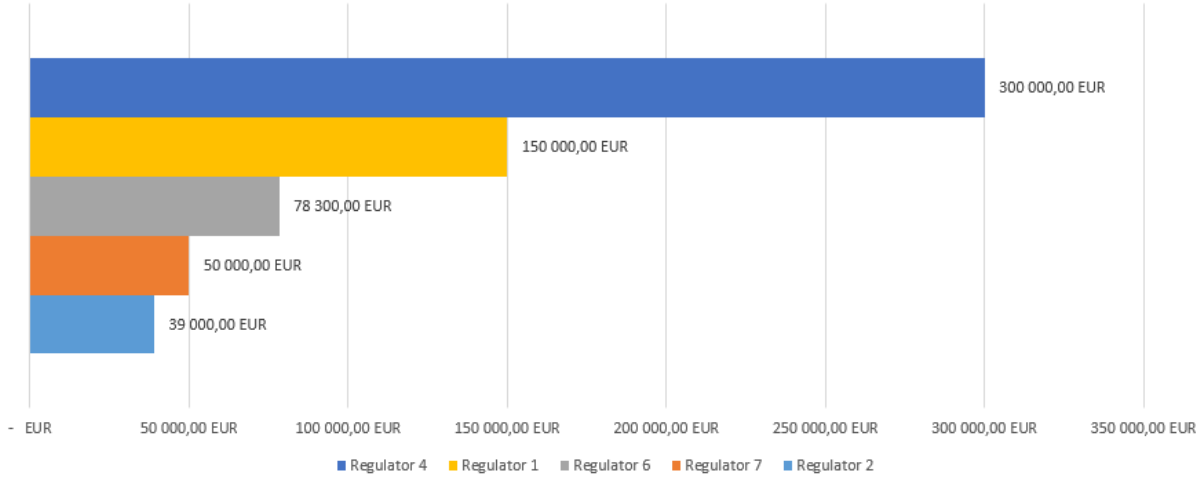

Figure 11: Average yearly cost of maintenance of software and hardware dedicated to XBRL infrastructure

Details of the particular respondents' selections are presented in the Table 27 below:

Respondent	Average yearly maintenance costs of XBRL software and hardware
Regulator 2	39,000.00 EUR
Regulator 7	50,000.00 EUR
Regulator 6	78,300.00 EUR
Regulator 1	150,000.00 EUR
Regulator 4	300,000.00 EUR

Table 27: Summary of responses on the average yearly costs of maintenance

The average cost to be spent yearly (on average) for the maintenance of software and hardware dedicated to XBRL reporting infrastructure, calculated for the sample (71,4%) that provide quantitative and explicit responses (excluding Regulator 5 due to combined costs with other systems) is 123,460.00 EUR. Median for the sample is 78,300.00 EUR.

9.2.1.4 Benefits

Examined aspects

Participants were asked about the benefits gained through the introduction of the XBRL standard within their jurisdictions. Questionnaire covered the following aspects:

- quality of the data;
- analysis of the data;
- automated quality control checks; and
- impact on submission timelines.

Primary research observation

Regarding the first aspect, all of the respondents agreed that the introduction of XBRL reporting significantly increased the quality of the data submitted by the issuers, expect of Regulator 5 which stated that the quality of information reported remains the same. According to the authority, the main purpose behind introduction of the standard was to enhance accessibility and reusability of the data rather than improving its quality. Figure 12 depicts distribution of responses acquired through the online survey:

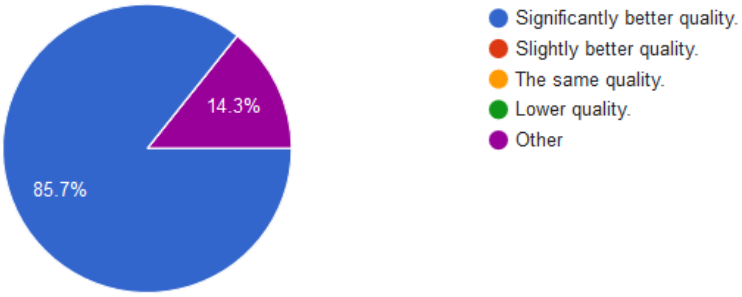

Figure 12: Quality of the data responses

Details of the particular respondents' selections are presented in the Table 28 below:

Respondent	Quality of the data benefits
Regulator 1	Significantly better quality.
Regulator 2	Significantly better quality.
Regulator 3	Significantly better quality.
Regulator 4	Significantly better quality.
Regulator 5	Our answer is "The same quality". It is because we introduced XBRL for the purpose of enhanced accessibility and reusability of data.
Regulator 6	Significantly better quality.
Regulator 7	Significantly better quality.

Table 28: Summary of responses on the benefits in terms of quality of the data

In case of the data analysis, the Regulator 6 stated that they are not yet publicly disseminating the XBRL data as quality assessment is still ongoing. Moreover, the authority is currently in the process of developing the front end portal for the public to consume the data gathered from the XBRL instances. Apart from the Regulator 6, the remaining respondents (85,7% of the selected sample) jointly agreed that the structured data made it easier for analysts to access the data and perform analytical tasks. Figure 13 depicts distribution of responses acquired through the online survey:

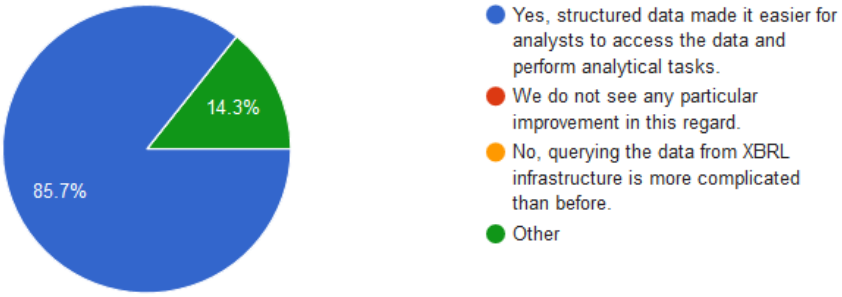

Figure 13: Analysis of the data responses

Details of the particular respondents' selections are presented in the Table 29 below:

Respondent	Data analysis benefits
Regulator 1	Yes, structured data made it easier for analysts to access the data and perform analytical tasks.
Regulator 2	Yes, structured data made it easier for analysts to access the data and perform analytical tasks.
Regulator 3	Yes, structured data made it easier for analysts to access the data and perform analytical tasks.

Regulator 4	Yes, structured data made it easier for analysts to access the data and perform analytical tasks.
Regulator 5	Yes, structured data made it easier for analysts to access the data and perform analytical tasks.
Regulator 6	Still we did not open the xbrl instance to public as we are still accessing the data quality. Moreover we are in the process of developing the front end portal for the public to consume the data gathered from the xbrl instances
Regulator 7	Yes, structured data made it easier for analysts to access the data and perform analytical tasks.

Table 29: Summary of responses on the benefits in terms of data analysis

It was discovered that all of the regulatory authorities that participated in the online survey did introduce new validations to check the quality of the submitted XBRL data. 6 out of 7 respondents (85.7% of the sample) introduced the validations in form of automated quality control checks, while only Regulator 5 stated that the new validations were added but without automation processes. Figure 14 depicts distribution of responses acquired through the online survey:

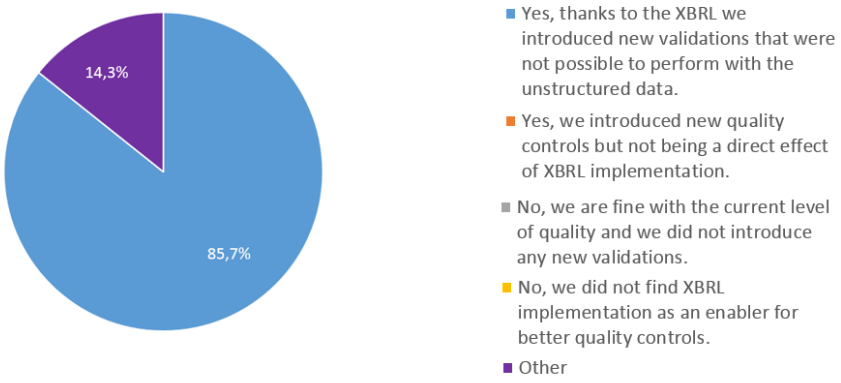

Figure 14: Automated quality control checks responses

Details of the particular respondents' selections are presented in the Table 30 below:

Respondent	Quality checks control benefits
Regulator 1	Yes, thanks to the XBRL we introduced new validations that were not possible to perform with the unstructured data.
Regulator 2	Yes, thanks to the XBRL we introduced new validations that were not possible to perform with the unstructured data.
Regulator 3	Yes, thanks to the XBRL we introduced new validations that were not possible to perform with the unstructured data.
Regulator 4	Yes, thanks to the XBRL we introduced new validations that were not possible to perform with the unstructured data.
Regulator 5	We introduced validation of XBRL quality. However we did not automate control checks on the quality of the reported contents.
Regulator 6	Yes, thanks to the XBRL we introduced new validations that were not possible to perform with the unstructured data.
Regulator 7	Yes, thanks to the XBRL we introduced new validations that were not possible to perform with the unstructured data.

Table 30: Summary of responses on the benefits of quality control checks

The last researched aspect, measuring of the impact of XBRL on the submission timelines, presented the highest diversity in the benefits section responses. 4 out of 7 respondents (57,1%) stated that the reporting entities started to submit their financial statements in XBRL format slightly earlier than before the introduction of the standard. This improvement concerns Regulators 1, 3, 4 and 7. Regulator

2 was the only regulator with negative response in this matter, stating that the submissions are significantly coming later than before. In case of Regulator 6, no particular improvement was noticed regarding the submission timelines. Although Regulator 5 selected "*Other*" option in the survey, it was confirmed that the same situation as in the Regulator 6 case applies, no particular improvement in this regard. Figure 15 depicts distribution of responses acquired through the online survey:

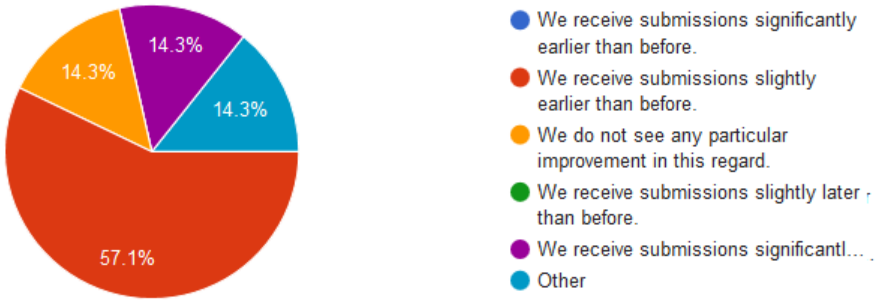

Figure 15: Submission timelines responses

Details of the particular respondents' selections are presented in the Table 31 below:

Respondent	Submission timelines benefits
Regulator 1	We receive submissions slightly earlier than before.
Regulator 2	We receive submissions significantly later than before.
Regulator 3	We receive submissions slightly earlier than before.
Regulator 4	We receive submissions slightly earlier than before.
Regulator 5	Our answer is "We do not see any particular improvement in this regard". It is because there was no change in legal requirement of submission timelines (45 days for quarterly, 90 days for annual).
Regulator 6	We do not see any particular improvement in this regard.
Regulator 7	We receive submissions slightly earlier than before.

Table 31: Summary of responses on the benefits of submission timelines

Apart from the direct responses received form the authorities, 3 out of 7 respondents (42,8% of the sample) did mention other benefits gained from the XBRL implementation, in particular:

- improved process for credit referencing agencies setting credit limits earlier for trade credit;
- easier monitoring and controlling the flow and status of submissions; and
- much clearer, standardized and well defined data.

9.2.2 Survey for the issuers

Purpose of this survey was to gather evidence on the actual costs required on the issuers side in order facilitate standardised electronic reporting of the financial information in XBRL and/or iXBRL to the local regulatory authorities. Initial set of questions was focused on identifying the particular reporting entity and group it by size of the enterprise in order to obtain the better perspective on the required costs.

The achieved sample group consists of 10 reporting entities that participated in the survey for issuers, of which 3 were identified as small companies (30%), 1 as medium (10%) and 6 that were considered as large enterprises (60%). The classification criteria used were: the value of total assets, annual turnover and number of employees. For each of the examined aspects, all of the participants provided responses. Distribution of responses acquired through the online survey is depicted on the following figures:

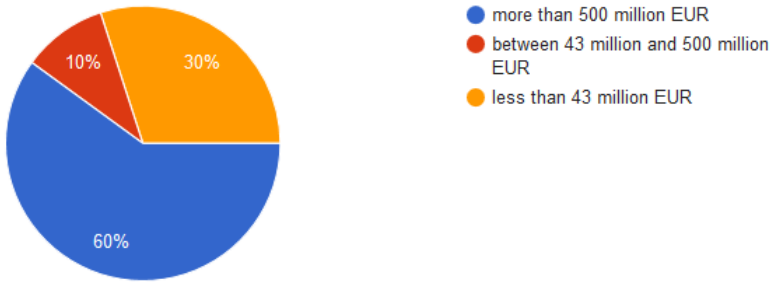

Figure 16: Total value of assets as disclosed in the latest annual consolidated financial statements

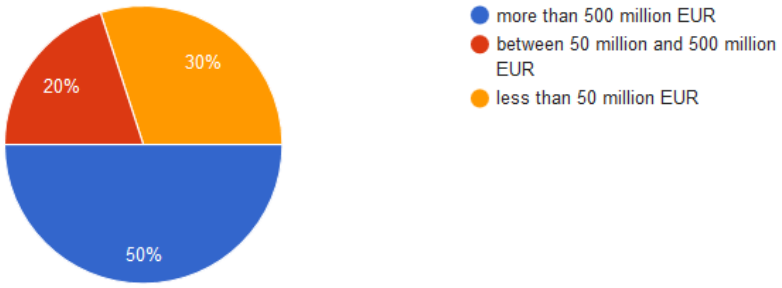

Figure 17: Annual turnover/revenue as disclosed in the latest annual consolidated financial statements

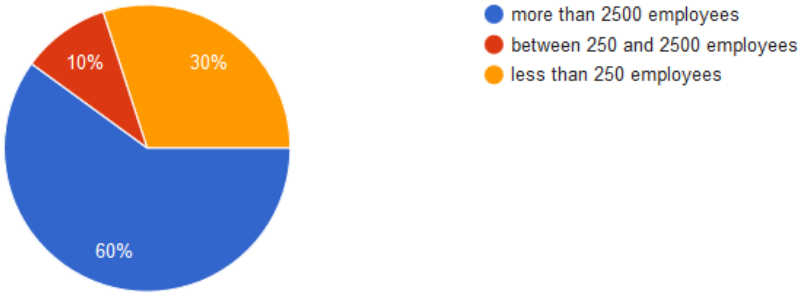

Figure 18: Number of employees as disclosed in the latest reported figures in the annual report

Details of the particular respondents' selections are presented in the Table 32 below:

Respondent	Value of Assets	Annual Turnover	Number of employees
Company 1	43-500 million EUR	50-500 million EUR	250-2500 employees
Company 2	> 500 million EUR	> 500 million EUR	> 2500 employees
Company 3	> 500 million EUR	> 500 million EUR	> 2500 employees
Company 4	< 43 million EUR	< 50 million EUR	< 250 employees
Company 5	> 500 million EUR	> 500 million EUR	> 2500 employees
Company 6	> 500 million EUR	> 500 million EUR	> 2500 employees
Company 7	> 500 million EUR	50-500 million EUR	> 2500 employees
Company 8	> 500 million EUR	> 500 million EUR	> 2500 employees
Company 9	< 43 million EUR	< 50 million EUR	< 250 employees
Company 10	< 43 million EUR	< 50 million EUR	< 250 employees

Table 32: General responses to the survey from the regulatory authorities

The sections below describe quantitative responses submitted by the responding issuers and summarise the overall implementation and maintenance costs required on the issuers side.

9.2.2.1 Implementation approach

Examined aspect

The production of XBRL/iXBRL reports may be implemented in multiple ways.

One approach is to *outsource* it to a third party who, based on the annual report provided in some common format (e.g. MS Office or PDF) by the reporting entity, prepares the necessary extensions to the respective base taxonomy (if applicable) and tags the values. In this case, involvement of the reporting entity is limited to assisting the third party representatives preparing the filing.

Another approach, commonly called *bolt-on*, represents a situation, where taxonomy extension and tagging is performed as a last step in the reporting process by employees of a reporting entity using dedicated software whose functionality enables taxonomy extension and tagging.

Cloud approach is similar to *bolt-on* but the solution is web based rather than on a desktop application.

The last option considered is integrating XBRL in financial reporting systems of a reporting entity, where accounts are mapped against the taxonomy concepts (including extensions). Once implemented, this approach is supposed to enable smooth and seamless production of tagged reports.

The issuers were asked to select their current implementation scenario in order to subsequently provide estimates on various costs and benefits involved.

Primary research observation

It was discovered that 50% of the issuers selected *cloud* as the approach for the production of XBRL and/or iXBRL financial reports to be submitted to their regulatory authorities. 3 out of 10 reporting entities (30% of the sample) decided to *outsource* the production of XBRL reports to third parties with the expertise in the standard, while 20% of participants purchased the *bolt-on* solution in order to produce filings internally. None of the respondents in the achieved sample decided to *integrate* the XBRL tools within their financial and accounting systems. Figure 19 depicts distribution of responses acquired through the online survey:

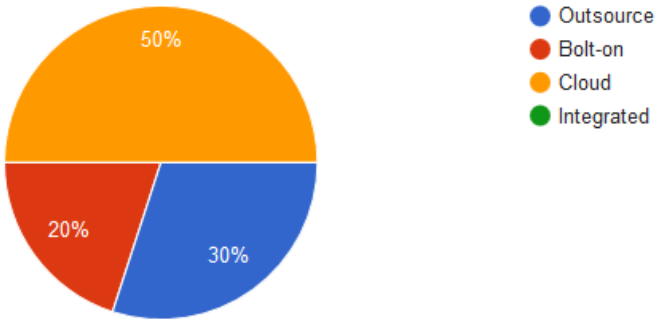

Figure 19: Implementation approach selected by the regulatory authorities

Details of the particular respondents' selections are presented in the Table 33 below:

Respondent	Implementation scenario	Level of tagging
Company 1	Outsource	Detailed tagging of primary financial statement and notes
Company 2	Cloud	Detailed tagging of primary financial statement and notes
Company 3	Cloud	Detailed tagging of primary financial statement and notes
Company 4	Bolt-on	Primary financial statements only, no tagging of notes

Company 5	Cloud	Detailed tagging of primary financial statement and notes
Company 6	Cloud	Detailed tagging of primary financial statement and notes
Company 7	Bolt-on	Detailed tagging of primary financial statement and notes
Company 8	Cloud	Detailed tagging of primary financial statement and notes
Company 9	Outsource	Detailed tagging of primary financial statement and notes
Company 10	Outsource	Primary financial statements only, no tagging of notes

Table 33: Summary of the implementation approach selection in the online survey

For each of the scenarios used for the production of XBRL and/or inline-XBRL reports, the respondents were asked about the level of tagging chosen by their organisations for the preparation of filings. In general, 80% of respondents (8 out of 10) tagged the primary financial statement and the notes, while only 2 issuers decided to tag only the PFSs without tagging the notes and explanatory disclosures. The level of tagging by the respondents is depicted on the below figures:

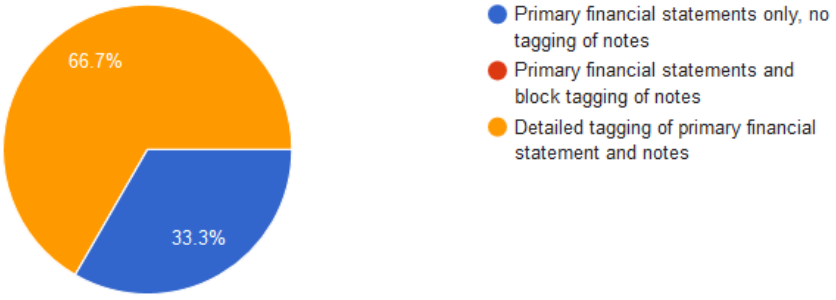

Figure 20: Level of tagging selected for the outsourced approach

66,7% of the respondents (2 out of 3 issuers) outsourcing the production of XBRL filings decided to follow the detailed tagging of primary financial statements and notes. Only one respondent stated that no tagging of notes is performed by their service provider.

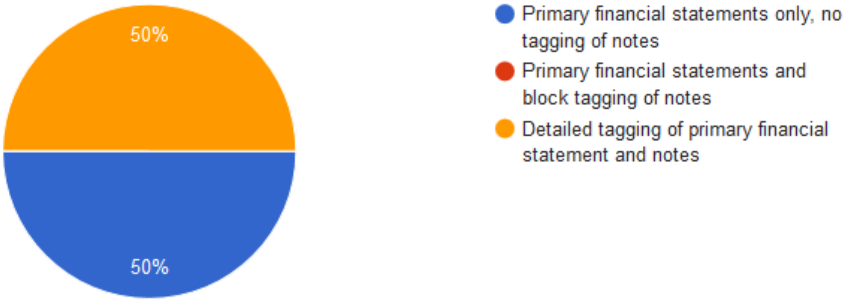

Figure 21: Level of tagging selected for the bolt-on approach

50% of the respondents (1 out 2 issuers) that are using the bolt-on approach stated that the detailed tagging approach is followed. The other respondent stated that no tagging of notes is performed on their side.

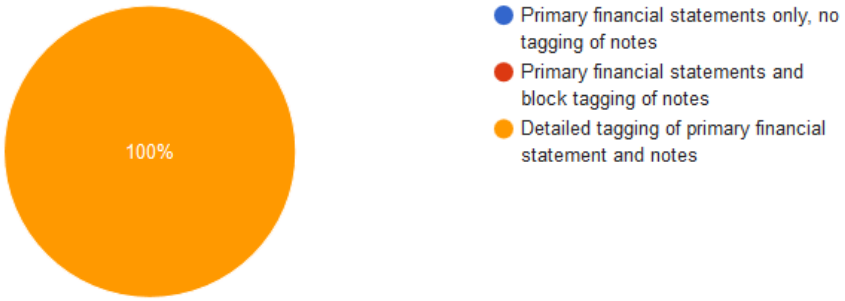

Figure 22: : Level of tagging selected for the cloud approach

All of the respondents (50% of the whole sample) working using *cloud* solutions, jointly stated that detailed tagging of both primary financial statements and explanatory notes and disclosures is followed.

Based on the selected implementation approach and tagging requirements, the issuers were presented with a number of questions regarding the particular resources required for the production of filings using the respective scenario.

9.2.2.2 Production of filings costs

Examined aspect

Participants of the survey were asked whether their regulator requires, allows or does not allow taxonomy extensions for the discussed reporting scenario.

Primary research observation

It was discovered that the most common extension approach (60% of the issuers) recognized in the achieved sample is to define taxonomy extensions, even if it is not required by the regulatory authority. 80% of the respondents stated that are preparing the company extension of the local taxonomies in order to present true and fair view of company financials, of which in only 2 cases the extensions are mandatory. Companies 9 and 10 responded that no extensions are defined by their organisations. Figure 23 depicts distribution of responses acquired through the online survey:

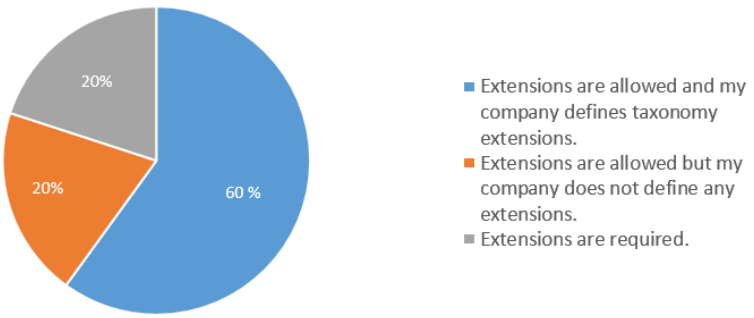

Figure 23: Extension approach followed by the issuers

Details of the particular respondents' selections are presented in the Table 34 below:

Respondent	Extension approach selected
Company 1	Extensions are required.
Company 2	Extensions are allowed and my company defines taxonomy extensions.

Company 3	Extensions are allowed and my company defines taxonomy extensions.
Company 4	Extensions are allowed and my company defines taxonomy extensions.
Company 5	Extensions are allowed and my company defines taxonomy extensions.
Company 6	Extensions are allowed and my company defines taxonomy extensions.
Company 7	Extensions are required.
Company 8	Extensions are allowed and my company defines taxonomy extensions.
Company 9	Extensions are allowed but my company does not define any extensions.
Company 10	Extensions are allowed but my company does not define any extensions.

Table 34: Summary of responses on the selected extension approach

Examined aspect

Participants of the survey were asked how many man-days in total were required to be spent internally on the preparation of the first and subsequent XBRL filings.

Primary research observation

60% of the reporting entities (6 out of 10) provided a response to this question, of which 1 company did not spend any man-days to prepare the first XBRL filing (due to *outsource* approach). The highest amount of man-days spent on creation of the report was 6 and was communicated by companies that are using both *cloud* and *bolt-on* solutions. Figure 24 depicts distribution of responses acquired through the online survey:

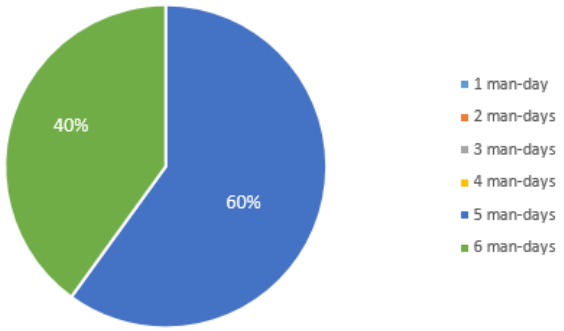

Figure 24: Number of man-days spent internally on the production of first XBRL filing

In terms of preparation of subsequent XBRL and/or iXBRL reports, the response rate increased to 70% (7 out of 10 respondents). Similarly, as regarding the question related to the preparation of the first filing, one company stated that no man-days were spent on the preparation of subsequent filings due to the *outsource* approach followed. The least time spent (1 man-day) was noted by 2 companies who are using *cloud* solutions. The highest amount of man-days spent to prepare subsequent filings was four (with the issuer preparing the reports with the *cloud* approach). Figure 25 depicts the distribution of responses acquired through the online survey:

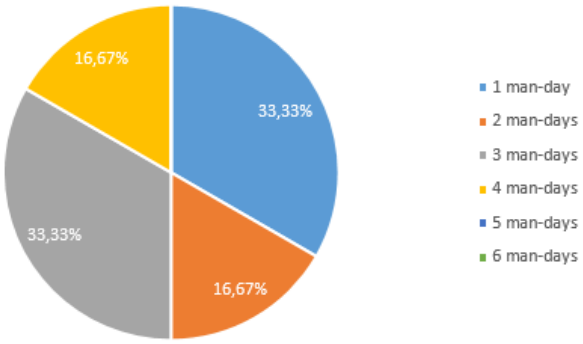

Figure 25: Number of man-days spent internally on the production of subsequent XBRL filing

Details of the particular respondents' selections are presented in the Table 35 below:

Respondent	Number of man-days spent internally on the preparation of first XBRL filing	Number of man-days spent internally on the preparation of subsequent XBRL filing
Company 2	-	4
Company 3	6	3
Company 5	5	1
Company 6	5	1
Company 7	6	3
Company 8	5	2
Company 9	0	0

Table 35: Summary of responses on the number of man-days spent for the first and subsequent XBRL filings

The average number of man-days spent internally for the preparation of first XBRL filing, calculated for the sample that provided quantitative and explicit responses (without outsourcing companies) is 5.4 with median 5, while for the preparation of each subsequent report oscillates around 2.3 with median 2.5.

Examined aspect

Participants of the survey were asked how many employees were trained on XBRL standard and iXBRL tagging in order to support preparation of the reports.

Primary research observation

7 out 10 issuers (70% sample) provided their responses, with 1 company stating that none of its personnel was trained at all with regards to either XBRL standard or the tagging process (*outsource* approach). The highest amount of employees equipped with the necessary knowledge observed among the respondents was five, whereas the lowest was one. Except of Company 4, all respondents that stated the usage of either *cloud* or *bolt-on* approaches, received training for internal personnel in order to understand the solutions used by their organisations. Figure 26Figure 25 depicts distribution of responses acquired through the online survey:

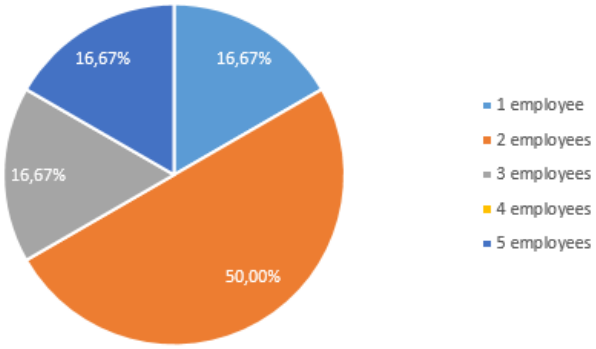

Figure 26: Number of employees trained on XBRL standard and iXBRL tagging

Details of the particular respondents' selections are presented in the Table 36 below:

Respondent	Number of employees trained on XBRL tagging
Company 9	0
Company 6	1
Company 2	2
Company 3	2
Company 7	2
Company 8	3
Company 5	5

Table 36: Summary of responses on the number of employees trained on XBRL standard and iXBRL tagging

The average number of employees trained on XBRL standard and/or iXBRL tagging, calculated for the sample that provided quantitative and explicit responses (without outsourcing companies) is 2.5. Median for the sample is 2.

Examined aspect

Participants of the survey were asked about the costs that were required in order to prepare the first and subsequent XBRL filings (applicable for *outsource* approach only). The figures are presented in Euro.

Primary research observation

All of the respondents that selected *outsourcing* as the scenario for production of XBRL filings (30% of the whole sample) provided responses for this question. According to the Company 10, no actual costs were borne during the production of the first and subsequent filing which is doubtful due to *outsource* nature of the creation of report. Company 1 reported the highest figures, 8,333.00 EUR for the first filing and respectively 6,333.00 EUR for each subsequent. The lowest amount was stated by Company 9 that stated 1,500.00 EUR for each filing created by external service provider. Figure *27* depicts distribution of responses acquired through the online survey:

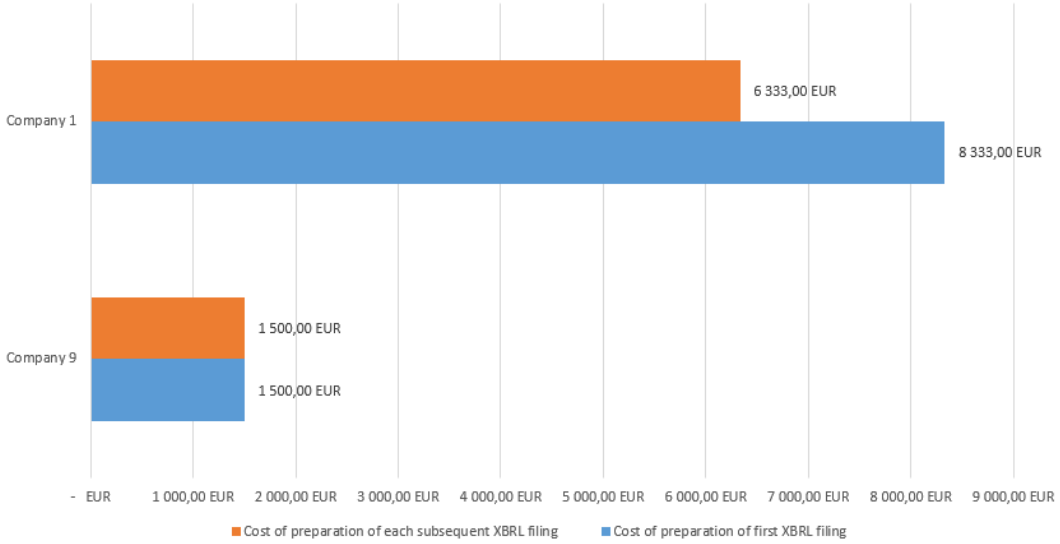

Figure 27: Cost of the preparation of first and subsequent XBRL filing

The average cost for the preparation of first XBRL filing (based on the two responses provided) was calculated at 4,916.50 EUR, while for each subsequent filing at 3,916.50 EUR. More information on the *outsourcing* prices is provided in the analysis of the responses from the intermediaries as well as within sections 9.3.1 and 9.3.2.

Examined aspect

Participants of the survey were asked about the costs of licenses/seats for the either *cloud, bolt-on* or *integrated* solutions purchased from software providers, together with the costs of yearly maintenance for their offerings. The figures are presented in Euro.

Primary research observation

From the 70% sample eligible to answer this question, only 3 out 7 issuers (42,9 %) provided their cost estimates, all of them following *cloud* approach. Highest amount was stated by Companies 6 and 8, with estimated license cost around 10,000.00 EUR, while Company 5 reported 2,000.00 EUR paid for acquiring the seat. Figure 28 depicts distribution of responses acquired through the survey:

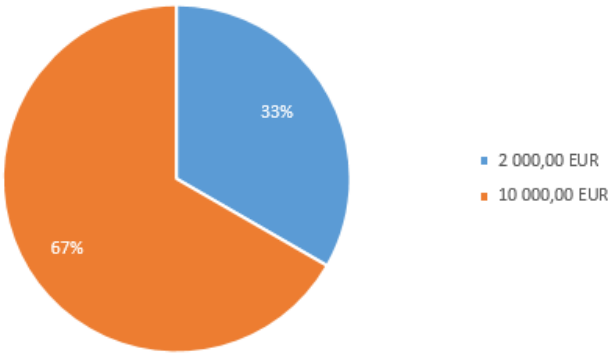

Figure 28: Cost of the license fees/seats acquired by the issuers to produce XBRL filings

Details of the particular respondents' selections are presented in the Table 37 below:

Respondent	Cost of the license fee/seat
Company 5	2,000.00 EUR
Company 6	10,000.00 EUR

Company 8	10,000.00 EUR

Table 37: Summary of responses on costs of license fees/seats

For the eligible sample that provided responses to this questions, average that was calculated for the acquiring of a software license/seat is 7,333.33 EUR. Calculated median for the sample is 10,000.00 EUR. More information on the license fees/seat prices is provided in the analysis of the responses from the intermediaries as well as within sections 9.3.1 and 9.3.2.

9.2.3 Survey for the intermediary organisations

The purpose of this survey was to gather evidence on the actual costs of services and software products offered by the intermediary organisations to assist issuers with the standardised electronic reporting of the financial information in XBRL and/or iXBRL to the local regulatory authorities. This was deemed useful to complement the survey directed to the issuers. The first set of questions was focused on identifying the particular intermediary, its offered services and XBRL/iXBRL implementations supported.

The sample group that submitted their responses consists of 19 software and service providers, of which:

- 1 intermediary supporting Danish implementation
- 1 intermediary supporting Chilean implementation
- 1 intermediary supporting Dutch implementation
- 2 intermediaries supporting Japanese implementation
- 7 intermediaries supporting US implementation
- 11 intermediaries supporting UK implementations

Details of the particular respondents' selections are presented in the Table 38 below:

Respondent	Provided feedback
Provider 1	Danish Business Authority
Provider 2	Tool is 100% compliant with XBRL standard and taxonomy agnostic which means that once you implement our software package you can work with any XBRL taxonomy regardless of the underlying accounting frameworks
Provider 3	Other Disclosure dedicated tool to support your disclosure practices in the experienced and professional staff with a variety of IT tools.
Provider 4	US-SEC
Provider 5	Chilean SVS (We provided the platform) we also provide services to about 15% of companies reporting to them
Provider 6	U.K. HRMC and companies house
Provider 7	Primarily provide services for US-SEC XBRL implementation. Also provided services for UK HMRC iXBRL implementation.
Provider 8	UK HMRC and US -SEC
Provider 9	UK HMRC/Companies House
Provider 10	We mainly support preparations of disclosure documents in Inline XBRL data format for Japanese FSA and Tokyo Stock Exchange.
Provider 11	UK HMRC/Companies House, CRD IV, Solvency II, Irish Revenue
Provider 12	Our solutions are can work with any implementation based on XBRL specifications. If the implementation has some custom requirements, then the customisations can be added as an extra layer to our core products. We are currently offering our products and services in about 14 countries. 1) Of the stated list, the XBRL /iXBRL implementations that we cover are – US SEC, UK HMRC

	and Companies House, UAE SCA. 2) Some of the other like implementations where we offer our products and services are – a) Infocamere, Italy, b) Revenue - Ireland, c) ACRA, Singapore d) MCA, India e) RBI, India d) BOM, Mauritius e) Reporting Banks, India and Mauritius f) DBD Thailand g) MCI, Saudi Arabia h) QFCRA, Qatar
Provider 13	We provide services and sometimes access to software interfaces to support almost every XBRL reporting programme around the world. Significant teams and investments aligned to UK HMRC and the US-SEC programme mentioned.
Provider 14	UK HMRC, UK Companies House, Irish Revenue Commissioners
Provider 15	Our products are in use for US SEC filings, India MCA, and UK HMRC.
Provider 16	Nederlandse Taxonomie NT11
Provider 17	UK HMRC/Companies House
Provider 18	The tool supports XBRL filing for the US stock exchange, XBRL reporting to the Central Bank of Israel,
Provider 19	UK HMRC/Companies House iXBRL; EBA XBRL

Table 38: Summary of responses on costs of preparation of first and subsequent XBRL filings

The sections below describe quantitative responses submitted by the above intermediaries and summarise the overall costs to be borne by issuers for receiving external support.

9.2.3.1 Implementation approach

Examined aspect

The intermediary organisations were asked to provide the implementation scenario (as described in section 9.2.2.1) for which they provide support or products in order to subsequently provide estimates on prices and effort.

Primary research observation

It was discovered that 52,6% of the intermediaries (10 out of 19) responded that their products or services support the *integrated* approach for the production of XBRL and/or iXBRL financial reports. The second biggest group are the intermediaries offering *cloud* approach (21,1%), while 3 other providers provide services relating to the *bolt-on* approach. Only 10,5% (2 out of 19) mentioned *outsourcing* as part of their services. Figure 29 depicts distribution of responses acquired through the online survey:

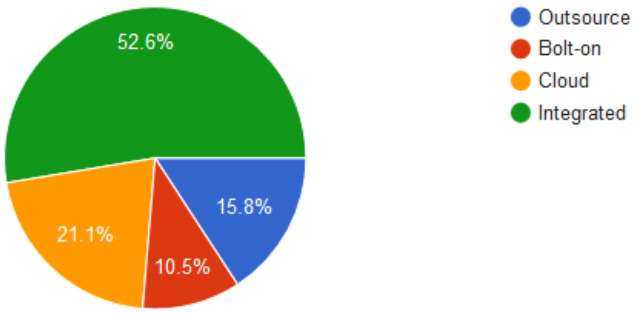

Figure 29: Implementation approach offered by the intermediary organisations

The diagram above presents the initial selection of the implementation approach made by the software and services providers, however some of them are offering more than one scenario to assist

issuers in the preparation of XBRL filings (26 in total). Details of the particular respondents' selections are presented in the Table 39 below:

Respondent	Selected implementation approach offered to the issuers
Provider 1	Integrated
Provider 2	Bolt-on
Provider 3	Cloud
Provider 4	Cloud
Provider 5	Integrated
Provider 6	Integrated
Provider 7	Cloud, Bolt-on, Outsource
Provider 8	Cloud
Provider 9	Integrated
Provider 10	Integrated
Provider 11	Bolt-on, Outsource
Provider 12	Cloud, Outsource
Provider 13	Outsource
Provider 14	Outsource
Provider 15	Outsource, Cloud
Provider 16	Integrated
Provider 17	Integrated
Provider 18	Integrated
Provider 19	Integrated, Outsource, Bolt-on

Table 39: Summary of responses on selecting the implementation approach offered to the issuers

Moreover, for each scenario, intermediaries provided additional context in terms of level of tagging offered within the solution. For the *outsource, bolt-on* and *cloud* approaches, all vendors support detailed tagging of both PFSs and explanatory notes. In only two cases for the *integrated* scenario, intermediaries support block tagging instead of detailed tagging (Providers 10 and 16).

Based on the offered implementation approach and tagging requirements, the intermediaries were presented with a number of questions regarding particular resources required from the issuers in order to support their production of filings using the respective scenario.

9.2.3.2 Production of filings costs

Examined aspect

Participants of the survey were asked whether their products or services does or does not enable taxonomy extensions for the discussed reporting solution or service offered.

Primary research observation

It was discovered that in all 26 different combinations of services/products and implementation approaches, 46,1% of the offered solutions/services do not foresee creation of taxonomy extensions offered to the issuers. In 14 cases (53,9%) option of extending the local taxonomies for the purposes of companies' filings is enabled for the reporting entities. Below figure depicts the division of responses broke down by the implementation scenario:

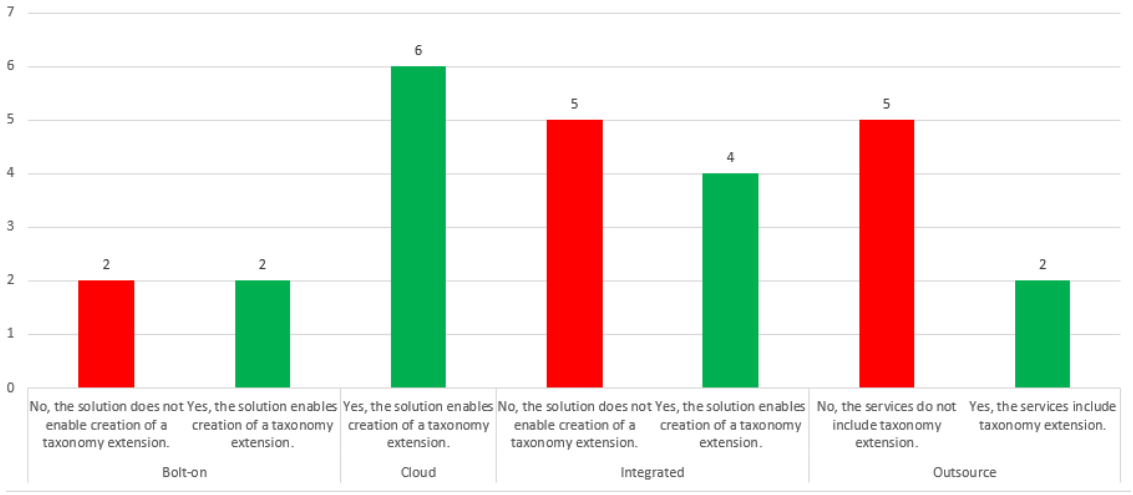

Figure 30: Taxonomy extensions offered by the intermediary organisations

Details of the particular respondents' selections are presented in the Table 40 below:

Respondent	Implementation approach	Taxonomy extensions
Provider 1	Integrated	No, the solution does not enable creation of a taxonomy extension.
Provider 2	Bolt-on	Yes, the solution enables creation of a taxonomy extension.
Provider 3	Cloud	Yes, the solution enables creation of a taxonomy extension.
Provider 4	Cloud	Yes, the solution enables creation of a taxonomy extension.
Provider 5	Integrated	Yes, the solution enables creation of a taxonomy extension.
Provider 6	Integrated	No, the solution does not enable creation of a taxonomy extension.
Provider 7	Outsource	Yes, the services include taxonomy extension.
	Bolt-on	Yes, the solution enables creation of a taxonomy extension.
	Cloud	Yes, the solution enables creation of a taxonomy extension.
Provider 8	Cloud	Yes, the solution enables creation of a taxonomy extension.
Provider 9	Integrated	No, the solution does not enable creation of a taxonomy extension.
Provider 10	Integrated	Yes, the solution enables creation of a taxonomy extension.
Provider 11	Outsource	No, the services do not include taxonomy extension.
	Bolt-on	No, the solution does not enable creation of a taxonomy extension.
Provider 12	Outsource	No, the services do not include taxonomy extension.
	Cloud	Yes, the solution enables creation of a taxonomy extension.
Provider 13	Outsource	No, the services do not include taxonomy extension.
Provider 14	Outsource	No, the services do not include taxonomy extension.
Provider 15	Outsource	Yes, the services include taxonomy extension.
	Cloud	Yes, the solution enables creation of a taxonomy extension.
Provider 16	Integrated	Yes, the solution enables creation of a taxonomy extension.
Provider 17	Integrated	No, the solution does not enable creation of a taxonomy extension.
Provider 18	Integrated	Yes, the solution enables creation of a taxonomy extension.
Provider 19	Outsource	No, the services do not include taxonomy extension.
	Bolt-on	No, the solution does not enable creation of a taxonomy extension.
	Integrated	No, the solution does not enable creation of a taxonomy extension.

Table 40: Summary of responses on taxonomy extension services offered by the intermediaries

Examined aspect

Participants of the survey were asked how many man-days in total were required from the client to be spent internally on the preparation of the first and subsequent XBRL filings. The question was not applicable for the *integrated* solution.

Primary research observation

The response rate achieved for the above questions is 63,6% with 7 intermediaries that responded out of 11 eligible (other companies were offering integrated solutions). In total, 11 responses were provided out of 17 possible combinations (break down by company and implementation scenario). The highest amount on man-days required by the client in order to prepare the first filing was 12 in both *cloud* and *bolt-on* offerings delivered by. The lowest effort for the client was unsurprisingly identified in the outsourcing scenario, where one intermediary estimated the effort from client side for the production of XBRL filings, to be only half a man-day. Figures below depict distribution of responses acquired through the online survey, divided by *outsource* and *bolt-on/cloud* approaches:

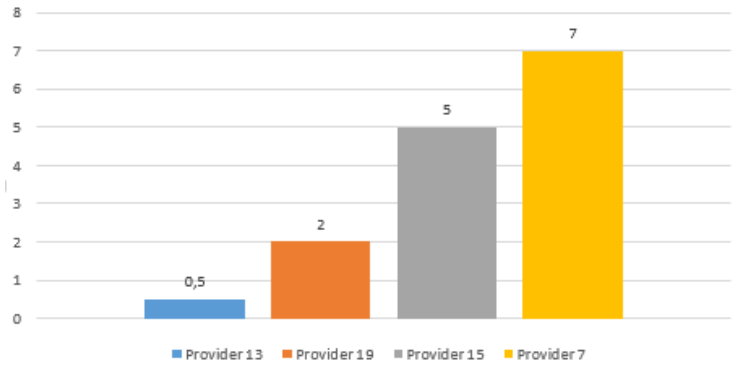

Figure 31: Number of man-days required from the client for the first XBRL filing using outsource approach

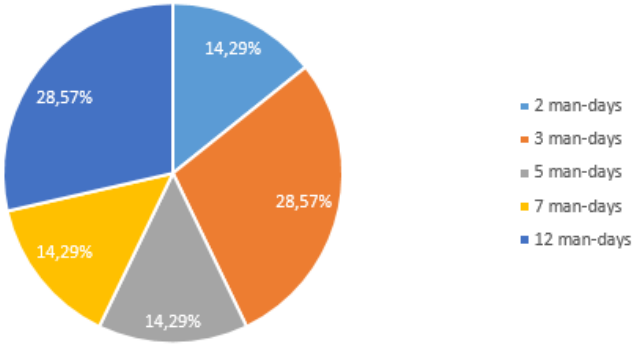

Figure 32: Number of man-days required from the client for the first XBRL filing using bolt-on or cloud approaches

In terms of preparation of subsequent XBRL and/or iXBRL reports, the response rate remained the same, with a general observation that the number of man-days decreased for all but one respondents. Again, the lowest amount was noted in the *outsource* scenario with 0.2 man-days required. (*outsource),* The lowest estimate of clients effort for the clients to prepare their XBRL/iXBRL report in the bolt-on scenario was 0.5 man-days. Below figures depict distribution of responses acquired through the online survey, divided by *outsource* and *bolt-on/cloud* approaches:

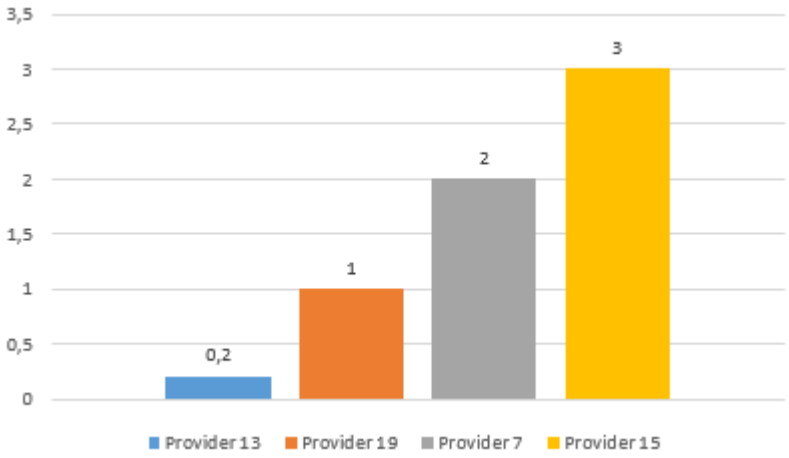

Figure 33: Number of man-days required from the client for the subsequent XBRL filing using outsource approach

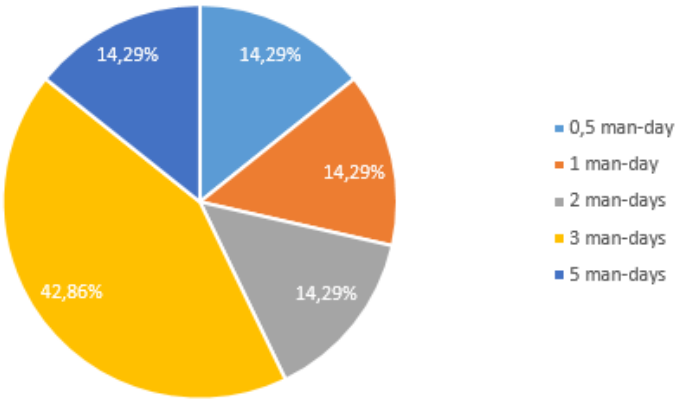

Figure 34: Number of man-days required from the client for the subsequent XBRL filing using bolt-on/cloud approach

Details of the particular respondents' selections are presented in the Table 41 below (sorted by the number of man-days required for the subsequent filing for each implementation scenario):

Respondent	Implementation scenario	Man-days required for the first filing	Man-days required for the subsequent filing
Provider 13	Outsource	0,5	0,2
Provider 19	Outsource	2	1
Provider 7	Outsource	7	2
Provider 15	Outsource	5	3
Provider 11	Bolt-on	3	0,5
Provider 2	Bolt-on	2	1
Provider 19	Bolt-on	3	2
Provider 7	Bolt-on	12	3
Provider 15	Cloud	7	3
Provider 7	Cloud	12	3
Provider 8	Cloud	5	5

Table 41: Summary of responses on the number of man-days required from the client for XBRL filings

The average number of man-days required from the client (using *outsourced* approach) for the preparation of first XBRL filing, calculated for the sample achieved is 3.63 with median 3.5, while for the each subsequent filing is 1.55 with median 1.5.

In case of internally prepared filings using *outsource/bolt-on* approaches, average client's effort for the production of first XBRL report was estimated at 6.29 man-days with median 5, while for each subsequent filing at 2.5 with median 3.

Examined aspect

Participants of the survey were asked how many man-days were required to be spent by clients to integrate the solutions offered by the intermediaries within their internal systems. Applicable only for the *integrated* scenario.

Primary research observation

7 out of 9 companies (77,7% of the eligible respondents) did provide their answers for this question. The highest expected amount of man-days days from the client to be spent on integration was reported to be 200 man-day whereas two intermediaries estimate the clients' efforts for the implementation of an integrated approach to be only 1 man-day. Depending on the functionalities of the tools and complexity of the internal systems it is hard to assess the actual number of man-days required that would be common for all the issuers. Figure 35 depicts distribution of responses acquired through the online survey:

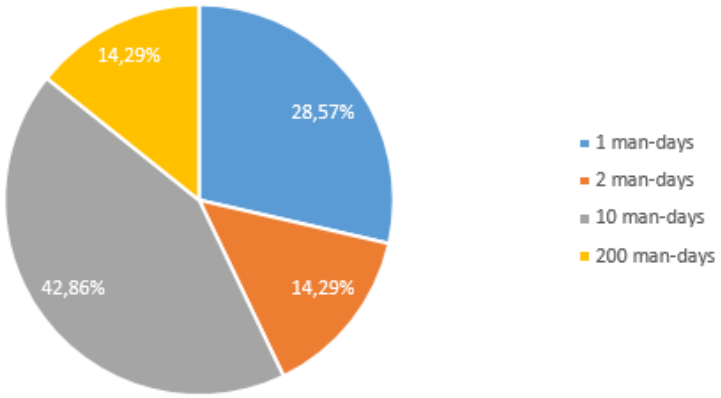

Figure 35: Number of man-days required for the integration of the solution

Details of the particular respondents' selections are presented in the Table 42 below:

Respondent	Number of man-days required for the integration
Provider 1	1
Provider 17	1
Provider 16	2
Provider 5	10
Provider 10	10
Provider 19	10
Provider 9	200

Table 42: Summary of responses on the number of man-days spent for the first XBRL filing

The average number of man-days required from the client for integration of the solution within the internal systems, calculated for the sample that provided quantitative and explicit responses is 33.43

with median 10. If the highest value would be excluded from the calculation (200), then the average would be oscillating around 5.67 man-days with median 6.

Examined aspect

Participants of the survey were asked how many client's employees (on average) were trained by the intermediary on XBRL standard and iXBRL tagging in order to work with the offered solutions.

Primary research observation

For the possible 26 combinations of intermediaries and implementation approaches, 20 responses were received from 13 companies giving the response rate 76,9%. Second highest estimate of the number of personnel receiving XBRL training that is 10 people. There is no correlation observed between the implementation approach and the number of trained employees. Figure 36 depicts distribution of responses acquired through the online survey:

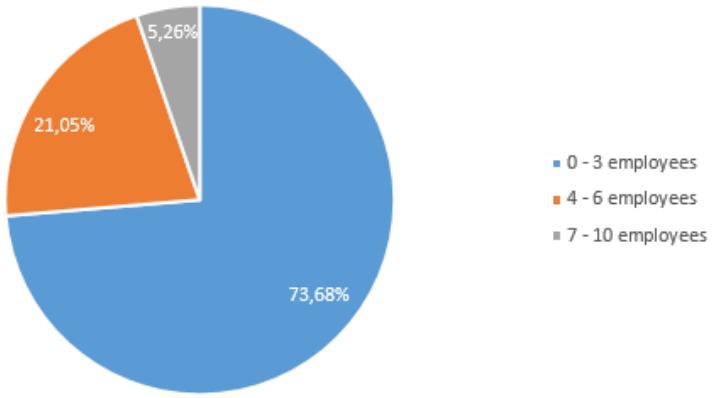

Figure 36: Number of employees trained on XBRL standard and iXBRL tagging

Details of the particular respondents' selections are presented in the Table 43 below:

Respondent	Implementation approach	Number of trainees
Provider 12	Outsource	1
Provider 15	Outsource	1
Provider 17	Integrated	1
Provider 19	Outsource	1
Provider 13	Outsource	1,3
Provider 2	Bolt-on	2
Provider 7	Outsource	2
	Bolt-on	2
	Cloud	2
Provider 11	Bolt-on	2
Provider 15	Cloud	2
Provider 5	Integrated	3
Provider 8	Cloud	3
Provider 19	Bolt-on	3
Provider 9	Integrated	4
Provider 12	Cloud	4
Provider 19	Integrated	4
Provider 10	Integrated	5
Provider 16	Integrated	10

Table 43: Summary of responses on the number of employees trained on XBRL standard and iXBRL tagging

The average number of employees (per client) trained by the intermediaries on XBRL standard and/or iXBRL tagging, calculated for the sample that provided quantitative and explicit responses is 2.81 with median 2.

Examined aspect

Participants of the survey were asked about the costs that were required in order to prepare the first and subsequent XBRL filings (outsource approach). The figures are presented in Euro.

Primary research observation

From 7 responses concerning the outsource services, 5 out of 7 intermediaries (71,4%) provided the requested figures on the costs for preparation of the first and subsequent XBRL filings. The highest amount reported for the first XBRL filing was estimated at 26,000.00 EUR, however for the subsequent filings the intermediary reported that the cost would decrease to 6,000.00 EUR for each filing (which is still considered as the highest). The lowest cost estimate of outsourcing the production of XBRL reports is reported is 300.00 EUR. Only one of the remaining intermediaries offers discounts on the subsequent fillings, with the first filing set to 1,500.00 EUR and each subsequent report set to 1,200.00 EUR. Below figures depict distribution of responses acquired through the online survey, divided into costs for preparation of first and subsequent XBRL filings:

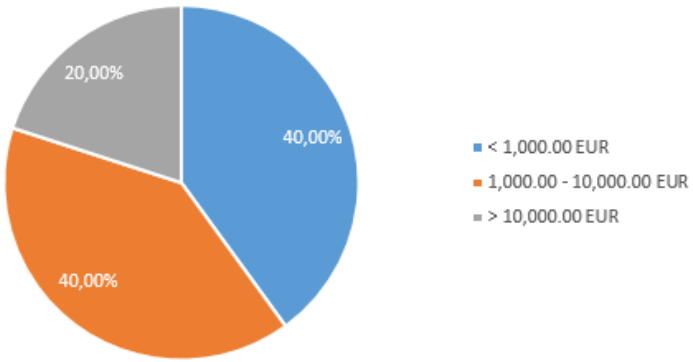

Figure 37: Cost of the preparation of the first XBRL filing according to the intermediaries

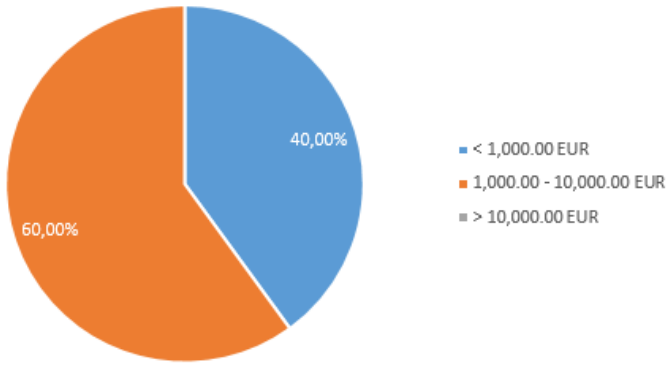

Figure 38: Cost of the preparation of each subsequent XBRL filing according to the intermediaries

Details of the particular respondents' selections are presented in the Table 44 below:

Respondent	Cost of outsourcing first XBRL filing	Cost of outsourcing each subsequent filing
Provider 11	300.00 EUR	300.00 EUR
Provider 15	860.00 EUR	860.00 EUR

Provider 13	1,500.00 EUR	1,200.00 EUR
Provider 19	2,500.00 EUR	2,500.00 EUR
Provider 7	26,000.00 EUR	6,000.00 EUR

Table 44: Summary of responses on costs of preparation of first and subsequent XBRL filings

The average cost to be spent for outsourcing the first XBRL filing to the service providers, calculated for the sample (71,4%) that provide quantitative and explicit responses is 6,232.00 EUR with median 1,500.00 EUR, while each subsequent filing is estimated at 2,172.00 EUR with median 1,200.00 EUR.

Examined aspect

Participants of the survey were asked about the costs of licenses/seats for the either *cloud, bolt-on* or *integrated* solutions offered to the clients, together with the costs of yearly maintenance for their offerings. The figures are presented in Euro.

Primary research observation

From the possible 19 eligible combinations 12 responses were received from 10 intermediaries (63,1% response rate). The highest cost for purchasing a license/seat for the XBRL-based tool was reported at 20,000.00 EUR (for an *integrated* solution). The lowest estimates for the integrated solution are EUR 500 and 860 EUR for a cloud solution. No direct correlation between the type of solution and cost of license was observed. Figure 39 depicts distribution of responses acquired through the online survey:

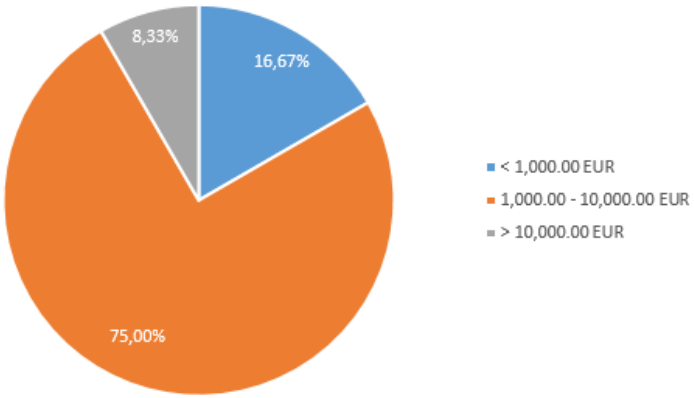

Figure 39: Cost of licenses/seats for the offered XBRL-based solutions

In terms of costs required for the yearly maintenance of the offered XBRL-based solution, the sample above was decreased by 3 responses leaving the response rate at 47,3% (9 out of 19 eligible combinations). The highest reported maintenance cost was 17,250.00 EUR (the same provider's solution on the other hand was amongst the cheapest solutions in terms of purchasing license). The lowest annual cost reported are 100.00 EUR. Figure 40 depicts distribution of responses acquired through the online survey:

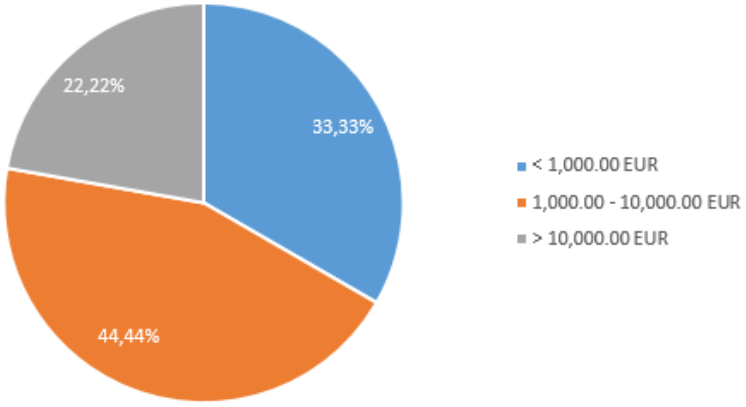

Figure 40: Cost of yearly maintenance for the offered XBRL-based solutions

Details of the particular respondents' selections are presented in the Table 45 below (sorted by the cost of license fee/cloud seat for each implementation scenario).

Respondent	Implementation scenario	License fee/cloud seat	Yearly cost of maintenance
Provider 11	Bolt-on	1,500.00 EUR	1,500.00 EUR
Provider 2	Bolt-on	5,000.00 EUR	1,200.00 EUR
Provider 7	Bolt-on	5,500.00 EUR	-
Provider 19	Bolt-on	8,800.00 EUR	-
Provider 15	Cloud	860.00 EUR	17,250.00 EUR
Provider 7	Cloud	5,500.00 EUR	-
Provider 9	Integrated	500.00 EUR	500.00 EUR
Provider 17	Integrated	1,000.00 EUR	1,000.00 EUR
Provider 16	Integrated	2,000.00 EUR	500.00 EUR
Provider 5	Integrated	5,000.00 EUR	1,250.00 EUR
Provider 1	Integrated	10,000.00 EUR	100.00 EUR
Provider 19	Integrated	20,000.00 EUR	14,500.00 EUR

Table 45: Summary of responses on costs of preparation of first and subsequent XBRL filings

The average cost to be spent for purchasing the license/seat for the offered XBRL products, calculated for the respondents that provide quantitative and explicit responses is 5,471.66 EUR with median 5,000.00 EUR, while yearly maintenance costs are estimated at 4,200.00 EUR with median 1,200.00 EUR.

Apart from the direct responses received form the intermediaries, 13 out of 19 respondents (68,4% of the sample) submitted additional comments and explanations. Most of the received feedback contains supplementary information on the solutions and services offered by the particular providers and explaining the reported figures. Two of the intermediary organisations, Provider 12 and 19, raised a particularly important point with regards to the effort required in the production of XBRL/iXBRL filings. The respondents highlighted that resources needed from the filer may substantially be different and incomparable, depending on the tagging requirements and taxonomy scope. As mentioned by the Provider 19, currently applicable level of tagging in the UK does not require that much of involvement from the clients than in the detailed tagging scenario (e.g. US), however additional assurance services may be required after the report is prepared. Taxonomy-wise, aspects like extensibility, sector-specific elements and number of concepts to be tagged have huge impact on the time required for the

production of filing. For the jurisdictions where taxonomies are not required to be extended by the reporting entities, the effort is significantly lower due to roll-on functionalities of the tools offered which help reducing the manual work required by applying the already defined tags from the previous periods (noted by Provider 12). Complexity of taxonomies published by the regulators, may also require different levels of understating the XBRL/iXBRL standard, hence number of employees for the knowledge transfer may vary in particular scenarios.

9.2.4 Summary of observations

Below section presents the summary of findings from the analysis of the survey responses received:

- from regulatory authorities;
- from issuers; and
- from intermediary organisations.

9.2.4.1 Responses from regulatory authorities

Examined aspect	Observation
Tagging requirements	In over **70%** of cases, detailed tagging of primary financial statements and explanatory notes and disclosures (all or selected) was selected by the regulators which participated in the survey
External entities involvement in the XBRL infrastructure development	**85,7%** of regulators decided to include external advisors in the development process
Man-days spent for the internal education on XBRL standard	The average number of man-days spent on XBRL education and knowledge transfer, calculated for the sample that provided responses is **68** with median **30.**
Man-days spent for the external education (market participants, stakeholders) on XBRL standard	The average number of man-days spent on XBRL education and knowledge transfer, calculated for the sample (**57%**) that provided quantitative and explicit responses is **6.5** with median **3.**
Total cost of software licenses required for XBRL implementation	The average cost to be spent on acquiring the software licenses required for XBRL implementation, calculated for the sample (**71,4%**) that provide quantitative and explicit responses is **526,400.00 EUR** with median **500,000.00 EUR.**
Total cost of hardware dedicated for XBRL implementation	The average cost to be spent on acquiring the hardware dedicated for XBRL implementation, calculated for the sample (**42,8%**) that provide quantitative and explicit responses is **190,000.00 EUR** with median **50,000.00 EUR**.
Man-days spent internally on XBRL implementation	The average number of man-days spent internally on XBRL implementation, calculated for the sample (**57%**) that provided quantitative and explicit responses is **482.5** with median **365.**
External entities involvement in the maintenance of the XBRL infrastructure	**85,7%** of regulators decided to include external advisors in the maintenance process
Average number of man-days required for yearly maintenance of XBRL infrastructure	The average number of man-days spent on XBRL implementation, calculated for the sample (**71.4%**) that provided quantitative and explicit responses is **149** with median **50.**
Average yearly cost of maintenance of software and	The average cost to be spent yearly (on average) for the maintenance of software and hardware dedicated to XBRL reporting infrastructure, calculated for the sample (**71,4%**) that

hardware dedicated for XBRL implementation	provide quantitative and explicit responses is **123,460.00 EUR** with median **78,300.00 EUR.**
Benefits observed	For the **85,7%** of regulators, the following was observed: ▪ Significant increase of data quality ▪ Better accessibility of the data ▪ More efficient analysis of the data ▪ Automated quality control **57,1%** of regulators did also mention minor improvement in terms of submission timelines

Table 46: Observations from the survey for the regulators

9.2.4.2 Responses from issuers

Examined aspect	Observation
Implementation approach for the production of XBRL filings	**50%** of the issuers selected ***cloud*** as the approach for the production of XBRL and/or iXBRL financial reports to be submitted to their regulatory authorities. ***Outsource*** was selected by **30%** of the respondents while ***bolt-on*** solutions were purchased by the remaining **20%**
Level of tagging	**66,7%** of the respondents ***outsourcing*** the production of XBRL filings decided to follow the detailed tagging of primary financial statements and notes. **50%** of the respondents that are using the ***bolt-on*** approach stated that the detailed tagging approach is followed. **100%** of respondents using ***cloud*** solutions stated that detailed tagging of both primary financial statements and explanatory notes and disclosures is followed.
Man-days required internally for the preparation of XBRL filings	The average number of man-days spent internally for the preparation of first XBRL filing, calculated for the sample that provided quantitative and explicit responses (without *outsourcing* companies) is **5.4** with median **5**, while for the preparation of each subsequent report oscillates around **2.3** with median **2.5**.
Total cost required for the preparation of XBRL filings (*outsource* scenario)	The average cost for the preparation of first XBRL filing was calculated at **4,916.50 EUR**, while for each subsequent filing at **3,916.50 EUR**.
Total cost of the license fees / seats for the XBRL software (*cloud/bolt-on* scenario)	The average cost calculated for acquiring a software license / seat is **7,333.33** EUR with median **10,000.00** EUR.

Table 47: Observations from the survey for the issuers

9.2.4.3 Responses from Intermediary organisations

Examined aspect	Observation
Implementation approach for the production of XBRL filings	**52,6%** of the intermediaries responded that their products or services involve ***integrated*** approach for the production of XBRL and/or iXBRL financial reports. Second biggest group is offering ***cloud*** approach (**21,1%),** while 3 other providers chosen ***bolt-on*** scenario. Only **10,5%** mentioned ***outsourcing*** as part of their services.
Level of tagging	For the ***outsource, bolt-on*** and ***cloud*** approaches, all vendors support detailed tagging of both PFSs and explanatory notes. In only two cases for the ***integrated***

	scenario, intermediaries chosen the block tagging instead of detailed.
Creation of taxonomy extensions	In **53,9%** cases, intermediaries are enabling extensions of the local taxonomies as part of their solutions/services
Man-days required for the preparation of XBRL filings	The average number (regardless of the implementation approach) of man-days required from the client for the preparation of first XBRL filing, calculated for the sample that provided quantitative and explicit responses is **5.32** with median **5**, while for the preparation of each subsequent report oscillates around **2.15** with median **2**.
Man-days required for to integrated the solutions	The average number of man-days required from the client for integration of the solution within the internal systems, calculated for the sample that provided quantitative and explicit responses is **33.43** with median **10**. If the highest value would be excluded from the calculation (200 reported in one case), then the average would be oscillating around **5.67** man-days with median **6**.
Number of clients' employees trained	The average number of clients employees trained on XBRL standard and/or iXBRL tagging, calculated for the sample that provided quantitative and explicit responses is **2.81** with median **2**.
Total cost required for the preparation of XBRL filings (*outsource* scenario)	The average cost to be spent for outsourcing the first XBRL filing to the service providers, calculated for the sample (**71,4%**) that provide quantitative and explicit responses is **6,232.00 EUR** with median **1,500.00 EUR**, while each subsequent filing is estimated at **2,172.00 EUR** with median **1,200.00 EUR**.
Cost of license fees/seats for *cloud, bolt-on* or *integrated* solutions and maintenance	The average cost to be spent for purchasing the license/seat for the offered XBRL products, calculated for the sample that provide quantitative and explicit responses is **5,471.66 EUR** with median **5,000.00 EUR**, while yearly maintenance costs are estimated at **4,200.00 EUR** with median **1,200.00 EUR.**

Table 48: Observations from the survey for the intermediaries

9.2.5 Conclusions

Based on the conducted surveys, the following tables summarise the reported costs (in ranges) of the implementation of XBRL reporting infrastructures and production of iXBRL reports. Moreover,

For the purposes of cost analysis:

- 1 man-day was calculated to be 200.00 EUR based on the EUROSTAT press release (61/2016 – 1 April 2016): *Labour costs in the EU*[74]*;*
- Cost for 1 employee trained in XBRL standard was calculated (average) to be 1,816.67 EUR based on reference data provided by BR-AG and training costs offered by XBRL International during the Data Amplified conference in Singapore 8-10.11.2016[75]

[74] See http://ec.europa.eu/eurostat/documents/2995521/7224742/3-01042016-AP-EN.pdf/453419da-91a5-4529-b6fd-708c2a47dc7f

[75] See https://www.dataamplified.org/training/

9.2.5.1 Regulatory authority costs

Aspect	Minimum value	Maximum value	Median	Average
Cost of software licenses for XBRL reporting infrastructure	10,000.00 EUR	1,500,000.00 EUR	500,000.00 EUR	526,400.00 EUR
Cost of hardware dedicated to XBRL reporting infrastructure	20,000.00 EUR	500,000.00 EUR	50,000.00 EUR	190,000.00 EUR
Man-days spent on implementation of XBBRL reporting infrastructure	200 man-days 40,000.00 EUR	1000 man-days 200,000.00 EUR	365 man-days 73,000.00 EUR	482.5 man-days 96,500.00 EUR
Man-days spent for yearly maintenance of XBRL reporting infrastructure	15 man-days 3,000.00 EUR	555 man-days 111,000.00 EUR	50 man-days 10,000.00 EUR	149 man-days 29,800.00 EUR
Average yearly maintenance cost of XBRL reporting infrastructure	39,000.00 EUR	300,000.00 EUR	78,300.00 EUR	123,460.00 EUR

Table 49: Regulatory authority costs - conclusions

Conclusions:

- Total cost for regulator to implement the XBRL reporting infrastructure ranges between 70,000.00 EUR and 2,200,000.00 EUR with calculated average 812,900.00 EUR and median 623,000.00 EUR
- Yearly maintenance cost for regulator for the XBRL reporting infrastructure ranges between 42,000.00 EUR and 411,000.00 EUR with calculated average 153,260.00 EUR and median 88,300.00 EUR.

9.2.5.2 Reporting entity costs (outsourced production of XBRL filings)

Below figures are representing responses provided by both issuers and intermediary organisations:

Aspect	Minimum value	Maximum value	Median	Average
Number of employees to be trained in XBRL standard	0 employees 0.00 EUR	2 employees 3633.33 EUR	1 employees 1,816.67 EUR	1.05 employees 1,907.50 EUR
Man-days spent internally on the preparation of first XBRL filing	0.5 man-day 100.00 EUR	7 man-days 1,400.00 EUR	5 man-days 1,000.00 EUR	4.17 man-days 833.33 EUR
Man-days spent internally on the preparation of each subsequent filing	0.2 man-day 40.00 EUR	3 man-days 600.00 EUR	2 man-days 400.00 EUR	1.73 man-days 346.67 EUR
Cost of the preparation of first XBRL filing	300.00 EUR	26,000.00 EUR	1,500.00 EUR	5,443.33 EUR

Cost of the preparation of subsequent filing	300.00 EUR	6,0000 EUR	1,350.00 EUR	2,060.00 EUR

Table 50: Reporting entity costs (outsourced production of XBRL filings) – conclusions

Conclusions:

- Total cost for filer to outsource the first XBRL filing ranges between 400.00 EUR and 31,033.33 EUR with calculated average 8,184.16 EUR and median 4,316.67 EUR
- Total cost for filer to outsource each subsequent filing ranges between 340.00 EUR and 6,600.00 EUR with calculated average 2,406.67 EUR and median 1,750.00 EUR

9.2.5.3 Reporting entity costs (internal production of XBRL filings)

Similarly as in *outsource* scenario, below figures are representing responses provided by both issuers and intermediary organisations:

Aspect	Minimum value	Maximum value	Median	Average
Number of employees to be trained in XBRL standard	1 employee 1,816.67 EUR	10 employees 18,166.67 EUR	3 employees 5,450.00 EUR	3.36 employees 6,098.81 EUR
Man-days spent internally on the preparation of first XBRL filing	2 man-days 400.00 EUR	12 man-days 2,400.00 EUR	5 man-days 1,000.00 EUR	5.62 man-days 1,123.08 EUR
Man-days spent internally on the preparation of each subsequent filing	0.5 man-day 100.00 EUR	5 man-days 1,000.00 EUR	2.5 man-days 500.00 EUR	2.32 man-days 464.29 EUR
Cost of software license fee/seat on cloud solution	500.00 EUR	20,000.00 EUR	5,000.00 EUR	5,844.00 EUR
Cost of yearly maintenance of the XBRL software	100.00 EUR	17,250.00 EUR	1,200.00 EUR	4,200.00 EUR

Table 51: Reporting entity costs (internal production of XBRL filings) – conclusions

Conclusions:

- Total cost for filer to internally produce the first XBRL filing ranges between 2,716.00 EUR and 40,566.67 EUR with calculated average 13,067.89 EUR and median 11,450.00 EUR
- Total cost for filer to internally produce subsequent filing ranges between 100.00 EUR and 1,000 EUR (excluding yearly maintenance of the solution) with calculated average 464.29 EUR and median 500.00 EUR
- Total cost for filer to internally produce subsequent filing ranges between 200.00 EUR and 18,250.00 EUR (including yearly maintenance of the solution) with calculated average 4,664.29 EUR and median 1,700.00 EUR

9.2.5.4 Additional costs for issuers (integrated solution only)

Aspect	Minimum value	Maximum value	Median	Average
Man-days spent internally on the	1 man-day	200 man-days	10 man-days	33.42 man-days

integration of XBRL reporting infrastructure	200.00 EUR	40,000.00 EUR	2,000.00 EUR	6,685.71 EUR

Table 52: Additional costs for issuers (integrated solution only) – conclusions

Conclusions:

- Total costs for filer to integrate the solution within its reporting systems ranges between 200.00 EUR and 40,000.00 EUR with calculated average 6,686.71 EUR and median 2,000.00 EUR

9.3 External desk research

9.3.1 Online market research

This section presents the results of the research of websites, information gathered through e-mail or telephone contact and from publically available marketing materials listing services, software license fees or Software as a Service [SaaS] costs related to support of creation of XBRL reports covering a scope of annual financial statements.

Research covered, but was not limited to, the online resources available on the websites of service providers or vendors offering XBRL/iXBRL products and solutions (see Appendix A2. for details).

While many vendors and software providers publish the pricing of their offerings publically, others are reluctant to disclose the costs even in a telephone conversation after being informed the data would remain anonymous and serves research purposes only.

The next paragraphs present exemplary prices or price ranges and important terms and conditions for various implementation approaches: outsourcing, bolt-on/cloud, COTS and integrated disclosure management/regulator filing solution.

The commercial model for outsourcing iXBRL tagging is commonly based on the number of pages in a report. The expected input is MS Word or MS Excel file. The numbers presented below are in majority related to the UK HMRC and Companies House reporting requirements as described in section 3.2.1. They do not include any activities outside of tagging (i.e. review, effort of issuers to support the third party, creation of taxonomy extension, etc.).

The outsourcing costs starts from around 100.00 EUR per small 10 pages report. Every five pages more costs additional 5.00 to 50.00 EUR depending on the fixed starting price for the minimum number of pages. Majority of service providers offer preparation of a report within an average of 10 working days. Should the report be prepared in a faster pace, the prices increase by approximately 30-50% to shorten the period by half and are doubled for the next day service. The prices may also very in case the minimum subset or a full tagging is applied, where the service for the latter require an average 30-60% surcharge. A few outsourcing services providers offer volume discounts for multiple entities or reports. An example of pricing[76] is based on number of pages is described in Table 53.

Number of pages	within 10 working days	over 15 entities/reports	within 3 working days
up to 14	156	143	200
15 – 29	231	209	300
30 – 44	319	286	415
44 – 50	412,5	374	536
over 50	5,5	5,5	7,15

[76] Source: https://www.datatracks.co.uk/ixbrl-tagging-cost.

Table 53. Exemplary pricing for outsourced tagging based on the number of pages in a report (converted from GBP to EUR using exchange rate 1.1 EUR = 1 GBP).

The pricing models for bolt-on/cloud solutions are more diverse. They are commonly offered as SaaS and depend on the number of reports, users and time. The prices start from around 10EUR per month per user with limited number of reports to be tagged. Unlimited reports and users service is available for 1200EUR per year or more depending on the solution functionalities enabling simplifying the tagging, allowing collaboration and other features to reduce the time effort and ensure high quality result.

The price for standalone XBRL COTS software start from a few thousand EUR. These solutions enable opening of any taxonomy and manual input of data or import from other common formats such as a predefined MS Excel and are not limited by number of reports. Due to lack of customisation to any reporting scenario, their generic interface is less user friendly and requires more effort from the issuers side to prepare the report.

Simple integrated solutions can be purchased for 500.00 EUR per license. They offer basic features for accessing source data and are usually profiled for a given reporting scenario and taxonomy. More generic solution including a comprehensive disclosure management and regulatory filing features can be purchases starting from 50,000.00 EUR per license with a yearly support (this does not include configuration, integration and hardware). Additional licenses are usually less expensive and the implementation cost is spread across many users which allows to benefit from scale of implementation.

9.3.2 International case studies

This part of the report presents the outcome of international studies conducted by public authorities and professional organisations to assess the costs and benefits of introduction of XBRL to data exchange process.

9.3.2.1 Annual charge for outsourced creation of XBRL reports

An important research[77] from standpoint of this report was performed by the American Institute of CPAs [AICPA] in 2015. It was aimed at understanding the cost of companies complying with the US SEC mandate. In order to learn that AICPA surveyed 14 XBRL filing agents providing XBRL tagging and filing services to 1299 smaller public companies (32% of all small publicly listed companies). The annual price for outsourced creation of XBRL filing ranged from 900 USD to 50,000.00 USD as presented in the following table.

Annual price for outsourced creation of XBRL filing	Number of companies	% of population
900 – 5000 USD	368	28%
5001 – 10000 USD	531	41%
10001 – 15000 USD	180	14%
15001 – 20000 USD	63	5%
20001 – 25000 USD	59	5%
25001 – 30000 USD	48	4%
30001 – 35000 USD	20	2%
35001 – 40000 USD	17	1%
40001 – 45000 USD	9	1%
45001 – 50000 USD	4	0%

[77] https://www.aicpa.org/interestareas/frc/accountingfinancialreporting/xbrl/pages/xbrlcostsstudy.aspx

Table 54. Number of companies and % of population for each 5000 threshold increase in annual charge for outsourced creation of XBRL reports

The survey showed that almost 70% of the companies paid less than 10,000.00 USD on an annual basis for fully outsourced creation and filing solutions of their XBRL filings. Meanwhile, almost 20% of the companies paid annual costs of between 10,000.00 and 20,000.00 USD and only 8% were charged more than 25,000.00 USD. This is lower than estimates forecasted in a publication from 2010[78].

9.3.2.2 SEC reporting and the impact of XBRL surveys

Interesting surveys were conducted in 2011, 2012 and 2013 by the Financial Executives Research Foundation. The most recent one[79] was distributed to 5000 members of Financial Executives Int.[80] and 3500 additional SEC reporting professionals with data collected by Cvent, an independent survey firm. Responses were gathered from 509 individuals representing 442 companies with different SEC Filing Status as presented in Table 55.

Type of respondent	Number of respondents	Percentage of respondents	Distribution of all XBRL issuers
Large Accelerated Filer (public float over 700 million USD)	276	62%	24%
Accelerated Filer (public float of 75-700 million USD)	96	22%	21%
Non-Accelerated Filer (public float of less than 75 million USD)	39	9%	11%
Smaller Reporting Company (a sub-set of non-accelerated issuers)	31	7%	44%

Table 55. Profile of respondents in the research conducted by the Financial Executive Research Foundation

Table 56 presents the implementation approaches applied by the respondents.

Type of respondent	Outsourcing/Bolt-on/Cloud	Disclosure Management Solution
Large Accelerated Filer	22%	78%
Accelerated Filer	32%	68%
Non-Accelerated Filer	41%	59%
Smaller Reporting Company	58%	42%
Total	29%	71%

Table 56. Implementation solution applied by respondents.

Interestingly, comparing to results from 2012 survey many issuers switched to integrated approach and employ disclosure management system (63% in 2012, 71% in 2013) to further benefit from structured data and cover the entire reporting and tagging process internally rather than depend on third party services and solutions.

One part of the survey was devoted to measuring the most challenging aspects of XBRL implementation using scale from 0 to 5 where 1 corresponds to no challenge, 5 to extreme challenge and 0 means that aspect is not applicable. The outcome is presented in Table 57.

Profile	Implementation approach

[78] http://accounting.smartpros.com/x71155.xml
[79] https://www.secprofessionals.org/sites/default/files/2013%20FERF%20Final%20Report.pdf
[80] https://www.financialexecutives.org/Home.aspx

	Large Accelerated Filer	Accelerated Filer	Non-Accelerated Filer	Smaller Reporting Company	Outsourcing/ Bolt-on/Could	Disclosure Management Solution
Final Review Process / Validation	2,9	3,0	3,5	2,9	3,0	3,0
Mapping / Tag Selection	2,7	2,8	3,2	2,9	2,7	2,8
Proper Handling of Negative Values	2,7	2,6	3,0	2,5	2,4	2,8
Internal Teams' Level of XBRL Competency	2,6	2,8	3,0	2,9	2,7	2,7
Getting Educated on XBRL	2,4	2,8	3,1	2,6	2,5	2,6
Tagging / XBRL Exhibit Preparation	2,3	2,4	2,5	2,3	2,1	2,4
Pencils Down Period Associated With Outsourced XBRL Services	1,2	1,7	1,8	1,8	2,3	0,9
Experience Working With Outsourced XBRL Service Provider	1,2	1,5	1,8	1,4	3,0	0,8

Table 57. Challenges of XBRL implementation.

As disclosed in Table 57, the most challenging aspect identified by respondents was the final review/validation and the tagging/mapping selection processes including proper handling of negative values. Education, skills and level of knowledge were also recognised as significant concerns while cooperation with third party offering XBRL services was deemed as a small challenge.

Among the most frequently used and helpful resourced in creating the submissions majority of respondents named the XBRL services or tools providers and trainings. Interestingly, one of the useful sources of information were the filings of other companies from the industry or competitors.

In terms of concerns regarding XBRL compliance, majority of the answers oscillated between low to moderate levels.

Another question related to outsourcing of XBRL works. Large issuers used significantly less external services and declared further reduction in the next years while small entities more heavily relied on third party experts and were planning to even further extend this option.

A set of questions were devoted to estimating the number of hours spent on preparation and review of XBRL report. The numbers oscillated on average at around 50 and 60 hours for larger entities and 30 for small issuers as presented in Table 58.

		Average		Median		Maximum	
		Preparation	Review	Preparation	Review	Preparation	Review
Profile	Large Accelerated Filer	49	16	32	28	600	280
	Accelerated Filer	42	10	20	23	500	200
	Non-Accelerated Filer	44	16	24	22	200	150
	Smaller Reporting Company	23	8	24	11	65	50
Implementation approach	Outsourcing/ Bolt-on/Cloud	31	23	20	14	280	210
	Disclosure Management Solution	49	15	32	15	600	280

Table 58. Hours spent on preparation and review of XBRL report.

The survey also measured the cost associated to outsourced services. As presented in Table 59, the average amounted to approximately 20,000 USD with median at the level of 10,000 USD with significantly lower numbers declared by small entities.

		Average	Median	Maximum
Profile	Large Accelerated Filer	21	10	125
	Accelerated Filer	15	10	65
	Non-Accelerated Filer	19	10	50
	Smaller Reporting Company	10	2	50
Implementation approach	Outsourcing/Bolt-on/Could	20	10	125
	Disclosure Management Solution	18	8	100

Table 59. The cost of outsourced services per report (in thousands USD).

Important aspect of XBRL filing relates to pencils down policy which refers to the time prior the planned filing when the final version of report is expected to be finalized in order ensure its proper tagging. As presented in Table 60 majority of issuers using an integrated approach do not require any pencils down policy while in case of other approaches almost half of respondents needs to have their reports finalized at least two days before the planned submission.

	Outsourcing/Bolt-on/Could	Disclosure Management Solution
no pencils down policy	20%	90%
less than 24 hours	23%	6%
1-2 business days	44%	2%
2-4 business days	9%	2%
5+ business days	4%	0%

Table 60. Pencils down policy.

Percentage of respondents that engaged or planned to engage an external accounting firm for findings and recommendations and agreed upon procedure XBRL engagement did not exceed 7% and was increasing slowly however those companies that decided to use such services were in general satisfied with the outcome.

The average number of employees involved in XBRL reporting varied from 5 in case of larger companies to 3 for small issuers as presented in Table 61.

	Average	Median	Minimum	Maximum
Large Accelerated Filer	5	4	1	40
Accelerated Filer	4	3	1	15
Non-Accelerated Filer	4	3	1	10
Smaller Reporting Company	3	2	1	10

Table 61. Number of employees involved in XBRL filing.

Majority of these employees had only basic knowledge of the concept. Usually only one person was highly skilled and had comprehensive understanding of the preparation and review process and one or two possessed general understanding of tagging and mapping.

The number of working days to close the books varied from average a little over 10 in case of large issuers to almost 20 for smaller entities. This translated to the number of days after the year-end when the filing was submitted which varied from average 53 to almost 80 for larger and smaller issuers respectively.

Around 70% of respondents did not expect any shortening of this period in the subsequent years but around 25% estimated to file a few days faster in their next submissions.

All of the identified bottlenecks in the process i.e. XBRL, late changes, internal/auditor/legal review process, data collection/consolidation and closing of books were rated between slightly and somehow difficult with XBRL and late changes being perceived as more challenging factors.

9.3.3 Conclusions

The conducted market research indicates that compliance with the XBRL reporting requirement may be achieved at the level of around one thousand euro in case of outsourced approach and a small and simple report and may grow to tens or hundreds of thousands for integrated implementation.

The case studies analysed in the previous section identify that the cost of XBRL filing shall not exceed a few tens of thousands of EUR per filing. The average number of employees involved in filing is 3-4 people of which only one or two require more detailed knowledge about the standard, taxonomies, tagging and mapping. Preparation and review of a filing amounts to proximately 6-8 man-days per report and with additional outsourcing cost of 10,000.00 EUR.

9.4 Reference model analysis

9.4.1 Assumptions made

This section provides the analysis of the process of tagging of a selected report using a *bolt-on* desktop application and a *cloud* based solution. The time effort is estimated for works being conducted by a person with basic knowledge of XBRL standard, intermediate familiarity with the taxonomy, well comprehension of the content of the financial statement and understanding of the look and feel and features of a software tool for the preparation of XBRL reports. This profile corresponds to an employee of an issuer from an accounting department, trained in XBRL, taxonomy and the tool during the three day workshop.

9.4.2 Description of the process

The applied process of tagging using bolt-on/cloud approach involved five steps as presented on Figure 41.

Figure 41. Process of report tagging

Loading of the taxonomy may be part of a setup conducted by solution's provider or the initial step performed by an issuer. In the first case, the application may be profiled to deal with certain constructs used in the taxonomy to support the filer with subsequent tagging. This exercise was performed on a custom designed taxonomy; therefore this step is omitted in the analysis.

At first, the user loads a report in MS Word or MS Excel format to a tool. The next step involves setting up an application by providing general information about a report including:

- referenced taxonomy,
- company name and identifier,
- periods covered by a report.

Once the report is set up a user can start mapping information from a report to the taxonomy. This is typically done in an interface displaying the taxonomy content next to a report. Below Figure 42 presents a standard mock-up of a *bolt-on/cloud* solution user interface.

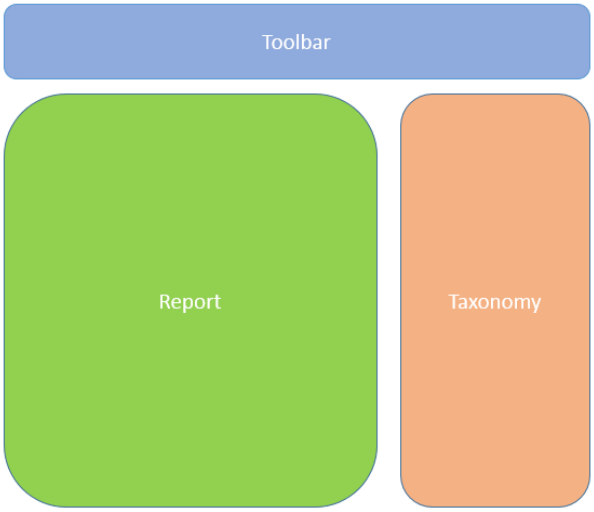

Figure 42 Visualisation of software interface

In general, there are two types of mappings: tagging a specific fact value individual or block tagging of an entire segment of information (e.g. a note).

Financial data are commonly represented in tabular format as presented on Table 62.

€ millions, unless otherwise stated	2015	2014	2013
Total revenue	**20,793**	**17,560**	**16,815**
Cost of cloud and software	–3,313	–2,557	–2,370
Cost of services	–3,313	–2,716	–2,660
Total cost of revenue	**–6,626**	**–5,272**	**–5,031**
Gross profit	**14,167**	**12,288**	**11,784**

Table 62. Part of the sample Consolidated Income Statements

Tables may be tagged in two ways.

One approach is to tag information applicable to an entire row or column. As a result, the fact appearing on the intersection contains characteristics from both a row and a column. A user can search for a suitable concept in the taxonomy by label, name or select an element from the adequate extended link. The hierarchies in the extended links define the relations between the elements (e.g. the element “Cash and cash equivalents” is a part of the element “Current assets”, which is a part of “Assets” element). An example is provided in Table 63 where row “TOTAL REVENUE” is tagged with taxonomy element “Revenue” (in green colour) while column “2015” is mapped against the period from 2015-01-01 to 2015-12-31, “EUR” currency and scale “1,000,000” (in blue colour). As a result, the value “20,793” (in yellow) inherits the concept, period, currency and scale from the rows and columns on which intersection it appears. If necessary, a user may provide on a row or column additional information about applicable dimensions and members. An average time needed to tag an individual row or column is about 15 seconds in case the corresponding concept is found in the taxonomy (situation when there is no corresponding tag in the is described later in this section).

€ millions, unless otherwise stated	2015	2014	2013
Total revenue	**20,793**	**17,560**	**16,815**
Cost of cloud and software	–3,313	–2,557	–2,370
Cost of services	–3,313	–2,716	–2,660
Total cost of revenue	**–6,626**	**–5,272**	**–5,031**
Gross profit	**14,167**	**12,288**	**11,784**

Table 63. Part of the sample Consolidated Income Statements – tagging a concept defined in the taxonomy

Another approach offered by software is to tag each fact individually. In this case a user marks a single value in the table and identifies applicable taxonomy concept, period, currency, scale and dimension members. This is estimated for about 20 seconds per fact (in case a taxonomy defines a corresponding concept). As a result, the first approach is much faster. Moreover, tagging applications based on the first approach may provide a functionality of automatic tagging. It this process the tool automatically searches for corresponding concepts in the taxonomy for all of the facts in the report based on the text in headers of rows/columns or wording of paragraphs. Subsequently, a user can review matched elements and confirm or reject suggested tagging. Additionally, during the manual tagging process a software may display additional list with suggested concepts (based on text matching, placement in a report, previously used tagged, etc.) and probability of a success hit.

Tagging is more time consuming in case the taxonomy does not define a direct equivalent concept for a fact, in which case a user marks the row or column title and tags it against the technical "Name of other element of (…)" concept which is assigned with a unique value for "Other element identification" dimension. Subsequently a user tags the value against the "Value of other element (…)" for the same unique key of "Other element identification" dimension. An example is provided in Table 64.

€ millions, unless otherwise stated	2015	2014	2013
Total revenue	**20,793**	**17,560**	**16,815**
Cost of cloud and software	–3,313	–2,557	–2,370
Cost of services	–3,313	–2,716	–2,660
Total cost of revenue	**–6,626**	**–5,272**	**–5,031**
Gross profit	**14,167**	**12,288**	**11,784**

Table 64. Part of the sample Consolidated Income Statements - tagging a concept not defined in the taxonomy.

Row "Cost of cloud and software" (marked in grey in Table 63) represents facts for which there is no corresponding concepts represented in the taxonomy. To tag the value of this fact for 2015 column a user marks "Cost of cloud and software" and defines it as "Name of other element of profit (loss)" with value "1" for "Other element identification" dimension. Subsequently a user marks "-3,313" as a "Value of other element of profit (loss)" with value "1" for "Other element identification" dimension. Should there be other fact not matching any taxonomy concept in this or other table a user would repeat the process but provide other value than "1" (e.g. "2") for "Other element identification" dimension.

Time required to tag such fact is assessed for around 1 minute.

Tagging of Table 62 should not exceed 3 minutes in the first approach (3 columns, 4 rows with direct match in the taxonomy, 1 row with additional concept) or 5 minutes in the second approach (15 tags, of which 3 not matching any taxonomy concepts).

Tagging the notes is a next step in the process of creating of an iXBRL report. To apply a block tag, a user should mark a section of a report containing a note and select a corresponding text block or string concept from the taxonomy. An example of a note is provided on Figure 43.

2) SCOPE OF CONSOLIDATION

Entities Consolidated in the Financial Statements

	Total
December 31, 2013	**272**
Additions	58
Disposals	–43
December 31, 2014	**287**
Additions	8
Disposals	–40
December 31, 2015	**255**

The additions relate to legal entities added in connection with acquisitions and foundations. The disposals are mainly due to mergers and liquidations of legal entities.

Figure 43. Example of an explanatory note

As explained above, in order to tag a note a user marks the area starting from 2) Scope of consolidation (…) "up to "(…) legal entities." and select from the taxonomy a matching concept "Disclosure of consolidated and separate financial statements [explanatory]". The process of tagging a single note takes around 15 seconds.

When tagging is completed a user can create an iXBRL report. Depending on the software the file is saved on the hard drive or available for download from a website.

9.4.3 Conclusions

The approximation of tagging times stated in the previous section are average numbers based on the two different products used. The analysed financial report contains five general tables of the PFSs and 34 notes. The process of tagging the statement may vary (depending on the functionalities of the toolkit used and the experience of a user) from three to five man-days where one to three man-days are required to tag all of facts in the five consolidated statements and the other day or two are needed to block tag notes (including detailed tagging for some of the content).

After the successful tagging process, the software analyses all applied tags. Based on that in the next process of report tagging the suggested by software matches of facts and concepts should be more accurate. Therefore, subsequent filings shall be completed in shorter times.

As a result, the total cost of filing (in the described scenario where notes are tagged as blocks and the taxonomy defines technical constructs to be applied instead of a company extension) includes:

- a license for a bolt-on application or access to the cloud based solution for one user and report (see other sections of this report for details),
- three-day training for an employee of an accounting/financial department,
- four man-days (on average) for creation of first filing,
- two man-days (on average) for creation of any subsequent filing.

Assuming an access to a cloud solution on the average level of 500.00 EUR per month/user/report, the price of training varying from 1,000.00 to 3,600.00 EUR (for three day long comprehensive workshop) and the average daily salary in EU of 240.00 EUR[81], the total amount related to tagging should not exceed 3,300.00 EUR for the first submission and continue on the level of around 1000.00 EUR per each subsequent submissions. This estimation does not include the costs of any review or quality assurance, which as described in section 9.3.2.2, is perceived as a major challenge and results in additional man-days or consulting expenses. Additionally, issuers may involve more human resources in the process to reduce the risk of employees rotation and benefit from scaling factors (less expensive training per person, better subscription plans for cloud tagging SaaS or bolt-on licenses, etc.), that may further increase one-time and ongoing costs.

An alternative cost of outsourced service for a report of 50 pages would amount at least 400EUR. This cost, however, does not include the time spent by issuers' employees to support the third party experts or to review the tagging, which may result in additional costs.

The total cost of implementing an integrated solution is hard to estimate given the number of driving factors

10 Final Summary

Inline XBRL is a mature technology with stable specification covering requirements related to metadata description and exchange of structured data. It is applied globally in multiple implementations of regulatory reporting with thousands of reports exchanged each year. Production and consumption of iXBRL reports is supported by numerous services and software solutions available on the market at various level of prices and with diverse functionalities.

Estimates for the implementation costs of iXBRL are based on survey results backed up by external desk research, analysis of international case studies and the proof-of-concept exercise on the reference model enabled to create a reliable set of estimates of the costs of implementation of Inline XBRL.

Based on the survey results, the total cost for an issuer to outsource the first XBRL filing ranges between 400.00 EUR and 31,033.33 EUR with calculated average 8,184.16 EUR and median 4,316.67 EUR. The process involves, on average, one person trained in iXBRL and around 4 man-days on preparation of the first filing. In case of subsequent filings, the cost of outsourcing services ranges from 340.00 EUR to 6,600.00 EUR, with average on the level of around 2,400.00 EUR and a median of 1,750.00 EUR. The research of information available online shows that the price for outsourcing XBRL tagging for a 50 page long document, starts from the level of 400.00 EUR. This amount, however, does not include any taxonomy extension activities and any effort on the issuer side such as training of employees in order to actively participate in the tagging process and support the third party experts which combined with the tagging cost would result in similar amounts. Findings from the survey are also slightly below the results of the two referred international cases studies. According to one of them, the average cost of outsourcing XBRL tagging amounted to around 9,000.00 EUR (with median at the level of 7,200.00 EUR), while the other survey indicated the range of 9,000.00 to 19,000.00 EUR for the average (depending on the size of an issuer) and the median varying between 2,000.00 and 9,000.00 EUR. Higher numbers identified by these researches may be related to the fact, that the analysed studies related to a reporting scenario that assumes taxonomy extension by issuers, which results in additional effort.

[81] http://ec.europa.eu/eurostat/statistics-explained/index.php/Wages_and_labour_costs

In case a report is created internally by an issuer as the last-mile step, tagging or with an integrated solution, the total cost related to the production of the first filing, according to the survey, varied between around 2,700.00 EUR and slightly over 40,000.00 EUR with average at the level of 13,000.00 EUR and median amounting to 11,500.00 EUR. Subsequent filings involve a cost between 100.00 and 1,000.00 EUR with average and median of around 500.00 EUR. These numbers exclude the yearly maintenance cost of the solution. Including these expenses raises the costs to the range of 200.00 to 18,250.00 EUR and 4,600.00 EUR average / 1,700.00 EUR median. Should the issuer decide to apply the integrated solution, there is additional effort of 1 to 200 man-days with average level of a bit over 33 man-days (which translates to 6,600.00 EUR) and a median of 10 man-days (2,000.00 EUR). Pricing of the bolt-on/cloud/COTS and integrated solutions are in general not disclosed on the vendors' websites, nevertheless, the few numbers found during the online research seem to back up the responses provided by issuers and intermediaries in the survey, with costs of simple bolt-on applications or cloud SaaS starting from under 1,000.00 EUR and up to 40,000.00 EUR or more for integrated Disclosure Management Systems and Regulatory Filing solutions (excluding any expenses related to training or integration). Similarly, the referred case study results identify the necessary effort of around 3 man-days (for small companies) up to 6-8 man-days (in case of large issuers) to produce the first filing by a team of 3-4 people of which half has more expertise with XBRL, tagging process and the tools involved. The estimates of the proof-of-concept exercise conduced on the reference model lean toward the lower end of the survey results with cost assessed at the level of 3,300.00 EUR for the first filing and the ongoing cost of 1,000.00 EUR per report. Importantly, these numbers refer solely to the tagging process itself and do not include subsequent review necessary to ensure the quality of the filing or involvement of more human resources to mitigate the risk of employees' rotation. Additionally, the reference model reporting scenario did not assume taxonomy extension and expected (in general) tagging of notes as blocks.

Overall, the total cost for an issuer may start from 400.00 EUR in case of an outsourced approach and run up to 40,000.00 EUR or more when the production of reports, including XBRL tagging, is fully integrated. While the first number may be underestimated comparing to the ESEF project assumptions and requirements (scope and complexity of data exchanged, tagging coverage, etc.), the latter seems to be a reasonable amount required to fully automate the reporting process based on the IFRS or a similar XBRL taxonomy. Production of subsequent filings shall remain on a slightly lower level comparing to the creation of the first filing in case of outsourced or bolt-on/cloud approach while it may be rapidly decreased once the integrated solution is set up and running.

According to the answers gathered in the survey for regulators, implementation of XBRL reporting infrastructure would cost between 70,000.00 EUR and 2,200,200.00 EUR depending on the functionalities of the system, decisions on supporting or not taxonomy extensions, number of issuers and reports, etc. The average and median amounted slightly over 800,000.00 and 600,000.00 EUR respectively. Yearly maintenance costs vary between 42,000.00 and 411,000.00 EUR with around 150,000.00 EUR on average and 88,300.00 EUR median. The expenses to be incurred by the OAMs in case of the ESEF project implementation, should not exceed the average numbers resulting from the survey. Nevertheless, the final cost may vary depending functionalities of the acquired/developed solutions or extensions to the reporting scope that may be considered by individual countries (e.g. applying available national or third-county taxonomies).

Appendix A1. Tools selected for the reference model

The proof-of-concepts exercise for the reference model was conducted and described based on the following tools and materials:

- Arkk Solutions iXBRL Reporting Desktop application (https://www.arkksolutions.com/solutions/),
- Corefiling a testing environment for the cloud-based Seahorse (https://www.corefiling.com/products/seahorse/),
- IRIS Business Services description on operating of IRIS CARBON solution.

Appendix A2. List of websites researched within the external desk study

List of websites researched to conduct the external desk study:

- http://www.12efile.com/Homepage/price.htm
- http://www.1stchoiceixbrl.co.uk/
- http://www.anavrin.co.uk/
- http://www.xbrlconverter.com/
- https://www.123xbrl.co.uk
- https://www.datatracks.co.uk/ixbrl-tagging-cost
- https://www.gbooks.co.uk/pricing.php
- https://www.taxcalc.com/accountsProduction#Features
- http://www.smith.williamson.co.uk/ixbrl-tagging
- http://www.pdf2ixbrl.co.uk/pdf2ixbrl/prices.aspx
- http://www.vtsoftware.co.uk/prices/index.htm
- http://www.essentialixbrl.co.uk/
- http://www.xl2xbrl.co.uk/
- http://estore.gemini-systems.com/ibm/software-license/business-intelligence-analytics/cognos-disclosure-management/
- http://mca.gov.in/XBRL/pdf/Fujitsu.pdf
- http://keytime.co.uk/
- http://tax.co.uk/products/xbrl/
- http://taxfiler.co.uk/
- http://www.advancetrack.co.uk/
- http://www.alui.com/
- http://www.amanecersolutions.com/
- http://www.amosca.co.uk/
- http://www.andica.com/
- http://www.bidazzle.co.uk/firstchoice/newkeyfeatures.shtml
- http://www.btcsoftware.co.uk/
- http://www.buzzacott.co.uk/
- http://www.creaseys.co.uk/
- http://www.ctplc.com/
- http://www.efileready.com/
- http://www.ez-xbrl.com/
- http://www.ftax.co.uk/
- http://www.infini.com/
- http://www.iris.co.uk/

- http://www.pinacleaccounts.co.uk/
- http://www.relate-software.com/
- http://www.sa2000.co.uk/
- http://www.sage.co.uk/accountants
- http://www.softpark.com/
- http://www.taxcomputersystems.com/alphatag-ixbrl-statutory-accounts-tagging-software/
- http://www.vtsoftware.co.uk/ixbrl/tagging.htm
- http://www.xbrlconverter.com/
- https://1stopxbrl.com/
- https://tax.thomsonreuters.co.uk
- https://www.absolutetax.co.uk/
- https://www.arkksolutions.com
- https://www.bdo.co.uk
- https://www.capium.com/
- https://www.caseware.co.uk
- https://www.cch.co.uk/
- https://www.rsmuk.com/
- https://www.workiva.com

Appendix 2 - Feedback received on the questions to the CBA

1. The questions to which the responses that are summarised in this document relate, were published together with the Consultation Paper and the CBA 2015 on 25 September 2015. The questions can be found at the end of this document.

Questions directed to issuers of securities admitted to trading in a regulated market in the EEA

Q1: We would appreciate some information about your entity. Are you a large company/group of companies or a SME? If you represent a credit institution, please also tick the respective box.

2. Nine respondents self-identified themselves as preparers of financial statements. 2 of them considered themselves to be SMEs in the sense of article 3(3) of the Accounting Directive (Directive 2013/34/EU). One of the large group of companies responding, was a credit institution.

Q2: What kind of financial statements are contained in the annual financial report of your entity? Please tick the appropriate boxes.

3. This question was answered by eight respondents. Three of them noted that their AFR would contain the consolidated financial statements prepared under IFRS and the individual financial statements of the parent company drawn up in accordance with national GAAP. One respondent prepares not only the consolidated financial statements under IFRS but also the individual financial statements of the parent company. Four respondents explained that their AFR only contains the consolidated financial statements under IFRS but no individual financial statements. This however would not be in line with article 4(3) of the TD that determines that the AFR also has to contain the individual financial statements of the parent company of a group.

Q3: Considering the 4 technological options examined in the CBA, ESMA suggests that XBRL and Inline XBRL are the most appropriate solutions for the implementation of structured electronic reporting. What of the following is in your view the most appropriate solution? If other format, please explain.

4. Eight respondents provided a comment to this question. The responses seem to be influenced by the current reporting practices of the respondents. The two respondents that prefer XBRL are financial institutions that use XBRL for the purposes of their regulatory reporting. Three of the respondents are entities from Germany that are allowed to use the XML format to submit their AFR to the OAM. They consequently considered that XML would be the most appropriate technology for ESEF. Three other respondents thought that PDF would be the best format for ESEF.

Q4: Has your company ever carried out an analysis to implement a structured electronic reporting format?

5. Out of the eight respondents to the question, only two indicated that they have carried out an analysis to implement a structured electronic reporting format, whereas the other six have not yet done so.

Q5: Has your entity already implemented a structured electronic reporting format? If yes, please explain which format was implemented.

6. This question was answered by seven respondents. Three of them have already implemented a structured electronic reporting format. One of the respondents, an insurance, uses XBRL for its regulatory reporting, the other two XML.

Q6: As presented in section 4.2.1. of the Cost Benefit Analysis, issuers considered implementing structured electronic reporting through a built-in or a bolt-on approach. Which implementation approach has your entity followed or does intend to follow?

7. From the seven respondents, four pointed out that they have not yet developed a preference regarding the implementation approach. Two of them indicated that they either intend to implement, or have already implemented, structured reporting using a built-in approach. One other respondent either intends to implement, or has already implemented, structured reporting using a bolt-on approach.

Q7: Can you provide an estimate of the expected costs to set-up structured electronic reporting in your entity for XBRL and Inline XBRL?

8. Five respondents provided an estimate of their expected one-off costs to set up structured electronic reporting. The estimates differ significantly. Whereas one respondent estimated the set-up costs to be between 0.1 and 0.25 million EUR, two other respondents expected costs between 0.5 and 1.0 million EUR. One respondent expected the set-up costs to be between 1.0 and 2.5 million EUR and one respondent even expected the costs to exceed 2.5 million EUR.

9. Regarding the on-going costs on a yearly basis, one respondent expected costs of less than 0.1 million EUR and another respondent estimated yearly costs of between 0.1 million and 0.25 million EUR. Two of the respondents believed that the costs lie between 0.25 and 0.5 million EUR and another respondent assumes the yearly costs would exceed even 0.5 million EUR.

10. The respondents considered that the cost could be reduced if only the primary financial statements, but not the notes to the financial statements, would be required to be presented in a structured format. The estimates vary between cost reductions of about 20% which are expected by one respondent, whereas another respondent expected that this measure would reduce the costs by 50% and two respondents even expected cost savings of more than 60%. One other respondent distinguished between one-of costs and ongoing yearly costs. This respondent assumed that by limiting the requirement for structured reporting to the primary financial statements only, the one-off costs could be reduced by 20%. For the yearly on-going costs, this respondent expects cost-reductions of more than 60%.

Q8: In your opinion, to what extent will the ESEF provide the following benefits?

11. Seven respondents rated several benefits on a scale from one to five (five being the highest benefits and one the lowest). In their opinion, the benefit ESEF would provide to the highest extent, would be improved comparability (with a score of 2.9). Some of the respondents also considered that ESEF would facilitate cross border investment (overall a score of 2.5) and provide entities with easier access to capital markets and users with an improved ability to extract data (score of 2.4). Some of the respondents also saw an improvement of accessibility of the financial information (score of 2.2). The respondents generally did not consider ESEF to simplify the reporting process (score of 1.3) and to increase synergies with other reporting processes (score of 1.2).

Q9: In your opinion, to what extent will the different technologies provide the following benefits?

12. Six of the respondents provided an estimate of benefits that could be achieved by the use of XBRL and four of these respondents also provided an estimate of the benefits they expect from Inline XBRL. These respondents expected that XBRL would somewhat more improve comparability than Inline XBRL (score for this benefit 3.1 out on a scale from one to five for XBRL and 2.3 for Inline XBRL). In addition to that they expected that XBRL would improve the ability to extract data to a higher degree than Inline XBRL (2.8 instead of 1.7). Regarding the other benefits (increased accessibility, improvement of data quality, easiness to implement, ability of technological standard to be integrated, reduction of reporting burden and process simplification for other stakeholders) the respondents did not expect that either of the options might contribute significantly to achieve them.

Q10: Do you believe that SMEs should be fully covered by the ESEF in the same timeline as the large entities? If no, please explain.

13. All three respondents that expressed an opinion on this question, thought that SMEs should not be covered by the ESEF in the same timeline as large entities.

Q11: Do you consider that the expected benefits would be different depending on the type of issuer?

14. Of the three respondents to this question that expressed an opinion, two believed that the expected benefits would not depend on the type of issuer, whereas one respondent thought that the benefits would accrue to the business analysts only whereas the issuers would not benefit from ESEF.

Q12: Do you believe that ESMA should have added other costs and benefits in the CBA?

15. Two respondents think that the cost to audit the structured data should also have been considered in the CBA. One respondent thinks that all relevant costs and benefits were considered in the CBA.

ESMA response to the feedback received relating to the questions to the CBA 1 to 12

16. ESMA takes note of the answers provided by the respondents. However, considering that in total no more than 9 responses were received and that many of the questions were answered by even less respondents, the responses to the CBA do not provide strong evidence and cannot be considered to be representative of the about 6,300 issuers on regulated markets in the EEA. In addition to that, only two of the respondents indicate that they already would have carried out an analysis to implement structured electronic reporting. Therefore, ESMA concluded that further input is necessary and commissioned a study to assess the costs and benefits of the proposed technology and its appropriateness and suitability to fulfil the policy objectives of Article 4(7) of the TD.

Questions directed to users of financial statements of issuers of securities admitted to trading in a regulated market in the EEA

Q13: Please specify as which type of Stakeholder you qualify?

17. One of the three respondents self-identified itself as a data aggregator, one as institutional investor/financial analyst and one as 'other user', without further specifying this. These three respondents also self-identified themselves as issuers and also answered the questions directed to issuers.

Q14: Do you believe that structured reporting of financial information would be useful for your entity?

18. The three respondents to this question considered that structured reporting of financial information would not be useful for them.

Q15: Does your entity plan to use data from structured reporting?

19. The three respondents therefore do not plan to use the data in a structured format.

Q16: Considering the 4 technological options examined in the CBA, ESMA suggests that XBRL and Inline XBRL are the most appropriate solutions for the implementation of structured electronic reporting. What of the following is in your view the most appropriate solution? If other reporting format, please explain.

20. As the three respondents to this questions also answered the questions directed to issuers, they reiterated the opinion expressed in their answers to question three. Two of them prefer the use of PDF and one of them prefers XML.

Q17: According to you, what are the expected benefits from structured electronic reporting for each of the suggested technologies?

21. The three respondents rated several benefits on a scale from one to five (five being the highest benefits and one the lowest). In their opinion, the benefit structured reporting in XBRL or Inline XBRL would provide to the highest extent, would be improved comparability (with a score of 2.7). To a low degree they also assume that reporting in XBRL and Inline XBRL format would improve the ability to extract data (a score of 2.0). They also assume that reporting in the Inline XBRL format would somewhat improve the accessibility of the data (score of 2.0). The respondents generally do not believe that either reporting in XBRL or Inline XBRL format would be easy to implement or simplify the reporting process.

Q18: In your opinion, what would be the benefits of reporting the following parts of the financial statements in a structured format?

22. The respondents consider that the highest benefits can be expected from reporting the primary financial statements in a structured format (score of 2.0 on a scale of one to five, with 5 being the highest benefits). They see no benefits for having the notes in a structured electronic format.

Q19: Do you have an estimate of the cost reduction that would be possible for your entity due to the implementation of structured electronic reporting for all issuers on regulated markets in the EEA?

23. Two of the respondents do not believe that structured electronic reporting could reduce their costs. One of the respondents does not have an estimate.

Q20: Do you believe that ESMA should have added other costs and benefits in the CBA?

24. The respondents did not provide any specific comments to this question.

ESMA response to the feedback received relating to the questions to the CBA 13 to 20

25. ESMA takes note of the answers provided by the respondents. However, as already explained in the ESMA response related to the questions one to twelve, due to the low number of responses the feedback received does not provide strong evidence.

Therefore, ESMA concluded that further input is necessary and commissioned a technical study to assess the costs and benefits of the proposed technology and its appropriateness and suitability to fulfil the policy objectives of Article 4(7) of the TD.

Questions on the CBA 2015

For issuers

Please answer the questions 1-12 if you are an issuer of securities admitted to trading in a regulated market in EEA.

Q1. We would appreciate some information about your entity. Are you a large company/group of companies or a SME[1]? If you represent a credit institution please also tick the respective box (more than one selection is possible).

- ☐ Large company
- ☐ SME
- ☐ Credit institution
- ☐ Other (please explain below)

Q2. What kind of financial statements are contained in the annual financial report of your entity? Please tick the appropriate boxes (more than one selection is possible).

- ☐ Consolidated financial statements according to IFRS
- ☐ Individual financial statements according to IFRS
- ☐ Individual financial statements according to national GAAP
- ☐ Consolidated and individual financial statements according to a third country GAAP deemed equivalent to IFRS as endorsed in the EU

Q3. Considering the 4 technological options examined in the CBA, ESMA suggests that XBRL and iXBRL are the most appropriate solutions for the implementation of structured electronic reporting. What of the following is in your view the most appropriate solution? If other format, please explain.

- ☐ XBRL
- ☐ iXBRL
- ☐ Other format (please explain below)
- ☐ Don't know / No opinion

[1] According to Article 3(3) of the Accounting Directive (Directive 2013/34/EU) Small and medium-sized enterprises (SMEs) do not exceed the limits of at least two of the three following criteria:

Company category	**Employees**	**Turnover** or	**Balance sheet total**
SME	< 250	≤ € 40 m	≤ € 20 m

Q4. Has your company ever carried out an analysis to implement a structured electronic reporting format?

☐ Yes
☐ No
☐ Don't know / No opinion

Q5. Has your entity already implemented a structured electronic reporting format? If yes, please explain which format was implemented.

☐ Yes (please explain below)
☐ No

Q6 As presented in section 2.1 of the Cost Benefit Analysis, issuers considered implementing structured reporting through a built-in or a bolt-on approach. Which implementation approach has your entity followed or does intend to follow?

☐ Built-in approach
☐ Bolt-on approach
☐ Don't know / No opinion

Q7. Can you provide an estimate of the expected costs to set-up structured electronic reporting in your entity for XBRL and iXBRL?

a. What is your estimation of the relevant one-off costs (such as IT, staff and processing costs or consultancy fees)?

☒	0-100k €	100-250k €	250-500k €	500-1000k €	1000-2500k €	2500k+ €
XBRL	☐	☐	☐	☐	☐	☐
iXBRL	☐	☐	☐	☐	☐	☐

b. What is your estimation of the relevant on-going costs (such as IT, staff and processing costs or consultancy fees) **on a yearly basis**?

☒	0-100k €	100-250k €	250-500k €	500+€
XBRL	☐	☐	☐	☐
iXBRL	☐	☐	☐	☐

c. Please make an estimate by how much the projected cost above could be reduced if only the primary financial statements (balance sheet, income statement, statement of cash flows, etc.), but not the notes to the financial statements would be required to be presented in a structured format

☒	<20%	20%-30%	30%-40%	40%-50%	50%-60%	> 60%
One-off costs	☐	☐	☐	☐	☐	☐
On-going costs per year	☐	☐	☐	☐	☐	☐

d. How did you estimate these costs? Which factors did you take into consideration?

Q8. In your opinion, to what extent will the ESEF provide the following benefits?
Please rate each benefit from 1 to 5 according to the benefits expected by market participants (1 being the lowest amount of expected benefits and 5 the highest).

Benefits of ESEF	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessibility of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Simplification of the reporting process	☐	☐	☐	☐	☐	☐
Increase of synergies with other reporting processes	☐	☐	☐	☐	☐	☐
Easier access to capital markets	☐	☐	☐	☐	☐	☐
Facilitate cross border investment	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

Q9a. In your opinion, to what extent will the different technologies provide the following benefits?
Please rate the benefits for the technologies that after the CBA were deemed to be most appropriate (XBRL and iXBRL). Please rate each benefit from 1 to 5 (1 being the lowest amount of expected benefits and 5 the highest).

XBRL BENEFITS	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessibility of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Improvement of data quality	☐	☐	☐	☐	☐	☐
Easiness to implement	☐	☐	☐	☐	☐	☐
Ability of technological standard to be integrated into an existing technological environment (interoperability) and/or to re-use old technology for the new standard (re-usability)	☐	☐	☐	☐	☐	☐
Reduction in reporting burden	☐	☐	☐	☐	☐	☐
Process simplification for other stakeholders	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

iXBRL BENEFITS	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessibility of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Improvement of data quality	☐	☐	☐	☐	☐	☐
Easiness to implement	☐	☐	☐	☐	☐	☐
Ability of technological standard to be integrated into an existing technological environment (interoperability) and/or to re-use old technology for the new standard (re-usability)	☐	☐	☐	☐	☐	☐
Reduction in reporting burden	☐	☐	☐	☐	☐	☐
Process simplification for other stakeholders	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

(if the answer to Q3 was answered "Other format"):
Q9b. You answered in Q3 that in your opinion, there is a technological option that would be more appropriate for the implementation of structured electronic reporting than XBRL and iXBRL. Please rate to what extent will this preferred technology provide the following benefits? Please explain which technological option you would prefer.
Please rate each benefit from 1 to 5 (1 being the lowest amount of expected benefits and 5 the highest).

Other preferred standard BENEFITS	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessibility of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Improvement of data quality	☐	☐	☐	☐	☐	☐
Easiness to implement	☐	☐	☐	☐	☐	☐

Other preferred standard BENEFITS	1	2	3	4	5	Don't know / No opinion
Ability of technological standard to be integrated into an existing technological environment (interoperability) and/or to re-use old technology for the new standard (re-usability)	☐	☐	☐	☐	☐	☐
Reduction in reporting burden	☐	☐	☐	☐	☐	☐
Process simplification for other stakeholders	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

Q10. Do you believe that SMEs should be fully covered by the ESEF in the same timeline as the large entities? If no, please explain.

☐ Yes
☐ No (please explain below)
☐ Don't know / No opinion

Q11. Do you consider that the expected benefits would be different depending on the type of issuer?

Benefits for XBRL
☐ Yes (please explain below)
☐ No
☐ Don't know / No opinion

Benefits for iXBRL
☐ Yes (please explain below)
☐ No
☐ Don't know / No opinion

Q12. Do you believe that ESMA should have added other costs and benefits in the CBA? If yes, please explain below.

☐ Yes (please explain below which costs and benefits)
☐ No
☐ Don't know / No opinion

Costs

Benefits

For users

Please answer the following questions if and only if you are a user of financial statements of issuers of securities admitted to trading in a regulated market in EEA.

Q13. Please specify as which type of Stakeholder you qualify? (please tick one as appropriate)

- ☐ Financial Analysts
- ☐ Retail investor associations
- ☐ Other stakeholders' associations
- ☐ Institutional investors
- ☐ Data aggregator
- ☐ Auditors/ Accounting bodies
- ☐ Others (please specify in the textbox below)

Q14. Do you believe that structured electronic reporting of financial information would be useful for your entity?

- ☐ Yes (please explain below)
- ☐ No (please explain below)
- ☐ Don't know / No opinion

Yes: Explain what benefits you would expect from structured electronic reporting

No: Explain why you believe that structured electronic reporting would not be useful for your entity

Q15. Does your entity plan to use data from structured reporting?

- ☐ Yes
- ☐ No (please explain below)
- ☐ Don't know / No opinion

Q16. Considering the 4 technological options examined in the CBA, ESMA suggests that XBRL and iXBRL are the most appropriate solutions for the implementation of structured electronic reporting. What of the following is in your view the most appropriate solution? If other format, please explain.

- ☐ XBRL
- ☐ iXBRL
- ☐ Other format (please explain below)
- ☐ Don't know / No opinion

Q17a. According to you, what are the expected benefits from structured electronic reporting for each of the suggested technologies?

Please rate each benefit from 1 to 5 according to the benefits expected by users (1 being the lowest amount of expected benefits and 5 the highest).

XBRL BENEFITS	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessability of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Easiness to implement	☐	☐	☐	☐	☐	☐
Ability of technological standard to be integrated into an existing technological environment (interoperability) and/or to re-use old technology for the new standard (re-usability)	☐	☐	☐	☐	☐	☐
Process simplification	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

iXBRL BENEFITS	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessability of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Easiness to implement	☐	☐	☐	☐	☐	☐
Ability of technological standard to be integrated into an existing technological environment (interoperability) and/or to re-use old technology for the new standard (re-usability)	☐	☐	☐	☐	☐	☐
Process simplification	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

(if the answer to Q16 was answered "Other format"):
Q17b. You answered in Q16 that in your opinion, there is a technological option that would be more appropriate for the implementation of structured electronic reporting than XBRL and iXBRL. Please rate to what extent will your preferred option provide the following benefits? Please explain what technological option you would prefer.

Other preferred standard BENEFITS	1	2	3	4	5	Don't know / No opinion
Improved comparability of data	☐	☐	☐	☐	☐	☐
Increased accessability of data	☐	☐	☐	☐	☐	☐
Improved ability to extract data	☐	☐	☐	☐	☐	☐
Easiness to implement	☐	☐	☐	☐	☐	☐
Ability of technological standard to be integrated into an existing technological environment (interoperability) and/or to re-use old technology for the new standard (re-usability)	☐	☐	☐	☐	☐	☐
Process simplification	☐	☐	☐	☐	☐	☐
Any other. Please explain below	☐	☐	☐	☐	☐	☐

Q18. In your opinion, what would be the benefits of reporting the following parts of the financial statements in a structured format?
Please rate each benefit from 1 to 5 (1 being the lowest amount of expected benefits and 5 the highest).

Comparative BENEFITS of different parts of the financial statements in structured format	1	2	3	4	5	Don't know / No opinion
Primary financial statements (balance sheet, statement of comprehensive income, statement of changes in equity, statement of cash flows)	☐	☐	☐	☐	☐	☐
Notes to the financial statements, comprising a summary of significant accounting policies and other explanatory information	☐	☐	☐	☐	☐	☐

Q19. Do you have any estimate of the cost reduction that would be possible for your entity due to the implementation of structured electronic reporting for all issuers on regulated markets in the EEA?

- ☐ Yes (please explain below)
- ☐ No
- ☐ Don’t know / No opinion

Q20. Do you believe that ESMA should have added other costs and benefits in the CBA?

- ☐ Yes (please explain below)
- ☐ No
- ☐ Don’t know / No opinion

Appendix 3 – CBA 2015

Glossary

AFR	Annual Financial Report
ASCII	American Standard Code for Information Interchange
CBA	Cost-Benefit Analysis
CP	Consultative Paper
EC	European Commission
EP	European Parliament
ESEF	European Single Electronic Format
ESMA	European Securities and Markets Authority
EU	European Union
HTML	HyperTextMarkup Language
IT	Information Technology
iXBRL	Inline eXtensible Business Reporting Language
MP	Market Participant
NCA	National Competent Authority
OAM	Officially Appointed Mechanism
PDF	Portable Document Format
RTS	Regulatory Technical Standards
TDA	Transparency Directive Amended
US SEC	United States Security and Exchange Commission
XBRL	eXtensible Business Reporting Language
XHTML	eXtensible HyperText Markup Language
XML	eXtensible Markup Language

Disclaimer

The information contained in this document is the result of the analysis performed on the answers provided to the questionnaires by Market Participants (MPs), National Competent Authorities (NCAs) and Officially Appointed Mechanisms (OAMs).

The questionnaires were sent to 28 NCAs, 28 OAMs[1] and a large number of MPs and responses were collected from 26 NCAs, 16 OAMs, 22 issuers and 12 users of financial information.

The European Securities and Markets Authority (ESMA) wishes to underline that the questionnaires sent to MPs achieved a very low response rate with a lack of representativeness from major markets and users of financial information. As such, this small sample of respondents prevented ESMA to perform a complete analysis whose results could be adequately interpreted.

Differences among the respondents may also have affected the interpretation of the questions and impacted the answers (e.g. their own experience and investment in Information Technology (IT), their knowledge of the technological environment, their opinions about the accounting integration process in the European Union (EU), sector in which they operate, other regulatory financial reporting obligations, size of the company/group, among others).

Therefore, it was difficult to obtain robust figures and draw conclusions based on the large range of values derived from the questionnaire. Precise figures contained in this report should be carefully considered to avoid misleading interpretations.

In order to complement this analysis, ESMA decided to ask further questions related to the Cost-Benefit Analysis (CBA) when stakeholders provide their answer to the Consultative Paper (CP). This will allow ESMA to obtain additional evidence and reach more robust conclusions on the costs and benefits of the ESEF.

[1] *Please note that Finland and Lithuania are represented by the same OAM (NASDAQ OMX)*

SUMMARY

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Executive summary

Under the requirements of the Amended Transparency Directive (TDA), the European Securities and Markets Authority (ESMA) is required to provide a Cost-Benefit Analysis (CBA) of the draft Regulatory Technical Standards (RTS) related to the establishment of the European Single Electronic Format (ESEF).

This CBA aims at analysing the preliminary list of the ESEF requirements drafted by ESMA, as well as at defining the costs and benefits related to the four options considered suitable for implementation of the ESEF.

The following 4 technological options have been considered for the purpose of this CBA:

- **Option 1:** this option would require the use of eXtensible Business Reporting Language (XBRL) technology. XBRL is an XML-based open international standard for digital business reporting. It provides a language in which reporting terms can be defined and subsequently used to represent the content of financial statements or other areas of business reports. This standard has been developed to facilitate automatic exchange and reliable extraction of financial information among various software applications.
- **Option 2:** this option would require the use of Inline XBRL (iXBRL), a technology centred around electronic rendering of financial information encoded in XBRL documents in order to obtain human-readable electronic filings similar to paper copies.
- **Option 3:** this option would require the development of a new European Standard based on the TDA and Accounting Directive requirements to fulfil the ESEF requirements using XML technology.
- **Option 4:** this option would require the development of a new European Standard based on the TDA and Accounting Directive requirements to fulfil the ESEF requirements using Extensible Hyper Text Markup Language (XHTML) technology.

When implementing reporting under structured format, different approaches have been considered. Some issuers considered the implementation of this requirement by addition of a final process step to generate electronic filings (bolt-on approach). Effective bolt-on solutions are available in the market and impose lower setup costs. Other issuers considered an integrated approach and a significant reorganisation of their reporting processes and systems in place (built-in approach). These two approaches were extensively considered, especially in the section on the results of the Cost-Benefit Analysis.

Assessing the impacts on the different categories of stakeholders involved in the process is crucial for the identification of the most suitable technological options for the ESEF implementation. Three questionnaires were sent to the National Competent Authorities (NCAs), Officially Appointed Mechanisms (OAMs) for storage of regulated information and Market Participants (MPs) with the aim to analyse the costs and benefits of the ESEF. The answers received constituted the key part of this report.

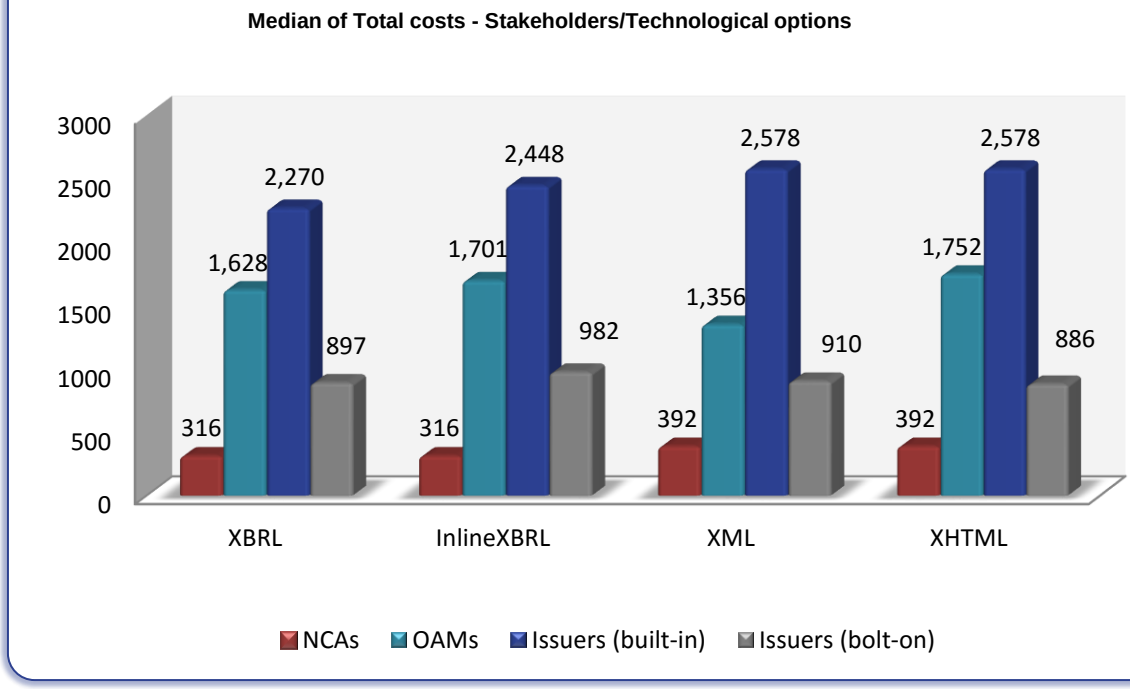
COST COMPARISON AMONG THE DIFFERENT TECHNOLOGICAL OPTIONS

The very small number of answers collected from MPs did not provide a complete picture in terms of costs of ESEF development, and large differences among the answers of respondents within the same categories prevented ESMA from drawing strong conclusions. This concern was partially addressed by separating the 2 possible approaches (bolt-on and built-in) that issuers can select when implementing the ESEF requirements.

The overall costs evaluation reveals that, within the same stakeholder category, no significant differences exist among the technological options that were considered. This conclusion can be drawn for all stakeholder categories.

COST EVALUATION (in '000 €)[2]

[2] *For the costs evaluation, please refer to the* ***Cost-Benefit Analysis – Methodology*** *in section II*



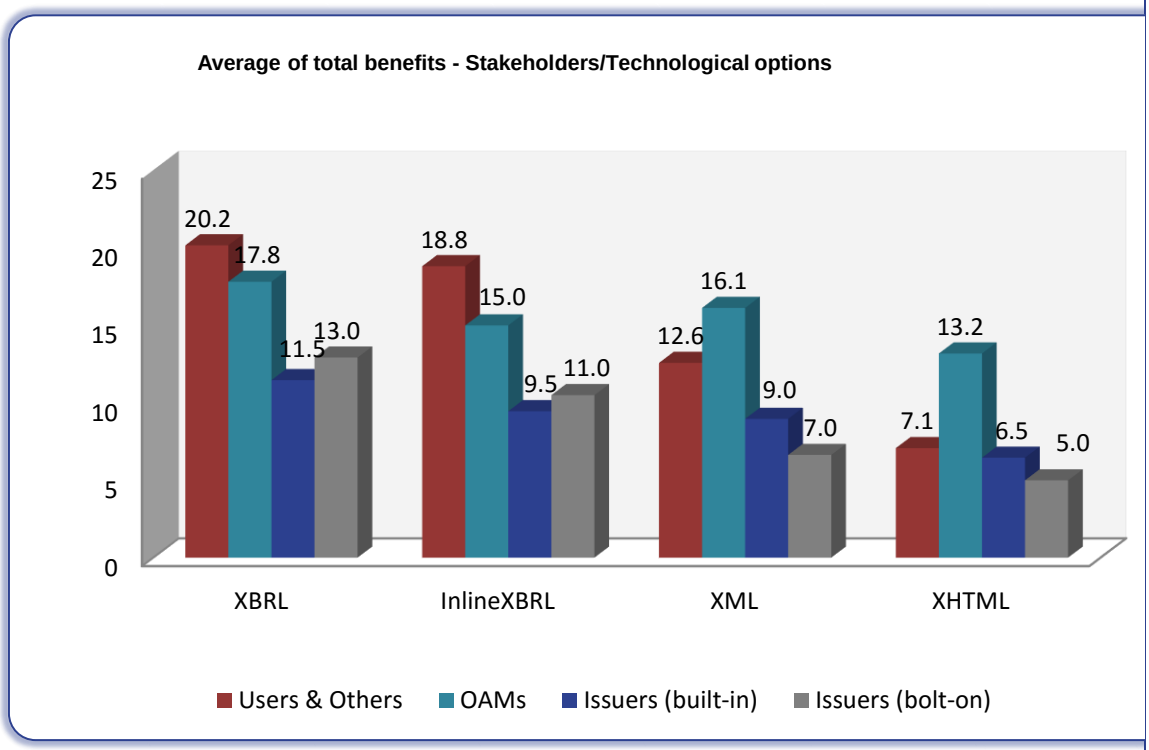
Across the different stakeholder categories, the collected data for the cost evaluation span on a wide range of values, as each category deals with different activities along the financial reporting process and sustains different costs.

BENEFIT COMPARISON FOR TECHNOLOGICAL OPTIONS

The overall benefits evaluation resulting from the questionnaire shows no significant differences among the stakeholder categories. This conclusion applies to all categories, although it is mainly supported by issuers, who assigned a closer score to the different technological options.

BENEFIT EVALUATION (score)[3]

[3] *For the benefits evaluation, please refer to the* ***Cost-Benefit Analysis – Methodology*** *in section II*



In terms of benefits, all the relevant stakeholders expressed a preference for XBRL, compared to the other options. They also made some further observations:

- Overall, issuers selecting the bolt-on approach expressed a lower level of benefits for all the technological options as compared to the other categories;
- OAMs did not significantly discriminate one option among the different technologies and considered XBRL, iXBRL and XML to have broadly the same level of benefits, whereas the expected benefits of XHTML were considered to be lower;
- Users and other stakeholders expressed a stronger preference for XBRL and to a lesser degree iXBRL compared to the other categories because of the global prevalence of these technologies and the perceived technological facility.

EVIDENCE FROM THE DATA ANALYSIS OF OTHER MARKETS

The information obtained from the Data Analysis of other markets was insufficient to rank the different technologies, as no country among those considered had performed a comparative analysis of the technological options under the ESEF evaluation.

XBRL appears to be the most widely used technological option among those considered for the ESEF scope, that would allow quality, accuracy, validation of data and greater comparability of Annual Financial Reports. As of today, no other harmonised electronic reporting format exists.

SUMMARY OF CONCLUSIONS

The results of the cost analysis do **not significantly discriminate** among the technological options considered for the ESEF evaluation.

The benefit evaluation showed that, although only **minor differences** were registered among the technological options, **XBRL and iXBRL appear to be the preferred technological option** for the ESEF evaluation.

Even if the results of the desk research do not contribute to the comparative analysis of the different technologies, they provide evidence supporting **XBRL as a "de facto" international standard.** In most of the countries analysed, XBRL was widely adopted for electronic financial reporting, while in one country (Israel) a mix of technologies (PDF and XBRL) was chosen.

Introduction

In accordance with its founding Regulation 1095/2010, the objective of ESMA shall be to protect the public interest by contributing to the short, medium and long-term stability and effectiveness of the financial system, for the Union's economy, its citizens and businesses.

In this context, where the European Parliament (EP) and the Council delegate power to the European Commission (EC) to adopt the Regulatory Technical Standards (RTSs), ESMA may be assigned the responsibility to develop these standards. Before submitting these standards to the EC, ESMA shall first conduct open public consultations on the draft RTSs and analyse their potential related costs and benefits. As such, ESMA is required to carry out a CBA on the RTSs that are under its responsibility.

Directive 2013/50/EU amending Directive 2004/109/EC of the EP and of the Council on the harmonisation of transparency requirements (TDA[4]) in relation to information about issuers whose securities are admitted to trading on a regulated market requires the mandatory preparation of Annual Financial Reports in a single electronic reporting format with effect from 1 January 2020, provided that a CBA has been undertaken by ESMA. ESMA is required to develop draft RTS and submit them to the EC for adoption after the accomplishment of an open public consultation and a CBA before 31 December 2016.

As part of the consultation on the RTS on the ESEF, ESMA prepared a CBA to identify and analysed possible technological options for the ESEF.

[4] *Directive 2013/50/EU of the European Parliament and of the Council of 22 October 2013 amending Directive 2004/109/EC of the European Parliament and of the Council on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market, Directive 2003/71/EC of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading and Commission Directive 2007/14/EC laying down detailed rules for the implementation of certain provisions of Directive 2004/109/EC.*

I. Financial electronic reporting format

1.1 Global electronic financial reporting practices

Electronic financial reporting has spread rapidly across countries with advent of the internet, allowing financial data to be rapidly and easily exchanged among users. Filing financial data electronically has become mandatory in several countries and different formats are required for the submission of information, depending on the specific regulations and guidelines of the public authorities.

Currently, HTML and PDF are the most popular formats adopted worldwide for electronic financial reporting, although new technologies are emerging to enable interactive data filing.

HTML is the main mark-up language for creating web pages and information that can be displayed in a web browser. It has been widely used since the 1990s for financial reporting and currently most digital representations of financial information are coded in this format.

XBRL is a new format that has been developed starting from the end of the 1990s and uses data tags to describe financial information.

The approaches adopted for the transition to electronic financial reporting differ widely in terms of scope of application, voluntary versus mandatory provision and supplementary versus exclusive submission of electronic formats. The most frequent approach foresees voluntary submission of financial information in a supplementary format as an addition to the one mandated by law. The United States Securities and Exchange Commission (US SEC) request the submission of financial reports in XBRL, while the Australian Securities and Exchange Commission and the Canadian Competent Authority only encourage voluntary submission of financial statements electronically as an addition to the traditional format (PDF).

Some countries have completed the transition to electronic financial reporting and abandoned alternative formats, such as Israel (where issuers file financial statements in XBRL and footnotes in PDF), Singapore, Taiwan, Japan, China and South Korea.

Other countries have not yet implemented electronic financial reporting, but are in a transition process, such as Indonesia or Malaysia, which plan to roll out XBRL-based financial reporting in the coming years.

In most countries, the transition to electronic financial reporting has been implemented through voluntary programs aimed at assessing the impact of the new format and testing the taxonomy. The Taiwan Stock Exchange launched in 2008 a demonstrational project allowing issuers to voluntary file financial statements using XBRL, which became mandatory from 2010 for all listed entities.

With respect to the scope of electronic financial reporting, a phased approach to the transition has frequently been adopted and the application of the new format has gradually been extended to the financial statements of a larger number of issuers. The US SEC initiated a first phase of XBRL submission for large entities, followed by a second phase extending the requirement to all other listed entities. The Companies Commission of Malaysia implemented a first phase of XBRL submission for listed companies, followed by a second phase for their subsidiaries and a third phase for non-listed companies.

Figure 1 Countries implementing electronic financial reporting

Table 1 Countries undertaking electronic financial projects

List of countries undertaking electronic financial projects			
Australia	India	Panama	Turkey
Brazil	Indonesia	Peru	United Arab Emirates

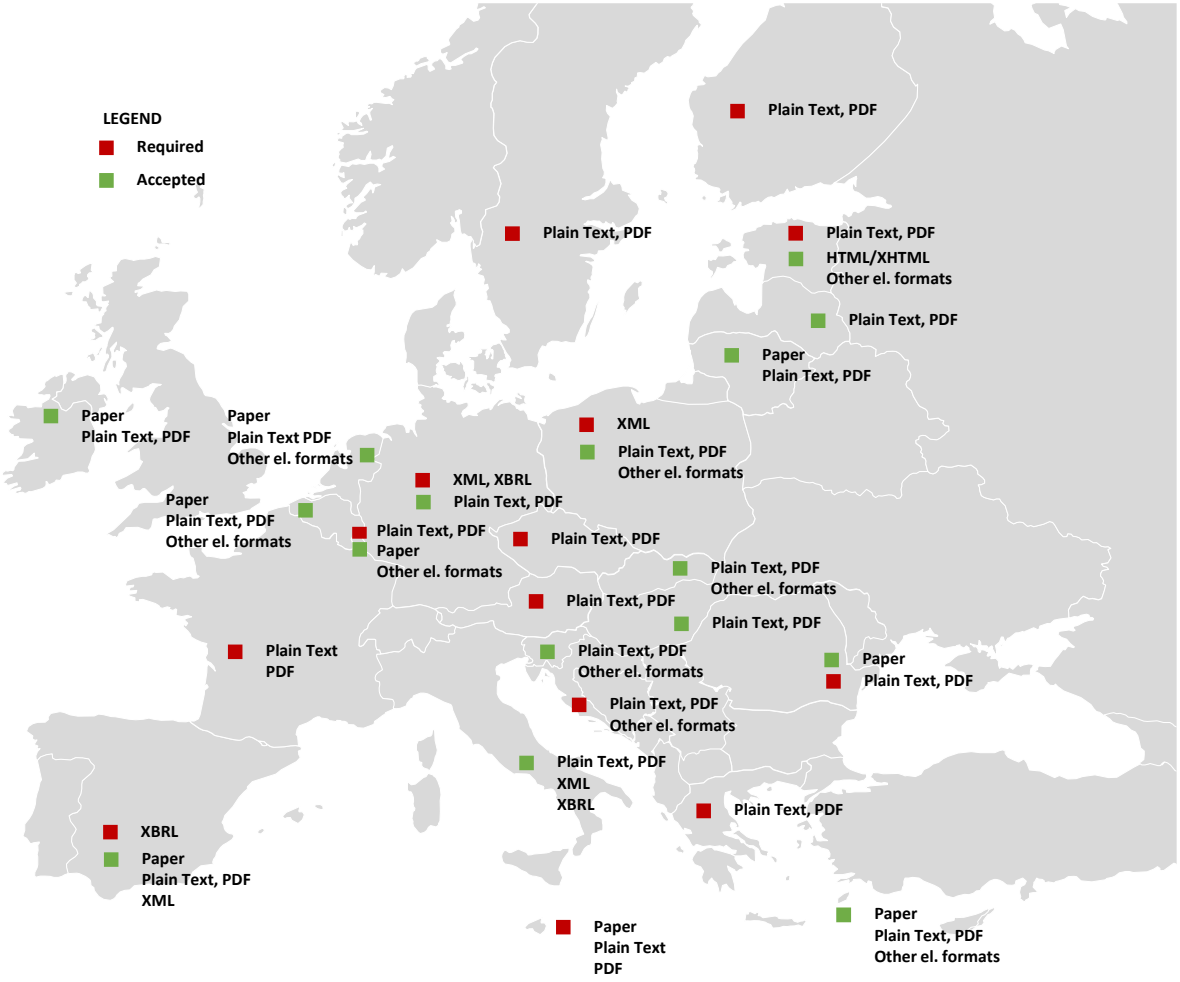
Cayman Islands	Israel	South Africa	Uruguay
Canada	Japan	South Korea	United States
Chile	Malaysia	Singapore	Europe (see next section)
China	Mexico	Taiwan	
Colombia	New Zealand	Thailand	

1.2 EU Member States financial reporting practices

The CBA for the implementation of the ESEF requires a preliminary assessment of the current electronic reporting practices existing in the EU Member States, as these practices will affect the magnitude of the related impacts and benefits.

NCAs responses to the questionnaire allow to assess the current financial reporting practices adopted by the EU Member States.

Figure 2 EU Member States financial reporting practices



Source: NCAs' questionnaire

The majority of European NCAs request issuers to submit their financial statements in PDF and plain text formats. Only Spain has implemented XBRL for half-yearly financial statements while a number of countries implemented a requirement to receive financial statements in a structured electronic format (such as XML/XBRL in Germany, HTML in Latvia, XML in Poland and Greece). However, the narrative part (management report, auditors report) of all reports is prepared in a non-structured format (PDF, Word).

1.3 Lessons learnt from other financial markets

The use of a specific technological solution for the submission of financial statements is currently mandatory in several jurisdictions, while its adoption is under evaluation in other countries. Different studies, aimed at evaluating the benefits and the impacts of the financial electronic reporting implementation, have been carried out using different approaches and research methodologies.

In order to provide additional information for the evaluation of the different technological options, a Desk Research activity analyzed the projects undertaken in the countries which implemented electronic reporting. The projects considered for the ESEF CBA are outlined below.

Table 2 Electronic Reporting Standards implementation projects

Country	Year launched	Commissioned by	Purpose	Technology
Japan	2003	Bank of Japan	Banking report	XBRL
United States	2005	SEC	Company filing	XBRL
Canada	2007	Canadian Securities Administrators	Company filing	XBRL
Israel	2008	Israel Securities Authority	Company filing	Mix of technologies
The Netherlands	2010	Dutch Tax Authority	Tax filing	XBRL
Germany	2011	German Tax Authority	Tax filing	XBRL
United Kingdom	2011	HM Revenue and Custom5	Tax filing	iXBRL
United Arab Emirates	2011	Abu Dhabi Securities Exchange	Company filing	XBRL

[5]*This study refers to tax reporting*

Spain	2005 & 2008	CNMV Business Register	Interim financial reports Company filing	XBRL

As the financial reporting formats differ from one country to another, the impacts and/or the benefits arising from electronic reporting implementation could result in substantial differences. The main results derived from the Desk Research are the following:

- **Scope** – None of the countries considered performed comparative analysis of different technological options. Rather, ex ante and/or ex post studies were performed, aimed at providing evidence of the expected or assessed effects of the chosen technology on the electronic reporting process.

- **Technology** – XBRL is the preferred technological option among the countries considered for the ESEF development. Only two countries selected a different technology: UK chose iXBRL while Israel opted for a mix of technologies (XBRL for financial statements and PDF for footnotes).

- **Stakeholders** – each study has considered the impacts and benefits for users and issuers. The impact on NCAs has been thoroughly considered and analyzed, most of the studies being commissioned by the NCAs themselves. Auditors have been specifically considered in three cases, while impacts on the info providers have been highlighted only in two studies.

- **Costs –** costs for issuers have been directly or indirectly taken into account in all studies but it was difficult to make comparison of the different technological options based on the costs evaluation. However, except for the US SEC, the level of quantitative details about the implementation costs that have been disclosed is very low or missing. Based on this experience, it was found that the SEC had underestimated the cost for Issuers while the research revealed that most filers believed that costs outweighed benefits. Additionally, in some cases (Japan and UK), the costs for electronic reporting tools were sustained by the national authority by providing free software for filing and alleviating any relevant impact.

- **Benefits** – benefits have been analysed in more detail than costs and different kinds of benefits linked to the technological option implementation have been described[6]:

[6] *Readers should consider that these benefits have been described by the authorities or by third parties, which were directly involved or interested in the technological option implementation process.*

- ✓ Simplification and integration of internal reporting process;
- ✓ Time reduction in external financial reporting preparation and delivery;
- ✓ Re-usability and interoperability of data;
- ✓ Improvement of internal reporting processes by ensuring data availability.

The most relevant benefits in relation to Users are briefly reported as follows:

- ✓ Enhancement of data quality in terms of accuracy, validation etc.;
- ✓ Comparability and Interpretation of data;
- ✓ Easier access to financial information.

Easiness of implementation has not been explicitly mentioned in the different studies, as this might become relevant only when a comparison among different technologies is conducted.

According to data from academic literature, the benefits of XBRL are not expected to be immediate but will accumulate over time. For small and medium sized companies, benefits from XBRL are limited as the reporting requirements are relatively straightforward;

- **Taxonomy** evidence about costs or benefits related to the underlying taxonomies; however, each study only considered one taxonomy (built on IFRS or local GAAP, depending on the country), while none analyzed several different taxonomies (as might be the case for ESEF).
- **Impact on implementation –** the analyzed projects revealed that the implementation of electronic reporting has been carried out differently in each country.
  - ✓ In the US and Japan, the electronic financial reporting has been implemented in different stages in order to facilitate the transition process. In particular:
    - In the US, filers were required to tag only their primary financial statements during the first year of the mandatory program, with accompanying footnotes and financial statement schedules filed tagged in block. From the second year, issuers were also required to tag quantitative data in their footnotes and supporting schedules;
    - In Japan, between 2003 and 2013, filers were required to tag only primary financial statements. Footnotes tagging has been made mandatory from 2013.
  - ✓ In several countries, the implementation of electronic reporting format envisaged a transitory phase of dual filing. The duration of the dual filing phase depends on the specific experience analysed:

- In the US, dual filing lasted for two years, during which interactive data documents were considered to be provided but not submitted. This stage was concluded in 2014, and HTML substituted ASCII;
- In Canada, the dual filing phase is still in place, as the Voluntary Program has not yet been concluded. Canadian issuers submit their financial statements in PDF format and issuers participating in the Program provide additional filing in XBRL;

- **Impact on the ESEF**

  ✓ XBRL seems to represent the main technological option considered and/or implemented in other countries;

  ✓ In several instances, other formats for electronic reporting in place based on low-level technology (e.g., ASCII or PDF) were already in place. For this reason, the additional costs and/or the benefits arising from the implementation of the electronic reporting format can hardly be generalised;

- **Other aspects**

  ✓ The general level of acceptance of the electronic reporting format introduction by the stakeholders seems to be quite good;

  ✓ The general level of knowledge of the electronic reporting format among the stakeholder categories seems to be quite low.

- **Impact on dimensions of the prototype**

  - ✓ The level of complexity of the European Market is unparalleled, involving different countries, jurisdictions, market sizes and languages. No other previous experience had to match so many different situations and practices (e.g., several different local GAAPs used in the preparation of annual financial reporting);

  - ✓ All other experiences aimed at testing costs and benefits of only one technological option (i.e., XBRL); therefore such analyses did not compare possible alternatives;

  - ✓ From the public documentation available, the other projects were significantly driven by the local regulator and did not try to build a multi-dimension CBA model encompassing all the different stakeholder categories (including NCAs and OAMs, in addition to Market Participants).

All of the above pose a significant limit when trying to fit data derived from the desk research into the dimensions of analysis of the ESEF CBA model.

However, the desk research provides valuable insight into the more qualitative aspects of the benefits (and, to a lesser extent, of the costs) associated with electronic financial reporting. The additional benefits highlighted include the following:

  - ✓ iXBRL presents the financial data in both a machine and human readable form (either on screen or in printed output). Other technological options require separate interactive data filing that could increase the discrepancies between the two different documents;

  - ✓ One of the elements to be evaluated in the selection of a technological option regards the effects on data quality process, in terms of accuracy, validation, etc. In this regard, different studies highlighted that XBRL could allow avoiding errors in the financial reporting preparation thanks to the possibility to use specific formulas;

  - ✓ One of the objectives of the electronic reporting format implementation is the possibility of improving the comparability of data at national and international levels. Setting a single technological standard ensures the maximum comparability of data across countries. Therefore, considering the extent to which a technology has emerged as the dominant standard and the benefits that could result from the convergence is of major importance. Currently, XBRL seems to be the most frequently adopted standard among the technological options.

1.4 Academic research on XBRL

An overview of structured electronic reporting benefits and impacts was derived from recent academic literature, especially the reviews performed by Muller-Wickop, Schultz and Nuttgens[7] on XBRL solution, and by Liles on Inline XBRL,[8]

XBRL Benefits (Muller-Wickop, Schultz and Nuttgens, 2012)	
Quality	Increased Comparability/Transparency
	Increased Accuracy
	Increased Analysis
Development	Improved Market Efficiency
	Advanced Standardisation
Efficiency	Time Savings
	Reduced Effort/Costs
	Improved Communication
Flexibility	System Flexibility
	Conceptual Flexibility

XBRL Issues (Muller-Wickop, Schultz and Nuttgens, 2012)	
Quality	Characteristic-based Issues
	Processing Issue
Uncertainty	Future Development
	Software Support
	Standardisation Issue
Adoption Effort	Infrastructure
	Knowledge

[7] *Niels Müller-Wickop, Martin Schultz and Markus Nüttgens, XBRL: Impacts, Issues and Future Research Directions, University of Hamburg, 2012*
[8] *Enhancing SEC Disclosure with Interactive Data, Jeremy Liles, Denver University Law Review, vol.91, April 2014*

1 Benefits

Quality

Increased Comparability/Transparency - The use of standardized taxonomies provides a common terminology for financial reporting, therefore increasing comparability of data. XBRL enables a consistent representation and an improved transparency, as the trail from an aggregated element to the underlying business transactions can be traced by the help of the XBRL General Ledger taxonomy (true only for built-in approach).

Increased Accuracy - XBRL potentially reduces errors arising from re-keying of information due to incompatible applications and encourages the development of homogeneous reporting processes and more accurate audit process as the auditors can access and process financial data in a standardized and timely manner.

Improved Analysis - The literature analysed agrees that XBRL eases the access to relevant financial information resulting in a significant increase of search, manipulation and analysis capabilities.

Efficiency

Reduced Effort - XBRL is widely seen as vehicle for significant effort reductions in the processing of financial information for all stakeholders. The basic financial information only needs to be prepared once and is available in a machine-readable format so that automated processing and access is facilitated. Some authors state that the effort reduction also results in a decrease of costs for the preparation of financial information. Some authors argue that XBRL also improves audit processes as relevant information is always up-to-date and can be easily processed. As mentioned earlier, in this way XBRL enables the concept of continuous auditing.

Time Savings - The reduced effort related to the electronic creation, processing and exchange of financial information via XBRL leads to a decreased cycle time of financial reporting processes.

Improved Communication - There is a broad consensus on the fact that XBRL significantly improves the distribution of financial information among stakeholders. The basic financial information only needs to be prepared once and can be provided in a wide range of formats and languages through different communication channels (e.g. web reporting).

Development

Improved Market Efficiency - Due to the improved quality of financial information induced by XBRL, several authors see an indirect effect of XBRL on the reduction of information asymmetries on financial markets.

2 Issues

Literature also discusses the issues related to usage of XBRL as integral part of the reporting supply chain, some of which accrue directly from XBRL properties.

Quality

Characteristic-based Issues – As data can be changed without leaving a trace, the exchange of information needs to be secured. Due to validation rules XBRL might be used to accrue the market's perception without guaranteeing a quality level.

Processing Issues - The main concern is related to the tagging process which is complicated but required in order to convert financial information into an XBRL document.

Adoption Effort

Knowledge - Several articles agree that the implementation of a complex process such as XBRL requires specific expertise and additional learning for different stakeholder categories (Issuers, auditors, etc.) so that they understand complex taxonomies, tagging procedures and extensions.

Infrastructure - Several articles point out the necessity of new infrastructure. All authors refer to software as needed infrastructure. Either software updates or new software tools are required in order to fully utilize the benefits of XBRL. Costs may also result from investments in design and maintenance of a web reporting or the implementation of continuous reporting due to increased expectations of intermediaries and addresses. Effort for the redesign of affected business processes must be considered.

Uncertainty

Uncertain Software Support - Comprehensive software support is a crucial success factor for the adoption and dissemination of XBRL. Benefits of XBRL can hardly be achieved without supporting software applications, even though a lack of adequate tool support prevents stakeholders from adopting XBRL.

Standardization Issues - Financial reporting, disclosure practices and legal aspects vary among countries and between industries. This leads to considerable national variation in calculation rules and dimensional structures as well as increased coordination effort for taxonomy design with complex interactions amongst diverse organizations. Regarding the extensibility of XBRL taxonomies, the trade-off between the comprehensiveness of a taxonomy that allows more firm-specific information and standardization that reduces firm specific content but improves on cross-sectional comparability are mentioned.

II. Cost-Benefit Analysis - Methodology

Following the assessment of the process status, an analysis of the costs and benefits of the different technological options for the ESEF implementation has been conducted through the following steps:

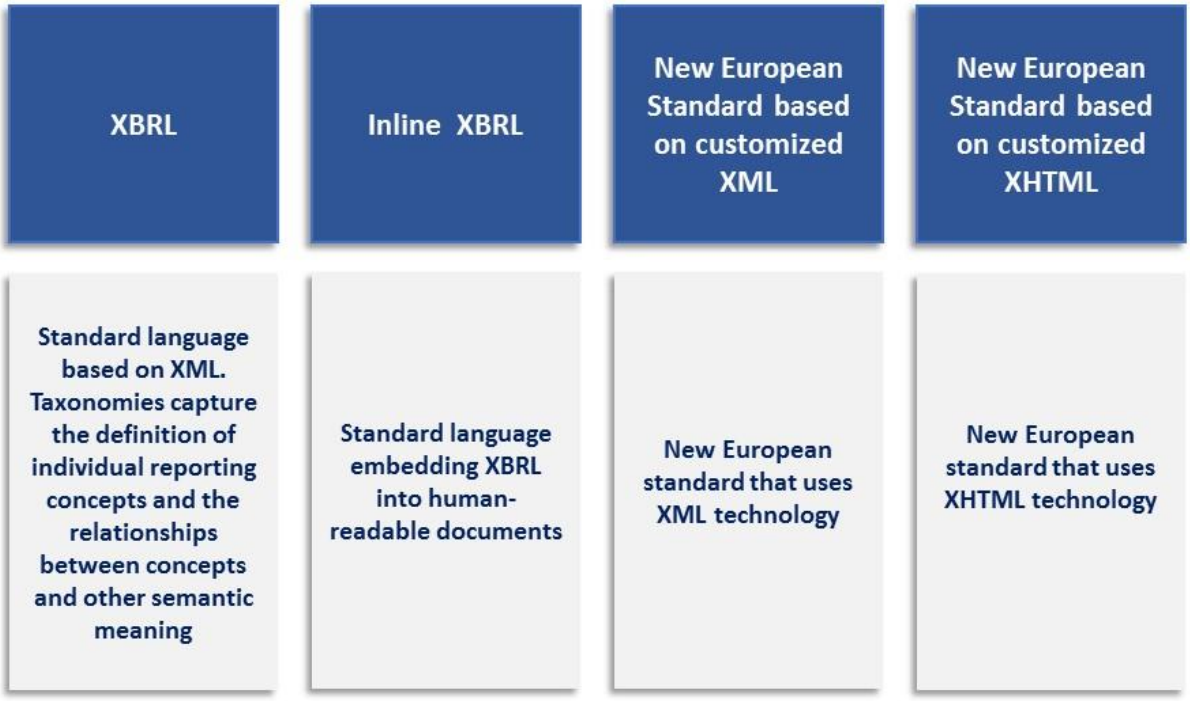
2.1 CBA model definition

In order to analyse the feedback received, a CBA model was designed for the evaluation of costs and benefits related to the technological options and to the stakeholder categories. The model is structured around four main dimensions:

a) Technology

All the technological options considered as alternatives for the ESEF implementation have been defined by ESMA and are reported as follows:

Figure 3 Technological options for the ESEF implementation



b) Stakeholders

The stakeholders affected by the ESEF target scenarios are:

- ✓ NCAs;
- ✓ OAMs;
- ✓ MPs divided into the following subcategories:
  - Issuers of securities
  - Users, including:
    - Business registers

- Professional investors
- Regulators

- Other stakeholders
  - Auditors
  - Standard Setters
  - Stock exchanges
  - Others

c) Costs

Total costs related to the ESEF implementation are quantified by an economic (monetary) value and are reported under three subcategories:

- General costs: split into the following categories:
  - One-off costs - all the costs that are sustained once, excluding costs for extension and data quality, are analysed according to the following categories:
    - ✓ IT
    - ✓ Staff
    - ✓ Process
    - ✓ Consultancy
    - ✓ Others
  - Annual ongoing costs - all the costs that are sustained recurrently each year, excluding costs for extension and data quality, analysed by using the following categories:
    - ✓ IT
    - ✓ Staff
    - ✓ Process
    - ✓ Outsourcing
    - ✓ Others

- Data quality costs - split into different categories:
  - One-off costs - these cost categories represent new data quality costs that will occur only once. They are directly related to the ESEF implementation (e.g., quality assurance process) and will only occur during the implementation time.
  - Ongoing costs - these cost categories represent data quality additional costs, they will occur each year to guarantee the data quality process of the ESEF.
    Both one-off and on-going data quality costs include:
    - ✓ Accuracy costs - in terms of the formal correctness of information (e.g., date format compliance, controls on entering alphanumeric codes, taxonomy accuracy, etc.);
    - ✓ Validation costs - in terms of correctness of the information provided by verifying the significance compared to an acceptable domain or by verifying the consistency between the various data.

- Costs for extension: split into the following subcategories:
  - IT
  - Staff
  - Process
  - Outsourcing
  - Others

- Implementation approaches available to issuers

When implementing reporting under structured format, issuers considered the implementation of the ESEF requirement by undertaking several approaches:

- A bolt-on approach, which implies the addition of a final process step to generate electronic filings, in addition to the current reporting practice. Effective bolt-on solutions are available in the market and do not impose highly expensive setup costs.
- A built-in and integrated approach, which implies a significant reorganisation of the record-to-report processes and systems of the issuer in an integrated approach to electronic reporting.

The approach for a bolt-on or a built-in solution is key to issuers. Built-in implies rethinking significantly the record-to-report processes and systems with a view to producing electronic reporting, whereas bolt-on means adding a final step in the existing process to generate electronic filings.

- Those two different approaches were not fully taken into account by some of the respondents.
- Issuers were asked whether they had already performed an Impact Assessment and which approach they planned to use.

d) Benefits

Benefits contain qualitative elements that are not measurable by using an economic value (for details on scoring methods, please refer to tables 05 to 06). The following benefits have been identified:

- Information improvement – defines the benefits from a user perspective and is divided into:
  - Extracting data -the possibility for the final user to get data from a report in order to export them in a different format/electronic support/source (e.g., can data be converted into another format easily? Can data be downloaded easily?)
  - Accessibility to data - the possibility for the final user to open/visualize and analyse data included in a report (e.g. is a web browser able to visualize the report? Are specific add-ons/or other software required?)
  - Comparability of data - the possibility for the final user to compare data from several reports compiled using the same technology (e.g., is it possible to simultaneously compare data from different reports?). It is divided into:
    - ✓ Standardisation - all processes, taxonomies and technological standards are the same for all issuers/countries.
    - ✓ Harmonisation - all processes, taxonomies and technological standards are only similar or equivalent.
- Data quality divided into:
  - Accuracy - formal correctness of information (e.g., date format compliance, controls on entering alphanumeric code, etc.)
  - Validation - checking the correctness of the information provided verifying the significance compared to an acceptable domain or verifying the consistency among different data.
- Technological facility - defines the benefits from a technological/process perspective. It is divided into:
  - Easiness to implement - it reflects a general evaluation provided by the stakeholders about the implementation of a specific technological option;
  - Interoperability/Reusability - the ability of a technological standard to be integrated easily into an already existent technological environment (interoperability). In

particular, reusability refers to the ability to re-use already owned technology in order to implement a new technological standard;
- Reduction in reporting burden - it refers to the simplification of producing reports (for Issuers);
- Process Simplification - it refers to simplification of the process in general for the other stakeholders (not Issuers).

2.2 Preparation of the questionnaires, launch of the survey and data collection

Taking into consideration the CBA data model and the main evidence resulting from the questionnaires for the NCAs, the costs and benefits dimensions have been translated into specific questions embedded into the questionnaires targeting OAMs and MPs.
Additionally, each questionnaire to be delivered to a specific stakeholder category (OAMs and MPs) included other relevant elements useful for the ESEF evaluation according to the TDA requirements, and structured into four different sections reported as follows:

e) Section I: Current electronic reporting practice
f) Section II: Views on future ESEF reporting
g) Section III: Identification of potential costs of various options for ESEF
h) Section IV: Identification of potential benefits of various options for ESEF

2.3 Data cleansing

After the collection, data screening was necessary in order to detect and correct inaccurate input.

2.4 Data analysis

Following data collection and cleansing, the CBA has been performed. Precisely, data gathered from the questionnaires was the input for the model and the total value of costs and benefits has been calculated summing all the values of the costs and benefits subcategories resulting from the responses to the questionnaires.

Costs have been quantified in economic terms according to the calculation rules defined by the model, in particular:

- for the total amount of "**One-off costs**" (IT, Staff, Consultancy, Process and Other), the point value has been considered for the analysis on the basis of the actual figures provided by respondents;
- for the total amount of "**Ongoing costs**" (IT, Staff, Outsourcing, Process and Other), the NPV of the point value has been considered for the analysis on the basis of the actual figures from respondents. Ongoing costs were established on the basis of a 5 year-period and a discount rate of 4%;
- the quantification of total costs for extension and data quality have been performed according to the calculation rules specified below.

Savings and benefits were calculated on the basis of the model specified in the tables 5 and 6.

Table 3 Scoring rules - Costs for Extensions

	Costs for Extensions (in '000 €)									
	Level of Costs					Level of Savings				
Value range (in € '000)	>500	<500 and >250	<250 and >100	<100 and >50	<50	<50	<100 and >50	<250 and >100	<500 and >250	>500
CBA score (average value)	500	375	175	75	25	25	75	175	375	500

Regarding extension costs, the respondents were asked to provide an evaluation of the costs sustained for each subcategory by flagging the corresponding range (first row in the table above). For the purpose of the CBA, these ranges have been converted into a point figure calculated as the average value of the range (second row in the table above).

The same rules process applies to the scoring of the answers on data quality costs as illustrated below.

Table 4 Scoring rules - Data Quality Costs

	Data Quality Costs (in '000 €)[9]							
	Level of Costs				Level of Savings			
Value range (in € '000)	>50	<50 and >25	<25 and >1	0	0	<25 and >1	<50 and >25	>50
CBA score (average value)	50	37.5	13	0	0	13	37.5	50

The results of this process are overall values for each respondent of the costs for the different technological options.

The benefits have been quantified according to the calculation rules defined by the model and reported in the table below:

[9] Data quality costs are split into one-off and on-going costs and for the latter the NPV of the point value has been considered for the analysis

Table 5 Scoring rules - Benefits

	Level of Benefits					Level of Qualitative Costs				
Qualitative information	**Very High**	**Medium High**	**Medium**	**Medium Low**	**Low**	**Low**	**Medium Low**	**Medium**	**Medium High**	**Very High**
CBA Score	**5**	**4**	**3**	**2**	**1**	**-1**	**-2**	**-3**	**-4**	**-5**

Specifically, respondents were requested to provide an evaluation of the benefits arising from the different technological options using a qualitative scale, as illustrated in the table above (first row of the table). The answers were converted into the corresponding numerical value (second row of the table) to enable calculations and comparisons.

The minimum and maximum score that can be assigned to each benefit category are reported as follows:

Table 6 Minimum and Maximum scores to be assigned

Benefit category	Minimum score achievable	Maximum score achievable	Applicable to
Information improvement	**-20**	**20**	
Data Extraction	-5	5	OAMs – Issuers - Users
Accessibility to data	-5	5	OAMs – Issuers – Users
Comparability of data	-10	10	
Standardization	*-5*	*5*	OAMs – Issuers – Users
Harmonization	*-5*	*5*	Issuers – Users
Data quality	**-5**	**5**	Issuers
Technological facility	**-20**	**20**	
Implementation Easiness	-5	5	OAMs – Issuers – Users
Interoperability/reusability	-5	5	Issuers – Users
Reduction of reporting burden	-5	5	Issuers
Process simplification	-5	5	OAMs - Users

The final evaluation of costs and benefits for the ESEF development has been obtained by calculating for each technological option the median **of total costs and total value of benefits** provided by the considered respondents. In order to address the significant differences in the implementation cost faced by issuers, ESMA separated the issuers into two categories: bolt-on and built-in.

To evaluate the different scenarios for the ESEF implementation according to the objectives of the TDA, namely, obtaining the minimum level of costs and the maximum level of benefits for all the stakeholders involved, each technological option has been evaluated by considering:

a) Costs and estimations resulting from the questionnaires responses;
b) Benefits estimation resulting from the questionnaires responses;
c) Comments expressed by the respondents.

III. Views on future ESEF reporting

The TDA considers that the implementation of "a harmonised electronic format for reporting would be very beneficial for issuers, investors and competent authorities, since it would make reporting easier and facilitate accessibility, analysis and comparability of annual financial reports".

The stakeholders' views on the relevant aspects of taxonomies, extensions, impacts and benefits arising from a structured electronic reporting format were investigated and the results summarised in the following tables.

Table 7 Demand in the market for a structured reporting format

Is there a real demand in the market for a structured reporting format?	*Yes*	*Partially*	*No*	*No answer*
	14	10	9	1

Overall, demand for a structured reporting format is clear for central banks, business registers and stock exchanges but less clear for issuers and analysts. Most analysts use data provided by data integrators, whose data are provided by structured reports. Therefore, some analysts may not be conscious of these facilities.

The respondents which considered that there is a demand for structured reporting believed there are benefits in comparing data, as the current format is not comparable among issuers and among different countries. This would enable efficient and timely input of data into financial valuation models, higher benefits for internal purposes (e.g. reduce the cost for manual input), data check and validation, search functions, extraction and broader use (e.g. electronic treatment of data with an Excel spreadsheet). Listed banks consider that convergence of all types of reporting is needed, because diversity increases the structure and IT expenses.

Some respondents answered "partially" as they considered that the current non-structured format was sufficient and that simple improvements would be sufficient.

The respondents which consider that there is no demand believed that neither professional or institutional investors, nor analysts, nor individual shareholders had asked for structured electronic reporting. They believed that an additional intermediary tool will remove information from its context. In their view, the automatic production of data is not an adequate manner to generate meaningful information. Such technologies are not valid for disclosing additional information or explanatory notes on the elements presented on the face of the financial statements. Information can also dismembered or presented out of context. IFRS are based on principles and can be applied and presented in various manners, thus reducing the comparability. Comparison has its inherent difficulties because it must go beyond the figures to understand the context for getting the right conclusions. Therefore, users could be misled

that the data is comparable. Additionally, respondents commented that the specific information requested by investors is mostly qualitative and numbers can be easily managed without an electronic reporting format and pointed out that such demand may come mainly from quantitative asset managers, or companies providing data to third parties (Bloomberg, Reuters, etc.).

Potential benefits and potential risks

Some respondents believed that the ESEF would facilitate the access of issuers to regulated markets.

Divergent views were expressed on the adoption of this requirement by SMEs as a new reporting method. Some respondents feared this would lead to additional costs and hinder access to regulated markets. However, other respondents believed that SMEs currently lack visibility and electronic reporting will strengthen the issuer's ability to access regulated markets. For that reason, as large companies have already a large access to regulated markets, they may have less benefit than SMEs in this respect.

On the risk side, respondents considered that the ESEF will be an operational and costly burden for issuers, considering that non-structured electronic format already provides relevant information. The following risks were identified:

- Instability of IFRS;

- Standardization of narrative information;

- Inexistence of taxonomy for national GAAP for preparing statutory financial statements;

- Lack of flexibility of a structured electronic solution, which could lead to excessive standardisation of data or a rule-based approach, and render communication inflexible and not adapted to the specific characteristics of the company;

- Responsibility issues related to the consequences of using unsuitable taxonomies or languages that would not reflect the substance of their disclosure;

- Effects on the overall architecture of the IT system.

Table 8 Benefits to data accuracy and data validation processes/controls [10]

	No	*Partially*	*Yes*
Do you believe that the use of a structured electronic format would bring benefits to your data accuracy processes/controls?	8	1	12

[10] *10 Users out of 12 did not provide an answer to this question. Therefore, these results mainly refer to Issuers.*

Do you believe that the use of a structured electronic format would bring benefits to your data validation processes/controls? [7]	8	1	12

Twelve respondents agreed that the use of a structured electronic format would bring benefits to data accuracy processes/controls, while eight MPs disagreed. Those respondents, that did not find any benefit accruing to the data accuracy process, pointed out that no electronic format can replace manual checks before financial data is published, as the issuer is liable for its disclosure. One issuer expected no benefits in terms of data accuracy processes and controls due to its preference for a bolt-on approach. On the other hand, one user observed that fully automated controls on XBRL data are provided "out of the box" using taxonomy design and XBRL formula-based business rules, being no setup cost for issuers. Any bolt-on service would provide both data accuracy and data validation controls without extra cost. Any manual controls (fully-manual or hybrid) would result in persistent quality issues and would impose costs which could be likely to fall in the range of € 10,000-15,000.

Two participants agreed on the fact that benefits would arise partially, with the extent that this structured electronic format should be compatible with different reporting tools and other regulator/supervisors (e.g., EBA, ECB, etc.) and limited to the data accuracy but not to the process.

However, the significance of this data is quite low, given the large number of MPs that did not provide an answer to this question (13 out of 34).

With respect to the benefits of the data validation process/controls, the results are exactly the same as those concerning data accuracy. 12 respondents believe that some benefits may arise from the use of a structured reporting format, while 8 issuers stated that no such benefits are detected.

XBRL was indicated as the technology involving the least changes with the existing taxonomy, although several respondents were unable to answer this last question due to lack of information.

The majority of the respondents currently use IFRS taxonomy for consolidated financial statements and National GAAP for separate financial statements.

Table 9 Approach for the setup of the taxonomy

What approach would you prefer for the setup of the taxonomy?	***Use of the IFRS taxonomy, as issued by the IFRS foundation and endorsed by the EU***	***Use of the IFRS taxonomy embedded in the RTS by ESMA***	***Develop a new taxonomy at EU level based on the Accounting Directive and embedded in the RTS by ESMA***	***Other***
	24	4	3	3

The "use of IFRS taxonomy as issued by the IFRS foundation and endorsed by the EU" has been indicated as the preferred approach by the majority of MPs[11].

Table 10 Use of extensions

Do you believe it useful to allow companies to use extensions?	*Yes*	*No*	*Partially*
	21	4	9

The majority of respondents believed that allowing issuers to use extensions is useful and that the taxonomy should enable constrained extensions. Nevertheless, the strong preference for the use of extension is limited to the issuer subcategory, as the opinions of users were equally split across the 3 alternatives. Some respondents claim that the use of extensions challenges standardization and comparability, but admitted there are specificities in every sector that justify the use of extensions as a key to understanding the business-model and a company's financial situation and performance. One user observed that national extensions will reduce comparability but will have no cost impact on individual companies, whereas multinational groups will see staff costs associated with support for multiple national extensions. However, iXBRL supports "part tagged, part untagged" documents that allow filers to mitigate the costs of developing entity-specific extensions.

Most issuers considered that companies should have the opportunity to deliver additional information based on their own specificities. Structured reporting should allow understanding better the business model and the financial situation of the companies. This should be even more necessary for large issuers with complex accounting policies.

Respondents who disagreed considered that extensions reduce comparability, are difficult to manage and limit the possibility to develop cheap automated solutions for filing financial statements.

Table 11 Taxonomy to be implemented

Which kind of taxonomy would you prefer to implement for the ESEF?	*With constrained extension*	*Full extension allowed*	*Minimal taxonomy*	*Other*
	13	10	7	4

With respect to the taxonomy, the results differed between issuers and users. A majority of users expressed a preference for constrained extensions (7 out of 12 respondents), while a

[11] *Please note that the other two options, the use of the IFRS taxonomy embedded in the RTS by ESMA and the development of a new taxonomy at EU level based on the Accounting Directive and embedded in the RTS by ESMA have found larger consensus among Users. In fact, these were the preferred alternatives for 3 and 2 Users respectively out of a total of 12 respondents.*

number of issuers pointed full extension as their preferred alternative (9 out of 22 respondents) [12].

Audit

Overall, the majority of the respondents believed structured electronic format adopted for the ESEF should be audited, as shown in the table below:

Table 12 Audit of electronic financial statements

In the case where ESEF would require a structured electronic format, do you believe that it should be audited?	*Yes*	*No*	*Partially*
	21	9	4

The majority of Users pointed out the need for auditing electronic financial statements (8) to ensure data integrity and the responsibility of the relevant actors.

The majority of those who indicated that no audit should be conducted are Issuers (6). They considered that it would be difficult to audit a structured file. The information presented would be dismembered or presented out of its context. The respective responsibility of the issuer and the auditor would also be difficult to establish. The comments also highlighted that the complexity of the process implied that audit would be extremely costly.

[12] *One User expressed a preference for the full extension taxonomy, 2 for a minimal taxonomy and 2 indicated Other. 6 Issuers expressed preferences for constrained extensions, 5 for minimal taxonomy and 2 for Other.*

IV. Cost-Benefit Analysis - Results

4.1 Respondents analysis

In order to provide evidence of the significance of data resulting from the responses to the questionnaires and to ensure their correct interpretation, this section illustrates the results of the analysis of the data sample.

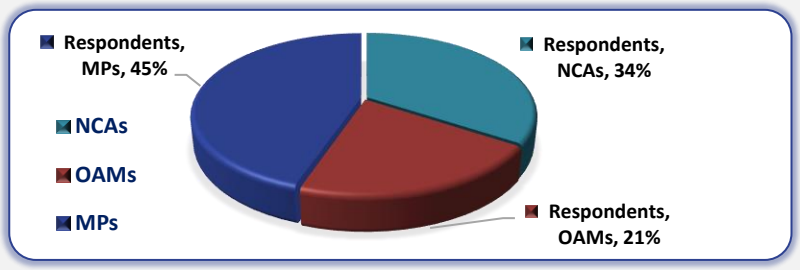
The ESEF questionnaires have been sent to three different categories involving a total of 484 stakeholders. 76 participants out of 484 submitted a complete questionnaire, resulting in an overall response rate of 16%. The differences in the response reflect a composition of the respondent's sample, which is significantly different from the selected sample. The sample of participants addressed by the questionnaires was composed of 28 NCAs, 28 OAMs and a significant number of MPs while the number of respondents was 26, 16 and 34, respectively.

The overall response rate (16%) is in line with the results obtained in similar surveys. Nevertheless, while the OAMs and NCAs questionnaires achieved a satisfactory response rate, a very narrow coverage has been registered for the MPs. Furthermore, only 14 out of 220 targeted issuers provided valid responses to the specific questions about costs, which comes to an even lower response rate (only 6.8%). The small number of answers collected does not provide a complete picture in terms of costs for the ESEF development and the large differences among the answers prevent ESMA from drawing strong conclusions. Therefore, this issue should be carefully taken into consideration when interpreting the results.

Figure 4 Distribution of respondents Audit of electronic financial statements

Stakeholder category	Respondents	Percentage
NCAs	**26**	**34%**
OAMs	**16**	**21%**
MPs	**34**	**45%**
Issuers	*22*	*29%*
Users	*8*	*11%*
Others	*4*	*5%*
Total	**76**	**100%**

The sample of participants that submitted the questionnaire is composed of 26 NCAs, 16 OAMs and 34 MPs. The latter is the most represented category in the sample (45% of the total number of respondents), while NCAs and OAMs categories account for 34% and 21%, respectively.



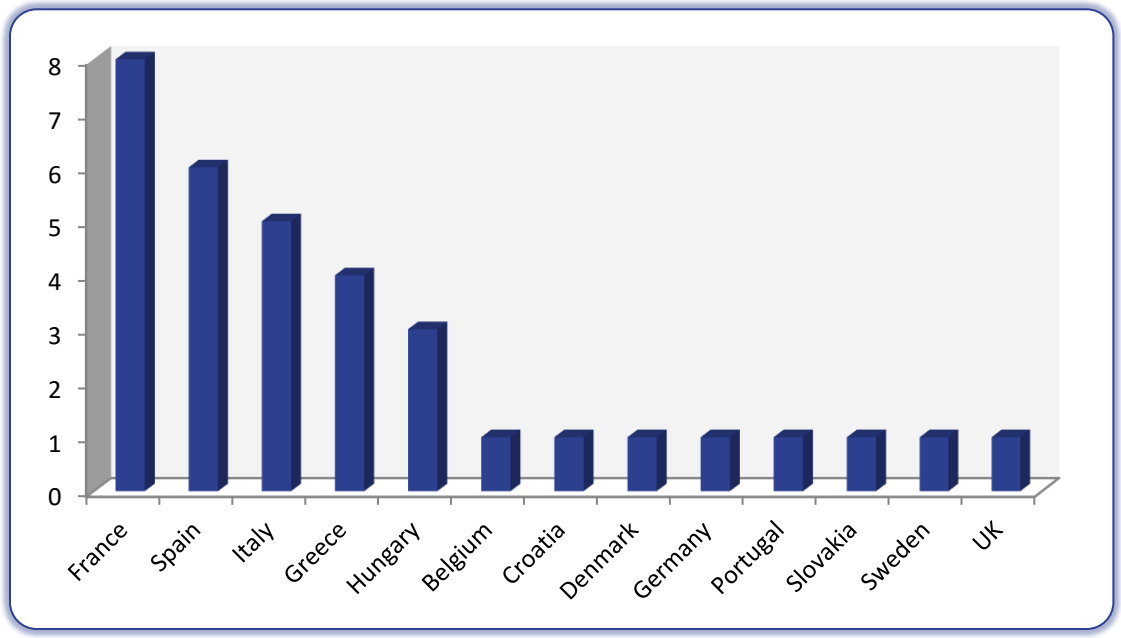
To enable a deeper understanding of the results of the analysis, the distribution of the responses was assessed among the different stakeholder categories.

4.1.1 Respondents analysis - Market Participants

The MPs questionnaire has been sent to a significant number of MPs and 34 responses were received.

The low level of responses achieved by the MPs may be due to the scarce knowledge of some technological options and the Issuers' inability to perform an assessment of the implementation of each technological option. Among the respondents, only 13 countries with at least one MP were represented.

Figure 5 Distribution of MPs respondents by country



France, Spain and Italy are the most represented countries, accounting for 56% of all responses. Germany and UK, the largest European markets which account for 35% of the EU's total number of issuers, are under-represented in the analysis, with only one MP per country submitting the questionnaire. Therefore, the results of the CBA should take into consideration that the potential impacts arising from the ESEF implementation could have been underestimated/overestimated as data on these large markets were missing.

Additionally, the MPs that submitted the questionnaire were further divided into three categories of respondents, representing issuers, users and other respondents.

Table 13 Number of responses by MP category

MP category	Respondents
Issuer of securities	**22**

Favouring a built-in approach	9
Favouring a bolt-on approach	13
Users	**8**
Business register	*3*
Professional investor	*3*
Regulator	*2*
Others	***4***
Auditor	*2*
Standard Setter	*1*
Stock exchange	*1*
Total	**34**

Issuers of securities account for the largest share of respondents with 22 submitted questionnaires, while users account for 8 respondents and 4 other stakeholders are represented in the sample. Additionally, the number of respondents within each subcategory is very low and, therefore, they will be aggregated and analyzed as “users & others” in the following sections of the document. Cost estimates have been provided by a limited number of issuers (15), whereas most users (10) and all issuers have given their assessment of benefits.

4.1.2 Respondents analysis - Officially Appointed Mechanisms

The OAMs questionnaire has been sent to 28 OAMs and 16 responses were received, leading to a 58% response rate. This response rate can be considered satisfactory.

4.1.3 Respondents analysis - National Competent Authorities

The NCAs questionnaire has been sent to 28 NCAs and 26 responses were received, leading to a 93% response rate. This response rate can be considered very satisfactory.

4.1.4 Respondents analysis - Sample of data used to perform the Cost-Benefit Analysis

This CBA has been performed after refining the collected data in order to ensure data completeness (i.e., link between answers and questions), accuracy (i.e., quality/meaningfulness of answers) and consistency (i.e., logical interrelation between answers is respected). Any invalid data or inaccurate/incomplete answers were discarded and/or amended and the final sample used to perform the CBA is composed as reported below:

- the costs evaluation has been based on the questionnaires submitted by 35 respondents (14 Issuers, 7 NCAs and 14 OAMs);
- the benefits evaluation has been based on the data provided by 50 respondents (22 Issuers, 12 Users & other respondents and 16 OAMs), while the data provided by the NCAs have not been scored with the CBA data model[13] but evaluated qualitatively.

The table below briefly summarises the data mentioned above:

Table 14 Sample of data used to perform the CBA

Stakeholder category	Costs respondents	Benefits respondents	Total respondents
NCAs	7	-	26
OAMs	14	16	16
Issuers (built-in)	9	8	9
Issuers (bolt-on)	5	14	13
Users	0	**8**	**8**
Other		**4**	**4**
Total	**35**	**50**	**76**

[13] The CBA data model has been drafted after the launch of the NCAs questionnaire and the structure of the latter was not fully aligned with the model

4.2 Collected Data Analysis

This section illustrates the main results from the survey, which were further integrated with data obtained from the desk research.

4.2.1 Comparative analysis - Costs

Within each stakeholder category, the analysis showed no significant differences among the options considered for the ESEF development. Large divergences were detected in the assessment of the three stakeholder categories, as each of them performs different activities along the financial reporting process.

The minimum and maximum values of the collected data set are summarized in the table below.

Table 15 Value ranges (in € '000) by technological option and stakeholder category

Stakeholder category	Technological options							
	XBRL		iXBRL		XML		XHTML	
	Min	Max	Min	Max	Min	Max	Min	Max
NCAs	78	2,027	78	2,027	45	1,307	45	1,307
OAMs	188	2,728	186	3,228	365	6,384	188	6,073
Issuers (built-in)	340	12,132	375	12,132	375	12,132	406	12,132
Issuers (bolt-on)	406	1,753	406	2,259	406	2,782	406	3,282

As shown in the table, data span on a wide range of values. NCAs expressed an evaluation ranging from a minimum of € 45,000 (for XML and XHTML) to a maximum of € 2 million (XBRL and iXBRL) for the implementation of the technology, while OAMs estimated a minimum expense of € 186,000 for the implementation of iXBRL to a maximum cost of € 6 million for the adoption of XML.

Issuers provided the most expansive range of figures for the evaluation. The analysis of their answers revealed that divergent figures were mainly due to a different understanding of the approach chosen by issuers and whether they preferred a built-in or a bolt-on approach. Value estimations ranged from € 400,000 to € 1.7 million for issuers who chose the bolt-on approach and decided to only comply with the minimum regulatory requirements. Value estimations ranged from € 300,000 to € 12 million for issuers which voluntarily chose to adopt a built-in approach and undertake a large transformation of their information systems.

A number of issuers found it extremely difficult to provide the costs of solutions not yet developed whose scope had not yet been defined (main financial statements, notes, management forms) and whose technology and taxonomy should be clarified. 10 out of 22

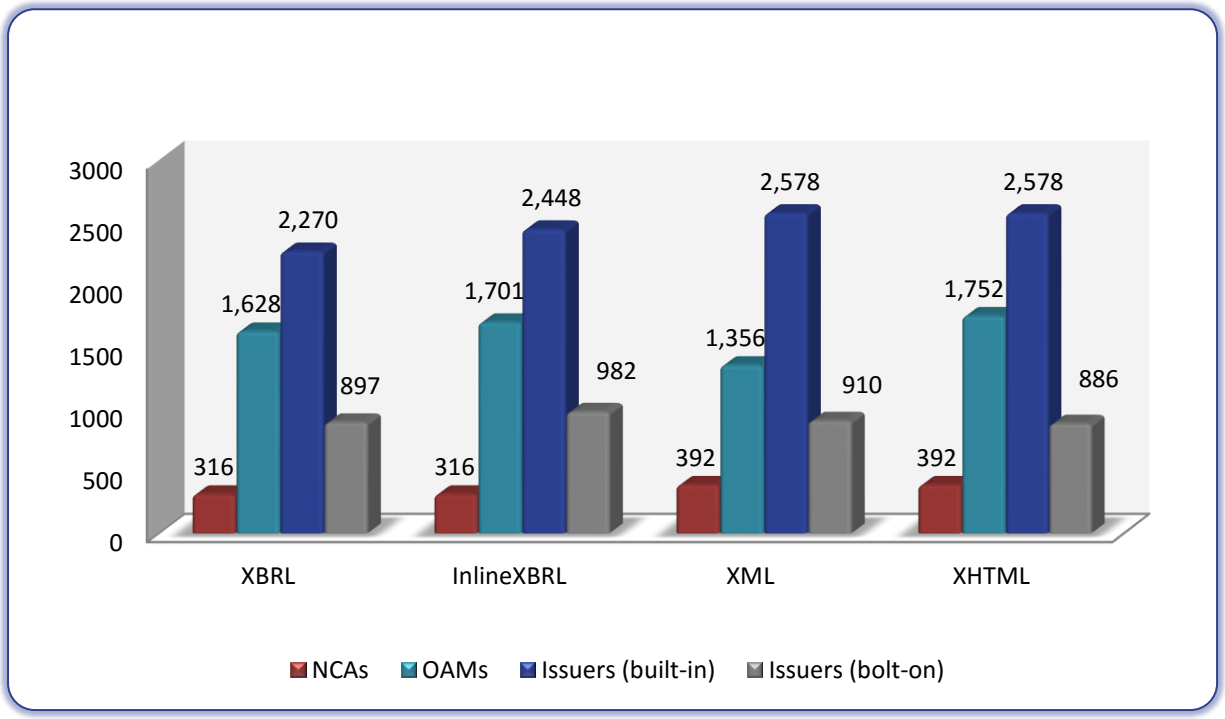
issuers did not provide any estimates for one-off and on-going costs and as such were unable to decide whether the option should be bolt-on and built-in.

The bolt-on approach implies the addition of a final process step to generate electronic filings. MPs considered it was more flexible, adaptable, affordable and sufficient for financial reasons, as issuers could not afford to develop an extensive and expensive new financial information system. Respondents reported that effective bolt-on solutions are available in the market and do not impose highly expensive setup costs.

The built-in and integrated approach implied to significantly reorganise the processes and systems of issuers in a "built-in, integrated" approach to electronic reporting. One respondent considered that financial institutions will have to rethink their systems in order to fulfil the different reporting requirements to the different regulators.

Given the wide dispersion of data and the need to avoid situation whereby abnormally large or small observations affect the evaluation, the analysis was based on the comparison of the median value of the total costs for the implementation of different technological options.

Figure 6 Median of Total Costs in € '000s - Stakeholders/Technological options



The costs to be incurred by issuers for the implementation of the ESEF mainly relate to the conversion and the submission of financial reports in the required format, while OAMs and NCAs[14] carry-out the activities of storing and analysing data. Therefore, Issuers will bear the

[14] Please note that NCAs were not requested by the questionnaire to provide any evaluation of the data quality costs and costs for extension.

highest costs among all stakeholder categories, and this condition is reflected in the evaluation of the different options, as shown in the graph. The overall median estimate of the total costs for the different technological options expressed by the NCAs is significantly lower (€ 316,000 - € 392,000) as compared to the figures provided by the OAMs (€1.3 million - € 1.7 million) and issuers provided the highest values for the built-in approach (€2.3 million - € 2.6 million).

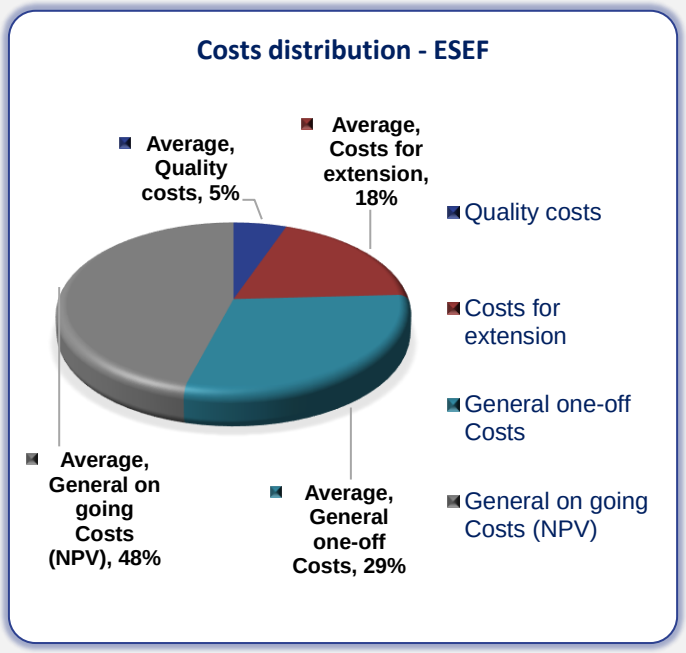
It is worth noting that the use of the average would have widened the range of values expressed by the different stakeholder categories. In fact, the average values of the total cost for the ESEF implementation expressed by issuers range from a minimum of €1 million for the bolt-on approach to a maximum of € 3.6 million for the built-in approach, whereas NCAs and OAMs provided a minimum and maximum evaluation of € 481,000 - € 630,000 and € 1.5 million - 1.9 million respectively. This finding can be explained by the answers of some outliers in the MPs distribution that are not reflected when calculating the median value.

4.2.2 Analysis by technological option - Costs

The following section provides a detailed illustration of the costs of the different technological options resulting from the aggregation and analysis of the assessment provided by each stakeholder category. The following graph illustrates the cost distribution for the ESEF implementation and provides an average cost for the different technologies, as no significant differences in the repartition were detected among the three stakeholder categories, as shown in the table below.

Ongoing costs have been calculated on the basis of the Net Present Value (NPV) of 5 years of costs.

Figure 7 Costs distribution - ESEF



On-going costs account for the largest share of total expenses, followed by one-off costs and costs for extensions. Quality costs represent a smaller share, from 5% to 6% of total expenses depending on the technology considered.

Technology solution	Costs for Extension	Quality costs	One-off costs	Ongoing costs (NPV)
XBRL	18%	6%	31%	45%
iXBRL	18%	5%	31%	46%
XML	17%	5%	29%	49%
XHTML	20%	5%	28%	47%

No significant differences occur among the stakeholder categories in terms of costs distribution for the ESEF development. The share of general on-going costs is slightly higher for XML than for the other technologies, while general one-off costs are higher for XBRL and iXBRL.

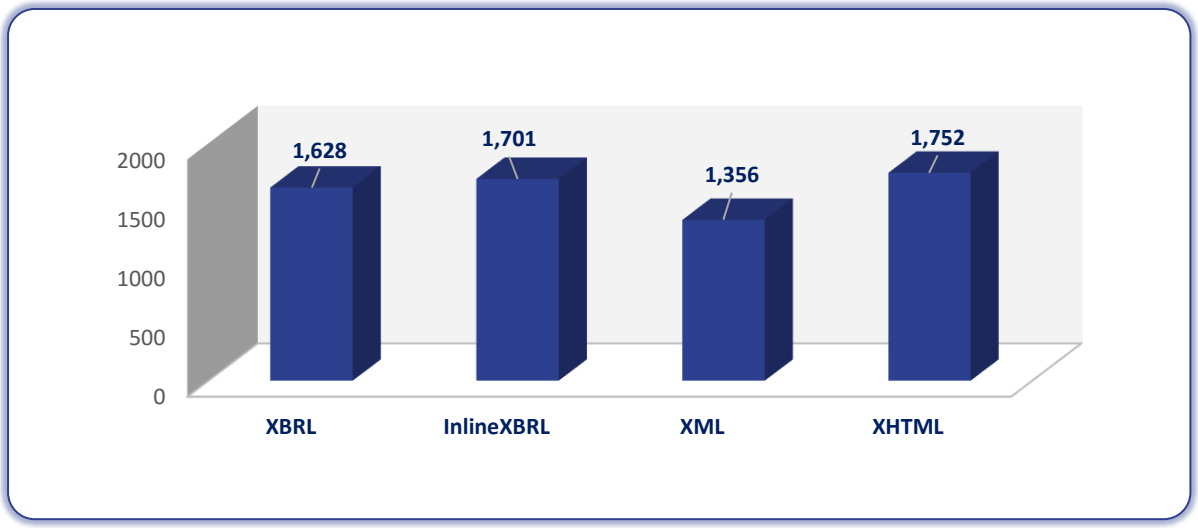
4.2.3 Analysis by Stakeholder category - Costs

In order to properly understand the costs data for the considered technological options, the evaluation provided by the different stakeholder categories must be analysed individually, as the three categories expressed significantly dissimilar value ranges. For this purpose, the evaluation of costs for the ESEF implementation has been broken down by stakeholder category.

4.2.3.1 Analysis of the OAMs questionnaire results

The current section illustrates the estimates of total costs for the ESEF implementation and the comparison among technological options resulting from the OAMs questionnaire. The following graph shows the median values of total costs for the different technological options expressed by OAMs.

Figure 8 Median of Total Costs in € '000 expressed by OAMs

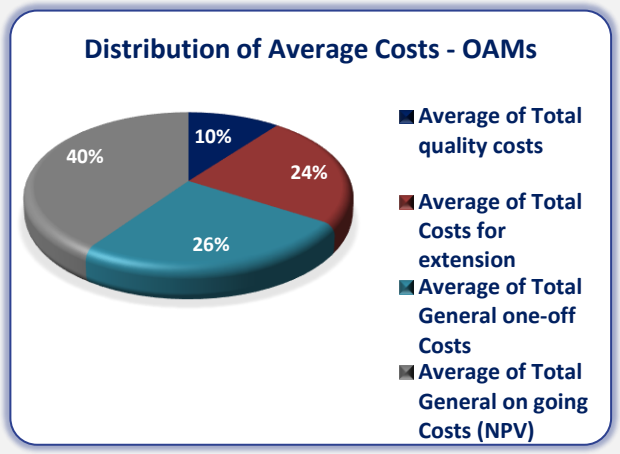


Among OAMs, XML is considered the most convenient solution at € 1.3 million, while XHTML seems to be the most expensive option at € 1.7 million. Overall, no significant differences can be observed among the different technologies and these results should be interpreted taking into account that several respondents did not provide a quantitative assessment of the costs of the different technological solutions.

In order to investigate the impact of the different cost categories on the overall evaluation, the average[15] costs composition should be considered.

[15] *The figure is obtained by averaging the cost compositions observed for the different technological options.*

Figure 9 Distribution of Average Costs expressed by OAMs



In line with the previously illustrated average costs distribution for the ESEF, general on-going costs account for the largest share of total costs, followed by general one-off costs. Quality costs represent a larger share as compared to extension costs, and the two categories together account for one third of the total costs.

The composition and percentage ranges[16] for the costs subcategories expressed by OAMs are detailed as follows:

Table 16 Average costs expressed by OAMs (with distribution of reported estimates) - General Costs subcategories

General costs - OAMs			
66% (64%-68%)			
One-off	26% (24%-28%)	On-going (NPV)	40% (38%-42%)
IT	(10%-14%)	IT (annual cost)	(3%-4%)
Staff	(3%-4%)	Staff (annual cost)	(1%-2%)
Process	(3%-4%)	Process (annual cost)	(2%-3%)
Consultancy	(4%-5%)	Outsourcing (annual cost)	(1%-2%)
Others	(0-1%)	Others (annual cost)	(0-1%)

Within general costs, as expected IT expenses account for the largest share (10%-14%), while Staff, Process and Consultancy/Outsourcing costs have a lower impact on the total value, both at initial and subsequent stages. While the contribution of Process, Staff and Other expenses remains stable over the period following the implementation, the share of IT category experiences the largest reduction after the initial stage.

[16] *Each range is calculated as a percentage of the total cost*

Table 17 Average costs expressed by OAMs (with distribution of reported estimates) - Data Quality Costs subcategories

10% (10%-14%)	
One-off	(10%-14%)
On-going (NPV)	-
On-going	-

Table 18 Average costs expressed by OAMs (with distribution of reported estimates)- Extension Costs subcategories

24% (22%-24%)	
IT	(3%-4%)
Staff	(6%-7%)
Process	(6%-7%)
Outsourcing	(3%-4%)
Others	(3%-4%)

Data quality costs account for a significant share of total expenses (10%-14%).

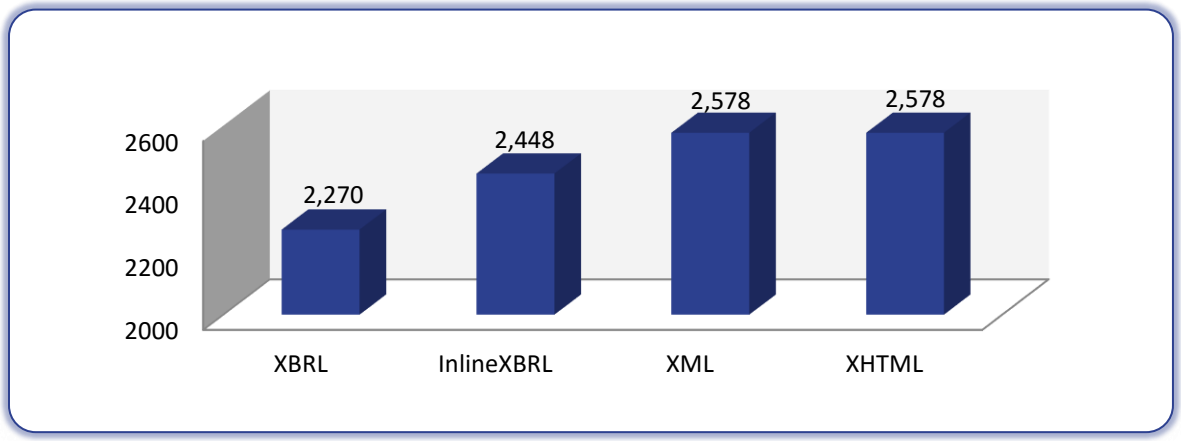
According to the OAMs, the extension costs account for a significant portion of the total expenses, although no relevant differences can be observed in terms of composition (IT, Staff, Process, Outsourcing and other costs are almost equally affecting the total value of expenses).

4.2.3.2 Analysis of the MPs questionnaire results

The current section illustrates the estimates of total costs for the ESEF implementation and the comparison among technological options resulting from the MPs questionnaire. Since responses on the quantitative evaluation of the different technological options are limited to the issuers' subcategory (the question was not mandatory for the other respondents), only the latter's results have been taken into account for the purpose of the analysis.

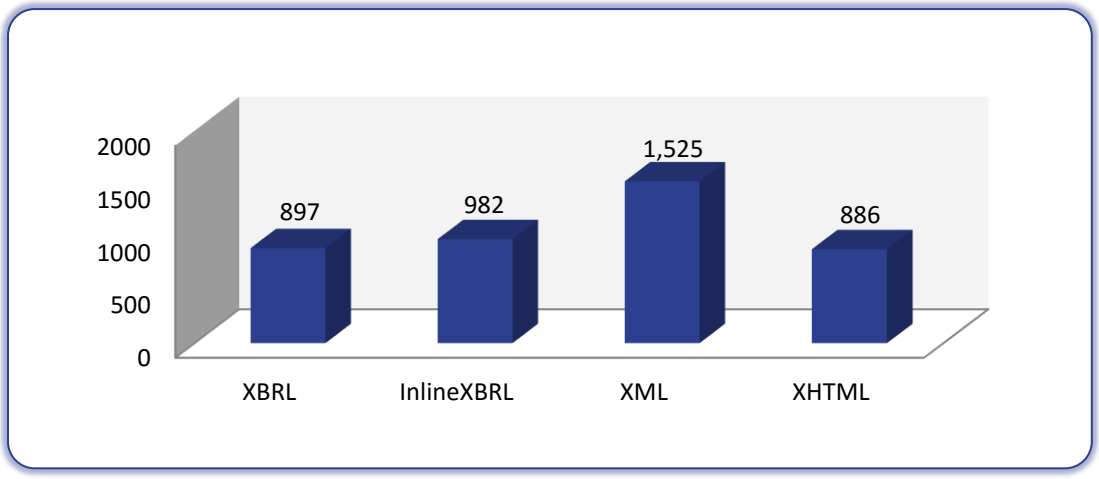
As previously illustrated, the cost evaluation expressed by issuers range from a minimum value of € 340,000 to a maximum value of € 12.1 million for the implementation of each of the considered options. Given the wide dispersion of data, the median value was used to perform the CBA to neutralize the effect of outliers on the figures provided. Furthermore, the following 2 graphs have been prepared according to the approach chosen by the issuers.

Figure 10 Median of Total Costs in €'000s expressed by issuers (built-in approach)



The assessment expressed by issuers which chose the built-in approach is relatively high, with XBRL being the least expensive option at € 2.2 million, and XML-XHTML evaluated as the most expensive alternative for a total cost of €2.5 million.

Figure 11 Median of Total Costs in €'000s expressed by issuers (bolt-on approach)



The assessment expressed by issuers which chose the bolt-on approach is much lower than the previous approach, with XBRL and XHTML being the least expensive option at about € 900,000, and XML evaluated as the most expensive alternative for a total cost of €1.5 million.

The distribution of the cost evaluation expressed by issuers for the different technological options is illustrated by the number of respondents whose answer fall in the considered range.

Table 19 Costs distribution per approach

Technological option	N. of responses per cost ranges (for a single Issuer favoring a built-in approach in '000 €)

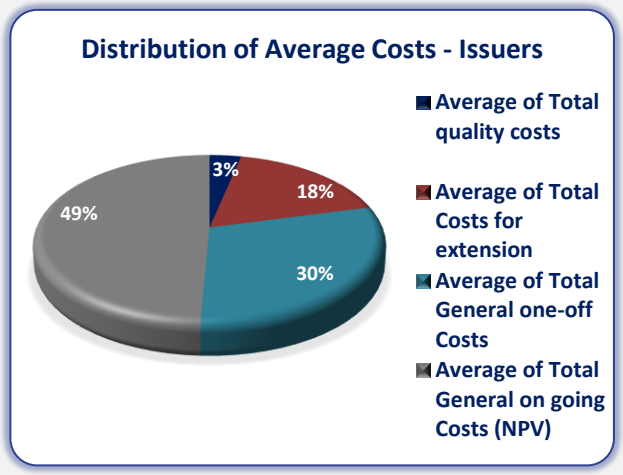
	400-1000	1000-2000	2000-4000	4000-6000	Over 6000
XBRL	4	1	1	2	1
iXBRL	4	1	1	2	1
XML	4	1	1	2	1
XHTML	4	1	1	2	1

Technological option	N. of responses per cost ranges(for a single Issuer favoring a bolt-on approach in '000 €)				
	400-1000	1000-2000	2000-4000	4000-6000	Over 6000
XBRL	2	2	0	0	0
iXBRL	2	1	1	0	0
XML	2	1	1	0	0
XHTML	2	1	1	0	0

As shown in the table, the majority of Issuers estimate the costs for the different technological options in the range €400,000 to € 1 million, while among the other value ranges, responses were more equally distributed.

The overall distribution of average costs among the different categories is shown in the graph below.

Figure 12 Distribution of Average Costs expressed by Issuers



General on-going costs account for the largest share of total expenses, followed by general one-off costs. Extensions represent a smaller share of the total composition, accounting for 18% of the total costs.

Finally, quality is the less impacting cost category, accounting for only 3% of total costs.

The composition and percentage ranges[17] for the costs subcategories expressed by MPs are detailed as follows:

Table 20 Average costs expressed by MPs (with distribution of reported estimates) – General Costs subcategories

General costs - MPs			
79%			
One-off	30% (27%-31%)	On-going (NPV)	49% (47%-51%)
IT	(10%-14%)	IT (annual cost)	(3%-4%)
Staff	(5%-6%)	Staff (annual cost)	(2%-3%)
Process	(7%-8%)	Process (annual cost)	(1%-2%)
Consultancy	(2%-3%)	Outsourcing (annual cost)	(1%-2%)
Others	(2%-3%)	Others (annual cost)	(1%-2%)

Within General one-off costs, as for the OAMs, IT expenses account for the largest share (10%-14%), followed by Staff and Process costs. Consultancy and Others costs represent a significantly lower share of the total costs. Looking at the on-going costs, no significant differences can be observed among the different cost categories.

[17] *Each range is calculated as a percentage of the total cost*

Table 21 Average costs expressed by MPs (with distribution of reported estimates) - Data Quality Costs subcategories

Data quality costs - MPs	
3% (3%-4%)	
One-off	(0-1%)
On-going (NPV)	(2%-3%)
On-going	(0-1%)

Table 22 Average costs expressed by MPs (with distribution of reported estimates) - Extension Costs subcategories

Costs for extension - MPs	
18% (15%-19%)	
IT	(3%-4%)
Staff	(3%-4%)
Process	(3%-4%)
Outsourcing	(3%-4%)
Others	(3%-4%)

No relevant imbalances can be observed in the composition of data quality and extension costs.

Table 23 Impact on the overall risks related to each option

Could you evaluate the impact of the overall risks related to each different options?	Very low	Low	Medium	High	Very High
Option 1: XBRL	4	1	11	4	2
Option 2: Inline XBRL	3	1	11	5	2
Option 3: new European Standard based on XML	3	1	13	3	2
Option 4: new European Standard based on xHTML	4	0	12	4	2
TOTAL	14	3	47	16	8

Issuers believed that the main risk was linked to the implementation, but not to data accuracy. Among the different options, 3 issuers believed that the higher standardization of XBRL format allows more integrated validation rules that in turn limit the overall risks. They fear that having another format than XBRL would be costly and risky to maintain.

Therefore, the biggest data quality risks would arise from the new European standards, as the extension of the modelling mechanisms would be used to model and extend corporate financial data. It would duplicate the work put into the original XBRL, take a long time to implement with no guarantee that the new mechanisms would at the end meet all the requirements.

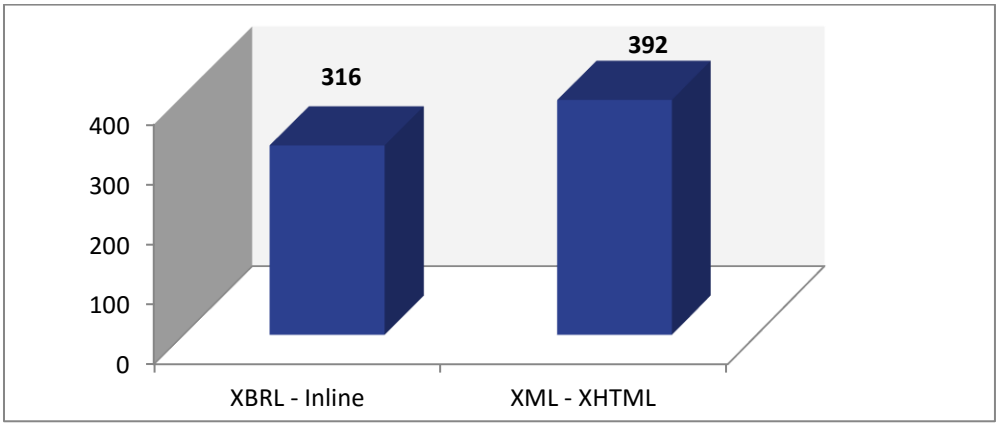
However given the low level of participation and the relatively small deviations in the expected risks related to each of the different options it is not possible to come to an unequivocal conclusion.

Qualitative appraisal expressed by MPs
Since these differences do not significantly discriminate among the different technologies, the results obtained from the responses to the questionnaires should take into account some general considerations expressed by MPs with respect to costs estimation. • Some respondents found it difficult to estimate costs without performing a previous assessment; • Some respondents considered their estimates rough and tentative, due to a lack of knowledge of the technology and taxonomy required to implement at this stage of the approach (bolt-on/built-in); • On the basis of their internal knowledge, some respondents considered it easier to estimate the costs related to XBRL implementation; • For some of the issuers that already use XBRL, this technological solution could represent the least expensive one. Of the issuers that do not use XBRL, one considered that the lack of internal knowledge would generate a high implementation cost in the first phase; • To make use of XBRL data directly, users will need to invest in desktop rendering tools. However, there are also a number of free XBRL financial analysis websites available which are based on published XBRL corporate data. iXBRL offers the additional benefit that, because XBRL data is already rendered in an XHTML wrapper, data can be shared with third parties who can view it without any special tooling. • Some concerns regarding the development of the taxonomies have been mentioned by different stakeholders that were not able to provide precise cost estimations.

4.2.3.3 Analysis of the NCAs questionnaire results

As shown by the comparative analysis, NCAs provided the lowest overall cost estimate of the different technological options among all stakeholder categories. The graph below shows the median of total costs expressed by NCAs.

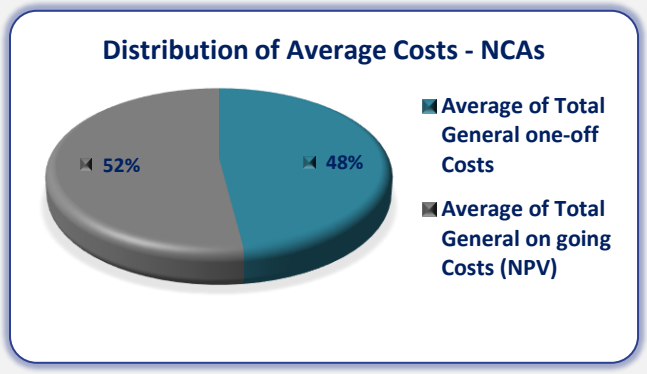
Figure 13 Median of Total Costs in € '000 expressed by NCAs



No significant difference in terms of costs was revealed among the technological options. As shown in the Figure 13, XML and XHTML are considered the most expensive solutions at € 392,000, while XBRL and iXBRL are the least expensive at € 316,000. It is worth noting that the respondents were asked to provide a single evaluation for XBRL and iXBRL, as well as for XML and XHTML.

The following graph illustrates the costs distribution resulting from the NCAs responses.

Figure 14 Distribution of Average Costs expressed by NCAs



The total expenses sustained by NCAs for the ESEF implementation would be almost equally represented by general one-off costs and general on-going costs.

Table 24 Average Costs expressed by NCAs (with distribution of reported estimates) - Data Quality Costs subcategories

General costs - NCAs			
100%			
One-off	48% (41%-49%)	On-going (NPV)	52% (50%-59%)
IT	(27%-31%)	IT (annual cost)	(3%-4%)
Staff	(3%-4%)	Staff (annual cost)	(5%-6%)
Process	(8%-9%)	Process (annual cost)	(2%-3%)
Consultancy	(2%-3%)	Outsourcing (annual cost)	(1%-2%)
Others	(0-1%)	Others (annual cost)	0-1%)

Within General one-off costs, IT accounts for the largest share (27% - 31%), followed by Process, while the other subcategories represent a significantly lower share of the total costs. Within the on-going costs, the NPV of Staff is the largest share.

Because of the structure of the questionnaire, no data are available on Data quality and Extension costs. Nevertheless, some respondents suggested that the adoption of XBRL or iXBRL for the ESEF might raise questions on the availability of the taxonomy and the development of extensions.

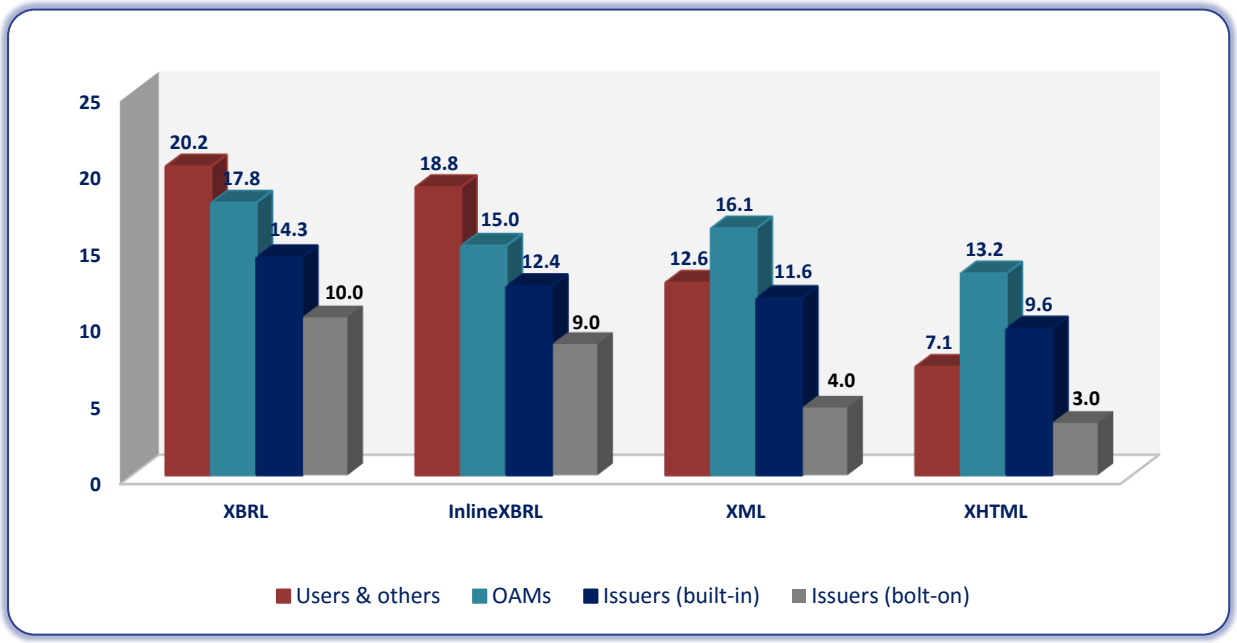
4.2.4 Comparative analysis - Benefits

This section provides a comparison of the benefits of the different technological options for each stakeholder category (NCAs, OAMs, market participants) as resulting from the analysis of the responses provided by the survey participants.

The analysis is based on the comparison of the average and median score of the total benefits for the implementation of the different technological options.

The scores are determined by converting the qualitative judgement expressed by the stakeholders into the corresponding figure to enable calculations and comparison (*please refer to Tables 05 to 08*).

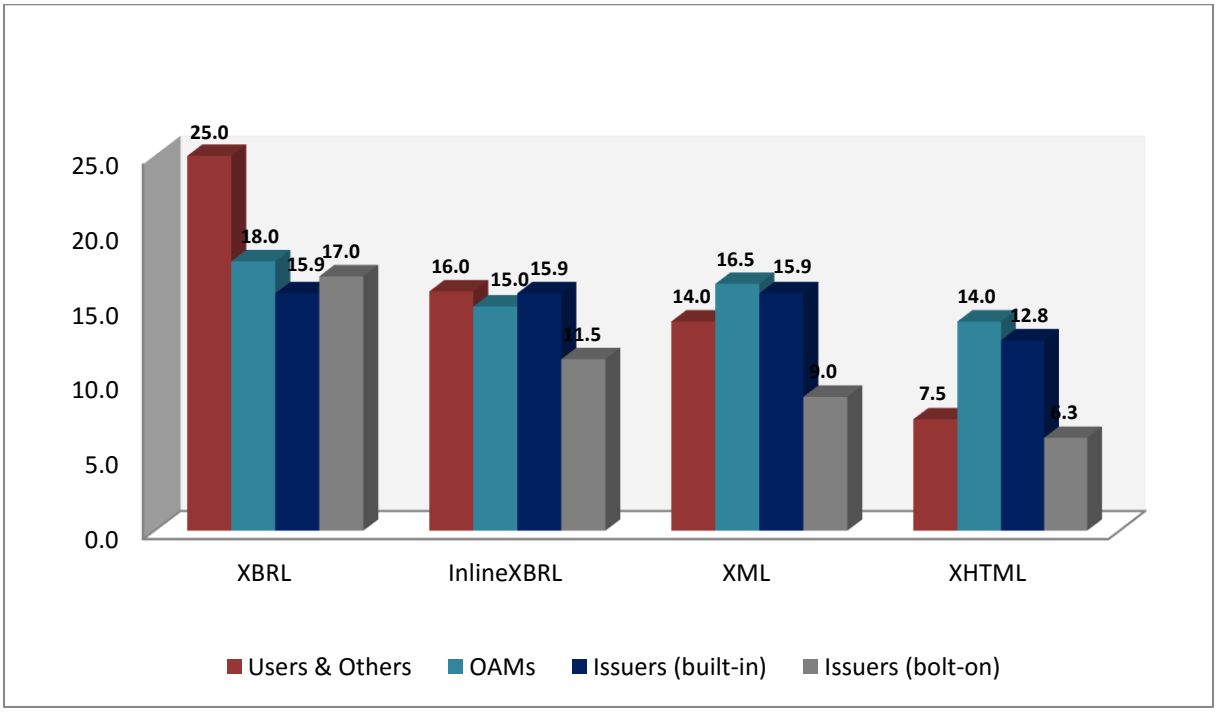
Figure 15 Average of Total Benefits (score) - Stakeholders/Technological options



Overall, the respondents of all three categories express a general preference for XBRL compared to the other options, while XHTML is considered the least valuable alternative.

Considering the evaluations provided by the three stakeholder categories, no significant differences can be observed between iXBRL and XBRL.

Figure 16 Median of Total Benefits (score) - Stakeholders/Technological options



The lack of significant differences among the different technologies is confirmed when comparing them using the median values. Nevertheless, the preference for XBRL as compared to iXBRL is stronger when considering median values, especially for the Users' category.

4.2.5 Analysis by Stakeholders category - Benefits

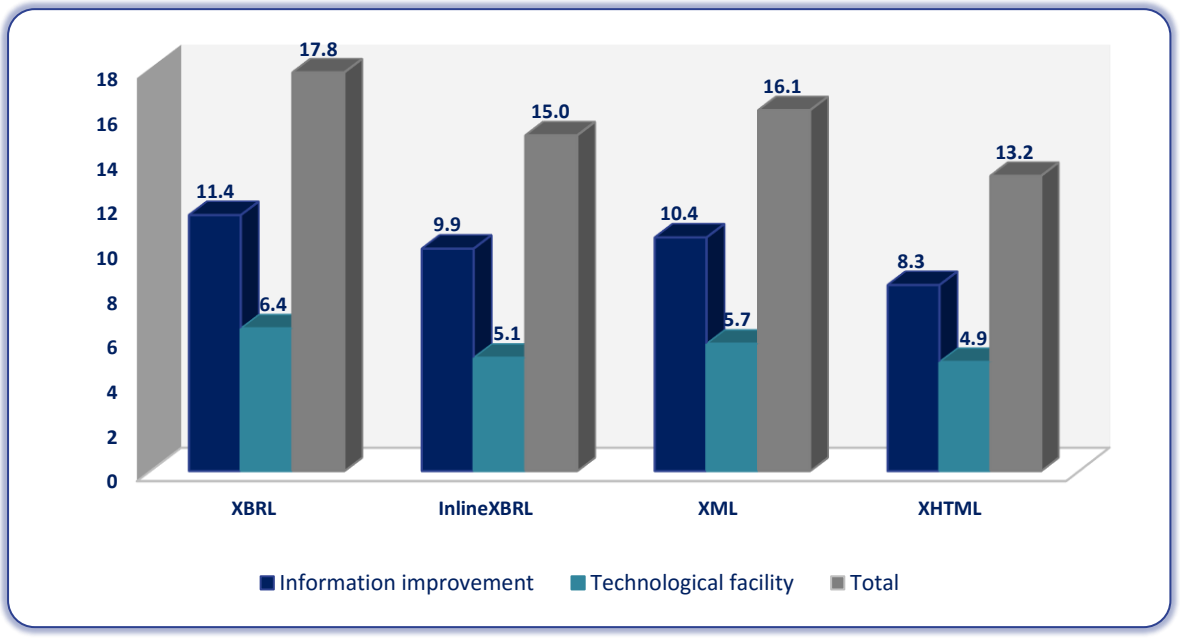
This section aims at illustrating the comparative evaluation of benefits of the different technological options for OAMs and MPs (issuers and users) as resulting from the analysis of the responses provided by the selected survey participants.

The analysis is based on the comparison of the average score of the **total benefits** for each technological option broken down into the main categories, namely information improvement, technological facility and data quality.

4.2.5.1 Analysis of the OAMs questionnaire results

This section illustrates the results of the benefits assessment conducted on the OAMs' responses. The average values of total benefits expressed by this selected category are reported in the following figure.

Figure 17 Average of Total Benefits (score) expressed by OAMs



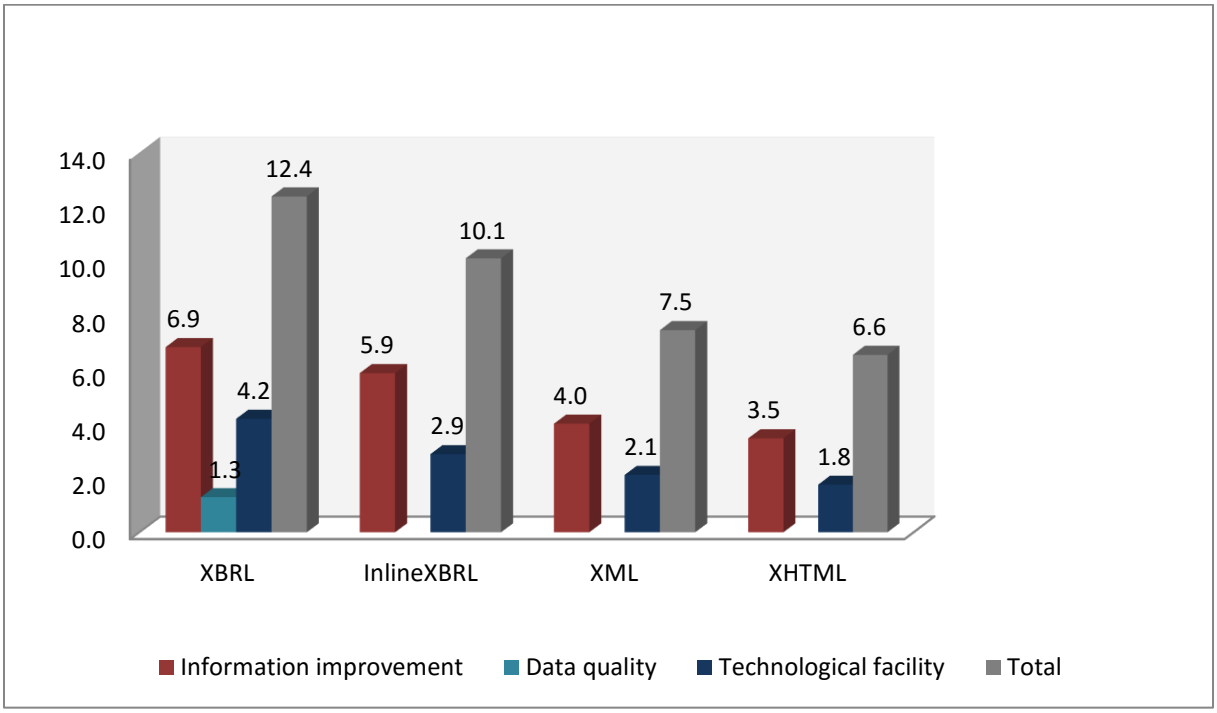
According to the estimated benefits, the OAMs seem to prefer XBRL for a total score of 17.8. This difference is due to a higher score obtained by XBRL compared to the other technologies with respect to both technological facility and information improvement.

It is important to note that the differences in estimated benefits among the considered technological options are relatively small; only the application of XHTML is expected to be significantly less beneficial than the other options. This conclusion can be drawn also considering each of the benefits subcategories, both technological facility and information improvement.

4.2.5.2 Analysis of the MPs questionnaire results

The results of the benefits assessment conducted among the different subcategories of MPs provide values reported below.

Figure 18 Average of Total Benefits (score) expressed by Issuers



The benefits evaluation expressed by issuers confirms the results obtained from the OAMs, with XBRL being the favourite option and XHTML appearing as the least attractive alternative.

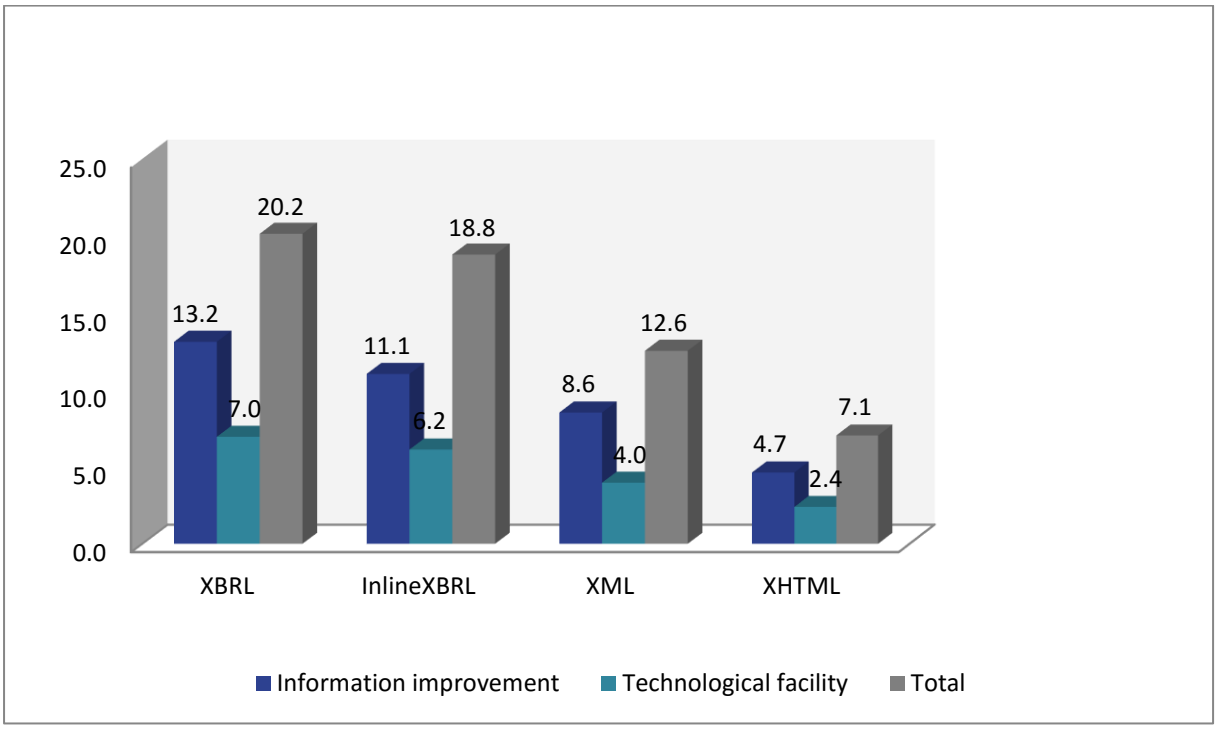
This difference is mainly due to the perceived advantage of XBRL for information improvement.

According to the issuers, the potential benefits of an automatic processing/extraction of structured financial data would be:

- Cost saving and simplification of extracting and comparing information.
- Faster validation for reported data, reduction of errors.
- Faster and more precise analysis
- Confidence on the data source for institutional investors.
- Enhanced analysis of information, based on improved availability.

- Promotion of cross-border investment may be achieved if the concepts used have a uniform meaning and the uncertainty that exists today for various concepts with the same meaning is avoided. This reduces lead times (administrative tasks) and allows more time for analysis.
- For institutional and retail investors: reduced cost for manual input of figures from paper and PDF. Better data quality arising from automated controls and checks.
- However, most respondents do not see added value for retail investors. To meet their specific needs, software should be available to view and analyse the electronic format in an easy way.

Figure 19 Average of Total Benefits (score) expressed by users & other stakeholders



For users, the benefits evaluation confirms the results obtained from the other categories with XBRL and iXBRL being the favourite options and XHTML appearing as the clearly least popular alternative. The difference is mainly due to a higher score obtained by XBRL compared to the other technologies with respect to information improvement.

Due to the small number of respondents, it was difficult to draw general conclusions on the benefits identified by every sub-category:

- Regulators - XBRL appears to be the preferred option with a total score almost twice the score expressed for the other technological options;
- Auditors - the scores of the different options are very close and no relevant difference can be inferred from the analysis;
- Business registers - iXBRL and XBRL are the preferred options, with related scores twice as high as XML and XHTML;

- Professional investors - XBRL is the most valuable option, but the scores of the different technological options seem to be very close and no substantial difference exists;
- Standard setter - iXBRL and XBRL are the preferred options with related scores twice as high as XML and XHTML. Furthermore, they consider that XHTML is expected to bring disadvantages rather than benefits.

Some respondents considered that XBRL is widely used on an international basis and would have the key advantage to provide similar reporting in Europe and in the United States.

iXBRL has the advantage to be more user-friendly for non-professional investors than XBRL. As it combines rendering and structured data, retail investors would find it easier to handle.

As the following table shows respondents and especially Issuers feared that all options would have an adverse impact on the timely delivery of the financial statements. It would be an additional step in the preparation and control of financial statements. XBRL and iXBRL are expected to be slightly less detrimental to the timely delivery of annual financial reports than XML or XHTML.

Figure 20 Facilitation of the timely delivery of annual financial reports with the different options

	YES	*PARTIALLY*	*NO*	*BLANK*	*TOTAL*
Option 1: XBRL	9	15	10	0	34
Option 2: iXBRL	9	12	13	0	34
Option 3: new European Standard based on XML	6	14	14	0	34
Option 4: new European Standard based on xHTML	6	12	16	0	34

Qualitative appraisal expressed by MPs

Other relevant information useful for the final benefits evaluation was received from MPs:

- Impact on taxonomy and financial reporting process - 15 respondents believe that, of all the proposed technological options, XBRL would involve the smallest changes in their taxonomy and financial reporting process. In this respect, five respondents chose a new European standard based on XML and three chose iXBRL.

- One user stated that pure XML lacks the specific structures needed to create and extend taxonomies, and this will make it hard to incorporate national and entity-specific extensions into an XML filing regime, thus having a large impact on costs. To allow national authorities to extend an XML dataset, the XML model needs to be

refined to provide extensibility and relationship structures akin to those in XBRL. The lack of specification-level constraints on extensions would tend to make this an expensive and unreliable approach. Ease of access to XML for software developers would be cancelled by the lack of tooling around the chosen report formats and lack of publicly available analysis. This would severely limit the benefits.

- The above reasoning was also made for pure xHTML. In addition, this solution would cover most of the ground already handled by iXBRL which provides the accessibility of XHTML and the semantic structure of XBRL.

- Issuers raised concerns about an increase of operational burden, higher costs and additional lead time for financial information release. In addition, some critical criteria (regarded as risks) to ensure that ESEF will bring benefits to issuers were highlighted: 1) Instability of IFRS; 2) Standardization of narrative information; 3) Inexistence of taxonomy for National GAAP for preparing statutory financial statements; 4) Lack of flexibility of a structured electronic solution, which could lead to excessive standardisation of data or a rule-based approach, which would render communication overly inflexible and not adapted to the specific characteristics of the company; 5) Responsibility issues related to the consequences of using unsuitable taxonomies or languages that would not reflect the substance of their disclosure; 6) If the final approach would result in a built-in one, the effects on the overall architecture of the IT's system.

- Issuers see no advantage on their access to financing, while users welcome overall transparency and well-timed availability of financial data.

- Structured financial reporting is deemed as enabling the promotion of cross-border investment, although, in the view of issuers, providing consistency among national GAAPs and regulatory requirements is of the greatest importance.

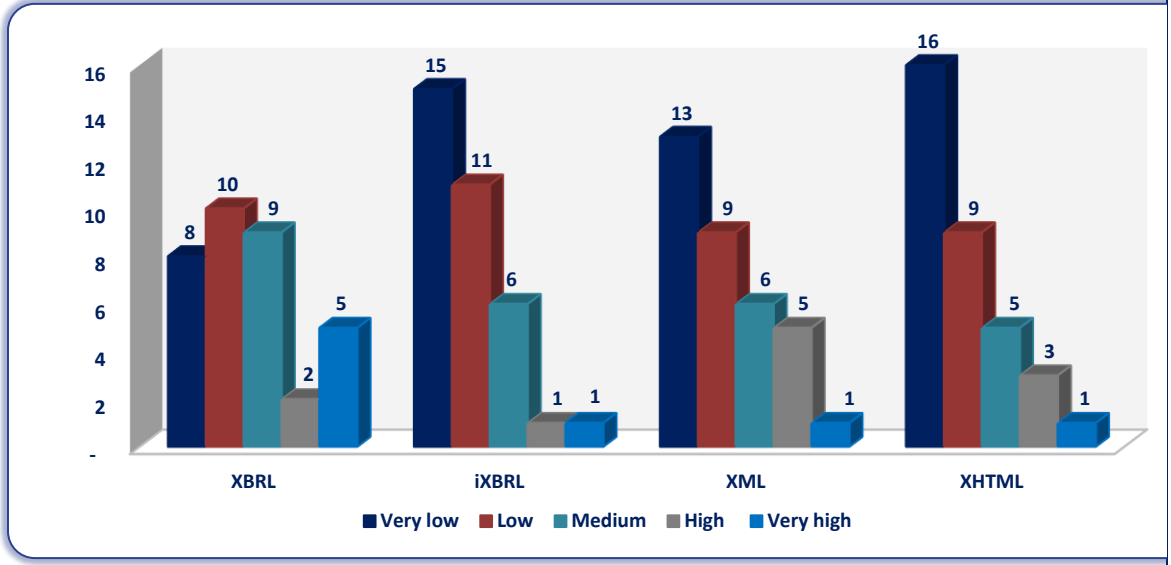
- Some issuers set forth the advantage of implementing the same technology as in the U.S. and other countries (XBRL), with possibly one single XBRL IFRS file to be filed in the U.S. and in Europe.

- One user reported high added value for small and medium companies on their ability to access regulated markets, because of their present lack of visibility. For large companies there would be little value added on their ability to access regulated markets.

- Level of internal knowledge of the different technological options - XBRL seems to be the most well-known technology among those considered for the analysis, while the majority of the sample showed a low level of internal knowledge with respect to the possible development of a new European standard based on XHTML. The

following graph shows the level of internal knowledge of the different technological options as resulting from the responses to the questionnaires.

Figure 21 General level of internal knowledge of the technological options



- Furthermore, some respondents stated that the adoption of a different standard than XBRL would create significant burdens for European issuers listed in the U.S. (where XBRL is mandatory).

4.2.5.3 Analysis of the NCAs questionnaire results

Although no quantitative data on benefits have been required from the NCAs, some qualitative assessments could be drawn from the comments provided:

- Overall, NCAs considered that the key benefit of structured reporting will be enhanced supervision through the ability to compare harmonised information, to automatically assess their completeness, to analyse the filed data and undertake statistical assessments.
- While underlying the current wide use of XBRL, NCAs made a number of comments on the different options:
  - ✓ Numerous quality problems of XBRL have been observed by the US SEC.
  - ✓ The use of iXBRL has not always made it possible to achieve comparability and standardisation of reporting, as it offers every organisation a wide range of options tailored to its specific needs.
  - ✓ The development of a new European Standard based on customised XML or HTML would require considerable time and compromise the implementation of structured reporting. As HTML is subject to extensive technological changes, the comparability of reports would not be provided for with the same extent as with the other options.

V. Tentative conclusions

The final recommendations are based on the evidence derived from the CBA and the results gathered from the experiences of other countries.

The answers provided by stakeholders on the questionnaires led to the following conclusions:

1. **MPs** consider XBRL and to a slightly lesser extend iXBRL to be significantly more beneficial than XML and XHTML. Very small variations in expected costs could be observed among the different technologies. The issuers expect the costs of XBRL to be overall lower than of the other technologies. But caution has to be applied when forming conclusions based on these results as the response rate of MPs was very low. Also the lack of representatives of large markets amongst the respondents has to be taken into account; in particular only one MP (Users subcategory) for UK and Germany took part in the survey;

2. **OAMs** evaluate XML as the least expensive option and expect the largest benefits from an application of XBRL, however the differences in expected benefits for XBRL, iXBRL and XML are rather small;

3. **NCAs** assume there are no relevant differences between the 4 technological options, even though XML and XHTML are considered more expensive than the other options.

Considering that the responding MPs and OAMs expect XBRL to be the most beneficial technology and taking into account that most costs will be borne by issuers and the responding issuers expect XBRL also to be the cheapest technology, XBRL seems to be the most appropriate option. However, the lack of adequate representativeness of the figures collected from MPs did not provide a complete picture in terms of costs for the ESEF development and the large differences among the answers of respondents prevented ESMA from drawing strong conclusions. As such, further analysis will be necessary.

The results of the desk research demonstrate that XBRL is currently the most used technological option for electronic reporting transmission. This implies that there might be an issue of data comparability, not only within the EU but also at a global level. Several respondents considered that, because XBRL reporting is already in place in the US, developing a new European Standard based on customised XML or HTML would reduce comparability between US and EU issuers.

According to the TDA, "*A harmonised electronic format for reporting would be very beneficial for issuers, investors and competent authorities, since it would make reporting easier and facilitate accessibility, analysis and comparability of annual financial reports".* Based on this consideration, the different technologies should be evaluated taking into account not only the costs related to their implementation, but also the extent to which they are aligned to the objectives of the TDA.

After the assessment of the economic feasibility of the ESEF implementation, the final evaluation of the format to be adopted should take into account the benefits associated with the different technological options. In this view, the opinions expressed seem to indicate that XBRL and iXBRL are the most beneficial options and are better aligned with the objectives of the TDA in terms of information improvement and technological facility.

Therefore, the adoption of XBRL or iXBRL is supposed to foster the achievement of the objectives of the TDA and result in an enhancement of the attractiveness of EU capital markets and an increase in investment flows. However, it has to borne in mind that ESMA's CBA is limited to the choice of technologies.