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Aalto University
School of Business

Welcome to ESEFHelsinki

XBRL FI

Welcome to ESEFHelsinki2018 seminar!

Aalto University
School of Business

- Esko Penttinen
  - Professor, Aalto School of Business
  - Director, Real-Time Economy Competence Center
  - Chairman, XBRL Finland
- Elina Koskentalo
  - Project manager & taxonomy developer, XBRL Finland
- Hanna Heiskanen
  - Senior advisor, Finnish Financial Supervisory Authority
- Riitta Pelkonen
  - Senior accounting expert, IFRS, Finnish Financial Supervisory Authority

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Program

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Time	Talk	Speaker(s)
12:15-12:30	Welcome, opening words	Hanna Heiskanen (FIN-FSA) Elina Koskentalo & Esko Penttinen (XBRL Finland)
12:30-13:15	ESMA's decision to move to ESEF and XBRL – rationale and implications	Anna Sciortino (ESMA)
13:15-13:45	Data storage – Nasdaq as OAM	Roberto Moretti (Nasdaq)
13:45-14:15	Coffee break	
14:15-15:00	Panel1 – Experiences of XBRL filings from Finnish issuers	Sini Halla (Nokia) Joonas Konttila (Valmet) Karin Martikainen (UPM)
15:00-15:45	Panel2 – How does XBRL improve data analytics to different stakeholders?	Niels-Peter Ronmos (Danish business register) Dirk Beerbaum (Deutsche Bank)
15:45-16:45	Panel3 – How can service providers make the transition to XBRL smoother?	Service providers
16:45-18:00	Cocktail reception	

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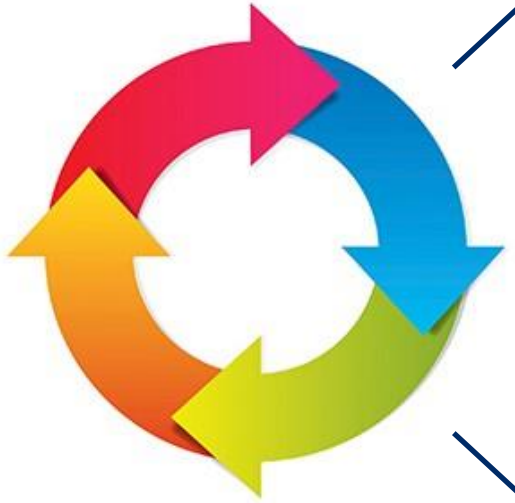
Opening remarks

#ESEFHelsinki

Drivers towards digitalisation of financial reporting



Technology

- Robotics
- Artificial intelligence
- Data

Regulation

- ESMA ESEF
- EU E-Government action plan

Users

- Growing demand
- Need for speed and efficiency
- Transparency

The success of ESEF depends on several parties' input

Issuer	FIN-FSA	ESMA	OAM/Nasdaq
Investors	Analysts	Robots	Auditors
Business registers	Other OAMs	Other enforcers / security market authotities in Europe	Software providers
Service providers	IASB	IFRS Foundation	

Views on the benefits of ESEF

Listed companies

- Will require effort in the beginning, but benefits will follow
- Defined frameworks are always helpful in the long run
- Usage of other listed companies' data

Users

- Transparency
- Easier access to information and automated analysis with the help of different tools
- Possibility to process large data sets

Supervisors

- Supervisory convergence
- New ways to utilize the data
- Encourages supervisors to develop digital tools

We are only at the beginning of the path

- Tallin declaration from October 2017:
  - *We call upon the Commission to further explore possibilities of Standard Business Reporting in view of the implementation of the **ESMA European Single Electronic Format** to make company data comparable, transparent and accessible digitally to reduce administrative burdens.*
- ESEF will likely be the beginning and also the catalyst of the digitalisation of financial reporting

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Thank you!

ESMA REGULAR USE

26 November 2018

The European Single Electronic Format (ESEF)

An introduction to ESMA‘s draft RTS

Anna Sciortino

ESEF Mandate for ESMA

ESMA's mandate on the ESEF is contained in the revised Transparency Directive*

Article 4(7) states that

"*ESMA shall develop draft regulatory technical standards to specify the electronic reporting format*"

Recital (26) points out that:

*A **harmonised** electronic format […] would*

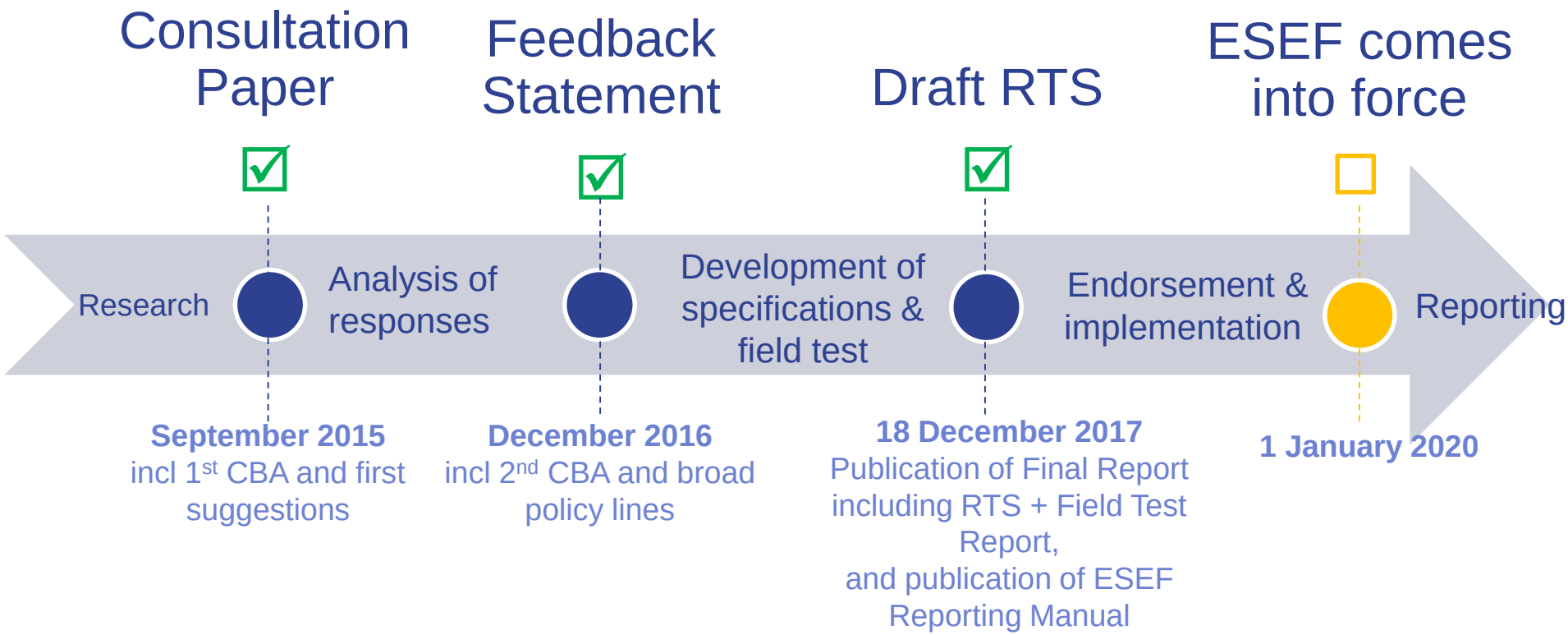
- *make reporting **easier***
- *facilitate **accessibility**,*

analysis

*and **comparability** of annual financial reports.*

*Directive 2004/109/EC as revised by Directive 2013/50/EU

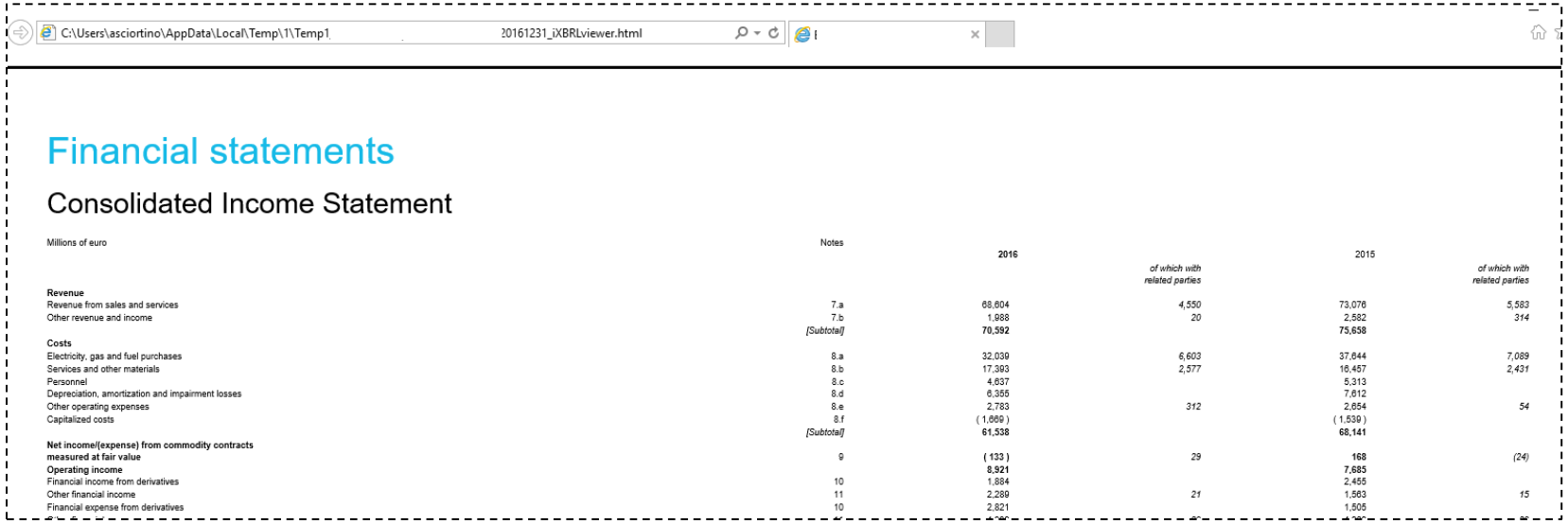
An overview of the development process



Key requirements of the ESEF

- All annual financial reports have to be prepared in xHTML
- Annual financial reports containing consolidated IFRS financial statements need to be marked up using XBRL tags
- XBRL tags have to be embedded in the xHTML document using Inline XBRL
- The taxonomy to be used is the ESEF Taxonomy

What does an xHTML file look like



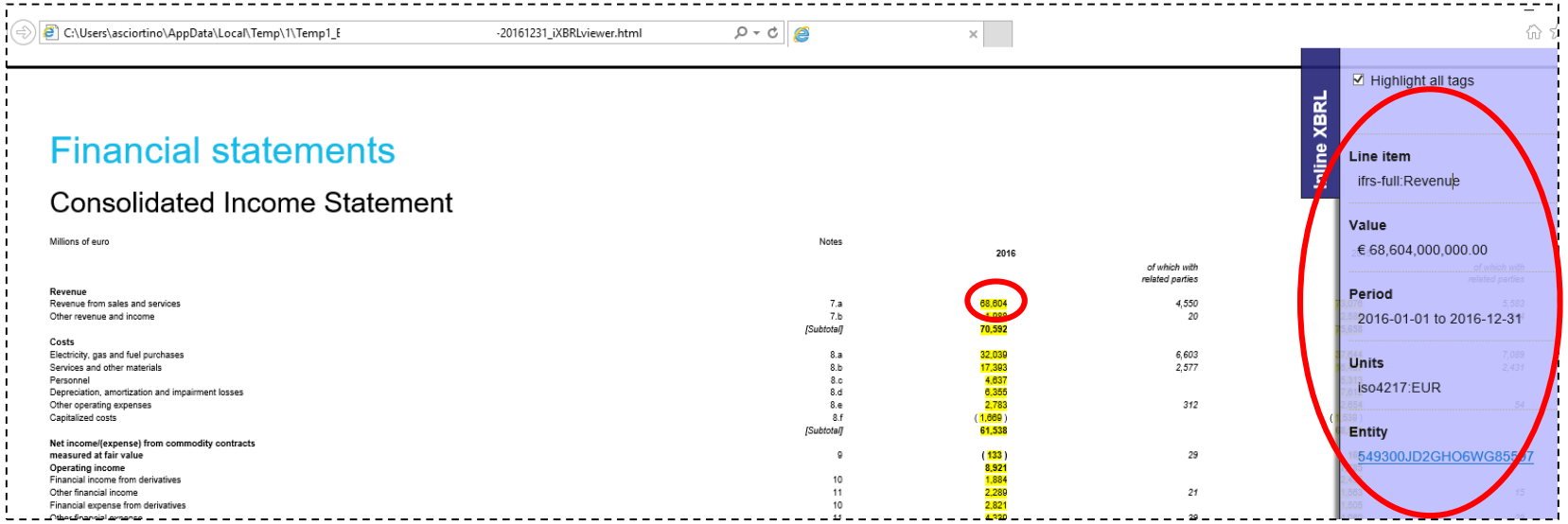
Financial statements

Consolidated Income Statement

Millions of euro	Notes	2016	of which with related parties	2015	of which with related parties
Revenue					
Revenue from sales and services	7.a	68,804	4,550	73,076	5,583
Other revenue and income	7.b	1,988	20	2,582	314
	[Subtotal]	**70,592**		**75,658**	
Costs					
Electricity, gas and fuel purchases	8.a	32,039	6,603	37,644	7,089
Services and other materials	8.b	17,393	2,577	16,457	2,431
Personnel	8.c	4,637		5,313	
Depreciation, amortization and impairment losses	8.d	6,355		7,612	
Other operating expenses	8.e	2,783	312	2,654	54
Capitalized costs	8.f	(1,669)		(1,539)	
	[Subtotal]	**61,538**		**68,141**	
Net income/(expense) from commodity contracts measured at fair value	9	**(133)**	29	**168**	(24)
Operating income		**8,921**		**7,685**	
Financial income from derivatives	10	1,884		2,455	
Other financial income	11	2,289	21	1,563	15
Financial expense from derivatives	10	2,821		1,508	

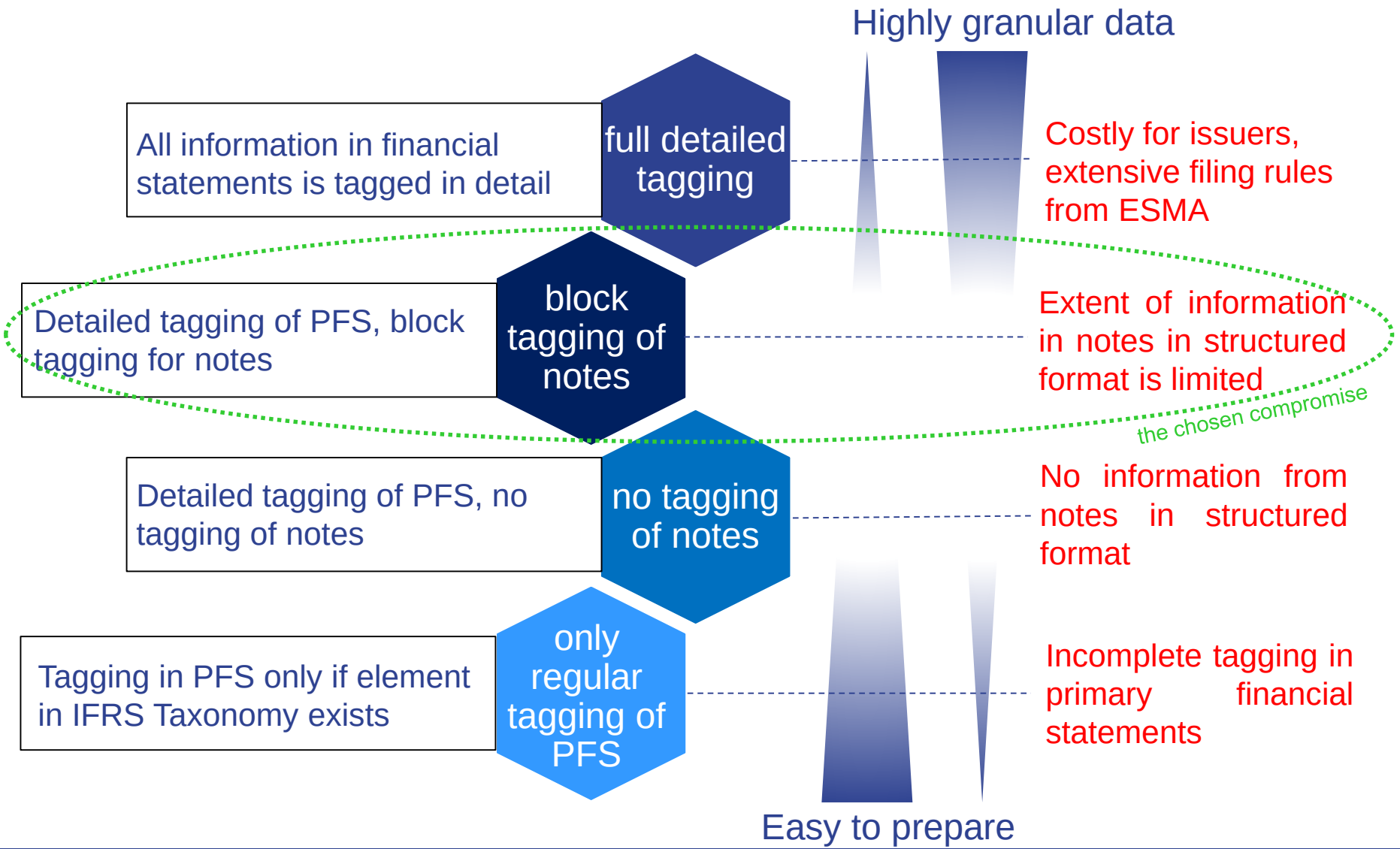
… like a standard web page

What do embedded XBRL tags look like

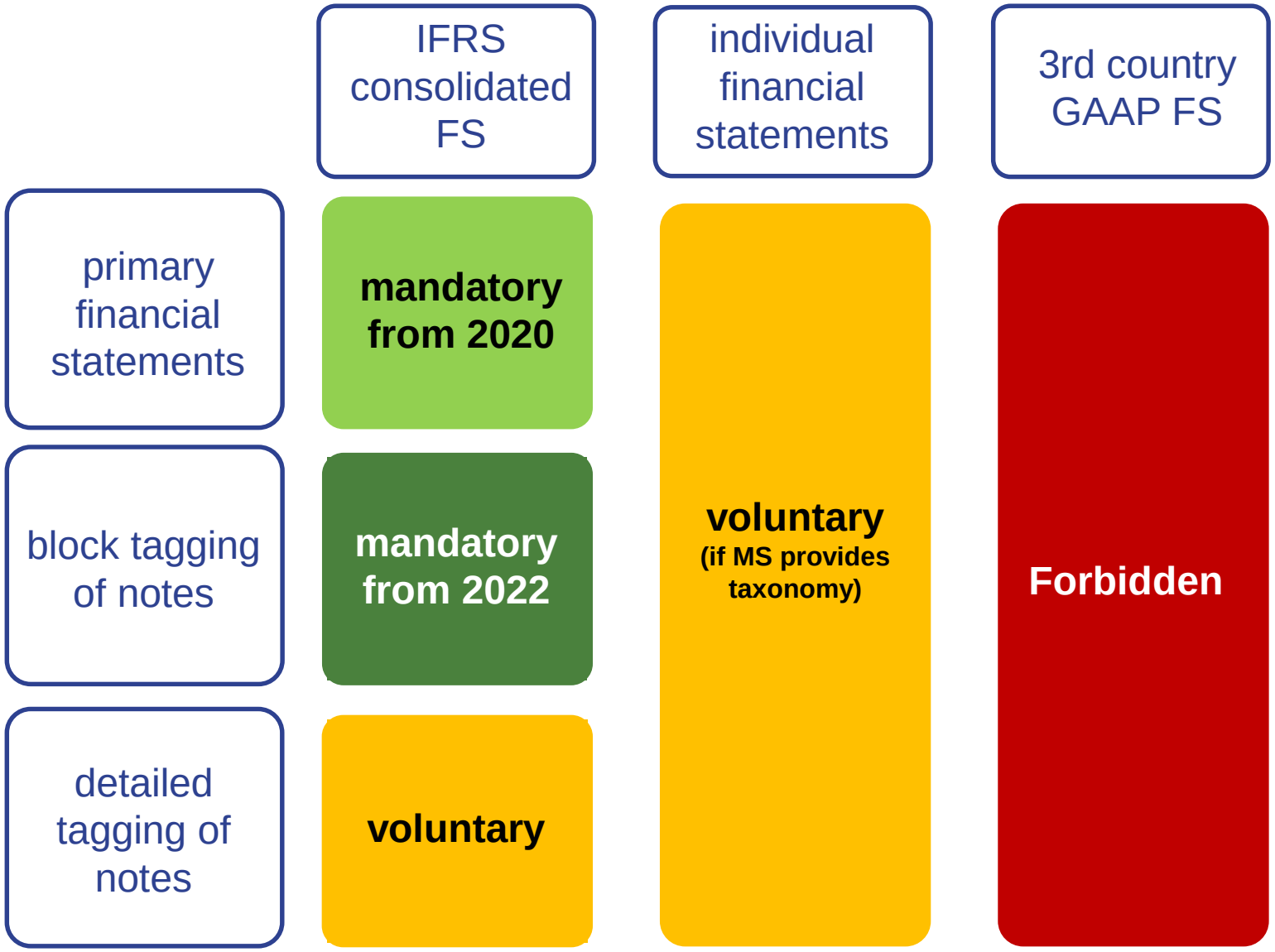


…like an additional layer of information that can be displayed when clicking on a certain tagged element

Level of tagging required by ESEF RTS



Level of tagging required by the RTS on ESEF



The ESEF taxonomy

- A taxonomy is a classification system used to identify and structure information
  - The IFRS taxonomy, prepared by the IFRS Foundation, lists and defines the specific elements that preparers can use to identify (*tag*) the information disclosed within IFRS financial statements.
  - IFRS taxonomy elements are obtained from (1) IFRS Standards and (2) common reporting practice
- ESEF taxonomy = IFRS Taxonomy + a small set of ESMA additions:
  - guidance concepts
  - labels in all EU languages
  - 'wider-narrower' relationship (*arc-role*) used for anchoring of issuers' extensions
- The RTS includes the labels of all elements of the core taxonomy → translations
- The taxonomy codes will be published on ESMA's website

Marking-up disclosures

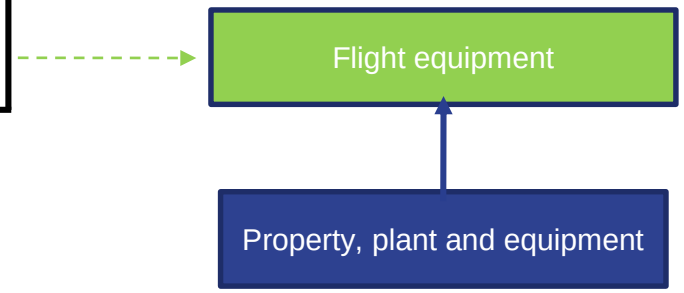
- Marking up = “tagging” = applying to a disclosure the relevant XBRL tags
- Preparers shall mark-up their disclosures with the taxonomy element having the closest accounting meaning to marked up disclosure
- If the closest taxonomy element misrepresents the accounting meaning of the disclosure, issuers shall create an *extension* taxonomy element.

Example of extension

Example 1 : Balance Sheet of a European issuer

CONSOLIDATED BALANCE SHEET

Assets *In € millions*	*Notes*	December 31, 2016
Goodwill	*17*	218
Intangible assets	*18*	1,066
Flight equipment	*20*	9,119
Other property, plant and equipment	*20*	1,480



Extension elements

Elements contained in the IFRS Taxonomy

Anchoring disclosures

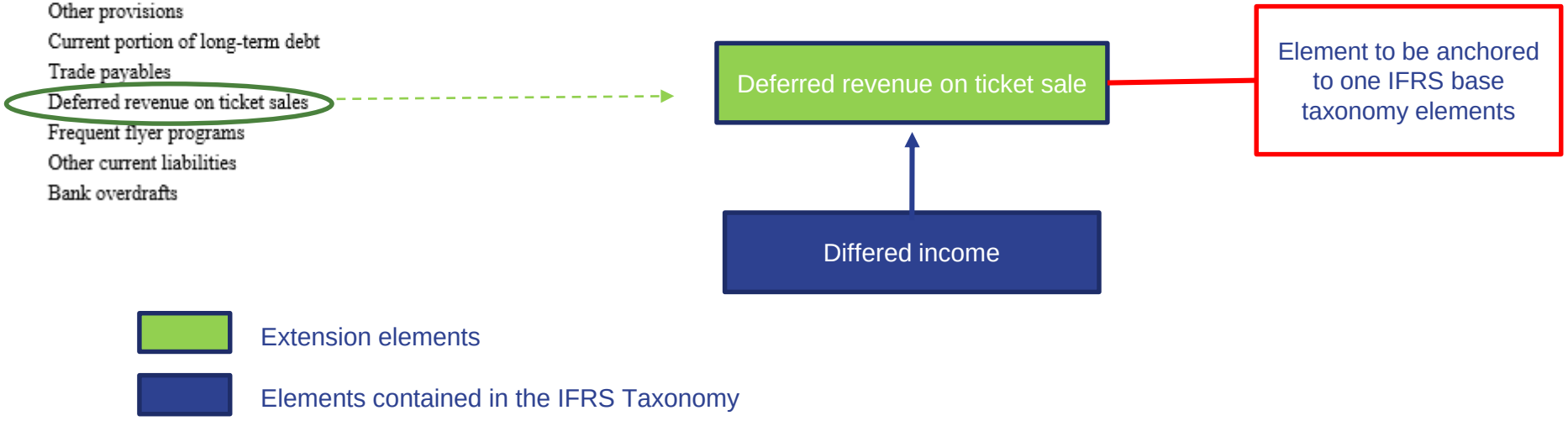
- Anchoring = “linking” through an XBRL relationship
- Extension elements shall be *anchored* to the core taxonomy element that has the closest wider accounting meaning
- Anchoring can:
  - Link one entity specific disclosure to one IFRS core taxonomy element (*one to one)*
  - Link two or more entity specific disclosures to one IFRS core taxonomy element (*n to one*, or combination)
  - Link one entity specific disclosure to two or more IFRS core taxonomy elements (*one to n*, or disaggregation)
- Extension elements which are subtotals of other disclosures need not being anchored

Example of anchoring

(1) One-to-one anchoring

Balance Sheet of a European issuer

Total non-current liabilities
Liabilities relating to assets held for sale
Other provisions
Current portion of long-term debt
Trade payables
Deferred revenue on ticket sales
Frequent flyer programs
Other current liabilities
Bank overdrafts

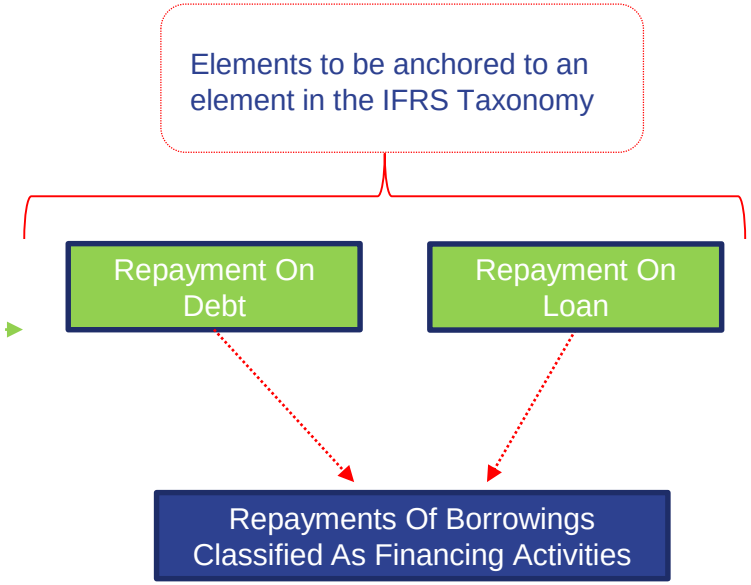


Example of anchoring

(2) Disaggregation (n to one)

Cash flow of a European issuer

Net cash flow used in investing activities
Perpetual
Sale of minority interest without change in control
Issuance of debt
Repayment on debt
Payment of debt resulting from finance lease liabilities

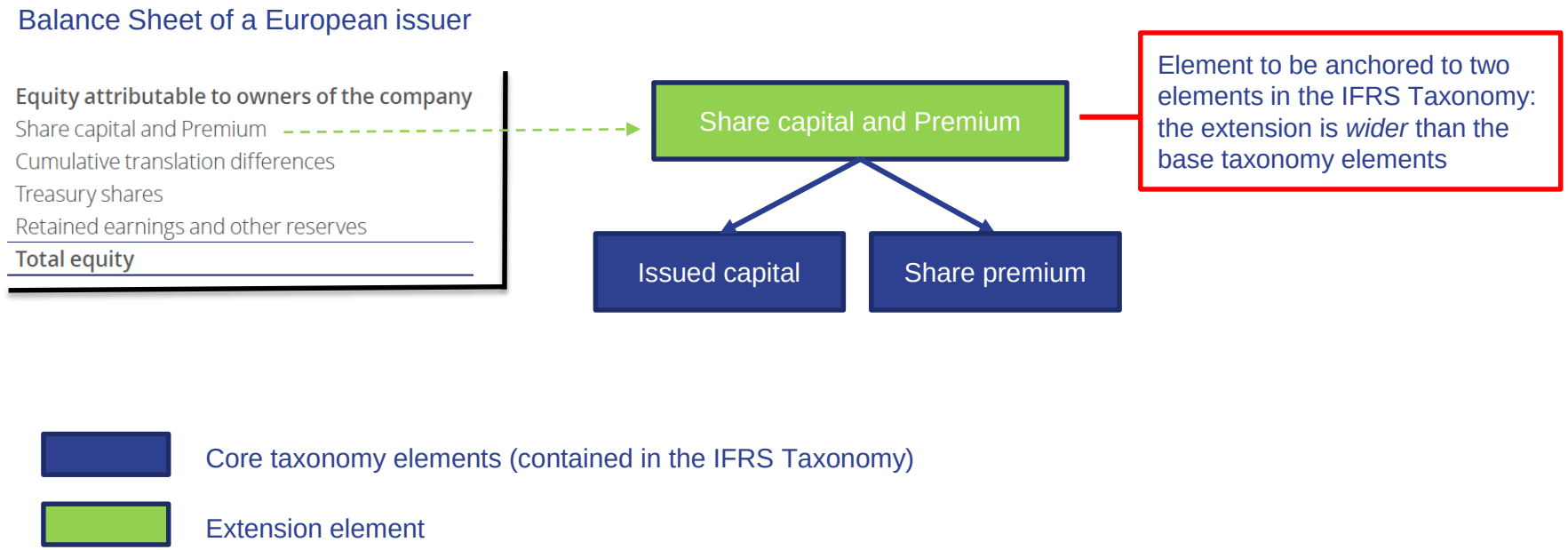


Element contained in the IFRS Taxonomy

Extension elements

Example of anchoring

(3) Combination (one to n)

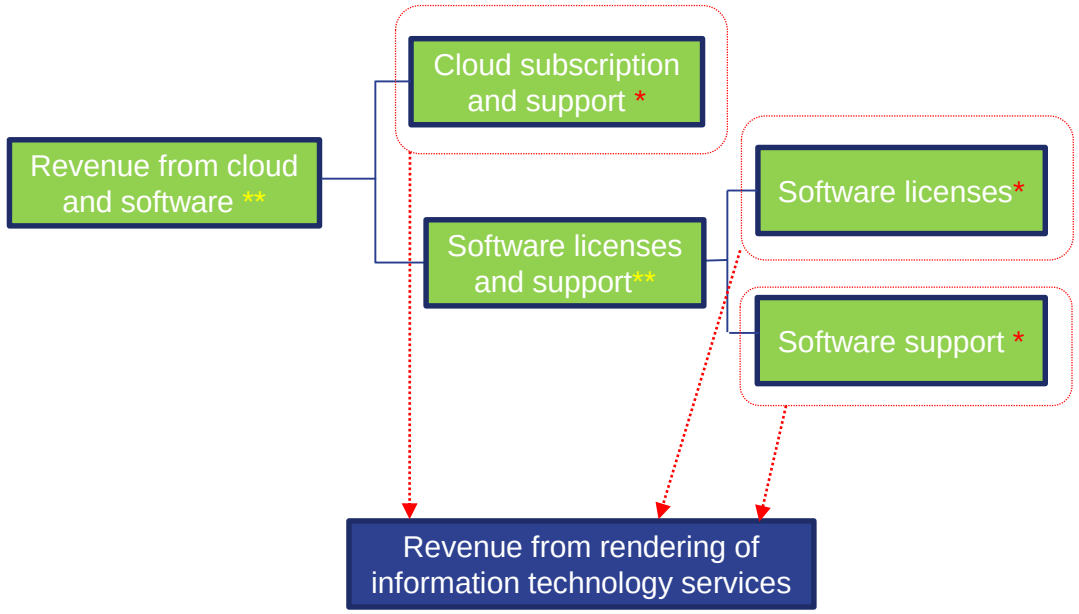


- Where the extension taxonomy element combines a number of elements of the base taxonomy, the issuer should anchor that extension taxonomy element to each of those narrower elements

Example of subtotals

Example 3: P&L of a European issuer

millions, unless otherwise stated
Cloud subscriptions and support
Software licenses
Software support
Software licenses and support
Cloud and software
Services
Total revenue



*Extension elements that shall be anchored

Elements contained in the IFRS Taxonomy

Extension elements

- Extension elements that are *subtotals* of other disclosures do not need to be anchored (**)

How to get prepared for ESEF

LEARNING

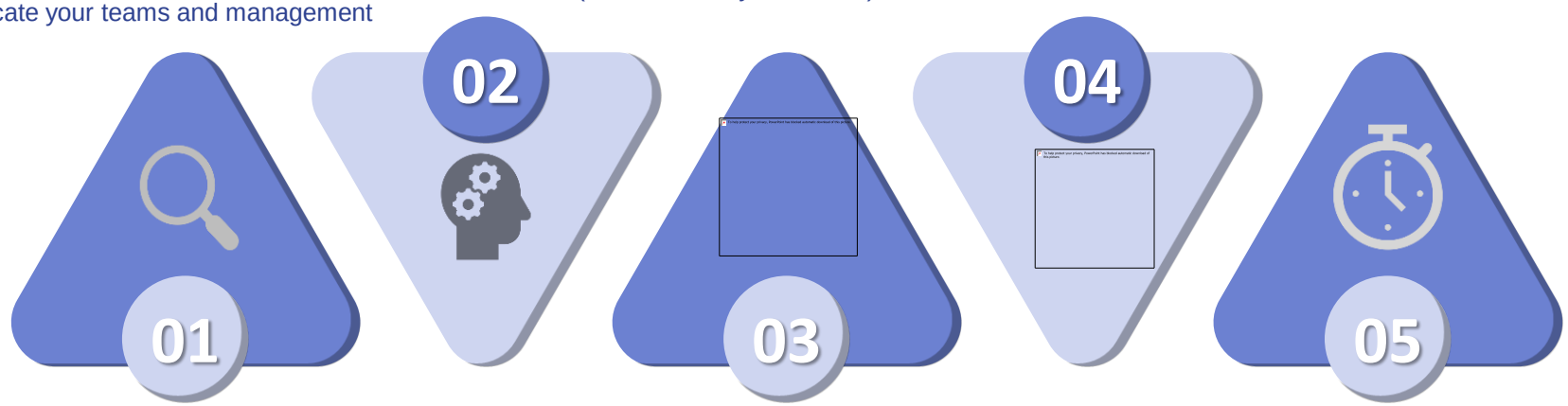
- Familiarise yourself with the ESEF requirements and with the IFRS taxonomy
- Educate your teams and management

STRATEGY

- In-house or externalised production?
- Governance of the ESEF project (validation , key actors etc)

TIMING IS KEY

Start early!



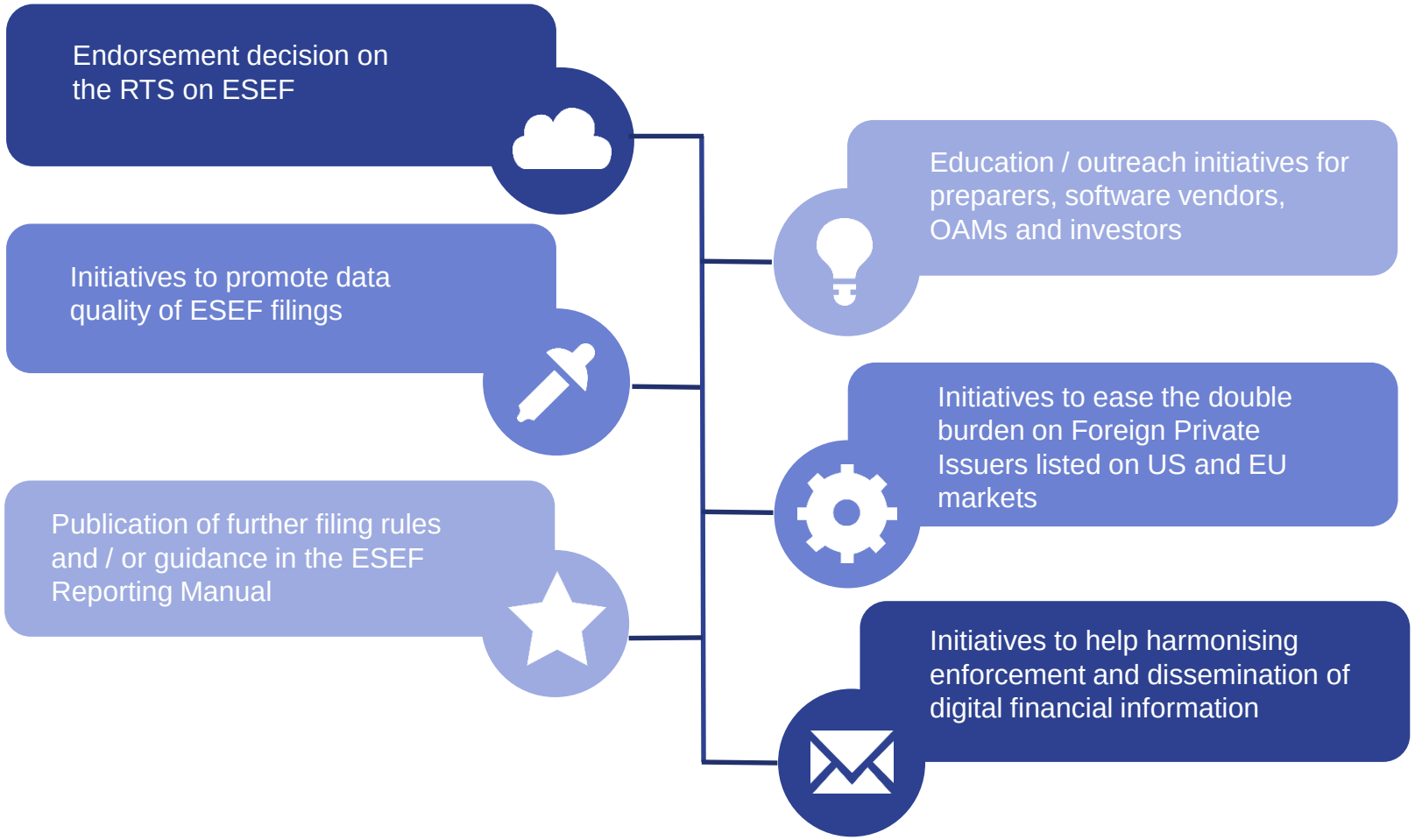
MAPPING

- Map your financial statements to the IFRS taxonomy
- Analyse the need for extensions and anchors

SOFTWARE TOOL

- Start assessing the right solution
- Built in or bolt on approach?
- Standalone iXBRL or disclosure management solutions?

What to expect next



Where to find out more on the draft RTS on ESEF

On ESMA's website:

- The Final Report on the draft RTS on ESEF (ESMA32-60-204) published on 18 December 2017 (*nb. many useful links on pp. 485 and 486*)
- The ESEF Reporting Manual (ESMA32-60-2540), published on 18 December 2017 | → for both Preparers and Software Vendors
- The ESEF field test webpage https://www.esma.europa.eu/field-test-esef

On ESMA's Youtube page:

- video tutorial(s) on the ESEF , the first of which was published on 19 November 2018

On the IFRS Foundation website https://www.ifrs.org/issued-standards/ifrs-taxonomy/

- Using the IFRS Taxonomy : A Preparer's Guide
- IFRS Taxonomy illustrative examples

On Eurofiling website:

- list of existing iXBRL software solutions: http://eurofiling.info/portal/ixbrl-solutions/
- ESEF draft taxonomy http://standards.eurofiling.info/

Thank you for your attention!

Data Storage – Nasdaq as OAM

ESEF Seminar 2018 - Helsinki , November 26th

Roberto Moretti
Product Manager

Roberto.Moretti@nasdaq.com

In the next 30 minutes you will listen to:

- An Introduction to Nasdaq OAM services
- How Nasdaq OAM will comply to ESEF requirements
- Q&A

Introduction to Nasdaq OAM services

Nasdaq OAM services

The **Officially Appointed Mechanism (OAM)** is the official filing destination for regulated information of listed companies in each European Member state.

Each EU member defines who operates its OAM system. In some countries it's the Financial Supervisory Authority, like Finansinspektionen (SW), Finanstilsynet (DK), whereas in some other countries the OAM is operated by the Stock Exchanges.

Each OAM decides what kind of technical solution to apply.

The **CSF (Central Storage Facility)** is the platform developed and run by Nasdaq to operate the OAM in Finland (www.oam.fi), Iceland (www.oam.is) and Lithuania (www.oam.lt).

Nasdaq OAM will upgrade and adapt its system to be compliant to upcoming initiatives driven by ESMA and EU (e.g. ESEF - *European Single Electronic Format*, the EEAP - *European Electronic Access Point* and EFTG - *European Financial Transparency Gateway*).

3 Key benefits with a common OAM Platform

1. **Increased Visibility:** Listed companies among Baltic/Nordic states will increase their visibility with investors worldwide

2. **Easy and reliable access:** Markets' stakeholders, such as investors, traders, financial analysts and advisors, will have an easy and reliable access to an OAM webpage that provides search functionalities for regulated information from Companies listed on multiple regulated markets

3. **7 Distribution providers available:** Issuers will be able to file regulated information in electronic format through multiple Distribution Service Providers, which are already connected to Nasdaq OAM.

TD & TDA Requirements on regulated information

Only regulated information disclosed by issuers having shares admitted for trading on EU regulated markets need to be submitted electronically to the OAM and made available for users, according to the ***Transparency Directive*** *(TD, 2004/109/EC)*.

Regulated information such as:

- Annual financial reports
- Half-yearly financial reports
- Major holdings notifications
- Inside information (regulated in MAR)

The amendment to TD (*TDA, 2013/50/EC, article 4/7*) defines the requirements for ESMA to develop the Regulatory Technical Standards (RTS) on ESEF.

ESEF requirements on **XBRL tagging** are only related to **Annual Financial Reports**.

RTS - Key requirements to Issuers

Mandatory requirements starting from January 1st 2020, for IFRS consolidated FS:

- All **annual financial** reports prepared in **xHTML format**
- **XBRL tags for** IFRS financial statements in Annual Financial Reports. This applies to *Statement of financial position, statement of profit and loss and other comprehensive income, statement of changes in equity and the statement of cash flows*
- XBRL tags embedded in the xHTML document using Inline XBRL
- Core Tags are defined by the ESEF Taxonomy

Mandatory requirements starting from 2022:

- Block tagging of the Notes

Voluntary options:

- Block tagging for notes of IFRS consolidated Financial Statement prior to 2022
- Detailed tagging of notes in IFRS consolidated FS
- Tagging of Individual financial statements (according to local GAAP taxonomy)

European Commission recommendation to OAM

European Commission has given Commission recommendation (*2007/657/EC*) concerning minimum quality standards that OAM should put in place. Among them, you will find:

- Security standards:
  - Reliable **access** by issuers and end users
  - **Integrity** of stored regulated information
  - **Back-up** systems
- Certainty as to the information source:
  - User **Authentication**
  - Minimize risk of data **corruption** and **unauthorized** access
  - Electronically acknowledge **receipt** of documents
- Date and Time recording
- Easy access by the end users
  - Multiple **languages** and filters for **categories**/companies in the searching facility
  - Offer service **support** for its users
  - View, Download and print in a user friendly manner

How Nasdaq OAM will comply to ESEF requirements

Nasdaq OAM – a DEMO for ESEF

Valmet Corporation - Financial Statement Release
https://csftest.omxgroup.com/cns-web/oam/viewOamDisclosureSwitchMessage.action?disclosureId=371790&selectedLanguage=en

UPM-Kymmene - Financial Statement Release 2016
https://csftest.omxgroup.com/cns-web/oam/viewOamDisclosureSwitchMessage.action?disclosureId=371791&selectedLanguage=en

Nasdaq OAM – How to adapt to ESEF

Based on the objectives of the ESEF initiative, the outcome of the field Test and the RTS requirements, Nasdaq has planned to implement the following validation methods:

- Check if the zip file attached to the release can be unpacked
- Check if there is an .xhtml file and a xbrl viewer included in the zip
- Is there a valid Legal Entity and Disclosing Party (ensure that the company is not deactivated)

If these criteria are fulfilled, then the OAM will display an icon that the end user can click to open up the Annual Financial Report directly in the browser. Otherwise there will only be a link to the zip file attached to the release.

Nasdaq OAM – Services that are not included

- **Tagging tool:** The Nasdaq OAM platform does not offer any tool for tagging the data in the Financial Reports. Issuers should contact specific service providers and software providers for that purpose.

- **Data analysis:** End users of XBRL data and financial reports (analyst, journalist, investors, FSAs, etc.) will be able to browse, access and download the data they need from OAM. However, the OAM does not offer any tool for the data analysis, data verification or data comparison.
  End users should use their own tools or contact/use software vendors for that purpose.

- **Release service:** Nasdaq OAM does not offer any Release distribution service on behalf of the issuer. Whenever the issuer faces any issue with the disclosure reporting, the issuer should contact its News Service Distribution Provider which will investigate the incident either internally or with Nasdaq.

Q&A

Thank you for listening

Roberto Moretti
Product Manager

Roberto.Moretti@nasdaq.com

Panel 1: issuers

Aalto University
School of Business

- Sini Halla (Nokia)
- Joonas Konttila (Valmet)
- Karin Martikainen (UPM)

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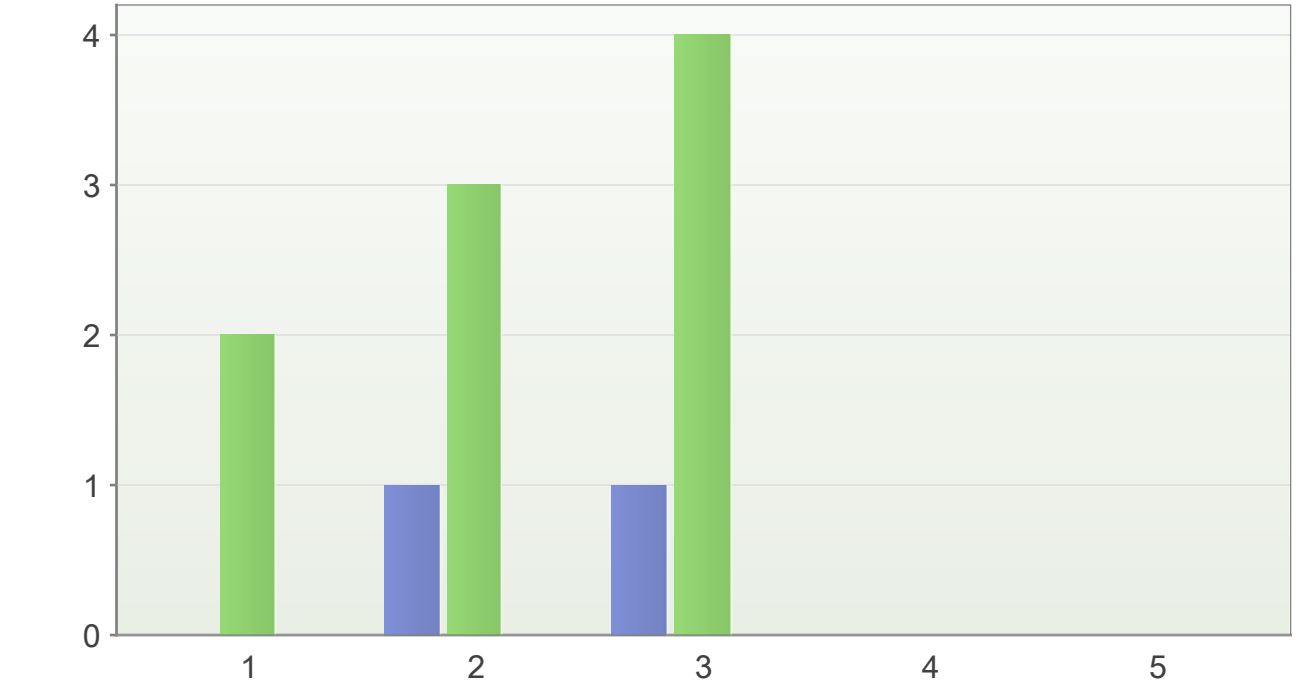
2. Implementing XBRL reporting requires considerable IT resources from issuers
strongly disagree - strongly agree

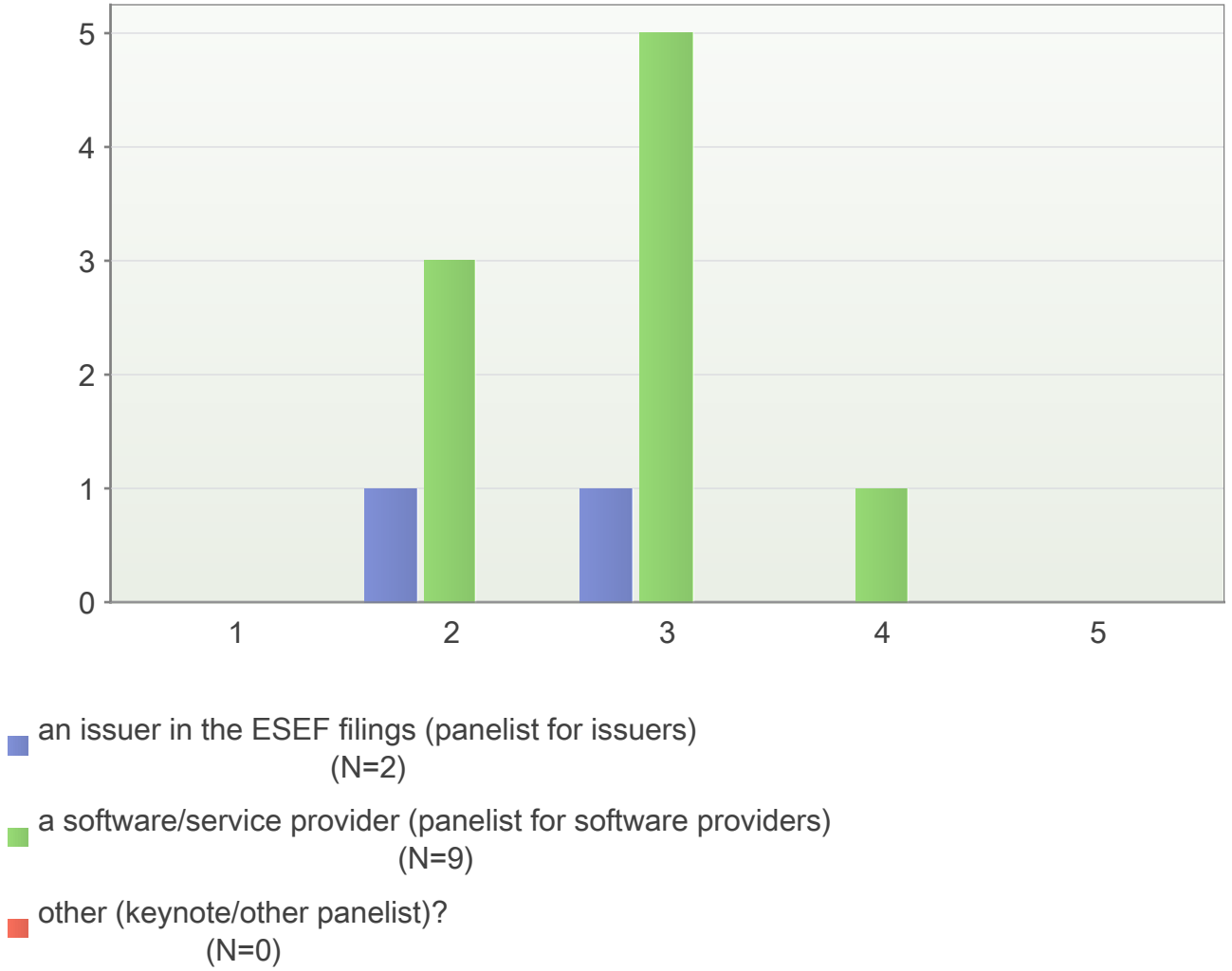


an issuer in the ESEF filings (panelist for issuers) (N=2)

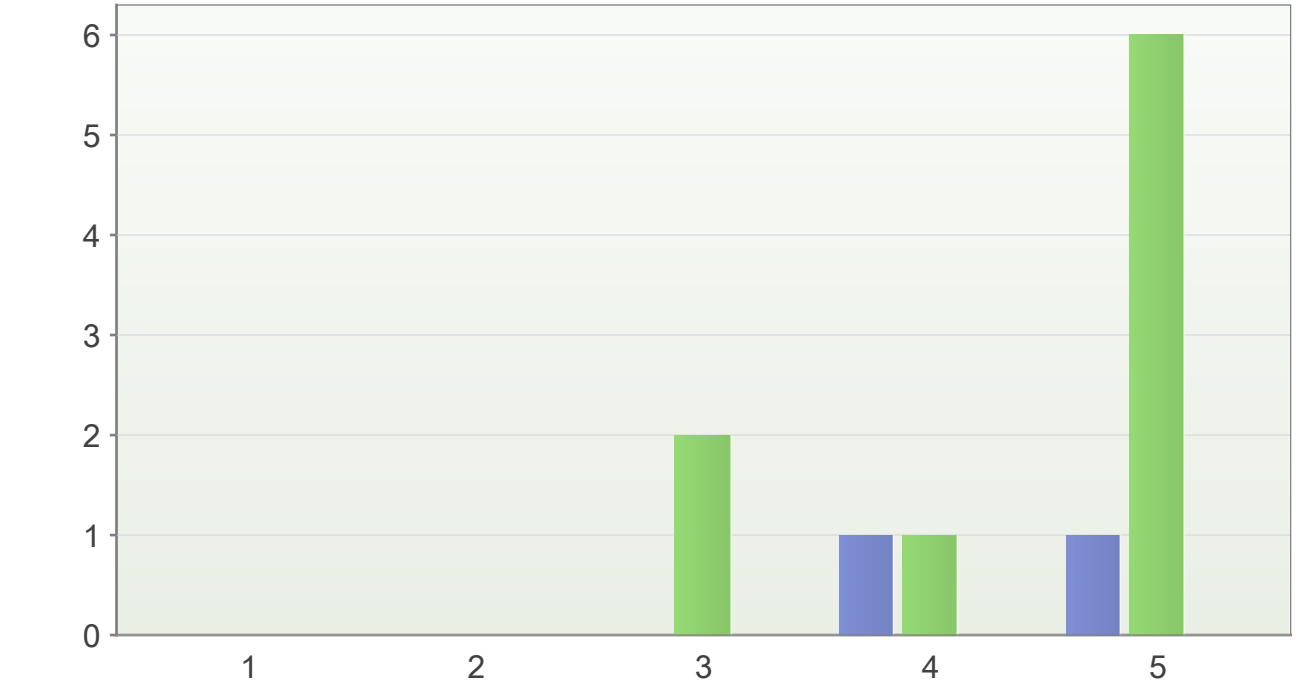
a software/service provider (panelist for software providers) (N=9)

other (keynote/other panelist)? (N=0)

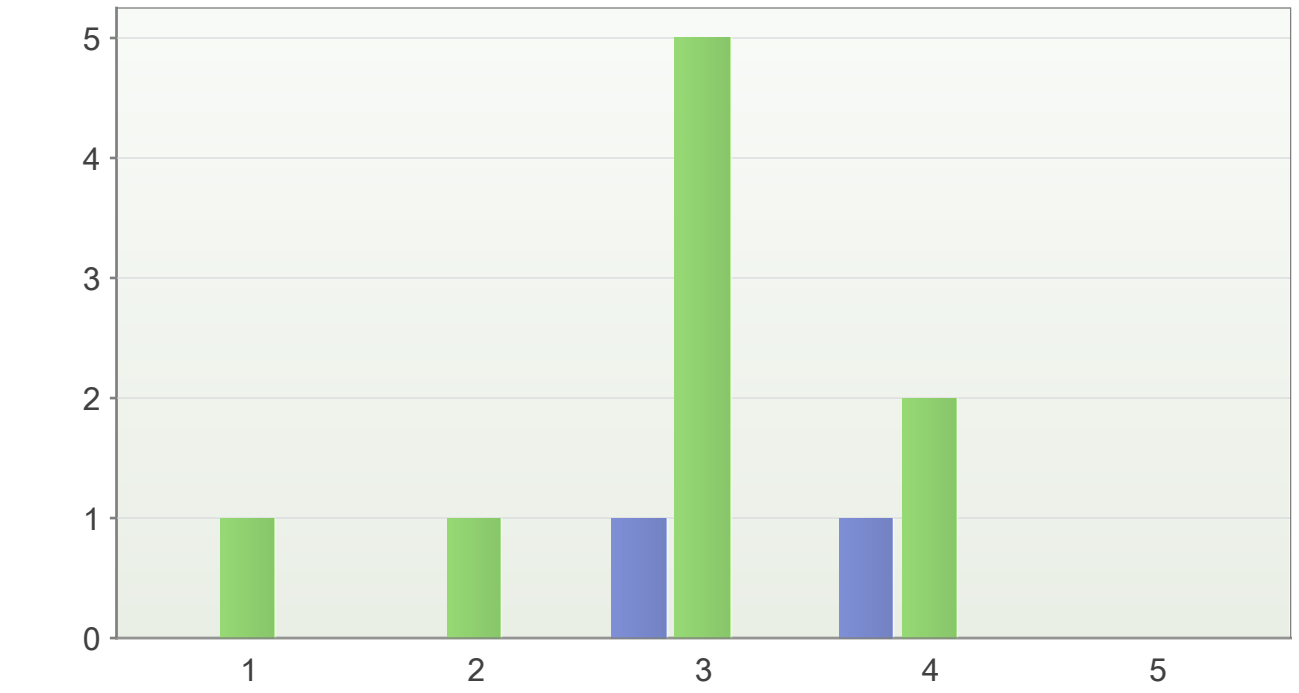
3. Implementing XBRL reporting requires deep knowledge of XBRL from issuers
strongly disagree - strongly agree



4. Implementing XBRL reporting requires deep knowledge of IFRS from issuers
strongly disagree - strongly agree



5. Implementing XBRL reporting incurs considerable costs strongly disagree - strongly agree

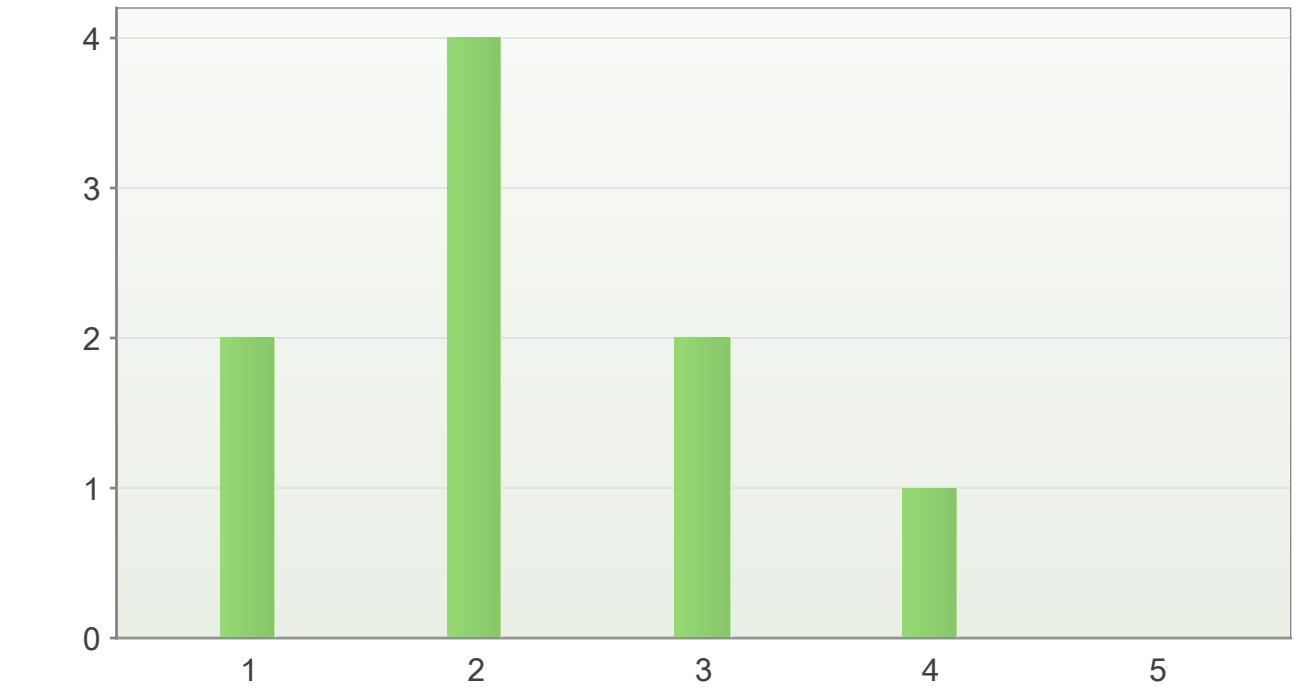


an issuer in the ESEF filings (panelist for issuers) (N=2)

a software/service provider (panelist for software providers) (N=9)

other (keynote/other panelist)? (N=0)

6. XBRL requires a high level of localization of reporting software
strongly disagree - strongly agree

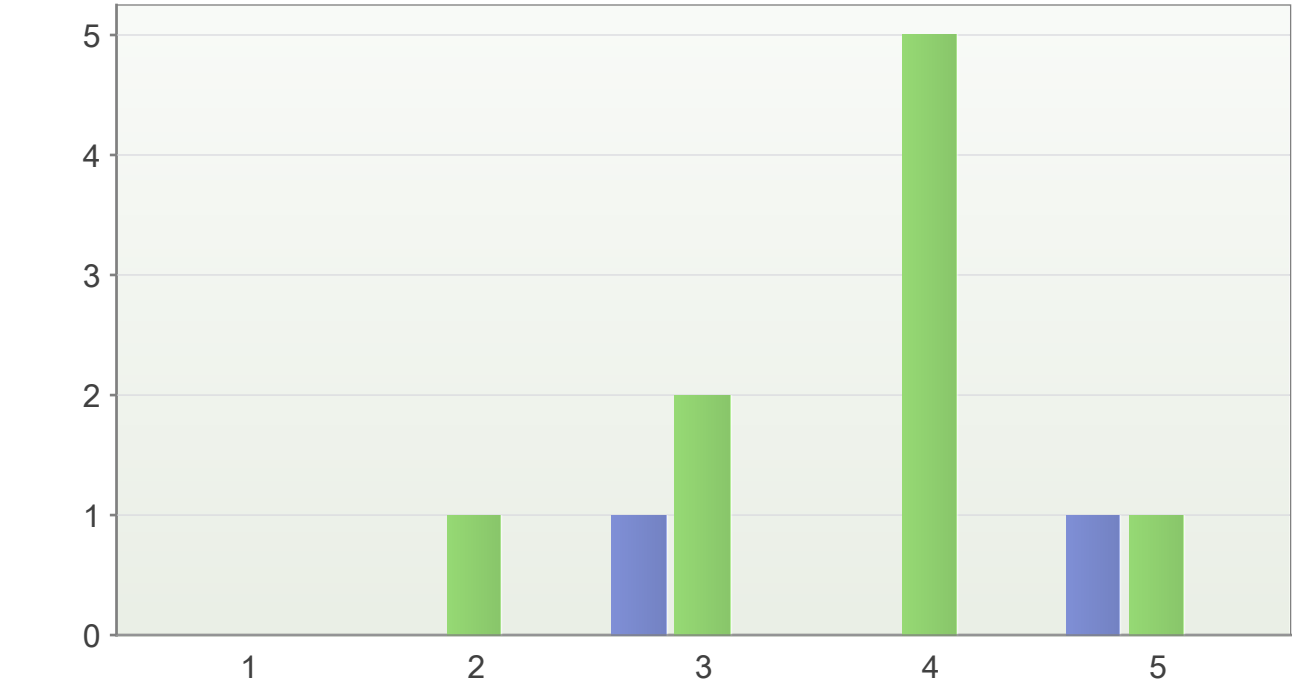


an issuer in the ESEF filings (panelist for issuers)
(N=0)

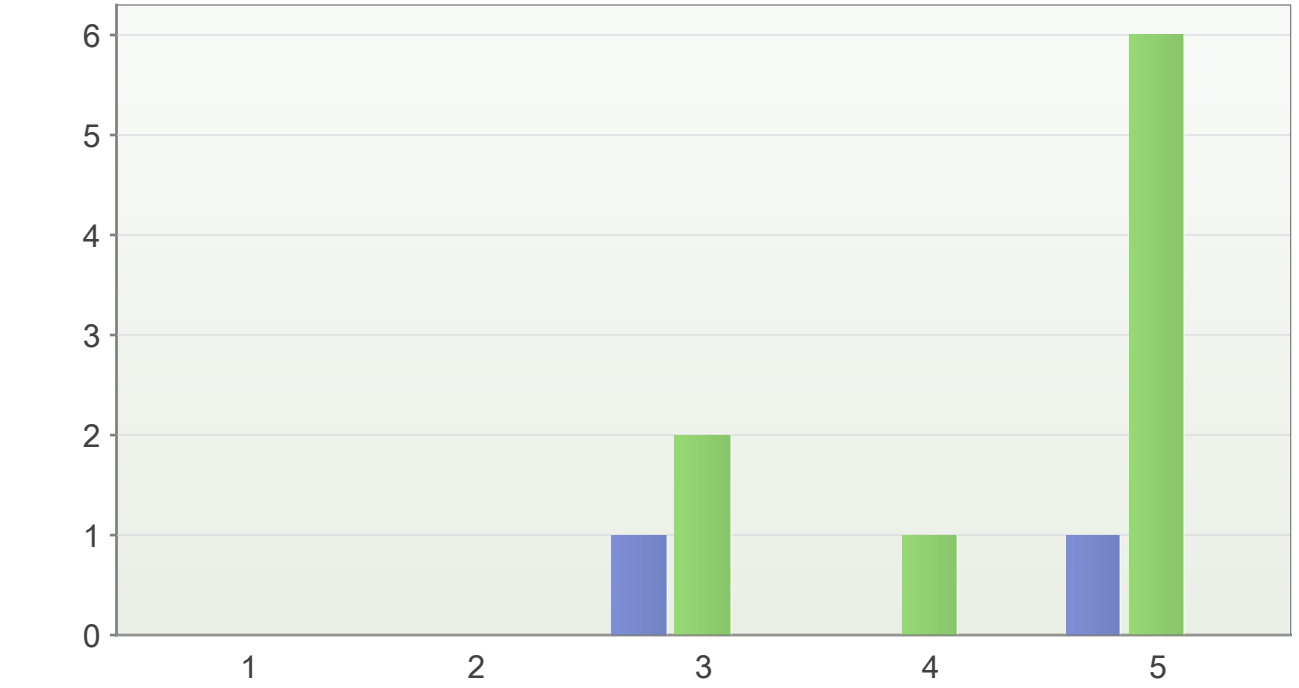
a software/service provider (panelist for software providers)
(N=9)

other (keynote/other panelist)?
(N=0)

7. Issuers should have a deep knowledge of ESEF-taxonomy and they should know the rules specified in ESMA's ESEF-reporting manual strongly disagree - strongly agree



8. Software vendors should have a deep knowledge of ESEF-taxonomy and they know the rules specified in ESMA's ESEF-reporting manual
strongly disagree - strongly agree

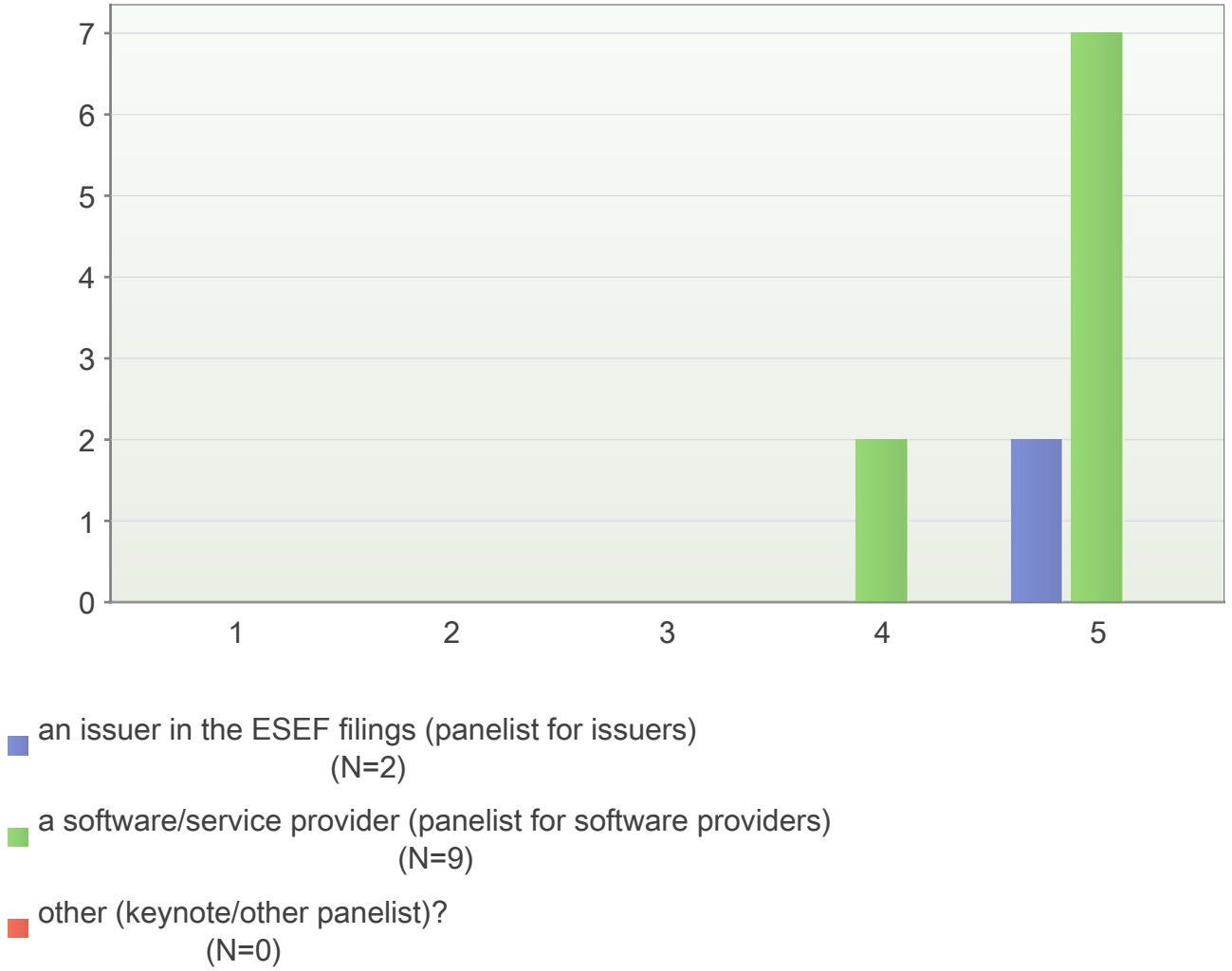


an issuer in the ESEF filings (panelist for issuers)
(N=2)

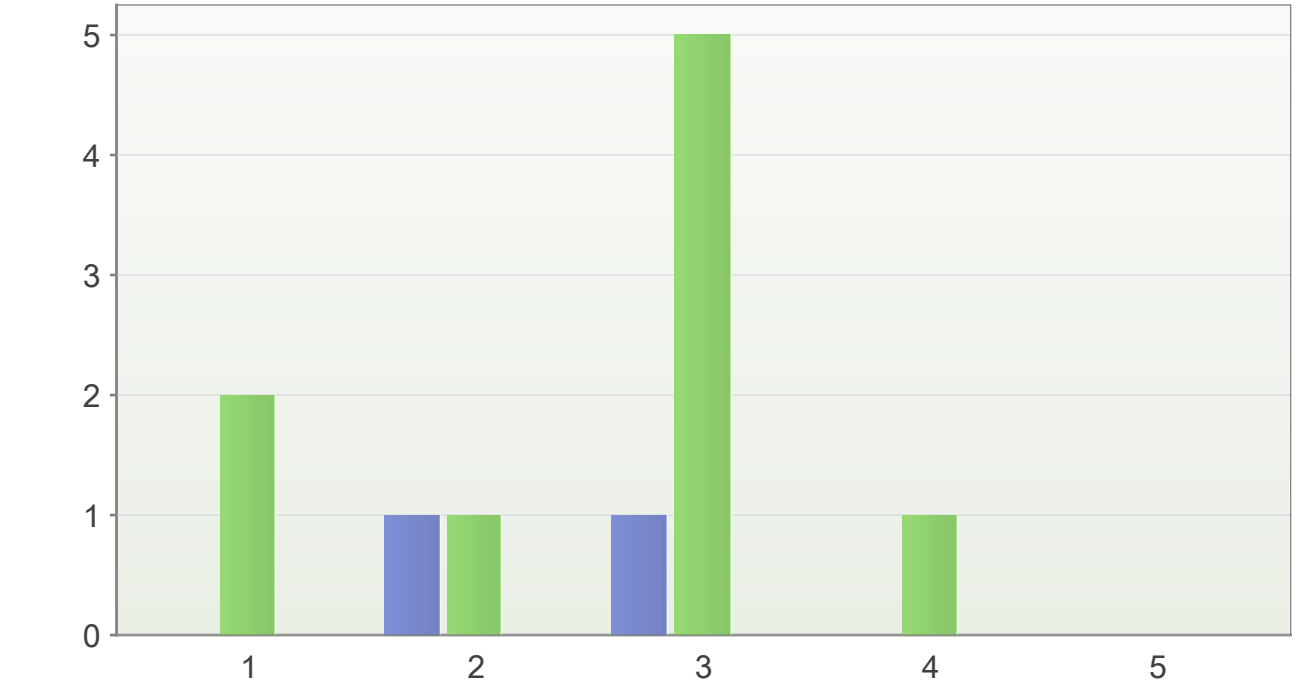
a software/service provider (panelist for software providers)
(N=9)

other (keynote/other panelist)?
(N=0)

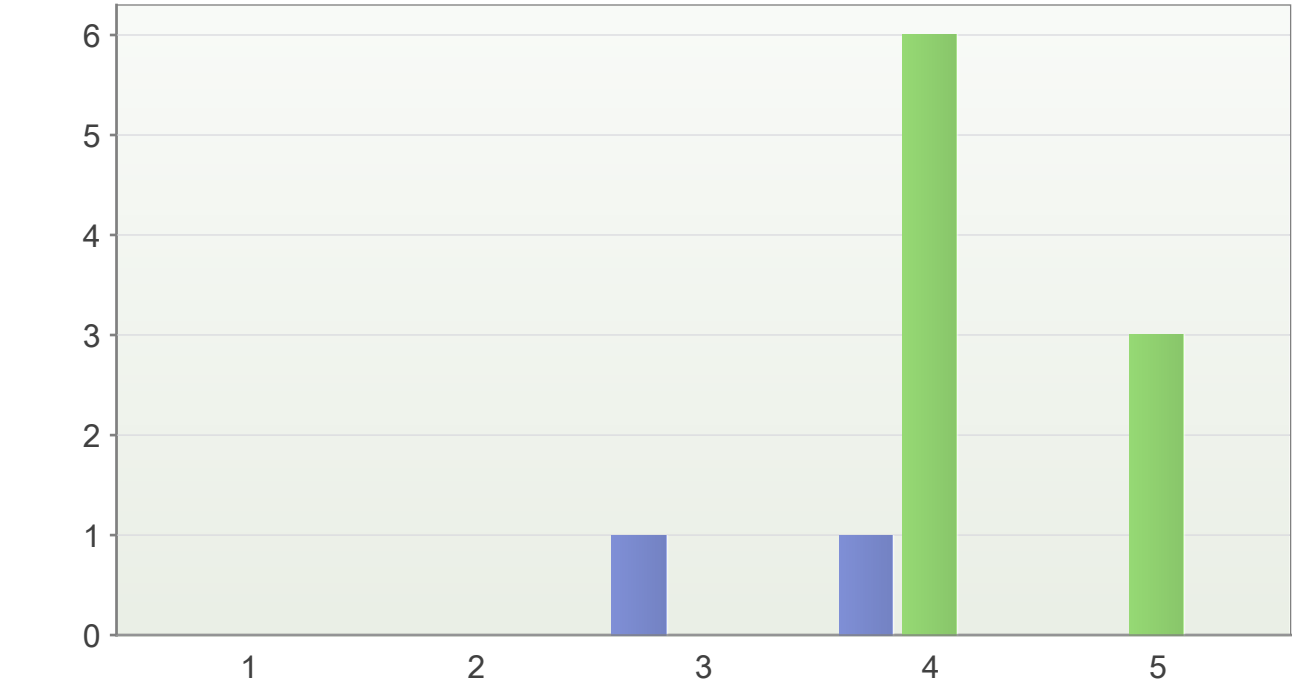
9. Filing service providers should have a deep knowledge of ESEF-taxonomy and they know the rules specified in ESMA's ESEF-reporting manual
strongly disagree - strongly agree



10. Issuers should outsource the creation of XBRL reports to filing service providers
strongly disagree - strongly agree



11. Quality of the XBRL financial statements suffers if XBRL tags will not be audited
strongly disagree - strongly agree



Panel 2: analytics

Aalto University
School of Business

- Niels-Peter Ronmos (Danish business authority)
- Dirk Beerbaum (Deutsche Bank)

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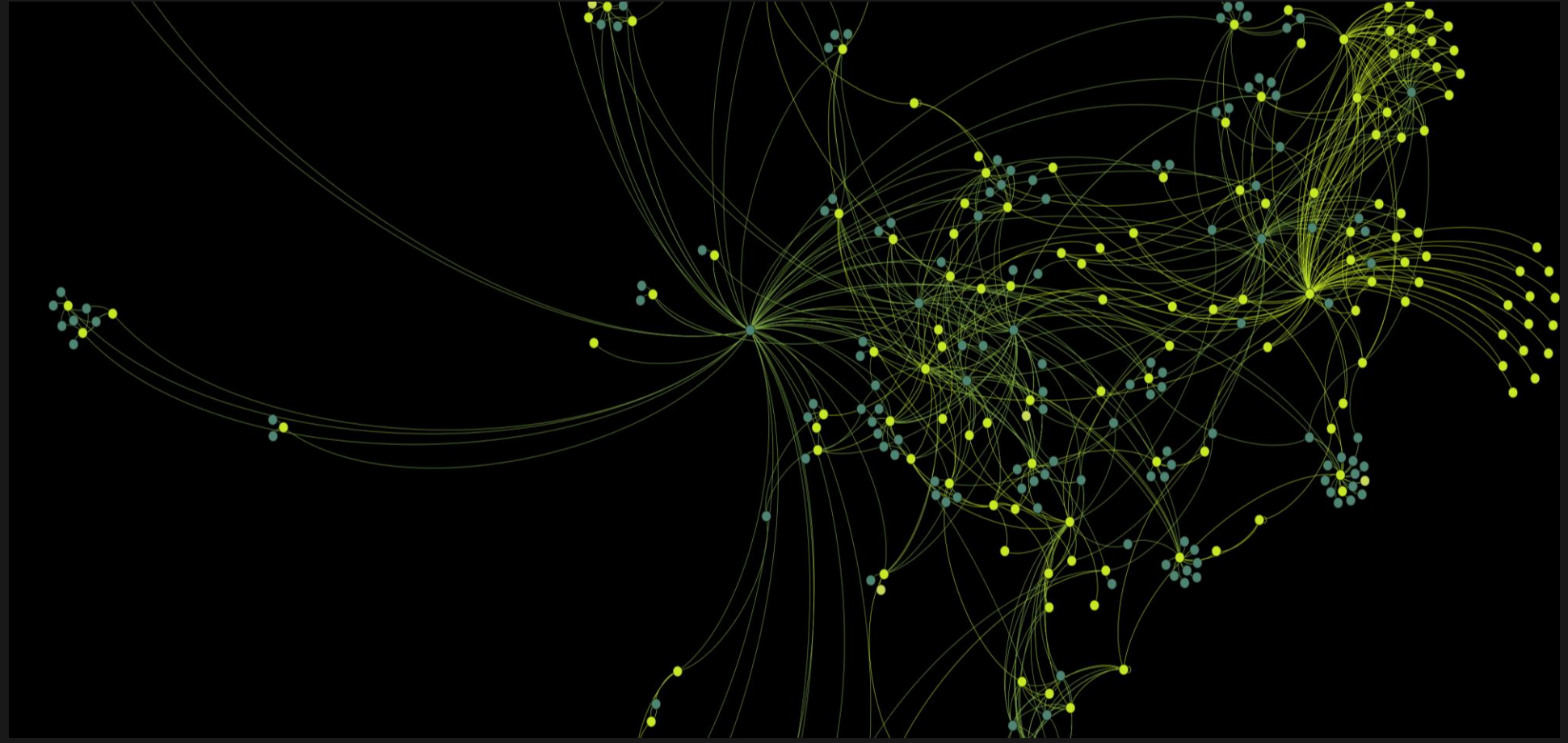
xBRL FI



ESEF

The main benefits of XBRL from the viewpoint of analytics

Niels-Peter Rønmos

ERHVERVSSTYRELSEN

Niels-Peter Rønmos

- Danish Business Authority, 2012 -
- Chef data scientist
- Cand Oecon,

- Boardmember XBRL-Denmark

The main benefits of ESEF from the viewpoint of analytics!

= the benefit of:
well described structured data

Preconditions to get benefits of well described structured data

Connectivity

- Free data
- Fast access
- Searchable

Preconditions to get benefits of well described structured data

Traceability

- Metadata management (Taxonomy)
- Legal reference (Taxonomy)

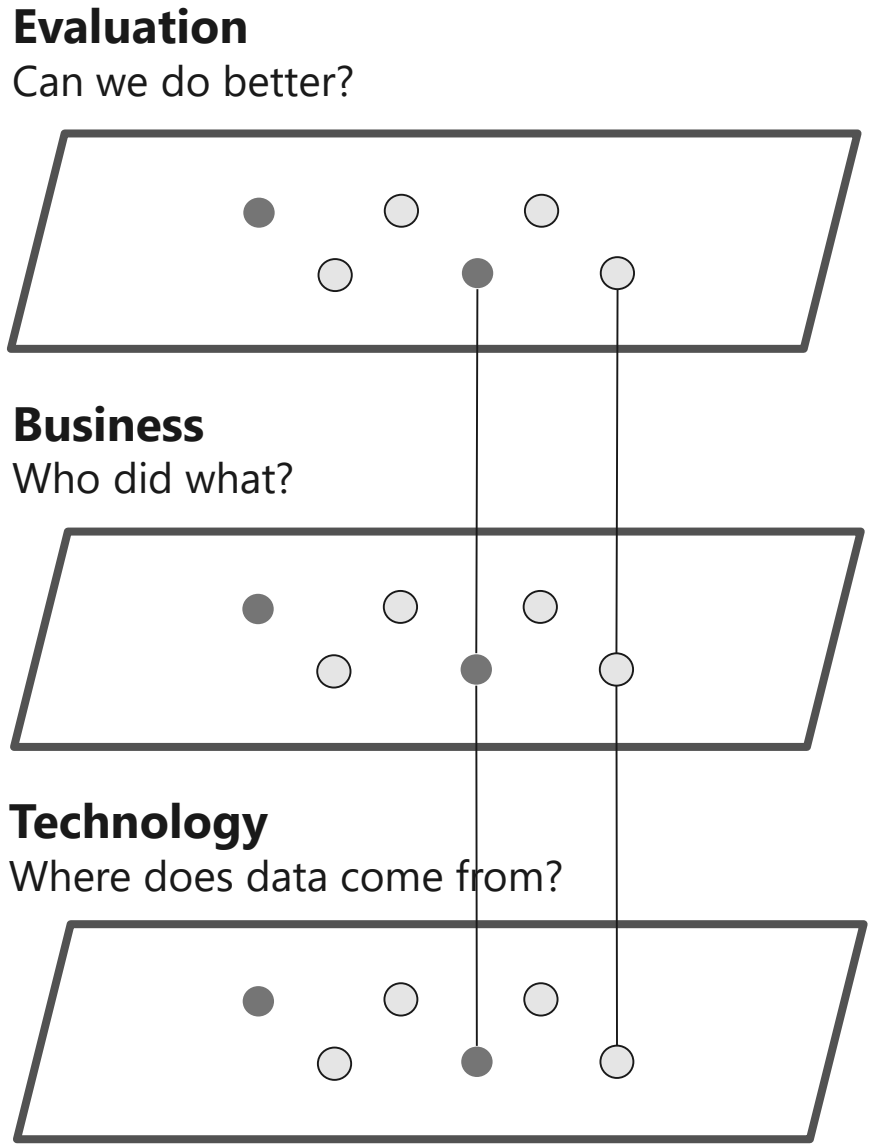
Traceability in data

Data and data life cycle must be:

- Healthy
- Transparent
- Explainable
- Traceable

- and of course treated safely

So now and in the future, we know why and how we have made a decision and conduct sound management.



CASE: Example of usage of XBRL in Denmark

- When submitting accounts, the machine will monitor proactively on the accounting policies and accounting figures for buildings and equity interests
- Then the user will be warned and guided to not make mistakes
- The control will thus be scalable for ALL 250,000 annual reports, so that +10,000 errors will be released

CASE: Usage of XBRL "tomorrow“ in Denmark: Strengthened company control regarding VAT

By learning the machine to see patterns in public data sources we will be able to stop or delay companies that are expected to commit fraud.

We do this by collecting our knowledge from:

- • CVR
- • TAX's VAT reports and VAT controls
- • Annual Accounts (XBRL)

... and other data sources

> Costs: 20 millioner DKK p.a.

> Reducered VAT-fraud: 1,2 billion DKK p.a.

Case: Early warning

CASE Identification of companies in distress

- By looking at accounting and business register data we can use machine learning to identify and help companies in crisis - early!
- …. And share our findings with other European countries in Early Warning Europe.

Thanks!

Deutsche Bank

ESEF Seminar
Panel 2: How does XBRL improve Data Analytics to stakeholders?

26th of November 2018

#PositiveImpact

Agenda Items

1. Introduction to XBRL and Data Analytics – Digital Nudging
2. Value of XBRL for Data Analytics
3. Case Study: Empirical Study on SEC IFRS-Filers
4. Q&A

Disclaimer

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Dr. Dirk Beerbaum in brief

Deutsche Bank AG, Infrastructure Change – Change Execution Manager
Main Projects: Basel IV, XBRL SEC 20-F 2018, CECL New York, IFRS 9-Impairment
Doctoral thesis: XBRL and Corporate Governance Reporting, 2015
Executive-in-Residence, Aalto University School of Business, Department of Accounting,
Member of the ITCG (IFRS Taxonomy Consulting Group) at the International Accounting Standards Board, London

For further information:
https://www.linkedin.com/in/dr-dirk-beerbaum-5b51878b?trk=hp-identity-name

1 Introduction to XBRL - Digital Nudging*

“In addition to making data more accessible, some agencies are attempting to make the data more readily **usable**. An example of this kind of clean, clear, and flexible transparency technology is eXtensible Business Reporting Language (XBRL)(XBRL, n.d.). XBRL is an open standard for creating electronic reports and exchanging data via the web. Using a standardized series of “tags” for labeling information, XBRL essentially allows anyone to download and analyze huge amounts of data using a simple spreadsheet.”**

Cass R. Sunstein, University Professor at Harvard

Sunstein and Thaler are the authors of “Nudge: Improving Decisions about Health, Wealth, and Happiness”, 2008,;Edward A. Thaler received 2017 the Noble Price in Economics” for incorporate psychologically realistic assumptions into analyses of economic decision-making. By exploring the consequences of limited rationality, social preferences, and lack of self-control, he has shown how these human traits systematically affect individual decisions as well as market outcome” (https://www.nobelprize.org/prizes/economic-sciences/2017/press-release/)

**Source: Nudges.gov: Behavioral Economics and Regulation, Oxford Handbook of Behavioral Economics and the Law, 2013, p.20

1 XBRL Mandates Accelerating

Global Standard

XBRL is used by more than 100 regulators in more than 60 countries, supported by more than 200 software packages and in an increasing number of corporates to facilitate structured data reporting within millions of companies.*

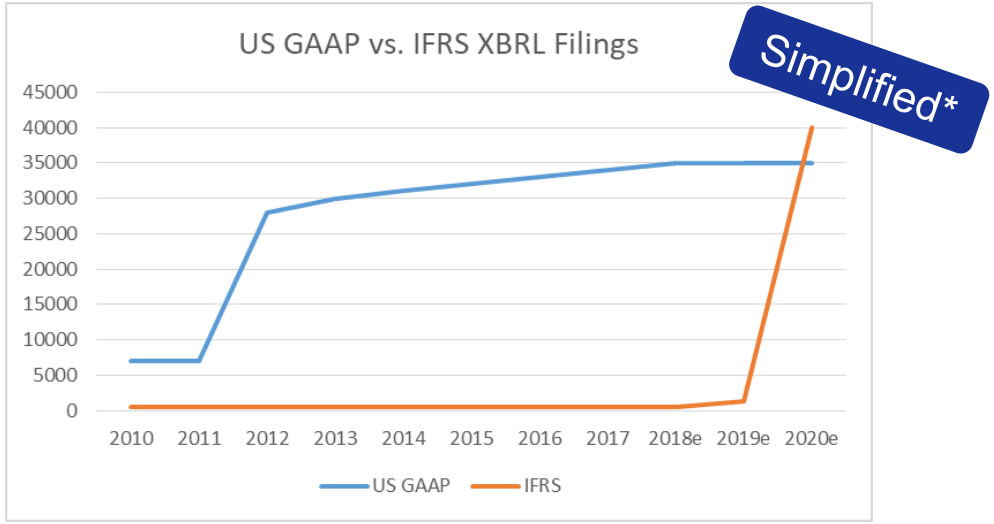
*Source: www.xbrl.org, XBRL International

XBRL™
THE BUSINESS REPORTING STANDARD

1 X XBRL Filings

With ESEF Number of Filings will increase strongly by 2020

#in t.



Phases of XBRL for Annual Report Filings

- Voluntary SEC XBRL program
- 2008 SEC Interactive Rule
- 2017 SEC IFRS-Filers
- 2020 ESMA‘s ESEF based on XBRL Taxonomy

*Source: XBRL.org, World Federation of Exchanges and own estimateOwn research, Beerbaum, Blockchain - a business case for XBRL – a beast or a lame duck?

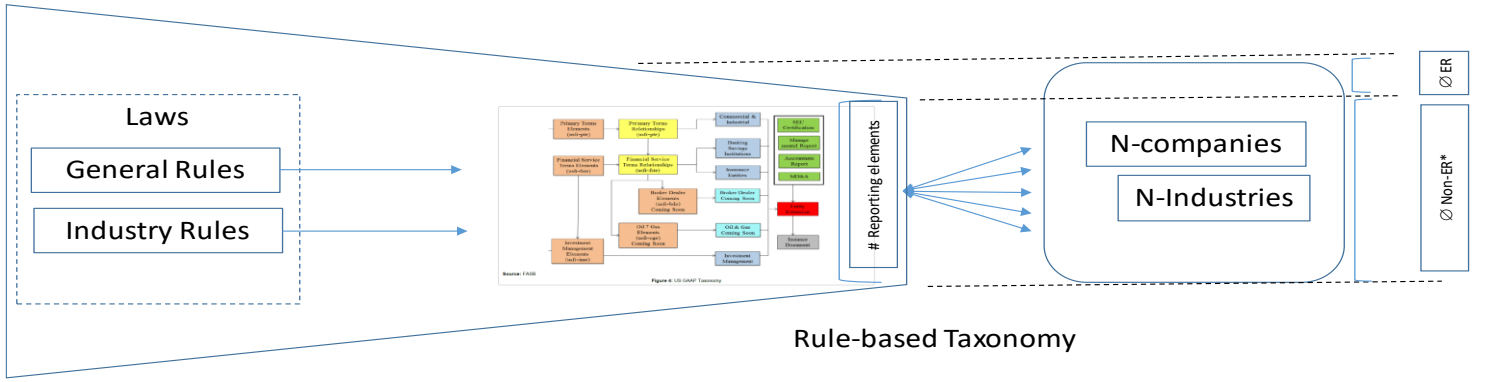
2 Value of XBRL for Data Analytics

Investors and Analyst	**Accuracy and traceability:** Data is provided with a taxonomy providing clearly defined information for data element reported on. **Transparency:** Access to relevant financial information is enhanced, resulting in major improvements to search, reporting and analysis functionalities. Less time is spent on data mapping and analysis and decision-making can be further prioritized.
Standard Setters	**Consistency of reporting standards:** The taxonomy acts as a structured dictionary, providing an explicit definition for each data element that can be shared to assure consistent interpretation.
Reporting organisations	**Reusability:** XBRL offers a format optimized to use info on multiple reports **Consistency:** organisation has control over interpretation of the data by third parties
Rating Agencies	**Accuracy:** The taxonomy specifies the meaning and rules of valid data, while automated tools can insure the compliance with the taxonomy **Efficiency:** By combining taxonomies and XML-based documents, automated tool can be used effectively to eliminate manual processes

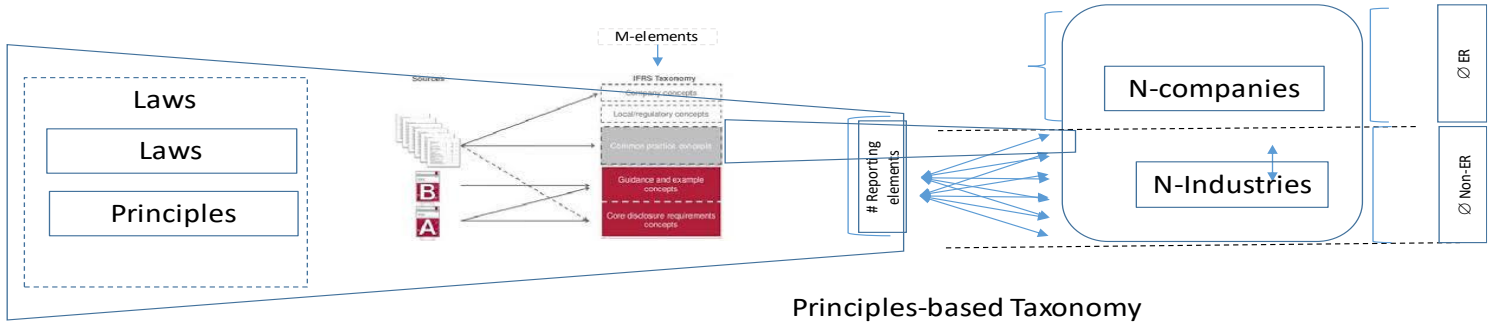
*Source: vandenEnde, Deloitte, XBRL Dublin conference and Beerbaum, D. 2015. Towards an XBRL-enabled corporate governance reporting taxonomy. An empirical study of NYSE-listed Financial Institutions, University of Surrey, Dissertation 2015

2 Pivotal role of Taxonomy: US GAAP versus IFRS

Conceptual overview: Design difference between US GAAP and IFRS Taxonomy



Rule-based Taxonomy



Principles-based Taxonomy

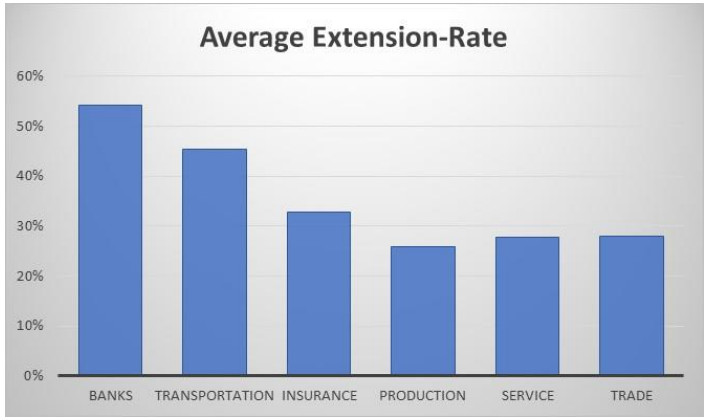
*Source: RAIS Conference at Princeton University, Beerbaum, Puaschunder: A Behavioral Economics approach to Digitalisation – The Case of a Principles-based Taxonomy, 2018

3 Case Study: SEC IFRS-Filers 2018

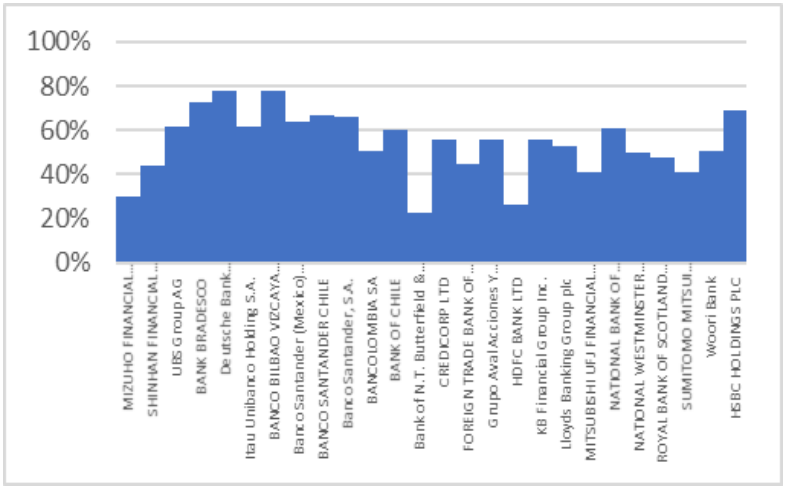
Overall Sample 1.112 20-F IFRS-Filers

Form	Number of companies
10-Q	2840
20-F	1112
10-K	824
6-K	484
Sonstige	4040

By Industry

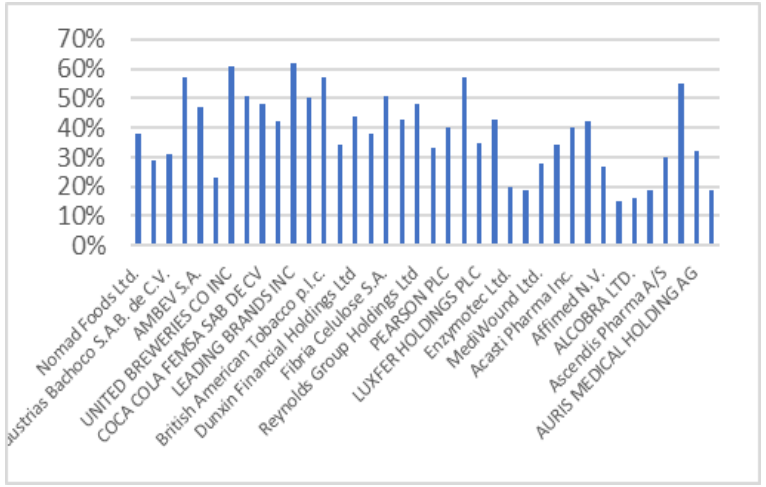


Selected Industry: Extension Rates - Banks



*Source: Own Research based on EDGAR XBRL submission, 2018

Selected Industry. Extension Rates - Transportation



Thank you for your attention

Panel 3: service providers

Aalto University
School of Business

- Lou Rohman (Merrill Corporation)
- Liv Watson (Workiva)
- Deepta Rangarajan (IRIS)
- Sven Baltrusch (West Corporation)
- Taru Kettunen (Clausion)
- Catarina Asplund (Intito)
- Kevin Curran (Corefiling)
- Miguel Vergara (Oracle)
- Antoine Bourdais (Invoke)
- Jean-Paul Daisomont (Acsone)

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