



What are the costs and benefits of XBRL in the financial services industry?

Master thesis

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1 Introduction and problem definition

1.1 Thesis overview

A new language for financial reporting is eXtensible Business Reporting Language (XBRL). This master thesis will take a closer look at the costs and benefits of XBRL in the financial industry from an economical point of view. After stating the background, research motivation and research question(s), a literature review will give first theoretical background on XBRL. Then empirical data is collected by interviewing highly relevant people who are in charge of using, managing, auditing or developing XBRL technology. Afterwards the initial research question will be answered.

1.2 Thesis background

In the financial market information plays a very important role. After being announced to be the CEO of Citicorp in the year 1967 Walter Wriston said: “Banking is not about money; it is about information” (Faratin & Rodríguez-Aguilar, 2006, p. 115). This statement shows how important information is for the financial industry and how important proper management of that information is.

XBRL is continuously being developed since 1998 by an international non-profit organization consisting of more than 550 companies and agencies at the moment. From time to time new specifications and standards are published by the organization. Moreover there are local organizations for every country which address the special issues of the local legislation.

The effort of promoting XBRL leads to increased popularity: “XBRL is moving into the mainstream. Organizations need to be proactive in responding to XBRL, whether their use of XBRL is going to be voluntary or mandated by an outside organization such as regulatory bodies or banks” (Gray & White, 2005, p. 27).

This thesis will examine the costs and benefits of XBRL for financial institutions in internal and external accounting and also explore if XBRL will pay off from an economical point of view.

1.3 Research objective

As promoted in the media, XBRL seems to have a big potential for companies in order to improve data flows from and to other companies as well as internal data flows. There are benefits

from a macroeconomic point of view as well, especially regarding transparency in the financial market: “Attendees at XBRL International’s annual conference in Washington last month suggested that the standard could be applied to mortgage-backed securities (MBS) to shed some light on which institutions own what assets” (Sandman, 2008, p. 8). Moreover XBRL is crucial in order to be compliant to several laws which force companies to publish information to stakeholders like the government, tax authorities, shareholders and the stock exchange supervision.

Information about potential technical benefits is available as well as promoted benefits for accountants. But XBRL is not yet deeply examined from an economic point of view. For a company or law-making powers it is very important that a technology is effective as well efficient from an economic point of view. This research should give an answer to that question.

1.4 Research question(s)

This leads to the following main research question:

What are the costs and benefits of XBRL in the financial services industry?

The term financial services industry covers mainly banks, but also insurance companies and other companies which deal with financial services, like accounting firms.

Moreover there are several additional questions which have to be answered in order to give a proper answer to the main research question:

What is XBRL?

What are the drivers and barriers for XBRL?

What is the potential of XBRL for the internal accounting?

What information is especially required in the financial market?

1.5 Research methodology

In order to understand the whole subject of XBRL and its costs and benefits, first a literature review is required. Literature from several areas can be taken into account: Books about information systems can answer several technical questions. Accounting literature can give a deep background on the accounting part of the research objective and literature on law gives insight into the regulations on the financial market. Moreover there might be first specific literature on XBRL in detail which will be considered as highly relevant for the main research question. Next there will

be several web sources on XBRL, published by the (local) XBRL organizations, auditing companies and other interest groups.

Moreover the literature review should give deep background knowledge to ask highly relevant questions during the interviews in order to get most valuable information out of the interviewee.

In order to collect empirical data the case study approach seems highly suitable for this problem and is an essential and most commonly used part of the qualitative research method. It is defined as “investigating a contemporary phenomenon within a real life context, especially when boundaries are not clearly evident” (Yin, 1994, p. 13). Because of that is eminently suited for research in the field of information systems. This case study approach should give opportunity to verify the knowledge from the literature, spot inaccuracies or areas which have not been covered by the literature yet. Also aspects, contradicting to the literature may be detected.

Within the case study approach interviews are suited to gather information. To get in touch with relevant interview partners might be a challenge for this research. The more interview partners and the more relevant interview partners can be won, the better the quality of research will be.

1.6 Chapter summary

This chapter showed the background of this master thesis about XBRL, a rising technology. The motivation, why this research is highly relevant, was explained and the main research questions for this master thesis were stated. An important part is also the research methodology, which will ensure high academic standards for this master thesis, as the last and most important piece of work in order to receive the master degree.

2 XBRL: State of the art

2.1 Introduction to the literature review

As mentioned in the previous chapter, this section should give a deep theoretical background on XBRL, explaining the state of the art while looking at the literature available. After a general description of XBRL, the history and compliance aspects are examined. Next the technical aspects are observed and an insight about costs and benefits of XBRL is observed, by paying as much attention as possible on the XBRL practice within financial service providers.

2.2 Description of XBRL

To answer the question what XBRL is, a look to several definitions in the literature is appropriate, because each definition differs a little bit from the others and points out different aspects.

Savage (2009) defines XBRL as a "royalty-free, open specification for software that uses XML data tags to describe business and financial information for public and private companies and other organizations." This definition describes the technical background of XBRL, which is XML and will be explained later in detail in this chapter. Moreover it states that it can be used to describe financial information, by using data tags. Another important fact, expressed by this definition is that XBRL is an open and free standard, which means that no license fees have to be paid by its users.

Often eXtensible Business Reporting Language is also referred to as "interactive Data" (Garbellotto, 2009a, p. 56). This definition reflects the aspect that data is used in a new and innovative way. The word "interactive" demonstrates that by using XBRL the exchange and processing of data is improved.

Nonfinancial information can also be included in their definition of XBRL, as e.g. mentioned by Pinsker and Li (2008, pp. 47-48) which quote xbrl.org: "The eXtensible Business Reporting Language (XBRL) is a nonproprietary Web-based XML derivative used to tag both financial and nonfinancial data and give it context." On the other hand the fact, that XBRL is "web-based" is wrong: The purpose of XML is to store data, on a content-based way. XBRL as an XML derivative stores data as well, but there is no general need of being "web-based". The fact that XBRL adds a semantic to the numbers is expressed by Weber as well (2003, p. 3): "XBRL is a variant of XML specifically, designed to provide the semantics of text associated with business reporting."

Several times a comparison between the XBRL technology and the Universal Product Code (UPC) technology, better known as “barcoding” is made: “In layman’s terms, XBRL is an IT language, not unlike barcoding, developed specifically for the management of financial information” (Dzinkowski, 2008, p. 22), or like Willis & Sinnett (2008, p. 45) express: “Like UPC, XBRL is a form of standardization that brings significant process efficiencies. Just as the UPC standardized product descriptions enable greater agility in inventory management, enhanced product throughput and lower overall inventory management costs, XBRL enables greater agility in managing enterprise information, speed of access and analysis and provides an opportunity to lower overall compliance process costs.” This comparison already includes several promoted benefits, which will be analyzed in the next chapters of the literature review.

All those aspects of XBRL and especially their benefits for the users are examined in the following chapters, but first the development of XBRL will be explained.

2.3 History of XBRL

First a research on the history of XBRL is outlined in order to show the evolution of XBRL. A view back to the roots should explain the development and moreover show the current status of XBRL as well as show technical, economical and legal areas which are under construction right now.

The Certified Public Accountant (CPA) Charles Hoffman is known as the founder of XBRL. In 1997 “Charlie Hoffman (CPA, Knight Vale & Gregory, Washington, US) proposes using XML for financial reporting” (Deshmukh, 2004, p. 198). Hoffman’s “idea was quickly supported by the American Institute of Certified Public Accountants (AICPA) in developing the first prototype” (Phillips & Colvard, 2007, p. 4). Afterwards funding was granted and a steering committee was found in order to start a controlled development of the XBRL technology.

A lot of companies with different backgrounds joined the XBRL committee, like banks, auditing and accounting firms, as well as software developing companies. In cooperation they wanted to develop a first version of XBRL. In 2001 the first global meetings were held in London, New Orleans and Sydney. In December 2001 XBRL 2.0 is released, one year after the first XBRL 1.0 specification for financial statements was released for commercial and industrial companies in the United States. (XBRL International, 2009)

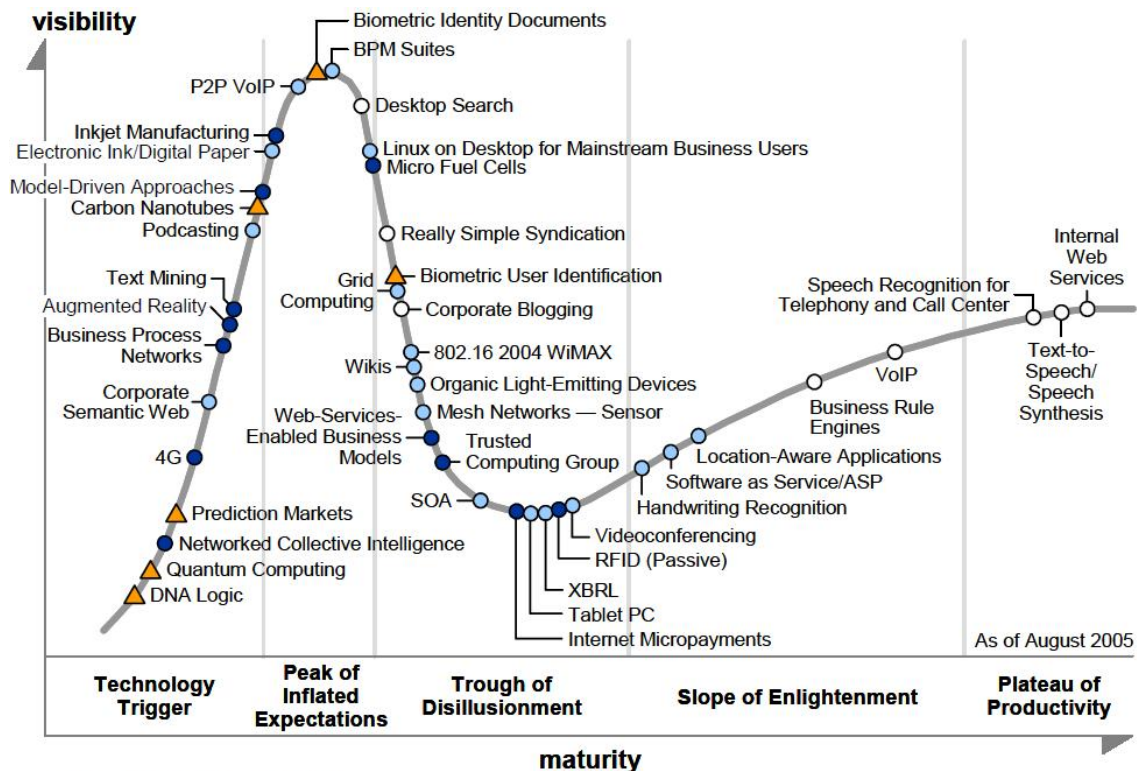
If XBRL wants to be a well accepted standard, it needs continuous improvements and has to be up-to-date to the developments and regulations in the market: “The standards and taxonomies

are constantly evolving based on industry and IT input. XBRL International oversees global cooperative efforts, and different national chapters work on the ground to lobby for and actively promote the implementation of XBRL reporting by companies” (Dye, 2009, p. 29). This described support of different interest groups seems to be crucial for the success of XBRL. This will be validated in the empirical chapter.

In 2002 the Australian Prudential Regulation Authority (APRA) was the first company using XBRL in daily business, when it announced “that XBRL is being used to overhaul data collection from 11,000 super funds, insurers and banks required to report to it on a regular basis” (XBRL International, 2009).

A few years later, the U.S. Securities and Exchange Commission (SEC) encouraged companies to use XBRL as well: “In an effort to make financial statements machine-readable, to increase the accuracy and quality of financial data, and to reduce the cost of financial reporting, the SEC began its Voluntary Filing Program (VFP) for XBRL in 2005. [...] In return, the companies that participated in the test program received accelerated reviews by the SEC on their financial documents” (Choi, Grant, & Luzi, 2008, p. 69). But even receiving accelerated reviews did not motivate many companies to participate in this voluntary program, as it was not mandatory yet. Nowadays the SEC has a tight schedule to require all companies to report in XBRL, but other companies, like “China, Japan, Sweden and other countries are years ahead” (Williams & Cannon, 2009, p. 32).

Since 2009 it is mandatory for the 500 biggest companies listed in the US to report in XBRL. As a lot of companies in the United States have to report in XBRL, it is likely that the speed of development will increase now. Afterwards more possibilities to use XBRL will be discovered: “Currently, the market’s focus around XBRL has been on its benefits for those outside an organization. For companies, XBRL implementations have mostly been about complying with SEC reporting requirements” (Ohata, 2008, p. 16). When more companies deal with XBRL, even if their incentive is just compliance, it might be possible that they will discover more benefits of using XBRL. Especially internal benefits by using XBRL are promoted, but so far there are not many solutions available. The empirical chapter will examine if the interviewed experts see potential for internal use of XBRL.



Plateau will be reached in:
 ○ less than 2 years ● 2 to 5 years ● 5 to 10 years ▲ more than 10 years ✗ obsolete before plateau

Acronym Key

- | | |
|--|--|
| 4G fourth generation | SOA service-oriented architecture |
| ASP application service provider | VoIP voice over Internet Protocol |
| BPM business process management | WiMAX Worldwide Interoperability for Microwave Access |
| P2P peer to peer | XBRL Extensible Business Reporting Language |
| RFID radio frequency identification | |

Source: Gartner (August 2005)

Figure 1: Gartner Hype Cycle for Emerging Technologies from the year 2005 (Fenn & Linden, 2005, p. 3)

Figure 1 shows the Gartner Hype Cycle for emerging technologies. XBRL is listed in the phase “Trough of Disillusionment.” In the recent time - as this graph is from the year 2005, many developments took place. Nowadays more companies use XBRL and governmental institutions force companies to use XBRL by law. Moreover “it will be the basis of the Interactive Data Electronic Applications, or IDEA, system that the SEC is readying to replace its old Edgar system” (“Official 2009 XBRL taxonomy for GAAP released,” 2009, p. 27). This research will have a look, if XBRL might reach the plateau of productivity. “The transition from the trough to the ‘Slope of Enlightenment’ is more subtle, and therefore more difficult to spot” (Fenn & Raskino, 2008, p. 80). By interviewing XBRL experts, this thesis will give an answer to this question.

The next chapter is going to examine the compliance aspects in more detail in order to explain this important driver for XBRL adoption.

2.4 XBRL from a compliance point of view

To be compliant and adapt to laws and regulations is crucial to every single company, as violation of these laws will result in high penalty fines. This chapter will point out, what the requirements and challenges for a company regarding the fulfillment of laws concerning XBRL are.

In a lot of countries all over the world business reporting in XBRL is encouraged and in an even increasing number of countries even mandatory. Many of the earliest adopters were located in Asia. As mentioned by Dzinkowski (2008, p. 24) equity regulators in China, Japan, Korea, Singapore and Spain have already mandated XBRL as the primary filing format.

During this year the development in the US speeds up. “The SEC's final rule on XBRL tagging, published on Feb. 10 [2009], requires the 500 largest companies to publish using XBRL starting April 13. [2009] Mutual funds should start tagging by this July and will be required to file risk and return information under XBRL starting Jan. 1, 2011” (Morgan, 2009, p. 9). Not only companies with their headquarters in the US are required to report in XBRL, but also all companies listed at the US stock exchange have to report in XBRL. This leads to the fact, that many European and Asian companies have to use XBRL based reporting as well, even it is not required in their own country.

But nowadays there is a rising movement of institutions supporting XBRL in Europe as well: “On Feb. 28, 2008, the European Parliament’s Committee on Economic and Monetary Affairs adopted an opinion that ‘strongly promotes the use of new technology such as XBRL; emphasizes that such information should be easily accessible for investors, creditors, employees and public authorities throughout the EU” (Bonsón, Cortijo, Escobar, & Flores, 2009, p. 38). As a consequence more and more countries apply laws in order to make XBRL mandatory and the XBRL community in Europe is growing. The early adopting XBRL jurisdictions of Denmark, Germany, Ireland, the Netherlands, Spain, Sweden and the United Kingdom have now been joined by France, Belgium, and Luxembourg (O’Kelly, 2007, p. 17). “Government/mandated projects are running in the UK and the Netherlands, mandated filing is also in place in the Bank of Belgium, Bolagsverket (Swedish Companies House) launched their filing program in June [2007], while XBRL is the bedrock of regulatory reporting within the Bank of Spain“ (O’Kelly, 2007, pp. 16-17). Sooner or later, all European countries might ask for XBRL reports.

These laws force companies to apply XBRL in their reporting process. They can choose in which way they are going to implement XBRL, as long as they submit their financial report in XBRL to the authority in charge of receiving the reports.

In the US the SEC gives companies the opportunity to get slowly used to XBRL by not applying the strictest rules imaginable. “Notably, the SEC ruled that companies can start XBRL filing with shorter, less complex forms” (Cmp. Karlin, 2009, p. 19). Latest development shows that companies applied the rules as late as possible. Even if most companies hesitated to participate the voluntary filing program (VFP) now, the majority of companies is ready to use XBRL for their reporting: “At least 340 of the first 500 companies are ready to file in XBRL format, according to a survey by XBRL” (“BIGGEST READY FOR XBRL,” 2009, p. 7).

When it comes to compliance, the role of the auditor is also considered highly relevant: “The International Financial Reporting Standard (IFRS) transition, Extensible Business Reporting Language (XBRL.) for communicating financial data electronically, and IT risk rank among internal auditors' biggest concerns, according to Protiviti's 2009 Internal Audit Capabilities and Needs Survey” (Steffee, 2009, p. 13). As quarterly and annual reports are submitted in XBRL, new ways of auditing are required – in case that the audit of XBRL documents is mandatory, which is not yet discussed in the literature and still a question to be answered in the XBRL community.

2.5 XBRL from a technical point of view

As XBRL is also a highly technical topic, the basic technical background will be explained. This chapter will describe the relation between XML and XBRL, explain the parts of which XBRL consists and point out what are the technical challenges a company faces by implementing XBRL. Moreover different ways of implementing XBRL are explained.

XBRL as an extension of XML

XBRL is based on the eXtensible Markup Language (XML). “XML is a set of rules for defining semantic tags that break a document into parts and identify the different parts of the document. It is a meta-markup language that defines a syntax in which other domain-specific markup languages can be written” (Harold, 2004, p. 3). Because of that XML is appropriate for standardized tagging and exchange of electronic data. As Liberty and Xie (2008, p. 304) mention, “the key point of XML is to provide an extensible markup language.” And further: “XML was born as a more general-purpose markup language that allows users to define their own tags.” This is the major difference to non-extensible languages like HTML, which merely describes the appearance of information (e.g. Times New Roman, bold, 12-point font), while “XML, and hence XBRL, describe the information itself”, as mentioned by Ramin et al. (2003, p. 50). By that, XML and XBRL allow individuals to specify the language and adjust it to their individual needs.

Gray & White (2005, p. 36) give an examples how an XML element could look like:

“<cost_of_goods_sold>101000000</costs_of_goods_sold>”

The value “101000000” is surrounded by starting and ending tags. The “/” indicates an ending tag to a corresponding start tag with exactly the same name. Moreover attributes like “year=2004”, “currency=EUR”, “customer=VfB_Lübeck” and “scenario=actual” can be added to the tags to specify the data.

Connection between XML and XBRL

XBRL is based on XML and has a direct connection, which is pointed out by Ramin et al. (2003, p. 51): “XBRL uses an XML specification called XLink. XLink linkbases are used in conjunction with XBRL schema files to create robust XBRL taxonomies.” To clarify how XBRL works, the XBRL items of which XBRL consists are explained.

Items of XBRL

XBRL consists of several items, which are related to each other: “In XBRL, individual data items are called elements, which are combined into taxonomies (dictionaries) defined by schemas and relationships called linkbases. An XBRL instance document is a business report in an electronic format created according to the rules of XBRL” Kay (2009, p. 32). To clarify each of the parts, a definition will be provided.

Instance document

An XBRL document with actual data is called instance document: “XBRL instance documents describe financial facts; it can be a single item such as Current Assets, or a complete Annual Report” (Deshmukh, 2005, p. 72). Only this instant document contains the actual data, but this instance document has to be consistent with taxonomies.

Taxonomies

The second ingredient of the XBRL technology besides the instance document is the taxonomy file: “Taxonomies, which provide the elements that will be used to describe information, and instances, which provide the real content of the elements defined, are the main ingredients of XBRL” (Lara, Cantador, & Castells, 2006, p. 273). These taxonomies include a set of rules and provide the logic of the element.

There are a lot of taxonomies available, which describe rules and elements for different purposes, like different reporting standards like IFRS and US-GAAP. Even for different industries like banking, real estate or construction business are different taxonomies available. By applying

those specific taxonomies the needs of the individual industries are met. Moreover there are different taxonomies in different countries to address the country specific reporting needs, requirements of the specific legislation. On the one hand this offers each country the opportunity to add individual rules and elements; on the other hand it is more difficult to compare two not-similar XBRL reports of companies in different countries, because the taxonomies are not the same.

But not only legal entities, like governments or tax offices can create their own taxonomy. “Organizations can also create specialized taxonomies to cover their own business reporting needs” (Kay, 2009, p. 32), so every company may create their own taxonomy in case they want to use XBRL for internal reporting purposes with specific reporting requirements.

Schema

Also taxonomies need a structure and have to be specified. In order to provide that structure and order, “a typical taxonomy consists of a schema (or schemas) and linkbases” (Debreceeny, Felden, & Piechocki, 2007, p. 155). Those two items ensure that the taxonomy is complying with a definite standard.

Especially in the schemas, the connection to XML can be observed: “XBRL taxonomies can be regarded as extensions of XML Schema” (de la Fe, Hoffman, & Huh, 2000, p. 5). Those XBRL taxonomies are actually extension of XBRL Schema. This ensures the extensibility of XBRL as well as XML by setting common rules for the document: “The W3C’s XML schema specification (www.w3.org/XML/Schema) provides a standard language for defining the document structure and the XML structures’ data types” (Curbera, et al., 2002, p. 87).

Linkbase

After the schema documents give the taxonomy syntax, XBRL taxonomies need linkbases to express the meaning and relation between the items: “Linkbases are link collections which enrich the syntax schema with semantics. Thus, questions can answered like is the information understandable or how were the numbers charged” (Arndt, Isenmann, Brosowski, Thiessen, & Marx-Gomez, 2006, p. 4). As mentioned by Hannon (2005, p. 58), there are five types of linkbases that can be associated with a schema: label, definition, reference, presentation and calculation.

2.6 Ways of implementing XBRL

After outlining the technical background basics of XBRL, different ways of actually implementing XBRL are described. According to Garbelletto (2009a, p. 56) there are three different possible ways to implement XBRL:

- The Bolt-on approach
- XBRL built in at reporting applications level
- XBRL deeply embedded in ERP applications and ledgers

Each of those ways to implement XBRL offers different opportunities to the business and gives different costs and benefits to a company. When it comes to cost and benefit assessment, it is crucial to understand the terms and underlying technologies.

Bolt-on approach

The Bolt-on approach can only serve the external reporting. After the financial statements were created in an ordinary way (e.g. Pdf or Excel- document), the statements are converted into XBRL. This can be done by mapping each item from the original report to the XBRL report. No new data or calculations have to be executed. “It is important to note that XBRL does not change the data in financial statements – it provides a standard way of describing it” (Rezaee & Hoffman, 2001, p. 48). For the company which converts the usual reports into XBRL, there are no internal benefits, but the company might fulfill legal requirements. But there are a few exceptions, when reporting in XBRL by using the bolt-on approach can create benefits to a company, like in Germany by using the Bundesanzeiger, an electronic commercial register in Germany. The charged fees for companies reporting in XBRL are lower compared to the costs using older formats like PDF, Word or Excel. But this will be only in the first years of XBRL reporting in order to encourage companies to use this technology. In the future there will be no reduced fees. By using XBRL only for external reporting, the company will have no deep knowledge on XBRL or realize any internal benefits. Most obvious are the costs related to create the XBRL reports.

There are several service providers, which allow other companies to outsource the process of converting ordinary reports into XBRL. In return they receive a service fee. For companies, which have no knowledge and human resources available in order to create XBRL reports, this is an easy and quick way to be compliant. On the other hand it is over the long term most likely not the cheapest way and moreover the company has no own knowledge on XBRL. Because of that the company will not see the potential to use XBRL in a more advanced way. Ohata (2008, p. 17) notes that “whether XBRL documents are prepared internally or outsourced, managers remain responsible for the accuracy of their company’s financial data.” This fact is really important, when a company is being audited.

XBRL-built in at application level

If XBRL is built in reporting level applications, XBRL can be used for internal reporting purposes as well. “With this way of implementation, significant process benefits in the aggregation of data, the review chain and the assembly of the final reports are enabled” (Garbellotto, 2009a, p. 57). If the reporting process is embedded in applications, it is very convenient and easy to create standardized reports. Moreover it is possible to create additional reports requested by managers, like internal monthly or daily management reports. Usually these reports have to be created manually by other employees, most of the time by using several programs. With XBRL embedded at application level the processing of those reports can be automated and have still strong relation to the underlying data, in contrast to some reports in Excel: “Consequently, the conversion to XBRL becomes a natural extension of the reporting process rather than being another output from a manually converted Excel spreadsheet that has no connection to the underlying systems and data” (Garbellotto, 2009, p. 56). Additional benefits are the increased speed and reduced workload for a company.

XBRL deeply embedded in ERP systems and ledgers

The most advanced use of XBRL can be realized, if XBRL is deeply embedded in ERP applications and ledgers. Only in this case XBRL Global Ledger (GL) taxonomy can be implemented. “XBRL GL is designed to represent in general all the information typically found in ERP applications and accounting software” (Garbellotto, 2009a, p. 56). Using this method of implementing XBRL is of course the most advanced and most costly method. But on the other hand this way of implementation offers a wide range of possible applications to a company by using the XBRL GL taxonomy.

“By using XBRL GL (the XBRL Global Ledger, previously General Ledger) an organization can represent each individual transaction in a format that is extremely accessible for any software application, considerably facilitating the work of auditing and controlling its processes and transactions” (Bonsón, et al., 2009, p. 39). Moreover the data is separated from the applications. It might be easier to change the software provider of the ERP systems due a common standard. The bonding between individual companies and providers of ERP systems might not be so strong and individual companies might be more independent and have more bargaining power. But by implementing XBRL deeply in your company ERP system is an extremely costly and time consuming process which requires skilled workforce and training. “But for all contexts, infusion of XBRL by means of XBRL GL is a desirable scenario, with real advantages for the companies” (Bonsón, et al., 2009, p. 40).

2.7 Success factors and barriers of XBRL

In books and scientific magazines several authors express their opinion on XBRL and also the factors, which can influence its success. These general more specific success factors have also an influence on the costs and benefits of XBRL. Companies and lawmakers should be aware of this success factors and barriers.

Success factors

Most important precondition for XBRL's success is that the generating company and third parties can rely on the correctness of the data: "The reliability of XBRL-generated information can play an important role in the success of XBRL as a business-reporting vehicle" (Rezaee & Hoffman, 2001, p. 51). This reliability can only be ensured by external as well as internal auditors, but this objective is not seen as trivial from an auditor's point of view: "XBRL may well be the next generation of the digital language of business, and the internal auditor's involvement in ensuring the integrity of electronic financial reports and related internal controls is crucial to XBRL's success" (Rezaee & Hoffman, 2001, p. 49).

To ensure proper and reliable XBRL reports a company has to apply new reporting guidelines and processes, which requires a lot of knowledge and willingness to change: "More than half of the 725 respondents in a recent KPMG 404 institute poll believe that developing a sustainable, well-integrated process will be their biggest XBRL challenge"(Ohata, 2008, pp. 16-17). Companies have to face this challenge in order to implement XBRL successfully. "The implementation of XBRL encourages organizations to take another look at their current financial reporting process" ("XBRL-ready to take off," 2009).

If XBRL is implemented, a process which checks automatically the validity of the XBRL reports would save a lot of work for internal as well as external auditors: "The commission is requiring that companies use some form of validation software to make sure the data in the XBRL filing matches what is in their auditor-approved report" (Steinert-Threlkeld, 2009, p. 18). This would improve the data quality tremendous by keeping the human workload still on a lower level.

But even if the reliability of specific XBRL can be ensured, the success of XBRL as a technology depends on more interest groups: "Its ultimate success depends on the support, cooperation, and effort of a variety of groups: software developers and accounting professionals in developing specifications and applications; professional national and international organizations and others in supporting and promoting its use through their membership"(Rezaee & Hoffman, 2001, p. 51). Only if all of these groups are motivated to promote XBRL, interact with each other and develop sustainable and profitable solutions, XBRL can be a success.

As described by Sinnett & Overell (2009, p. 46), there are three critical trends which enforce the use of XBRL.

- A public outcry for more transparency in corporate financial reporting;
- Increased regulatory oversight of the financial markets; and
- The focus by many businesses on integrating and improving the efficiency of their information systems.

If these trends continue, XBRL might have a very successful future.

Barriers

On the one hand companies might see the potential of XBRL, but on the other hand companies are afraid of changes, especially if their current reporting processes are working properly. Too little motivation for implementing XBRL is a big burden. Even if companies are forced to report externally in XBRL, it does not mean, they are going to use XBRL for internal reporting as well: “Meanwhile, a Gartner survey of 256 companies portrayed the low demand: less than 5% said they currently plan to use XBRL for internal reporting purposes” (McCann, 2009). Cohen and Brint (2009, p. 27) see the primary focus of XBRL implementation clearly on external financial reporting, which underlines the fact, why most companies use it only for external reporting: “Eventually, though, interactive data can be used internally as an audit tool to monitor risk and analyze accounts, but those benefits could be years away.” Right now, the majority of companies still hesitate to invest in XBRL, as they are not sure, if XBRL really offers sustainable and profitable solutions.

These burdens seem to balance out the tremendous potential of XBRL as reported by several interest groups: “According to Laux, ‘there's been maybe a lot of hype [from the XBRL community] and an overpromising of what can be done. I'm a strong advocate and think these things can be done, but they take time’” (McCann, 2009). Only with patience and a can-do attitude, XBRL can be successful as a technology.

Moreover there are still doubts, if XBRL reports contain reliable data. In 2004, an Ernst & Young reports recommends investors to still rely on the classic reports: “Although the XBRL-Related Documents reflect the same information appearing in the corresponding portion of the official version of the filing to which they relate, investors and others should continue to rely on the official version of the filing rather than the XBRL-Related Documents”(Ernst & Young LLP, 2004, p. 5). As long as investors and analysts cannot rely on the correctness of the submitted XBRL reports, they will hesitate to use XBRL technology for analysis.

And as reported, “64 percent of public companies have no plans to use XBRL – despite an SEC mandate requiring XBRL use as early as June 2009 and no later than 2011. If the majority of the companies is not willing to use XBRL - even if they are forced by law- the technology will never have a breakthrough” (“Two-Thirds of Public Companies Have No Plans to Use XBRL - Despite SEC Mandate Requiring XBRL Use as Early as June 2009,” 2009).

One possible reason is that XBRL is not very easy to understand for everyone: “Yet XBRL isn’t without controversy. Its specification has been criticized for being complex – the documentation of the specification is more than 151 pages” (Cotton, 2007, p. 66). As a good usability is a major success factor, the developers of XBRL guidelines and taxonomies as well as developers of XBRL solutions should consider the usability as highly relevant for its success.

2.8 Costs of XBRL

This sub-chapter describes, what the costs of XBRL are, the next chapter will describe the benefits of XBRL. But first terms like cost and benefit are defined to provide a general base and afterwards outlined, what is seen as the costs and benefits of XBRL in the literature.

Direct and indirect costs

In general costs can be divided into direct and indirect costs. In contrast to indirect costs, direct costs can be directly related to a specific good or service, e.g. specific hardware manufacturing costs or maintenance costs for a specific software system. As mentioned by Remenyi et al. (2000, p. 89), direct costs possess the following categories: hardware costs, software costs, environmental – operating, overheads, training costs and maintenance costs.

Indirect costs cannot be attributed to a specific good but to the project as a whole. Indirect costs can be moreover categorized in indirect human and in indirect organizational costs. It is possible to justify the handling of almost any kind of cost as either direct or indirect.

Elements of the information system: hardware, software, employee

Besides the distinction between direct and indirect costs, it is also possible to divide them into different categories according to the point of view: “To help to identify IT costs, it is useful to look at them from a number of different perspectives” (Bannister, 2003, p. 68). Possible is for example the categorization into hardware, software and employee costs.

Hardware costs represent according to Burkey and Breakfield (2000, p. 30) typically the second or third largest expenditure of funds over the life cycle of a computer system.

Software costs can be distinguished between in-house developed software and third party software and it can be distinguished between different sub-categories as Boddy, Boonstra and Kennedy (2004, p. 124 f.) mention.

Employee costs occur, as the development, implementation and maintenance of information technology systems requires human intervention. This cost category includes software development expenses for programmers as well as training of employees to use the systems.

Distinction between the life cycle stages of an IT system

Moreover it is possible to distinguish the costs of information technology due to the different life cycle stages. The System Development Life Cycle (SDLC) divides IT into several stages of life, like planning, development, operations and removal. Even a more detailed separation is possible, as pointed out by Nayak and Qiu (2006, p. 105).

Impact for XBRL

As the literature will mention advantages and disadvantages of XBRL, a first preliminary estimation on the costs and benefits of XBRL will be developed in the next subchapters. But those results are just based on the literature and are not final. The findings have to be confirmed or contradicted in the literature review. It is important to mention, that costs as well as benefits for a specific company depend mainly on the way of implementation as the bolt-on approach is not as advanced as the approach, in which XBRL is deeply embedded into ledgers and ERP systems.

Like any other investment, the implementation of information technology generates costs and benefits for a company. Unfortunately the quantitative identification of those costs and benefits is in general a difficult and complex process. The International Accounting Standards Board (IASB) mentions, that a formal quantitative assessment of the costs and benefits is not practicable, due a lack of sufficiently well-established and reliable techniques for costs-benefit-analyses in the field of policy for which the IASB is competent. (Cp. International Accounting Standards Committee Foundation, 2006, p. 14)

Costs of XBRL for companies

The assessment off XBRL implementation and recurring costs is challenging task. Choi et al. (2008, p. 71) did a survey among early XBRL adopters. “The companies surveyed did not do a cost-benefit analysis to help them decide whether or not to begin the implementation of XBRL. They expected and found that implementing XBRL was neither a lengthy nor a costly process.” It can be expected that those companies used only the bolt-on approach, which is easier and cheaper

to implement than more advanced XBRL solutions. But this solution is fully satisfying, if your goal is to be compliant to the law. This survey shows that this goal can be achieved with low costs and within a short manner of time. There are more detailed reports that show the exact numbers: The participants of the VFP by the SEC using the Bolt-on approach reported that the average costs of the first submission was in average \$30,933 and the second submission averaged \$9,060. The substantial drop for the second submission reflects the learning curve between the first and the second filings, as mentioned by Garbellotto (2009b, p. 56). In the first year costs a lot of one-time costs are included which do not occur in the second year, because personal has not to be trained again and can benefit from the previous' year experience. This results in decreasing annual costs over several years. All four adopters, which were responding to a survey by Pinsker and Li (2008, p. 49), viewed the risk and costs post-adoption as low.

Even if XBRL implementation costs are not as high as some companies expected, other interest group express their critical view on XBRL: As mentioned by Dzinkowski (2008, p. 24), the US committee on corporate reporting of Financial Executives International (FEI) expressed its concerns that requiring filers to adopt XBRL now will result in increased costs with no improvements to internal processes: "The vast majority of SEC issuers will use a 'bolt-on' process for the foreseeable future, yielding no benefits to preparers."

In case companies do not like to change their internal processes to produce XBRL reports to be compliant, there are several service providers which allow outsourcing the production of XBRL reports, as mentioned by Morgan (2009, p. 9). Outsourcing gives companies which are willing to pay for this service, the opportunity, to focus on their core business instead of developing own XBRL skills.

2.9 Benefits of XBRL

By looking at the benefits of XBRL, a distinction between several interest groups is required as some aspects of XBRL only add value to users within a company, to clients or business contacts or regulators. Weber (2003, p. 3) points out the four major stakeholders of XBRL: businesses, investors, regulators, researchers. In contrast, Kentouris (2009, p. 12) mentions another classification of interest groups: "We are creating three focus groups— one of issuer and issuer agents, one for financial intermediaries and the other representing investors', said Brett Lancaster, vice president at DTCC." In this paper the costs and benefits are distinguished for single businesses, between businesses, investors and other external analysts and regulators.

Tangible and intangible benefits

The benefits of investing in IT can be classified as tangible or intangible. Tangible benefits are those benefits that can be measured and expressed in financial terms and can be additionally grouped in two categories: those that increase revenues and those that reduce costs. Intangible IT cannot be easily measured and quantified nonetheless, professionals often try to quantify intangible benefits and manipulate them in financial terms.

XBRL benefits for single business

In general there are several benefits for the preparer of XBRL reports that are promoted by a lot of XBRL supporters, like improved speed, accuracy, and improved data immigration efficiency, which are gained through automating the reporting process. Another benefit is that human errors are minimized: “The SEC said getting an early start on XBRL reporting can help companies reduce the need for repetitive data entry, reduce the likelihood of human error and help them have one less problem to worry about later on“ (Morgan, 2009, p. 9). According to Fang (2009, p. 71), the elimination of the manual rekeying process does not only improve data migration efficiency, but also data accuracy which is even more important. Furthermore a reporting system based on XBRL is easier to audit than other systems, as XBRL ensures a detailed audit trail.

Moreover, with this automated processes, the reports can be generated quicker than before: “As the kinks get worked out, the cost of getting data into analytic tools will go down and the speed will increase, as will the understanding of public companies' operations, according to Newman and David vun Kannon, also a Deloitte audit director” (Steinert-Threlkeld, 2009, p. 18). This increased speed can give advantages, especially for external analysts when they compare the result of several different companies.

By increasing speed and human involvement, a long-term value for the company can be generated: “By conversion from manual to automated processes, replacing document based reporting with data-based reporting also promises tremendous cost savings to any company that undertakes it” as mentioned by the SEC (2009) as cited in (Morgan, 2009, p. 9). By redesigning the reporting process and converting the systems to XBRL supporting ones, older legacy systems can be replaced as well.

In addition to the already mentioned benefits, some see also benefits in areas, which are not closely related to the reporting process, like decision making: “XBRL [...] holds the promise of enhancing internal management reporting and enabling better and quicker decision making by senior executives.” (Sinnott, 2009, p. 36). Improved decision making is mainly supported by the in-

creased speed, possibility to generate really special reports on request, maybe even by the decision maker himself, without asking for assistance to generate this process.

Moreover companies, who adopt XBRL, could demonstrate their advanced technical skills to the market. This way of marketing might attract investors, as assumed by several authors.

XBRL benefits for communication between businesses

But there are also way tremendous benefits when it comes to exchange data between businesses or when it comes to merge systems of two different businesses: If XBRL is deeply embedded into companies' ERP systems and ledgers it would be way easier to consolidate companies when it comes to merging and acquisitions: "Another potential use of XBRL is for consolidating subsidiaries' proprietary accounting applications" (Cotton, 2007, p. 67). Especially in a globalizing world, in which companies are acquired and merged every single day, advanced XBRL technology can be a major benefit, if all participating companies use XBRL.

But a big burden is, that standards are still missing: Sausner (Cp. 2009, p. 12) quotes Dan Schutzer: "The whole area of risk management, reporting and metrics is not standardized. It would seem to me that if we start getting some of these standards nailed down and some of the ambiguity taken out, it'll be easier for systems to interface with each other." This improved exchange of data by using standardized interfaces can already be seen, e.g. the *Bundesanzeiger* allows and encourages companies to submit reports electronically in XBRL instead of using PDF based reports. Moreover an electronic data exchange is planned in the Dutch banking industry, as leading banks require their lenders to send their annual reports in XBRL. The benefits of XBRL use by exchanging information electronically with XBRL will be examined in detail in the empirical chapter.

XBRL benefits for investors and external analysts

As mentioned in previous chapters, sometimes XBRL might not always add benefits to the preparer. But nearly always XBRL generates a benefit for institutions, which are going to use the data, like investors or external analysts. Usually it is a very time consuming process for analysts to convert paper reports of a specific company into reports that are readable for the analysts: "Attention has also been given to the (labour intensive) process of translating corporate reports into a format that could be used by investment analysts, and to the content-management capabilities inherent in any XML-based technology" (Fahy, Feller, Finnegan, & Murphy, 2009, p. 126).

Moreover there are a lot of opportunities to compare different numbers with each other: "XBRL facilitates comparisons of the results from multiple companies, side-by-side, without having to extract this information from each filing, or can support inter-period comparisons for single

company or multiple companies” (Williams & Cannon, 2009, p. 32). As this analysis can be done without rekeying the numbers into a system, this comparison can be executed in a quick and convenient way. But when it comes to the opportunity, that companies might extend the reports, as allowed by XBRL, Cohen & Brint (2009, p. 26) see also potential drawbacks for investors interested in comparability, when it comes to comparability of different XBRL reports.

The usability is considered to be very good, but training cannot be avoided: “Though XBRL-enhanced search engines will likely be easy to use, training investors on how to most effectively use this technology may also be necessary” (Hodge, Kennedy, & Maines, 2004, p. 701).

Besides the elimination of the rekeying process, analysts do not have to doubt, what the right labels for all the number are, because the XBRL taxonomies make sure, that the right numbers are connected for the right labels: “Using XBRL tagging will reduce, if not eliminate the potential for errors made by financial intermediaries forced to now reinterpret information from official and other documents” (Kentouris, 2009, p. 12). The human error rate for this aspect will be decreased dramatically.

A nice conclusion of the benefits for external analysts is the following: “The key benefits to credit pros who spend long hours analyzing companies’ financial statements is that XBRL solutions reduce costs, increase productivity, improve data quality, and extend the interoperability of the data” (“Now GAAP-Compatible, XBRL Enhances Financial Analysis,” 2009, p. 2).

XBRL benefits for regulators

Financial regulators like the SEC have the responsibility to ensure that the market works efficient, providing rules, guidelines and ask companies to be compliant to several guidelines. Especially during the financial crisis transparency is more important, so regulators should encourage companies to publish relevant information in order to make all actors in the market trust each other: XBRL can contribute to achieve this goal: “The technology not only enhanced transparency and reduced the filing burden, but it also improved the exchange of information with the central bank and statistics agency” (Graziano, 2002, p. 55). XBRL can also help to spot differences between several different regulations and increase transparency: “By assigning a tag to each individual data item, such as inventory or elements de stock, it becomes easier to identify, regardless of national and international differences in reporting standards, languages and terminology” (Meall, 2007, p. 73).

From this gained transparency, not only the market benefits, also the specific company, as it is more attractive to investors, as investors appreciate to have more information about the com-

pany available: “The U.S. respondent went so far as to relate increased reporting transparency to an increased level of trust between management and potential investors” (Pinsker & Li, 2008, p. 49).

In the financial market are still plenty of toxic assets, but nobody knows exactly where those assets are. With XBRL it is more likely to locate those assets, because it is easier to search for specific positions in reports and track those assets: “Mark Bolgiano. CEO of XBRL US, said the standard could even be used to track the underpinnings of asset-backed securities that contributed to the financial collapse” (Soule, 2009, p. 14). Meall (2009, p. 10) even goes further and claims, that impact of the financial crisis would be way lower, if XBRL would have already increased transparency in his article “XBRL could have prevented recession.”

2.10 Financial industry and information management

In order to give an answer to the question, if XBRL can add economic value to a specific business area, like the financial industry specific requirements have to be pointed out. Especially in banking the availability of accurate information in time is crucial for the business, as information about assets, risks and opportunities may lead to a competitive advantage or disadvantage.

To ensure that information is accurate, timely and always available, proper information systems are required to manage those information. The financial reporting chain has to be reliable and quick. As in internal reporting within financial companies is often still a manual process, XBRL may have the opportunity to improve this financial information chain.

As there is not much specific information available about the potential of XBRL within the banking industry, this master thesis will research the applicability of XBRL in this industry.

2.11 Summary on the literature review

This literature review should have given a deep insight into the area of XBRL and a first answer to the research question(s). Moreover this literature review should give sufficient background to ask highly relevant questions in the interviews. It was recognized that there is a gap in the literature, when it comes to specific XBRL solutions in the banking industry. The empirical chapter is going to find proper answers to the question, if XBRL adds value to the banking industry, and what its costs and benefits are.

3 Case study methodology

The gathering of empirical data will be a big challenge in this research. In order to collect high relevant data, interviews are an appropriate way to gather most actual and relevant information.

Possible interviewees are XBRL experts. For this master thesis XBRL experts, working in the financial market, are highly relevant, as they can judge the potential, the impact and the costs and benefits of XBRL as well as drivers and barriers for XBRL. This will cover the user side of XBRL.

Moreover the auditing view on XBRL seems to be highly relevant as XBRL deals with accounting and auditors have to ensure the correctness of the accounting systems.

In addition, it might be very interesting to talk to the people who are responsible for the development of XBRL. People in the (local) organizations are with no doubt, well known experts in the area of XBRL and should be able to answer very special questions, especially about the future of XBRL.

In order to get most valuable information out of the interviewees an open semi-structured interview seems to be appropriate. "The interviewer should be prepared to explore interesting lines of research, and look for surprise" (Myers & Newman, 2007, p. 17).

This means that general questions for a few carefully selected discussion areas are prepared. After these general questions were spoken out, the interview is directed by the interviewer. This open approach will ensure that most non-biased information is gathered. This method avoids issues of structured interviews such as misunderstandings due to different knowledge levels as well as issues of unstructured interviews such as leaving out important questions (Bryman & Bell, 2007, pp. 236, 479).

Regarding a semi-structured interview, Myers and Avison note that "if the interviewer directs the interview too closely, and refuses to allow interviewees to express their own views except in response to questions that are tightly controlled by the researcher, then the data obtained will lose much of the richness of interpretation which is the raw material of sensitive interpretive studies" (Myers & Avison, 2002, p. 108). The answers might be too biased and by directing the interview too closely, the interviewee may never express his real opinion on the case.

But that does not mean that a semi-structured interviewer should not control the direction of the interview around several topics, because: "If the researcher is too passive, for example either by not prompting with questions which follow some new direction taken by the interviewee or by

not offering his own ideas on some particular issue, a number of negative consequences can result. The interviewees may conclude that the researchers are either not interested in their views and/or that the researchers have no view of their own on the subject of investigation” (Myers & Avison, 2002, p. 108). This scenario has to be avoided. The interviewer has to show that he knows well about the subject and guide the interviewee smart through the interview. To increase the degree of comparison between the interviews, some rules can be applied: “The interviewer would usually use a standardized interview schedule with set questions which will be asked of all respondents. The questions tend to be asked in a similar order and format to make a form of comparison between answers possible” (Qualidata, 2009).

4 Findings

The data analysis is a very important part of the research. In this chapter the main findings of the data collection are outlined and carefully analyzed. Similarities between the different cases are outlined as well as contradicting opinions and answers.

The findings are based on the eight interviews conducted, which summaries are attached to this thesis. Moreover information was gathered during the 19th XBRL Conference in Paris during the 23th to 25th June 2009. A report about the XBRL conference is also attached to this thesis.

Managers of all four major banks in the Netherlands were interviewed. Mr. Ingo Dekker from ABN AMRO is a business architect and responsible for the communication from the outside to ABN AMRO using XBRL. Mr. Guust Jutte is working within the department of Rabobank Nederland dealing with the development of products for small and medium sized enterprises. In his team he holds among others the responsibility for special finance products and XBRL. Mr. Paul Staal is a Business Process Manager within ING Group and especially responsible for small and medium sized enterprises in the domestic market. Mr. Ralfi Vanlaethem is working for BNP Paribas Fortis as a Process Manager in the Finance Enablers departments and deals with XBRL, FINREP and COREP.

Beside these four managers, interviews with the chairman of XBRL Nederland Jan Pasmooy and the vice-chairman Paul Snijders were conducted. The Emeritus chairman of the XBRL International steering committee and adviser for the International Accounting Standards Committee Foundation XBRL team Kurt Ramin and Johannes Neumann, a senior manager within PricewaterhouseCoopers were interviewed.

After this chapter, there will be a more generalized conclusion and answer to the research question which will cover most important findings from empirical data as well as from the literature review. Also, possible limitations of the research are outlined and moreover possibilities for future research are shown.

4.1 Standard Business Reporting

4.1.1 Standard Business Reporting (SBR)

SBR stands for Standard Business Reporting. The first SBR projects were started in the Netherlands as well as in Australia. “The Australian SBR program follows the lead taken by the Netherlands, collaborating across agencies to agree to develop a single set of definitions and language for the information reported by business to government” (Madden, 2009, p. 4). But as stated in the SBR presentation to the XBRL International Conference 2009 by the Standard Business Reporting Programme Netherlands (Cp. 2009, p. 5), banks are also in the focus of the programme, besides Tax administration, Chamber of commerce and Bureau of Statistics. By this companies can use one report for all of the mentioned purposes.

The SBR is defined by Standard Business Reporting Programme Netherlands & Standard Business Reporting Australia (2009, p. 3) as a single report standard, which harmonizes and reduces the reported data by recognized the accounting standards. Moreover SBR is capable to map semantics to financial data. By this, the reporting becomes a by-product of normal processes.

This is going to improve the efficiency in reporting to external stakeholders. Willis (2009, p. 10) calls the SBR a multi-agency program with the goal to reduce the reporting burden by 25%. This is one of the main goals why the SBR was initiated and will reduce the costs of external reporting for enterprises.

4.1.2 Benefits of SBR

There are several benefits to businesses using SBR, as mentioned by the Standard Business Reporting Australia (2009, p. 1 f.): Companies have to spend less time and effort to report, which will result in less costs. Companies can fulfill reporting obligations easily and use a single-sign on access to all government on-line services. By this, the provided financial information is also accessible to investors, which might be a benefit to the provider as well.

4.1.3 Relation between SBR and XBRL

Sometimes XBRL and SBR are used with the same meaning, which is not correct. XBRL is just one of the standards within SBR: “The collection of agreed reporting terms is called the SBR Taxonomy, and has been developed in a technology standard called XBRL, or eXtensible Business Reporting Language” (Madden, 2009, p. 4). Missing were best practices, architecture,

design and approach, change management and governance as well as formula/validation (Standard Business Reporting Programme Netherlands & Standard Business Reporting Australia, 2009, p. 17). These were added by SBR in order to fulfill the requirements for a simplified reporting.

4.1.4 FINREP

FINREP is the abbreviation for FINancial REPorting. A FINREP-taxonomy for XBRL was developed and is maintained by the Committee of European Banking Supervisors (CEBS). This taxonomy is especially designed for financial institutions, which use IAS/IFRS in order to report to supervisory authorities. “The FINREP framework [...] will enable credit institutions to use the same standardised data formats and data definitions for prudential reporting in all countries where the framework will be adopted. CEBS believes that this will reduce the reporting burden for credit institutions that operate cross-border, and lower barriers to the development of an efficient internal market in financial services” (Committee of European Banking Supervisors, 2007, p. 4). This FINREP taxonomy is also an important contribution to a common European reporting based on common international financial reporting standards (IFRS).

4.1.5 COREP

In order to create a common European regulation for the financial market, the CEBS created a common solvency framework for all financial institutions within the European Union.: “The work is primarily focused on regulatory own funds and Pillar I capital requirements, credit risk, operational risk and market risk. The aim is to reduce the reporting burden on firms and encourage an increased level playing field across Europe” (Flórez, 2005). By reporting in line with COREP, credit institutions and investment firms can comply with the EU directive of Basel II, as the COREP templates are based on this law. (Cp. Committee of European Banking Supervisors, 2007, p. 45) By this COREP contributes to a transparent market, in which proper risk management is more transparent. The whole financial market will benefit of this regulation.

One COREP-XBRL-taxonomy is created to provide each institution the opportunity to provide the figures in XBRL. This XBRL taxonomy is really adaptive to the specific requirements of the different countries: “In accordance with the national criteria and characteristics, each Supervisor can request a greater or less degree of aggregation or break-down from the entities it supervises in the new system of COREP reporting, and can demand or dispense with any specific piece of information” (Boixo & Flores, 2005, p. 85). By this a local adoption in each member state should be possible, as the taxonomy can be adopted to the individual needs.

4.2 XBRL for the economy

4.2.1 Reasons for the regulators to use XBRL

When it comes to the success of XBRL as a technology for financial reporting, all the interviewees see the regulators, the European Union and the local governments in a very important position. Many interviewees as Mr. Ramin and Mr. Snijders see the government even as the main initiator of XBRL.

According to Mr. Neumann are the driving forces behind XBRL the expectation towards the European Union to reduce bureaucracy. Mr. Dekker sees also the Dutch government's goal of the XBRL related SBR project in reducing administrative costs and burdens for organizations. Mr. Gutte also recognizes the aims of the SBR project to reduce the reporting burden for enterprises, as they can use one report for reporting to tax office, statistical office and banks.

The regulators force companies to report in XBRL, like in Belgium, as mentioned by Mr. Vanlaethem or the United States as mentioned by Mr. Pasmooij. The government does so, first due to increase the transparency of the market and the quality of information. The main users of XBRL are the regulators, as they are in the position to mandate, drive this and maintain this development. A paper-based supply chain is moved to XBRL often by initiatives and laws by the government.

Moreover, as Mr. Ramin mentions, the government has the highest motivation to create a new standard and ensure reliability, speed and accuracy of data. Mr. Snijders notes that with the Dutch XBRL program the efficiency of reporting should be increased. In this case reducing costs rather than transparency was the reason for this project. Mr. Dekker mentions that the Dutch authorities see XBRL as a safe instrument, to transfer data via an internet connection. Nevertheless, there are no laws forcing banks to join this development according to Mr. Staal: ING joined the XBRL project voluntary, as they believe in the contribution of it.

According to Mr. Ramin, the biggest weakness of the financial market is that there are little general standards and that the interbanking collaboration is not strong enough. From a supervision point of view, XBRL could help to define a common standard. FINREP (FINancial REPorting) and COREP (Common REPorting) are projects, aiming to design a common standard within the financial market. FINREP is designed for credit institutions that use IAS/IFRS for their published financial statements. Within COREP (Common REPorting), a common solvency ratio reporting framework for credit institutions and investment firms under future EU capital requirements regime. As XBRL is a way to be compliant to FINREP and COREP by providing taxonomies for it, Mr. Vanlaethem mentions, that Fortis is adapting to XBRL within the scope of FINREP and COREP.

4.2.2 Costs and benefits of XBRL for the economy

The respondents see several benefits for the economy, when XBRL becomes a standard in the financial market, like a natural update of the financial information supply chain, increase transparency in the financial market by establishing international standards and reduce bureaucracy.

Updating the financial information supply chain

As mentioned by Mr. Ramin, the financial information supply chain is outdated. A lot of the reporting is still paper based and manually done. With XBRL an automated system is possible. This will increase the speed and transparency of the whole financial market. In the end, every participant will benefit from this natural development. It was just a matter of time that based reports are moved to reports that are able to be processed electronically. With less rekeying the data quality will rise as well, as there are often typing mistakes in documents. With this improved data quality, the reliability of this information will increase.

Increase transparency

According to Mr. Ramin, there is a lack of data within banks, which came to the light, especially during this actual financial crisis, as the banks were not completely aware of their risks and it was difficult to track, where the toxic assets within the market are and who possesses them. With better tracking of those assets, the impact of this crisis would not have been as big as it is actually.

With XBRL, financial information is more accessible, automatic process able and comparable, according to the respondents. Rating agencies and other public rating sources might have easier access to companies' financial data, which would increase transparency and open the market, as mentioned by Mr. Snijders. Especially in these times, the need for transparency is quite big. As XBRL contributes to a transparent market, this is a major benefit to establish higher transparency in the financial industry.

Establishing international standards

According to Mr. Dekker the lack of standardization is a weakness in the financial market. This problem is not only relevant for banks, but also for international retail organizations as well as the airline industry. In Mr. Ramin's eyes the little general standards are the biggest weakness of the financial market and interbank collaboration is not strong enough. XBRL could help to define a common international standard for reporting in the financial market.

XBRL has the potential to become a worldwide standard for financial reporting, as it is the first of this kind and there are no other standards, as Mr. Snijders mentions. To contribute to establish international standards in the financial market, is a potential of XBRL.

Reducing bureaucracy

With XBRL it is possible to reduce the bureaucracy and administrative burden, as mentioned by Mr. Dekker. This is the most important benefit promoted by the Dutch government. The SBR project plays a big role, as it promotes easier reporting to several receivers on basis of XBRL. For Mr. Neumann the expectations towards the European Union to reduce bureaucracy are the driving forces encouraging XBRL.

For companies the reduced bureaucracy will be a major benefit, as bureaucracy is an important barrier for entrepreneurs and enterprises, when entering or exceeding the market on a national or international basis.

4.2.3 Conclusion: XBRL for the economy

The research showed that XBRL will most probably have also positive impact on the whole economy: Because of that, regulators and governments put a lot of effort in XBRL by making it mandatory as a reporting instrument or launching initiatives for promoting business reporting with XBRL. Two main streams can be recognized: XBRL in order to reduce bureaucracy and XBRL in order to increase transparency.

When XBRL is launched in order to reduce bureaucracy the enterprises should benefit by a simplified reporting, like the Dutch SBR project. The Dutch SBR project is a perfect example how the government uses XBRL as a technology solution in order to reduce reporting burden for the companies, by allowing them to use one report to fulfill several reporting requirements and move the paper-based financial supply chain to an electronically one. With XBRL initiatives like the Dutch SBR project this development is facilitated.

Next stream for governmental XBRL initiatives and regulations is the desire for increased transparency, which came up especially in this financial crisis. By making information processing by computers possible, increasing accessibility and comparability of data the transparency and efficiency of the financial information systems in the economy are increased. Moreover XBRL could help to establish new international standard like IFRS, COREP or FINREP, as XBRL is also an international standard, which is also adaptable to specific local requirements. Maybe it does not seem that XBRL is to be worth the effort for individual enterprises, but it will definitely contribute to the transparency, stability and efficiency of the whole economic system.

4.3 XBRL used for external reporting within financial institutions

As XBRL can be used for several purposes, a distinction is required in order to determine the motivation for each area. In this thesis, a distinction between external reporting, internal use and receiving of XBRL documents is used.

4.3.1.1 Motivation for external reporting with XBRL

When companies use XBRL for external reporting, they often do so, in order to fulfill legal requirements which are preconditions to run the business, as mentioned by Mr. Snijders. This was confirmed by Mr. Vanlaethem from Fortis Belgium and Mr. Staal from ING.

As the Belgium regulators require Fortis Belgium to report in XBRL, Fortis started to use XBRL for external reporting in Belgium. Fortis saw this as a starting point and wanted to use XBRL for financial reporting to other regulators (Dutch, Luxembourg, and French) as well in order to leverage the benefit from a unique XBRL data flow. This is done within the scope of FINREP and COREP. Mr. Vanlaethem does not see any benefits of XBRL for Fortis by external XBRL reporting right now.

Regulatory reasons are also the reason for ING. As ING is also listed at the New York Stock Exchange (NYSE), ING is obliged to report in XBRL due to a new regulation, which was explained in the Literature chapter.

As big companies do not see any added value for themselves by preparing XBRL reports, they are reluctant to use XBRL for external reporting. By preparing XBRL reports they consider that an extra layer of activity is added to their reporting activity, which is costly. The motivation to use XBRL for external might change in the future, if stakeholders and investors are going to ask for XBRL, as mentioned by Mr. Pasmooij.

Leading banks should take initiative, as noticed by Mr. Ramin, but at the moment the banks' focus is on the financial crisis instead of strategic technology investments.

4.3.1.2 Benefits of external reporting with XBRL

If XBRL is used for external reporting, it is important to distinguish different ways of preparing this financial report. The bolt-on approach differs in costs and benefits significantly from external reporting systems, which are more integrated or from an outsourced process.

Most important reasons for companies to use XBRL for external reporting are laws which force companies to report in XBRL. To be compliant is crucial for their business. Mr. Vanlaethem says that due to the financial crisis the reporting requirements are going to rise. Because of that XBRL might be very beneficial and save lot money: A common European taxonomy for financial institutions is planned for 2012 and would facilitate this process and would generate even bigger benefits for banks. The more regulators ask for XBRL reports, the more beneficial it will be.

According to Mr. Snijders for public, global, private companies XBRL is a good way to improve their exposure on the stock market, by providing better information to all shareholders and analysts. By that the comparability in the market is increased as well as companies can present themselves as innovative companies.

Outsourcing of XBRL reporting and the bolt-on approach

The outsourcing of XBRL would mean that a financial report is converted to XBRL afterwards by an external party, which only increases costs and would be the worst possibility imaginable in Mr. Neumann's opinion, as there are no added benefits to the company.

Mr. Neumann does not see any benefits to the company by using the bolt-on approach, as it is just an extra layer of activity within the company.

Assumptions of Mr. Pasmooij say that most companies will use the bolt-on implementation, which he considers as a dead end, just within the first phase. As is just an extra level of activity at the end of the supply chain it does not generate any value to the companies. Because of this, he assumes that XBRL will be seamless integrated into the companies reporting supply chain: The General Ledger. But according to Mr. Neumann bigger companies hesitate and wait for the development of XBRL solutions as XBRL is just seen as added layer of work.

Automated reporting system

Mr. Vanlaethem said that Fortis uses a unified external reporting process based on XBRL, which provides Fortis with a transparent data flow with less manual intervention. An additional benefit is that also comments are able to be attached to the figures in a structured way. After all the main benefit is a reduction in internal process costs. Also reports can be created more frequently – for internal and external reporting purposes

The experts confirm that an automated system for reporting based on XBRL would increase the speed of reporting, improved audit trail as well as transparency. In addition the reporting process will be more controllable and auditable and in general it will be a better managed one, as noted by Mr. Snijders. This will be a major internal benefit for companies.

Especially small and medium sized enterprises can benefit from an automated reporting process, when reporting to banks, the government and other authorities within the Dutch SBR project. Also the reporting from banks to the central bank is managed in an improved way. Also a little bit of cost saving might be achieved.

According to Mr. Neumann there are a few companies which use XBRL integrated in the application level in order to generate a consolidated annual financial report for the whole group, like e.g. Thyssen Krupp.

4.3.1.3 Costs of external reporting with XBRL

From their experience the interviewees do not consider a pure XBRL system for external reporting as expensive.

The costs are mainly initial costs, like training of employees and add on XBRL to the existing reporting systems, which are not seen as very high. Mr. Snijders expects the cost of implementation of XBRL into an easy straight away system for a corporation between 10.000€ and 30.000€

But the bank managers agree that the bolt-on approach might be quite cheap, but in the end it will not add value to the company and just add an extra layer of activity to the reporting process. It will over long term just be and remain as an expense, if XBRL is kept in the bolt-on approach. This is considered as a dead end street by Mr. Snijders. The right approach would be to implement XBRL on the system level, and implement XBRL into the code system, where the data is and create the right connections and map the data to the XBRL definition.

Mr. Vanlaethem could give information about his costs for external reporting, as they successful use this approach in Belgium: At the moment Fortis creates 400 to 500 XBRL reports every month by an internal XBRL expert, which counts for half a FTE, as mentioned by Mr. Vanlaethem. For him, XBRL is considered to be a business, but not a technical challenge.

4.3.1.4 Conclusion: External reporting with XBRL

If compliance requires companies to report in XBRL, there is no way for companies to avoid this technology. Companies have to look for a solution to be compliant, even though this adds a layer of activity to their financial reporting and does not any level to them as a preparer.

Outsourcing or the bolt-on approach are considered as the worst possible solutions, offering no benefits to the preparer as also mentioned in the literature.

The process of fulfilling regulatory burden could be more efficient within the companies, if more regulators are going to ask for XBRL reports, as they can leverage the whole process and be compliant to several different requirements with one unified process. This ideal scenario would facilitate an efficient, unified, information data flow with less manual intervention and in the end decrease the costs of reporting after all.

But so far companies do not see the benefits for themselves, even though it might be beneficial for the whole economy. This might change, if more stakeholders besides the regulators are going to ask for the reports and companies see also a benefit for themselves in reporting in XBRL. At the moment, only the costs are recognized by the companies, but even those are quite low, companies try to avoid this extra layer of activity for themselves.

4.4 XBRL used for internal purposes within financial institutions

4.4.1 Motivation for internal use of XBRL

At the moment, there is nearly no motivation for big companies, like international banks to use XBRL for internal purposes right now. In Mr. Neumann's eyes, the costs for internal XBRL adoption are considered too high and the amount and quality of XBRL solutions is not as high as desired by the companies. Mr. Snijders does not yet see banks using their budget to extend the use of XBRL for internal purposes, as they focus more on the external side of XBRL and the internal preparation of receiving XBRL reports from their customers. A problem could also be that the XBRL community is not very stable, as a first version of XBRL was rejected, as Mr. Neumann notes.

This development could change in the eyes of Mr. Snijders when more and more companies are going to begin to see their own advantages in XBRL. This development will take place due to improved efficiency within the reporting systems and not purely due to cost saving.

Internal data exchange within banks is done with RIXML, which is based on XML as well, as mentioned by Mr. Ramin. RIXML stands for **R**esearch **I**nformation **eX**change **M**arkup **L**anguage and was developed by a consortium of The RIXML organization. It consists of Steering Committee members from buy- and sell-side firms and Associate members who are vendors that participate in the Standards and technical committees of the organization. (Cp. RIXML.org, 2009) A lot of major banks like Citigroup, Bank of America, UBS and Deutsche Bank are members of the sell-side. As banks use this data standard they do not see the need to change it to XBRL for internal purposes or data exchange between banks, as noted by Mr. Ramin.

Huge, complicated and individual banking systems as a difficult precondition

The interviewees responded that banks have in general very individual and complicated computer systems. Mr. Ramin points out that banks work in general with very old legacy systems. Those legacy systems are far away from the state of the art technology and are lagging behind, when it comes to processing data. The change to XBRL will be huge for companies with old legacy systems, as Mr. Pasmooij mentions. This makes it very costly to implement XBRL in a deeper level of the systems as banks have their own and very individual systems. As SAP and Oracle do not have a huge market penetration in banking, there might be no standard solutions fitting to a lot of banks available.

XBRL is not powerful enough?

Mr. Staal contradicts Mr. Ramin's opinion, that banks' systems are too old to use XBRL. He considers XBRL as a little bit old and not so sophisticated. This conflict shows that XBRL individual preconditions within each company might have a huge impact, if XBRL will pay off or not. Moreover it shows that a general conclusion might not be able to count for all banks. Mr. Vanlaethem says that using and processing XBRL reports in the XBRL format for internal communication is not considered as powerful enough for Fortis as they are not confident if XBRL can handle a large number of transactions.

The benefits when it comes to apply XBRL in the global ledger for internal accounting are imaginable, but still far away, due to the massive effort companies have to make, as Mr. Ramin says.

Change resistance

It would be very complicated for banks to shut down these systems and convert the data into new systems. In Mr. Pasmooij's opinion, XBRL will never be the only reason to facilitate a change in the IT systems of the enterprise: XBRL is not the trigger. But XBRL will most probably be considered when companies refresh and update their systems. That is the reason, why only a few big firms are engaged with XBRL. Mr. Gutte continues: As it is most important to keep the actual systems running, a change to XBRL internal reporting might cause problems, which have to be avoided within a running bank.

4.4.2 Benefits of internal use of XBRL

Mr. Snijders wonders that maybe there are currently no internal benefits for banks using XBRL. But other interviewees recognize potential for internal use of XBRL within banks like Mr. Neumann:

He says that the use of XBRL for internal reporting is mainly ignored by big enterprises, but smaller and medium sized enterprises, recognized the potential of XBRL for their internal reporting, by using a common, up-to-date database for reporting, which can create value for a company by decreasing costs. Mr. Pasmooij agrees that the major benefit of deeply embedded XBRL systems will be cost saving.

Moreover Mr. Neumann would recommend companies to adopt XBRL, also for internal purposes, which can create value. The benefit of using XBRL to create management reports or other internal information could be huge. Mr. Ramin also sees a potential for internal accounting with XBRL, but it has to be implemented in an economical way.

Standardization of the internal reporting might be an interesting area for XBRL, as mentioned by Mr. Gutte, as this reporting is quite diverse at the moment. A common reporting guideline, like with an XBRL taxonomy might be useful, but it might be easier to do this with some other technology besides XBRL as well.

Benefits by using XBRL are also seen by Mr. Vanlaethem: If the whole process would be XBRL based, a data flow from the most detailed level to the upper level is imaginable. Reporting to external parties like analysts in more frequent cycles is planned eventually, but stopped within Fortis to the lower priority at the moment. But Fortis waits at the moment, till a specification of XBRL's formula link is provided in order to have a common language, before they use it for internal reporting purposes. Without this specification, Fortis is afraid to be over and over again in the need to adapt the internal taxonomy. In addition to the common taxonomy and language, a common set of formulas is desired by Mr. Vanlaethem, which would also contribute to the validation of the documents and take XBRL one step further.

4.4.3 Costs of internal use of XBRL

So far, none of the interviewees could give a concrete estimation, how expensive a deeply embedded XBRL system could be. Mr. Snijders notes that within a bank the data is in stored in dozens different databases, which will make an implementation of XBRL very expensive, due to the high effort, banks have to pay in order to embed XBRL.

The level of difficulty of the technical integration mainly depends if it is used for internal reporting, receiving XBRL reports or if it is deeply embedded into the internal reporting systems. For the last option, a lot of business as well as technical knowledge and very specialized employees are required, as each company has a different General Ledger and the implementation has to be adjusted to the individual needs, as Mr. Vanlaethem notes.

4.4.4 Conclusion: XBRL in banks' internal systems

XBRL seems not to be very important for banks' internal systems, as all participants hesitate to use XBRL for internal reporting purposes. This gives the impression, that banks do not see a significant benefit of using XBRL yet; otherwise they would encourage a quick XBRL implementation into their internal systems. Mr. Staal says they are not planning to change internal systems within ING in order to use XBRL for internal reporting purpose.

Mr. Snijders does not see banks using their budget to extend the use of XBRL for internal purposes, as they focus more on the external side of XBRL and the internal preparation of receiving XBRL reports from their customers. Because of that, several experts consider XBRL just a communication tool.

The reason for the actual status might be that only a few solutions are available in the market and especially for huge information systems, like in banks, the implementation would mean huge expenses. Moreover several interviewees have doubts that XBRL might be strong enough for the purpose of quickly processing and storing huge amounts of data. As there are also other standards like RIXML already in the market, XBRL has tough competitors as a technology when trying to gain an outstanding role within banks internal information systems.

4.5 XBRL used for credit risk management within banks

4.5.1 Motivation for receiving reports in XBRL

Mr. Snijders sees the banks focusing more on the external side of XBRL by receiving XBRL reports from the clients, especially in the credit department. The opinion that XBRL contributes significantly to the credit department was shared among all interviewees. According to Mr. Ramin, XBRL can be used to approve or deny credits in a quick and reliable way with XBRL.

These XBRL reports are the basis for the credit granting process and to maintain the credit relationship and include yearly information about the customer, as mentioned by Mr. Dekker.

Moreover the participating banks recognized XBRL as a rising standard in the financial market, especially in the Netherlands and wanted to participate in the programme as this is the only way to improve their process efficiency and reduce operating costs, like the re-keying process. After all, even if it was a free choice to adapt to XBRL, the banks had to use the XBRL standard, as it was profitable from a business point of view. The detailed benefits are described in the next chapter.

Standardization plays a big role in the market, and is considered as very important for the success of XBRL. The benefits of standardization can only be used in the most efficient way, if all involved parties participate. This need and benefits for the whole economy were recognized by the banks, which was also an important factor. So the banks agreed on a common standard and founded a legal entity, which is going to take care of a common system for receiving XBRL reports by credit department customers according to the common banks specifications. From April 2010 on, the three major Dutch banks are going to receive reports in XBRL through this common system.

The SBR project plays an important role as well, as it was the starting point for the banks to really join this initiative. With the development from a paper based to electronically exchange, which is considered a natural process by Mr. Guust, important improvements for the market can be realized. Under the special direction of the Dutch State Secretary Frank Heemskerk an agreement was made that the three major banks are going to promote business reporting with SBR and XBRL. This should speed up the adoption of SBR and XBRL within Dutch enterprises. (Cp. www.pleinplus.nl, 2009)

4.5.2 Benefits of receiving reports in XBRL

As Mr. Gutte says that Rabobank aims to receive 50% of the reports in XBRL within the 1st year and 80% of the reports in XBRL in the 3rd year, an assessment of the costs and benefits seems very interesting. The business case is an attractive one for banks, according to Mr. Pasmooij. Also Mr. Vanlaethem mentions, there is no doubt within Fortis, that receiving XBRL will create value in the company. The more manual processes there are before in a bank the more benefits will be gained through XBRL.

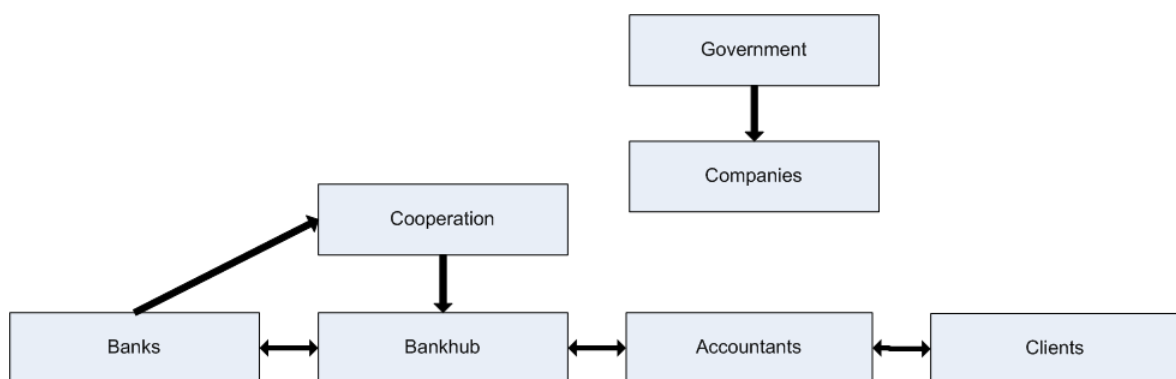


Figure 2: Financial Information Supply Chain as described by Mr. Staal

Three of the four interviewed bank managers consider XBRL as a relevant business case and already act according to their valuation right now by developing an XBRL system for receiving credits. Even though Fortis' main priority is not receiving of XBRL reports in the Netherlands right now, due to the integration with BNP Paribas, Mr. Vanlaethem is confident to join the initiative with Fortis very soon and follow the development carefully.

Less manual workload

If a bank has a manual process before XBRL, in which all reports have to be re-keyed a lot of manual workload can be eliminated, as those reports do not have to be rekeyed while moving them from paper into the banking computer system, as Mr. Dekker says. Mr. Gutte notes that as the re-keying process can be eliminated, manual workload is reduced and the data quality will rise.

Those changes can be confirmed by Mr. Dekker's observation: He refers to investigations in the United States, which found out, that approximately 30% of what is done manually includes one or more mistakes, often typos. The likeliness of typing errors in the re-keying process in the credit risk department is confirmed by Mr. Pasmooij. By using XBRL the rekeying-process is not necessary anymore. With XBRL the quality of information will rise and this information will be quick and easy machine readable, as mentioned by Mr. Pasmooij.

Increased efficiency

Moreover Mr. Dekker recognizes an increase of efficiency: As the data input is electronically, it can be processed within seconds and way quicker than before, as Mr. Pasmooij notes. Also the processed data is detailed than before. Investigations show that it took approximately 30 min for one report before XBRL. The amount of received annual reports for ABN AMRO is quite high (but less than 100000 reports each year) the efficiency of this process is increased significantly. This will improve efficiency and communication. Mr. Gutte agrees on this efficiency calculation: As the three majors banks, participating in the project have to process 150000 reports each year, assuming timesaving of around 30 minutes per report, an immense re-keying workload can be eliminated for those three banks. Not the whole 45 minutes of re-keying for each report can be accounted as saved time, as some analysis is also done within that timeframe, but 30 minutes of timesaving is considered as realistic.

Mr. Staal expects for ING also a reduction of the internal process costs, due to an update of the process definitions. This reduction is mainly based on fewer reviews, which are very time consuming and substituted by an automated system.

As Mr. Gutte mentions, Rabobank considers XBRL as a good business case in terms of direct and indirect financial benefits: Beside the financial benefit of fewer expenses for employees, this will enable more confidence and reliability of the data. This nonfinancial benefit may allow Rabobank using improved models, after data was collected for a couple of years. Mr. Staal agrees that first a big population of reports is required in order to improve the models. In his opinion this development will take a few years.

XBRL allows improved risk models

Afterwards both agree that the data quality will be improved significantly. This will offer the possibility to develop more advanced risk models, which allow a better prediction of risks. As affirmed by Mr. Staal, especially risk rated assets will benefit most by these improved models, which can predict risks more precise. Moreover, deeper analysis is possible, management information is more detailed and more financial figures can be retrieved. Mr. Pasmooij also mentioned that the improved data quality will allow better models, which are also very adaptive to the individual business needs, which will also contribute to a bank's success.

Next, less money for bankruptcy has to be hold back for solvencies or given to companies, which go bankrupt afterwards. In addition reports can be requested more frequently, as Mr. Gutte says which may prevent bankruptcies and allows keeping fewer solvencies. As banks can provide damage control, this should be in the interest of the customer as well. Moreover the speed will in-

crease, as more actual figures are available as noted by Mr. Pasmooij, which also contributes to the benefit of preventing bankruptcies. But one burden could be, that customers are afraid to provide more detailed figure in more frequent cycles.

These two factors, the improved models and also a more frequent retrieval allow banks to keep fewer solvencies for risk rated assets, which is far the most important benefit of XBRL according to Mr. Staal. In the past, the models were not so accurate and more capital than needed was kept for solvency, as there were not as detailed risk reports. By those more detailed reports, XBRL will have a serious impact to the business, as ING is able to use the equity for other business areas, which generate more profit, instead of keeping solvency in the lending business. In the future the credit risk process might move to a continuous monitoring process, as mentioned by Mr. Pasmooij.

Online real-time credit approval

According to Mr. Gutte and Mr. Staal an online real-time credit approval system is not considered as realistic. As Mr. Gutte says, it might only be imaginable for lending of a smaller amount of money, but as less profit can be made with smaller credits, the costs and effort to develop an online real time credit approval system are considered quite high. This may be useful for credits up to 125000 € but often selling agents of the banks still have to be send to the customer to make an analysis. Moreover it will not be an issue within the next years anyway, as it takes some years to collect data first in order to develop advanced models.

Mr. Staal also mentions an additional barrier for such kind of systems. He says, an online credit approval system is not considered as appreciated by clients: Especially small and medium sized enterprises consider borrowing of money an important step in their business and prefer to talk face-to-face to bank's sales agents, who can advice the customer as well. By that the level of trust is increased and the customer feels more comfortable taking a credit.

In contrast to the other bank managers, Mr. Dekker sees a potential in XBRL in order to automate the lending process. Nowadays ABN AMRO uses mainly non-program lending, in which an account manager has direct contact to the customer. This manual approval process should be substituted by program lending approval credits, in which credit is approved automatically based on XBRL reports. To achieve that, the automatic credit system has to be improved continuously. The goal is to raise the number of program lending to 80% over long term and allow receiving of reports and online, real time credit approval. This improved system would increase speed and quality and be compliant to Basel II requirements.

Benefits for the customer

Most probably the customer will benefit as well, by submitting the reports in XBRL to the bank. Far most important benefit will be the convenience that he can use the same report also to ask for credit from the bank as when he has to report to other institutions like tax office and the chamber of commerce. This benefit is only achieved in line with the Dutch SBR project

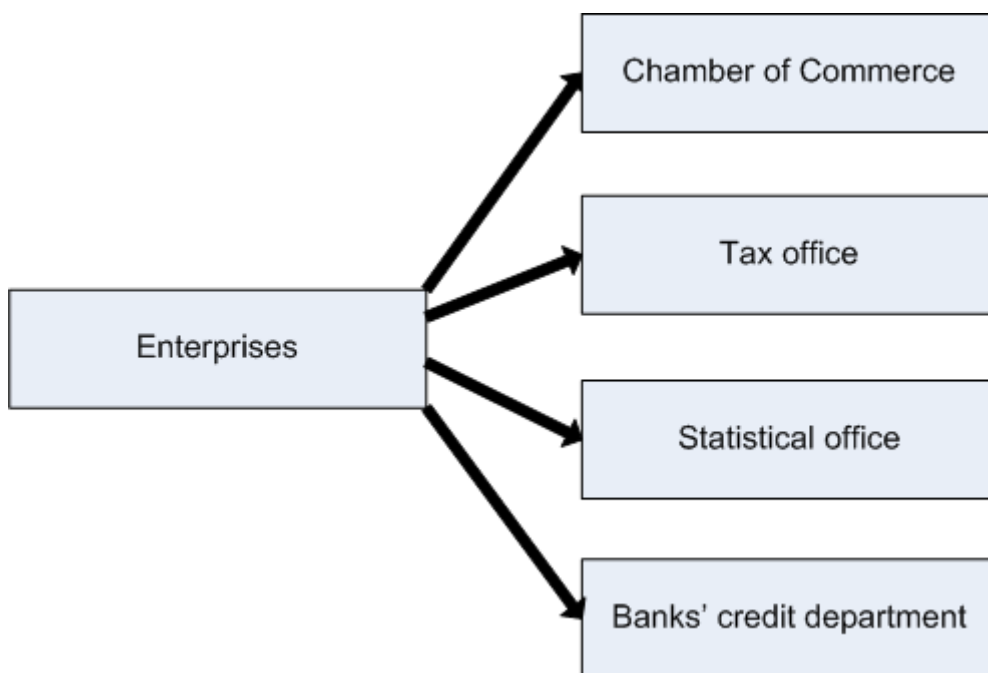


Figure 3: Reporting to several receiver based on XBRL and SBR

As reported by Cox (2008, p. 2) the reduction of burden is quite big. “This XBRL project is expected to save reporting companies 25% of their compliance costs. And it's already succeeded in cutting the number of reporting elements that companies have to keep track of from 200,000 to 4,500.”

But also the interest rate might decrease, according to Mr. Staal. But this decrease will not be extremely significant for the customer. Mr. Gutte explains the slightly lower interest rate as a result of the dropped operational cost component of the interest rate.

Furthermore, Mr. Staal expects a more detailed distinction between different customers is possible, as more information can be taken into account, which will make the lending interest rate fairer to the individual customers.

XBRL as a communication tool

Mr. Dekker wonders if there are any internal benefits realized, as XBRL is purely used as a communication tool to and from the outside. Important is to mention, the incoming reports have to be checked and approved to be valid, as well as the connection.

Also for Rabobank the main target areas of XBRL are the front side and the receiving of XBRL instances: Rabobank has not decided yet, if the data is stored in the XBRL format internally or transformed into the already existing banks format, as Mr. Gutte says. In the next 1-2 years, it will be most probably be transformed into the regular systems. To use XBRL internally, changes in the bank's ERP systems are required, but as this is a very complex process and not the highest priority of Rabobank, they do not put any effort in this internal usage possibility of XBRL.

4.5.3 Costs of receiving reports in XBRL

The bank managers outlined their plan to create a common bank hub, as a shared platform in order to receive XBRL reports. The three participating banks agreed on a common specification. According to Mr. Staal, the common bank hub will be an open, transparent and easy to use system. The banks decided to outsource the development to a third party. By that, it will be also easier for additional banks to join this initiative.

Outsourced XBRL hub for the banks

Outsourcing is considered as very handy and not too costly by ING, but Mr. Staal notes that he would appreciate it, if the government would have taken care of this hub. As Mr. Dekker mentions, ABN AMRO is very confident to use a system, similar to the governments system, which is already developed, proven as being secure and already used in the market for electronic data exchange, because this is considered as cheaper than developing an own XBRL data exchange system. Outsourcing is considered as being cheaper and quicker than a self developed system

By outsourcing ABN AMRO will not gain a deep knowledge, but focus more on its core activity, which is banking. Other parts, like software development, computer infrastructure is already outsourced and, so ABN AMRO will pay a fixed basis amount each year and a variable amount, depending on the amount of received reports each year. On this cost structure, a most probably fixed fee plus a variable amount, depending on the amount of received instances, Mr. Gutte agrees.

Internal handling of the XBRL reports

But besides this common hub, each bank has to take care individually, how to receive each of the reports internally and how to process these reports. After receiving the XBRL figures, the information is converted into ING's internal systems. From a technical point of view, the implementation is not considered as difficult or costly for ING, as Mr. Staal says. An important part of the internal receiving process will also be a validity check, as Mr. Gutte mentions, but it is not planned to ask for an additional auditor's approval, when there is no approval required for the paper report. So XBRL will not change this matter.

Cost shift within the banks

Within the banks, a small cost shift is expected. According to Mr. Gutte, a small shift from manual work to more analysis is predicted within Rabobank. Furthermore Mr. Staal expects within ING a cost shift from front and mid office staff to more back office and technology costs. But this is also a general trend, and is just facilitated by XBRL, as Mr. Staal mentions.

Tougher competition

Another aspect of the XBRL development for the lending department is that the competition between several banks might increase, as the customers can easily submit one report to all the competing banks as well, as described by Mr. Gutte. The bank with the best models, might gain market share and attract new customers, while the banks with not so advanced models might lose market share.

Nevertheless, according to Mr. Staal the market will be fairer and better for everyone. The question which bank can attract more customers can be answered, as the bank with the best risk models and the bank, which can make most money out of the balance sheet, will be able to offer lower interest rates than the competitors.

4.5.4 Conclusion: XBRL used for credit risk management

The receiving of XBRL reports by the bank is a very good example of a very promising solution based on the XBRL technology within the banking industry. All interviewed bank managers are convinced that XBRL is going to contribute to the success of their credit department.

Their motivation is not only a pure financial one, but also they recognize XBRL as a rising standard within the financial industry and so they want to participate as this is the only way for them to increase efficiency and reduce internal process costs. Standardization plays also a big role

for the financial industry and a good facilitating example is the Dutch SBR project which uses the XBRL technology as its base in order to simplify reporting for enterprises.

From a financial point of view, the banks see several benefits enabled through receiving of reports in XBRL. First the manual workload is reduced, as the re-keying process can be eliminated, which is known to be a process likely for typing mistakes. With XBRL the data will be quick and easy to be machine readable and be able to be processed, which will increase the efficiency and speed of the process.

Beside this direct reduction of internal process costs indirect financial benefits can be gained through an improvement of risk models, as now more data is available and also able to be processed within seconds. By that risks of lending can be predicted more accurately and a deeper analysis can assure that less money is given to bad creditors. As also more frequent reports move the process to a more continuous monitoring one, bankruptcies can be prevented. As those two effects allow banks to keep fewer solvencies, money can be used in more profit generating areas and create an additional benefit for banks, while minimizing the required amount of money to keep as a backup in order to fulfill Basel II requirements.

If an online real-time credit approval system might be beneficial for banks will be stressed in the future. On the one hand, it might allow a quick way of approving credits and increasing the percentage of automated credit processing within a bank, but on the other hand, first a big population of data is required and the development of models might be expensive and only possible for smaller enterprises, which unfortunately cannot generate as much credit as bigger enterprises, but those often need a more business approach by looking also on other figures than the financial history

The banks' clients will benefit by the convenience of reporting and asking for credit based on the same reports in one technical language: XBRL. The interest rate might drop slowly due to reduced operational costs within the banks and be fairer according to the individual situation. Also the clients might appreciate a damage control by banks in case they are in danger of bankruptcy.

Implementation costs on the banks' side are not considered as high, same for the technical challenge. The outsourced bank hub guarantees a transparent, open solution which is open to new joining banks as well. This is a well thought move of all the banks, even though competition might be increased as customers can easier compare the credit fees.

5 Conclusion

This is the last chapter of the master thesis and will summarize the research approach, outline the most important steps and the findings. A clear answer to the research question is given and the significance of this research for the knowledge in Economics & Information Communication Technology is shown.

5.1 Implications of findings

In order to give an appropriate answer to the main research question an examination of the literature was done first in order to present a balanced status quo of the XBRL development. It was found out that a literature gap exists in the area of XBRL in the financial services industry. No cost and benefit assessment and no special solutions for the banking industry were assessed in detail. It is the goal of this master thesis to find a proper answer to the question, if XBRL will create an economic value to the banking industry. But first, answers to the sub research questions are given:

What is XBRL?

XBRL is seen as a very promising technology standard in the literature. As governments and regulators facilitate the development, XBRL gains more and more attention in the financial market, e.g. with the Dutch SBR project or after mandatory XBRL filing in the United States became law by the SEC. Nowadays XBRL can be called a standard for electronic exchange of financial information on a worldwide level.

What are the drivers and barriers for XBRL?

The driving forces behind XBRL are the natural movement from paper-based reporting to an electronic reporting, which is a natural development, but XBRL facilitates this development and speeds it up.

Moreover the rising need for financial information and increased transparency are driving forces within the XBRL movement. With XBRL financial information are easier accessible, able to be processed and compared, which will easier reveal risks and grievance within the financial industry.

Another driver is the reduction of reporting burden, as perfectly demonstrated with the SBR project in the Netherlands, which will reduce the burden for enterprises significantly.

Especially for financial institutions like banks, there is not more than the effort, required for compliance, when it comes to external reporting with XBRL. The biggest barrier is that XBRL

is –when applied in the simplest way: the bolt-on approach – just an added layer of activity without any contribution for the preparer. As a receiver of XBRL reports on the other hand, banks see a profitable business case, which will be pointed out later.

What is the potential of XBRL for the internal accounting?

In the literature and scientific magazines the scenario of XBRL based internal accounting systems was positively promoted. This might be the case over long term for smaller companies with less complicated accounting systems, but for major banks, with huge information systems, a deeply embedded XBRL system does not seem profitable at the moment or the near future.

Banks prefer to use their own system for internal purposes in these days, as a change would require a lot of effort and the benefits are not considered as high enough. Because of that XBRL can never facilitate an information systems change within the banks, which does not mean that XBRL will be supported by future bank systems, when those IT systems are updated in a natural cycle, due to more important reasons besides XBRL.

What information is especially required in the financial market?

Especially in these days a lack of information within banks can be observed. Banks have a continuous demand of accurate and detailed financial information in order to do their business while keeping minimal risk rated assets.

XBRL helps to provide this information when banks receive reports in XBRL by their clients in the credit department. XBRL is providing those figures in a higher level of detail, easier retrievable in more frequent cycles and fully machine readable. This is a major contribution of XBRL for banks in order to run a risk minimizing business with improved models.

What are the costs and benefits of XBRL in the financial services industry?

The answer to this question depends of course on several factors and cannot be generalized for all banks and throughout all possible application areas. But in general the following conclusion can be given, according to the findings:

1. XBRL is contributing to the economy by increasing transparency and efficiency in the financial market and establishing an international standard for electronic data exchange
2. External reporting with XBRL does not generate any value for the preparing financial institutions, but transparency in the financial market can only be gained, if all companies report in XBRL.

3. Because of immense costs to change the internal systems, internal reporting with XBRL is not profitable for banks in the near future and ignored at the moment because of that. High implementation costs and high effort for an individual implementation are too high barriers for a quick system change with relatively small benefits.
4. XBRL is a tool for communication between business entities in a standardized way and not a tool to process data internally.
5. When receiving XBRL reports in the credit department, XBRL can contribute to a more profitable lending business as it enables more detailed models which minimize risks and reduce the danger of bankruptcies. As a consequence fewer solvencies have to be kept and automatic lending systems may be developed, reducing the manual workload and increasing efficiency and profits.

5.2 Limitatings of the work

This study was examining the influence of XBRL in Dutch banks in great detail. By interviewing managers of all four major banks in the Netherlands a deeper analysis of their experience and views on XBRL was possible. Nevertheless, in the Netherlands are different regulations and governmental XBRL projects than in other countries in place. The SBR project cannot be found in many countries. Because of those different preconditions for companies considering XBRL, the findings and conclusion might be different in other countries and should studied for individual cases in the same deep level of detail like in the Netherlands. Even though the research is focusing on the Netherlands, it is also appreciable as a clear conclusion is possible within the limited research area.

Moreover the technological progress is moving on rapidly, but it still takes time for companies to apply real XBRL solutions. So far none of the banks has tried to a deeply embedded XBRL in their internal financial information systems. Because of that the assessment of costs and benefits for internal purposes is based on the expectations of the bank mangers. Also the exact quantitative assessment of the receiving of XBRL reports within the banks' credit department is only possible after this system was implemented.

5.3 Recommendation for future work

Due to the limitations of the research, recommendations for future research can be made:

After the systems to receive XBRL reports within the credit department of the Dutch banks are in place, a quantitative assessment is possible and worth to execute. But an external academic assessment might be difficult as banks are reluctant to give internal information about profits and business cases to external researchers.

As already mentioned, actual laws and initiatives by the regulators and local governments play a major role for the success of XBRL. As there will most probably a development in the future, it might be possible that XBRL will pay off for more companies and banks. Especially for external reporting leverage effects might be observed in the future, which should be assessed from an economic point of view. As local regulations are so individual the research should be done for single countries to ensure a valuable conclusion.

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7 Attachments

Interview report Mr. Johannes Neumann (PricewaterhouseCoopers)

Interview report Mr. Kurt Ramin (IASCF)

Interview report Mr. Igno Dekker (ABN AMRO)

Interview report Mr. Gutte Juust (Rabobank)

Interview report Mr. Paul Sniijders (XBRL Nederland, Semansys)

Interview report Mr. Paul Staal (ING)

Interview report Mr. Jan Pasmooij (XBRL Nederland, NIVRA)

Interview report Ralfi Vanlaethem (BNP Paribas Fortis)

Report 19th XBRL conference

Report: Interview with Johannes Neumann (3rd June 2009)

Johannes Neumann is Senior Manager within PricewaterhouseCoopers and an XBRL expert.

1. Motivation/Barriers to use XBRL

The driving forces encouraging XBRL are the expectations towards the European Union to reduce bureaucracy. But moreover more companies have to be fascinated by XBRL, in order to turn their motivation towards XBRL into actions.

Companies do not ignore the benefits of XBRL, but the costs are considered as too high to start XBRL adoption. Moreover companies are afraid to be the first company implementing XBRL, which is seen as a risk as not so many solutions are available yet. Moreover there is no stable community for XBRL in the opinion of Mr. Neumann, as a first version of XBRL was rejected.

ERP software providers have a big potential to integrate XBRL, but are also afraid of disadvantages for their own business, which is a barrier for the success of XBRL.

2. Costs & benefits of XBRL

Benefits like increased speed, transparency, and improved audit trail were confirmed by Mr. Neumann., but he does not see any added value by the bolt-on approach. There are few companies which use XBRL integrated in the application level to generate a consolidated annual financial report for the whole group, like e.g. Thyssen Krupp. The use of XBRL for internal reporting is mainly ignored by big enterprises, but smaller and medium sized enterprises, recognized the potential of XBRL for their internal reporting, by using a common, up-to-date database for reporting, which can create value for a company by decreasing costs. Bigger companies wait for the development of XBRL solutions and hesitate, while XBRL is seen just as added layer of work. The outsourcing of XBRL would mean that a financial report is converted to XBRL afterwards by an external party, which only increases costs and would be the worst possibility imaginable in Mr. Neumann's opinion.

Mr. Neumann would recommend companies to adopt XBRL, also for internal purposes, which can create value. The benefit of using XBRL to create management reports or other internal information could be huge.

Mr. Neumann does not see that XBRL will be used in risk management or used in continuous monitoring within the near future, as it requires XBRL to be deeply embedded into the ERP systems of the company. If XBRL will be able to be adjusted to the internal processes will be an important question. But in case, XBRL is integrated into the company's internal systems, the consolidation of financial data would be way easier than without XBRL.

3. Success factors of XBRL

A lot of different stakeholders are involved, when it comes to make XBRL successful. As an auditor, Mr. Neumann sees that auditing companies see a benefit in XBRL and cannot imagine that XBRL will be a success without the involvement of the auditor. Moreover he considers commercial banks as an important party, as they can play a big role asking for XBRL reports in order to grant credit to companies.

Governments and regulators should be committed to financial reporting in XBRL. Besides software companies should develop solutions. Only with these interest groups, XBRL can be successful.

4. XBRL from an auditors point of view:

Mr. Neumann would encourage a mandatory audit of XBRL reports by law, but also sees a lot of new processes coming up, if XBRL report auditing is mandatory, which would increase costs and add a layer of complexity for the company. An automated audit using tools which could process the audit automatically (at least some areas) might be imaginable, but requires the company to have all systems in a standardized XBRL-friendly environment.

Report: Interview with Kurt Ramin (13th July 2009)

Mr. Kurt Ramin is now an adviser for the XBRL team within the International Accounting Standards Committee Foundation as well as the Emeritus Chairman of the XBRL international steering committee. In his previous position as a partner for PricewaterhouseCoopers for 15 years, he gained a lot of knowledge on accounting and the financial market. This interview was much related to the financial market and financial institutions.

1. Drivers/Motivation & Barriers for XBRL: What are the drivers and barriers, when it comes to implementing XBRL?

Mr. Ramin sees the government and regulators as the main initiators of XBRL. Companies have less motivation to adapt and use XBRL in comparison to the government, supervision authorities (e.g. SEC) and tax offices. The last mentioned entities have the highest motivation to create a new standard and ensure reliability, speed and accuracy of data.

Within banks it is only important for the credit department and within insurance companies there is little interest in XBRL. In the credit department it may be used to approve or deny credits in a quick and reliable way. Especially re-typing can be replaced by using XBRL. Data exchange between banks and internally in banks is done with RIXML. RIXML is based on XML as well and allows electronically exchange of data. As banks use this data standard they do not see the need to change it to XBRL.

The biggest weakness of the financial market is that there are little general standards and interbank collaboration is not strong enough. From a supervision point of view, XBRL could help to define a common standard.

2. Costs & Benefits of XBRL: What are the costs and benefits using XBRL?

The costs are mainly the initial costs and not considered as very high. Enterprises have to train employees and implement XBRL into their existing systems to report in XBRL, which is not very costly. Moreover companies are more transparent to competitors, but this will be a benefit for the banking systems as it allows more transparency.

Mr. Ramin confirms all the promised internal benefits like speed, transparency and improved audit trail. But he sees the major benefits added to the regulators. The benefits when it comes to apply XBRL in the global ledger for internal accounting are imaginable, but still far away, due to the massive effort companies have to make. There is a potential for internal accounting, but it has to be implemented in an economical way.

Mr. Ramin points out that banks work in general with very old legacy systems. Those legacy systems are far away from the state of the art technology and are lagging behind, when it comes to processing data. SAP and Oracle do not have a huge market penetration in banking. It would be very complicated for banks to shut down these systems and convert the data into new systems. This makes it very costly to implement XBRL in a deeper level of the systems as banks have their own and very individual systems.

3. Success factors, recommendation, XBRL in the future: What are the critical factors for the general development of XBRL?

The reporting domain is international not very grown together. There is no common standard for insurance companies, for banks there are few, but no general standards. The valuation of assets is not regulated at all. Besides Basel II there are no real regulations for banks. This makes it for XBRL more difficult. Mr. Ramin points out that XBRL is not complicated, but the accounting is. If IFRS would be easier, XBRL would be easier as well.

The major success factors are good taxonomies and a good usability: It will be difficult to agree on a common taxonomy as the supervision market is very diverse, even between different US States and different European states. The taxonomies should be built by the regulators and best would be a common basic taxonomy.

Leading banks should take initiative, but at the moment the banks' focus is on the financial crisis instead of strategic technology investments. There is a lack of data within banks, as nobody knows exactly, where the toxic assets are; otherwise the current financial crisis would not have such a big impact.

XBRL will only be a success if all required interest groups participate in XBRL. To achieve this goal, some companies have to take the lead. As an example Mr. Ramin notes the DATEV in Germany.

From an auditing point of view Mr. Ramin see no big problems. Moreover he thinks that it is important, but not sufficient to let auditing companies ensure the correctness of the XBRL reports.

4. XBRL in Finance: What is the role of XBRL for financial institutions?

The problem within banks is that banks hold assets, but nobody knows how much risk is in each asset. The quality of risk management within banks is not sufficient; otherwise they would not buy such toxic assets. Nobody knows where the risk is. Furthermore, the financial information systems supply chain is outdated as 70% of the data has to be manually re-keyed into the systems. With XBRL this would be easier.

Another good way of using XBRL within banks is the Dutch example of granting credit. Several Dutch banks want to complete the implementation by the end of 2009 to ensure that credit reports can be automatically be delivered via computerized exchange processes to the participating banks.

Report: Interview with Igno Dekker (17th September 2009)

Mr. Igno J Dekker is working as a business architect for ABN AMRO. In his position he is responsible for the communication from the outside to ABN AMRO by using XBRL. (ABN AMRO also reports to the Dutch national bank in XBRL, but this is the responsibility of another department within ABN AMRO)

1. Motivation/Barriers to use XBRL

Since 2005, there is the possibility that companies in the Netherlands submit one common report electronically to the tax authority, statistics department, etc. Two different annual reports (one on commercial basis and one on tax basis) were replaced by one common report. The government was the main initiator for this campaign with the goal, to reduce the administrative costs and burden for organizations.

ABN AMRO and Rabobank were involved in the development of a definition for the banking sector since 2007: A bank-taxonomy was created. This bank taxonomy included special information and more details, as banks require more information, for example for their risk management, than the tax office.

From 2Q 2010 (1st April 2010) on, ABN AMRO will have an XBRL system, which is going to receive annual reports from its customers. These reports are the basis for the credit granting process and to maintain the credit relationship and include yearly information about the customer.

The Dutch authorities see XBRL as a safe instrument, to transfer data via an internet connection. This was the trigger for ABN AMRO, to use XBRL for receiving reports through a secure internet connection by using the XBRL as a standard. As it was a fact for ABN AMRO, that XBRL is the (future) language for international and global communication between business entities like banks, accountants, tax authorities, etc, as the market already uses XBRL to exchange information with other companies, accountants and banks. In Mr. Dekker's opinion there is not a single law, which forces ABN AMRO to ask their clients for those reports in XBRL. But as XBRL became a standard, especially in the Netherlands, it was not a free choice, to implement XBRL. Using standards, like XBRL, is the only way to reduce costs for ABN AMRO.

Nevertheless there is so far there is no attempt to use XBRL for internal purpose within ABN AMRO. XBRL is seen as a pure communication tool for information transfer from and to ABN AMRO.

Benefits of XBRL

By receiving those annual reports, two main changes can be observed:

First: So far the reports are received on a manual basis and those reports have to be re-keyed, to move them from paper into the banking computer system. Investigations in the U.S. found out, that approximately 30% of what is done manually includes one or more mistakes, often typos. By using XBRL the rekeying-process is not necessary and the data quality is improved.

Second: The efficiency is increased. As the data input is electronically, it can be processed within seconds. Investigations show that it took approximately 30 min for one report before XBRL. The amount of received annual reports for ABN AMRO is quite high (less than 100000 reports each year), the efficiency of this process is increased significantly. This will improve efficiency and communication.

Mr. Dekker wonders, if there are any internal benefits realized, as XBRL is purely used as a communication tool to and from the outside. Important is to mention, the incoming reports have to be checked and approved to be valid, as well as the connection.

By using improved XBRL communication, the goal is to increase the percentage of program lending approved credits (automatic approval of credit based on XBRL reports; automatic credit system has to be improved (continuously) for that), in comparison to the nowadays mainly used non-program lending (account manager has direct contact to the customer; manual approval process). The goal is to raise the number of program lending to 80% over long term and allow receiving of reports and online, real time credit approval. This improved system would increase speed and quality and be compliant to Basel II requirements.

2. Costs of XBRL

ABN AMRO is requesting for proposals in the Dutch market to outsource this XBRL communication process to a third party. By outsourcing ABN AMRO will not gain a deep knowledge, but focus more on its core activity, which is banking. Other parts, like software development, computer infrastructure is already outsourced and ABN AMRO is very confident to use a system, which is already developed, proven as being secure and already used in the market for electronic data exchange, because this is considered as cheaper than developing an own XBRL data exchange system. Outsourcing is considered as being cheaper and quicker than a self developed system, so ABN AMRO will pay a fixed basis amount each year and a variable amount, depending on the amount of received reports each year.

3. Success factors of XBRL, especially standardization

The goal of ABN AMRO is to receive 80-85% of the annual reports in XBRL by the end of 2012. ABN AMRO will promote this to accounting organizations as well as to the commercial customers (end users). Those commercial customers will have several benefits by using XBRL, as they can exchange and send data to different parties (tax authority, banks, chamber of commerce, statistics agency) from one administrative point. Moreover online real-time credit approval will make information transmission in XBRL very beneficial for businesses, so ABN AMRO assumes that their system will be successfully accepted by the end users.

Most important issue to send information electronically is standardization, as a starting point for electronic data exchange. Therefore standardization is a crucial success factor for the success of the technology XBRL.

As XBRL is a common standard in the Netherlands, used by tax authority as well as chamber of commerce, XBRL is seen as the standard of electronic data exchange. As receiving data from the customers is a crucial part of ABN AMRO's business, there was no doubt to implement XBRL for ABN AMRO and it being a standard will encourage more and more companies to use XBRL as well

This standardization process was initiated by the Dutch government in order to reduce reporting burdens. A lack of standardization is a big problem in a lot of business like banks, as well as international retail organizations or the airline industry. If there is the feeling, that a standard is required, a positive development will be asked by the market. Mr. Dekker expects that soon more XBRL solutions will be offered by the market.

Report: Interview with Paul Snijders (28th September 2009)

Mr. Paul Snijders is Vice Chair of XBRL Netherlands and the CEO of Semansys Technologies. He is co-founder and board member of the Dutch jurisdiction of XBRL International and one of the driving forces behind the global adoption of XBRL. His company Semansys develops XBRL software tools (e.g. Semansys Taxonomy Viewer/Builder or the Semansys XBRL Reporter, xbrlOne SaaS web services platform) and gives strategic advice to companies and governments, interested in XBRL)

5. Motivation/Barriers to use XBRL

Mr. Snijders sees the governmental programs as the main driver for XBRL within the next two years. With this XBRL program, from a regulator point of view – the efficiency of reporting should be increased. As enterprises can use the same database to create similar reports to ask commercial banks for credit, report to the chamber of commerce and other Dutch authorities, a more efficient reporting process is created. As a result a lot of companies use XBRL, as they are required to use it, in order to run their business and fulfill the legal requirements.

In about two years, when this processes might be considered established, companies will see their own advantages of using XBRL and it is likely that larger companies use it also for internal reporting purposes in their organization. But the driver is not just cost saving.

6. Costs & Benefits of XBRL

Mr. Snijders does see advantages for banks by using XBRL right now. And he does not yet see banks using their budget to extend the use of XBRL for internal purposes, as they focus more on the external side of XBRL and the internal preparation of receiving XBRL reports from their customers. Maybe there is currently no internal benefit for banks using XBRL, Mr. Snijders notes.

The main benefits will be that the process is more controllable, auditable and that the reporting process is a better managed one, which is a major benefit. Another benefit is that with XBRL automated reporting processes from small and medium sized enterprises (SME) to banks are possible. Also the reporting from banks to the central bank is managed in an improved way. Also some of cost saving might be achieved.

For public, global, private companies XBRL is a good way to improve their exposure on the stock market, by providing better information to all shareholders and analysts. Especially the comparability in the market will be increased.

Most of the value generated by XBRL will be achieved by improved communication between business entities, also some internal cost saving, improved audit and control.

As stock quoted companies need to be audited in contrast to SMEs, banks might ask them for a confirmed and audited report, but not if the credit is low. Rating agencies and other public rating sources might have easier access to companies' financial data, which would increase transparency and open the market.

The costs of implementing XBRL vary on the complexity of the existing system. If it is an easy, straight away system, the costs for a corporation might be between 10.000€ and 30.000€ for an easy XBRL approach. For extremely complex systems, as many banks have, with data in dozens of different databases, it will require more investment to deeply implement XBRL.

The bold-on approach will just result in additional costs, an extra layer of activities and is considered as a dead end street by Mr. Snijders. The right approach would be to implement XBRL on the system level, and implement XBRL into the code system, where the data is and create the right connections and map the data to the XBRL definition.

7. Success factors, recommendation, XBRL in the future

Different interest groups play different roles in order to make XBRL a success: After the governmental initiative, it is time for the enterprises to adopt XBRL, which has to be encouraged by the regulators.

Some accounting firms are active, but the big CPA firms do not see a big benefit yet. As revenue generation is crucial to accounting companies, they consider the possible revenue generated by XBRL as not so high. Some software companies are active enough, but some other still hesitate to develop XBRL solutions, even though small companies might ask for XBRL modules and web services very soon.

Another success factor is to have a common taxonomy, which is crucial, as a correct data definition is needed. The usability also has a big impact for the success of XBRL.

As XBRL is a global standard in a single language, and the only one of this kind for financial reporting. As there is no other standard, XBRL leads the way. But a burden could be that many organizations use old standards, which are not compatible with XBRL.

Report: Interview with Guust Jutte (9th October 2009)

Mr. Guust Jutte is working within the department of Rabobank Nederland dealing with the development of products for small and medium sized enterprises. In his team he holds among others the responsibility for special finance products and XBRL.

8. Motivation/Barriers to use XBRL

The SBR (Standard Business reporting) project, initiated by the Dutch government, was the reason for Rabobank to join the initiative and use XBRL inside Rabobank. The SBR project aims to reduce the reporting burden for enterprises, as they can use one report for reporting to tax office, statistical office and banks. Rabobank saw the benefits for all participants in the whole reporting chain and joined.

Rabobank will receive reports electronically and realize benefits by that as well, which will be explained in the next chapter of this report. On 9th September 2009, during a conference with Dutch banks and the government, Rabobank agreed that receiving of XBRL instances should be working from April 2010 on. The government has already a portal for XBRL reports, but commercial banks are not allowed to use this public owned technology for commercial purpose. Banks have commonly agreed on a specification, requested for proposal by software companies to develop a new system, which is basically the same like the governmental one. So this legal entity of the banks, share this XBRL system. Only with this common system, which is equal to the government's portal, a standard within the market can be established.

Only by joining this initiative Rabobank was able to realize benefits as well, even though it was a free choice to adapt XBRL. Mr. Jutte notes that only if everybody in the market uses the same technology, bigger benefits in the chain may be realized. As the development from paper based to electronically data exchange is a natural development and everybody is convinced, that XBRL is the technology of the future, Rabobank did not hesitate to join this initiative.

9. Costs of XBRL Benefits of XBRL

Rabobank considers XBRL a good business case in terms of direct and indirect financial benefits: As the re-keying process can be eliminated, manual workload is reduced and the data quality will rise. Beside the financial benefit of fewer expenses for employees, this will enable more confidence and reliability of the data. This nonfinancial benefit may allow Rabobank using improved models, after data was collected for a couple of years. These improved models may allow a better prediction of risks, less money will be given to companies in danger of bankruptcy, and this will offer fair prices to customers. Moreover fewer solvencies have to be kept, as risks are assessed in

more detail. The target is that 50% of the reports are received in XBRL within the 1st year and 80% in the 3rd year.

In addition reports can be requested more frequently, which may prevent bankruptcies and allows keeping fewer solvencies. As banks can provide damage control, this should be in the interest of the customer as well.

As the three majors banks, participating in the project have to process 150000 reports each year, assuming timesaving of around 30 minutes per report, an immense re-keying workload can be eliminated for those three banks. Not the whole of the average 45 minutes of re-keying for each report can be accounted as saved time, as some analysis is also done within that timeframe. For the customers this might result into slightly lower interest rates, as the operational cost component of the interest rate will be reduced.

Costs of common platform will most probably fixed fee + variable amount, depending on the amount of received instances. Within Rabobank no big shift within the costs is expected, but a small shift from manual work to more analysis is predicted.

Competition might increase between the banks, as one report can be send easily to all the competitors as well. The bank with the best models, might gain market share and attract new customers, while the banks with not so advanced models might lose market share.

Changes within Rabobank

Besides the common bank XBRL platform, Rabobank has to take care to receive reports from this common platform and process the reports internally. A validity check will be part of this process, but the need for an auditor's approval is not planned and not depending on the way, the report is received.

The main focus of XBRL for Rabobank is the front side, and to receive all those instances. Rabobank has not decided yet, if the data is stored in the XBRL format internally or transformed into the already existing banks format. In the next 1-2 years, it will be most probably be transformed into the regular systems. To use XBRL internally, changes in the bank's ERP systems are required, but as this is a very complex process and not the highest priority of Rabobank, they do not put any effort in this internal usage possibility of XBRL for now.

Online real-time credit approval is not considered as realistic by Mr. Jutte. It might only be imaginable for lending of a smaller amount of money, but as less profit can be made with smaller credits, the costs and effort to develop an online real time credit approval system are considered quite high. It will take some years, to collect data and develop advanced models, which may be

useful for credits up to 125000 € but often selling agents of the banks still have to be send to the customer to make an analysis.

XBRL might be useful to standardize the internal reporting to the CFO, as this reporting is quite diverse at the moment. A common reporting guideline, like with an XBRL taxonomy might be useful, but it might be easier to do this with some other technology as well. As it is most important to keep the actual systems running, a change to XBRL internal reporting might cause problems, which have to be avoided within a running bank.

General economy

XBRL might increase transparency in the market, if all players in the market, including government, banks, and administrative offices agree on XBRL as a standard. Then comparability is increased, also competition in the market and whole economy will benefit after all, of a more transparent and fair market. The reduction of cost in the whole chain will also contribute to the general economy.

10. Success factors of XBRL

Main success factor for XBRL in general is the acceptance of the market. The challenge is to convince the market, the entrepreneurs of the benefits, as they do not see the benefits right away. Biggest burden is the change resistance and the time it takes to convince all participants in the market. To come over this burden, Mr. Jutte sees that the government is mainly responsible to communicate XBRL within the market, as they started this initiative.

As XBRL is a nice way to express data, increases transparency in the market and is an open standard, it has the potential to become a worldwide standard. Even though, different taxonomies may be used, the technological background will remain XBRL. This will ensure worldwide comparison.

Report: Interview with Paul Staal (12th October 2009)

Mr. Paul Staal is working as a Business Process Manager for Domestic General Lending Products within ING Group. He is the Portfolio Manager of small business entities (SBE) and monitors and helps out with risk modeling, management information and processing for lending to SBEs (business facilities up to 1 Million €).

1. Motivation/Barriers to use XBRL

According to Mr. Staal, there were no laws forcing ING to adapt XBRL. Nevertheless, from a business point of view, ING could not avoid using XBRL in the Netherlands, as the XBRL business case is considered to be profitable for ING.

At the moment, ING already uses information from the chamber of commerce in order rate every Dutch company ahead. A credit request can immediately be answered for any SMEs with the amount of money available for a credit. With XBRL reports, the data quality will rise and only because of this, improved models will contribute to ING's lending business

As ING already used information from the chamber of commerce and mapped those information into the own systems, ING was not doing so much manual re-keying, the re-keying process was not an issue to eliminate. The motivation was mainly, that more detailed models can be created and information, e.g. value of property can now be observed in more frequent cycles.

The benefits of XBRL also depend on the size of the customer. One small company does not generate as much profit for ING as a bigger company, but as smaller companies are 80% of ING's lending customers, an automated system will definitely pay off. So it is a very good business case for SMEs, even if only process costs are considered. For business banking as well as large enterprises the business case is not as good, as ING focuses there also on nonfinancial figures while using a more commercial approach, like considering the goodwill.

2. Benefits

By using XBRL the data quality will be improved, which offers the possibility for more advanced risk models. But a big population of reports is required in order to improve the models. This development will take a few years. Especially risk rated assets will benefit most by these improved models, which can predict risks more precise. Moreover, deeper analysis is possible, management information is more detailed and more financial figures can be retrieved.

Far most important benefit will be that fewer solvencies have to be kept for the risk rated assets. In the past, the models were not so accurate and more capital than needed was kept for solvency, as there were not as detailed risk reports. By those more detailed reports, XBRL will have a

serious impact to the business, as ING is able to use the equity for other business areas, which generate more profit, instead of keeping solvency in the lending business.

In addition, ING will update the process definitions, which will reduce the internal process costs. This reduction is mainly based on fewer reviews, which are very time consuming and substituted by an automated system. Furthermore, more detailed distinction between different customers is possible, as more information can be taken into account, which will make the lending interest rate fairer to the individual customers.

By submitting the reports in XBRL to the banks, the customer will benefit as well: Besides a reduced interest rate, the convenience, that the enterprise can use one report from one data source for several purposes (tax office, chamber of commerce, banks) will be more important

It is not planned to use XBRL for internal reporting purposes. Internal systems will not be changed, as XBRL is considered as a little bit old and not so sophisticated by Mr. Staal. XBRL will primarily be used for receiving the reports.

An online credit approval system is not considered as appreciated by clients according to Mr. Staal. Especially SMEs consider borrowing of money an important step in their business and prefer to talk face-to-face to bank's sales agents, who can advise the customer as well.

3. Costs

The common bank hub will be an open, transparent and easy to use system. Outsourcing is considered as very handy and not too costly by ING. Mr. Staal notes that he would appreciate it, if the government would have taken care of this hub.

After receiving the XBRL figures, the information is converted into ING's internal systems. From a technical point of view, the implementation is not considered as difficult or costly for ING. Most probably there will be a cost shift from front and mid office staff to more back office and technology costs. But this is also a general trend, and is just facilitated by XBRL, as Mr. Staal mentions

The competition in the market will be increased, tougher, but in the end fair and better for everyone. The question which bank can attract more customers can be answered, as the bank with the best risk models and the bank, which can make most money out of the balance sheet, will be able to offer lower interest rates than the competitors.

4. Success factors of XBRL

The government has the biggest impact and is considered as the most important interest group for the success of XBRL, as without the government's support the success of XBRL is way more difficult to achieve. The government benefits as well of improved data quality and may fine companies, which are not compliant with the requirements.

Next relevant interest group is the banks, which have to power to only give credit, when reported in their requested standard, which is XBRL. Also the accountants and intermediaries have an impact on the success of XBRL, and it is maybe a challenge for them, to connect the enterprises to the new systems. Some of the Dutch accountants are reluctant and other more advanced to use XBRL. As the banks will use a bank extension which will be attached to the tax office taxonomy, the reports are very similar to each other.

Mr. Staal predicts that XBRL will have a serious impact within ING in the next three years. He expects that 80% of the Dutch companies will report in XBRL and considers the international development of XBRL very interesting. For the Dutch XBRL approach, ING was not able to use its experience from the XBRL approach within ING Belgium. Mapping on the other hand is possible and required for international comparison, as long there is no common international banking standard.

In case the Dutch approach is successful, and XBRL will become a worldwide standard, this process may be rolled out in other countries, but this cannot happen, without the support of the local government.

Report: Interview with Jan Pasmooij (16nd October 2009)

Jan Pasmooij is the chairman of XBRL Nederland. Moreover he is the Manager of the ICT Knowledge Center within the accounting firm NIVRA. In his positions he shows great knowledge and experience of XBRL, especially within the Dutch market.

1. Motivation and drivers for XBRL

In the eyes of Mr. Pasmooij, XBRL is based on XML and designed especially for the exchange of business information. There are several drivers which let XBRL rise up.

XBRL is a technology to facilitate electronic exchange, especially between businesses, but also supports the semantic level to standardize data and harmonize information. Together with IFRS, as a worldwide financial reporting standard, XBRL is able to standardize and facilitate the worldwide exchange of information. Through XBRL information is electronically and worldwide available, which is only possible with XBRL. Furthermore the information is able to be processed electronically.

The main users of XBRL are the regulators, as they are in the position to mandate, drive this and maintain this development. A paper-based supply chain is moved to XBRL often by initiatives and laws by the government. The government does so, first due to increase transparency, quality of information, like in the US mandated by the SEC. Second reason is cost saving, by lowering the administrative burden, e.g. shown in the Netherlands with the governmental initiated SBR project.

Big companies, like banks see right now no reason to use XBRL voluntary, as they do not see any value added. Instead they see an extra layer of activity in their reporting process, which results in additional costs. Most of the time, the only driver is compliance. The motivation might change, if other stakeholders ask for XBRL reports, which is not the case yet, so there is no big incentive. Another reason for banks to adopt XBRL is credit risk, which benefits will be explained in the next chapter.

2. Costs and benefits of XBRL

Using XBRL in the credit risk department will eliminate the re-keying process, which is a lot of work and is as well likely to contain typing errors. With XBRL the quality of information will rise and this information will be quick and easy machine readable. The business case is an attractive one for banks, according to Mr. Pasmooij.

By using XBRL more detailed information are able to be processed in less time. Improved data quality will allow better models, which are also very adaptive to the individual business needs.

One burden could be, that customers are afraid to provide more detailed figure in more frequent cycles. On the other hand, banks will have more reliable models and will be able to reduce risks. The credit risk process might move to a continuous monitoring process. Moreover the speed will increase, as more actual figures are available.

Most of the companies will in the first phase use the bolt-on implementation approach. But over time it will change. But this will result in an extra layer of activity in the supply chain at the end of the supply chain, which just costs money. Over time, this process will be seamless integrated into the supply chain. The most integrated scenario is to move XBRL deeply in the General Ledger of the companies.

This change is a big for big companies as they have huge and often old legacy system. XBRL will never be the only reason to facilitate a change in the IT systems of the enterprise. But XBRL will most probably be considered when companies refresh and update their systems. That is the reason, why only a few big firms are engaged with XBRL. Major benefit of deeply embedded XBRL systems will be cost saving.

As financial reporting is often not a complete structured process, especially when done in Excel, there are cost savings possible due to efficiency improvements. These improvements are required as regulators are going to ask for more detailed and more frequently for information. This will be costly, when the process is inefficient. With XBRL the speed and efficiency will be improved and the information supply chain will be more controllable.

3. XBRL in accounting

In the Netherlands the market for accounting firms is divided into preparing of financial reports (98% of the activities, due to outsourcing of the accounting by companies) and auditing. As most money is made by preparing financial statements, this business model might change. PwC Netherlands sees also benefits for internal reporting with XBRL: for the preparing company as well as the auditors with a new more efficient audit approach.

It may be a little bit more costly, also to prepare also XBRL statements in addition to the traditional statement. The business model of the accountants may change, depending on the requested services. In the end the new approach will focus more on the accounting.

Within his role within XBRL Netherlands, Mr. Pasmooij, thinks that taxonomy projects should be in the role of the end users and not of the XBRL Netherlands group, which is responsible for keeping the standard, but not the adoption of XBRL.

Report: Interview with Ralfi Vanlaethem (22nd October 2009)

In his current position as Process Manager by Finance Enablers department of BNP Paribas Fortis, Mr. Vanlaethem is heading the Reporting Services team and is responsible for consolidation, internal reporting, as well as external reporting. His competencies cover FinRep, CoRep as well as XBRL.

1. Motivation/Barriers to use XBRL

As regulators in Belgium, France, Netherlands and Luxemburg required Fortis Group to report in XBRL, in 2007 Fortis started up an internal XBRL competence center for regulatory reporting, centrally operated in Brussels.. Fortis saw this as a starting point, with in the background the idea to push XBRL further in its reporting layers, in order to leverage the benefit from a unique XBRL data flow. Later on, when the market provides more and more data in XBRL format, Fortis would then also be able to investigate e.g. credit assessment processes based on XBRL input.

The first challenge was to report FINREP (FINancial REPorting), prudential reporting framework for credit institutions under IAS/IFRS. The next challenge was COREP (Common REPorting), a common solvency ratio reporting framework for credit institutions and investment firms under future EU capital requirements regime.

Meanwhile, Fortis is in the integration process into the BNP Paribas group, and keeps following the evolutions of the standard. XBRL is not in scope to use for consolidation nor internal reporting purposes; at present, it remains the output format to communicate with various regulators.

2. Costs and benefits of XBRL

Right now, the unified reporting process of XBRL provides BNPP Fortis a transparent data flow, with little manual interventions. Even comments to figures are included in the reports. This results in decreased process costs.

If an automated system for reporting based on XBRL is available, it will be way easier to create financial reports for internal as well as external purposes on a more frequent basis. As due to the financial crisis the reporting requirements for financial institutions will rise, XBRL may be very beneficial for banks. Especially if more and more regulators ask for reports in XBRL, banks will save a lot of money with a coherent XBRL system. A common European taxonomy for financial institutions is planned for 2012 and would facilitate this process and would generate even bigger benefits for banks.

At the moment XBRL is considered as a communication tool by Mr. Vanlaethem. In addition to the common taxonomy and language, a common set of formulas is desired by Mr. Vanlae-

them, which would also contribute to the validation of the documents and take XBRL one step further. To use and process XBRL reports in the XBRL format for internal communication is not in scope, given the integration efforts and other priorities.. Meanwhile, with the official XBRL formula specification, it could be an option to consider XBRL as internal common language, which would mean that BNP Paribas would have to create its own internal taxonomy. If the whole process would be XBRL based, a data flow from the most detailed level to the upper level is imaginable. Reporting to external parties like analysts in more frequent cycles is planned eventually, if market evolutions speed up in that area.

At the moment BNPP Fortis creates 400-500 XBRL reports every month by an internal XBRL team . XBRL is rather a business, than a technical challenge. The level of difficulty of the technical integration mainly depends if it is used for internal reporting, receiving XBRL reports or if it is deeply embedded into the internal reporting systems. For the last option, a lot of business as well as technical knowledge and very specialized employees are required, as each company has a different General Ledger and the implementation has to be adjusted to the individual needs.

There is no doubt within BNPP Fortis, that receiving XBRL will create value in the company. The more manual processes there are before in the company the more benefits will be gained through XBRL.

3. Success factors of XBRL

According to Mr. Vanlaethem, regulators have the biggest impact on the success of XBRL. They can push XBRL and the standardization in the banking sector. IFRS reporting is the main driver for standardization, but XBRL may facilitate this process for financial reporting. So different interpretations by different regulators may be eliminated which would result in more transparency.

Banks as a receiving party, as well as accounting firms may have an impact as well. Important will be, how the different interest groups collaborate.

Report of the 19th XBRL Conference in Paris (23. – 25. June 2009)

The 19th XBRL International Conference was held in Paris from 23. – 25. June 2009. It was hosted by xblr.fr in cooperation with XBRL Europe.

1. Latest Information

The XBRL Conference was the perfect opportunity to get latest information about the development of XBRL. This conference gave influential keynote speakers the opportunity to share the latest development and experience with the participants. The information given during this conference was highly relevant and up-to-date. Recent news about new regulations, projects were announced and successful and unsuccessful projects analyzed.

2. Meeting important contacts in the XBRL context

Moreover the conference gave the opportunity to make contact to a lot of relevant experts for this thesis like Ingo Dekker, Paul Snijders, Jan Pasmooij or Kurt Ramin, which was a major benefit. By getting introduced to such a network the quality of the interviewees won for the thesis was raised significantly and more relevant experts interviewed.

3. Honest opinion on XBRL

In addition the conference gave the opportunity to talk and listen to experts speaking open and honest about this topic. When experts publish papers or hold public speeches a level of professionalism is always kept, as well as the fact, the people have also express internalized thoughts of their employer or just express an opinion on XBRL which will increase their companies' profit. While having a more informal chat during the conference, a more honest and critical opinion on XBRL was expressed in comparison to publications, which was extremely valuable in order to investigate the real economic value of XBRL.