XBRL and SMEs: an opportunity to improve financial management and communication

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Abstract - *The potential impact of XBRL on financial reporting and communication has been extensively investigated in literature. However the focus of previous research and of XBRL development is on large listed companies with dedicated financial offices, while the potential impact of XBRL on small and medium enterprises (SMEs) is an underdeveloped area of research. Financial reporting and communication in SMEs is far from being efficient. Due to lack of knowledge, culture, resources and time, financial analysis and reporting are delegated to external consultants, and are considered a burden related to statutory filings or loan applications. In this paper we investigate how financial reporting and communication of SMEs could be improved through an online service devoted to financial reporting and management. We show how such a service simplifies the adoption of XBRL along the whole financial supply chain while preserving its benefits.*

Keywords: *XBRL, SME, financial reporting*

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1. Introduction

The importance of small and medium enterprises (SMEs) to the European economy is enormous: a large part of the European enterprises are SMEs and a large part of SMEs are actually micro–enterprises, with fewer than 10 employees. Due to their small size and limited resources, financial management in these firms is minimalistic (if not absent at all) and financial decisions are far from being efficient. For such firms, the cost of preparing financial information is too high, due to the lack of advanced information systems and the absence of staff dedicated to this job. Financial reports of small firms are mainly prepared by business consultants for fiscal requirements, statutory filings and loan applications to banks and are spot events; there is almost no possibility to use financial information as a decision support tool.

The objective of this paper is to investigate how XBRL can be used in order to improve financial analysis and communication performed by SMEs along the financial supply chain.

The paper will discuss the issue of using XBRL for financial reporting among small firms exempted from statutory filings, in order to standardize and automate the information exchange process between the actors involved. We will consider the critical points for the success of such a model compared to the expected benefits for the entire financial supply chain. In a system where opacity and inefficiency are so evident, the most relevant critical point is to demonstrate that the immediate benefits for the actors involved are bigger than the reasons to keep things as they are; this model challenges the usual perspective taken by firms and their consultants on financial reporting, which is dominated by fiscal or statutory aspects. We propose that the use of XBRL in SMEs could be boosted through an online service devoted to financial reporting and management of the firm, which simplifies the technological issues in the adoption of XBRL while preserving its benefits. The expected benefits of this service are operational efficiency and knowledge dissemination. It should provide a decisive incentive to standardize on common platforms, taxonomies and conventions, thanks to the huge network effect of fine grained, automated and securely controlled data circulation along the financial supply chain. Such benefits are obtained by means of putting together all the relevant actors (firms, banks, consultants, software vendors, information providers), and helping them serving the needs of businesses.

The paper is organized as follows. In section 2, we discuss the role of XBRL for financial reporting, highlighting the potential benefits deriving from XBRL as discussed in the previous literature. We also identify some issue related to the development and adoption of the XBRL standard that limit research scope on large firms. In section 3, we analyze the financial supply chain (financial management and financial communication) of SMEs. We identify the reasons why financial communication in SMEs is often considered a burden on the firm rather than a helpful management tool. In section 4, we discuss how problems highlighted in section 3 could be solved by means of a web service (based on XBRL and Web 2.0 technologies) dedicated to SMEs financial management and communication. After a brief introduction of the idea behind the web service and a discussion its features, we analyze through a SWOT analysis the impact of such a service will have on the members of the financial supply chain. Finally in section 5, we set out some conclusion and direction for further research.

2. XBRL for financial reporting

EXtensible Business Reporting Language (XBRL) is a markup language for the electronic communication of business and financial data. The basic idea behind XBRL is that, using eXtensible Markup Language (XML) technology, each data in a financial report may be associated to a "tag" (i.e. a label), and thus linked to a set of additional information (called meta-data) which give the "meaning" of the data. The main goal of XBRL is to allow automatic interpretation of the facts provided by reports.

From a technical point of view, in XBRL a financial report has two components: a taxonomy and an instance document linked to the taxonomy. A taxonomy gives the structure of the final report you want to provide while the instance document contains the financial data of a specific organization for a specific period. The exchange of financial information through XBRL between two actors is based on the agreement on common taxonomies, and on the availability to both actors of XBRL-based software able to process taxonomies and instance documents. XBRL allows automated processing of financial reports and automatic interchange of financial reports between different actors as long as they both have a XBRL-enabled software (not necessarily the same software).

The development and promotion of XBRL standard is guided by XBRL International, a worldwide consortium of over 650 companies and agencies. According to XBRL International: "(XBRL) provides major benefits in the preparation, analysis and communication of business information. It offers cost savings, greater efficiency and improved accuracy and reliability to all those involved in supplying or using financial data"[2]. These benefits can be gained by "companies of all sizes" and by "all types of organizations"[3], including regulators, analysts, software vendors and banks.

As far as concerns previous research on XBRL, Baldwin et al. (2011) collected and analyzed extant research in order to identify discussion and assertions about XBRL's potential impacts: results of their literature review are summarized in Table 1.

The list of 21 potential benefits identified by Baldwin et al. (2011) in their literature review seems consistent with what claimed by XBRL international on its web site. However, though previous research has actually shown how XBRL-enabled software increases the efficiency and the effectiveness of sharing financial information (see for instance Bergeron, 2003), there are aspects of XBRL and its adoption that are almost ignored or taken for granted by previous research.

First, though XBRL is an "open standard, free of license fees"[4] its development model is different from the open-source one: to participate to the actual development of the standard a fee must be paid to become a member of the consortium (Locke and Lowe 2007). The "design" of the standard is thus made by members of large companies and the principal target of the standard is the financial reporting of large companies and mainly listed companies concerned with compulsory filings.

Second, the necessary investment, in terms of software and training, for the effective adoption of XBRL is very high and thus can be afforded only by large companies, where you can find a dedicated financial office dealing exclusively with financial reporting.

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[2] http://www.xbrl.org/WhatIsXBRL/ accessed July 25 2011

[3] http://www.xbrl.org/WhatIsXBRL/ accessed July 25 2011

[4] http://www.xbrl.org/WhatIsXBRL/ accessed July 25 2011

TABLE 1 - Potential benefits of XBRL (adapted from Baldwin et al. 2011)

Corporation and Compliance

XBRL increases the efficiency of business decision making.

XBRL increases the effectiveness of management decision making.

XBRL allows for easier regulatory compliance.

XBRL makes it more difficult for management to issue misleading financial statements.

Financial Reporting

XBRL increases the efficiency of the financial reporting process.

XBRL decreases the occurrence of errors in financial reports.

XBRL reduces the cost of generating financial reports.

XBRL facilitates continuous reporting.

XBRL enhances the availability of financial reports.

XBRL eliminates the need for convergence of generally accepted accounting principles.

Users of Financial Reports

XBRL provides more accessible financial reports to users.

XBRL provides more understandable financial reports for users.

XBRL enables more thorough research by analysts because of access to more detailed financial data.

XBRL increases the use of un-audited information by investors.

XBRL decreases reliance on third-party information providers by users of financial reports.

XBRL decreases the ability of financial analysts to perform cross-sectional analysis between industries.

XBRL increases the ability of financial analysts to perform cross-sectional analysis within industries.

XBRL decreases the cost of financial analysis performed by users of financial reports.

XBRL allows more efficient investment decisions by users of financial reports.

Audit

XBRL facilitates continuous auditing.

XBRL reduces financial statement audit costs.

XBRL leads to improvement in internal controls.

Third the focus of regulators, analysts and banks is mainly on large listed companies, these companies are concerned with much more compulsory filings compared to SMEs.

In our view, both the development of XBRL standard and the discussion on the benefits of XBRL adoption are focused on large firms: the usual case researchers have in mind is a listed company or a large corporation with a rather sophisticated information system. A critical discussion of the benefits and issues related to XBRL adoption in SME is still lacking in literature.

3. The financial supply chain of SMEs

3.1. Financial reporting in SMEs

Most of potential benefits related to XBRL adoption, listed in Table 1, are self-evident when talking about financial reporting of large listed companies. SMEs and micro enterprises are quite different from large corporations and are often characterized by the absence of good financial communication. In general, due to limited resources and time, in SMEs almost all the efforts are directed towards the operational activity of the firm, while financial management is based more on intuition rather than supported by real and accurate information (see Berger and Udell 2006 for a study on SMEs finance).

On one hand, in large companies there are internal resources and software tools dedicated to financial analysis and financial communication (internal and external) which are integrated with company's data-warehouse. Moreover company's staff is often supported by the constant, and expensive, work of external consultants. In this situation, the real financial position of a large firm is constantly monitored and financial information may be also used by management for informed decision making.

On the other hand, in SMEs financial analysis and communication are in most cases delegated to external consultants since an internal dedicated staff is too expensive. These activities are seen as spot events, are mainly required for fiscal and statutory purposes, and are often considered only a burden on the firm. In this situation, available financial reports are not constantly updated and monitored and thus cannot be used as decision support tools. Behind this "weakness" of financial management and reporting in SMEs there are several reasons.

First, the lack of financial knowledge and culture. Often financial reports are seen by the entrepreneur as bureaucratic burdens and are prepared for fiscal purpose. From this perspective, their aim is to minimize the impact of taxes on the company income, in some cases at the expense of clarity. In general financial reporting is not seen as an investment which can give back to the firm some benefits, in terms of knowledge and decision support, but it is seen only an unproductive cost, performed only when explicitly required by external stakeholders. As a consequence, these reports are not seen as a summary document of the "financial health" of the firm which can help to monitor the general "status" of the firm.

Second, the lack of time and dedicated resources in terms of personnel. Very often the internal resources of a SME are limited in number and focused on operational and commercial activities, they do not have enough time and financial knowledge to be able to prepare accurate financial reports. Moreover tax and fiscal regulations are often so complex that in any case the help of external consultants is needed also by large companies. While in large companies the external consultants support the activity of internal staff, in SME the role of these consultants is crucial, since they have exclusive competence in this field.

Third, the "digital divide" between large companies and SMEs. While in large companies specialized BPM (Business Performance Management) software, integrated with ERP (Enterprise Resource Planning) systems, helps financial reporting, usually SMEs do not have dedicated software for financial analysis and reporting.

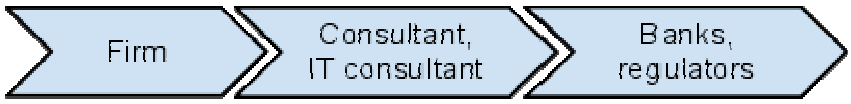
In summary, SMEs delegate financial reporting to external consultants, whose activity is hampered by the absence within the firm of advanced software tools. Financial analysis and communication in SMEs is a costly and inefficient activity resulting in the difficulty to obtain updated financial reports. Financial information is not always consistent with the real financial position of the firm which is often unclear even to the entrepreneur.

The consequences of this weakness in financial reporting are twofold. First, the uncertainty on the real financial position can lead the entrepreneur to mislead the financial needs of the firm and so to take inefficient or even wrong financial decisions. Second, the entrepreneur sees external financial reporting as a threat, since it may disclose hidden income of the firm to the taxman, or possible financial weaknesses to banks, and thus the aim is to give less information as possible, encouraging opacity in external financial reporting.

3.2. The financial supply chain for SMEs

In order to understand how XBRL technology may be used to improve financial management in SMEs, it is fundamental to understand which actors are involved in the financial management of SMEs and how these actors interact and exchange financial information. Figure 1 shows that there are three kinds of actors involved in the financial supply chain of SMEs: the firm, consultants (business, IT, fiscal, etc.), and the "targets" of financial reports such as banks, regulators, etc. (see Baas and Schooten 2006 for a survey on financial communication between SMEs and banks).

Figure 1: Exchange of financial information



In the financial supply chain of a SME, the role of consultants (business and IT) is crucial: they should fill the gap in terms of knowledge and lack of resources between the firm and the targets of financial reports. This is clear when looking at the relationship between the actors involved and when looking at the flow of financial information between them.

Firms enter in their information systems financial data derived from their operational and commercial activities. Consultants must collect these data, together with data available in other information systems of the firms or of third parties, and must enter them in their software; then they must prepare the reports according to the format requested by the "target" of the communication. Entities which receive these financial reports must enter them in their software in order to process and analyze them and then must provide a feedback to the firm (for instance, in the case of a loan application of a firm to a bank, the feedback is the answer on approval of the loan).

This circulation of financial information between different actors, due to the lack of dedicated software tools supporting these activities, is expensive, inefficient and in some case ineffective. As a consequence, all actors try to reduce the number of financial information requested and exchanged.

All the actors involved seem to agree on a sub-optimal level of financial communication: the cost to obtain detailed, accurate and trusted financial information is too high with respect to the expected benefits.

After 2007, following Basel II Capital Accord (see Basel Commitee on Banking Supervion, 2004 for the Basel framework and Ayadi, 2005, Berger, 2004, for the impact on lending to SMEs), some progress has been done in terms of financial communication of SMEs: more restrictive parameters requested to banks have been translated in more detailed financial information about firms that banks must collect in order to grant credit. In this context, focus is on automatic acquisition of the information, and on automatic mechanism of scoring and analyzing the reports. The need to reach more efficiency and less costs in collecting and analyzing financial data, leads to make a large use of external information providers, such as credit bureaus, to collect standardized reports and credit scores produced by automated models to evaluate the firm.

This approach has led to an improvement on quantity of financial data exchanged between the actors of the financial supply chain, but often at the expense of their quality, since this data exchange is mediated by third parties actors. Thus direct interaction between different stakeholders of SMEs is reduced and so the expected benefits in term of better financial knowledge of firms could not have been achieved.

Somewhat as a paradox, the need to get more and better information on a firm is not translated into an enrichment of the interaction between the firm and the other actors of the financial reporting supply chain.

In our vision, this improvement in direct interaction is crucial: the spread of knowledge which could came from a deeper relationship between all the subject involved in financial management of a firm could be a starting point for a significant and decisive improvement in the functioning of the entire system.

4. Improving financial reporting in SMEs

There are basically three aspects under which financial reporting of SMEs may be improved. The first aspect is the efficiency in production and communication of financial reports. The second aspect is the reduction of costs of financial data collection and analysis. Finally, the third aspect, is the improved interaction between actors involved in the financial supply chain.

The achievement of these results could lead to a continuous reporting and continuous interaction between firms and consultants, in order to reach a constant monitoring of the financial position of firms, giving the possibility also to SMEs to have adequate decision support systems in this field. This would lead to better financial decisions for SMEs and for the entire financial supply chain.

As shown in section 2, the adoption of XBRL could help to reach these points, however XBRL do not respond to the SMEs specific problems: the lack of financial culture and knowledge, the digital divide with respect to large companies, the lack of dedicated resources. In order to overcome these issues, the use of XBRL must be simplified and the cost of its adoption reduced while preserving its benefits.

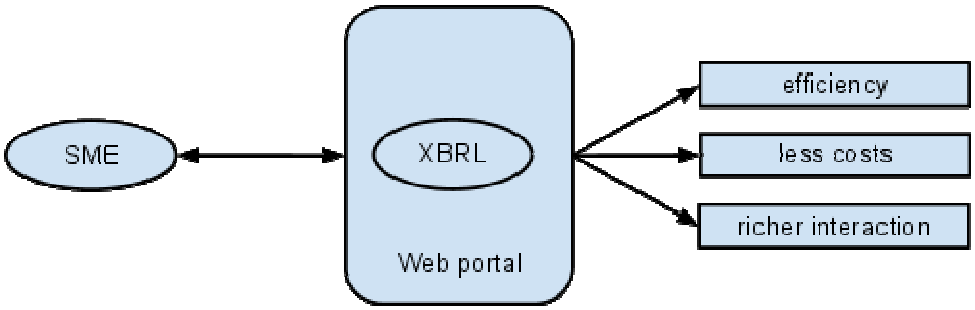
In this section we discuss how web 2.0 technology can help simplifying the adoption of XBRL for SMEs and give a collaborative environment which facilitates the direct interaction between firms and its stakeholders. Financial management of SMEs can be boosted by continuous consultancy who can

constantly assist the entrepreneur in its financial decisions. We discuss viability and affordability of this approach if supported by the use of a web based service (from now on called “portal” or “platform”) dedicated to the financial reporting of companies, and based on XBRL technology.

This web 2.0 portal can be seen as a virtual place in which all the actors involved in the financial supply chain can share and request documents such as financial reports or other documents, and can even interact in the process of preparing them, following the social network paradigm adapted to financial reporting. Among the advantages of web 2.0 technology, we can highlight: no specific software or hardware investment is needed, no technical knowledge is required, ease of use, direct interaction between users, large number of users (scalability and economies of scale), constantly updated services, data always available.

In this portal, use and complexity of XBRL will be hidden to users (Figure 2), while remaining crucial in achievement of benefits in term of efficiency and effectiveness in financial reporting. In other words, this portal will be a middleman which hides the complexity of XBRL to the SME (and to all the actors of the financial supply chain), reducing the costs while preserving its benefits, thus allowing a large part of firms to use XBRL and appreciate its benefits.

Figure 2: The web portal



Moreover, the adoption of XBRL is simplified by the agreement on standard taxonomies for the reports, which is crucial for the startup period. As shown in the case of the introduction of the mandatory filings in XBRL for the deposit of the annual statement in Italy (see Valentinetti and Rea, 2011), we have that XBRL technology can be successfully adopted also for SMEs in a closed reporting environment, in which all the companies must produce the report in XBRL format according to one fixed taxonomy.

4.1. The architecture of the web platform

The idea behind the web platform is to provide a place where SMEs may store and share documents and information about their financial situation. Documents may be in different formats and may be targeted to different audiences, for instance, financial reports are in XBRL format while accompanying documents may be in textual format.

To understand how this portal can be used by firms, it is crucial to explain its architecture (see figure 3). Each firm has a virtual space in which it can store documents and information; each space is made of different level of information: public data are available to anyone, internal data are available only to a subset of internal and external users, and restricted data are available only to firm's managers and employees.

The firm may grant different access to each document to different users; in this way there are public and private information and each user has access only the set of data for which he is enabled.

Of course different users can access different virtual spaces if they are allowed by the space owner. For instance a consultant can access the virtual space of more than one company as shown in figure 4.

One of the main advantages of such a web service is that all actors of the financial supply chain have a unique interface which enables the information exchange between them. Part a and Part b of figure 5 show how the web platform will fit in the middle of the interaction between the actors of the financial supply chain.

The adoption of a common web platform allows financial documents in XBRL format to be stored in a common place. Leveraging on web 2.0 and XBRL, the web service allows to:

- automatically extract and elaborate data from XBRL documents
- convert documents in different formats (XBRL, XML, JSON, Ms Excel, Html, Pdf, ...)
- automatically compile documents with data available in different documents (automatically merge data available in different documents)
- upload and download documents in different formats
- integrate software used by the firm or by its partners with the platform

4.2. Impacts on the financial supply chain

Such kind of web platform would have a dramatic impact on the entire financial supply chain, and would help overcoming all issues highlighted in section 3. In this paragraph we conduct a SWOT analysis in order to highlight the most relevant Strengths, Weaknesses, Opportunities and Threats of this solution for each actor of the financial supply chain. This kind of analysis will clarify the challenges and the opportunities related to the use of the web service.

As shown in table 2, there are some general aspects that are common to all the actors in the financial supply chain and some aspects that are specific to each actor.

In general, all the costs related to the production and sharing of financial documents are reduced eliminating the need of re-keying information, the exchange of information is faster and automated (higher efficiency), and the direct interaction and cooperation between actors is improved. General benefits are efficiency and effectiveness in financial reporting, eliminating the manual activity in preparing and sharing documents, the possibility to have more and better information and interaction with partners, allowing the diffusion of knowledge. Critical aspects of this solution are the initial investment required, and the risk to focus on automation of information retrieval and not on quality of information and on interaction between actors.

Though the benefits such a kind of platform could have on the whole financial supply chain, there are factors that may undermine its adoption. For example, entrepreneurs may not will adopt a system that would reduce the "opacity" of financial communication. Software vendors may see a competitor in

the system, further, the platform could increase competition among software vendors by reducing the switching cost between proprietary software platforms. Basically, the adoption of such a platform could require a change in their business model. Similarly, consultants may see an increase in competition, since financial information is no longer exclusively managed by the consultant. Incumbent services provider may be reassured if the portal adopts an open architecture, allowing the integration of third party services and applications.

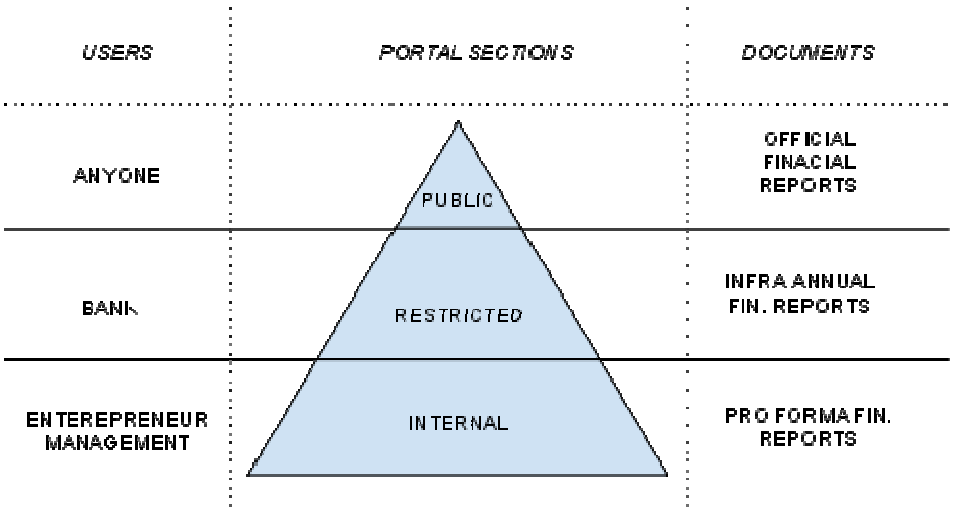


Figure 3: Diagram of the sections of the web portal

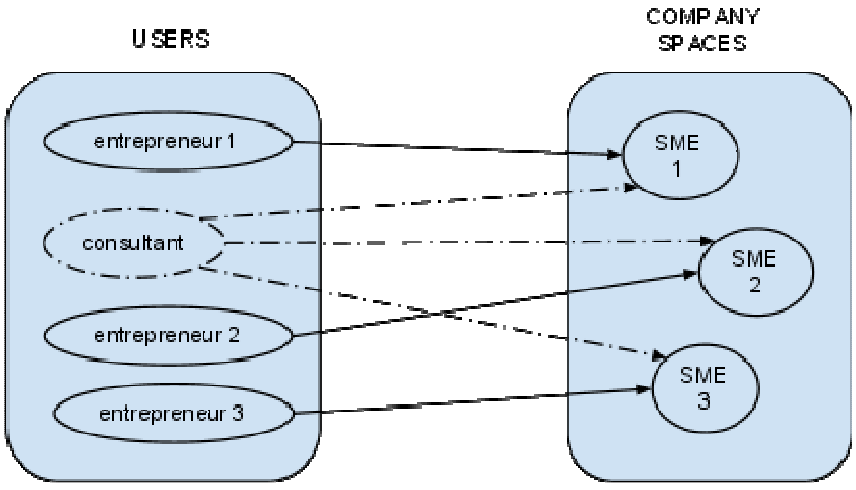
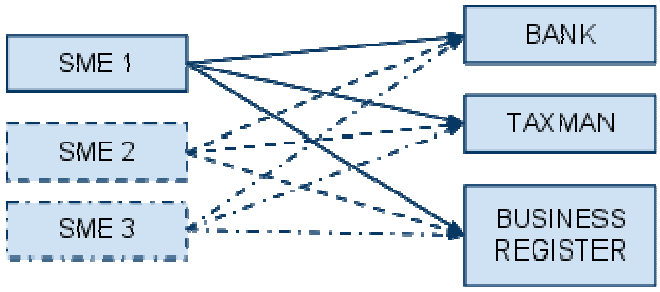
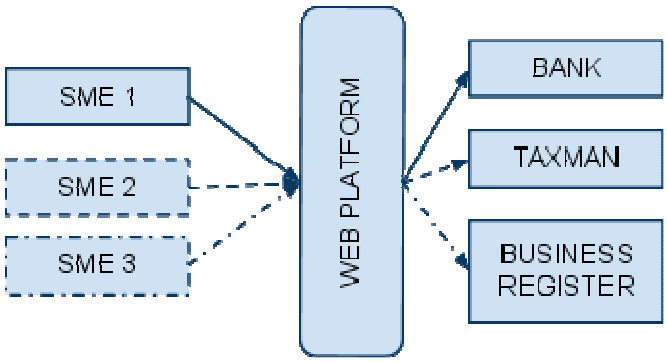


Figure 4: Relationships between users and entities

Figure 5: The web platform and the financial supply chain



Part a: Financial communication without the platform



Part b: Financial communication with the platform

Table 2 – SWOT Analisis

	S	W	O	T
GENERAL	eliminate the manual activity in preparing and sharing documents efficiency and effectiveness in financial reporting cheap w.r.t. dedicated software	challenge with the current opaque system initial investment in performing new procedure and time spent to use this new service	richer interaction between different actors of the financial supply chain diffusion of knowledge and cooperation between actors	risk to automate all the processes, eliminating the direct interchange of information and analysis of the reports
SME	reducing costs and bureaucracy	lack of culture, knowledge scarce attitude to use web solution	direct feedback	security of company data
BANKS	increase the quality and timeliness of data from firms		increase number of clients since the investment can be used inside and outside the portal	
CONSULTANT	direct and better interaction with firms	initial investment	increase number of potential client new services can be proposed	more competition in preserving clients
SOFTWARE VENDOR	interfaces with its software and the portal Services linked with the portal (security, data integrity)	the web portal, in middle term, could replace some of the services currently provided	increase number of potential client increase number of new services	more competition in preserving clients
BUSINESS INFORMATION PROVIDER	direct link in the portal with their services	required a change in their business model (thus investments): less data provider, more value-added services	new value-added services	potential competitor

The adoption of such a kind of platform depends on the prevalence of immediate benefits with respect to costs for all actors in the supply chain. In particular, the main advantages for firms are direct and better relationships with banks or regulators (less bureaucracy, less time spent in producing documents, better reputation and better condition for credit) with the possibility to obtain a direct feedback and the possibility to introduce some financial/performance management system without the need of heavy investments.

5. Conclusions and directions for further research

The impact of the adoption of XBRL has been studied by different authors with different methodologies and objectives. The adoption of XBRL as a standard for financial reporting is reaching a significant diffusion only recently, for example with the mandatory adoption of XBRL for SEC filings for the US listed companies. At this stage, most of the literature on XBRL for financial reporting consists of analysis of potential costs and benefits of its adoption and surveys on future research opportunities in the field of financial reporting. The main evidence emerging from these studies are efficiency, accuracy and effectiveness of XBRL based financial reports from different points of view: compliance, financial reporting, consumption of financial information, auditing (see A. Baldwin et al. 2011 for a survey of the literature in these categories).

Large part of the literature considers XBRL from the point of view of a large firm: the usual case is a listed company or a large corporation with rather sophisticated information systems and the research is concerned in discussing the opportunity of XBRL adoption for such a firm.

In this paper we begin to explore the challenges of introducing an interactive XBRL based model of financial reporting in which a SME or even a micro-firm can easily exchange financial data with its stakeholders and supervisors (banks, consultants, public authorities).

We found that poor financial communication of SMEs is one of the most relevant weakness of such firms for different reasons. The most relevant challenges in evolving financial communication of SMEs are not only about technical or operational difficulties, but concern also scarce financial knowledge and culture widespread among SMEs. This lack of attention on financial communication leads to low quality of financial reports which in turn leads to scarce knowledge of the real financial position of the firm and opacity in financial reporting to stakeholders.

Due to limited resources, financial communication of SMEs is always delegated to an external consultant whose work is limited by the absence of advanced software dedicated to financial management; this leads to inefficiency and high costs for preparing financial reports, thus these activities are only spot events. On the other hand the role of consultants for such firms is crucial, and so the point is to find efficient tools to make possible and convenient continuative financial consultancy.

As a possible contribution to overcome these difficulties, we have discussed a web portal which enable the diffusion of XBRL in SME, showing its benefits in terms of enrichment of the interaction between the firm and its stakeholders, first of all the consultant.

First, the web platform can be seen as a facilitator in the diffusion of XBRL also among companies that cannot make specific investments in this direction. Thanks to direct functionality of the portal and to software interfaces that can be developed by software vendors, all companies that have access to the

portal can publish their financial reports in XBRL format and can read and analyze financial reports in XBRL from third parties.

Second, this web service can become a direct window of company's financial status, where data available for investors are governed and fed by the firm itself. This improves the quality of data in comparison with those provided by third party databases: while the latter reclassify financial reports in order to get standardized information for the investors, the web platform provides standardized, directly processable and updated information.

Third, the web portal can be used by the firm as a tool for interacting with consultants in a continuous and cheap way: they can share documents and information and can interact in the process to prepare and analyze reports. The firm may also have direct and immediate feedback to analysis performed by third parties on its financial reports.

Fourth, the web portal may help SMEs in overcoming the digital divide with respect to large companies, providing some basic services for financial analysis and management control typically adopted in larger companies through expensive and sophisticated software packages.

Fifth, the web portal could become a unique interface between firms and stakeholders reducing the costs of different procedures for different "targets" of the communication.

Summarizing, XBRL gives significant benefits with respect to effectiveness and efficiency in preparing and sharing financial reports. This portal will reduce the specific investment for the firms, giving at the same time an increasing level of efficiency reducing costs in preparing and sharing documents with various actors. Moreover a such a portal can contribute in highlighting the immediate benefits of the adoption of XBRL, giving immediate advantages to the SME, in term of knowledge, transparency and direct feedback.

The positive and constructive contribution of all the actors of the financial supply chain of SMEs, supported by services like the one discussed in this paper, can get huge benefits, in terms of transparency and efficiency, not only for the single firms but also for the entire system: the more a firm knows itself, the more the entire system is strong.

This paper paves the way for further research. One of the aspects that can be studied in more detail are the specific areas in which the web portal could significantly help the firm (for instance external financial reporting, but also internal decision support system such as business performance management, thus contributing to fill the digital divide with respect to large companies), while on the other hand could be of great interest a real use case of this service using a prototype, that is currently being developed at our Department.

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