Principles for transforming to Standard Business Reporting: Lessons learned from the Netherlands

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ABSTRACT

Stricter laws and regulations demand that companies provide business information more timely and accurately to various government agencies. However, this trend increases the administrative burden for companies and the regulatory burden for government agencies. Standard Business Reporting (SBR) is a program that aims to reduce these burdens. Led by government agencies, stakeholders in this program are working towards a national data taxonomy, a single reporting gateway and a secure electronic infrastructure. Anticipated benefits include reduced time and costs for assembling, analyzing and providing business data to government agencies. However, stakeholders face several hurdles that need to be addressed before such benefits can be reaped. Typical hurdles in this transformation include conflicting public and private interests, legal constraints and high security demands. This policy paper presents seven transformation principles gained from the launch of SBR in the Netherlands. The principles are meant to guide stakeholders in proactively dealing with some of the transformation issues that may manifest when launching SBR. While the current scope of SBR is focused on financial reporting, the possibilities for its future application are broader, opening new avenues for digital government research.

Categories and Subject Descriptors


General Terms

Management, Performance, Design, Economics, Legal Aspects

Keywords

Standard Business Reporting, XBRL, transformation principles, public-private cooperation, administrative burden

1. INTRODUCTION

Most government agencies require companies to report information for many different purposes such as tax, statistics, industry regulation, safety, environmental control and so on. While the amount of reporting may vary, in general, it is significant and has grown over the recent years particularly as a result of more stringent regulatory requirements [1]. Historically, these reporting requirements have grown piecemeal, often driven by diverse legislation and different agencies within governments with little or no coordination of what information should be reported and how it should be reported. As a result, a company often ends up reporting the same information multiple times to different government agencies in different formats. This means that the reporting of data to government agencies has become a significant cost burden for companies. A recent study by the Organization for Economic Cooperation and Development estimates the cost to be in the region of 2.5% of GDP [2]. Reducing this cost is a major driver for transforming the reporting architecture in many western countries. A very significant element of that cost is the many data formats and descriptions used by different government agencies (and possibly even within the national tax office) for reporting information to government, and the resulting duplication and additional burden on business that occur as a result. The required information often resides in the various databases a company uses for its day-to-day operations. However, for accounting and financial reporting purposes, the fragmented information first has to be manually assembled, reformatted, modified, or re-entered before being sent to government agencies. Each entry error and every report that needs resubmitting incurs a cost. Typically, a company is required to provide information to government agencies such as the Tax/Revenue office, Statistical Agency, the Chambers of Commerce and sector specific regulators. These governmental agencies check commercially sensitive data of thousands of companies. Although business and governments have the same objective of reducing the administrative burden, governments have different concerns than businesses (e.g. different value perspectives, legislation/political concerns) and these concerns might compete at some time [3]. Against this backdrop, two Ministries within the Dutch Government initiated the Standard Business Reporting (SBR) program, a public-private
cooperation aiming to reduce the administrative burden for small and medium sized enterprises. However, to accomplish these long-term objectives, the required data standards, procedures and information technology (IT) infrastructure first need to be developed, adopted and maintained. Managing this transformation has proven to be difficult. It involves complex inter-dependencies between processes, data and technical infrastructure and the interests of many public and private stakeholders. Moreover, government projects which involve the development of information systems often turn out to be more expensive than initially estimated, require more time than planned, and do not deliver intended results [4], see also [5]. This paper derives seven transformation principles from experiences with the launch of SBR in the Netherlands. These principles aim to guide stakeholders in the transformation to an SBR architecture. As discussed by The Open Group Forum (TOGAF), “principles are general rules and guidelines, intended to be enduring and seldom amended, that inform and support the way in which an organization sets about fulfilling its mission” [6, p.139]. Such principles typically address concerns of the key stakeholders in the transformation to SBR.

This paper proceeds with some background on the commencement of SBR in the Netherlands. The Netherlands is considered as the front runner in the implementation of SBR and many other countries have started similar initiatives [2]. The case study involves a data taxonomy resulting from legal and process compliance requirements, collaboration in a network of government agencies and private parties and no optimal solution. Section 2 explains the components of SBR in more detail, as well the advantages anticipated from its implementation. Section 3 presents some lessons learned from the case study as principles for guiding stakeholders in public-private networks. This paper concludes with a discussion on the transformation to SBR and avenues for further research.

2. CASE STUDY: STANDARD BUSINESS REPORTING IN THE NETHERLANDS

2.1 Background

The Dutch National Taxonomy Project (NTP) started in 2004 as part of the parliament’s objective to reduce the administrative burden for companies [7]. In addition, the development of a more transparent, effective and efficient compliance monitoring architecture for government agencies was called for by parliament. From the beginning, it was clear that achieving these goals required the standardization of data and process definitions, alongside the development of a secure electronic reporting infrastructure. NTP reversed the reporting chain: it is not ‘government’ systems that are decisive, but businesses’ financial administration is taken as the starting point. This is accomplished by having a common language that is realized in data taxonomy, providing a universal set of financial concepts. This taxonomy would enable a company to generate the required reporting information directly from his own records, and enables government to check this information efficiently and effectively. In 2006, a feasibility study on a generic reporting infrastructure delivered a first set of functionalities required for financial reporting based on the Extensible Business Reporting Language (XBRL). Based on XBRL, the Dutch Taxonomy is a structured list of reporting definitions, guidance, references, rules and relationships in accordance with the relevant laws and regulations. We will briefly explain XBRL in section 2.3. In 2007, the first versions of the technical infrastructure developed for exchanging data based on XBRL were ready. Stakeholders decided that it should be maintained by Logius, the digital government service of the Dutch Ministry of the Interior and Kingdom Relations. This agency supplies products relating to access, data exchange, standardization and information security. In 2009 the NTP project was handed over to Logius and a steering group consisting of senior representatives of all Ministries involved was appointed. As per 2009, NTP continues as the Standard Business Reporting (SBR) Program. The program objectives are deepening and embedding the results obtained so far. As such, SBR is advertised as a program to reduce administrative burden for companies, by providing a standardized data representation format, semantics and secure electronic infrastructure for filing official reports. Achieving this goal requires a major transformation of the current architecture for financial reporting depicted in Figure 1.

Figure 1. Simplified pre-SBR architecture

Figure 1 shows the fragmentation and many reporting obligations to public (requesting) agencies. For the same piece of information, government agencies and other organizations (e.g., intermediaries and banks) have different requirements. The different shaped lines from company to the government agencies represent this situation, demonstrating the extent to which companies have to produce unique reporting capabilities to fulfill their reporting responsibilities to government. Companies report based on proprietary software applications, each dictating reporting templates for users. This means that information models, business rules, process designs, controls, etc. are redundantly embedded within each software application. Moreover, data validation and analysis need to be conducted by consumers (receiving agencies) and manual manipulation of information from disparate sources is needed to create custom reports. The stakeholder group referred to above as ‘intermediaries’ is a large group and includes accountants, tax agents, financial advisors, payroll specialists and bookkeepers, as well as business and industry associations. To conclude, in the pre-SBR situation, companies and their intermediaries are left with the problem and cost of identifying what piece of information that is within their accounting or other systems and mapping that information multiple times for different reports. This situation presented the basis for launching SBR in the Netherlands. The next section continuous with the benefits expected from the implementation of SBR.
2.2 SBR architecture in a nutshell

SBR is not yet a universally accepted or understood term. Even within those countries that are adopting SBR or considering its feasibility, its scope and precise implementation differs [2]. The main elements necessary for implementing SBR include:

1. Agreement on a national reporting taxonomy (e.g., based on XBRL) and provide support in accounting systems.
2. Development of the necessary SBR services (e.g., auditing controls, semantic validation) for digital reporting.
4. Preparation of public agencies for accepting and handling digital reports from SBR and provide immediate feedback (e.g., receipt and relevant error message).
5. Implementation of a supporting technical infrastructure for digital information exchange.
6. Education of businesses and public servants and marketing to drive take-up once SBR is implemented.

As the scope of SBR involves a large range of reporting activities, there are several reporting channels that can be used for reporting. The reporting process for payroll tax and the business activity statement can be largely automated within company software. More complex reports such as the corporate income tax return will more likely be provided to the business’s accountant to check and complete the process. The accountant interacts with the government. For many of the legally required reporting forms, SBR-enabled software (developed by commercial software vendors or intermediaries) needs to provide pre-filling of reporting information. In the Netherlands, the software also need to allow editing and further data entry to complete the form and send the completed report securely to the right government agency. It will also provide an electronic receipt confirming the delivery of the report. This means that vendors of accounting software need to be convinced that they must adapt their products and start to offer the XBRL reporting functionality. We elaborate on XBRL in the next section.

2.3 XBRL based national data taxonomy

A basic part of SBR is the use of Extensible Business Reporting Language (XBRL), a platform-independent language based on Extensible Markup Language (XML) for formatting business information in a way that can be read across different software applications. The fundamental idea of XBRL is to allow for a conceptual and physical separation of reporting facts from reporting meta-data [8]. Currently, companies generate this information and present it to users in a static document, either computerized or hard copy. Anyone wanting to analyze, compare or aggregate the financial information, either within or between companies, is forced to re-enter the data into a spreadsheet or other program, or to run specialized programs that need to be rewritten whenever document formats or content formats change. In contrast, XBRL allows companies to make financial data interactive, reusable and timely. All companies provide financial information to various public organizations. Instead of treating financial information as a block of text - as in a standard internet page or a printed document - XBRL provides an identifying tag for each individual item of data. This is computer readable. For example, company net profit has its own unique tag. Computers can treat XBRL data "intelligently": they can recognize the information in a XBRL document, select it, analyze it, store it, exchange it with other computers and present it automatically in a variety of ways for users. The meta-data are used to convey the conceptual meaning of reporting data items in a standardized way [9]. Data types available include XML, the language that XBRL derives from and extends. There is also a facility to suggest additional data sets. XBRL has almost become synonymous with online business reporting as it is commonly viewed as a means to ‘web enable’ the business reporting process for report preparers and users [10].

As an open standard, XBRL is governed by a not-for-profit consortium made up of representatives from more than 170 companies and organizations around the world, including the major accounting firms, software vendors, information brokers, regulators and accounting standards-setters [11]. XBRL is a freely licensed information standard. Its strength lies in its combination of XML-based reporting technology and the efforts of accountants around the world who are collaborating to achieve encapsulation of national and international accounting standards into XBRL format. XBRL is a ‘network innovation’ requiring concerted action from several stakeholders to be widely adopted. For this reason, its development has been, and continues to be, facilitated through the voluntary and collaborative efforts of key stakeholders — currently driven principally by local government and regulatory agencies [12].

2.4 Towards a ‘store once, report many’ architecture

Figure 2 shows the envisioned SBR architecture with standardized reporting streams to requesting agencies such as the Bureau of Statistics (production statistics, investment statistics and short term statistics, i.e. revenue per period), Chambers of Commerce (possibility to file the year-end financial report) and Tax Office (revenue taxes, corporate taxes, income taxes etc.) When it comes to SBR, Logius is expected to manage the gateway through which reports will be routed and which carries out authentication of the reporting organization. The gateway may also perform other services (e.g., authentication, logging, validation, enrichment). In particular, it could be used to allow for a single submission of financial data which the Gateway “disaggregates” sending relevant information to each agency as appropriate. Stakeholders in the SBR program have chosen the ‘store once, report to many’-architecture. That means that although the data definitions and the infrastructure may be re-used over different reporting chains, the actual act of reporting remains specifically addressed to one agency. The one-stop-shop/single window architecture [13] or the continuous monitoring/piggy-backing scenario [14] would be too far reaching. Firstly, because legislation does not allow to re-use data collected for one purpose to be used for different purposes. Secondly, because reports may have a different function and may therefore have different contents. For example, in a tax report, the company will try to report as little revenue as possible. In a year-end financial statement meant for shareholders, a company will try to report as much revenue as possible, to appear as a solid investment opportunity.
As depicted in figure 2, SBR will operate much like a post office, simply moving electronic messages from businesses’ system to the right agency, and returning an electronic receipt. While the main goal is the development of a single set of reporting definitions in a single language, a further goal is for the information to be sent directly and electronically from the business’s system to the participating agencies, and remain in the control of the business. This cooperation is settled in an agreement that was signed by over eighty parties. The main idea behind SBR is that the development of a XBRL based taxonomy, harmonized across the needs of participating public and private agencies will simplify and accelerate business to government reporting. While the current scope of SBR is quite specific, the possibilities for its future application are broad. We continue with some of the benefits in the next section.

2.5 Anticipated benefits of launching SBR

The SBR Program is focused on reducing the regulatory burden of business-to-government reporting within the clearly defined initial scope of financial reporting. According to the OECD [2], seven anticipated benefits of SBR include:

1. Single language to report to the agencies involved in SBR.
2. Reduction in the time and cost of assembling, analyzing and providing data to government thanks to the articulation of information models, business rules, process designs, controls, etc. in standardized taxonomies that are executed across software applications.
3. Single secure sign-on to report to the agencies involved in SBR.
4. Opportunities for streamlining the process of passing/aggregating data across different internal departments, offices or business units of a company.
5. Increased interoperability of information across finance applications.
6. Increased access to comparable performance information to guide investors.
7. Improved data quality — less manual intervention leads to fewer errors since data validation and analysis is conducted by companies (at the source).

The benefits of streamlined reporting are not limited to government requirements. For regulating agencies, SBR can provide benefits such as benchmarking/market comparisons and credit risks monitoring (trend and what if analysis). SBR can also be used for business-to-business reporting, something that is becoming increasingly important in supply chains and business networks. Initially, most applications of SBR are in the financial domain, covering reports to the tax office, bureau of statistics and Chambers of Commerce. Due to the generic applicability of the SBR concept, broadening the scope to other domains and applications also became a program objective. In the future, the inclusion of applications concerning food quality and public health are also envisioned.

3. TRANSFORMATION PRINCIPLES

Principles are commonly used for guiding stakeholders in the design of complex information systems [15, 16]. Principles are often based on the experiences of the architects, which they have gained during many years of information systems development [e.g., 16]. Similarly, Gibb [17] suggested that principles are the result of engineers reflecting on the experiences gained from previous engineering projects, sometimes combined with professional codes of conduct and practical constraints. Stakeholders can employ principles to address typical concerns in the transformation to an SBR architecture. Drawing on the experience gained from the transformation to an SBR architecture in the Netherlands, we present seven principles for guiding stakeholders in the (future) transformation to SBR.

3.1 Make SBR a by-product of the data already in the company’s accounting systems

This principle underlines the need to analyze existing reporting needs, processes and procedures as one of the first steps towards SBR. Compliance reporting is a very specific domain with its own lexicon of process flows, standards and definitions. Due to the extensive body of legislation in this domain, there is little room for legislative or process adaptation to introduced taxonomy and infrastructure design. Since there is no green field, a detailed understanding of the IST situation is imperative for the successful migration to an SBR environment. As such, several agencies within the Dutch Government continue to work directly with software developers, intermediaries and business to implement SBR to enable government reporting to become a by-product of the information already in the businesses’ accounting systems. Doing so enables SBR to be used not only for reporting to multiple regulators, but also for improving internal reporting and analysis. The key components of interest to accountants would be the rationalization/harmonization of terms and definitions, the mapping of the taxonomy, and the use of the SBR-enabled tools when available. It is expected that SBR will become standard functionality in accounting, financial and payroll software, but the benefits accrue only when that functionality is used extensively.

3.2 Include controls for auditing in software

This principle proposes to move quality assessment and error detection capabilities into the vendor supplied accounting software, which can be used by companies to directly send reports to the requesting agencies. Such application controls will automatically verify correct entry of data against the data types (e.g. 31 of February is not allowed), and will verify reconciliation relationships between data elements (e.g. the sales total over months, should equal the sales total over
departments). Because built-in application controls reduce the possibility for errors, reliability of the data is improved. From a small business perspective, such SBR controls will be almost invisible, as the facilities will be built into the accounting software that businesses use to manage their records. Moving up the scale to large business, much of the SBR abilities will still be built into accounting software, but the range of reports will be broader. Some of the information mapping between the SBR definitions and the information in businesses’ accounts will need to be set and audited by the business or its accountant. However, once mapped in a reliable way, the information can be used to satisfy a range of reporting needs. For some of the simpler forms, the accounting software can pre-fill the reports and companies can to complete the forms where necessary, check for accuracy and validity, and correct any errors before final submission. This will save time and effort with corrections.

3.3 Keep the business focus
This principle recognizes the continuous iteration between legislation changes, business reporting requirements and solutions (e.g., taxonomy and SBR core services). The business case and implementation plan for SBR were developed in 2007. Since then, the steps have been deliberate and carefully planned to bring all stakeholders along. There have been several iterations of the single set of definitions, or taxonomy, used for all reports in SBR’s scope as well as some pilot testing. The program is also well advanced with the build of SBR’s core services, including authentication, audit trails, style sheets, web services, workflow management, rights and roles for all users, authorizations and authorization register. SBR is a voluntary program and the take-up rates for the use of the technology by businesses and their intermediaries will be on the basis of the time and money that can be saved, as well as the other benefits such as greater reliability of information reported. Further benefits such as financial reporting within the business, or to share between businesses, can emerge once the potential of having a standard set of definitions attached to a business’s financial and accounting information can be seen.

3.4 Position SBR as a cross-government policy initiative
This principle addresses the issue of stakeholder’s expectations and gaining commitment. SBR is an example of using new technology (XBRL) to achieve a policy objective; in this case, reducing the burden of reporting to government agencies. We found that it is crucial that that policy objective is understood; otherwise, SBR becomes a technology-push initiative providing a solution to something that is not perceived as a problem by everyone. Of course, SBR is not the only way to reduce the administrative burden and it may not be the most appropriate way in the circumstances of particular sectors (e.g., customs and trade, agriculture). SBR offers a way for the requesting agencies (e.g., Tax office, Chambers of Commerce) to meet its own regulatory targets while contributing to wider government policy objectives. There is, therefore, every reason for the revenue body to play a major part in assessing the potential of SBR and driving its implementation. However, ideally, leadership should come from a policy arm of government that ranges wider than just tax reporting. This is what has happened in the Netherlands where both the initial assessment and the implementation have been led by a consortium of the Ministry of Justice and the Ministry of Finance. This has given the Dutch project a very powerful base and has avoided the project being seen as just a new tax collection initiative or an information technology push.

3.5 Stimulate private sector involvement
This principle underlines the need to gain stakeholder commitment early in the transformation process. Ultimately, SBR is about reducing the costs for business-to-government reporting. Yet, government agencies alone cannot realize this goal. It is therefore critical that business plays a very strong part in assessing and implementing SBR. There have been extensive consultation and collaboration efforts between government agencies, companies, accounting firms and business software developers. Together the single set of reporting definitions has been developed that will eventually make it possible to map government reporting terms directly to the appropriate information in a business’s financial/accounting or payroll system. The collection of agreed on reporting concepts is called the Dutch Taxonomy, and has been developed based on XBRL. In the Netherlands, private sector involvement was secured via an agreement between all of the stakeholders, an innovative and successful mechanism. From the outset, SBR has sought to engage all stakeholders in the planning, design, build and testing of all SBR elements. Several workshops were organized for software developers and business intermediaries, focused on concerns related to the data, process and technical architectures. As of August 2009, several cycles of the taxonomy were released, and a number of forms in scope have been completed for use in SBR-enabled software. End-to-end collaborative testing of the systems and software started in October 2009. Via the SBR website, developers can access the taxonomy and the software developer’s kit, and sign up for updates.

3.6 Combine restrictive and flexible project management strategies
Managing projects in public-private networks is a difficult process, subject to several complexities and uncertainties. Since these conditions often delay decision makers, stakeholders need to be motivated and mobilized in order to progress. In the multi-stakeholder environment, progress depends on the combination of restrictive/compulsory and flexible/learning management strategies. In the case study, project managers have predetermined fixed standards that are to be used by the companies and requesting agencies. One the other hand, extensions to the standards are allowed if these do not cover the process requirements of the stakeholders. An example of how flexibility is provided is the XBRL taxonomy that includes key financial concepts (e.g., what profit means and how it should be calculated) and their relationships in accordance to laws and regulations. Since SBR is not yet mandated by law, adoption of the capabilities provided by SBR is voluntary, requiring some flexibility in accommodating reporting flows to the processes and technology of the individual companies, intermediaries and software providers. Another outcome of this approach is trust amongst the stakeholders. In contrast to a top down, command and control based project management approach where the government decides with the private sector should comply with, stakeholders are invited to share their unique reporting
requirements and concerns. Therefore, they can be confident that the outcomes are sustainable and fit their context and needs.

3.7 Underline the attention given to end-to-end security over the reporting chain

The final principle covers the issue of security in the business-to-government reporting chain. In the SBR case study, security, more specifically the authentication (using digital certificates) and the authorization (permissions and delegation to intermediaries), has led to considerable debates and delays. The requesting agencies underline the need for ‘end-to-end security’, referring to security checks and controls beyond a single secure sign-on build into company software and the Digipoort Gateway. The initial certificate and permissions policy used for transactions to the requesting government agencies could not guarantee non-repudiation and confidentiality (disclosure of information to unauthorized individuals). The overall design for SBR would allow reports for many agencies to be created within and sent directly from businesses’ accounting systems. Here, the issue of who should validate electronic signatures (Logius or the requesting agencies) was not yet resolved. The situation across the agencies in SBR’s scope involved nine different user IDs and passwords and two different digital certificates, potentially in the hands of one business user. It was not acceptable that each employee in each reporting company needed to enter a different user ID and password depending on which agency the report was going to. After rethinking security from an end-to-end perspective together with some security software providers, Logius designed the processes and systems that will allow a business to register once for a digital credential (provided by the Dutch Chambers of Commerce). A company can now use that credential to send reports from its accounting system via the Gateway to the right requesting agency.

4. DISCUSSION

The promise SBR brings is simple: public agencies will be relieved from redundant compliance and monitoring tasks while companies are rewarded with simplified and accelerated reporting procedures. However, while the anticipated benefits are attractive, the transformation to the required SBR architecture is a complex change process, involving many public and private organizations, heterogeneous technologies and changing legislation. Moreover, benefits have not yet been fully realized for business-to-government reporting, as many legacies remain from the days of paper-based forms. Launching SBR requires a change in the way a company maintains and uses its own financial, accounting and payroll information to satisfy its reporting requirements of various government agencies. It took over three years before the conditions were in place for launching SBR and the transformation is still not complete. One of the remaining hurdles for the further transformation is the absence of legislation that mandates the use of XBRL for financial reporting. Since such legislation has already been passed in other countries such as the United States, we expect that the use of XBRL will soon be mandatory in the Netherlands, increasing the sense of urgency for SBR. The seven principles presented in this policy paper encapsulate the first lessons learned from the partial transformation to an SBR architecture in the Netherlands. These principles focus on managing the transformation process and do not cover issues regarding the design of the data, process and technology architectures. The derivation and evaluation of complementary design principles for the data, process and technology architecture is one of the next steps in our research. Since we derived the set of principles based on a single case study in the Netherlands, further research on extending and evaluating these principles is recommended.

5. REFERENCES