Government Information Quarterly 30 (2013) S9–S18

Contents lists available at SciVerse ScienceDirect

Government Information Quarterly

journal homepage: www.elsevier.com/locate/govinf

Tapping into existing information flows: The transformation to compliance by design in business-to-government information exchange

Nitesh Bharosa *, Marijn Janssen, Remco van Wijk, Niels de Winne, Haiko van der Voort, Joris Hulstijn, Yao-hua Tan

Delft University of Technology, Jaffalaan 5, 2628BX, The Netherlands

ARTICLE INFO

Available online 6 December 2012

Keywords:
Business-to-government
Compliance by design
Architecture
Information exchange
Continuous control monitoring
XBRL
Standard business reporting (SBR)

ABSTRACT

Transforming Business-to-Government (B2G) information exchange is a next frontier for reducing government spending while improving performance. This paper examines two different B2G information exchange architectures that reflect continuing transformations that empower some government agencies to do better compliance monitoring tasks with fewer resources. The win for the reporting companies is the lower cost of compliance. Instead of focusing on collecting compliance information from individual companies, the government agencies in this study focus on collecting information on the supply chain level, allowing for automated data reconciliation. Our findings reveal that pushing controls (automated checks) upstream (in company software and data sources) results in more efficiency, higher information quality and reduces redundant controls. The examined architectures exhibit high levels of compliance by design, meaning that many control objectives are by default encompassed in the design. This requires a well-aligned combination of data standardization (using shared syntax and semantics) and automated information processing (using an intelligent gateway between businesses and government agencies). However, achieving such an alignment is a difficult challenge; especially when taking into account that such transformations require solid governance, trust and high initial investments — prerequisites that are rare in many public-private partnerships.

1. Introduction

Business-to-Government (B2G) information exchange has recently become a frontier for government agencies facing the hard job of doing more (or better) tasks with fewer resources. In the broad spectrum of topics studied in the electronic government literature, B2G information exchange has received less attention than government-to-citizen (G2C) information exchange. Regardless of the reasons for this, B2G is an important instrument for fulfilling one of the most fundamental tasks of government agencies: monitoring the extent to which companies comply with the established laws and regulations. Accordingly, B2G information exchange often concerns the collection of business (usually financial) information by government agencies. In many cases, legalization dictates that businesses provide information to several government agencies in such a way that these agencies can assess the level of compliancy with the established laws and regulations. The Open Compliance & Ethics Group (OCEG) (OCEG, 2009), defines compliance as "the act of adhering to, and the ability to demonstrate adherence to, mandated requirements defined by laws and regulations, as well as voluntary requirements resulting from contractual obligations and internal policies" (p.4). Compliance essentially means ensuring that businesses operate in accordance with legislation and other prescribed set of norms. Ensuring compliance is in the public interest in order to reduce risks to society concerning safety and security, and maintain financial and social stability (Power, 2007). Compliance is predominantly viewed by companies as a burden that is a necessary evil. For companies it is mandatory to report a vast amount of information to various governmental agencies in order to demonstrate their compliance with legislation and regulations. Most companies need to report their tax and statistical information, whereas specific information can be asked for such as the ability for dealing with financial risks or for ensuring the quality of food. Monitoring compliance of businesses is often considered to be one of the most important tasks of government (Bonazzi, Hussami, & Pigneur, 2010). Compliance monitoring requires public organizations to collect and analyze information in order to determine the extent to which the regulated community operates in accordance to legislation. Government agencies with regulatory tasks require companies to report business information for many different purposes such as tax, statistics, industry regulation, safety, food regulation, environmental control and so on. Following financial (banking) scandals and calls for ethical behavior (e.g., Enron and Worldcom), firms are subject to more (international) laws and regulations (Power, 2009). In high risks sectors such as health care, customs, tax and food processing, there is an increase of governance guidelines and regulations that try to reduce risks for society (Tarantino, 2008). However, stricter laws and regulations have unwanted consequences for both

* Corresponding author.
E-mail address: n.bharosa@tudelft.nl (N. Bharosa).

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http://dx.doi.org/10.1016/j.giq.2012.08.006

the regulating government agencies and companies. For government agencies, more laws and regulations demand more compliance monitoring capabilities and (human) resources to collect and process information often resulting in physical inspection activities. For companies, more laws and regulations often lead to higher compliance costs — the time and money spent on collecting, structuring and sharing business information with several government agencies. Consequently, a 'spaghetti' of information exchange processes between businesses and public agencies is created which are hardly orchestrated.

These developments are in sharp contrast with the desire of politicians is to reduce the administrative burden for business and governments (Madden, 2010; National Audit Office, 2008). Transformation towards lean government requires a re-evaluation of the importance of tasks (cut all non-essential tasks) and a more efficient use of resources (e.g. cut processing time for procedures). Transformation often demands self-control, this means that companies perform tasks traditionally performed by regulators. As such, a primary objective of transformation is to enable government agencies to do more (tasks) with fewer (resources). Essential for facilitating this is having architectures enabling B2G information sharing and ensuring 'compliance by design'. Compliance by design refers to the latter situation in which control objectives are realized by having a sound architecture.

The objective of this paper is to understand new forms of B2G information exchange. For this purpose two different architectures reflecting changes in B2G information exchange that enable government agencies to do more compliance monitoring tasks with fewer (human) resources are investigated. The dimensions of these architectures, their impacts and the challenges that rise when transforming to new forms of B2G information exchanges are investigated. The findings should help researchers and policy makers seeking to examine or (re)design compliance architectures.

This paper proceeds as follows. Section 2 presents the background followed by the research approach in section 3. Section 4 presents the first case study where stakeholders are working towards a compliance architecture for financial reporting. Section 5 presents the second case study in which the stakeholders are working towards a different compliance architecture for monitoring the meat processing supply chain. Drawing on the insights gained from the two case studies, in Section 6 the main differences between both compliance architectures are discussed and the benefits and transformation challenges are presented. This paper concludes with avenues for further research and implications for policy makers and businesses.

2. Background

B2G is traditionally based on reporting a large amount of information by businesses to a number of public organizations. Public organizations use this information to analyze whether businesses comply with regulations and policies. There are two main approaches towards achieving compliance using reporting. The first is retrospective reporting, wherein audits are conducted afterwards often by expensive auditors who often manually inspect reports. The auditors check if the information is correct and represent the actual situations. The second approach concerns compliance by design which achieves compliance by ensuring that checks and controls are embedded in the system's architectures and information is collected from the source relying on some other input. The architecture can be audited before it will be actually used and once in operation the architecture ensures correct execution. Compliance by design refers to the latter situation in which control objectives are realized by developing and having in place a sound architecture. The designed architecture ensures the correctness of the information and only the architecture needs to be audited to warrant smooth functioning and correct outcomes. Compliance by design architectures should contain facilities for monitoring behavior, for managing legal terminology and for assessing risks (Sadiq & Governatori, 2009). Reporting flows can be designed in such a way that business processes, workflow and decision making automatically comply with relevant rules and regulations.

Compliance management often refers to meeting internal and external legal and regulatory requirements. Monitoring compliance requires data, sometimes in the form of template-based reports that serve either as evidence or as declaration that the citizen or company is compliant with a business rule, guideline or legal regulation. Stakeholders in the compliance community include citizens or companies filing out reports, institutions or regulators (public or private) verifying compliance, and possibly intermediaries (consultants, accountants, bookkeepers) and software or technology infrastructure providers. Institutions requesting reports can for instance be authorities (e.g., food safety authority), government agencies (tax office), professional organizations (chamber of commerce), or commercial parties (banks).

Usually, the compliance management tasks of companies must be tailored to the external compliance monitoring standards of government agencies, regulators or auditing firms. Based on established laws and regulations (often imposed by different agencies), a company needs to provide various types of information (on paper) to various agencies, who check whether or not the company operated in accordance to those laws and regulations. Key in monitoring compliance is that companies provide information to government agencies. In the past, such information was either provided by companies themselves (e.g., on paper) or collected by government agencies on the spot. However, due to new information collection and sharing capabilities provided by recent digital government infrastructures, there are some transformations taking place in the way companies can provide information (i.e., electronically) and governments can collect and analyze the information (e.g., from the companies own administration) (Winne, Janssen, Bharosa, Wijk, & Hulstijn, 2011). Depending on the sector in question and the monitoring or regulatory philosophy of the government agencies, various types of compliance architectures are possible.

This B2G information sharing situation is schematically sketched in Fig. 1. There is a distinction between the vertical supply chain processes performed by businesses (e.g., production, sales, shipping, aftersales etc.) and horizontal information exchange processes (e.g., data registration, collection, mapping, distribution, archiving and validation) for exchange B2G information. Information flows from upstream (businesses) to downstream (government). Compliance by design architectures represent an end-to-end approach in which information is collected from the source system and distributed to the relevant public agencies.

There are three main developments concerning new forms of B2G information sharing and compliance. The first developments is that the ability of new technology to store and mine large amounts of data enables public organizations to focus on business supply chains, instead of on single organizations. Whereas in the past companies provided information and this was checked based on history information and deviations in patterns, nowadays it is possible to compare data of various organizations with each other. It is possible to compare the output of one organization with the input of another organization. The amount of products and financial information should match with each other. Business supply chains become transparent in this way and it is possible to determine deviations.

The second development is the rise of information sharing and reporting standards. In particular of B2G reporting XBRL (eXtensible Business Reporting Language) has emerged as the de facto standard for exchange reports and data (Pinsker, 2003). XBRL is an XML-based standard for reporting, which include financial, statistical, taxes, and inspection reports. XBRL is a freely available international information-formatting standard that enables the gathering and dissemination of business information (Debreceny, Felden, Ochocki, & Piechocki, 2009).