A Stakeholder Analysis of Business-to-Government Information Sharing:
The Governance of a Public-Private Platform

Bram Klievink, Department of Technology, Policy and Management, Delft University of Technology, Delft, Delft, The Netherlands

Marijn Janssen, Department of Technology, Policy and Management, Delft University of Technology, Delft, The Netherlands

Yao-Hua Tan, Department of Technology, Policy and Management, Delft University of Technology, Delft, The Netherlands

ABSTRACT

ICT enables business-to-government (b-to-g) information exchange, which can be used to enhance control and compliance by businesses. However, sharing information can cause resistance by businesses, as for them information is key to competitive advantage, whereas governments need this information to conduct their tasks at lower costs. In this paper, the adoption of a b-to-g information-sharing platform is analyzed from a stakeholder theory perspective. The analysis shows that for stakeholders not the information-sharing infrastructure itself is their primary concern, but it is the governance thereof. A successful adoption and stakeholder management strategy was that companies have the sense-of-urgency and clear requirements to develop a public-private governance model. Governments can set the conditions to ensure that public functionality is also developed. The authors argue that stakeholder analysis should be used in developing adoption and implementation strategies.

Keywords: Business-to-Government, Information Exchange, Information Infrastructure, Public-Private Platform, Stakeholder Theory, Transformation

INTRODUCTION

Governments are initiating programs that aim to transform business-to-government (b-to-g) information exchange to reduce the adminis-trative burden for companies and improve the accountability at the same time (Winne, Janssen, Bharosa, Wijk, & Hulstijn, 2011). A key instrument is establishing an information platform for exchanging information both within the business community and between the businesses and government. Platforms have been given

much attention in the private sector and can be defined as "*products, services or technologies that connect different types of customers to each other*" (Hagiu & Yoffie, 2009, p. 75). Both businesses and government agencies can use the data that is exchanged through a platform to realise their goals better; the platform can thus support both business-to-business and b-to-g information exchange.

In this paper, we focus on the stakeholder dimensions in the development of a platform for information exchange platforms between businesses and governments involved in trade. The related information quality issues and parties involved in international trade are described elsewhere in this issue (see Klievink et al., this issue). Important for the study presented in this paper is that the development of a platform for data exchange is currently a pressing topic, primarily due to both the low quality of the information currently available (Hesketh, 2010) and the potential to improve compliance at lower costs (Bharosa et al., in press).

With the advancement of technology innovations it becomes possible improve the information exchange information worldwide, by creating connections between organizations. Government can tap directly into the information flow of company's information systems (Bharosa et al., in press; Tan, Bjørn-Andersen, Klein, & Rukanova, 2011). This re-use of the company's own business information for government control purposes is also called the '*piggy-back*' principle (Tan et al., 2011). This should result in a significant reduction of transaction costs and improve the information quality.

As there are so many actors involved in trade, the data become even more valuable if pieces of information from different actors are linked and combined. For example, Port Community Systems (PCSs) are information platforms that offer added value to customs and businesses by combining various data elements. Combining information requires the development of information exchange platforms that are used by a wide variety of stakeholders having diverse interests. The technical complexities of implementing platforms is compounded by the number of stakeholders affected by and involved in the decision making process. As a platform is a concern of both private and public parties, the governance mechanisms of the platform are of equal importance. Governance includes determining how communication, responsibilities and decision-making structures are formalized (Weill & Ross, 2005).

We analyze the stakeholder interactions in the design of a b-to-g information-sharing platform for the Dutch trade and logistics sector. For this, we use stakeholder theory, which is often used in e-government (Flak & Rose, 2005; Kamal, Weerakkody, & Irani, 2011; Lim, Chee-Wee, & Shan-Ling, 2007; Sæbø, Flak, & Sein, 2011). The principle idea behind stakeholder theory is that success can be increased by focusing on a wider set of stakeholders (Freeman, 1984). Sæbø et al. (2011) show that inadequately understanding the stakeholder dynamics can easily result in failure. Kamal et al. (2011) argue that few studies have examined the role of stakeholders and surrounding challenges when implementing integration in local government. In a similar vein, few studies have focused on the development and adoption of b-to-g information exchange.

BACKGROUND

Stakeholder theory originated in strategic management and concerns the viewing of an organization as having a broad range of stakeholders, all having their own interests and goals, and to strategically manage them (Freeman, 1984). Stakeholders are "any group or individual who can affect or is affected by the achievement of the firm's objectives" (Freeman, 1984, p. 25). A stakeholder can be an individual person or collective, like an organization or an institute (March, 1988). Stakeholders' goals, interests and perception might change over time and are influenced by each other. Rowley (1997) tied stakeholder theory to social network analysis. He argued that firms do not simply respond to each stakeholder individually; they respond

rather to the interaction of multiple influences from the entire stakeholder set. Stakeholders have multiple and conflicting objectives and interests and within a network there is often more than one participant with power to influence the outcomes.

Stakeholders can be either primary or secondary. The primary stakeholders are highly interdependent and are directly influenced. Secondary stakeholders are not involved in transactions and are not essential for the survival of the platform. Nevertheless they might influence the behavior of other stakeholders. These groups affect or are affected by the outcome of the stakeholder interactions. Often, business federations and interests groups are considered secondary stakeholders.

The theory of stakeholder offers theoretically sound arguments for why the needs of some stakeholders are considered salient and are met, whereas others are not (Mitchell, Agle, & Wood, 1997). Mitchell et al. (1997) propose that power, legitimacy and urgency are attributes that can be used to identify stakeholders, as they should poses at least one of these attributes. Uusitalo and Rökman (2004) provide a detailed description of these three attributes:

1. **Power:** Is defined as the ability of those who possess power to bring about the outcomes they desire.
2. **Legitimacy:** Is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions. Legitimacy thus depends largely on the perception of others, thus depends on the perception of the other stakeholders. The pursuit of legitimacy requires power, thus the stakeholders with power are likely to pursue their legitimate claims in public whereas the stakeholders with little power may fail to get their legitimate requirements public.
3. **Urgency:** Means that the demands of stakeholders are calling for immediate actions or are pressing.

The sum of the attributes determines the stakeholder salience, i.e., "the degree to which managers give priority to competing stakeholder claims" (Mitchell et al., 1997, p. 869). Mitchell et al. (1997) argue that these attributes are variable and change over time due to interactions and intervening activities, and stakeholders may or may not consciously and willfully exercise them. As such it is imperative to understand how stakeholders attributes change over time to understand the adoption process of innovative technology.

The interests of a stakeholder might be different or even conflicting and they might unconscious or deliberate employ stakeholder management strategies to influence developments. Stakeholders are dependent on their environment as organizations are not self-contained or self-sufficient and might exercise power or might be influenced by power (Pfeffer & Salancik, 1978). Various studies and authors (Bunn, Savage, & Holloway, 2002; Lim, Ahn, & Lee, 2005; Savage, Nix, Whitehead, & Blair, 1991) have suggested multiple strategies for this, which might directly or indirectly withhold resources to influence the balance of power (Frooman, 1999).

Process management takes a different strategy by focusing on defining rules for realizing and maintaining such a process of interaction (De Bruijn, Ten Heuvelhof, & In 't Veld, 2010). The process management approach acknowledges the role of power, urgency and legitimacy, but does not neglect the importance of information in decision-making (De Bruijn et al., 2010). Whereas other stakeholder management strategies are based on exercising powers (e.g., Frooman, 1999), persuasion through argumentation is fundamentally different. Process management operates in a continuum between open and closed refereeing to the relevant

parties to be involved in the decision-making and they must be certain that their interests will be addressed where possible. The process management approach aims to incorporate the diverging perceptions of participating actors and the relevant (types of) knowledge in decision-making. The approach aims at achieving negotiated solutions, on which the participants agree after exchanging the pros and cons.

The stakeholders are often working with each other within a formalized relationship, which is the area of governance. In governance the locus of decision-making is an important component (Peterson, 2004; Sambamurthy & Zmud, 1999). Governance is necessary for developing, implementing and exploiting b-to-g information exchange. Enterprises generally design three kinds of governance mechanisms: (1) Decision-making structures, (2) Alignment processes and; (3) Formal communications (Weill & Ross, 2005).

RESEARCH APPROACH

To be meaningful for managing stakeholders, stakeholder theory needs to be able to place firms in their proper context, which is that of multi-actor relationships and interactions. Due to the complex nature of b-to-g information exchange, the context and the need to gain a deeper understanding of the phenomenon at hand, a qualitative in-depth approach based on case study research was adopted for this research (Yin, 2009). Case study research can provide deep insight in the transformation enabled by ICT innovations. Case study research is a commonly used qualitative method (see for example Orlikowski & Lacono, 2001). We employ qualitative methods to get an in-depth understanding of the stakeholder interaction in its real-life setting, based on observational data. In this paper, we provide an in-depth description of the stakeholder process and analyse it.

Data was collected by studying internal documents and attending and observing the strategic meetings of the governance advisory group, which consisted of the various stake-holders. This allowed us to study the process entirely, throughout time. The debate started in 2011 and reached the current form of conclusion in the first half of 2012. Combined with our theoretical lens, our study enables us to draw a number of findings and conclusions that go beyond the phenomenon studied.

CASE STUDY

Background

The empirical study of this research is on the development of an open ICT platform in the Netherlands for interconnecting businesses and government organisations that are involved in trade networks. For this open ICT platform, government and business platforms join-up in a so-called Neutral Logistics Information Platform (NLIP).

PCSs have a key role in this NLIP. The functionality of PCSs can be found in many ports. Often, PCSs were initiated in the eighties by the port authorities and the national customs administration to use ICT for making the exchange of data among the numerous actors in the port region more efficient. PCSs typically combine public and private information.

A typical example in the Dutch situation of this public-private data combination is the clearance process of the export declaration. First, many exporting companies use the PCS to send electronic export declaration to Customs. This declaration is mandatory for companies, and generates 'community' data that the PCS can use. Subsequently, customs needs to know precisely at which vessel the container with these goods is loaded data, as part of the procedure to confirm that the cargo has left the port. The PCS therefore also exchanges business data from the container terminal with customs, as the container terminal knows on which ship a container containing goods that are registered in a specific declaration was loaded. Finally, the port authority knows when that vessel has left the port and, combined with the other data (which shipments are loaded in a specific container,

which ship that container was loaded on, and when that ship leaves Dutch territory), customs knows goods have been exported.

The companies also benefit from this data sharing, because the PCS also sends the final message from the customs to the company that the goods are cleared for export. Hence, the value of PCS is in combining the public data from the export declaration with the business data from the container terminal that loads the container on a specific vessel. In this way, the PCS reduces the number of individual data links between public and private organisations. Given its role in sharing data in the port area, the PCS has custody of much information that can also be shared among business partners in supply chains and ports.

As part of an innovation strategy for the logistics sector in the Netherlands, the NLIP was set-up to act as a national platform, and not be limited to ports, like a PCS often is. Existing PCSs, initiatives from various business communities, and government organizations all sought to see their interests met in the NLIP development. To address this multi-stakeholder situation, a governance advisory committee was set up specifically for working out the governance arrangements that will have to accompany the technical platform. Given the presence of existing platforms, the decisions made in this advisory committee were highly related to the existing ICT and also impact the technical solution for the NLIP.

The Starting Positions of the Key Stakeholders and the Underlying Issue

As one of the main stakeholders in the NLIP developments, the position of the Dutch PCSs is important. They are also involved in the advisory committee. The key business model of the PCS was offering message exchange with a translation function (where needed) and ensuring that various communities were able to connect to the system (based on standards). For a key PCS it is difficult to be completely self-supporting. The

basic community services are funded through general funds of the shareholders, which are the port authorities. Due to the economic crisis, these costs have become a heavy burden for these organizations, and therefore the PCS is forced to become economically self-supporting. This revenue currently comes from subscriptions and a fee-per-message method. However, the development and maintenance costs for the IT platform cannot be recovered by the fees that they can charge the companies through subscriptions and a fee-per-message method.

Given this development, the PCS seeks to expand their business-to-business services and the income generated from those services. The strategy is to develop a platform to provide "apps" to the business community, based on the data they have in custody. An example of such an app is logistics planning, which requires information from shipping companies, shipbrokers, agents, forwarders, inland carriers, customs, and (if applicable) other inspection authorities. It is the combination of using public and private data that provides the added value. However, this has also driven much of the discussion as the data that a PCS has in custody comes from its role in the exchange of information between the business community and government.

The business community is diverse and represented in the advisory committee through business federations. For example, there is a business federation that serves the interests of shippers, one for freight forwarders, and one for logistics providers. These business federations were primarily interested to not see their competitive position threatened or costs raised. However, businesses do play a key role in determining whether the PCS is allowed to use community data as the basis for business services that they provide to the market. Another issue is level playing field. If a PCS can use data to build an app that they offer as a business service to companies, then other companies (or platforms of business federations) should also have access rights to these data to develop competing services. However, currently, only the PCSs have custody of these data.

Finally, customs and the port authorities are key government stakeholders. Already in the early days of automating interactions between parties in the port, customs has been an important driver. Also now, combining and matching data is an important feature of a PCS for customs. Consequently, the electronic customs declarations and informing businesses of cleared shipments is much more efficient than it would be without a PCS. However, from the customs perspective, facilitating customs procedures is a task for the port authority. Customs provides suggestions on how to do this most efficiently and thereby gain competitive advantages for the port community as a whole.

The businesses view the PCS's role of combining data as government functionality, as they think customs is creating the problem by requiring customs declarations, even though national customs organizations are required to do this by the European Union. Consequently, businesses do not want to pay the PCS for the functionalities like the electronic customs declaration and electronic clearance message.

Ultimately the PCS is forced in a position in which they have to find a way to cover the costs for their ICT innovation, but both government and the business community do not want to pay for this. Therefore, the PCS aim to become the NLIP and build applications that can generate the revenue they need to survive. However, this would require that data gathered for community purposes will be used for business purposes, which is not necessarily acceptable by the business community. It is in this situation where the NLIP governance discussions have taken place.

Stakeholder Interaction Process: Designing a Governance Board

The debate on the governance structure of the NLIP was directly linked with the technical set-up of the platform. In the current situation, businesses can provide data to an electronic government postbox directly, or use the PCS for this. Given the position the PCS was forced into (as described previously), it aimed to use the governance discussion to present itself hav-

ing the data that all businesses would have to provide to the national NLIP platform. Based on that data, the PCS could be a key user and develop business apps based on that data, which could serve the business community, for a fee, which would provide the income needed. As the NLIP will become a mandatory platform for the business community to feed data to the government, this would ensure the core stream of data on which the value added apps can be based.

The platform information is of vital importance for all parties involved, especially in the struggle between community and business use of the data in apps. Therefore, in the governance advisory committee, it was decided that databases had to be part of the core of the NLIP platform. In that design, the NLIP platform contains databases, authorization, single sign-on and translation facilities. The NLIP platform is thus an ICT infrastructure, where the databases of the PCSs are connected to each other and to government databases. The functionality (apps) is separate from this infrastructure. The governance arrangement focused on determining which parts need a governance or decision-making body and how these parts will be governed.

In the discussion about how to arrange the governance, the position of the government organizations is particularly difficult, as they benefit from the role that the PCS has in combining business community data and government data. However, they want the NLIP to be driven by the business community. If not, the funding of the PCS functionality would befall on e.g., customs, which consider this functionality that the business community must organize themselves. Given the importance of the PCS for customs, businesses did expect customs to pick up the glove and counter the PCS's strategy to use the NLIP to become a mandatory way of contacting government and basing businesses apps on the data that would come from that role. However, customs considered this a business issue, and did not want to interfere in the process. This provided a window of opportunity for business to shape the information exchange infrastructure. Ultimately, the business com-

munity (through the business federations) had to organize joint action to steer this debate in a direction that was acceptable to all parties.

Outcome: Governance Board for the NLIP

The outcome of the debate is that there would be a separation between a decentralized infrastructure and value-added apps. The existing infrastructure and databases will remain part of the organizations that they are currently part of. An alternative option that was explored was to bring the central part of the NLIP to neutral entities. This was rejected, as the databases would then no longer belong to anyone, which would require that existing parts would have to be rebuilt, which would take a lot of time.

To safeguard the neutrality of the core infrastructure, a governance board is designed to accompany it. This governance board makes the decisions related to the NLIP and consists of all stakeholders. As there are many businesses, business federations represent those stakeholder groups. Furthermore, businesses like the terminal operators, the existing PCSs, and the relevant government agencies are part of the board. This board makes decisions on:

1. Acceptance of apps; which functionality is acceptable by all stakeholders;
2. Standards; the NLIP has to conform to widely accepted standards, including WCO, UN/CEFACT, and major industry standards;
3. Costs and pricing; that access to the NLIP is free of charge (i.e., using the NLIP only to exchange data with the government postbox). Basic community functionality (like the PCS currently provides) will be available at cost price. Additional functionality for a higher (commercial) fee can also be developed, but the governance board determines what is acceptable.

Setting the costs and (fair) prices will be one of the most difficult tasks, as it needs to strike a balance of being acceptable to the businesses

community present in the governance board and also needs to be at a level that the components of the NLIP can survive. In this model, the parts of the PCSs that are part of the NLIP become vital infrastructure and thus needs to be upheld. As a major PCS is currently facing financial losses, the governance board also has to decide how to deal with this. The business stakeholders will have to decide which functionality offers added value to them and how they are going to help sustain this functionality. This could mean that the pricing of this functionality is set higher. This arrangement was acceptable for the stakeholders.

DISCUSSION

The salience of stakeholders changed over time. In the first phase, the businesses were essentially waiting for customs to make their intentions known in the governance advisory committee. Customs, on the other hand, see a PCS as a platform by and for the business community and did not want to move first as they were afraid this might shift the discussion to how they were going to make sure that the PCS functionality would be upheld. By not moving and not initiating actions, the saliences shifted to the various businesses. The PCSs wanted to become the NLIP and see the businesses required to file information to government through them. As a result, the business started feeling a sense of urgency to ensure that on the one hand the PCS was not going to be permitted to sell them business services based on their own data, whereas on the other hand they did not want to lose the platform altogether given the community services it offers. This was also important for customs, as they want to use the NLIP for accessing accurate and original data from the businesses involved in trade and need the PCS functionality for combining data.

The attribute 'sense of urgency' changed over time (Table 1), whereas the others remain largely unchanged. This was because government did not act on the development the way that business expected customs would act,

Table 1. Changes in stakeholder's attributes

Stakeholder name	Stakeholder attributes		
	Power	**Legitimacy**	**Urgency**
1. Customs	High, but aim to seek consensus to have the businesses drive the innovation	Has the means and in the past used their (regulatory) power	In the past they had a high urgency, but in NLIP developments they sought to facilitate the debate in such a way that their interests would be accommodated in a business-supported innovation
2. Business (federations)	Increased when they got involved in the discussion and the various federations joined strength	High as they are acting on behalf of the business communities, but also fragmented	Low at first but higher later, as they were concerned that the PCSs would succeed in building business services on community data
3. PCSs	Decrease, they thought to be the spider in the network, but found that they need support by parties that see their added value	Low, because they are perceived to be taking advantage of the data they have in custody for the functionality needed by authorities	High, as their survival depends on it

and therefore the businesses felt an increasing sense of urgency. Although customs facilitates the b-to-g information exchange and should have the urgency to create the facilities, this is not sufficient for driving the innovations. Companies are the users of the infrastructure and they should have a sense-of-urgency for stimulating innovation.

Whereas the PCS tried to employ a closed innovation strategy by involving only a limited number of stakeholders, innovation only occurred when the strategy was opened up and businesses were involved. The business federations were initially secondary stakeholders as they are not directly involved in the platform. The federations become primary stakeholders by being involved in the governance board, as their involvement is essential for the survival of the platform. This illustrates that a process management strategy is better than a stakeholder management strategy based on utilizing power. By using stakeholder theory, the importance of assessing stakeholder's positions and

attributes becomes visible. As the use of stakeholder theory in e-government is often primary used to identify the key actors, we argue that it can also serve as a basis for determining adoption and implementation strategies. Too often, it is merely used for retrospective analysis and not for descriptive theory, although the original work of Freeman (1984) explicitly contains the question about how to use it as a base for taking action.

Using stakeholder theory, we identified a fundamental shift in the position of customs, which changed from very directive in the past to a much more facilitating attitude now. This is accompanied by an increasingly strong emphasis on public-private collaboration (Klievink, Janssen, & Tan, 2012), whereas in the past customs considered itself an organization setting strict rules and focusing on non-compliant companies. Furthermore, we found this to turn out into a Dutch 'Polder Model' consensus building process in which primarily business federations ended up playing a key role (there was

almost no direct involvement from individual businesses). A process management strategy is preferred over stakeholder management strategies based on power.

As such, our analysis of the Dutch debate on the governance accompanying the information sharing platform NLIP contributes to the use of stakeholder theory in e-government in showing that stakeholder theory needs to take into account that public-private collaboration means that boundary functionality relies on collaboration and a public-private governance model that can be accepted by both public and private sector organizations. Second, business federations or other representative groups can play a vital and direct role, although they are often not considered to be primary stakeholders in stakeholder theory.

CONCLUSION

The stakeholder analysis is useful to understand how the platform and accompanying governance structure were developed. The analysis shows that the sense of urgency of the stakeholders is a key aspect in the development but is not a fixed attribute. Stakeholders change their attributes during the interaction process, based on the (in)action of others. In our study, authorities have a powerful role, but as they did not act the businesses got a sense of urgency. The governance structure is driven by the need to have a revenue model, ensure fair access and pricing, keep community and public functionality, and focus on the added value of functionality and ultimately on the competitive position of the individual stakeholders and of the community in general.

Although stakeholder studies may seem obvious, in e-government there has been little application of stakeholder analysis concepts in determining which impact the stakeholder positions and interactions can have on the adoption and implementation strategies. This becomes visible in the design of the governance board in our case study. We argue for the use of stakeholder analysis for determining an adoption strategy in situations with a large number of stakeholders. A sound stakeholder strategy can determine success and is further substantiated when considering large-scale investments in ICT platforms with a high risk of failure for one or multiple stakeholders. In our case study the consensus-based process management type of strategy as suggested by De Bruijn et al. (2010) proved to be successful rather than stakeholder management strategies based on power, which caused resistance. We suggest comparing various types of strategies in further research to help organizations to determine the right stakeholder management strategy. Finally, as public and private organizations are increasingly collaborating in other situations and domains, further research should also focus on comparing public-private platforms and seek general lessons on public-private governance models.

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Bram Klievink is an assistant professor at the Faculty of Technology, Policy and Management at Delft University of Technology. He holds a PhD degree in technology and public management, an MSc degree in political science, and a degree in business information systems. His PhD dissertation is on coordination mechanisms for public-private service networks. For this research, he developed a role-play game to investigate and facilitate coordination arrangements in multi-actor service delivery. Furthermore, he participated in research projects on integrated, demand-driven e-government and on multi-channel management in government. Currently, he is involved in multiple Dutch and European research projects as a researcher and work package leader.

Marijn Janssen is Director of the interdisciplinary Systems Engineering, Policy Analyses and Management (SEPAM) Master programme and is an Associate Professor within the Information and Communication Technology section of the Technology, Policy and Management Faculty of Delft University of Technology. His research interests are in the field of ICT and governance in particular e-government, orchestration, (shared) services, intermediaries, open data and infrastructures for coordinating public-private service networks. He serves on several editorial boards, is associate editor of Government Information Quarterly *(GIQ) and the* International Journal of E-Government Research *(IJEGR) and is involved in the organization of a number of conferences, including IFIP EGOV. He published over 200 refereed publications.*

Yao-Hua Tan is professor of Information and Communication Technology and head of the ICT Group of the Department of Technology, Policy and Management of the Delft University of Technology. He was also Reynolds visiting professor at the Wharton Business School of the University of Pennsylvania. His research interests are service engineering and governance; ICT-enabled electronic negotiation and contracting; multi-agent modelling to develop automation of business procedures in international trade. He published five books and over 190 conference papers and journal articles. He was coordinator and/or scientific director of various research projects on IT innovation to facilitate international trade; including the projects ITAIDE, CASSANDRA and Extended Single Window. He is vice-chair of the Committee on Trade of the Trade Division of the United Nations Economic Commission for Europe.

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