Lessons from multi-agency information management projects: Case of the Online Business Licensing Service (OBLS) Project, Singapore

Thompson S.H. Teo\textsuperscript{a,}\textsuperscript{*}, Tat Koon Koh\textsuperscript{b}

\textsuperscript{a} Department of Decision Sciences, School of Business, National University of Singapore, 1 Business Link, Singapore 117592, Singapore
\textsuperscript{b} Tepper School of Business, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, United States

\section{Introduction}

Businesses and governments around the world are leveraging on Internet technologies to serve their customers. The Internet as a service delivery channel enables both private and public agencies to deliver their services 24/7, thereby allowing them to be more responsive to their customers' needs (West, 2004). Further, information management services, such as e-government have been found to improve trust by improving interactions with citizens and perceptions of responsiveness (Tolbert & Mossberger, 2006). It also tends to be more cost-effective than traditional overhe-the-counter/phone channels as it promotes self-service by the users. Further, by using technology, agencies can now do things that were previously not feasible, such as mass-customization of services for their users. Customers hence benefit from greater convenience, lower search and compliance costs, and better service quality with the development of information services through e-government.

Early e-government efforts tended to result in silo-agency projects and systems. Many agencies launched their websites to provide information or allow their customers to interact and transact with them directly. These initial efforts excited and benefited the users. However, most e-government systems tend to be principally informational in nature and involve the one way flow of information from government to citizens rather than providing integrated e-government services (Morris & Moon, 2005). As more and more agencies made available their services online, and as customers' expectation changed, such silo-agency approach was not able to deliver the full potential of information management through e-government. Customers found that the bureaucracy that existed in the traditional offline world was being migrated online. They had to visit multiple agencies' websites to get certain things done. In some instances, they had to submit the same information multiple times to different agencies. Hence, customers increasingly became dissatisfied, and the need for better cross-agency information management systems becomes crucial.

To overcome this, many governments are emphasizing the use of the Internet to transform traditional bureaucratic processes by reengineering them to take advantage of the potential of new technologies to provide one-stop services that deliver information services more efficiently and effectively (Ho, 2002; Kamal, Weerakkody, & Jones, 2009). Consequently, there is an increasing push for the implementation of multi-agency information management projects—projects that involve cross-agency collaboration and integrate relevant information services across different agencies. Such projects allow governments to deliver more effective services and be more cost-efficient. Customers overcome bureaucracy and red tapes that exist in the traditional systems, thereby enjoying greater convenience when dealing with their governments.

Managing multiple-agency projects, though, is not easy. Agencies have been created with specific roles and mandates. Having multiple agencies involved in a single project increases the project's complexity and difficulty. However, the potential impact of such projects is likely to be transformational in nature as such projects can reduce redundancies and streamline operations across agencies so as to better serve customers' needs. One key question,
then, is how do we develop, implement and manage these projects effectively to achieve the projects’ objectives? To address this question, we examine the implementation of the Online Business Licensing Service (OBLS) system by the Singapore government (OBLS Website, 2007). What makes the OBLS project an interesting case study is that it is a multi-agency information management project that integrates more than 70 licenses across 30 agencies into one common front-end platform. Further, the OBLS system was awarded the “2005 United Nations Public Service Award” for application of information and communication technologies (ICT) in government. This study provides insights of the challenges and lessons learned in a multi-agency information management project, which are useful for similar projects implementation in both the private and public sector.

Although we can learn from private sector experiences in developing transformational public sector information management projects, there are some inherent differences between projects in these two sectors that may limit the extent of knowledge transfer across the sectors. Specifically, public sector information management projects are characterized by, among other things, higher level of interdependence across organizational boundaries, red tape, and extra-organizational linkages (Bretschneider, 1990). Therefore, the need for leadership and difficulties in implementing changes in public sector information management projects tend to be greater (Cats-Baril & Thompson, 1995). The dissimilarities between the public and private sectors also affect how activities, such as business process reengineering (BPR) (Thong, Yap, & Seah, 2000) and information technology (IT) evaluation (Hoff, 1992), are carried out in different sectors. It is therefore useful and necessary to examine successful public sector experiences directly.

This paper contributes in the following ways. First, while information management projects are increasingly becoming more common, there is a dearth of research on managing multi-agency projects, particularly in the context of e-government. This study addresses this gap in the literature. Second, we introduce a 3Ps (product–process–participation) framework for analyzing the key issues in information management projects that involves multiple agencies (stakeholders). This framework can provide guidance to researchers, practitioners and policy makers on the key issues in managing such projects. Third, we illustrate a successful case of information management initiatives which can serve as motivation for other agencies and governments to embark on information management projects. The case also illustrates a set of lessons learned from the OBLS project based on the 3Ps framework.

This paper is organized as follows. The next section provides the literature review followed by a description of the method used to gather data for this study. This is followed by a description of OBLS and its impact. The paper then analyzes multi-agency information management projects using a 3P framework, and concludes with a discussion on key issues in single versus multi-agency projects.

2. Literature review

While some researchers view e-government as the delivery of public sector information and services through ICT (West, 2004), other researchers emphasize that the potential of information management through e-government is to significantly transform and enhance the access to and delivery of all facets of government services and operations for the benefit of citizens, businesses, employees and other stakeholders (Irañi, Hildman, & Jackson, 2007). Previous research on e-government tends to be conceptual (Dawes, Pardo, & DiCaterino, 1999; Layne & Lee, 2001; Warkentin, Gfen, Pavlou, & Rose, 2002) or based on case studies (Heeks, 2002; Kim, Pan, & Pan, 2007). Empirical studies (Davenport, Richey, and Westbrook, 2008; Srivastava & Teo, 2007a) tend to be relatively sparse. Topics examined in past research includes factors affecting e-government development (Parn & von Tunzelmann, 2007; Srivastava & Teo, 2007b), potential of e-government (Heeks, 2002), e-government payoffs (Irañi, Love, Elliman, Jones, & Themistocleous, 2005; Lawson-Body, Keengwe, Mukankusi, Illia, & Miller, 2008; Srivastava & Teo, 2007a), adoption and trust in e-government (Carter & Bélanger, 2005; Liu & Chetal, 2005; Warkentin et al., 2002), e-government policies (Mele, 2008) and evolution of e-government (Layne & Lee, 2001; Park et al., 2009).

One way to view information management in e-government is to consider it as a category of initiatives with certain characteristics or emphases. Layne and Lee (2001) posit a four stage growth model for e-government: (1) cataloguing (establishing online presence for the government), (2) transaction (allowing citizens to transact with government electronically), (3) vertical integration (connecting agencies for different functions or services of government), and (4) horizontal integration (integrating across different functions and services). Similarly, West (2004) outlines four general stages of e-government: (1) the billboard stage (static mechanisms to display information), (2) the partial-service-delivery stage (sporadic and limited opportunities for online services), (3) the portal stage (executable and integrated service delivery), and (4) interactive democracy (public outreach and accountability enhancing features). The potentials for effective multi-agency information management becomes more salient at the more mature or advanced stages (i.e. stages 3 and 4). At the same time, these stages present key challenges in the implementation of multi-agency information management initiatives as customers often see agencies as an integral part of a bigger body, and not as stand-alone units. Agencies need to bear this in mind as they redefine their relationship with customers, such that the customers are part of their strategic value networks, and not outsiders (Tans & Pan, 2003). Doing so often suggest significant changes to how agencies are structured or how they conduct their businesses. In addition, to integrate cross-agencies information and service offerings, there is a need for greater cooperation among government agencies (West, 2004). However, this requires certain level of information sharing and coordination among agencies, which has been identified as an impediment in multi-agency projects (Gil-Garcia, Chengalur-Smith, & Duchessi, 2007; Irañi et al., 2007; U.S. General Services Administration, 1999). Another challenge in multi-agency information management initiatives relates to the availability and allocation of funding. Agencies usually have limited budget support, resulting in them allocating small percentages of overall budget to IT. This limits the extent to which the need for integration, functionality, and democracy enhancements for effective cross-agency information management can be achieved (West, 2004). Apart from these, other challenges in multi-agency information management initiatives include ensuring privacy of the users (U.S. General Services Administration, 1999), changing the mindset of agency directors (Layne & Lee, 2001), and engaging stakeholders throughout the system (Irañi et al., 2007).

3. Method

Data were gathered through semi-structured interviews with key persons involved in the OBLS project from Ministry of Trade and Industry (MTI) and the Infocomm Development Agency (IDA). Key persons interviewed included the Deputy Director (e-Government Policies and Programs Division) and Senior Consultant (Electronic Services Division), both from the Government Chief Information Office at IDA. We also interviewed a Senior Assistant Director, who was a member of the OBLS Core Team, from MTI. In addition, we
examined in-house materials and newsletters, and e-government websites for understanding the impact of OBLS, thereby triangulating data from the interviews with secondary sources.

**4. Online Business Licensing Service (OBLS) Project**

**4.1. Background**

The OBLS project came about as a result of feedback from Singapore’s business community to the Pro-Enterprise Panel (PEP) in 2000. The PEP is a high-level panel chaired by the Head of Civil Service and comprises of business champions from the private sector and senior civil servants. Established in 2000, its role is to review rules and regulations on business licensing, taking into account feedback from businesses. Such feedback includes issues relating to the costs, application processes, and requirements of various licenses. The PEP brought some of these issues to the attention of the Committee of Permanent Secretaries (COPS), who appointed the Ministry of Trade and Industry (MTI) to look into these issues. MTI, together with the Ministry of Finance (MOF) and Infocomm Development Authority (IDA), then proposed OBLS project as a solution to tackle the situation. Note that Permanent Secretaries are the highest civil service appointment holders in the respective government ministries in Singapore. The COPS is therefore a high-level committee that deliberates on various national issues. The OBLS project aimed to develop a seamless system for businesses to apply for required licenses and hence create a more pro-enterprise environment (MTI & IDA, 2005).

The OBLS project involved a four-level management structure to drive and manage the project (refer to Fig. 1). The highest level was the COPS, which served as the top decision-making authority for endorsements and buy-ins. The next level was the OBLS Steering Committee (SC), consisting of senior officials from over thirty key agencies with license and permit activities. Chaired by the Deputy Secretary from MTI and co-chaired by the Deputy Secretary from MOF, the OBLS SC deliberated on policy issues and ensured that project deliverables and targets were achieved. It was also at this level where issues escalated from the working level were resolved.

At the working level was the Core Team which comprised of officers from MTI and IDA. The Core Team helped the top management in shaping the OBLS project vision and ensured that all aspects of the project were competently executed. With the support and mandate from high-level committees, the Core Team worked directly with agency staff throughout the three stages of development. In the process, the Core Team had to propose solutions and alternatives for regulatory, process and cross-agency issues. In addition, it managed the implementation of the OBLS system, such as the development of prototypes and vendor management. It reported directly to the OBLS SC on the status of the project and sought directions on difficult issues.

Lastly, various task forces were established at the agency level. To achieve the essential buy-in at the operational levels, the Core Team actively involved the task forces in the OBLS project. The task forces worked closely with the Core Team to cut red tape in licensing, streamline specific regulatory requirements and processes, and look into the integration of agencies’ systems with the OBLS system. Task force leaders were appointed to drive the review of licensing needs of individual industries or business activities, such as public entertainment or health-care. As we would see in the next section, the “industries and business activities” concept has an important significance in the OBLS project, as it would change how businesses interact with the agencies when applying for licenses.

**4.2. Impact of the OBLS system**

Previously, before the OBLS project was initiated and developed, applying for licenses was a daunting task for many startups and existing businesses. As most business activities commonly were under the purview of more than one agency, many businesses had to visit different agencies to apply for licenses. Liaising with multiple agencies could be an administrative nightmare for many businesses. Opportunity and compliance costs for businesses were significant, as the time and effort spent in liaising with multiple agencies could be devoted to other business-related activities. Applying licenses from multiple agencies caused another problem: applicants were required to submit similar information, such as business and personal particulars, to multiple agencies. Even when online application channels were provided by the public agencies, these liaison and multiple information submission problems still existed. As a result, many startups and businesses found that the license application process was costly, time-consuming, confusing and frustrating.

With the implementation of the OBLS system, the situation greatly improved. First, there was a reduction in the number and costs of licenses. In the licensing policy review stage, 11 licenses were deemed to be irrelevant or obsolete and hence eliminated. Two other licenses were converted to “life-time licenses,” which removed the need for businesses to renew them. License fees for some licenses were also lowered. For instance, the Company Incorporation fee was reduced from a variable cost of S$1200–S$35,000 (US$600–US$17,500) to a flat fee of S$300 (US$150). Second, processing time for license application was also reduced through the BPR efforts. The average approval processing time was reduced by 65%, from an average of 21 to 8 days. Table 1 summarizes some of the benefits of the OBLS system to businesses by comparing “over the counter” versus “online via the OBLS system.”

Third, with the online one-stop application system, applicants could now submit one integrated application for multiple licenses and make a consolidated payment for the various licenses that they were applying for. Data entry was reduced by up to 60% (MTI & IDA, 2005). The significance of the OBLS system was recognized when it was awarded the United Nation (UN) Public Service Award in 2005. The UN Department of Economic and Social Affairs described the OASIS project (the project name for the OBLS system) as an “outstanding achievement which has demonstrated excellence in serving the public interest and made a significant contribution to the improvement of public administration” in Singapore (MTI, 2005).
### Table 1
Benefits of OBLS system to businesses.

<table>
<thead>
<tr>
<th>Business transaction</th>
<th>Over the counter</th>
<th>Online via OBLS system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporating a new company</td>
<td>Cost: S$1200 and up</td>
<td>Cost: flat fee of S$300</td>
</tr>
<tr>
<td></td>
<td>Processing time: 5 days</td>
<td>Processing time: 2 h</td>
</tr>
<tr>
<td>Obtaining a public entertainment license</td>
<td>Processing time: 8 weeks</td>
<td>Processing time: 2 weeks</td>
</tr>
<tr>
<td>Applying a pet shop license</td>
<td>Number of counter visits: 7 government agencies</td>
<td>Number of counter visits: 0</td>
</tr>
<tr>
<td></td>
<td>Processing time: 2 months</td>
<td>Processing time: 3 days</td>
</tr>
</tbody>
</table>

*Note: US$1 = S$1.50.*  
*Source: MTI and IDA (2005).*

### Table 2
Business licensing via OBLS system versus East Asia/OECD.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Singapore</th>
<th>East Asia</th>
<th>OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting a business</td>
<td>Procedures (number)</td>
<td>5</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>Time (days)</td>
<td>5</td>
<td>46.5</td>
</tr>
<tr>
<td></td>
<td>Cost (% of income per capita)</td>
<td>0.8</td>
<td>34.9</td>
</tr>
<tr>
<td></td>
<td>Min. capital (% of income per capita)</td>
<td>0.0</td>
<td>50</td>
</tr>
<tr>
<td>Dealing with licenses</td>
<td>Procedures (number)</td>
<td>11</td>
<td>19.5</td>
</tr>
<tr>
<td></td>
<td>Time (days)</td>
<td>129</td>
<td>176.4</td>
</tr>
<tr>
<td></td>
<td>Cost (% of income per capita)</td>
<td>24.0</td>
<td>178.3</td>
</tr>
</tbody>
</table>

*Source: www.doingbusiness.org.*

In a separate study of 155 economies by the World Bank and International Finance Corporation (IFC), Singapore was ranked 5th in starting a business and 7th in dealing with licenses in 2005 (World Bank & IFC, 2006). In Singapore, starting an industrial or commercial business involved 6 procedures, took 6 days and cost 0.8% of Gross National Income (GNI) per-capita to obtain the necessary licenses and complete required procedures in 2008. These were improvements to the 7 procedures, 8 days and 1.2% of GNI per-capita in 2003. These figures compared favorably with countries in the region (East Asia) as well as OECD countries as shown in Table 2. Further, in Singapore, dealing with licenses to build a warehouse involved 11 procedures, took 129 days and cost 24% of GNI per-capita. Again, these figures compared favorably with countries in the region as well as OECD countries as shown in Table 2. Further, in a recent study, Singapore was ranked fourth in the world (and second in Asia after Tokyo) in the Mastercard Worldwide Centres of Commerce Index, and first in the world in terms of ease of doing business (Tay, 2008). Overall, these results provide evidence that the OBLS system had improved the legal requirements for startups and created a more pro-enterprise environment in Singapore. More importantly, these results also demonstrate that effective management of information across multiple agencies is a key cornerstone in transforming government to function more effectively in serving stakeholders’ needs.

### 5. 3Ps framework for effective multi-agency information management

Researchers have introduced various relevant frameworks that relate to areas such as e-government development (Grant & Chau, 2005; Layne & Lee, 2001; West, 2004), financing (Chen & Thurmaier, 2008), and evaluation (Gupta & Jana, 2003). A limitation of these frameworks, however, is that they do not specifically address strategies and issues in the development and implementation of multi-agency information management projects. For example, how can we achieve the needed cooperation among agencies? What are some activities during that implementation process that have significant impacts? Given the dynamic nature of multi-agency projects, we believe that a holistic framework is necessary (Fig. 2).

Based on the lessons learned from the development of OBLS, we develop a 3Ps (product, process, participation) framework that summarizes the key lessons for the implementation of multi-agency projects (Fig. 3). At the core of the framework is the need for pro-enterprise customer-centric mindset that underpins the 3Ps. Product refers to the nature of services provided by the government; process refers to the various procedures involved; and participation refers to the involvements of key constituents in the project. We will discuss the core of 3Ps, followed by each of the 3Ps in the following sections by describing the lessons learned from OBLS.

#### 5.1. Core of 3Ps—pro-enterprise, customer-centric mindset

The transition towards more effective multi-agency information management usually starts with a paradigm shift in public administration. From a traditional bureaucratic paradigm that focuses on internal and managerial concerns, public managers began to adopt a new paradigm that emphasizes on users satisfaction and control (Ho, 2002) through better provision and access
to information. In the case of OBLs, instilling a pro-enterprise, customer-oriented mindset in all participating agencies underpins the 3Ps. For example, licenses served as the primary tool for agencies to regulate and control businesses activities and behaviors. Therefore, some agencies reacted strongly to suggestions that certain licenses were no longer necessary or certain processes could be removed. In other words, there was a general tendency for individual agencies to be conservative and favor keeping all existing licenses regardless of whether such licenses were still needed. To overcome this challenge, agencies had to adopt a new mindset, to change from being agency-centric to being pro-enterprise, customer-centric. Note that "pro-enterprise" means that processes should encourage entrepreneurship and set-up of business while "customer-centric" means that the system should be convenient to use and cater to the needs of different types of users. As Singapore's Prime Minister Lee Hsien Loong (then Deputy Prime Minister) said at the launched of the eGovernment Action Plan II in 2003, "They [the agencies] must strive to make things as convenient as possible to the customers, rather than make things easy for themselves. I urge all agencies to deliver more convenience and more cost savings to the public" (Lee, 2003).

This new pro-enterprise, customer-centric mindset is crucial for maintaining a balance between the need to regulate an activity and the interests of businesses. A way for agencies to be more pro-enterprise customer-centric is by conducting regular feedback sessions with businesses. These sessions serve as important channel by which the OBLs team sought new ways to improve OBLs design and features, so as to better serve the needs of various businesses. At the launch for iGov2010, the new e-government master plan for Singapore, the Second Minister for Finance and Foreign Affairs stressed that:

"At the heart of our e-Government efforts lies the core principle of "starting with the user in mind". We have to put ourselves in the user's shoes, constantly thinking of what he wants, what will be useful and convenient for him when he transacts with the Government" (Lim, 2006).

5.2. "Product" lessons from OBLs

There are two key objectives in the design of OBLs. First, OBLs must be user centric. Hence, there is a need to better understand and support how user search, acquire and process information from public sector. Second, given the nature of business licensing [(where users may be required to obtain licenses from various agencies), OBLs should support cross-agency interaction. In other words, when users need to approach multiple agencies to fulfill their licensing obligations, the system should facilitate and coordinate such cross-agency interaction, and in a way where the underlying processes are transparent to the users.

5.2.1. Understand user requirements and adopt user-centric design

Launched in 2004, the main objective of the OBLs system is to make the licensing application process more customer-centric. We can see how the OBLs system achieved this objective when we examine its effects on the way businesses interact with the licensing agencies, its features and functionalities, and its impacts on Singapore’s business community. A conceptual depiction of the situation before and after OBLs is shown in Fig. 2. Ultimately, OBLs is a licensing portal that aggregates all business-related licenses and allows businesses to apply for multiple licenses concurrently and conveniently. Appropriate technologies are used to make the application process more user-friendly. Applicants’ information is pre-populated in the application form whenever possible.

A customer-centric focus would help to drive a concerted effort to design the product with the end users in mind. This is important for enhancing users’ experience as well as engendering trust in using e-government services (Grimmley and Meehan, 2007). The OBLs demonstrates how users’ experiences can be enhanced through transforming the license search and application processes. Since license applicants differ in needs and characteristics, OBLs has to ensure that different types of applicants can effectively and efficiently search for information about licenses that they need. To achieve this, OBLs provides different methods to search for licenses: by agency, industry/business activity, or keywords. Searching for licenses by agency is suitable for those applicants who have prior experiences of applying for the licenses, or have foreknowledge of the agencies that issue them. Such applicants can go directly to the relevant agencies in OBLs, and select the licenses that they need. This method, though, is not ideal for applicants who lack the relevant experiences or knowledge, such as first-time entrepreneurs. For this group of applicants, a more intuitive and user-friendly search method would be by industry, business activity or keywords. Based on the applicants’ inputs, OBLs would recommend the set of relevant licenses that they may need. Such search methods thus change the way businesses approaches the agencies when applying for licenses, and make the same licensing information more accessible to the applicants. The demand for applicants to be familiar with the licensing requirements for the particular businesses that they are starting is reduced, and the search and compliance costs are thus lowered.

5.2.2. Consolidate and integrate cross-agency requirements

We see a similar customer-centricity in the design of the license application process. The OBLs allows applicants to select and apply for multiple licenses simultaneously, even if the licenses are issued by different agencies. This is where the cross-agency nature of OBLs plays a significant role. OBLs would consolidate all information required for those selected licenses and present an integrated application form for the applicants to complete online. This integrated application form would remove any duplication of information required—that is, all information would only be requested once from the applicant. This reduces data entry effort and improves data
integrity. Also, to pay for the licenses, the applicants do not need to make separate payments to the individual agencies. Instead, they can conveniently make a consolidate payment through the OBLS system, which would then settle directly with the respective agencies. Upon receiving the applicants’ payments and submissions, the OBLS system would forward the relevant information to the agencies for them to process the application.

One of the main lessons learned here is that in designing the final products or deliverables in multi-agency information management projects, we must seek to address the end users’ needs and limitations. To be sure, the idea of being customer-centric in developing public sector services is not new. For example, Osborne and Gaebler (1992) proposed that citizens should be the focus in designing government service delivery. However, we contend that in information management projects, there are two specific areas that require greater attention from the agencies. First, do certain transactions with the government, at times, involve multiple agencies? Second, how do users differ in their needs and limitations? Those involved in the projects need to consider how the users interact with the government as a whole (and not just with the respective agencies), and design the system such that it provides multiple navigation, search or interaction alternatives when possible. We see this in the case of OBLS, for instance, where there are users who require greater cross-agency interaction during the application process (due to, say, the nature of their businesses). There are also users who lack the knowledge or experience in interacting with government agencies. By providing different methods of searching for information and applying for licenses, OBLS is thus able to effectively serve a wider pool of users and make the process more user-friendly and less onerous.

5.3. “Process” lessons from OBLS

The processes involved in the OBLS project comprise three key elements. First, a policy review is carried out to examine how red tape could be reduced. The aim is to transform existing processes rather than merely automating them. Second, as the project involved multiple agencies, funding becomes an issue, so an appropriate funding process must be in place to support the deliverables. Third, BPR is carried out to streamline processes and increase value-add to key stakeholders. Each of these elements had different functions but all shared a common objective of making the license application and approval process more efficient, affordable and convenient.

5.3.1. Validate business license requirements through policy review

A thorough review and validation of business license requirements was carried out throughout the entire government. The objective was to remove redundant and obsolete licenses. From an information management perspective, this is a critical step in reducing information load on customers and hence fostering a more pro-enterprise environment. To achieve this, the Core Team met regularly with the agencies to deliberate on whether a license should be retained or eliminated. It had to justify why certain licenses might be unnecessary and help agencies to see more from the perspectives of their customers. The Core Team also suggested alternatives to licensing that allowed agencies to continue achieving their regulatory objectives yet promote a pro-enterprise environment, such as through accreditation, class licensing and negative list. Accreditation usually relies on the industry to assess the competency of the business operators. A class license states the conditions by which a business should conduct its business. Negative list refers to a list of activities that need to be licensed. Activities that are not on the list are approved by default. In all these cases, license applications are not required by default. All these allowed the agencies to focus on their customers’ needs and provide value-added services, which are key elements in the success of the OBLS project.

5.3.2. Adopt an appropriate funding structure for project

Second, it is necessary to adopt an appropriate funding structure for the OBLS project given its multi-agency nature. In most single-agency projects, funding proposals tend to adopt a bottom-up approach, where cost projections are consolidated from the different areas to derive the overall cost estimation. The difficulties usually are in getting approvals for the needed funds. Once the funds are secured, use of the funds is a relatively straightforward affair, often based on the funding proposals. This is however not so for multi-agency projects such as the OBLS project. It is not feasible to have individual agency submitting its funding requirements and then consolidating the amount across all the agencies. Process and system standardization, which are key ingredients of optimal multi-agency information management systems, may become an issue as each agency proposes its own re-engineering approach and costs. Further, there may be an unhealthy competition for funds among agencies.

What is required, then, is to adopt an appropriate funding structure bearing in mind the dynamics within multi-agency projects. In the OBLS project, a top-down, centralized funding approach was deemed suitable. Instead of consolidating funding requirements from the agencies, MTI worked closely with IDA, which had vast experiences in IT project budgeting, to determine the amount of funds that was needed for the entire project. In addition, MTI and MOF co-managed the project funding to ensure effective allocation of funds. The main challenge was not about how to secure the funds but rather managing information on how, when and where to allocate the funds to ensure early and sustainable project success.

5.3.3. Reengineer business processes to remove redundancies

BPR is carried out to streamline the approval procedure and reduce the information needed from the applicant to a minimum. Here, unnecessary requirements were removed and the approval process was re-engineered to make the entire application experience more customer-centric. Agencies were encouraged to adopt technology during the approval process. For instance, agencies could tap on central databases to exchange information with other agencies. Hence, business applicants would not need to submit the same set of information to different agencies. This further reduced the likelihood of errors during the application process, which benefited both the applicants and agencies.

Thus, a lesson learned from OBLS is that multi-agency information management projects involve more than just the designing and implementing of IT applications or solutions. While having good designs and implementations are essential in such projects, equally important are those preceding processes that focus on minimizing the costs to the users and agencies, or improving the workflow and procedures. Policy reviews and BPR reduce the extent to which existing redundancies and bureaucracies are being carried over to the new systems, which would have lowered the overall impact of the projects. Further, they aid in ensuring that OBLS has a transformational effect on the process of business licensing. Appropriate funding process would ensure that the resources are allocated effectively in order to achieve objectives of multi-agency projects.

5.4. “Participation” lessons from OBLS

One of the key elements for success is the need for participation from all agencies as well as different levels (i.e., working and top levels). The leadership structure must support processes and product, as well as encourage participation from key stakeholders, so that information can be integrated and issues collectively resolved.
5.4.1. Secure project buy-in by convincing participants of the project’s vision and benefits

“Agencies must be convinced of the benefits and the values that the OBLS project will bring,” the Deputy Director of e-Government Policies and Programs Division in the Government Chief Information Office emphasized during our interview with him on the OBLS project. Otherwise, they would not give their full support and cooperation, which were crucial in this multi-agency project. The buy-in was required at both the highest and working levels in the respective agencies.

Convincing every project participant at the working level is important in a multi-agency project, just as it is in a single agency project. What is different in multi-agency project is the need for some degree of standardization across various agencies. The OBLS project would not be successful if some agencies insisted on retaining old procedures, since one of the key aims of the OBLS project is to streamline the entire licensing process for all agencies involved in business licensing. As in many projects that involved changes to existing system and processes, some agencies preferred to maintain status quo. When possible, the Core Team tried to address the needs and concerns of the agencies, such as in the areas of funding and processes. Similar to managing single agency projects, the Core Team also found that it was useful to take a consultative approach when working with the various agencies.

An effective way to convince agencies was to achieve quick and early successes. Once agencies had seen the positive experiences and benefits experienced by those that successfully came on board the OBLS project, they would be more inclined to participate. Hence the Core Team established a strategic plan to achieve the needed early successes. According to an MTI Senior Assistant Director who was involved in the OBLS project, the Core Team compiled information on licenses that were needed by most businesses as well as the types of activities that required the most licenses. From here, it identified key clusters of licenses and business activities to focus its initial efforts on so as to reap benefits early on in the project. In addition, it also tried to work with those agencies which shared similar front-end interfaces for their users to apply for licenses. However, it did not have the back-end systems to process the applications. Others had the front-end interfaces for their users to apply for licenses but not the back-end systems to process the applications. Yet a few others agencies had tightly integrated front- and back-end systems to support license applications. 

To overcome this, the review of licensing rules and policies were carried out with inputs from key stakeholders involved in licensing. Through various iterative discussions, the licensing rules and procedures were gradually simplified. Further, such discussions would also allow agencies to standardize and coordinate information required for various licenses. This was a challenge in itself, as the Acting Second Minister of Finance acknowledged that:

“it is not easy for agencies to give up their familiar procedures to agree to a common process. But the fact that we have succeeded in OBLS is testimony to the willingness and dedication of agencies to serve the customers as best they can, always searching for maximum convenience and maximum ease of use for them”

(Lim, 2004).

5.4.2. Involve key stakeholders in the reviewing and re-engineering process

Another challenge in this multi-agency project was in reviewing and re-engineering the various business rules and policies. Certain licenses were complex as they required a lot of information or had high interdependency with other requirements. The Core Team found it challenging to disentangle and simplify the requirements and procedures for such licenses, especially since they had limited domain knowledge and experiences in dealing with the licenses. To overcome this, the review of licensing rules and policies were carried out with inputs from key stakeholders involved in licensing. Through various iterative discussions, the licensing rules and procedures were gradually simplified. Further, such discussions would also allow agencies to standardize and coordinate the information required for various licenses. This was a challenge in itself, as the Acting Second Minister of Finance acknowledged that:

5.4.3. Establish eco-centric leadership structure

Apart from participation at the working levels across agencies, top management involvement is also critical in multi-agencies projects like OBLS. One of the key aims of the OBLS project is to streamline the processes so that they become more efficient. In a single-agency project, the focus is rightly on the agency’s process, agenda and mandate. However, in a multi-agency project, the focus needs to be on the performance of the entire ecosystem that comprises of multiple agencies. As such, top management commitment is needed to provide an eco-centric focus in the project, and ensure that no individual agency’s agenda takes priority over that of the entire system. While it is important to involve stakeholders in the development multi-agency projects, project leaders should not completely give in to the stakeholders’ demands (Tan, Pan, & Lim, 2005).

To achieve this balance in OBLS, it is therefore critical that project leaders hold a holistic view of the project and effectively manage the stakeholders’ interests and expectations concurrently. In addition, top management involvement is also required for it to serve as an effective mechanism that mediates unresolved matters that occurs at the agency levels. In the case of the OBLS project, the Core Team would bring unresolved conflicts (e.g., disagreement with licensing policies) at the working level to the attention of the steering committee, which would then make the final decision after consultation with relevant agencies and obtaining feedback from businesses.

The importance of considering the perspectives of various stakeholders (Teo, Sivarastava, & Ho, 2006) as well as encouraging stakeholders’ participation in e-government projects (Tan et al., 2005) has been well discussed. However, an important insight from OBLS is that in multi-agency information management projects, agencies not only must be involved in the projects but also be receptive to changes in their assumptions, requirements and processes. Specifically, participating agencies need to support the project objectives, and be willing to change or cooperate at micro (agency) level so as to achieve the necessary standardization and integration at the macro (project) level. One way to achieve such change-receptive participation, as demonstrated in OBLS, is for top management to actively provide an eco-centric leadership and mediate conflicts at the working level in the multi-agency projects.

5.5. Information view of 3Ps

While we have discussed each of the 3Ps above, it is important to note that the 3Ps should be viewed holistically and the interrelationships among the 3Ps, particularly in the context of multi-agency information management should also be considered. An example of how the Product-Process-Participation interacted to resolve one of the issues during OBLS is given below.

5.5.1. Example from OBLS

A unique feature in multi-agency projects is that the system maturity among different agencies may be heterogeneous (Layne & Lee, 2001). In the case of the OBLS project, some agencies had neither the front- nor back-end systems to support license applications. Others had the front-end interfaces for their users to apply for licenses but not the back-end systems to process the applications. Yet a few others agencies had tightly integrated front- and back-end license application systems. These differences in system maturity among agencies increased the complexity of standardization and integration in the OBLS project.

In addition, certain agencies with highly integrated systems were the most required to come on board the OBLS project. These agencies implemented their own licensing systems because of high application volumes for their licenses. Hence these agencies were in the key clusters identified by the Core Team. However,
these same agencies often had the least incentives to participate in the OBLs project since their systems were already operational. To overcome the resistance of these agencies, the Core Team had to convince them of the vision and strategic values of the OBLs project, such as the benefits to them and their customers, as well as encourage them to adopt a pro-enterprise customer-centric mindset (Core of 3Ps). Together with the funding support (Process) and high-level committee’s influences, this helped to achieve the important involvements from agencies in the key clusters (Participation) which ultimately contributes to the user-centric licensing system that cut across multiple agencies (Product).

It is also important to note that information management plays a key role in the 3P framework. At the core, vital information on the need to change the mindset to be more pro-enterprise and customer-centric (Core of 3Ps) needs to be disseminated to all agencies. In order to secure buy-in, information pertaining to funding support (Process) as well as addressing key stakeholder concerns though policy review and encouraging participation (Participation) are crucial. Further, in reengineering the licensing system, information must be integrated from various stakeholders to balance the needs of various stakeholders and adopt user-centric design (Product).

6. Concluding remarks

Although the OBLs system was a multi-agency project, some of the challenges encountered and key success factors were similar to those in single-agency projects. For instance, the Core Team stated that project leadership and getting buy-in were important in the OBLs project. These were also key requirements in many single-agency projects. However, we observed that there were also some differences between multi- and single-agency projects which gave rise to various challenges. We summarize the challenges and lessons learned from the OBLs project, some of which are similar to single agency projects except for increased complexity (e.g., secure project buy-in, instill mindset change, and involve stakeholders), while others are more peculiar to multi-agency projects (e.g., establish eco-centric leadership, adopt appropriate funding structure). Table 3 shows the main considerations for multi-agency projects based on the lessons learned. We also added the considerations for single-agency project into the same table for comparison. The table also furthers our understanding of the need for effective information management particularly, when multiple agencies with conflicting interests may be involved.

In conclusion, this case illustrates the lessons learned from a multi-agency e-government project namely, the OBLs project. The learning points of this case are relevant and transferable to organizations undertaking information management projects that involve integrations across different business units or agencies. It is important to note that when multiple business units or agencies are involved, the project dynamics change to a greater extent compared to single agency project due to increased complexity and greater number of stakeholders involved. Greater attention is therefore needed to align stakeholders’ interests and encourage involvement in the project. The effective management of information in such projects is a crucial element in ensuring that the final product meets the needs of both internal and external stakeholders.

Acknowledgment

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Table 3

<table>
<thead>
<tr>
<th></th>
<th>Single-agency projects</th>
<th>Multi-agency projects</th>
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<tbody>
<tr>
<td><strong>Core of 3Ps</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mindset change</td>
<td>Important for mindset change to enhance reengineering processes</td>
<td>Crucial as system impacts various agencies and refusal to change mindset will affect overall impact of system</td>
</tr>
<tr>
<td><strong>Product</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>May be less user-centric and cater to needs of agency</td>
<td>User-centric design is crucial</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single agency</td>
<td>Cross-agency</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy review</td>
<td>Less complex</td>
<td>More complex due to multiple agencies</td>
</tr>
<tr>
<td></td>
<td>Usually within the agency, bottom-up approach</td>
<td>Central funding may be necessary for better coordination as well as facilitate buy-in (since some agencies may not allocate sufficient funds to the project if the funding comes from their own budget)</td>
</tr>
<tr>
<td><strong>Business process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reengineering</td>
<td>Less complex</td>
<td>More complex and crucial</td>
</tr>
<tr>
<td></td>
<td>Important to facilitate project buy-in to ensure sufficient resources are allocated to project</td>
<td>Critical to facilitate project buy-in to ensure support and cooperation, else system standardization and integration would be difficult</td>
</tr>
<tr>
<td><strong>Participation</strong></td>
<td></td>
<td></td>
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<tr>
<td>Project buy-in</td>
<td></td>
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<tr>
<td></td>
<td>While there are multiple stakeholders, they are within the agency purview</td>
<td>Stakeholders are from different agencies with different interests. Much harder to manage competing interests of stakeholders</td>
</tr>
<tr>
<td><strong>Stakeholders</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>involvements</td>
<td></td>
<td>Eco-centric leadership is necessary for overall view of system impact rather than localized impact on any particular agency</td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agency-centric leadership that is focused on agency objectives</td>
<td></td>
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References


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Thompson S.H. Teo is an Associate Professor in the Department of Decision Sciences at the School of Business, National University of Singapore. His research interests include strategic use of IT, e-commerce, adoption and diffusion of IT, strategic IT management and planning, and offshoring. He has published more than 100 papers in international refereed journals. He is Senior Associate Editor for the European Journal of Information Systems, Regional Editor (Asia and Pacific) for the International Journal of Information Management and is also on several editorial boards in international refereed journals. He is an Associate Professor in the Department of Decision Sciences at the School of Business, National University of Singapore. His research interests include strategic use of IT, e-commerce, adoption and diffusion of IT, strategic IT management and planning, and offshoring. He has published more than 100 papers in international refereed journals. He is Senior Associate Editor for the European Journal of Information Systems, Regional Editor (Asia and Pacific) for the International Journal of Information Management and is also on several editorial boards in international refereed journals.

Tat Koon Koh is a doctoral student at Tepper School of Business at Carnegie Mellon University. He has a Master of Science degree in Industrial Administration from Carnegie Mellon University, and a Bachelor degree in Business from Nanyang Technological University. His research focuses on electronic commerce and online markets.