

6-2013

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Recommended Citation

Tatnall Victoria, Arthur; Davey, Bill; and Victoria, Eva University, Melbourne, Australia Dakich, "Major eGovernment Projects in Health, Education and Transport in Victoria" (2013). *BLED 2013 Proceedings*. 30.

<http://aisel.aisnet.org/bled2013/30>

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26th Bled eConference

eInnovations:

Challenges and Impacts for Individuals, Organizations and Society

June 9, 2013 – June 13, 2013; Bled, Slovenia

Major eGovernment Projects in Health, Education and Transport in Victoria

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Abstract

This paper suggests that an understanding of eGovernment systems can be gained by examining them from the viewpoint of project management principles. The method adopted was to conduct a thematic analysis of documents describing six systems in the Australian state of Victoria. These projects were in Health, Education and Transport. Three were seen to be successful while three were not. The framework for the analysis was generated from a comparison of the general literature of project failure and the principles of two commonly used project management standards: PMBoK and PRINCE2. The comparison of successful and failed eGovernment projects within the same governmental departments enables conclusions to be drawn about the importance of stakeholder involvement and other project management principles.

Keywords: ICT-enabled, eGovernment, project management, PMBoK, PRINCE2, governance, procurement

1 Introduction

It is no secret that eGovernment systems do not always achieve their intended outcomes or are completed on time and on budget. This was highlighted by a Victorian Ombudsman's report in November 2011 that pointed to ten failed state eGovernment projects (Victorian

Ombudsman 2011). They were chosen by the Ombudsman as they were seen to be complex, high risk, large budget projects across various agencies in the Victorian public sector. These were: Link (Victoria Police), HealthSMART (Department of Health), Myki (Transport Ticketing Authority), RandL (VicRoads), Client Relationship Information System (Department of Human Services), Ultranet (Department of Education and Early Childhood Development), Integrated Courts Management System (Department of Justice), Property and Laboratory Management (Victoria Police), HRAssist (Victoria Police) and Housing Integrated Information Program (Office of Housing). In this paper we will look at just three of these in detail: HealthSMART, Ultranet and Myki, as well as three successful projects, VicSmart, SmartBus and Healthcare Identifiers. Details of these eGovernment projects have recently been made public through three reports:

- The Victorian Ombudsman's Report (2011) notes that each of the 10 projects mentioned above failed to meet expectations and all ran over budget. The investigation aimed to determine why some projects were over budget or delayed, whether the ICT systems designed achieved their intended purposes, responsibility for failures and any lessons that could be learned (Victorian Ombudsman 2011). What the investigation found was that all the projects had been poorly managed and: *"On average, projects will have more than doubled in cost by the time they are finished."* (Victorian Ombudsman 2011 :4). Singling out poor project management, the report further noted that: *"... despite the extensive guidance and literature available, agencies are making the same mistakes around planning, governance, project management and procurement that our offices have observed and reported on for some years."* (Victorian Ombudsman 2011 :3)
- The Auditor-General's Report on HealthSMART (VAGO 2008), published in April 2008.
- The December 2012 the Victorian Auditor-General reported on two Victorian education projects: Ultranet and VicSmart (VAGO 2012).

These reports shed some useful light on what can go wrong and what can go right with some eGovernment projects.

2 Research Framework and Methodology

The research framework for this study was derived by comparing two significant project management methodologies: PRINCE2 – developed by the UK Government, and PMBoK – produced by the Project Management Institute (PMI) and forming the basis for an ISO standard. While these methodologies are not the most commonly used ((KPMG 2005) and (PWC 2012)) they are widely recognised and are formal statements of project management methods.

In a 2005 report KPMG (2005 :32) listed the global use of project management methodologies as follows: PRINCE2 - 6%, PMBoK 11%, Hybrid – 36%, Home grown – 25%, Other – 5%, Unknown – 2% and None – 15%. In 2012 a survey by PWC came up with rather different figures showing that PMBoK was the most widely used methodology with 41% of respondents using this. PRINCE2, on the other hand, while popular in the UK had only 3% usage. In this paper we will concentrate on material from PMBoK and PRINCE2 as

alternatives such as the Agile methods are not supported by standards and a single structured method.

The choice of a project management approach is justified by the extent to which senior managers believe that these principles are central to the success of IT projects and better manage project risks. The literature shows that project management principles have consistently been identified by managers as being essential to project success with about half saying that adhering to project management practices helps them achieve project success (Economist Intelligence Unit 2009). It is relevant to note, however, that PWC (2012) reported that 26% of the respondents used no specific methodology. This report further argued that: *“Using Established PM Methodologies increases success in the key performance indicators of quality, scope, budget, schedule, and business benefits”* (PWC 2012 :19). Another report suggests that *“one-half of respondents (48%) measure whether the project had a quantifiable return on investment, 40% evaluate the quality of deliverables, and a mere 25% ask clients whether they are satisfied with the project outcomes”* (Economist Intelligence Unit 2009 :10-11).

Approaches to project management were compared with the literature of project failure to identify the most significant causes of failure of these eGovernment projects in project management terms. This produced the following themes, common to both of the project management methodologies and to the literature of failure described in section 3 below: business case misunderstanding, stakeholder involvement, business needs alignment and communications management. The government reports mentioned were used to identify eGovernment projects recently completed or abandoned. The names of each of these projects were used as search terms in both general search engines and the search facilities of the departments concerned. The search yielded a large enough body of documentation to allow for analysis of six projects.

The documentation found included both formal documents (press releases, reports and news analysis) as well as informal documents (blogs, web pages and streams.) These documents were analysed (Bowen 2009) in terms of the areas of project management most commonly reported as related to failure, and patterns identified by a single researcher from the team concentrating on just one government department each. At the end of each individual analysis the researchers compared outcomes to derive a single conclusion regarding eGovernment project success.

3 IT Project Success or Failure

The Standish Group commenced large scale surveys of IT projects in 1994 and conducted multiple inspections of about 350 companies and 8,000 projects during subsequent years. They found that (Lamsweerde 2000; Basili 2001; Briggs and Gruenbacher 2002; Eberlein and Leite 2002; Anbari 2003; Dalcher and Drevin 2003; Pan, Pan and Flynn 2004):

- Less than 30% of projects are successful
- 25% fail outright
- more than 30% have budgets doubled or schedules blown out
- More than 70% of projects were delayed.

Other studies have found very similar problems around the world. For the UK, Sauer and Cuthbertson (2003) looked at 565 projects and found 5% abandoned, 55% over budget and 20% delivered with less than 80% of specifications.

Project failure is defined as one or more of: cost overrun, late delivery or lack of end-user acceptance, with the ultimate failure being project abandonment. The UK Department for Business, Enterprise and Regulatory Reform (2007 :3) indicates that to be successful, a project must:

- “deliver the outcomes and benefits required by the organisation, its delivery partners and other stakeholder organisations
- create and implement deliverables that meet agreed requirements
- meet time targets
- stay within financial budgets
- involve all the right people
- make best use of resources in the organisation and elsewhere
- take account of changes in the way the organisation operates
- manage any risks that could jeopardise success
- take into account the needs of staff and other stakeholders who will be impacted by the changes brought about by the project.”

Extensive surveys show that project management failures can normally be attributed to a small range of problems: poor estimates/missed deadlines, lack of executive sponsorship, poorly defined goals/objectives, change in scope mid-project, insufficient resources, poor communication, lack of stakeholder involvement, change in environment, change in strategy, inadequate risk planning, and lack of change management (PWC 2012).

Another aspect of our analysis is the dependence of success on the involvement of key stakeholders. McKinsey has found that projects where the end-user is seen as a crucial stakeholder are more than twice as likely to succeed (Block, Blumberg and Laartz 2012). In its guide to the project management body of knowledge, IEEE Software & Systems Engineering Standards Committee (2011 :24) argues that: *“Identifying stakeholders and understanding their relative degree of influence on a project is critical. Failure to do so can extend the timeline and raise costs substantially.”* Awareness of these previous studies of failure formed the basis of initial analysis. The inclusion of successful systems produced by the same authorities and the restriction of cases to a single government allowed an outcome more focussed on eGovernment.

The following six projects were studied and case studies of each are provided below. Each has been categorised as either failure, where significant cost, time or acceptance problems have arisen, or successes where these were seen as acceptable by post implementation reviews. On this basis the systems fall into the categories in Table 1 below:

System	Success or failure	Measure of success/failure	Some sources of review
HealthSMART (Health)	Failure	Budget \$323 million, overrun \$243 million and abandonment	http://www.egov.vic.gov.au/victorian-government-resources/trends-and-issues-victoria/e-health-victoria/victoria-kills-healthsmart-it-project.html
Healthcare Identifiers Service (Health)	Success (so far)	On time, on budget	http://www.nehta.gov.au/
Ultranet (Education)	Failure	Budget \$60 million, cost \$180 million technical failure on delivery day, poor user acceptance	http://delimiter.com.au/2013/01/08/180m-vic-ultranet-project-a-complete-failure/
VicSmart (Education)	Success	On time, on budget	http://www.education.vic.gov.au/about/programs/infrastructure/pages/vicsmartfaqs.aspx
Myki (Transport)	Failure	Budget \$999 million overrun \$350 mill, time overruns, user acceptance problems	http://www.heraldsun.com.au/news/myki-flawed-from-the-start-parliament-told/story-e6frf7jo-1226455069120
SmartBus (Transport)	Success	On time, on budget	http://ptv.vic.gov.au/using-public-transport/smartbus/

Table 1: Example of eGovernment project success and failure

4 Health Projects – Department of Health (DOH)

4.1 HealthSMART

The use of ICT in Health Care has become very important around the world (Wickramasinghe and Bali 2009; Sobel 2013). In 2003 the Victorian Government established the Office of Health Information Systems to implement its 2003-2007: ‘Whole-of-Health Information and Communication Technology Strategic Plan’ (VAGO 2008). This was to be delivered by a program it called HealthSMART.

The HealthSMART project was commenced in 2003 and was intended to consolidate health service ICT systems. The Victorian Auditor-General described the HealthSMART project this way:

“The HealthSMART strategy is based on a coherent vision which reflects global and national trends to increase ICT-enabled health service delivery. The strategy was designed to address immediate issues of obsolescence and to provide a basis for cost effective service delivery and improved patient outcomes. The strategic plan was developed following stakeholder consultation to ensure that appropriate priorities were identified across the sector. A steering committee, composed of senior DHS and health agency representatives, oversaw its development.”
(VAGO 2008 :5)

HealthSMART was intended to provide a financial application to support health services, a patient management application to store details of patients and their appointments, and a clinical application designed to replace paper-based patient records in hospitals and offer facilities for electronic prescribing and patient discharge summaries. The initial budget was \$323 million and the plan involved purchase of a system from the US which would then need to be adapted to local requirements (Calleam Consulting Ltd 2013).

A report by the Victorian Auditor-General (2008) noted that in 2003 a Program Management Office, four portfolio managers and a technical services manager were appointed to manage the project, and that the adopted project management methodology was ‘loosely based’ on PRINCE2. At this time it was concluded that program and project management processes were sound. Three years later, a report by the Victorian Ombudsman (2011) pointed out that poor planning handicapped HealthSMART, with project costing and timelines being too ambitious. It was also noted that DOH had problems in the recruitment of staff for the project team with the required expertise, and with expertise and quantity of staff provided by the US vendor until more senior staff were appointed. It noted that many of HealthSMART’s problems relating to time, cost and functionality could have been avoided if DOH had properly planned the project.

HealthSMART was originally scheduled for completion by the end of 2007, and the finance and patient management applications were finally completed during 2010, but the clinical application was still not finished by the end of 2011. The main delays appear to have been related to adapting to Australian terminology and medications content. Project costs also blew out considerably with the final budget being expected to reach \$566 million, 33% over that planned, not including the additional expenses incurred by health services to upgrade their own computer equipment.

In May 2012 the Victorian Government abandoned the HealthSMART project, then running five years late with an expected cost overrun of over \$240 million (Victorian Ombudsman 2011; Victorian eGovernment Resource Centre 2012). The Health Minister then announced instead, help to individual hospitals to improve their healthcare ICT:

“In those hospitals where it has been put in place or partially put in place, health services will make their decisions from that position, but going forward, beyond that, health services will be able to examine what is appropriate for their particular service.” (Charette 2012).

4.2 The Healthcare Identifiers Service (National E-Health Transition Authority)

The National E-Health Transition Authority (NEHTA) was set up by the Australian State and Federal Governments to design ICT systems for e-health. The Victorian Government played a significant role in this. An important aspect was developing the Healthcare Identifiers (HI) Service (NEHTA 2010b :7) to uniquely identify *“healthcare providers, healthcare organisations, and individuals who seek healthcare in Australia”*. This included three identifiers: the Individual Healthcare Identifier, the Healthcare Provider Identifier (Individual) and the Healthcare Provider Identifier (Organisation). Project completion is anticipated for December 2013, and so far the project has been judged to be successful.

In Victoria, NEHTA has built conformance and accreditation specifications, in consultation with industry bodies, for health applications software (NEHTA 2013b). This also involved developing and testing software platforms, in conjunction with vendors, to enable different systems to communicate and exchange data. In 2010 NEHTA sought industry comment on a discussion paper on options for a national medical software certification program designed to: *“balance the cost and complexity of testing against the quality and safety benefits it offers to vendors, clinicians and patients”* (NEHTA 2010a).

An example of the design of this system is the Patient Flow diagram for Individual Healthcare Identifiers (IHI) shown in Figure 1 below (HealthSMART Design Authority (NEHTA) 2011 :10).

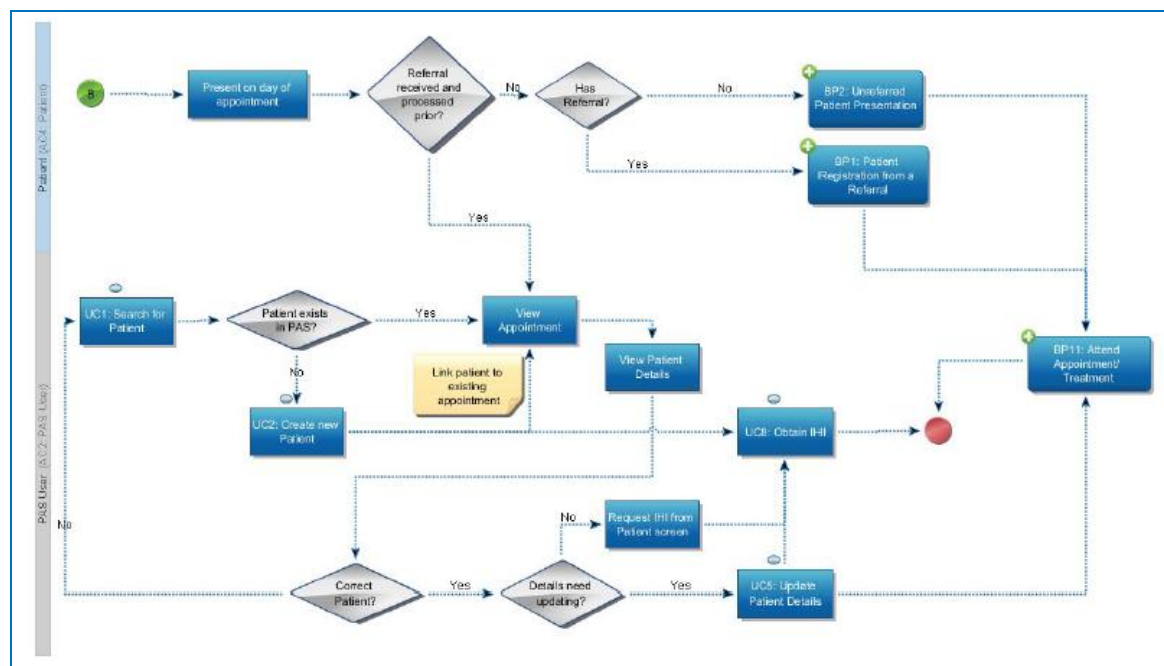


Figure 1: IHI Pre-Implementation Project – Patient Flow

To further develop the foundations of a national e-health system NEHTA is concentrating on e-communications that will provide information on e-Pathology, e-Discharge Summaries, e-Medication Management and e-Referrals (NEHTA 2013a). In particular, e-Referrals relates to the seamless exchange of significant patient information from one healthcare provider to another and NEHTA is developing specifications for software vendors, GPs and specialists. These are needed so that referrals can be handled securely and reliably.

5 Education Projects –Victorian Department of Education and Early Childhood Development (DEECD)

5.1 VicSmart

DEECD (2012b) describes VicSmart as a “a wide area network that provides Victorian government schools with a ten, twenty or fifty megabit per second (10/20/50Mbps) fibre optic bandwidth connection”. All Victorian Government schools were connected to the VicSmart network between October 2005 and December 2011.

Prior to 2005 Victorian Government schools received a narrowband Internet connection through the VicOne network offering a 64 Kbps connection speed (VAGO 2012). This was regarded as quite adequate in 1998 when it was first implemented, but by 2004 this connection speed had become unacceptable and it was decided to replace this system with VicSmart and so connect all Victorian Government schools and offer: “a more efficient and effective Internet connection which allows improved access to online resources and teaching materials – giving students opportunities to learn in new and exciting ways” (DEECD 2012a).

Planning by the Victorian government for VicSmart as an \$89 million project to run over four years was formally approved in 2005. This followed a through needs and options analysis and was based on the requirement to use the ‘whole-of-government single-source provider’ –

Telstra (DEECD 2012a; VAGO 2012). The VicSmart project business case noted that Internet connections available to most households had, by this time, exceeded VicOne’s speed and had raised community expectations about the performance of online services in schools.

VicSmart benefits as defined in the 2005 business case	Achieved
Learning and teaching benefits	
• Provide access to online multimedia learning materials from any school computer.	✓
• Capacity to deliver lesson via videoconference between all schools, leading to increased staffing flexibility.	✓
• Enable online testing and examinations from any school site	✓
Administration and management benefits	
• Able to centralise data and software, lowering cost and improving data quality and reporting.	✓
Schools infrastructure benefits	
• Future cost reduction. All schools provided with scalable optical fibre-based broadband. Affordable upgrades available as required.	✓
• Improved productivity of information and communications technologies resources by enabling support and configuration from clusters or centrally to optimise service delivery, performance and efficiency.	✓
• Improved productivity. Software will be deployed and supported across the network rather than onsite.	✓
Source: Victorian Auditor-General’s Office.	

Figure 2: Assessment of VicSmart’s expected benefits

In a December 2012 report, the Victorian Auditor-General (2012) regarded the VicSmart project to have been a success, in that it was well planned and underpinned by a sound business case. The project was delivered on time and on budget. The report notes that: “*Since completion of rollout, the VicSmart project has provided high-capacity and high-speed fibre-optic connectivity to all Victorian government schools. Use of VicSmart is increasing in line with the increase in end-user computing devices in government schools.*” and that since its inception, network capacity had been scaled up to 100Mbps for large schools.

5.2 The Ultranet

As a result of a 2006 election commitment the Victorian Government announced a \$60 million project to build the Ultranet – a Web-based online system designed to support delivery of curriculum, online teaching and learning and sharing of knowledge across all Victorian Government schools. A major goal of this project was to improve communication between schools and the parents of their students (Tatnall and Dakich 2011; Tatnall, Dakich and Davey 2011). The project was completed and began its service to all Victorian Government schools in September 2010.

The Ultranet was designed to have many of the features found in business extranets and its intended users were school teachers, school students and parents. It was designed for the Victorian Government school community with three principle purposes (Tatnall and Dakich 2011):

- To allow students to access personalised learning activities and to keep an on-going record of these activities

- To allow teachers to create curriculum plans, collaborate with other teachers, monitor student progress and provide student assessment
- So that parents would be able to see information that would help them keep up-to-date with their child’s learning, including attendance records, timetables, test results, learning progress, homework activities and teacher feedback.

The Victorian Auditor-General (2012) considered that the Ultranet project had been poorly planned and implemented and noted that after six years of work it had not yet delivered the expected benefits. The report noted that the project was both significantly late and over budget. Furthermore, uptake by users had been much lower than expected. Prior to this, in November 2011 a Victorian Ombudsman’s report (2011) had pointed out that: “*Inadequate up-front planning and a general disregard for industry and Gateway advice resulted in a failed tender that cost around \$5 million, set the project back by a year and damaged the reputation of Ultranet.*” (- see Figure 3).

Date	Phase	Rating	Outcome
May 2007	Gateway 2 – business case review	RED (critical and urgent, action on recommendations should be taken immediately)	In all instances, the project proceeded to the next phase with little evidence that issues identified were rectified and recommended actions were implemented.
May 2007	Gateway 3 – procurement strategy review	RED	
Apr 2008	Gateway 4 – contract decision review	RED	
Oct 2008	Gateway 3 – procurement strategy review (second)	AMBER (critical and not urgent, actions on recommendations should be carried out before further key decisions are taken)	
Feb 2009	Gateway 4 – contract decision review (second)	RED	

Source: Victorian Auditor-General’s Office analysis of Department of Education and Early Childhood Development documents.

Figure 3: Gateway reviews during the Ultranet planning phase

It noted that before finalising the tender, DEECD had sought industry feedback which suggested that:

- “the timeline was too aggressive
- the budget was insufficient
- the scope of the project was not clearly defined
- integration with third-party applications could be problematic
- the size and bandwidth requirements to accommodate the state-wide Ultranet could be unmanageable
- the vendor that developed the pilot at the request of DEECD had an advantage in the RFT process.” (Victorian Ombudsman 2011)

As a result of the failed tender DEECD was forced to de-scope the Ultranet business case so reducing its functionality and lowering the support available to users.

6 Public Transport Projects – Public Transport Victoria (PTV)

6.1 Myki

In 2002, the Victorian Government decided to develop a new smart-card ticketing system for use on Melbourne's trains, trams and buses, and the Transport Ticketing Authority (TTA) was established to manage the implementation of the new ticketing system which was to be known as 'Myki' (Public Transport Victoria 2012b). After many delays Myki became fully operational, replacing the previous ticketing system, in January 2013 – five years late and \$350 million over budget.

TTA completed its business case in 2004 for a project costing \$742 million, setting a timeframe it suggested was 'aggressive but achievable'. After a tender process, in July 2005 a vendor was appointed to develop the new ticketing system and the budget was soon increased to \$999 million. By April 2008 it had risen to \$1.35 billion.

TTA required the Myki to be an open architecture system, not relying on third party products. As most other smart-card ticketing systems around the world are proprietary systems this meant that very little could be adopted from these systems. The idea was that each system element (i.e. vending machine, scanner etc.) could come from a different source and so TTA would not be dependent on a single supplier. The system to be built was a complex one with over 20,000 physical devices as well as the computer hardware and software to control them. It would have to work over a range of different transport systems including metropolitan and regional bus lines, rail lines and trams. The vendor selected an 'agile' software development methodology to deliver Myki with the intention of helping to meet the planned short timeframes.

The Victorian Ombudsman (2011) was highly critical of the quality of the Myki project managers, and of the vendor's approach to project management. The Ombudsman reported that the agile approach proved unsuccessful and that one witness to the inquiry stated that: *"The agile methodology was never going to work in an environment where development was being undertaken across many countries by numerous developers ... I did bring this to the attention of TTA management at the time but my advice was ignored"* (Victorian Ombudsman 2011 :80-81). The report suggests that the relationship between the vendor and TTA was one of mistrust, and that TTA had required over 350 changes in specification during the development process.

The report was also critical of TTA's approach to the project, indication that its Board did not have sufficient relevant experience, and that it had no members with experience in managing the implementation of large ICT-enabled projects or of the transport ticketing environment. Another issue was the requirement for the system to use an open architecture approach when other similar system around the world did not. While this approach offered advantages in Myki not being tied to a single supplier, it entailed considerable risks and contributed to delays in the project timeline.

6.2 SmartBus

The SmartBus concept was first mooted in the late 1990s, but took several years to be initiated. In 2008 the Victorian Government allocated \$290 million to deliver (and expand) the SmartBus network in Melbourne. SmartBus was designed to complement Melbourne's radial train and tram network by the provision of a number of 'cross-town' connections. These follow major arterial roads and were designed to connect with train stations, tram lines, schools, hospitals and shopping centres (Public Transport Victoria 2012c).



Figure 4: Real-time SmartBus passenger information sign

SmartBus vehicles are able to communicate with their depot during a journey and Global Positioning System technology is used to keep track of the location of each bus (Public Transport Victoria 2012a). This allows the provision of real-time travel information to passengers on departure times at bus stops, as well as other information relating to arrival and departure times of connecting train services. In addition, SmartBus offers traffic-light priority so that buses could better keep to their time schedules.

The SmartBus project was regarded as successful as it was delivered on time and on budget and fulfilled its objectives.

7 Findings on eGovernment Project Success or Failure

For each of the pairs of projects has been described above the individual researchers identified a range success factors from document analysis. These were then compared and the following characterisations were concluded:

1. **The nature of the projects.** Across these projects it was found that the successful generally had a more technical focus. Healthcare Identifiers has little interaction with patients whereas HealthSMART would have impacted all patients directly. The

Ultrahet required actions from teachers and parents where VicSmart merely provided a physical connection between educational institutions. Myki obviously involves the travelling public interacting with the system and although SmartBus also involves the public, mostly the customers need only to read signs. The research team concluded that the government departments were much more likely to be able to implement effective business cases when those business cases were largely independent of human interaction.

2. **The project management process.** A great deal of evidence suggests that use of an established project management methodology such as PMBoK or PRINCE2 greatly reduces the chance of project **failure** and enhances the chance of its success. This is evident in the choice of project management methodology in each of the six project case studies.
3. **Project communication.** PMBoK (Project Management Institute 2013) identifies project communications management as a pivotal process. This consists of identifying stakeholders, planning communications, distribution of information, managing stakeholder expectations and reporting on performance.
4. **Defining project objectives.** Getting the business case right is crucial to project success as there is little value in producing a good solution to the wrong problem. PMBoK (2013) shows the first step in initiating a project as development of a Project Charter that formally recognises the project, determines its objectives and management, determines how it will be organised, and identifies the stakeholders. PRINCE2 also regards this first step as extremely important. A guide to PMBoK by the IEEE Computer Society points out that: *“Identifying stakeholders and understanding their relative degree of influence on a project is critical. Failure to do so can extend the timeline and raise costs substantially.”* (IEEE Software & Systems Engineering Standards Committee 2011).
5. **Communication with end-users.** The research team compared analysis for each of the three departments and found that the failures could be significantly explained by the failure to identify, communicate with or manage the expectations of end-users. In the case of the Ultrahet the teachers who were to populate the value of the system were almost completely ignored at all stages of the project.
6. **Project Management Office (PMO).** A fundamental of both the PRINCE2 and PMBoK approaches is the concept of the PMO. The idea is that a project is sponsored by the organisation and that sponsorship should be ongoing and explicit. eGovernment projects obviously have the current ruling government as their ultimate sponsor.
7. **Project timeline.** Any project that is planned to extend beyond the lifetime of the originating government must be able to survive a potential change of government and hence sponsor. The problem of sponsorship has affected both HealthSMART and the Ultrahet. The corresponding projects (VicSmart and Healthcare Identifiers Service) were not significantly overtime and hence avoided the change of government.

8 Conclusion

In this paper six eGovernment systems have been considered. These systems were analysed in pairs with each pair being developed for use in one government department. Each pair consisted of one system for which the outcome can be considered a success and one for which the outcome is clearly a significant failure. By taking this approach the analysis has kept constant both the organisational factors for the system and the environment for which the system was designed. Document analysis was used by independent researchers to compare themes within a large body of documentation, both formal and informal, with the processes described in two significant project management methodologies.

The lessons learned from this analysis indicate that the difference between success and failure in eGovernment projects can be attributed to the approach taken to specific project management processes. Several themes from project management methodology were found to be common to each of the pairs of systems.

It was found that stakeholder analysis is critical to the success of projects. In each case the importance of one or more stakeholder groups was overlooked contributing to the failure of the project. In the failed systems communication with stakeholders was seen to have been particularly poor. The worst example was the Ultrahet where teachers were not included and their union decided to boycott the system.

Project management methodologies clearly set out division of responsibilities for projects. A top level group representing the project sponsor should be clear about the business case. The project team lead by the project manager should be responsible for carrying out the project and these responsibilities should be distinct: a group to set aims and targets and a group to carry out the project. Failed projects often involved the people from the PMO attempting to perform tasks within the project. For instance one PMO made 350 changes to the project schedule, pushing the timeline out and making the project plan unworkable. The PMO is also responsible for ensuring top management support for the project. In eGovernment projects this means support from the Government. If a project extends past the term of a government then this support can be abruptly withdrawn. Another clear problem arising from the PMO in eGovernment projects is the nature of the business case. Significant evidence was found that some projects were created with a mixed business case: on one hand the business case was intended to provide some benefit for a group of citizens, on the other hand the case was rushed and poorly defined due to the need to meet political deadlines. The successful projects were all much more clearly described in their business case statements. The correspondence between ministerial statements and project briefs reflects this difference.

The nature of the systems was found to be a difference between success and failure. Failed systems were given initial tests of a prototype which, generally, was found to be robust. These prototypes were found to be unscaleable: the Ultrahet could not provide robust communications to all schools, Myki was found not to function on several modes of transport and HealthSMART did not interface with all the existing systems. Small scale prototypes of complex systems do not give a clear idea of the problems of scale. In a few cases the project management method chosen was found to be a significant cause of failure. In one case Agile method was used and found to be inappropriate and one system did not use project management at all.

These themes were found to contribute to most of the difference between success and failure and appear to be especially important for the outcomes of eGovernment systems.

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