Abstract

This paper outlines an e-government initiative of the Cabinet Secretariat of the Republic of Indonesia, the adoption and implementation of an Electronic Document and Records Management System (EDRMS) called the Legal Document Retrieval System (LDRS). The authors were engaged in the early developmental stage of the project through a special training program involving key personnel of the Cabinet Secretariat under the auspices of the Indonesian Australia Special Training Project (IASTP) III. This experience has provided insights into the challenges and potential pitfalls for such development projects. Taking these challenges and potential pitfalls into account, a set of critical success factors is proposed for the LDRS and similar projects. The paper highlights the difficulties of such individual undertakings within public sector and governmental contexts in which good governance frameworks generally, and ICT governance frameworks and infrastructures in particular, are still emerging. In such contexts, a fine “balancing act” is needed to meet the challenges, avoid the pitfalls and optimise the benefits. If this balancing act can be achieved, the LDRS project and others like it have the potential to provide models of best practice in e-government and to demonstrate the features needed in whole-of-government frameworks in this area. In such contexts initial and ongoing education and training for key personnel become even more critical success factors.

Keywords: e-government, Legal Document Retrieval System (LDRS), Electronic Document and Records Management System (EDRMS), critical success factors, education and training
Introduction

The growth and commoditization of information and communication technology (ICT) over the past decades have significantly impacted every facet of the world’s societies. The advancement of ICT, coupled with the rapid uptake of increasingly affordable, key technologies such as the Internet, has helped foster an environment that promotes globalization of goods, services, and information. One of the most notable impacts is the diffusion of information (OECD, 1997). With the exception of some countries such as China, which impose censorship over particular information on, and through, the country’s Internet gateways, and countries with less-developed ICT infrastructure, citizens around the world have increasingly been able to gain information of any kind. As a result, there have been changes that permeate throughout every part of society. Government is not immune to these changes. Not unlike its private sector counterpart, the public sector has also realised the potential benefits derived from adopting ICT to support its functions. In the late 1990s and early part of the 21st century, the term e-government has increasingly been used to describe ICT-supported government functions (refer to Tapscott, 1995; Stratford & Stratford, 2000).

This paper discusses an e-government initiative of the Cabinet Secretariat of the Republic of Indonesia, the Legal Document Retrieval System (LDRS) project, as an example of the challenges and pitfalls involved for countries with less well developed ICT governance frameworks and infrastructures. The main objectives of the LDRS initiative relate in the shorter term to enabling the Cabinet Secretariat to operate more effectively and accountably in supporting the legislative function and interacting with other national agencies. In the longer term it is hoped that Indonesian legislation and other legal documentation will be readily accessible via the Internet to regional and local government, researchers, and the public. As with many e-government initiatives, a key driver in the LDRS initiative is the desire to use new technologies and the Internet to make information more accessible and government processes more transparent.

Within the Office of the President of Indonesia, the Indonesian Cabinet Secretariat and its Deputy for Laws and Legislation division are responsible for drafting legislation, providing advice on the development of legislation to the President, preparing legal opinions for Cabinet meetings, providing updates on the progress of the preparation of legislation, and administering enacted legislation. The Cabinet Secretariat is also responsible for the publication of legislation and, with support from the National Archives, for the preservation and long-term accessibility of the original signed copies of all the laws passed in Indonesia since the Declaration of Independence. In order to support these functions, the Cabinet Secretariat is introducing the LDRS to track its work processes, manage and retrieve legal documents, and enable publication of legislation on the Internet via the development of a website. This new electronic document and records management system will replace the existing manual, paper-based systems. Digitisation of all existing paper copies of Indonesian laws, including those held by the National Archives, is also planned, the aim being to eventually provide access to all Indonesian law, past and current, through a single gateway.

The paper endeavours to evaluate what key factors are critical to achieving optimal outcomes for such e-government projects, no matter how small or big the project. Prior to the discussion of the case of the Cabinet Secretariat, it is essential to gain some understanding of the concept of e-government as adopted by the authors.
What Constitutes e-Government?

According to Moon (2002), there is a growing trend for governments around the world to adopt ICT to restructure archaic bureaucratic procedures. Such attempts to use ICT to modernize and transform government operations have been popularly termed e-government (Stratford & Stratford, 2000). Growing interest in the e-government concept in recent years (Huang et al. 2005) has stimulated discussions regarding what constitutes e-government. While some definitions of “e-government” refer mainly to the use of Internet and government websites or portals as the predominant theme (see Pons, 2004; OECD, 2003), others use the term e-government to refer broadly to the adaptation of ICT to governmental use (Breit Schneider, 2003; Koh & Prybutok, 2003). There are publications on e-government that measure the sophistication level of e-government on the basis of evaluating government websites (refer to the work of Pons 2004; Holliday, 2002). Although this might be relevant to determining the usefulness of the websites and the information they provide, arguably this is not an adequate approach to assessing the level of maturity of the whole e-government approach. Although government websites, and/or portals, can be regarded as pivotal to an e-government approach, arguably there is a host of other activities that define “e-government”. It should be noted that the concept of e-government is “more than a technological phenomenon” (Grant & Chau, 2005). Issues of governance, information access, privacy, accountability, and public service amongst others also need to be considered.

The push towards greater adoption of e-government capabilities stems from the potential benefits promised by the concept of e-government (Grant & Chau, 2005). Some of the benefits commonly associated with the implementation of e-government range from greater efficiencies, the facilitation of internal administration, and improved levels of services to increased transparency, citizen empowerment and support for e-democracy (Schware & Deane, 2003; Siau & Long, 2006; West, 2004). It is also believed that e-government potentially enables the transformation of bureaucracy and public administration practices as we know them now (OECD, 2003; Fountain, 2001).

The Case of the Indonesian Cabinet Secretariat’s LDRS Project

In order to provide a clearer understanding of the key entity involved in the project and the circumstances surrounding the LDRS project, this section describes further the role of the Cabinet Secretariat of the Republic of Indonesia and its recent e-government initiative.

The Cabinet Secretariat of the Republic of Indonesia

The Cabinet Secretariat of the Republic of Indonesia is a unique entity within the government structure (see Figure 1 Organisational Structure). Led by a ministerial-level official, the agency works under and is responsible directly to the President. Among its other responsibilities (providing administrative and technical support for cabinet meetings, overseeing and evaluating government policy and government programmes), the agency’s Deputy of Law and Legislation division is responsible for drafting the legislation that falls under the auspices of the Office of the President of the Republic of Indonesia. It has an important role in drafting legislative bills, government regulations, presidential decrees, and presidential instructions (refer to Keputusan Presiden RI Nomor 188 Tahun 1998). This role includes the provision of analyses, recommendations, and legal advices relating to various legislative bills to the President. Working with the Department of Law and Human Rights, it
also plays a significant role in editing, analysing, and finalising legislative bills proposed by other government departments.

**The LDRS Project**

A feasibility study was conducted in 2004 involving several key personnel across different bureaus working under the Deputy of Law and Legislation division of the Cabinet Secretariat. The outcome was a recommendation to seek funding for the introduction of the Legal and Document Retrieval System (LDRS). This was regarded as one of the keys to improving the efficiency of the Cabinet Secretariat’s functions, particularly the legal drafting function of the Deputy of Law and Legislation division. In particular it was hoped that in the shorter term the new system would enable legal drafters and legal analysts to readily access relevant legislation, constitutional instruments, and academic papers when drafting new laws or amendments, as well as to work collaboratively and electronically, thus streamlining work processes. In the longer term the aim is to develop a “front end” to the system that will enable intra-governmental and public access to Indonesian laws via a web site, similar to the Australian Lawlex and AustLII sites.

To date, the process of legal drafting is a cumbersome one, heavily reliant on key personnel’s memory to identify other related legislation, in particular the specific clauses in past and current legislation relevant to the new bill or amendments. Discovery and retrieval of relevant legislation is also problematic as the manual indexing and tracking systems are rudimentary and storage areas are remote from the offices of the legal analysts and drafters. Moreover the processes for creating, reviewing and amending draft bills is only semi-automated. In the existing work environment, there are no automated systems to support workflow and tracking, which means that more than one group of legal analysts and drafters may be working on different sections of the same bill or related bills without being aware of each other’s involvement or progress. More broadly, the dissemination of copies of legislation to other government agencies, regional and local government, and their publication is piecemeal at best.

More often than not, the key personnel responsible for drafting the bill write the draft, submit the handwritten draft to the legal administration personnel for typing on a stand-alone PC, and send it to other parties involved in the process via a floppy-disc. When they require access to past and existing copies of legislation, a staff member goes to the IT office to seek information about where copies of a particular piece of legislation or legal documents are stored, then proceed to the archive or the library (which is located in a different part of the building) to physically retrieve the documents. In cases where a particular document is on loan to another staff member, some effort is needed to identify the borrower through the library card and the staff member then proceeds to obtain the document from the borrower. Once the document has been obtained, another task is to locate the clauses and/or paragraphs that are relevant to the legislative bill that is currently being drafted. Of course, this process may be repeated many times in the drafting cycle of a bill. With the number of legal drafts exchanging hands and the number of times the drafts need to be edited and revised by different groups, version tracking also strains the manual system.

The current system used by the Deputy of Law and Legislation division is the legacy of a 1986 project using Cobol and RPG II with IBM S36 as the platform. Due to technical difficulties and scalability issues, in 1993 a Clipper-based electronic catalogue system was built with a stand-alone PC as the main platform.
The inefficiencies associated with these work practices not only result in a great deal of lost time and effort. During the IASTPIII training program, participants identified failure to identify other relevant legislation, failure to locate relevant legislation, failure to maintain version control, and the potential loss of or damage to archival copies of legislation as being significant risk factors in their work. Possible effects range from the inability to identify which were the authoritative versions of a bill at different stages in the drafting process, to inconsistencies within the legislative drafts themselves, and contradictions between the content of new legislation and other legislation – or worst of all, the country’s constitution. If such inconsistencies and contradictions are not detected until after a particular law is enacted, at the very least the re-working of the process would be difficult and time-consuming. At worst, a petition might be lodged by members of the public to the Mahkamah Konstitusi (Constitutional Court) to conduct a judicial review of the new legislation. In any case, not only the credibility of the government and the authority of the laws are at stake, but also significant resources (i.e. personnel, time and money) are needed to rectify the situation.

While it is acknowledged that the proposed new system is not a magic bullet that will solve all of the division’s problems, it is perceived as a multi-purpose tool that will enable the legal staff to increase their efficiency in dealing with the drafting process, minimize the risks associated with the current mostly manual practices, and result in much better quality outcomes. As discussed, ultimately, the idea is also to expand the system to provide information about Indonesian law and copies of the legislation itself for the public access via the Internet. Thus much is expected of the new system as it is envisaged as having the functionalities of document management, version control, document tracking and retrieval, and workflow management systems, as well as providing the backend for a web site that will support intranet and Internet access to authoritative versions of legislation.

The first step and some barriers
It is said that a journey of a thousand miles begins with a single step. However, it is indeed a long journey when the first step faces so many challenges and potential pitfalls, and such high expectations are riding on it. The knowledge that first steps on a similar journey have been taken in the past with some notable failures puts additional pressure on this particular initiative. A number of attempts initiated by previous regimes to join the e-government race have faltered, e.g. the indonesia.go.id project. Each project was launched with noble aims and hopes of more effective government practices, better serving the public’s need for information and promoting the country’s image. Yet factors such as the lack of a broader ICT governance framework, funding shortfalls, weak ICT infrastructure, lack of human resources with appropriate expertise, and poor project management capability have meant that many of these initiatives have been unsustainable. With regard to e-government related project failure, Indonesia is by no means an exception. According to Heeks (2000), in developed countries, where many more resources are available, 20-25% of e-government projects either never reach the implementation stage or are abandoned after implementation. A more disconcerting figure comes from Ramsey, as cited by Symonds (2000), who states that “85% of all public sector IT projects are deemed to be failures”. If these figures are correct, the challenge for the Indonesian Cabinet Secretariat is indeed a daunting one, especially in an environment already sceptical about the benefits of ICT, given past experiences, and critical of any government spending in this area, in which any hint of failure will bring severe political repercussions.

Some aspects of the development of the LDRS project so far give rise to concern about its future success. Ideally such initiatives are launched within a whole-of-government framework for e-government, in which ICT governance and infrastructure are key.
components, project and change management capability is available, project champions and key stakeholders are on board, and ongoing resources are assured. This was not the case in relation to the LDRS project. The project plan and timelines as developed thus far are also problematic. Outsourcing arrangements relating to the development of the system have been put in place ahead of the rigorous specification of user needs and system functional requirements. One particularly critical concern relates to the way in which the project is currently scoped and the Project Schedule. It was initially proposed that the LDRS would be developed and implemented, and all existing paper and electronic copies of legislation and other legal documents would be scanned and digitised ready for uploading to the Internet within one year of the project’s start date. The LDRS funding proposal sent to BAPPENAS explicitly stated this as the milestone for the first year of funding. This is clearly an over-ambitious milestone, given that detailed user requirements and system specifications had not yet been developed, there are approximately 8000 legal instruments in the form of paper documents that need to be indexed, converted into electronic format and validated, and the existing IT infrastructure in the Cabinet Secretariat is rudimentary. Only one month in the Project Schedule was allocated to finalising specifications for user requirements and system functional requirements. Part of the funding and the first seven months of the Project Schedule were dedicated to procuring and establishing the IT infrastructure, leaving less than five months to develop, test, and implement the LDRS itself, an impossibly short timeline. A number of major steps were also left out of the Project Schedule and interdependencies between existing steps not taken into account. In general the Project Schedule focussed on the introduction of the technology, and the technical aspects of system specification and development, and of the digitisation of existing legislation. It overlooked the development of policy, strategy and tools to support the new system, the need to standardise and re-engineer business processes before they are automated, and the resource intensive indexing and validation process associated with digitisation and conversion of existing legislation. It was at this stage that the authors became involved with the project through the Indonesia Australia Special Training Project (IASTP) III – LDRS. Looking back at some of the earlier e-government initiatives that failed or are now defunct, it is hoped that the LDRS project will not end up a derelict artefact akin to some of its predecessors. In order to help increase the project’s chance of success, the training program was designed to improve the participants’ awareness and knowledge in relation to the critical success factors for this kind of project as well as providing technical knowledge and skills. The trainers also worked with participants in a consultancy style in order to identify and address the gaps in the existing Project Schedule, and to develop a number of key deliverables to help plug these gaps. Further details of the training program itself and the value-added consultancy type input from the training team are provided in the final section of the paper relating to knowledge transfer as a critical success factor. The next section highlights some of the factors deemed critical to the success of projects like the LDRS project with reference to the literature, and a commentary on the LDRS project with reference to these factors. Hence it serves as both a critique of the Cabinet Secretariat’s LDRS project in its current stage of development, as well as a review of the important issues that need to be addressed in order to achieve a successful outcome.

BAPPENAS (Badan Perencanaan Pembangunan Nasional), or the Agency for National Development Planning, is the government department in charge of developing and maintaining the blueprint and strategic plan for the government. One of its strategic roles is also to assess and evaluate the merit of other agencies’ proposals in order to determine whether or not they are within the nation’s development guidelines. Through its recommendations, the BAPPENAS plays a significant role in determining whether a certain project has enough merit to receive funding allocation from the government.
Critical Success Factors (CSFs) for the LDRS Project

Dobbins & Donnelly (1998) consider the identification of CSFs as useful not only in identifying key concerns and assisting in developing strategic plans, but also in recognising problem areas that contribute to project failures. Caralli (2004, p.12) acknowledges that “CSFs are powerful because they make explicit those things that a manager intuitively, repeatedly, and even perhaps accidentally knows and does (or should do) to stay competitive.” Further, he emphasises the usefulness of CSFs by stating that “…when made explicit, a CSF can tap the intuition of a good manager and make it available to guide and direct the organization toward accomplishing its mission” (Caralli, 2004, p.12). In the context of an e-government project, a collection of explicitly acknowledged CSFs may provide key personnel with not only a reminder of what issues are pertinent to the success of a project, but also a sense of direction towards a set of unified and shared goals that should be achieved not only by an individual government department, but rather, the whole government. The CSFs discussed in this section are deemed essential to the success of not only the LDRS project, but also other similar projects, and indeed, the overall e-government initiative in Indonesia.

A coherent National Information Infrastructure (NII)

The availability of an adequate technological infrastructure is one of the keys to a successful implementation of e-government (Chen et al., 2006; Pons, 2004). Chen et al. (2006) emphasise that “infrastructure development is a necessity before countries can consider any large projects dedicated to e-government” (p.30). Understandably, without sufficient national infrastructure, citizens’ access to any e-government touch point will be limited. Hence, the value and usefulness of any individual e-government initiative is questionable. Simply said, the presence of an adequate national infrastructure is the basic necessity for people and businesses to use e-government services (Nair and Prasad, 2002). Equally important are the back-office functions performed by the government departments’ internal systems that support e-government. Without appropriate and adequate back-end infrastructure, no government department would be able to provide efficient or effective service to the people via an e-government front-end (e.g. a web portal).

Of similar importance in a National Information Infrastructure is a whole-of-government ICT governance framework featuring ICT and information policies, the legislation needed to support e-government (e.g. passing electronic transactions and digital signature laws, and extending existing laws relating to evidence, privacy, IP, freedom of information, and information security to e-government transactions and information stored in electronic form), and ICT management standards and best practice guidelines, e.g. for ICT project management. This framework needs to encompass both the front- and back-end functions. In an era where systems integration is seen as a key to achieve a successful system implementation (Sammon & Adam, 2005), an overarching e-government blueprint also needs to provide for interoperability among various systems owned and operated by government departments. This need is highlighted by research conducted by Lam (2005) which indicated that one of the biggest challenges in implementing e-government is in integrating various e-government systems. Lam’s research shows that the problem lies in the lack of standardization among government departments in selecting and implementing technological platforms and application development frameworks (Lam 2005). It is pertinent to acknowledge that “integration of applications and services across governments are relatively more complex and problematic than similar integration in private business” (Grant & Chau, 2005, p. 7). The relevant literature emphasises the need for a coherent and strategic NII blueprint to be adopted prior to further investment in individual e-government projects.
Particularly in the context of the back-end/back-office infrastructure within the government, there is a need to provide a coherent framework for a whole-of-government approach to designing and implementing information systems. If this framework is not developed and implemented before individual government agencies proceed to develop their own internal systems, these individual projects face greater challenges and higher risks. The existence of design standards, ICT project management guidelines, data standards, metadata standards, systems architecture standards, and security protocols enable individual agencies to operate within a best practice environment, promote interchangeability of data and information across all government departments, and provide the basis for making government information available via the web.

Within a whole-of-government framework, individual project initiatives like the LDRS project face far fewer challenges and potential pitfalls. In the absence of such a framework, they have the potential to become models for the future development of e-government and to demonstrate some of the features that need to be built into a National Information Infrastructure. In order to secure and sustain stakeholder support for the LDRS project, particularly when it comes to continuing project funding from BAPPENAS, making the business case for the re-useability or adaptability of the system may become a critical factor. It is possible to argue that the LDRS would be a useful model for other government agencies and/or legislative bodies that require a system to support the processes of drafting, administering and publishing legal instruments (e.g. the Department of Law and Human Rights, Legislative Council, and the Parliament). More broadly, it could be a useful model for document management, retrieval and tracking systems in any area, for workflow management in processes that are document driven, and for the publication of government information on the Internet. Thus the case could be made that supporting the ongoing development and sustainability of such a system is in the best interests of the government as a whole, and that by continuing to invest in the Cabinet Secretariat’s LDRS, the government would be providing a testing ground for a system that can be easily replicated and used by other government agencies. However, it needs to be recognised that taking that approach puts even more pressure on the initiative and adds further user and system functional requirements related to re-usability and adaptability. Moreover, in the absence of a National Information Infrastructure of the kind described above, the onus would be on the LDRS project managers to create a micro-environment for their system that mimics at least some the features of a national framework. For example, in the absence of a government suite of guidelines on ICT project management, system design, data and document management standards, security protocols, and so on, the LDRS project team might need to adopt, adapt or develop standards and best practice guidelines of their own, drawing on relevant developments in other jurisdictions around the world.

**Inter-departmental coordination and related policies**

Without proper coordination between different departments, there will be inconsistencies between systems, resulting in a waste of already-scarce resources and problematic integration of information, systems and processes (Lam, 2005). One early example in the literature is provided by the case of the city of Corpus Christi Texas, USA (Jorgensen & Cable, 2002). In the late 1990s the city embarked on a journey to establish e-government systems to allow its citizens to find information and interact with city officials via the Internet, but major problems emerged as a result of the lack of coordination and control across all projects.

The need for coordination is not limited to e-government information systems and their hardware and software platforms. It also applies to inter-departmental processes and
procedures. Standard Operating Procedures for inter-departmental communications and processes need to be established. These should include the role of ICT in supporting and enhancing communications and processes between various departments. Bilateral agreements between one department and another are not sufficient. There also needs to be government-wide policies regarding inter-departmental communications and processes.

Working in the absence of government-wide policies in these areas, the LDRS project managers might need to look to policies developed by other government agencies around the world in implementing e-government and developing e-government systems.

**Political support, government vision and strategy, and supporting legislation**

In the government and public service context, these are probably the most important of all the other factors. Political factors have significant impact in the development of infrastructure and must be considered in creating e-government strategies (Chen et al., 2006; Accenture, 2004). In a country such as Indonesia, where the euphoria of democracy has yet to settle down and the relationships between the legislative and executive bodies need further balancing, political support and cooperation between the government and the legislative council are needed to ensure the success of an e-government project. Naturally, political support does not necessarily mean a carte blanche for the initiator and implementor of the e-government initiative, but rather maintaining a critical perspective (e.g. exercising prudence in evaluating the progress of the project, critically evaluating the milestones and achievements of the e-government initiative, and ensuring that funding is being used effectively), while facilitating the development and implementation of the initiative (e.g. by ensuring that key resources are available and supporting legislation is in place).

As part of the process of gaining this support, the government needs to develop a coherent and comprehensive e-government vision and strategy. As reported by Ke and Wei (2004), the rapid progress of e-government in Singapore can be attributed to the country’s integrated e-government strategy. Equally important is the effective communication and sharing of the vision and strategy with other stakeholders, within and outside government, to enable them to understand clearly the government’s position and future plans for the country’s e-government initiative.

Although the LDRS project managers may have limited capacity to influence stakeholders at higher levels of government, and external to government, within the Cabinet Secretariat there is already a strong sense of a shared vision around the LDRS and the role it might play as a model for other e-government initiatives. Within the Secretariat, there are also dedicated project champions and a high level of commitment from the staff directly involved. Given the role of the Cabinet Secretariat, and the way in which it interacts extensively with other government agencies, there would seem to be some potential to influence a range of other stakeholders, particularly in relation to seeing the LDRS as a model for similar initiatives.

**Good governance frameworks and practices**

Good governance regimes put in place accountability and transparency mechanisms, including administrative law, standards of best practice, quality controls, and regulatory bodies and watchdogs like auditors and ombudsmen. Broadly speaking, good governance practice involves individual agencies in implementing their programs in ways that are accountable and transparent, complying with relevant laws, standards and best practice, and undertaking audit, quality assurance and recordkeeping programs that support sound administration and accountability.
The application of good governance practices is important to the success of any project. In cases like the Indonesian Cabinet Secretariat’s, this becomes a priority issue that needs to be addressed in the early stages of the project. In a country known for its reputation for corruption (King 2000; Lee 1986; World Bank, 2003), the establishment of good governance guidelines and/or practices will not only enable greater accountability and transparency which would enhance public and stakeholder support of the project, but may also increase its chances of success.

In relation to ICT systems development projects, such guidelines and practices need to be implemented at every stage of the system life-cycle, but the procurement phase is of particular concern. In a recent report, the World Bank (2003), highlighted public procurement as one of the key areas where corruption and collusion are rampant. As stated by the World Bank report (2003, p. 32):

Typically these collusive arrangements occur with the active involvement of government officials. Such collusion is part of the procurement process and reflects a number of techniques, including restrictive specifications, splitting of contract packages, and use of non-competitive bidding procedures, limited advertising, shortened bid submission periods, and breach of confidentiality during the procurement process. During contract implementation, the actors may collude through poor contract administration, unjustified amendments, over-or under-invoicing, fictitious certificates of completion, inaccurate disclosures, etc. The collusive ring appears to be a common occurrence in Indonesia. The price is agreed and fixed up front, with the Owner’s Estimate facilitating such price fixing. There may be other bidders who are not part of the ring but nevertheless participate in the bidding to avoid appearances of collusion. These bidders also receive a participation fee from the ring.

Undoubtedly, such practices, if they occur, will threaten the success of any project.

Poor governance practices are compounded when coupled with factors such as an over-reliance on outsourcing partners, under-qualified IT staff and a lack of strong project management expertise in-house, and cutting corners in relation to the rigorous specification of key system functionalities and user requirements. Commitment to the development of good governance guidelines and practices within the Cabinet Secretariat, and ensuring that all of the compounding risk factors identified above are addressed in projects like the LDRS initiative will increase the chances of success.

**Change management strategy**

E-government initiatives have the potential to transform traditional bureaucracies. They inevitably involve changes in communication patterns, work practices, organisational structures, procedures and processes enabled by the adoption and implementation of ICT (Forman, 2002). Over time, as government agencies and departments become intertwined in a mesh of electronic processes and activities, the characteristics of networked organizations will become more prevalent than the older forms of bureaucracy (Fountain, 2003). In order to anticipate the changes that may occur and to ensure the success of e-government initiatives, a well-thought-out change management strategy needs to be developed and implemented. Part of this strategy should include education regarding ICT and its impact. As stated by Pons (2004, p. 36), “... e-government requires technical knowledge and understanding, a lack of education of these technologies is a serious impediment to their adoption.”
Managing the changes associated with the introduction of the LDRS is seen as one of the most challenging aspects of their role by participants in the LDRS training program, and the need for better change management capability was identified as a critical need in relation to the success of the project.

**Conclusion**

In this paper, the authors have identified several factors that must be considered carefully and understood clearly prior to adopting and implementing a system to support e-government. Admittedly, the analysis was based on a single case which may raise questions regarding applicability and relevancy to other cases. However, we believe that the discussion in this paper addresses some generic issues faced by others who are in the process of adopting and/or implementing e-government. Although the paper does not provide an exhaustive list of critical success factors, it hopefully demonstrates the need to address such factors in the development and achievement of coherent and unified e-government capabilities.

Indonesia along with most developing nations still has a long journey towards a mature e-government capability. There is much work to be done, many challenges to be met and many pitfalls to be avoided in order to achieve the required capability, and it will take some years for current expectations to be fulfilled. A sustainable and viable vision of Indonesia’s future in e-government needs to be developed and promulgated, good governance frameworks and practices have to be formulated and implemented throughout every layer of the bureaucracy, ICT policies and standards need to be developed, infrastructures need to be built, expert knowledge and skills need to be acquired and applied, and reasonable milestones must be set. The first step taken by the Cabinet Secretariat with its LDRS project may be just a small step in the whole e-government scenario, yet it is potentially an important element in progressing the whole picture of e-government development in Indonesia. If implemented carefully, addressing the factors identified in this paper, this medium-sized project, coupled with the strategic roles and functions of the Cabinet Secretariat, could become a catalyst in further developing the e-government initiative by modelling the features needed in relation to broader governance frameworks and ICT infrastructure. We have every hope that our friends at the Cabinet Secretariat will be successful in their endeavours and set a new pace towards e-government in Indonesia.

**References**


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