# Preliminary Study on Risk Management in E-Government Outsourcing Projects

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*Abstract:* - Electronic Government (E-Government) in Malaysia is one of the seven flagships introduced to accelerate the objective of Vision 2020. It is the intention of E-Government to improve the internal government's operation and its delivery services to Malaysian. Most E-Government projects in Malaysia are outsourced to service providers. There are many risks involved with outsourcing and managing those risks should be seen as one of the critical success factor in project success. Therefore, this paper discusses the phase and the performance of risk management practices in IT outsourcing. A set of questionnaire was distributed to government agencies to assess their risk management practices. The result showed that out of 10 government agencies, only three practice risk management and subsequently succeeds in managing their IT outsourcing project. The findings showed that the consequences of not practicing risk management will result in poor controlling and managing of IT outsourcing projects. Based on the findings, future empirical and exploratory survey will be conducted to support the findings of the pilot study.

*Key-words:* - Electronic Government, Risk Management, Malaysia, Analysis of Decision to Outsource, Selection of Service Provider, Contract management, On-Going Monitoring.

## **1** Introduction

In 1996, the then Prime Minister of Malaysia, Tun Sri Dr. Mahathir Mohamed introduced Vision 2020, a vision that would transform Malaysia into a knowledge-based society. Consequently, Multimedia Super Corridor (MSC) was launched to accelerate the objectives of Vision 2020. Seven flagships introduced namely Electronic Government (e-Government), Multipurpose Card, Smart School, Telehealth, R&D Cluster, Technopreneur Development and Electronic business (e-Business). These applications will be a starting point for innovative producers and users of Multimedia technology [8].

Malaysia is one of the developing countries that has made e-Government a top priority in its vision [29]. In 2001, Malaysia achieved 1.63 global index that placed it among the medium e-Government capacity. In another research [28], Malaysia was categorized with a silver medalist that indicated the policies to implement e-Government initiatives are in place, but there are many government websites that is still in the testing phase. This may lead to the drop in Malaysia's e-Government ranking when it dropped from ranking 16 in 2001 to ranking 21 in 2002 and 83 in 2004 [26]. Many of the government's agencies websites are still in the testing phase due to e-Government service providers that took a long time to deliver the solutions [15].

E-Government provides many opportunities for the states and citizens, but they also provide many challenges. The biggest challenge before government agencies can deliver electronic services to citizens is to deal with their service providers. There are many risks involved when dealing with service providers. Those risks should be managed as manage risks explicitly is one of the Critical Success Factor in a project [9]. However, researches on Risk Management in e-Government outsourcing projects have not been given enough attention. Therefore, this paper intends to bridge the gap by presenting the summaries of previous literature on risk management steps in dealing with service providers and the practices of risk management in Malaysia's E-Government projects.

# 2 Risk Management in E-Government Outsourcing Projects

From technological perspective, E-government can be defined as the use of information, ICT and multimedia technology to improve the access to and delivery of government services to benefit other stakeholders [28]. From business perspective, Egovernment is the application of ICT and multimedia technologies to transform the efficiency, effectiveness, transparency and accountability of informational and transactional exchanges between the government and its stakeholders [28]. Intended to serve the citizens better, the government agencies need to co-ordinate changes to these three inside elements of government; people, processes and system [14].

In order to facilitate the growth of ICT usage in Malaysia, most government agencies outsourced their network services [20]. For system development, many government agencies in Malaysia rely on service provider. The service provider will be free to propose solutions for government agencies to either integrate or replace the system, depending upon the functionality and adaptability of the legacy system. However, the service provider has to make sure that the new system is compliant with the government wide technology standards and policies.

Since many government agencies rely on service provider, the risks increase as many players are involved in the outsourcing projects. Government agencies are inviting disaster if those risks are not assessed. Those risks if carefully and deliberately assessed and managed will attenuate the level of the risks exposure [3]. When consideration is given to the risks in a project early in their development and incorporating relevant control techniques, it will increase the likelihood of a successful system [1]. However, early identification is not enough. During the initial stage, risk assessment may not be imprecise due to limited information and resources. Therefore, government agencies should have systematic risk management and continuously carry it out through the life of the project [25].

Many studies proved that the practice of risk management will increase the likelihood of successful projects including a survey done to show a positive association between risk management and project success [16]. Therefore, risk management should be recognized as one of critical success factor in IT outsourcing projects. In Malaysia, even though the awareness of risk management is high, the practice is still low whereby only 8.0 percent of IS project integrate risk management in the development process due to no formal training in risk management [17,18,19]. Therefore, this paper stressed on the importance of risk management by discussing the phases and performance.

# 3 Methodology

There are two methodologies used in this paper. The first is reviewing secondary data to gather information about risk management and E-Government. During the review, the best practices that lead to success in outsourcing are identified. Then, a set of pilot questionnaires are distributed to 15 personnel at 15 government agencies that are involved in e-Government outsourcing projects with ten returned answers.

# **4** Research Findings and Discussion

Based on the data gathered, the following findings and discussion are presented.

# 4.1 Organizational background and project characteristics

The research involved ten government agencies. The designation of the respondents are Project Director, Principle Assistant Director, IT Manager, three Systems Analysts and four IT/IS officers. The nature of the business are mainly services (five government agencies), health care (three government agencies), Human Resources and Law Enforcer. Six of the government agencies outsourced their application system development function, two government ICT agencies outsourced their application maintenance, one government agency outsourced their ICT infrastructure and one government agency outsourced strategic planning. The project cost range from 50K to 20M (Ringgit Malaysia).

All government agencies agreed that the reason they outsourced a particular function is the resources and expertise are not available in-house. Surprisingly, cost reduction is not the main reason to outsource a function in government agencies. This might support the research where cost reduction is a goal of traditional outsourcing and therefore might not be appropriate in current environment [10]. Other reasons to outsource include to focus on core business, to improve productivity, to achieve higher quality and to achieve higher customer satisfaction. Another important reason derived from this survey is the government support. This is especially true in Malaysia's environment where the government itself encourages its agencies to outsource a particular function to offer new career fields.

From the ten agencies surveyed, only one government agency involves the use of multi-vendor to complete the task. Six out of ten organizations focused on selective outsourcing. Selective outsourcing is the decision to outsource selected IT functions to service providers while still providing between 20% and 80% of the IT function internally [12]. The rest of the organization performed total outsourcing.

Six of the government agencies set up strategic partnership type of relationship. The rest of the agencies set up buyer/seller relationship arrangements. All the government agencies sign feefor-service contract. Fee-for-service contract is divided into four types, namely standards, detail, loose and mixed [11]. From the four types of contract, seven government agencies signed detailed contract while the rest signed for standard contract. From ten government agencies that participate in the survey, only one signed for medium-term (from 6-10 years). The rest of the respondent signed for short term contract (less than 5 years). This is because of the government policies itself that provide five years license contact, subject to satisfactory review of performance.

## 4.2 Risk Management Practices in E-Government Outsourcing Projects

The process of risk management as proposed by FFIEC [7] together with the best practices in risk management, e-Government and outsourcing is used as the basis of the survey. The process can be divided into four main phases: analysis of decision to outsource, selection of service provider, contract management and on-going monitoring. The details of each process and its finding are described below.

#### **4.2.1** Analysis of Decision to Outsource

Creating a risk management committee is the first step in risk management. To incorporate risk management practices, it is utmost important that the stakeholder be part of risk management committee and create Risk Management Plan (RMP) to control an outsourcing action. This team is crucial as they will be responsible in identifying and managing the risks.

However, only three government agencies in the survey follow these procedures. This is an early sign that e-Government outsourcing projects in Malaysia did not fully practice risk management. The reason given for not creating risk management committee is risk management is not the practice in their organizations.

 Table 1: Elements considered during the

 Analysis of Decision to Outsource phase

Elements to be Considered	Hit
Select and Understand the function to be	9
outsourced [23]	
Cost Benefit Analysis (CBA) [24]	8
Setting up realistic scope, budget and schedule	9
[27]	
Determine number of service providers [6]	2
Determine the type of relationships [6]	5
Involvement of stakeholders in the RMP [7]	3
Usage of the RMP in monitoring the IT	3
outsourcing process [7]	

An analysis of the decision to outsource should emphasis on the internal due diligence in ensuring that outsourcing is right for their agencies and fits in with its overall strategy [21]. In this phase, elements considered are as stated in Table 1.

The survey shows that 9 government agencies conduct analysis of decision to outsource. One government agency skipped this process as the project is a directive from the ministry and the government agencies will only be responsible with the next phase of IT outsourcing life-cycle. It is a good practice when all government agencies carefully select and understand the systems function before it is passed to the third party so that the requirements could be easily determined.

Cost Benefit Analysis (CBA) is then conducted to compare the benefits and the costs of doing the function in-house versus outsourced. However, one government agency did not perform CBA. In this particular agency, CBA is not a high priority as the project is a mandatory project where the success of the development of the project outweighs the cost.

After the decision to outsource has been finalized, the government agencies defined realistic and achievable goals which include realistic budget, allocation, specification of scope requirement and schedule of the project. Failing to do so is one of the top reasons for IT outsourcing failures [29]. Therefore, by defining realistic and achievable goal, the risks of failure are reduced.

The previous literature mentioned that the usage of multi-vendor can minimize the risks of IT outsourcing [6]. However, in the survey, only two government agencies practiced the usage of multivendor concept because of the complexity and size of the projects. Managing the relationship is very important to ensure the success of IT outsourcing. Therefore, signing the strategic alliance type of relationship would ensure the good relationship between agencies and service provider. Table 1 shows that 5 of the agencies emphasis on the type of relationship prior to contract awarding.

By conducting the first phase, it shows that the agencies have included risk assessment in their projects.

#### 4.2.2 Selection of Service Provider

Proper selection of service provider is necessary is necessary to reduce the risks of IT outsourcing [2]. Request of Proposal (RFP) should be prepared using the information gathered during the analysis of decision to outsource phase. After receiving the proposal, it should be evaluated against the agencies' needs.

Elements that were considered in selecting service provider are as shown in Table 2.

From the survey, reputation and performance are the most important criteria in selecting service

provider. The high reputation and good performance of service provider will ensure high reliability of services and products. The government agencies also need to consider the experience of service provider with the function being outsourced. With a team of experienced IT personnel, the service provider could deliver high quality products.

Table 2:	Elements	considere	ed during	the
service	provider	selection	process	

Elements to be considered	Hit	Rank
Reputation and performance	10	1
Experience with the function	9	2
Financial stability	8	3
Access and ability to adapt to latest	8	4
technology		
Practices of standard, policies and	7	5
procedures		
Practices of security	7	6
Responsibility towards disaster recovery	7	7
plan		
Personnel assigned by service provider	6	8
Usage of third party	4	9

Financial stability is another criterion that is considered important. This will also ensure that the service provider may not drop a project or go out of business. The government agencies are also interested with the provider that has access and ability to adopt to latest technology. This is to make sure that any upgrading or integration is easily performed in the future.

Practices of standard, policies and procedure were also ranked high because most of the E-Government project involves citizens' information. By having standardized policies and procedures, many potential threats could be controlled. They also considered provider that will provide disaster recovery plan. This is because the e-Government projects are crucial and it is important for business to be recovered from major disaster.

Screening personnel background is also important in selecting service provider so that no conflict of interest occur especially with the appointed subject matter expert by the service provider. The usage of third party was the least important criteria in selecting service provider as not many providers used the subcontractor services.

The agencies should also perform site visit at their service provider location to have an overview of their working environment. However, only three agencies performed the site visit evaluation as the other government agencies have faith with their providers.

#### 4.2.3 Contract Management

Contract is the most important element of a secure outsourcing plan [5] and it must be recognized as important risk management vehicles [13]. Elements that have been considered during contract management phase are as shown in Table 3.

 Table 3: Elements considered during the contract management phase

Elements to be Considered	Hit
Contract negotiation	9
Legal Counsel engagement	9
Contract designing	9
Meeting the contract	9

During the contract management phase, it is important to negotiate a contract so that all needs and requirements are defined clearly. From the survey, almost all government agencies conducted contract negotiation. The engagement of legal counsel is important as they can help in reviewing the contract and this is a common practice in most government agencies.

In IT outsourcing, it is important to include Service Level Agreement (SLA) in the contract as it will provide a formal agreement regarding the division of work between the agency and the service provider. The contract should include the scope, cost and duration to complete the projects, description of relationship, penalty and rewards for higher or lower performance, security and confidentiality of the organization resources, control over the projects, type of report the agencies should receive, the service provider's responsible towards the recovery plan and subcontracting, ownership and license, dispute resolution, limitation of liability, termination clause and regulatory compliance [7].

After designing and signing the contract, the next step is to make sure that the agreed contract is met [4]. All the agencies' requirements are already build into the contract. Therefore, service provider has to comply with the contract.

Almost all elements that are required in a contract as stated above are present in the governments' contract. However, some agencies did not include the dispute resolution, limitation of liability and regulatory compliance clause in the contract.

However, from ten government agencies involved in the survey, one admitted the cost stated in the contract was higher that the estimation, two government agencies declared the schedule were not met and one did not meet the SLA. The government agency that faced overrun budget problem also admitted that they have less control over the project. Besides that, problems cited include, reports not received on time, ownership and license is not abide, dispute resolution is not respected and the limitation of liability incurred by the service provider is not traced. It should be noted that the agencies that did not practice risk management faced more problems.

In managing the contract, the government agencies suggested two more steps that should be performed during the contract management phase. The steps are regular implementation meeting and report regularly to steering committee. Regular implementation meeting is necessary to ensure the development of the project is on the right track and complied with the agreed contract. It is also important to report to steering committee so that the stakeholders will keep abreast with the development of the project.

#### 4.2.4 On-Going Monitoring

An effective monitoring and auditing mechanisms in the outsourcing process should be implemented since written agreement in the agreement is not enough [22]. Performing the ongoing monitoring phase will enhance the ability to mitigate risks by identifying potential problems before they become catastrophic and thus contribute to IT outsourcing success.

All government agencies that participate in the survey conducted on-going monitoring to make sure that their service provider will deliver what they have promised. The respondent also suggested another three steps that should be performed during the ongoing monitoring phase. They are performance review, performance and stress test and user acceptance test. The performance review is to make sure that the product performed accordingly as stated in the contract. Performance and stress test are performed during the peak hour to test its capability and performance to work in a stress environment. User acceptance test is to make sure that the user can use and easily adapt the product.

However, besides performing on-going monitoring, the risk management should be practiced through out all IT outsourcing lifecycle. Therefore, on-going monitoring will not be effective if the agencies skip other phases of risk management.

## 5 Conclusion

The Malaysian government is actively moving towards E-Government. There are many risks in E-Government especially when the developments of the projects are handed to the service providers. Risks should be managed and risk management should be seen as one of the critical success factors in IT outsourcing. Research should enhance the effectiveness of risk management to lead to success in IT outsourcing. Therefore, this paper fills in the gap by examining the risk management practices in E-Government outsourcing project.

A survey was conducted in government agencies to look at their practices of risk management in e-government outsourcing projects. From the survey, many government agencies did not follow the risk management phases closely and thus causing many problems such as late delivery, overrun cost, quality not up to the expectation and many more. Consequently, five out of ten projects surveyed ended with termination clause, a circumstances where the contract is terminated before the completion of the project.

Meanwhile, three government agencies that started with the creation of risk management committee and practice risk management are able to complete the outsourcing activities successfully. Therefore, future empirical and exploratory survey will be conducted to serve as an empirical validation to the results of the pilot study.

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