14th International Research/Expert Conference
"Trends in the Development of Machinery and Associated Technology"
TMT 2010, Mediterranean Cruise, 11-18 September 2010

E-GOVERNMENT – WEALTH MANAGEMENT SYSTEM RISK IDENTIFICATION

Sabedin A. Meha, Loreta N. Gashi, Behar M. Fejzullahu
University of Pristine, Department of Mechatronics
Kodra e diellit p.n., Pristine
Kosovo

ABSTRACT
Risk identification is a very important task to consider in order on succeeding as a project manager. A good manager systematically attempts to specify threats to the project plan. It is very important to have a close monitoring on estimates, schedules and deadlines, resource loading, etc. Identifying known and predictable risks it's a first step that the project manager takes toward avoiding them whenever is possible and controlling them when necessary. During the implementation of the "E-Government – Wealth Management System" in all public institutions of Kosovo, there has been identified a lot of risks that has influenced the overall project implementation. Large number of users, end-users resistance on the new system and customer changing requirement present some of the risks identified during the project implementation.
Keywords: E-government, Wealth Management System, Risk Identification

1. INTRODUCTION

E-Government is being implemented in Kosovo for some years now as a very important governmental project. This is the project that manages governmental wealth (assets, immovable wealth, vehicles, expendables, etc), and it is intended to be implemented in:

- Prime Minister Cabinet
- 17 Ministries
- 38 Municipalities and
- 20 Public Agencies

The software development process consisted of developing a central database for all institutions and web interface for the users to work with. Furthermore the project foresaw the interconnection of software with two devices: one for printing barcodes and one for scanning printed barcodes, and searching for scanned barcodes in the database.

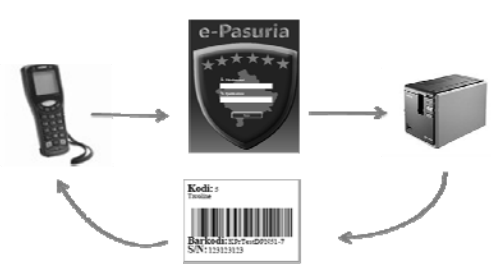

Figure 1. Software - barcode printer - barcode reader

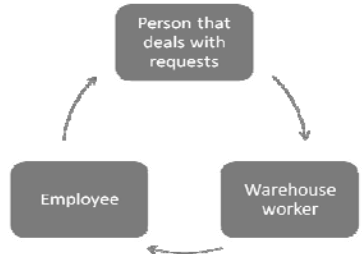

Figure 2.Cycle to deal with one request

Figure 1shows hardware parts that are used for printing barcodes and scanning those printed barcodes.
One very important part of the system is a interconnection among warehouse worker that receives goods in the institution from different contractors and hands out materials and devices to the employees (executor), the administration director of the institution (that deals with requests) and all other employees from that specific institution (that can make request for a computer or similar) (see figure 2).
Since the application can be accessed via Internet browser, each staff that works in the institutions can log into the application and make requests for himself/herself. Then, if the request is granted, the warehouse worker completes the request by sending materials or devices to the employee that made that request.

2. RISKS

Making informed decisions by consciously assessing what can go wrong, as well as the likelihood and severity of the impact is at the heart of risk management. Making informed decisions involves the evaluation of the trade-offs associated with all policy options for risk mitigation in terms of their costs, benefits, and risks, and the evaluation of the impact of current decisions on future options. This process of risk management embodies the identification, analysis, planning, tracking, controlling, and communication of risk. Acquisition, development, and deployment programs continue to suffer large cost overruns, schedule delays, and poor technical performance. Generally, this is a result of failing to deal appropriately with uncertainty in the acquisition and development of complex, software-intensive and software-dependent systems. The acquisition and development communities, both governmental and industrial, lack a systematic way of identifying, communicating, and resolving technical uncertainty. Often the focus is on the symptoms of cost overruns and schedule delays rather than on the root causes in product acquisition and development. In fact, all areas in systems development are potential sources of software risks (see Figure 3) since it involves technology, hardware, software, people, cost, and schedule. Risk is commonly defined as a measure of the probability and severity of adverse effects. Software technical risk can be defined as a measure of the probability and severity of adverse effects inherent in the development of software that does not meet its intended functions and performance requirements.

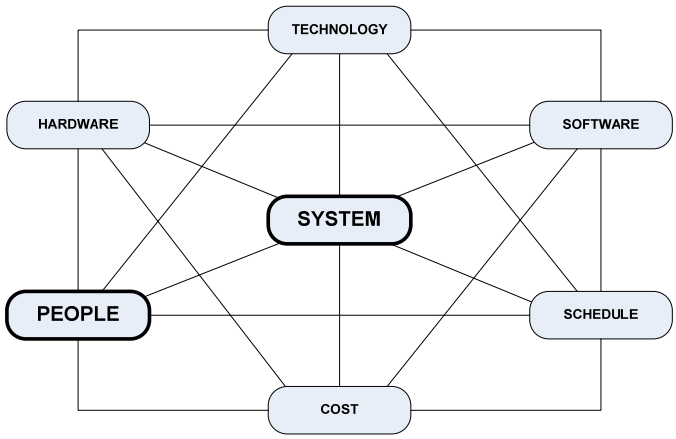

Figure 3. Risks within a System context

The need to manage risk increases with system complexity. Figure 4 demonstrates this concept by indicating that as the complexity of the system increases, both technical and non-technical (cost and schedule) risks increase.
There is an increasing need for more systematic methods and tools to supplement individual knowledge, judgment, and experience. These human traits are often sufficient to address less complex risks. It is worth noting that many managers believe that they are managing risk in its multifaceted

dimensions. The fact of the matter is that they are merely managing cost and schedule along with isolated cases of technical risk. Many of the most serious issues encountered in system acquisition are the result of risks that either remain unrecognized and/or are ignored until they have already created serious consequences. This focus on risk management is important because structured techniques, even quite simple ones, can be effective in identifying risk, and approaches, procedures, and techniques do exist for risk mitigation.

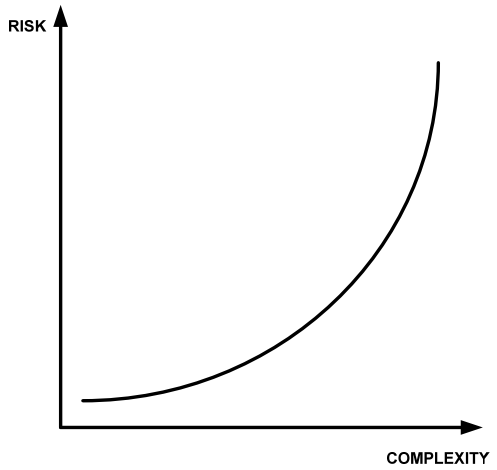

Figure 4. The Need to Manage Risk Increases with System Complexity

In its attempt to respond to these problems, the goal of the risk identification process is to improve the process for acquisition and development of software-intensive systems. In particular, its aims are: to enable acquisition and development managers and engineers to make better decisions (by identifying risk before they become problems); to communicate risks in a positive, nonthreatening way; and to resolve technical risk in a cost-effective manner. Figure 3 shows a continuous set of activities to identify, confront, and resolve technical and other risks during software implementation process.

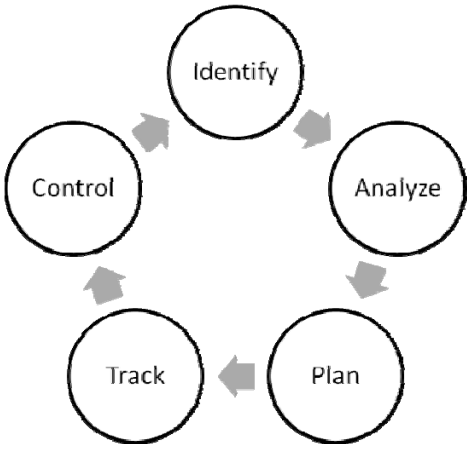

Figure 5. Activities taken to deal with risks

3. HUMAN RELATED RISKS IN OUR PROJECT

During the implementation of the project, software manager faced a lot of risks to deal with, some predictable and some unpredictable, making the overall project implementation in some of the institutions hard and maybe impossible at all. Main risks to deal with were the human related and are listed below:

1. **Institution computer infrastructure** – Because Kosovo institutions are relatively young, some had problems accessing computers or Internet. Users that were supposed to use the system, like warehouse worker, do not have computer! Warehouse worker did the entire job by paper work. This was an unpredictable risk that caused problems in implementation. Project could not be implemented in similar institutions were elementary tools are missing.
2. **Users not familiar using computer** – Some users are adapted in their job by keeping evidences manually without using computer, so it is very hard for them to adapt to the new system, even that the application is very simple, has nice user interface, and has guides how to use it.
3. **Users not interested to work with new system** – Some users don't want to use the application because they are using some other application that they made it themselves (excel spreadsheets) or were supplied earlier from different suppliers. They got used with that old way of doing their job and hesitate to start to work with new system.
4. **Institutions staff shortage** – Due to the staff shortage in some of our institutions and as they are recruiting staff time after time, in some new municipalities and new ministries, there is no adequate staff to work with the system. In some cases, one staff does the work that actually has to be done by two, three or even four persons.
5. **Users changing requirements** – Even that the application is based in existing legislation in Kosovo, some users continually make additional requirements that they suppose the application must have.
6. **Large number of users** – Initially there were supposed that the application must handle around 500 users, but with the implementation of request module, that number grew up in thousands. The employees that are supposed to make requests with the application, some of them, now require trainings.

4. EPILOGUE

Risk analysis is not difficult to perform properly, and the benefits in project planning are great. However, if it is not done properly, the results can be disastrous as the analysis can severely understate risk and lead to unsatisfactory conclusions about project viability. In our case, the biggest risks were human (end user) related that are still representing challenges that must be surpassed, in order to have successfully implemented project.

5. REFERENCES

[1] Higuera R., Haimes Y.: Software Risk Management, CMU/SEI-96-TR-012, ESC-TR-96-012, June 1996,

[2] Humphreys K.: Project risk management - advantages and pitfalls, ICEC, Granite Falls, NC, United States,

[3] Kajko-Mattsson M., Nyfjord J.: State of Software Risk Management Practice, IAENG International Journal of Computer Science, 35:4, IJCS_35_4_02.