IT Procurement - Identifying IT System Requirements

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DATA GOVERNANCE AND
MANAGEMENT TOOLKIT

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January, 2021
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INTRODUCTION

This document discusses workflow analysis and Agile management approaches. These processes can be used to increase the effectiveness and efficiency of existing IT systems, or to identify the needs and requirements for new IT systems.

KEY POINTS IN THIS DOCUMENT

- Workflow analysis considers how people, processes, and technology fit together to carry out work.

- Data management tools need to be set up to fit your government's workflows in order to be useful to your government.

- User testing is about achieving a better understanding of how the system is being used, with the goal of changing, improving, or evolving the system.

- When first considering whether to buy, build, or change a new or existing data management system, it is critical to develop a set of clear requirements indicating what the desired system will do.

WORKFLOW ANALYSIS

Workflow analysis considers how people, processes, and technology fit together to carry out work. Typically, workflow analysis is done as part of the process of designing a system. Workflow analysis can also help to ensure that everybody is carrying out the same functions consistently, using the same process.

Workflow analysis involves reviewing all the steps involved with carrying out a function by asking who, what, where, when, why, and how. **Data management tools need to be set up to fit your government's workflows in order to be useful to your government!**

Workflow analysis is particularly important if you're thinking about automating a process or implementing a new IT system (ex. new accounting software). You can use workflow analysis to help any IT vendors you are working with understand your needs and, therefore, to implement a system that fits your needs.

If your current IT systems are not working well, you may be thinking about implementing a new system. Before exploring options for new systems, consider how your current systems can be optimized. Often IT systems are not being used to their full potential and have not been implemented to fit an organization's workflows.

SULINGITUK GOVERNMENT: The importance of workflow analysis
Fictional Case Study
When Sulingituk Government's Health and Social Services department decides to implement a new case management system (CMS), they learn that insufficient workflow analysis prior to implementation can be the downfall of a new system. Sulingituk Government's Health and Social Services department is using an outdated CMS that needs to be replaced. Glenn, the Health and Social Services Director, meets with Katlyn, the IT Administrator, to discuss some of the major issues with the old system and asks IT to find a replacement. Katlyn then issues a Request for Proposal (RFP). Five companies reply to the RFP and after an extensive review of the proposals, Katlyn decides on new CMS software that comes from a vendor that the Government has done business with in the past, has some desirable features, and is well within the approved budget for the project. Katlyn schedules a meeting with the vendor and Glenn, to discuss how the new system can meet the needs of the Health and Social Services department. The vendor provides a demo of the software, and reviews the pricing options. They sign an agreement with the vendor to provide the server installation and configuration of the new system, migration of legacy data, user licences, 2 days of end user training for all Health and Social Services staff, and 2 years of technical support. Katlyn, who is the lead on the project, works directly with the vendor to implement the new system and organizes the user training sessions. The "go live" date for the new system is 6 months from the beginning of the project. The project goes relatively smoothly – they import all the data from the old system, confirm that everything is working as it should and that all data is accessible in the new system, and complete the training sessions for staff. However, about a month after the system "goes live" it becomes clear that the employees of the Department of Health and Social Services are struggling. Glenn is getting reports from his staff about the following issues: • Staff are unable to print reports in the format that they need; instead, they must export multiple reports to Excel and then merge them in an Excel workbook. This process is time consuming, so staff have started

updating the "master excel list" directly instead of updating the CMS, which means that CMS data is often outdated.

- They struggle with the navigation of the new system, which forces them to click through multiple pages or "tabs" for each client rather than having all the critical information in one place; this means that staff are missing critical information and alerts, which are buried deep in the system.

- The new CMS system doesn't integrate with the financial system used to print cheques; consequently, staff must update a different Excel sheet that gets sent to Finance for cheque runs every 2 weeks, and then manually input payment information back into the system.

- Because the system's security protocols severely limit the ability for staff to edit a client's information, when errors are made staff have to create a new record. This has led to a number of clients having multiple case files in the system, which leads to errors in processing their information and payments.

- The CMS doesn't issue any alerts about changes to the guardian information for minor children, so staff are struggling to keep track of who the correct contact person is for children who are in care. There have been several instances where information and support payments were sent to the wrong household after a child was moved to a new guardian.

The issues are causing employees to develop workarounds to avoid using the system. Staff have started printing off documents and maintaining parallel paper files. Naturally, this creates confusion around who has the most current information as multiple files float around. As the errors and inaccuracies in the CMS continue to grow, staff are growing increasingly frustrated with it and are on the verge of abandoning it altogether. Already about 1/3 of frontline staff refuse to use it.

How could this have been avoided? By looking at workflows. Although Katlyn did meet with Glenn, the head of the department, she did not take the time needed to comprehensively understand how the frontline staff in the department actually do their jobs, and what they would need from the new system in order to make their jobs easier. This oversight led to Katlyn choosing a system without having a good understanding of what operational needs the system was supposed to fulfill, including how employees were recording and using information. Ultimately, Katlyn chose a new system that was not a good fit for the department. These issues could have been avoided if there had been a greater upfront investment in understanding workflows within the department before selecting and implementing the system.

USER TESTING AND ITERATIVE WORKFLOWS

Ideally, a system will evolve, both as the organization's understanding of challenges improves and as those challenges themselves change.

A key element of this evolution is to understand how the systems in place are being used. While workflow analysis aims to understand how data and needs flow through the organization, user testing aims to understand the solutions in place. Primarily, user testing is about achieving a better understanding of how the system is actually being used. User testing can be very simple: an analyst can monitor the systems in use, review data quality, identify gaps, errors and slowdowns, and note identified challenges for future improvements.

The goal is to make use of this information to change, improve, or evolve the system. In order to achieve that, an iterative or agile workflow should be considered. In an agile workflow, the system designer, analysts, IT team, or

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software developers are considered an ongoing component of the system, working to iterate towards the ideal solution. More information on agile development and workflow is available online.

DEVELOPING CLEAR REQUIREMENTS

When first considering whether to buy, build, or change a new or existing data management system, it is critical to develop a set of clear requirements. The requirements will indicate what the desired system will do (i.e., the features or functionality). This will also include developing both the system and data requirements surrounding privacy, security, data at rest, data in transit, and data quality. The Project Management Institute's online library has numerous articles that can help with the development of requirements.

- PMI - Creating clear project requirements

- PMI - Determining Project Requirements - Best Practices and Tipsces-7278

- PMI - Don't forget the data

Consider utilizing a data domain subject matter expert as well as a data architect/analyst and IT analyst to help determine what data is required in the system as well as to understand high level system requirements. For large data management projects, an experienced project manager is useful in guiding the organization and project through the required project phases and documentation.

TABLE 1. EXPERTISE TO DEVELOP REQUIREMENTS

Role	Function
Project Manager	Developing requirements, total cost of ownership (TCO) analysis, decision matrix, RFP
IT Analyst	Developing requirements, TCO analysis, decision matrix, system architecture, privacy and security considerations for data at rest and in motion, network security
Data Domain Subject Matter Expert	Understanding incoming data, developing metadata, enabling work of data analyst
Data Analyst/Architect	Model data relationships, develop storage schemas, data analysis planning and modelling