Why government ICT projects **run into problems**
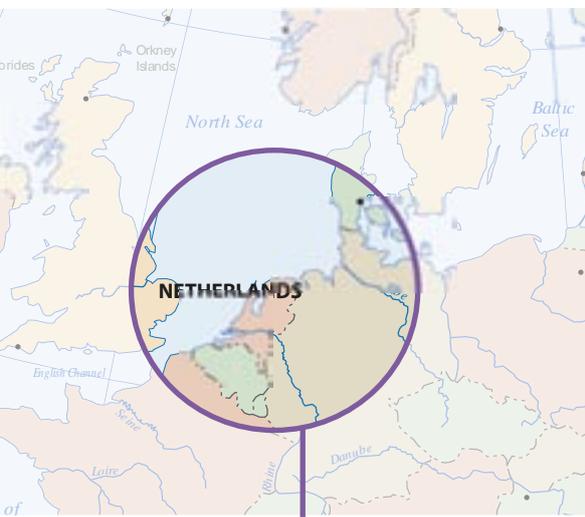
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Government ICT projects are carried out in a complex environment. The complexity is threefold: political, organisational and technical factors complicate these projects. Therefore government ICT projects are difficult to govern. Actors involved in government ICT projects are inclined to turn a blind eye to these difficulties because each actor, for its own legitimate reasons, has an interest in large and ambitious projects. While both politicians and ministers should take our observations to heart, we believe that the latter hold the key to break out of the spiral in which projects become too complex. Ministers should be more realistic in their ambitions and should make sure to keep a firm grip on their ICT projects.

Introduction

The Dutch government experiences severe difficulties managing ICT projects. Projects run into problems, they get far more expensive than budgeted, need more time than planned or do not deliver the intended results. The problems can have adverse impact on government processes and often a great deal of money is involved. For instance, because of substantial problems with the project to implement a new procedure for the payment of housing and medical care benefits 52,000 people did not receive the benefits they where entitled to at the end of 2005. Another case in point is the failure of a project aimed to develop an ICT system to support a future human resources shared services centre. Because of an unconstructive relationship between government and the supplier, the supplier threw in the towel which ended the project. A recent example is a project for the renewal of a social benefits system which was abandoned after having spent € 87 million.

Such problems are not unique to the Dutch government. In the United States serious problems with ICT projects led to the introduction of the Clinger-Cohen Act in 1996. Also the private sector struggles to manage ICT projects. Projects in the public sector, however, are much more in the spotlight.

In this article we will discuss the underlying causes of the problems with government ICT projects. It is based on an audit that we performed at the request of our parliament.

Request from parliament

On 5 June 2007, members of the House of Representatives addressed questions to the Minister of the Interior about newspaper reports on large amounts of public money wasted on failing ICT. According to the media, ICT experts estimated that the Dutch government spends between €4 and €5 billion a year on failing ICT projects. As a result of the debate with the minister, the House asked the government to give an overview of all large ICT projects of central government and to examine how coordination by the Minister of the Interior could be strengthened. The House also requested the Netherlands Court of Audit to investigate the persistent problems with ICT projects.

We were requested to identify the main underlying causes of problems with ICT projects of the central government and to make recommendations for improvement. The request also comprised four other questions but in this article we focus on the first question[1]. This article is based on part A of the audit that we published at the end of 2007 (http://www.rekenkamer.nl/9282000/d/p425_report.pdf). We published part B in July 2008.

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1   Four other questions – not covered here – were:
   - What is the quality of the information provided to the House of Representatives and how useful are the project administrations to provide this information?
   - How are the efficiency and effectiveness of expenditure on ICT projects accounted for?
   - What indication can the Court of Audit give of avoidable costs and avoidable delays?
   - What view does this investigation give on the possibilities and limitations of a government-wide investigation into avoidable costs and delays in central government ICT projects since 2000?

Method

To start with, we defined an ICT project as follows:

An ICT project is a project whose aim is to develop and/or introduce an ICT system. We understand development to mean the specification, procurement and internal and external construction or modification of the system. Introduction means both the technical and the organisational implementation.

We based our report on three sources of information. First we used previous audits of ICT projects by the Netherlands Court of Audit. Second we conducted a study of the causes given in national and international literature. As our third source we consulted experts from diverse backgrounds: government, ICT suppliers, academia and IT audit.

A great deal of literature has been published on how to manage ICT projects and how to control the risks. Despite the many manuals and methods, large projects keep running into problems. Our aim was not to write the next 'how to' project management handbook or to reproduce a list of common well known failure factors. Instead, we strived to identify the main underlying causes of the persistent problems with ICT projects.

Characteristics of Government ICT projects

We identified three factors of complexity that characterise government ICT projects, namely political, organisational and technical complexities. Government ICT projects often fail to a certain degree because of a combination of these three factors. In this section we will describe these factors that complicate ICT projects, often to the extent of becoming unmanageable.

Political complexity

Political decision makers tend to believe that ICT is the ideal solution to any policy problem. Senior civil servants, ministers and the members of parliament often do not fully understand what ICT can do and, more importantly, what it cannot do. A minister who takes decisions without seeking adequate advice runs the risk that the project becomes unrealistic from the start. Also, it is not uncommon for a project deadline to be the outcome of a political debate or the statement of an ambition instead of an underpinned and realistic planning result. Unrealistic timing can get projects into serious problems.

Another aspect of political complexity is that the political environment is highly dynamic. Political changes with considerable consequences for the project should lead to a reconsideration of the project conditions in terms of ambition, time, money and human resources. Also, when problems or new risks arise the project conditions should be reconsidered. However, such reconsiderations are not always politically opportune. As a result the responsible persons are tempted to keep muddling on even when continuation of the project is no longer justified by a valid business case.

Organisational complexity

Often government ICT projects are also complex because several organisations are involved that are more or less autonomous. One can think of a number of organisations joining forces in an ICT project because their business processes are related and require exchange of information. Central steering of the project is difficult or sometimes even impossible in these cases. Since organisations tend to act primarily from their own main goals, their contribution to and acceptance of the ICT project depend largely on how the ICT project can serve these specific goals.

Another aspect of organisational complexity is the strong interconnection between ICT and organisation. An ICT project generally implies an organisational change and, conversely, organisational change can have significant impact on the ICT landscape.
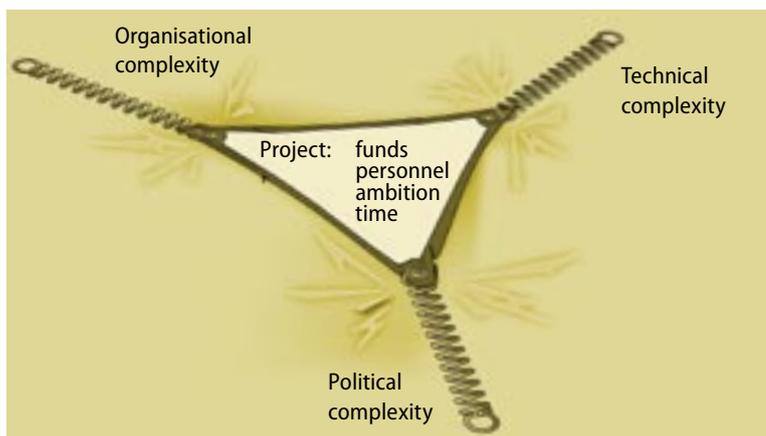
Technical Complexity

There is an inherent mismatch in flexibility between ICT systems and political and organisational processes. While political and organisational processes are dynamic and flexible by nature, once a decision has been taken to develop a particular ICT system and the project is under way, it is difficult to change the project. Such changes are not impossible, but have their price in terms of time and budget overruns.

Another complicating technical factor is that ICT systems often have to be connected to other systems already in operation. Compatibility between ICT systems – already a major issue within a single organisation – becomes especially challenging where a number of organisations is involved. The problems that arise when collating data from two or more organisations if the data entries do not agree with each other (conversion problems) are often underestimated.

Also, advances in ICT succeed each other at a daunting pace. Expertise and know how quickly become obsolete and new techniques that become available during the project place the chosen strategy in a new light.

Tension between organisational, political and technical complexity

Source: Court of Audit, 2007

Why government projects become unwieldy

Our main finding is that government ICT projects are often too ambitious and too complex because of the combination of the political, organisational and technical factors we mentioned in the previous section. A project that is too complex lacks balance between the ambitions and the available human, financial and time resources. In theory, the solutions to reduce complexity are relatively simple, if not obvious. The motto is: start small and proceed in small steps. Minimise the organisational and technical complexity. Organisational complexity, for example, can be reduced by limiting the number of organisations involved. Depending on the type of project, pilot schemes can be carried out or developments can be 'piggy backed' with one organisation developing an application and others adopting the functionalities they need. Technical complexity can be reduced by opting for standard software. The '80/20' rule is also often applicable. About 80% of the work required to develop an ICT application is concerned with the last 20% of the application's functionality. Do all exception rules really have to be programmed? Or can some exceptions be replaced with manual procedures? Complexity is sometimes a given, for example because legislation must apply to all citizens at the same moment. If it is a given, other conditions, such as completion time, must be adapted for the project to remain realistic. A project can also be made more manageable by dividing it into smaller, more controllable subsidiary projects.

All the 'recipes' given above are known. But they are often not applied even though those involved know that projects are doomed to failure if they are too ambitious or too complex. Why is this so? The Court of Audit understands the cause to be in the area of legitimate interests of the actors concerned.

The actors involved in the initial stages of an ICT project are ministers, the House of Representatives and ICT providers. Each of these actors, for its own legitimate reasons, has an interest in large and ambitious projects.

The House of Representatives not only exercises parliamentary control over the government but also takes its own initiatives to steer the government's actions. In this latter role, the House often expects the government to solve complex problems, preferably as quickly as possible. These demands usually culminate in complex projects with tight deadlines.

Ministers like to show they are decisive. Decisiveness is best displayed by an ambitious project subject to a definite and tight deadline. Announcing a feasibility study or a small scale pilot scheme is not usually seen as decisive action.

To survive, ICT providers need contracts, preferably big ones. And they are unlikely to refuse the additional work brought about by additional requirements.

Since all these actors have a 'natural' tendency to think in terms of big solutions to big problems and therefore cannot keep each other in check during this critical phase, an ICT project can quickly be sucked into a spiral of growing complexity during the process of discussion and negotiation. The parties entrap each other in the spiral and inevitably agree upon a project that is too complex but has the status of political fact from which there is no elegant way back.

Recommendations

We are convinced that ministers hold the key to break out of the spiral in which projects become too complex. A minister not only has a voice in the political decision making but is also responsible for the management and execution of a project. In their capacity as client, moreover, the minister is in direct contact with the provider. Our recommendations are therefore designed to strengthen a minister's position. The underlying thought is that if a minister has

'put their house in order' they can take a more considered view of the dynamic environment in which ICT projects become increasingly ambitious. We can summarise our recommendations as follows: be realistic about the ambitions and make sure you keep a firm grip on your ICT projects.

Realism means being aware that:

- ICT is not a 'quick fix' to a problem;
- Political deadlines can be fatal to a project;
- ICT ambitions also display a gap between policy and practice;
- Changes during the project are often inevitable;
- An exit strategy prevents muddling on.

To keep a grip on ICT projects:

- The minister should be a serious counterpart for both the House and the ICT provider;
- Decisions should be taken in phases;
- Decisions should be based on well considered plans, and projects should be evaluated as part of an overall project portfolio;
- Reconsideration along the way should be made possible.

Closing remarks

1 The factors that we identified above are not to be used as an excuse for failing ICT projects: 'Government ICT projects are inherently complex, therefore my project failed to deliver'.

2 While we explicitly address the ministers in the report, they can not do it all by themselves. Also the House of Representatives should be willing to be more realistic in its demands.

3 Although we address the ministers in our recommendations, this does not imply that we see the minister as some sort of 'super project manager'. All who are involved in the decision making should take the lessons to heart.

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