



INTOSAI – 3rd Working Seminar on Performance Auditing of the use of IT
– Country Paper

IT projects: Swedish experiences and issues

We would like to start by sharing the results of two rather extensive IT-project surveys, which are – as far as we are aware – the most comprehensive ones carried out into state IT projects in Scandinavia. The subsequent observations and reflections lead to questions (in italics) which we propose for discussion at our seminar.

A survey of 231 IT projects

In December 1997 and 1998 the Swedish National Audit Office (RRV), sent out a questionnaire to the 70 agencies classified as “agencies of great significance to individuals, companies and the national economy”. In this questionnaire, we asked about the agencies’ IT strategies, and about the five biggest IT projects – with the exception of Y2K projects – going on within the respective agencies at the time of the survey. The responses to this questionnaire provide a good view of the scope and direction of state IT development. We will be looking at a number of main points and commenting on each of these in brief.

Most agencies are running a number of projects – on average more than three – all at the same time.

231 projects in progress were surveyed by means of our questionnaire. Among these, 221 projects reported costs of SEK 3.8 billion. Converted to an annual cost, this amount is equivalent to around SEK 1.8 billion. The average cost per project is SEK 17.4 million (1 USD = SEK 10), while the median value is as low as SEK 2.0 million. A few very large projects affect the average.

Most agencies are working to an IT strategy, but 12 agencies do not as yet have a strategy. The median age of the IT strategies is approximately one year. The Director-General is usually the person who has approved the strategy.

Most of the projects relate to the agencies’ core operations. Rationalisation continues to be the most common objective. Better service for individuals and companies is also frequently cited.

More than half of the projects relate to reinvestment, and almost half relate to new investment in existing operations. Investment in new operations is cited in 15 per cent of cases.

Most projects are ongoing for a long time, on average approximately two years.

The development time in the case of projects worth more than SEK 100 million is three



times as long as the time spent developing projects worth less than SEK 1 million.

Throughout their “lifetimes”, more than half of the projects are affected by serious problems with their schedules or budgets.

Schedules or budgets have been revised previously in 56 per cent of the projects. Of these, only the schedule was revised in 32 per cent of projects, only the budget in 3 per cent, and both the schedule and the budget were revised in 21 per cent of cases.

Problems occurring with adhering to schedules appear in many cases to have no satisfactory solutions once they have occurred.

Of these projects, 11 per cent were delayed considerably in relation to schedules applicable at the time of the questionnaire, and 25 per cent were slightly behind schedule. Of the projects which were adhering to their schedule or were ahead of schedule at the time of the questionnaire, these schedules had previously been revised in 37 per cent of cases. In the case of projects which were slightly delayed, this figure was 72 per cent, and 96 per cent of projects were delayed considerably.

Delays are considerably more common than going over budget.

The use of resources is lower than or in accordance with applicable budgets in 83 per cent of cases, thereby displaying considerably greater adherence to budget than to applicable schedules.

Once projects have had problems with their budgets, however, these problems tend to recur.

Of the projects for which budgets had previously been revised, 35 per cent had exceeded the budget applicable at the time of the questionnaire.

Problems with adhering to plans “normally” begin to appear only after approximately seven months.

Of the 231 projects surveyed, 84 had neither been revised at an earlier date nor deviated from the applicable plan at the time of the questionnaire. Only 28 of these problem-free projects were more than seven months old at the time of the questionnaire, and therefore many of these may perhaps not yet have reached the stage at which any problems have given rise to consequences.

Projects relating to management functions and core operations more often experience difficulties in execution according to plan than is the case for projects with other objectives.

Projects with these objectives are over-represented among projects with relatively considerable problems. On the other hand, projects aimed at service to individual citizens and companies and the enforcement of regulations are under-represented among projects with considerable problems. Surprisingly, projects involving reinvestment are also over-represented among projects with considerable problems. Our data does not allow us to explain these differences.



There is very extensive use of consultants.

Consultancy costs are budgeted in 178 projects, which is equivalent to 81 per cent of cases. Consultancy work accounts for 19 per cent of the total costs for these projects.

Consultancy costs amount to at least 50 per cent in 60 projects, equivalent to 27 per cent of projects. Projects with this high level of consultancy costs are relatively small in terms of budget. As many as 74 per cent of these projects have previously been revised or found themselves in difficulties with adhering to applicable schedules or budgets. The corresponding figure for all projects is 67 per cent.

Quality assurance in organised form is in itself no guarantee that problems can be avoided. The way quality assurance is implemented and executed is decisive.

The most common way of distributing responsibility for quality assurance of projects is to lodge responsibility with the project management. However, quality assurance with no organised form occurs in as many as 18 per cent of cases. These projects are generally quite small. They display a greater tendency to find themselves in difficulties with adhering to schedules and budgets than other projects, although there is too little statistical information available to be able to draw reliable conclusions.

In almost two-thirds of projects, system solutions are made up using system products from the market. This an important change that has taken place over the last few years, as the difficulties in adhering to schedules and budgets are comparatively small for these projects.

There are considerably greater problems in projects in which system solutions are produced by means of contracts. Contract work from external suppliers is used in 29 per cent of cases, and in-house development in 36 per cent. Consequently, more than one method of acquisition may be used for a single project.

Remarkably, in the case of both contract projects and in-house projects, projects which have larger budgets have fewer problems than projects with smaller budgets.

Are the agencies learning?

This is not a trivial question to answer. As far as we can see, the number of successful projects in the Swedish public administration has not increased, even though this is difficult to observe in a reliable manner. We can also see that the same problems seem to recur. Does this mean that no-one is learning? Not necessarily. Even though the number of successful projects has not increased, we can see that the projects are tackling tasks which are more difficult than those they approached in previous years. On the other hand, there are more standard solutions / applications available on the market now. Therefore, agencies should be forced to implement major in-house solutions less frequently. And yet when this has to be done, they now have ever more sophisticated system development environments available to them. Standardisation of the structural elements of the architectures has advanced, which has reduced the risks for all those who do not want to or are forced to surf in the wake of leading edge technology. At the same time, system and application architectures are tending to become ever more complex.

We conclude that of course the agencies have learnt, but demands regarding what projects



have to resolve have increased to a greater extent than the phenomena which help to facilitate implementation of these projects. However, this conclusion is rather uncertain, and without a doubt there will be *alternative conclusions which can be drawn by seminar participants and which it would be interesting to discuss at the seminar.*

One immediate question is: how do we learn? What kind of part does auditing play? How have we arranged things so that we can convey what we have to say? As far as we ourselves are concerned, there is reason to be self-critical. The reports are certainly not masterpieces from a pedagogical angle. At the same time, many auditors are of the opinion that the time and effort required nowadays for reporting is starting to approach some kind of limit beyond which the role of the auditor will be affected.

To be sure, we also have to learn how to better supplement the audit reports – something which most SAIs surely do – with seminars aimed at both individual auditees and agencies in general. It is also necessary to secure closer contact with universities and colleges so that our findings can be included in what is taught there. We also have to reinforce the exchange of experience between agencies, and SAIs have to take an active part in this. At the same time, we have to safeguard our work as auditors: there are plenty of organisations attempting to teach people good project management, but we are (almost) the only ones carrying out audits. *This may also be an interesting topic for discussion at the seminar.*

IT projects are also investments

Process development, development of personnel and skills, modernisation of systems, additions to the technical infrastructure and new services are all investments in measures required to develop agencies' operations. What should agencies decide to concentrate on, and how should various efforts be linked to one another in order to bring about desired over-all effects? Furthermore, which effects are needed the most? We have seen that this – the integrated, cautious and systematic first steps in the investment management process – seems to create even greater difficulties than implementing a investment/project once decisions have been made on it. The four large agencies (Police, National defence forces, The Criminal justice administration and the Migration Agency) we have audited lately have exhibited difficulties selecting their investments wisely. The projects which are implemented or fail to succeed are sometimes not the ones which the agencies “really need”. Time after time, RRV has seen obvious shortcomings in the decision-making processes behind project investments. Decisions are being made *ad hoc* and with no general overview. Proposals for investments in IT, as well as other investments in development, are not being viewed in relation to one another, the documentation relating to effects shown and checking against strategies affected is not of sufficiently high quality, and so forth.

A lack of management commitment is often behind these shortcomings, and not infrequently these shortcomings are also a result of a lack of skills from the departmental and agency management as regards managing and controlling process development. Other forces then take control in the vacuum which occurs as a result: users, system managers, IT functions, external partners and “house consultants” take the place of the management.

How should we concretise demands on management and control of the investment process? One proposal has been prepared by GAO. This has many merits and a few limitations. Other SAIs may have management paradigms which are similar but which differ in essential respects. We may perhaps *have the opportunity for a comparative*



discussion of this during the seminar.

A few views on the lead paper

What we discussed by way of introduction deals mostly with the occurrence of problems and does not deal all that much with the causes of these problems. The causes have been dealt with well in the United Kingdom lead paper. We concur with more or less everything stated in this paper in respect of causes. However, we would like to underline – and perhaps elaborate on – some issues.

1. As has already been pointed out above many projects are started from the wrong reasons. As we see it, this is an important explanation as to why problem projects remain problematic in spite of forcible corrective measures being implemented. It is not often that the basic foundations can be amended during project implementation.
2. The most important criterion – and one which is missed out surprisingly often – is that the definition of the change to the agency in whole or to a specific main process is so incomplete and focused on changes relating to the IT systems. In this way agencies end up with IT projects instead of business development projects containing all the elements required to bring about a clearly defined change. The lead paper seems to be of a similar opinion.

Our conclusion is that change/development requirements and change/development strategies which are well substantiated / analysed and described often do not exist. This does not allow management to clearly define the role which can and must be played by the IT component in a multifaceted agency or process development project. The management does not express itself clearly on the main issue; what should be achieved overall and how various development activities (IT systems, staff skills, IT infrastructure, organizational structure etc) areas should work together.

3. The function specialists within the abovementioned areas are often unable/unwilling or not commissioned to work together on some kind of joint planning of the development effort. The IT-specialists seem to have the upper hand and what should have been a multifaceted, well co-ordinated and focused change work implemented from the hearts of the management, tend to end up as an IT project with some lip service paid to other areas of expertise in late stages of the project.
4. Instead of giving issues relating to the significance of cultural and process changes and changes of relations with the outside world enough attention, projects often move rapidly on to the specification phase. Here the main roles are often held by the earlier “process operators”, the users, and – not infrequently – by consultants. Members of the management team cease to manage in business terms and are “drawn into” IT project control functions (management groups, project steering committees and the like) with which they are unfamiliar and therefore feel uncomfortable. The basis for passionate commitment from the management on what should be important change processes thus vanishes quickly.

Most of the above mentioned concerns management issues on a rather high level. We are



of the opinion that questions on the roles and responsibilities of the management should have been dealt with more clearly in the lead paper, and we *would be very pleased if these issues were to be discussed at our seminar.*

How should the SAI form a basis for it's own investment management process?

Below is a list of the main reasons why RRV may choose to audit individual projects:

1. The project is a vital or essential part of a multifaceted development process
2. The project is of particular significance to a specific operation which is in itself important to safeguard
3. It is a major / expensive project and RRV has found that there are indications that problems have occurred or are imminent
4. The project contains obvious risk factors, often in combination with its size: long schedule, turbulent environment, a lack of skills, interorganisational ambitions or systems concepts
5. RRV is of the opinion that there is something positive to teach other agencies by auditing a specific project and reporting the results
6. The project is important within an agency which is undergoing a complete audit (agency-wide audit)
7. The Government gives RRV an auditing assignment

In the first five cases, some kind of review of the outside world or “intelligence activity” is needed so that the SAI is able to build up a rational investment process – investment in audits – of its own.

In the case of RRV, an experimental database has been built up which contains the most important (the biggest) projects taking place within the 70 agencies classified as “agencies of great significance to individuals, companies and the national economy”. This database has been used in the study to which were referred in the introduction to our paper. Denmark has now done something similar. *It would be nice to discuss what are other SAIs are doing.*