



Obsolescent IT systems – an obstacle to effective digitalisation

The Swedish National Audit Office has audited the incidence of obsolescent IT systems at more than 60 large government agencies. The focus of the audit was on whether these agencies and the Government are doing enough to deal with the problems that obsolescent IT systems represent. The overall conclusion is that the majority of agencies are not doing enough. The Swedish NAO believes that the problem is so serious and widespread that it represents an obstacle to further effective digitalisation of central government administration..

The audit shows that the Government has worked at an overall level on digitalisation, which may indirectly have positive effects on the problem of obsolescent IT systems. However, the Government lacks knowledge about the incidence and consequences of problems of obsolescent IT systems. There is also a lack of measures that are more directly targeted at obsolescent IT systems. The Swedish NAO recommends that these agencies improve their methods of working on obsolescent IT systems. The Swedish NAO recommends that the Government provide clearer support in this process. These conclusions are developed below. These conclusions are developed below.

Background and rationale

It is very common for organisations that have not been recently established to have an IT environment that has been built up over time and which largely consists of what are termed legacy systems that have been acquired for different purposes and under different eras. Many of these are more or less unproblematic; they deliver good service to the organisation and can be run, maintained and further developed relatively effectively and securely. Other legacy systems are obsolescent or outdated and risk posing considerable problems of efficiency. This is because obsolescent systems require more resources in relative terms, which in turn affects further effective development of the IT environment. It is well-known that developments in the field of IT are rapid, and require that resources are set aside for innovation. The existence of obsolescent systems may also affect information security.

Ambitions are high in this area – the Riksdag's objective is for Sweden to be the world leader at exploiting the potential of digitalisation. The Government has also pointed to the importance of clearer central government leadership in this change and continuous analysis of digital maturity and the need for measures. The Government has also stated that "Information and cyber security work is a necessary activity for safeguarding the quality and efficiency of societal functions and a prerequisite for harnessing the opportunities of digitalisation".

The importance assigned to digitalisation by both the Riksdag and the Government, combined with the fact that obsolescent IT systems may be a major obstacle to effective digitalisation, have been the prime reasons for the Swedish NAO's audit.

Purpose and method

The purpose of the audit was to examine the incidence of obsolescent IT systems in central government administration and to see whether government agencies and the Government have taken sufficient measures to prevent these systems from becoming an obstacle to effective digitalisation. The audit questions that are addressed are whether:

- the government agencies have taken sufficient measures to deal with the problems associated with obsolescent IT systems.
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The audit was conducted in three stages. First, case studies were undertaken at the Swedish Pensions Agency and the Swedish Tax Agency. These were then used to construct a survey that was sent out to a total of 64 agencies. Finally, the Swedish NAO sent a questionnaire to the Government Offices to examine what knowledge the Government has of obsolescent IT systems and which measures have been taken by the Government.

Audit findings

Incidence of obsolescent IT systems

Obsolescent business-critical IT systems entail a major risk of efficiency problems in that in proportional terms, organisations are forced to use more resources just to maintain the system. There is therefore good reason to assume that obsolescent IT systems represent a high risk of mismanagement of public funds. It also implies a crowding-out of an agency's innovative capacity, in terms of being able to develop new IT systems. However, not only do obsolescent IT systems lead to risks for an individual agency but problems at one agency may mean major consequences for its ability to conduct operations at another agency or private actor.

The audit shows that obsolescent IT systems are to be found in a large number of government agencies. At many agencies, moreover, one or more business-critical IT systems are obsolescent. As far as the Swedish NAO is aware, this is new information and thus no-one has been aware of the extent of the problem in central government administration.

IT costs for the government agencies covered by the Swedish NAO's audit are some SEK 19 billion. The inefficiencies that can be linked to obsolescent IT systems are therefore considerable from a budgetary perspective. Obsolescent IT systems also entail risks from an information security perspective. The Swedish NAO believes that obsolescent IT systems at

aggregate level lead to considerable efficiency problems for the State and an obstacle to continued efficient and secure digitalisation.

The agencies do not use the right methods

The conclusion of the Swedish NAO is that a large proportion of the government agencies examined do not have the correct approach to development and administration of IT support. They do not use the tools for operational development that exist in order to determine how IT support could best contribute to achieving the objectives of core operations. Thus a large proportion of the audited agencies lack an overall description of how strategies, operational processes and systems are linked. This, in turn, means that they have difficulties in analysing and understanding how changes affect the objectives of the organisation and it is thus also more difficult to define a future, desirable situation.

The agencies lack processes for ongoing evaluation of the appropriateness of their IT support

Of the 64 agencies that responded to the survey, 69 per cent say that there is no approved model for dealing with and taking decisions on their IT systems from the system development stage to phase-out, which is usually termed life-cycle management. According to the Swedish NAO, this indicates that life-cycle management is not undertaken in a structured and methodical manner. The perspectives which should reasonably be taken into account and against which assessments should be made in life cycle management are lacking in about 40 to 60 per cent of the agencies. The agencies are best at purely technical matters, which could indicate that life-cycle management is undertaken primarily from the IT department's perspective, rather than on the basis of an analysis of the overall needs of the agency. There are also shortcomings in risk analysis. As many as more than one-third of the agencies only undertake regular risk analysis of one or a few business-critical systems, or none at all. An equal number are unable to break down IT costs at the detailed level necessary for sound decision-making. Without regular risk analyses and detailed information on the costs, it is difficult to undertake meaningful evaluations of the appropriateness of IT support.

The agencies do not take a conscious position on their IT systems

Almost 60 per cent of the government agencies lack system development life cycle plans for any systems other than one or a few business-critical systems. Of those agencies that have drawn up such plans, 60 per cent consider that the plans are not satisfactory other than for a few single systems, or none at all. The lack of life-cycle plans and other planning documentation at many agencies, combined with shortcomings in the life-cycle management that is actually conducted, means that the agencies in general cannot be regarded as having a conscious and explicit position on their IT systems.

The Government has not taken sufficient measures

The Swedish NAO's assessment is that the responsible ministries and thus also the Government lack sufficient knowledge concerning both the incidence and the consequences of obsolescent IT systems. The Government Offices states that it is aware of the incidence of obsolescent IT systems in 15 of the 32 government agencies that the Swedish NAO has identified as a risk group. Apart from in four cases, the Government Offices has submitted such general answers that it is not clear that it knows what the consequences are.

Representatives of the Government Offices have pointed out that the Government does not control government agencies so as to direct how agencies should design their IT environments or the systems that they should choose. Instead, the Government has focussed on managing overarching issues, such as the conditions for information exchange that may ultimately also have a guiding effect on individual IT systems. This perspective on governance is in line with the Swedish administrative model, which is based on the government agency largely being allowed to design its operations independently. Following the same logic, the direct responsibility for ensuring that IT systems do not become obsolescent or for ensuring removal or reduction of the problems accompanying obsolescent IT systems is each individual government agency's responsibility.

At the same time, the Swedish NAO finds that almost half of the government agencies admit that problems in individual IT systems or the IT environment as a whole have a fairly significant or very significant impact on further digitalisation efforts. The audit shows that obsolescent IT systems are a widespread problem that has a great impact, not only on individual government agencies but also has consequences for the administration as a whole. . The conclusion is, therefore, that government agencies have so far not themselves managed to effectively deal with the problems of obsolescent IT systems.

Based on the findings of the Swedish NAO, the Government appears to be unaware of the risk that obsolescent IT systems represents for government administration as a whole. In view of the incidence of obsolescent IT systems at the government agencies that were audited, the Government's lack of knowledge and the Riksdag's and Government's ambitious objectives for digitalisation, the Swedish NAO considers that the Government should ensure that it knows how government agencies deal with the problems associated with obsolescent IT systems. Without such knowledge, the Government's ability to steer, even at a more overarching level, is hampered. As a second step, the Government should consider providing common tools or models to facilitate the government agencies' work. A common approach, including common means of evaluating and reporting, would also improve the Government's capacity to compare government agencies with each other, and thereby make it possible for the Government to ensure that digitalisation of central government administration is effective and to determine how Government governance is to be designed.

The Swedish NAO's assessment is therefore that the Government cannot be regarded as having taken sufficient measures to ensure that the problems are reduced or eliminated.

Recommendations

The Swedish NAO directs its recommendations to the government agencies that were audited and to the Government.

Recommendations directed at the government agencies

The government agencies should develop and use the tools necessary for assessing how IT support can contribute to the achievement of the objectives of core operations.

The government agencies should have a process for ongoing evaluation of how well IT support contributes to the achievement of the objectives of core operations.

On the basis of this process, the government agencies should take explicit and conscious positions on their IT environments and the need for any measures.

Recommendations directed at the Government

The Government should consider developing support for government agencies to help them to work effectively with the problems associated with obsolescent IT systems and continued digitalisation.

The Government should instruct a suitable actor to monitor and evaluate issues related to obsolescent IT systems in central government administration in order to ensure ongoing knowledge concerning the conditions and situation of government agencies.