

Process for Identification of Areas Where IT Can Make a Significant Positive Financial Difference for Denmark

Background

Like many other western countries, Denmark is experiencing severe financial difficulties. According to the latest estimates from the Ministry of Finance, the deficit on the State Budget will be around 80 billion DKK in 2010 and some 50 billion DKK in 2011. The government has introduced changes to bring Denmark's annual deficit within the limit allowed by the European Union, namely 3 % of BNP by 2013. To illustrate how much money 80 billion DKK is, 80 billion DKK corresponds roughly to the total of the state pension ("Folkepension") which the 830.000 pensioners in Denmark receive every year. 80 billion DKK is also around four times the yearly cost of running all the Danish universities.

At the same time as billions are being accumulated in debt, there are potentials for decreasing spending and increasing earnings by appropriate use of IT. IT is therefore a tool, not the only one, but a very important one, for addressing the challenges of the country.

The IT University has started exploring what those financial potentials in better use of IT are, based on publicly available reports and meetings with people who are domain experts.

Based on this exploration we believe the following to be the case:

- Introduction of IT to replace manual routines in purely administrative processes has a potential of a small number of billions DKK. For example, the potential saving that can be obtained by replacing all letters sent by public authorities by digital communication is estimated to around 1 billion DKK a year.
- Political initiatives often require some IT for their implementation. One German minister of finance has been quoted as saying that "Eventually, every political initiative becomes an IT project"
- The really big potentials for improving the finances of the country require fairly bold political initiatives, supported by competent use of IT. The most surprising such potential, we have encountered, is in buildings, where the (long term) potential in better use of IT for construction, use and maintenance of buildings (private plus public sector) is estimated at 17 billion DKK a year. However, achieving this saving requires very substantial changes in the processes by which buildings are constructed, used and maintained. Other really substantial potentials, like smart grids, require substantial changes in the energy sector, not necessarily huge technical challenges, but certainly challenges concerned with changing the business models of that market.
- The health sector is often mentioned as an area where IT investments have a large potential. Again the big picture is that this requires bold political actions to initiate substantial changes. IT will have a large role to play in implementing these changes.
- The importance of IT for the growth in BNP is essential. Various economic surveys report that IT accounts for more than 30 % of the increase in productivity. To harvest this potential requires continued growth of IT competencies in the workforce and research contributing with innovative products and services.

There are two reasons why this agenda is interesting to the IT University:

1. The IT University is a state university, funded mainly by the Danish state, i.e., the university is an investment made by the Danish state. The IT University has an obligation to be a good investment, i.e., an investment that creates value for the State. Even if the IT University is not large enough to tackle all the potentials that IT give rise to, it is important to understand and explain what the potentials are. Such understanding can help politicians and other decision makers to decide where they are going to spend their limited resources in order to get the most out of the resources.
2. The IT University can itself use the process of identifying the potentials in the further development of its research strategy. For the IT University it makes sense to look for research areas where there is alignment between the research competences of the University, a major potential for improving the financial situation of the country, and an identified theme in the EU research programmes. This last part is important, because ICT is very high on the EU research agenda (and backed up with EU funds).

Note that the agenda we are proposing is very focussed on financial impact. There is no end to the ways in which IT can make our lives more comfortable, more interesting or more entertaining, at great expense, and with no obvious financial return for anybody. This agenda is not about such ideas. It is not about "nice to have". It is about uses of IT that will improve the financial state of the country, whether they be exciting or mundane.

The IT University has initiated collaboration with DR2 about bringing the agenda to the general public.

Process

So far, the exploration of potentials has been carried out by the Management, assisted by the Communications department. This approach was taken in order to avoid wasting the time of the rest of the organisation in case the suspicion that there were very large unharvested potentials turned out to be unfounded. However, the evidence we have come across suggests that the potential for improving the financial situation of the country with better use of IT runs into tens of billions of DKK a year. Also we have only scratched the surface and no doubt, many of the employees of the IT University have expert domain knowledge which can dramatically accelerate the advancement of the agenda.

Recommendation

Management proposes that the IT University undertakes an internal process, whereby groups of faculty, staff and students on a voluntary basis collaborate on identifying and exploring areas that they think should be (or perhaps should be) on the agenda. The process would be given until June 2011, where the Board would get an overview of the most promising areas at its strategy seminar as a basis for a discussion of how the university should position itself in the future.