WHITE PAPER ON ICT – NO 17 – AN INFORMATION SOCIETY FOR ALL

Background – OECD peer review on e-Government 2005[1]

The OECD published a peer review report on e-Government in Norway 2005. The report pointed out that up until then Norway had been at the forefront in applying ICT within the Government back office organisations and thus facilitated process efficiency and inter-organisational data sharing. Conversely, Norway ranked in the "middle of the pack" in terms of delivering electronic services within the front office.

The OECD concluded in its report that Norway's decentralised approach represents challenges towards providing well integrated solutions for provisioning public electronic services to citizens and businesses:

> Despite its early achievements on back office integration, Norway is now confronted with the same challenges as those countries which focused its e-government on service delivery first, such as better integrating back office systems with front office delivery. The challenge for Norway is to find a path that best exploits the well integrated government-wide use of technology, while respecting the tradition of a decentralised, consensus-based government.

The government submitted a White Paper to the Storting (Parliament) on ICT in December 2006. The white paper raises, discusses and propose measures to the challenges identified by the OECD.

Firstly, this paper discusses the overall aims for the public sector. Secondly, the government's vision and measures towards a common ICT-architecture are presented. A common ICT-architecture would enhance the potential for cross-cutting re-use and reduce the extent of unnecessary duplication and hence reduce costs. A common ICT architecture would also enable better service provisioning to businesses and citizens.

The government's aim for the public sector

Norway has a large public sector which is involved in many societal areas and is organised through various types of affiliations. In 2005, the central government administration accrued 234,200 normal man-years, while the local government administration accrued 337,800. When central and local government administrations are put together they account for approximately 29 percent of total employment (in normal man years). The production of services which are publicly financed has seen a strong increase over the last 30 years.

The government's aim is for the public sector to maintain and develop its robustness and efficiency but also for it to undertake reform in line with developments within the economy. Along the lines of the government's political platform (Soria Moria Declaration), the reform programme is to achieve greater prosperity whilst using less administrative resources. The keywords in this initiative are usability,

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[1] OECD, e-Government Studies Norway, 2005

openness, efficiency improvements, quality and involvement. To that end, the government will be working in close collaboration with employees, voluntary societies and organisations to continue building a more efficient public sector.

Within the efforts for reform, ICT will be an important resource. Norway is at the forefront internationally in using ICT within the public sector. However, the sector is large, the actors are numerous, and interactions between them could strongly be improved. Each individual government organisation is responsible for its own procurements or development of in-house ICT solutions, while Norway also has an autonomous municipal sector. The outcome is that many electronic services are scarcely coordinated.

The aim is for the users to be met by a more user-oriented and efficient sector through facilities such as electronic self-service solutions. These facilities should allow them to provide and receive electronic services 24 hours a day, i.e. from what is commonly referred to as a "round-the-clock electronic public administration". However, round-the clock public administration will pose challenges for organisational, legal and administrative processes in the public sector.

A well-functioning ICT-architecture is key

The White Paper highlights the importance of a well functioning common ICT architecture that would further facilitate the potential for cross-cutting re-use and reduce the extent of unnecessary duplication and hence reduce costs. A common ICT architecture also enables better service provisioning to businesses and citizens.

The model below illustrates a common ICT architecture for the public sector.
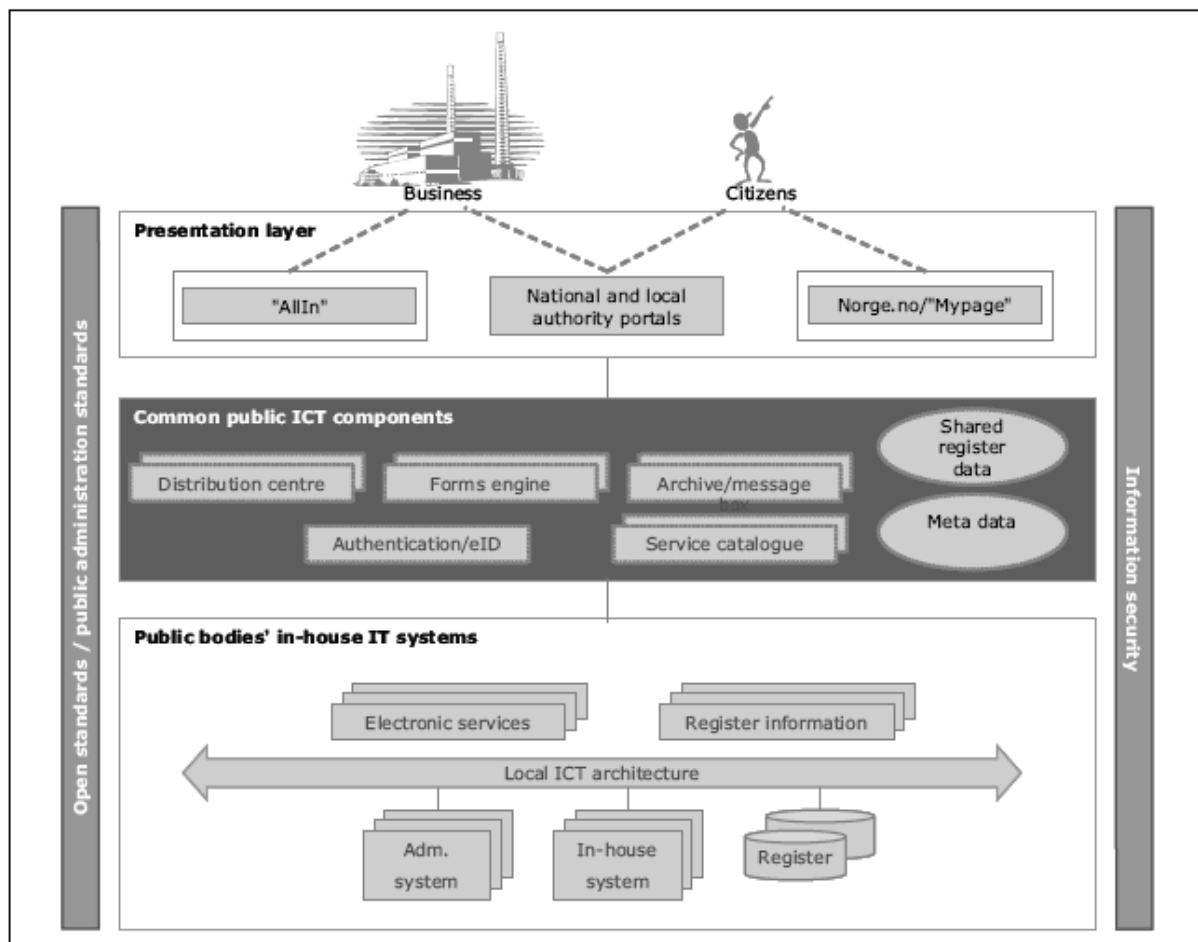
The concept of ICT architecture can be described as a regulation scheme for using ICT, which describes ICT structures and relationships within and between public bodies. The objective of ICT architecture is to get different ICT systems to fit together and work together well.

One of the main consequences from a lack of architecture is the loss of flexibility which in turn makes it arduous to develop self-service solutions for citizens, business and industry. One particular challenge is that stricter requirements for integrated and straightforward self-service solutions for citizens, business and industry entail an increased complexity and a need for stronger cooperation across organisational divides. A concern for usability will, in certain cases, be in direct opposition to the need for efficiency which each individual enterprise is subject to. An increase in the number of services from different enterprises in, for example, the "AllIn" and "MyPage" service portals will mean that individual enterprises will potentially need to adapt their services to the different contexts they are to be included in.

An increased requirement for user information and the development of electronic self-service solutions, which require electronic interaction across bodies and administrative levels, dictate the need to establish an overarching ICT architecture for the public sector. Such an architecture cannot initially cover every aspect of public sector ICT use, but should, in the first instance, focus on coordinating service provision over the Internet to citizens, business and industry.

The organisation of an overarching ICT architecture should look at the development trends seen within the organisational architecture and overarching ICT architecture in other countries. For example, Denmark, the UK and the USA have recently strongly focused on establishing an overarching ICT

architecture in their respective public sectors. One common trait for these countries is that they have opted for developing a layered service-oriented architecture. This type of architectural model shares the components involved in different layers. It is a common conceptualisation to divide an overarching ICT architecture into three main layers: *presentation layer*, *shared component layer* and *enterprise layer*.

The presentation layer is the layer which citizens and businesses encounter. It displays public sector self-service solutions through, for example, centralised service portals (such as "AllIn" and "MyPage") and enterprise portals (the public bodies' and municipalities' homepages).

The shared component layer contains a range of shared ICT components which public bodies need in order to offer self-service solutions effectively. The joint development of such components and their use by several public enterprises saves the individual body development resources, since it does not need to create and operate expensive components itself. In addition, the public sector will be better placed to develop services for end users if public bodies have access to help services from other public bodies.

The necessary functionality for achieving interactivity and re-use will concern, amongst other things, form production, data transport, data definitions, electronic ID, dialog message boxes. The work on future common resources should also take into account the fact that data from important central registers, such as the Central Coordinating Register for Legal Entities and the National Registry, should be administrated and developed in a more coordinated manner, both technically and semantically.

The enterprise layer contains the enterprise's technical system, registers and administration systems (e.g. procedural, archive and finance systems). If the bodies are to offer self-service solutions or register information in the presentation layer, they will use elements from their own enterprise layers (and perhaps also others' enterprise layers) and the shared component layer. The enterprise layer is owned and administrated by the individual public sector/body.

What is common to all layers is that the interactions between them are based on clearly defined and open standards for interoperability; In addition, it is necessary to make thorough requirements from a comprehensive information security regime entailed by realisation of the overarching architecture.

The overarching ICT security architecture in the public sector must be flexible and adaptable, so that it interacts to the greatest possible degree with the ICT architectures that exist within the individual sub-sectors and the individual bodies. What ensues from the overarching ICT architecture must have the least possible negative impact on changes in the way public bodies perform tasks and organise themselves.

Important measures proposed in the White Paper

Establishing an overarching ICT architecture for the public sector. The architecture must be layered and, as a minimum, will consist of a presentation layer, a common component layer and an enterprise layer. The architecture must, to the greatest degree possible, be based on open standards and a regime for information security. Before the end of 2007, a more detailed description of the architecture principles with associated strategies, paradigms and guidelines will be prepared. The sectors' and public bodies' ICT strategies and major public ICT projects must be based on and support the overarching ICT architecture principles for the public sector.

Preparation of a reference catalogue of administration standards. Administration standards will be established which will in turn be collated in a so-called reference catalogue. The reference catalogue will provide public bodies, suppliers and other stakeholders with an overview of recommended and mandatory administration standards relevant to ICT solutions in the public sector. The reference catalogue will be compiled gradually over time and in 2007 will be expanded to include specific standards in several new areas.

An assessment will be made as to whether to establish shared components. In order to support the increasingly complex electronic transactions in and with public administration and also contribute to a highly user-friendly administration which utilises scarce resources as efficiently as possible, an assessment will be made as to whether to establish shared components for the public sector. The measure will involve evaluating how this should be financed, managed and organised.

Establishment of electronic self-service solutions. Each enterprise/sector must make relevant services available via the "MyPage" and "AllIn" portals, in addition to any communication via the enterprises own websites. The enterprise/sector has responsibility for following up on this measure.

Systematic user surveys. All national public bodies shall carry out systematic user surveys which shall also include the enterprises' outward-facing ICT services. As a main rule, the results must be published.

Establishment of a national centre of expertise for open source software. To provide public bodies with better conditions for an active relationship with open source software, a centre of expertise will be established to serve as a key resource for public bodies in this area.