THE INFORMATION AND COMMUNICATIONS TECHNOLOGIES (ICT) STRATEGY 2010-13

A Strategy for ensuring that the right ICT services, application systems and, infrastructures are in place and that information is appropriately managed.

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1. Introduction

This ICT strategy sets out a plan for managing and deploying the Council's information and ICT assets efficiently and effectively to meet the authority's objectives passed down from the community, corporate and service plans.

This strategy builds on previous ICT strategies, the last one of which covering the period 2006-09 was approved by Policy and Resources Committee on 24 May 2006. This previous strategy was followed by a holding report on 10 March 2009 as the position with regards to the DBS programme and its impact on the ICT service was not sufficiently clear as DBS was still in the design phase.

The position with regard to DBS is now clear and this ICT strategy sets out a high level and practical plan for the way forward that seeks to exploit committed investment in ICT as well as leading from the front in new technology areas that deliver genuine savings and service improvements.

The first section of the strategy sets out the vision for the ICT Section as the sole provider of ICT services to the Council. This vision defines the overall approach the will be taken by the section as well as setting the values and qualities considered essential to the success of the strategy

The second section details the key drivers of the strategy which will impact on the ICT strategy not just in the short to medium term but also well into the future. These drivers will influence the approach to service delivery and dictate important changes in technology that will be implemented during the life of the strategy.

The third section describes the high level technology road map for the Council. This will identify the key technology areas that will be tackled and provide the framework for the annual ICT action plans detailing the projects and activities that will be undertaken in order to implement the strategy.

Finally, the fourth section identifies the priority projects that will make up the annual ICT action plans during the lifetime of the strategy. The majority of these projects will be dictated by the DBS programme.

2. The Vision

The starting point of the strategy is to set the vision which is a practical aid in helping others, including the ICT staff themselves, to understand what the ICT service is aspiring to achieve and the direction in which it is travelling. The vision statement spells out clearly and succinctly the overall purpose of the service and, by doing so, establishes a baseline for all its strategic and business planning processes.

VISION

To deliver and be recognised by our stakeholders as delivering high quality, relevant and responsive ICT services that are closely aligned to business goals and fully exploit both existing investments in ICT and newer technologies for the benefit of Moray.

The mission statement builds on the vision by stating how it will achieve this in terms of its strategic objectives and the core values on which success will depend.

MISSION

1. CUSTOMER FOCUS
To be business-like and outward looking in our approach at all times putting the needs of our customers at the centre of our delivery and planning processes.

2. MODERNISING
To play a leading and active role in helping the Council to modernise and transform itself and its service delivery so that it can be seen as a leader.

3. CONTINUOUS IMPROVEMENT
To continuously improve our service and customer satisfaction so that we continue to deliver best value for money when compared with the best in our class.

4. SUSTAINABLE ASSETS
To make best use of all our assets ensuring that they are always up to date, fit for purpose and highly available, even in the event of major disruption.

5. QUALITY STAFF
To value, develop and motivate our staff so that they can realise their full potential and efficiency while gaining recognition and job satisfaction for their contributions.

In summary, the ICT Section wants to place itself at the centre of the modernising and transformation agendas by working closely with and for the service departments to deliver real and sustainable change and service improvements. In so doing the ICT Section wants to be recognised as adding value and making a positive difference to the Council.

3. Drivers

The ICT strategy must operate in the real world and so is dependent on and heavily influenced by a number of external factors which shape and, in some cases, dictate the strategy. It is important that an ICT strategy is updated on a regular basis and this strategy is an opportunity to look ahead and take account of a number of major factors which have come to the fore in the very recent past.

The following are the key factors that will drive the ICT strategy for 2010-13.

TYPE OF FACTORS	DESCRIPTION
SOCIETAL FACTORS (Central Government)	• Demographics • Public Sector Reform • Greener Agenda
BUSINESS DRIVERS (Local Government)	• Reducing Costs • Improving Business Processes • Improving Workforce Effectiveness • Better Use and Analysis of Information
MARKET FORCES (ICT Industry)	• Virtualisation • Mobile Technologies • The Web and Cloud Computing • Information Management and Workflow • Open Source Software

3.1 Societal Factors

The societal factors are addressed, in the main, by central government in the form of policy development and fiscal measures.

3.1.1 Demographics

The post war baby boom years of the 1950s and 1960s combined with subsequent declining birth rates and increasing life expectancy has created an aging population that will place significant strain on public expenditure and create budget deficits for the foreseeable future. The dependency ratio (how many young people (under 16) and older people (over 64) to those of working age (16 – 64)) in UK is forecast to double from 0.34 to 0.65 by 2040. This creates massive financial challenges for governments as a decreasing number of people of working age leave future governments with less revenue from taxes to support them. The ICT strategy for 2013 and beyond will therefore operate in a climate of stringent cuts in budgets that may force a rethink of the shape of the public sector itself. The ICT Strategy will therefore need to plan for year on year reductions in the ICT budget and prepare to cut its costs in the medium to long term following the implementation of DBS.

3.1.2 Public Sector Reform

There is constant and increasing pressure for public sector reform and it is generally recognised that the public sector is at a critical turning point whereby it will look very different in the future. The main objective of this reform is reducing the size and cost of the public in response to the enormous strain on public finances as a result of the demographic changes outlined above.

While ICT will play an important and increasing role in the short term in facilitating this reform, ICT will not be immune from it and will be impacted by it in the same way as all other services in the public sector. This means that ICT in the public sector generally, and Moray in particular, may look very different in the future to what it looks like today. The nature of this reform will be cost reductions and efficiency improvements in the short term but is likely to be more radical in the medium to longer term, including shared services and other forms of joint working and public private partnership arrangements.

The ICT service is also likely to be impacted by cutbacks in other parts of the Council as the service departments cut their costs by reigning back on projects that do not provide significant and timely returns on investment.

The government has responded to the reform agenda in terms of ICT by recently publishing a government-wide ICT strategy in March 2010 that is aimed at substantially reducing costs through providing common infrastructures, standardisation and joint working. This government strategy will play a major role in dictating the scope and content of future ICT strategies in Moray.

In summary, the Council's ICT strategy needs to prepare to cut ICT costs, take account of what is happening nationally in terms of public sector reform generally and the national ICT strategy in particular and plan for shared services in the medium to longer term.

3.1.3 Greener ICT

The ICT industry has a sizeable carbon footprint. Globally, ICT is responsible for 2% of CO_2 emissions (the same as air travel) and in the public sector ICT accounts for 35% of total energy consumption. The government has published a green ICT strategy aimed at making energy consumption of our ICT systems carbon neutral by 2012, and making them carbon neutral across their lifetime (including manufacture and disposal) by 2020. The ICT industry has also responded to the greener agenda by developing products and services that help to drive down energy consumption and carbon emissions.

The Council's ICT strategy is therefore strongly affected by the greener agenda and will have a duty to respond to it. It will do this in a number of different ways including the implementation of virtualisation technologies which will deliver significant environmental benefits as well as delivering other benefits required essential to support the DBS programme. Virtualisation will also be an integral part of the ICT Section's plan to establish a modern and more efficient data centre in the Aldi

Building which will be ready in mid-2011. Virtualisation is described in more detail in paragraph 4.1 below.

The ICT Section will also provide the technologies that will underpin other green initiatives associated with reducing the need for travel for example, on-line web self services through the Council's web site which will reduce the needs of the public to visit Council offices and flexible and mobile working which will reduce the needs of staff to work from Council offices.

A number of other greener ICT projects will also be carried out by the ICT Section as part of this strategy including extending the life of ICT equipment, reducing the number of printers, implementing a corporate document management system and active device power management.

3.2 Business Drivers

Business drivers reflect the needs of and pressures on the service departments within local government. These take the form of business requirements for ICT solutions and services that satisfy their needs and feed into the annual ICT actions plans.

3.2.1 Reducing Costs

The service departments will be required to reduce their costs as a result of the drivers described in paragraphs 3.1.1 and 3.1.2 above. In terms of ICT, this could work two ways. This could either translate into additional requirements for new ICT solutions to help them make savings where clear business cases can be made or force new requirements to dry up where no business cases can be made. The ICT Section therefore needs to work closely with the service departments to help them to identify ICT solutions which generate savings.

The ICT Section will also be subject to reductions in its own budget in common with the other Council services and must constantly look for ways to remove costs from its service and increase efficiency. Continuous service improvement and benchmarking will therefore play an important part in the ICT strategy and to its approach to service delivery.

3.2.2 Improving Business Processes

Over the years ICT has helped service departments greatly to automate their business processes. However, in many cases this has created an additional layer of bureaucracy and complexity to these processes especially where these are still predominantly paper based. While service departments are aware of the need to improve their processes they require some assistance on the effective and appropriate application of technology to make these processes more efficient. The ICT Section is already committed to the implementation of a corporate document management and workflow system as part of the DBS programme but it will need to work closely with the service departments in order to help them to get the best out of this system, especially in the area of workflow.

3.2.3 Improving Workforce Effectiveness

In the current economic climate, most Councils are looking to improve the productivity of their workforce in order to reduce costs and improve customer service. By doing so, they are either aiming to do more with the same resources or, more recently, doing the same with less resources. One of the ways in which this can be done is to more fully exploit ICT to allow them to work more effectively and efficiently especially when out in the field delivering services to the public. A lot of the technologies revolve around mobile ICT to capture data at source and enable remote access to systems and information removing duplication and paper wherever possible.

The DBS programme has identified a number of solutions to improve workforce effectiveness and these will form an important part of the ICT action plans for the foreseeable future.

3.2.4 Better Use and Analysis of Information

Information is one of the Council's key assets and plays an important role in service delivery yet it is rarely treated in the same way as the Council's other assets, namely, finance, property, plant and vehicles. Information is often fragmented, dispersed over multiple databases and multiple copies held on different media and vast amounts of time are wasted searching for it, often without success. ICT offers massive opportunities to improve efficiency in the handling, storage and dissemination of information and the ICT section has a leading role to play in working together with information specialists in order to make this happen.

The ICT section also has an important role to play in identifying opportunities to better analyse this information by identifying trends and turning this information into business intelligence that better supports decision making.

Management of the Council's information assets and provision of the necessary ICT tools to support information management and the Council's Information Management Strategy is an important part of the ICT strategy. The ICT Section therefore needs to establish itself in a leading role in this area as the need for better management will support the Council's drive for efficiency savings.

3.4 Market Forces

Market forces in the information technology market place heavily influence the ICT strategies of most organisations as they define the technology solutions that will satisfy their business requirements. The market place is dynamic and moves at a fast pace so the ability to look ahead and identify new opportunities whilst future proofing the organisation and protecting existing investments are at a premium. The risk reward that comes from being innovative and leading edge and innovative as opposed to using tried and tested technologies requires careful and robust risk management processes. The ICT Section must continue to provide the best advice on technology decisions for the Council taking account of the need to minimise the risk to public money weighed against the need to achieve efficiency savings.

There is a very close match between the key technologies and trends in the current ICT market place and those required by DBS. These key technologies will form the core of the ICT strategy upon which the ICT Section will concentrate and prioritise its work over the next three years. These technologies will be discussed in more detail in section 4 below.

4. Technology Roadmap

A technology roadmap is a high level planning tool that helps to identify critical technologies or technology gaps that must be met to satisfy the goals of the Council. It also provides an important strategy framework upon which to build more detailed development plans like the ICT action plans which will be added to the ICT strategy on an annual basis in order to identify the actual projects and activities that are needed to deliver the strategy at a tactical and operational level.

The technology roadmap of the Council is heavily dictated by a number of key transformational technologies required the DBS programme that were identified during its design phase. Some of these technologies represent a major step change to the technical infrastructure of the Council while others represent a corporate wide acceleration of technologies that were already being considered or implemented but on a smaller scale and incremental fashion.

The technology roadmap is also being heavily influenced by a number of clear trends in the IT market place today whereby a number of technologies have reached sufficient maturity and critical mass that they are now being adopted by many medium to large organisations. One of the biggest of these trends that will have a major impact on Moray is the move away from a decentralised or distributed model of computing to a centralised model. This has far reaching consequences for the Council and the ICT Section and will be described in more detail below in the section headed ‘Virtualisation’.

The roadmap of Moray is made up of the following key technologies whose implementations will form a major part of the ICT action plans associated with the ICT strategy.

KEY TECHNOLGIES

1) **Virtualisation**
2) **Mobile Technologies**
3) **The Web and Cloud Computing**
4) **Information Management and Workflow**
5) **Open Source**

4.1 Virtualisation

Many medium to large organisations are starting to move from a decentralised to a centralised model of computing more akin to the “mainframe” model of the 1960s and 1970s. This move has been prompted by the maturity of some key technologies and improvements in computer networking but also by the need to drastically improve data security and reduce escalating ICT support costs. The current decentralised model began in the early 1980’s with the emergence of personal computers (PCs) which have grown exponentially since then to create a position today whereby the model is difficult to manage in a cost effective way.

Centralisation is enabled by a technique called virtualisation which allows computer servers to be consolidated on a smaller number of physical servers (server virtualisation) and the processing power of PCs to be transferred to servers located in the data centre (desktop virtualisation). The latter is sometime referred to “thin client” technology as the device that was previously a powerful PC (“fat client”) can be replaced by a low powered terminal (“thin client”) which is nothing more than a screen and keyboard.

Virtualisation brings a number of benefits, including the following :

- Reduced costs
- Better utilisation of assets
- Supports higher availability and disaster recovery
- Greener IT – less power and cooling
- Improved information security
- Faster PC support response times
- Shorter ICT development time scales
- Supports flexible working and hot desking

The move to a centralised model of computing is a major and radical shift for the Council and the ICT Section. It will substantially change the Council’s ICT infrastructure and the type of the ICT service that is provided by the ICT section as it changes the range of skills required to support it. The ICT Strategy will therefore need to be reviewed in the medium term to take account of these important changes and the organisational structure required to support it.

The ICT Section has recently embarked on a server virtualisation programme and DBS has both accelerated this programme and introduced a new requirement to adopt desktop virtualisation to support flexible working. The new data centre in the Aldi building has also been designed with virtualisation in mind and the move towards a centralised model of computing.

4.2 Mobile Technologies

Mobile technologies describe all the technologies that are required to provide remote and wireless access to ICT facilities, applications systems and data when on the move, in the field, at home or in the community at large. The types of devices generally associated with mobile technologies are smart phones, personal data assistants (PDAs), tablet PCs and laptops as well as digital pen and paper.

Mobile technologies are changing at a rapid rate in parallel with the equally rapid development of telecommunications technologies and the widespread availability of fast broadband connections. Many organisations are looking to exploit these by implementing mobile technology to boost productivity and improve the work/life balance for their employees. Mobile computing can also support new ways of flexible working and can improve and personalise Council services to the public. The Varney Report on service transformation stated that mobile technology offers new, cheaper, faster and more accessible self-service options for government transactions as well as contributing to the reduction in the property estate.

Many organisations recognise the value in mobilising their workforce. Traditionally field workers have been required to visit an office to receive work instructions and then return there in the evening to hand in job cards, which are then keyed into the corporate systems. This is not productive and takes time that could be spent servicing customer needs. Workers often don't have ready access to information required to complete the service call on an initial visit. In addition, once a service call is complete, the need to complete forms and other documents delays the closing of the customer service request. This in turn delays providing immediate updates to customer records and reduces customer satisfaction. Savings can be made across a number of areas, particularly time, travel costs and duplication of effort. There are also savings to be made by reducing paper costs leading to a reduction in administration support.

While DBS has identified a need for mobile technologies to support flexible working and workforce scheduling there will be other mobile opportunities that will arise during the implementation of the ICT Strategy as mobile technologies are constantly changing and new business applications based on them are emerging all the time.

4.3 The Web and Cloud Computing

The Internet and advances in computer networking have revolutionised society in a similar way to the industrial revolution that went before it. The Internet has also transformed the way in which business is conducted and has started to bring governments and citizens together in innovative and exciting ways. The Internet and the way that it is used are constantly changing so it is vital that the ICT Section stays up to date with its developments so that the Council can continue to exploit its many benefits. The ICT strategy therefore has to reflect the continued and increasing part that the Internet plays in supporting the delivery of Council services to the public.

The ICT Section has been implementing on-line self-service to the public through the Council web site for a number of years and this will continue to play an important part in the ICT strategy. Furthermore, as the web develops and public expectations grow then additional services will be added, like, personalisation and push technologies.

The Internet has evolved in recent years from initially being used only as a medium for one-way information dissemination through two-way interaction and web-based applications to newer technologies for example, mashups, wikis, blogs and social networking like Facebook. These latter technologies, as a whole, are generally referred to as Web 2.0, as they represent the second generation in the development

of the web. Web 2.0 differs from the first generation web in that it allows two way interaction and collaboration with web users as opposed to passive viewing of information. While these facilities are currently restricted to non-business uses for the reasons of security and inappropriate use, they will inevitably find valid business applications. The ICT strategy will therefore need to encompass and embrace Web 2.0 as a natural evolution of web development.

Looking slightly further into the future, Web 3.0 is a currently evolving development of the web which is being coined the Semantic Web. This will allow meaning (semantics) to be added to information and services on the web, making it possible for the web to "understand" web content thereby opening up new opportunities for using the web. The ICT strategy will therefore need to look ahead to Web 3.0 as the next natural evolution of the web.

Cloud computing is a new form of Internet-based computing, whereby shared ICT resources, software and information are provided on-demand, like a public utility. The term “cloud” is used as a metaphor for the Internet, based on the cloud drawing symbol used to represent the Internet in computer network diagrams. Typical cloud computing providers deliver common business applications online via the web which are accessed from a simple device containing a web browser, while the software and data are stored on servers. This is a form of “pay as you go” computer software for which the user does not need any supporting ICT infrastructure other than access to the web. This type of arrangement is called “Software as a Service” (or SaaS) and is being considered by organisations as an alternative to the traditional way of operating software as it has the potential to reduce costs and remove the need for lengthy implementations. The ICT strategy will therefore need to take account of SaaS as a future option for providing software applications where robust business cases can be made.

Cloud computing also covers ICT infrastructure services or "Infrastructure as a Service” (IaaS) which delivers computer infrastructure as a service. Rather than purchasing servers, software, data center space or network equipment, clients instead buy those resources as a fully outsourced service which can be access over the web. IaaS is typically billed like any other utility whereby the amount of resources consumed determines the cost. The ICT strategy will also need to take account of IaaS as a future option for providing ICT infrastructure where robust business cases can be made.

4.4 Information Management and Workflow

There is huge scope for savings by reducing the mountains of unnecessary, duplicate or inaccurate information that exists in the Council. Furthermore, making the right information available in the right format at the right time to the right people inside and outside the authority is vital to efficiency.

An effective information management strategy is vital so that expected benefits of the Council’s electronic document management and workflow system, in terms of improved customer self-service, workflow efficiencies, rationalisation of the office estate savings, and so on can be achieved.

The ICT strategy sits alongside the information management strategy ensuring information quality, accuracy, security and business continuity. The ICT Section also has an important role to play in providing some of the following :

- access to information from any location
- powerful search facilities
- drill-down facilities
- business intelligence
- knowledge management
- workflow process mapping

The ICT strategy should therefore seek to implement ICT tools and systems which support some or all of the above.

4.5 Open Source Software

Traditionally, the public sector has only purchased commercial off-the-shelf software programs or packages from the private sector to run their business systems. These packages use proprietary code and cannot be modified of re-used therefore limiting value for money and flexibility.

Open source software, on the other hand, is software which can be obtained free of charge and in its native or source code form so that it can be modified, reused and distributed if required. The definition of open source includes the following :

There have been many barriers to the widespread adoption of open source. The software itself and the ICT market place for open source products and services have previously been sparse and immature. Furthermore the complexity of the pricing and licensing models from the suppliers of commercial off-the shelf packages made it extremely difficult to make like for-like comparisons with open source software. A common concern for organisations in the past who wish to use open source software is the lack of a warranty and technical support. However this situation is changing and open source is becoming a viable and low cost option with a number of major players in the IT industry entering the market to support them.

The Cabinet Office has also recently leveled the playing field for open source software making it more competitive and easier to procure to ensure that the public sector can benefit from the savings and value for money that can result from it.

Open Source may also facilitate and encourage shared services as suppliers have traditionally been resistant to change their pricing models when local authorities join together around common business applications and this has adversely impacted on the business cases for sharing.

Open source will play an increasing part in the ICT strategy as financial pressures increase and radical cost cutting measures are investigated.

5. PRIORITIES FOR 2010-13

The ICT Section has used an enterprise architecture framework model based on the service framework and technical architecture model of the Society of Information Technology Management (Socitm) in order to develop its ICT strategy. This latter model consists of a set of structured checklists which identify all the technical issues relating to :

i. **applications systems**
ii. **technical infrastructure**

This has been used in the development of the ICT strategy to ensure that a systematic and standardised approach has been taken to identify all the Council's requirements.

This model was used in the development of the ICT readiness plan for the DBS programme and is being used within this strategy in order to plan ahead for the next three years. The model has helped to identify the current and desired future status of its ICT component parts which has led to the identification of the following priority areas that will be tackled over the next three year.

5.1 Application Systems

There are no new systems planned for the period other than those that may arise as a result of the development and implementation of DBS. Currently, the following systems have been identified :

5.1.1 Lagan Customer Relationship Management (CRM) System

Roll out the Lagan system for all Council services, as appropriate, as they are transferred to the Contact Centre.

5.1.2 Web Self-Service Applications

Roll out customer self service using the Council's web site in parallel with the Lagan transfer of services to the contact centre.

5.1.3 Microsoft Sharepoint 2010 System

Roll out Sharepoint 2010 to all Council services and users, as the corporate workflow and document management system.

5.1.4 Workforce Scheduling Solution

Roll out Optitime as a corporate workforce scheduling solution.

5.1.5 Application Integration

Use the recently procured new integration system tool from NDL to automate the transfer of data between the Council's application systems as required by DBS.

5.1.6 Mobile Applications

Implement mobile access to existing application systems.

5.1.7 Booking System

Implement a corporate system for booking rooms, desks, cars etc.

5.1.8 Essential upgrades

Upgrades will continue to be carried out to the 200+ applications systems used across the Council when required.

5.2 Technical Infrastructure

5.2.1 Directories

A programme of work to roll out Active Directory to all ICT users in the Council excluding schools. This will help to provide better management of resources and improved security sign on and identity.

5.2.2 Office Systems

A programme of work to roll out Office 2007 and Exchange 2007 email system to all ICT users in the Council, excluding schools.

5.2.3 Firewall

Replace the current firewall.

5.2.4 Platforms

Carry out server virtualisation for all Windows servers, where appropriate.

5.2.5 Sign On/Identity

Investigate and implement a secure method using tokens for remote access to support the roll out of DBS.

5.2.6 Data Networks

Complete the upgrade of the local and wide area networks. Investigate the practical use of wireless networking and implement where appropriate.

5.2.7 AntiVirus/Spyware (Mobile)

Investigate the marketplace of antivirus solutions for mobile devices and implement a preferred solution.

5.2.8 Remote Access

Rollout Virtual Private Network (VPN) for all users who require remote access to the Council's network when away from their office base.

5.2.9 User Devices

Continue the roll out of PCs to all users, including schools, using the national framework contract. Investigate the market place of thin client devices and implement a preferred solution to appropriate users. Investigate the market place of mobile devices and implement preferred solutions to appropriate users.

5.2.10 Terminal Services

Implement thin client to all users, excluding schools at this stage, where appropriate.

5.2.11 Voice Networks

Integration of the Council's two main telephone systems in HQ. Extension of the Council's wide area telephone network incorporating Internet Protocol (IP) telephony technology.

5.2.12 Patch Management

Implement a system to automate the regular updates of software patches.

5.2.13 Software Distribution

Implement a system to automate the regular updates of software.

5.2.14 Asset Management

Implement a system to manage the whole lifetime of all ICT assets from procurement to disposal.

5.2.15 Recognition Devices

Working within the DBS programme to continue to rollout the National Entitlement Card scheme and expand its use into other applications as appropriate.

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