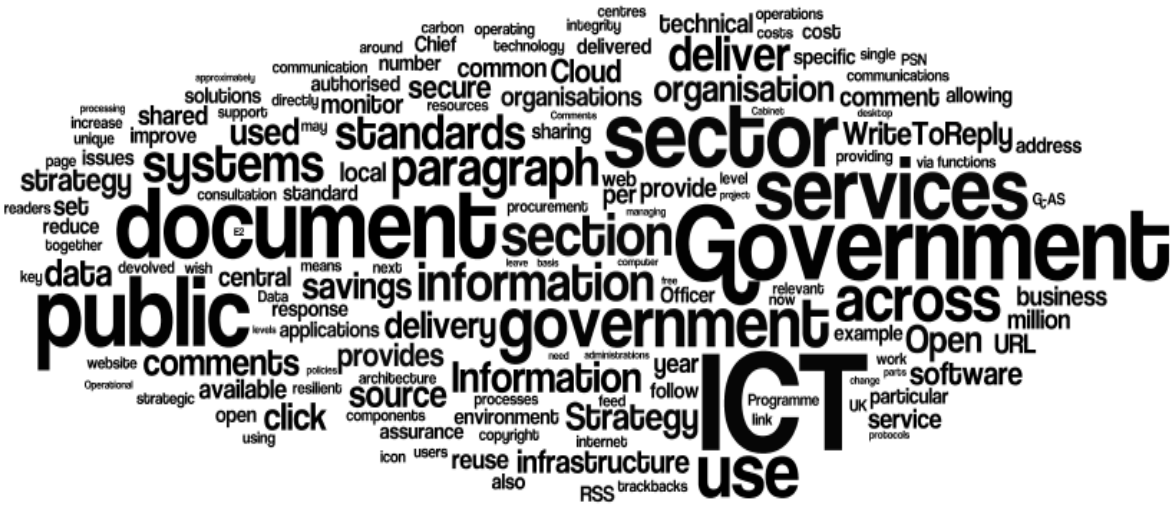
Warwick District Council
Corporate ICT Strategy 2011-2015



WARWICK DISTRICT COUNCIL

www.warwickdc.gov.uk

WDC Corporate ICT Strategy 2011-15

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Approvals

This document requires the following approvals:

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Corporate & Community Services Portfolio Holder

The Council is changing and with its partners it is setting ambitious and challenging targets to meet the expectations of the residents and businesses of Warwick District.

Technology affects all our lives and brings many exciting opportunities. The pace of change is great and the Council needs to embrace these changes in technology to improve service delivery to individuals, communities and businesses. Technology can help us to target our resources to areas of greatest need, reduce our operating costs and improve the working environment of our employees.

Much progress has been made in recent years and this document sets out the vision for how technology can help us to take advantage of the opportunities it brings, in order to achieve our ambitions for the future.

Cllr Moira-Ann Grainger

Head of Corporate & Community Services

We're all aware that Warwick District Council is a complex and diverse organisation, and that we're now in a period of radical change. We'll see a fundamental shift in the way we operate internally and - even more importantly - how we relate to citizens, local businesses and other public service providers.

Much of that will be a response to the demands from today's citizens that we, like other local authorities, do more with less, and work more effectively in partnerships with other service providers. Citizens want to see better value, more choice and improved response.

Information Communications & Technology has a major contribution to make in enabling us to meet these increasing expectations and rise to the challenges, now and in the future.

Susie Drummond
Head of Corporate & Community Services

1 Management Summary

The next four years will witness significant changes across the public sector. The shape and size of the council is likely to change but the need to provide high levels of service to our citizens will remain and be set against a backdrop of reduced budgets. With these new challenges will come new opportunities; using ICT to enable the Council to achieve efficiencies, providing the infrastructure to support shared services and most importantly, keeping pace with citizens' changing needs and expectations.

Corporately the Council has responded to these challenges by developing 'Fit for the Future'. Fit for the Future is a Programme of Change which will enable us to provide high quality services which our customers value, improve the way we develop as an organisation and balance our budget.

Throughout the period of this strategy, ICT will underpin and support these strategic objectives.

ICT is no longer just a support service; it has become a critical service. If it is unavailable, the organisation cannot operate and we are unable to deliver to our customers. It has the ability to transform the way services are organised and delivered. It has a fundamental role to play in improving efficiency, reducing cost across the organisation and underpinning the organisational change programme.

Demand for public services and expectations of levels of service are ever increasing. Citizens and businesses expect the same levels of access, ease of use and customer service that they see online from large private sector organisations such as Amazon and Tesco. They expect to be able to access their services from multiple locations and in ways that suit them. Our Strategy will align with the Council's developing Channel Strategy.

Our programme of embracing modern working practices, rationalising office accommodation, eliminating unnecessary bureaucracy and administration, and supporting community based service delivery will drive efficiencies.

These efficiencies will be enabled through technologies such as virtualisation, including desktop virtualisation, and modern telephony services such as Voice over IP. New methods of ICT service delivery will also unlock efficiencies through the use of Cloud Computing and a blended approach to the use of 'open source' will reduce capital expenditure.

Investing in our people is a high priority. We will continue to improve the ICT skills of our workforce, equipping them with the skills they need to deliver efficient quality services to our citizens. At the same time we will continually review the replacement and upgrading of ICT hardware and systems to ensure that our workforce has the right solutions for their work.

Information security is a critical focal point within the strategy given the increase in the amount of malware and the diverse ways that information can be shared. We place great emphasis on protecting our systems against threats and maintain constant vigilance to

protect against any new threat. We need to ensure customer information is protected, and ICT is an important element of that. We will continue to invest in training and education for our users, to raise awareness of security risks and to promote good data security practice both at work and at home.

2 Purpose

The ICT Strategy is focused on the business requirements that technology will support and provides a strategic framework for the use of Information and Communications Technology (ICT) over the next four years.

This strategic framework applies to ICT throughout the Council and will be used by Service Areas in shaping their ICT requirements aligned to their business priorities.

3 Introduction

Warwick District Council's strategic commitments and aspirations are enabled and underpinned by maximising the strategic and operational value of ICT.

Whilst it is recognised that technology has tremendous potential, it is vital that the utilisation of technology reflects the business needs of the Council. The benefit of technology investment must be demonstrated in terms of either a financial return or by delivering better Council services to the citizens of Warwick district.

The ICT Strategy provides a framework and direction of travel for technology at Warwick District Council. The strategy will be realised through a number of implementation vehicles that support or directly deliver the Council's strategic and operational priorities.

4 Vision

4.1 Where are we now?

Warwick District Council, like all public sector organisations, faces the major challenge of delivering quality services in a time of unprecedented financial austerity. The Council has responded by introducing a programme of change called 'Fit For the Future'. The programme, and its underlying projects, will challenge the Council's current service delivery model and processes. In doing so, the Council's underpinning ICT systems will need to be flexible and assist in providing innovative solutions to business problems.

Since, and during the Implementing E-Government (IEG) programme, considerable investment has been made in ICT across the Council. Consequently there is no pressure to replace large numbers of critical line-of-business applications, although there are opportunities to drive out more value from this investment.

During this period significant lessons have been learned in respect of large corporate projects and the consequences of 'scope creep'.

There are, of course, ongoing pressures for change and the ICT provisions need to be continuously upgraded and refreshed as the equipment ages. 2010/11 saw a major upgrade to the Council's server and virtual infrastructure environment, while 2011/12 will see the completion of the infrastructure refresh with telephony, storage and e-mail

all being upgraded. These on-going upgrades are reflected in the Council's Equipment Renewal Reserve (ERR)

In addition, new business demands will continue to emerge and new opportunities to deliver efficiencies will continue to present themselves. In 2010/11 the Council recognised the business benefit of Agile Working and this triggered the adoption of Virtual Desktop Infrastructure (VDI) to support this.

In parallel to the Council's investment programme the Council's service delivery model continues to evolve. The introduction of a Customer Service Centre, One Stop Shops, partnership working and agile working has had a major impact on service delivery. Not only have these initiatives changed the Council's service hours, but also raised citizen expectation by enabling them to access services on-line through a variety of channels. These changes have had a major impact on ICT. Service availability can no longer be 9 to 5, the time available to perform essential backups of data is reduced, data storage requirements have grown through Electronic Document and Records Management, maintenance windows have disappeared and support expectations have changed. All these issues continue to challenge the operational service delivery of ICT within the Council.

4.2 Where do we need to be?

Having made a substantial investment in ICT, significant progress has been made in exploiting the technology to deliver more with less. This has been recognised by the Audit Commission in its assessments. However, we cannot be complacent and we need to be doing the following:

- Exploiting what we've got
- Realising demonstrable benefits
- Identifying and realising savings
- Investing wisely to deliver important outcomes
- Resisting the lure of technology for its own sake
- Ensuring good communication with members and other stakeholders

In parallel to the above we must ensure that:

- ICT investment is business led
- New services are customer focused and evidence based
- ICT resources are allocated and prioritised based on business and customer benefits
- Where applicable, ICT investments enable shared and collaborative working
- Risk is reduced by managing project scope and, if necessary, prototyping solutions prior to committing significant resources.

Many of these objectives are implicit in the Council's Fit for the Future programme and will be realised through the Systems Thinking interventions.

4.3 How do we get there?

Unlike previous years when the IEG programme dominated the ICT Strategy, there is no single ICT project or programme that will achieve the Council's objectives. Rather ICT

will act as an enabler for Fit for the Future. In addition, the on-going Systems Thinking initiatives will assist Council services to exploit current ICT investments enabling waste to be driven from existing business processes.

5 Strategic Alignment

The District is facing a period of great change, with the Council being required to deliver more with less. Our customers have high expectations of the quality and availability of our services. Fit for the Future is our corporate strategy to focus on what needs to be done to adapt and thrive. The ICT strategy is driven by the Corporate strategy, with ICT being an enabler rather than an end in itself. The three strands of the Corporate Strategy are:

- Customers will be at the heart of what we do. Rather than changes being driven by external factors (like IEG) or internal factors (like cost savings), we will ensure change is focussed on delivering value to customers. ICT is key in supporting this work. A number of technologies are being used to improve access to services, make useful information available to customers and support staff working in different ways and locations to deliver services. ICT also supports service area changes via systems thinking by providing guidance on appropriate solutions for specific needs.
- The Council is required to have a balanced budget. From 2011 to 2016 we need to make savings and increase income to deliver this. By reviewing all available technology solutions, ICT will ensure the most cost-effective and efficient systems are used. Technology changes fast, so ICT will continue to investigate the benefits of new and emerging technologies.
- We will become an organisation that continuously learns and improves. Our other key resource, our staff, will be working to deliver the best services possible to our customers. ICT will be key to making sure we have the data available to make decisions, that we have the best-fit technology to help deliver and that we remove barriers to progress. ICT will continue to work with our partners and communities of interest to build on the capability we have.

The ICT strategy is focussed on what needs to be delivered to meet the needs of the Council's customers. How this is done will continue to evolve. ICT will continue to balance the needs of the diverse areas of the Council, and adopt new approaches and technologies when it is appropriate.

The other key piece of work which will place demands on ICT is the Channel Strategy. The Channel Strategy is a plan for the channels we will use to deliver services to, and interact with, our customers. It balances the needs and wishes of customers with the resources we have available. The channels we use vary from more traditional ones like face-to-face, and telephone, to newer channels like social media and mobile web access. While we make channels easier for customers to use we must also ensure that we are automating as mush as possible to reduce any waste in the systems. ICT will be key in advising the Council and in delivering the technology solutions needed.

6 Business Initiatives

The following section describes the key business initiatives being undertaken by the Council and the linkages to ICT.

6.1 Agile Working

The ICT Strategy has previously outlined the financial and service delivery challenges the Council faces during the next four years. Like many organisations, both public and private, the challenge to balance the Council's budget will be partly met by ensuring all property assets are used effectively. This includes deciding whether to move to a new headquarters. Regardless of that decision, it will be important to provide staff with a technical and office environment which supports the ethos that **work is something you do, not a place you go**.

The benefits of Agile Working are:

- it can improve the work/ life balance of staff.
- it ensures the Council uses its office space efficiently and cost effectively.
- it minimises the Council's environmental impact.
- it improves productivity.
- it enables new services to be identified and allows existing services to be re-engineered.

Technology can contribute to these benefits by providing a working environment that is not constrained by location. This enables teams to adopt a range of agile working methods according to the needs of customers.

The council has built a number of principles of occupancy for its office space. These are based around encouraging home working, adopting open plan working, wider use of HotDesking and more sharing of office space. In addition to these principles, it must also be recognised that between 15 and 20 percent of the Council's workforce spends a significant amount of time in the field or working alongside our partners.

One of technology's roles is to support staff when they adopt these Agile Working methods. This is primarily about giving staff access to their IT systems, data and telephony via an appropriate device e.g. desktop PC, laptop, smartphone or VOIP handset.

As discussed in the technology section, significant progress has been made through the use of VDI to support the Agile Working programme and through VoIP to support a more Agile workspace. Additional work is required to identify appropriate solutions which will support our mobile workforce.

6.2 Digital by Default

6.2.1 Channel Strategy

The Council's Channel Strategy, which is currently under development, will be one of the key delivery agents of the ICT Strategy.

The Channel Strategy Principles agreed by Senior Management Team are:

- wherever possible and valuable for customers, move transactions and information to the web
- continue face to face services, and not just at One Stop Shops
- Review use of CSC and levels/depth of expertise required of CSC advisers
- Investigate use of social media, DigiTV etc where valuable for customers
- Systems thinking work to be end to end, to include all customer access channels
- Systems thinking – put experts close to the customer where possible

The Channel Strategy and its key principles, will impact on the Council's Application Strategy, technology selection, infrastructure, security, ICT resource allocation and system integration methodology.

6.2.2 Online Services - www.warwickdc.gov.uk

ICT services help develop and support online services under the council's .gov domain.

In line with recommendations by the government's UK Digital Champion, all council web content and services must be available through the single .gov domain in order to improve the experience for the customer. This approach also leads to more efficient content management and support.

The website is the most popular customer services channel with visits having grown from 50,000 a month to around 90,000 a month between 2007 and 2011. Performance is measured continuously through customer data - e.g. success rates and satisfaction - and the website has historically performed well when compared to other councils. We assess accessibility through annual audits carried out by disabled users and experts. We have achieved accessibility accreditations set against international guidelines since 2006.

The website provides customer focussed information and transactional services. All content - be it information or transactional - is designed, organised and written based on data/evidence relating to online customers and user testing with customers. We aim to make our customer's top tasks as usable and accessible as we can. At the same time we aim, where appropriate, to reduce demand on other customer service channels and to aid efficiency in the back office. This evidence-based approach will continue to drive future developments and improvements to the site. Service Level Agreements are in place to ensure that the web and ICT teams are informed by service areas of any plans for online transactional services prior to acquiring or developing them. This is to ensure transactional services meet the required standards and the needs of customers.

In line with the government's approach of ensuring information and services are available wherever people are on the web, we will explore the possibility of opening up our .gov content and applications to other organisations e.g. by providing data in open format.

Social media is used as a means of two-way communication with customers and the Council's approach is outlined in the social media strategy.

The website uses Microsoft Content Management Server 2002. This reaches end of extended support with Microsoft on April 8th, 2014. Beyond this date we will decide

whether to continue on this platform with custom support or whether to seek an alternative, taking into account cost, maintenance and the government's Code of Connection requirements.

6.2.3 Mobile, Digital TV and apps

WDC has a contract until 2012 to provide cross-platform services and information through the Looking Local service. Looking Local provides integrated services on Digital TV (Sky and Virgin), mobile and iphone and Android apps, through a single content management system (CMS) which is owned, supported and managed by Kirklees Council. Whilst content is less extensive than it is online, it includes real time travel information, job searches and Homechoice bidding. We will continue to review these services to ensure they meet customer needs.

6.2.4 Text Messaging

WDC is trialling a third party system for communicating general information with customers through text messages. This trial will partly inform the council's approach to text messaging within the overall channel strategy. In addition, some service areas are considering bolt-ons to existing back office systems in order to communicate account-specific information with customers. We will continue to review the service to ensure it meets customer needs.

6.3 Partnership Working

A major consideration when adopting technology is the Council's attitude to partnership working. Although system compatibility or system migration are the issues that immediately come to mind, security is by far the most significant issue. Currently, for example, no other organisation is permitted to connect directly to the Council's network. Where connectivity is only required for access to a specific system, there are established approaches to resolving this. However, where joint teams are involved in partnership working, security issues become more complex and, at present, can result in unsatisfactory solutions.

At present the Council is not adopting a blanket approach to partnership working. Where there is a sound business case, delivering a quality outcome for our customers, which could not be achieved by the Council acting alone, then a partnership may be entered into. A key consideration may be the partnership's approach to technology but a decision on a partnership will not be technology driven.

6.4 Systems Thinking

The challenge the Council currently faces requires a radically different business strategy to those that have been previously developed – Fit for the Future. Fit for the Future is organised around systems thinking as an approach.

The Council is committed to using a set of systems thinking principles to deliver improved services and a balanced budget. These principles are:

- Take the customer's perspective
- Understand purpose
- Consider the whole system – end to end
- Understand demand – value and failure

- Understand flow – value and waste
- Measure what matters to the customer
- Decisions based on Data
- Design to meet demand
- No targets – seek perfection
- Involve and engage the people

These principles have significant implications for the way we develop our ICT systems

- ICT systems should be designed around what matters to our customers rather than round the capability of ICT systems. ICT needs to be designed to support the system rather than constrain it. Where ICT is found to constrain the system, radical approaches are required. This may involve removing the system, commissioning alternatives or implementing significant changes.
- Systems Thinking focuses on the end to end customer experience as it crosses functional boundaries. ICT systems need to support this – recognising that a solution created for one business area may have a knock on impact somewhere else.
- Systems Thinking relies on having access to good quality data about what matters to customers (e.g. if our system is working well for customers how will we know? What data do we need to gather to know how well it's working at any time?). ICT can support this through appropriate data gathering, interrogation and reporting.
- Many of our existing ICT systems have more capability than we are currently using. Once we understand our system design, we need to explore the unused capabilities to find out if they can help rather than investing in new or adapted systems.
- Users need to be trained appropriately to ensure they maximise their use of technology and to also ensure that they do not introduce 'waste' by developing alternative approaches and solutions to existing functionality through lack of knowledge.
- Where possible, ICT systems should be kept simple. Large, function rich systems are often complex and expensive. Sometimes something simple, such as a spreadsheet, can do the job and often this is more flexible and much less costly to maintain and update.

A number of Systems Thinking interventions have already taken place throughout the Council. What has become clear is that involving ICT Services early in the interventions has proved beneficial. By ICT Services working closely with service areas and focusing on the ICT requirements needed to do the value work, this has allowed ICT Services to understand what is really needed to deliver the right ICT for the Council and external customers

7 Investing in our People

Since its introduction, the main focus of the ICT training function has been to develop the skills of Council staff in the core MS Office applications. To encourage the take up of

training, the Council introduced the European Computer Driving Licence (ECDL) qualification and the training schedule was adapted accordingly. As the training function developed, further courses were offered to support the introduction of corporate applications, such as TOTAL and most recently Civica APP.

The training function has continued to develop and significant progress has been made in delivering e-learning content through Moodle. The ICT trainer has also worked with service areas to deliver non ICT related e-learning content.

Although ICT training is a well respected function, and operates effectively within the current delivery model, changes are required to meet the future challenges of the Council and the operational needs of the ICT Service.

ICT within the Council is a very dynamic environment, with new products, services and capabilities being introduced; telephony upgrades, printer changes, etc. The Council also has users who, through their job roles or personal abilities, experience challenges utilising ICT effectively and efficiently.

Using the principles of Systems Thinking, it is clear that 'waste' is generated by either staff under-utilising the resources at their disposal or by struggling with technology. In many cases, these issues manifest themselves in helpdesk jobs. These are jobs that, given appropriate training, users could do for themselves, or they are jobs which result from incorrect use of technology.

To enable ICT Training to align itself with the needs of Service Areas and the operational needs of the ICT service, whilst still maintaining a formal training programme, the training function has been integrated with the ICT Helpdesk. Information collected via the Helpdesk can assist in identifying individuals who would benefit from 1-2-1 training, whilst also ensuring training focuses on those operational issues, either short term or long term, which are creating demand upon the ICT service; file management, burning CDs, printing, etc. In addition, where major desktop initiatives are being undertaken, the Technical Support Manager will have increased resource flexibility to assist in project delivery.

ECDL will still remain the central focus of the formal training programme, but with the predicted reduction in the Council's headcount and reduced staff turnover, there is the potential for capacity to be released to broaden the training portfolio. ICT Services will work with the corporate training function to undertake a Training Needs Analysis to identify any further opportunities.

8 Technology Summary

Previously virtualisation was seen as the key to delivering a more agile business environment, but today Cloud Computing is seen as the future. In response, the Council has made a significant investment in its virtual infrastructure and is now well placed to evaluate its approach to cloud computing.

The Council's data centre virtualisation project has delivered significant capital savings by reducing the number of physical servers it operates and, as a consequence, has also reduced its operational costs – power and cooling. The Council is now extending its approach to virtualisation to include desktops and has already halved the cost of its PC replacement programme by extending hardware life.

The Council's approach to virtualisation, combined with its recent investment programme, provides the Council with a window of opportunity to evaluate Cloud computing for hosting business and desktop applications.

Having reduced the costs of the physical ICT environment, software costs remain a significant part of the Council's ICT operating costs. Supported by the Government's ICT Strategy, Open Source software will be evaluated to see if the Council can derive any benefits. However, unlike hardware virtualisation where the costs benefits are easy to identify, the business case for Open Source can be difficult to calculate as many of the costs are hidden.

The introduction of desktop virtualisation is making a positive contribution towards the Council's agile working agenda. However, despite the introduction of a Voice over IP solution, the Council's telephony system has not provided an acceptable home working solution. A recent major upgrade to the solution now needs to be evaluated to see if improvements in this area can be made.

Further detail on all the technology issues facing the Council can be found at Appendix 1.

9 Governance

The ICT Strategy will be owned by the Corporate ICT Steering Group, and delivered by the ICT Services Manager and the ICT Management Team. It is recognised that there are increasing pressures being placed on scarce financial and staff resources. It is therefore proposed that any significant programmes of work initiated as a direct consequence of this Strategy, Service Area Plans or Service Interventions are fully scoped and costed, and this investment is considered corporately alongside competing project proposals.

Wherever possible officers and members involved in the governance of ICT will seek to exploit the existing investments in ICT infrastructure and systems before investing in further technology products. However, it should also be recognised that many ICT investments are "enablers" for other parts of the Council to deliver cashable benefits.

A copy of the ICT Steering Group's membership and Terms of Reference can be found at Appendix 3.

10 Business Continuity

Prior to 2010, the Council did not have a contract for external business continuity services, but relied on utilising a duplicate Storage Area Network (SAN) and associated data replication technology. Unfortunately, due to the location of the duplicate SAN, the

solution only provided limited protection to the Council in the event of a localised disaster to its corporate data centre. If a more significant disaster occurred to the Council's Headquarters, then a disaster recovery plan would be invoked. During the recovery period, Council services would be required to invoke their own continuity plans.

In 2010, the Council reviewed the economics of continuing with its internal provision of continuity services and the exposure it created due to its limited continuity provision. The outcome of this review was to engage with an external supplier for ICT business continuity arrangements. The contract has been in place since December 2010.

The Council will undertake a programme of testing the new continuity arrangements, in collaboration with Service Areas, and will update and maintain its plans accordingly.

11 Security

ICT Services is in the uniquely difficult position of ensuring that the Council can transact its business in a safe and secure environment, while not inhibiting the operational requirements of individual services. This is set against the ever increasing pace of technology change, greater expectations from citizens in the way they wish to access services and evolving service delivery models – collaborative and partnership working.

ICT Services will continue to consult and collaborate with appropriate external bodies (CESG, PCI SSC, etc) and Internal/External Audit to ensure that both the technical and behavioural aspects of information security are addressed in a co-ordinated and systematic way to reflect the changing needs of the Council.

ICT Services will continue to promote and support an effective information risk assessment process; enabling informed business decisions be made and documented regarding security measures to balance the need for confidentiality, integrity and availability of information.

In addition, the Council will undertake a 'gap analysis' against the information security standard ISO27001 to ensure that existing information security controls are appropriate and continue to meet the organisation's information security needs on an ongoing basis.

11.1 Government Connect

ICT Services will maintain compliance with the list of security controls which all councils must adhere to in order to make a direct connection to Government Connect. Government Connect is a Central Government facility which has enabled the wider utilisation of the Government Connect Secure eXtranet (GCSX) as a secure electronic communications channel to share information between local authorities, central government and the wider public sector. This secure connectivity will be used efficiently share it with other local authorities, central government departments or agencies.

11.2 PCI- DSS

The Payment Card Industry Data Security Standard (PCI DSS) applies to all entities that store, process and/or transmit cardholder data. It covers technical and operational

system components included in or connected to cardholder data. All Merchants, of which the Council is one, who accept or process payment cards must comply with the PCI DSS.

The Council understands the responsibilities it has to process its citizens' card payments in a professional and secure manner. The Council will continue to promote best practice through the implementation of its Card Data Policy and will undertake an annual audit of its processes and technology by submitting an appropriate Self Assessment Questionnaire (SAQ) to its acquiring bank.

12 Green ICT

ICT, like everything we do, has an environmental impact, a much more significant one than most people realise. According to Gartner, "The global information and communications technology (ICT) industry accounts for approximately 2 percent of global carbon dioxide (CO2) emissions, a figure equivalent to aviation"

Warwick District Council has made significant strides towards 'greening' ICT:

- Where possible, third sector organisations are supplied with redundant Council equipment.
- Server virtualisation is reducing the amount of physical equipment required and reducing power and cooling requirements.
- Desktop virtualisation is extending the lifespan of existing desktop PCs and enabling the introduction of Thin Client PCs which require much less energy.
- The use of forced air cooling in the Council's data centre has significantly reduced power consumption.
- Our printing strategy has reduced the number of desktop printers replacing them with multi-function networked devices.
- The introduction of Agile Working is reducing travel and is contributing to a reduction in CO2 emissions

However, the Council is not complacent and recognises that further improvements can be made:

- Environmental criteria will be specified for all new devices including energy consumption and robust energy management facilities.
- We will develop and promote "paper-light" environments in which documents are stored electronically and shared electronically rather than in paper format.
- A corporate approach to desktop power management settings will be defined and implemented.

Appendix 1 - Technology Developments

The following lists some of the key technologies which will have an impact on the Council, financially or operationally, during the life of this strategy.

1. Cloud Computing

Cloud computing is all the rage and is the next big thing in ICT. In simple terms, Cloud Computing consists of applications and services that are hosted and delivered from the internet and accessed via a web browser. Cloud computing promises lower up-front costs compared with on-premise products that ICT teams must buy and support themselves.

A cloud service has three distinct characteristics that differentiate it from traditional hosting. It is sold on demand, typically by the minute, hour, day or as a subscription based service; it is elastic -- a user can have as much or as little of a service as they want at any given time; and the service is fully managed by the provider (the consumer needs nothing but a personal computer and Internet access).

In addition, the adoption of Cloud computing fundamentally changes the cost model for ICT by transferring up front capital expenditure on assets to consumption based revenue charges.

While the private sector in particular has been leading the charge in using cloud services, including sales force management and CRM, the public sector is potentially ripe for major adoption of cloud too.

In government circles this approach, although attractive, brings with it a variety of concerns, particularly procurement and security.

However, with a tendency among a vast number of public sector bodies to use similar applications - for example payroll, revenues and benefits and environmental services - the potential savings from delivering such apps via the cloud rather than building and supporting hundreds of separate versions are clear - and play well with the downward pressure on government IT budgets.

It's against this background that the government has embarked on the Government Cloud (G-Cloud) project - part of a package of measures detailed in its Government ICT Strategy - which could host applications and services for Westminster departments, more than 400 councils and other public sector bodies in the UK.

As with any pan-government initiative, the G-Cloud is a huge undertaking, and we know that the larger the project, the greater the risks. Some commentators are doubtful that government can deliver the G-Cloud within the timescales envisaged.

Clearly cloud computing has real benefits, but there are also reasons for caution. Risks include loss of service if your provider has downtime or goes out of business, regulatory problems when personal data is stored internationally, security concerns when users lose control of how their data is protected, one-sided service agreements that give users little

redress in the event of a calamity, and lock-in dependency on proprietary cloud applications.

Warwick DC is in a fortunate position of being half way through its core technology refresh. This refresh will provide a stable server and storage infrastructure to host applications in a virtualised environment for the next 5 years.

Transferring capacity to the cloud during this period would therefore present a real cost to the Council not a saving, through the underutilisation of existing assets. In addition, the immaturity of the cloud, and the absence of the G-Cloud, would make Warwick DC an early adopter with all the associated risks.

However, that is not to say that Warwick DC should ignore the Cloud for the next 4 years. From a business application perspective, it is possible that tactical opportunities will arise, especially for services which are traditionally difficult for the in-house ICT function to support. Examples of these applications can be found in Cultural Services which relies on ICT to deliver several out-of-hours services.

There may also be opportunities to explore the use of cloud services to deliver desktop applications such as Microsoft Office or its equivalent. This is expanded further in the Desktop section of this strategy.

2. Open Source

Open Source Software is software that is freely distributed and is maintained, modified, and updated by the user community that uses the software. The case for using Open Source software is not always clear cut, and is often clouded by user perception, organisational capacity and attitude to risk. The initial business case for open source software often appears compelling, but while the open source products are initially "free" for download, installation, and licensing, the costs in terms of skills and maintenance are estimated to be the same as for any proprietary product – and these costs are at least 80% of the entire equation.

During the late nineties Warwick DC explored the use an open solution for its standard desktop office product - StarOffice. Unfortunately, integration with commercial line-of-business applications was unsupported, compatibility with dominant Microsoft products caused issues with power users, and general lack of user acceptance killed the open source experiment.

However, open source has continued to develop and improve and, coupled with the current financial pressures, presents an opportunity to re-evaluate our position.

The Council's previous use of open source was based on a one size fits all approach. With tools such as Software Asset Management (SAM), the Council is in a much better position to review the usage of software. Understanding utilisation is the key to adopting a more blended approach to open source. For example, using the desktop scenario again, some users will not need the full suite of office applications. Some users may never author content, but only view. Some users may create very simple content while

others, such as accountants, will demand and require commercial spreadsheet applications.

A blended approach to open source, will enable us to adopt a low cost or no cost solution based on identifiable user profiles.

3. Desktop

For the last 20 years the desktop has evolved; desktops became increasingly more powerful, the hardware reduced in size, power management improved and applications grew increasingly sophisticated. Today, as a result of the cloud and virtualisation, evolution is about to be replaced by revolution.

The device we use to access applications is no longer restricted to a PC. Increasingly phones, TVs and games consoles are becoming the devices of choice. Where the PC still exists this is morphing in to new form factors with tablets and slates becoming ever more popular. The mouse is also being replaced by touch screens and gesture recognition.

In fact the PC of your future doesn't exist as one discrete tool; instead, it's a personal network of devices that share data and collectively represent you to the rest of the Internet. In the not too distant future, we will abandon our bulky desktops in favour of remote storage and applications, lashing together our favourite music, movies and games via a web of internet-connected devices.

If evidence was ever needed that this is increasingly the vision of the future then this can be best illustrated by Microsoft. Microsoft's original vision was 'A PC on every Desk and In Every Home'. This has now been replaced by 'Continuous cloud services for every person and every business'.

Ultimately, the desktop strategy of the Council will be to make access to Council systems device and location agnostic. This approach will provide greater freedom for staff to use their device of choice and potentially personal devices – security permitting.

The Council has already started on this journey and during the life of this strategy some key decisions will be required.

Many years ago the Council made the first key decision which was to remove all data from individual PC's, leaving just an operating system and applications to reside on the device. Through the use of Virtual Desktop technology, we are now starting to remove these components from the desktop and storing them in our data centre, or in our own 'Private Cloud'. This is starting to introduce the concept of being device agnostic. This approach is already reducing Council costs by extending the life of existing equipment and reducing the hidden support costs associated with a desktop refresh programme.

However, the next decision will be to decide whether to continue to purchase our desktop applications and to host them privately or to subscribe to a public cloud based service. Both Microsoft and Google are investing millions of dollars in public cloud services. In short, instead of buying Microsoft Office, for a monthly fee you subscribe to

a cloud based service branded Microsoft Office 365, which is accessed via a web browser. This also changes the financing of desktop applications from capital expenditure to revenue expenditure. It also means that as employees come and go, the costs associated with the desktop can be flexed up and down accordingly.

Google, whose entire business model is web based, is already ahead of Microsoft. It has a mobile platform for smartphones that enables access to the Internet from almost anywhere and a desktop platform that does much the same. This is in addition to the well known Google mail (gmail) and Google Docs, a direct competitor to Microsoft's office suite, which are already hosted in the Cloud. The introduction of the Chrome Operating System and the soon to follow Chromebooks, changes the very nature of the conventional desktop PC. Chromebooks boot directly to Chrome web browser, but because there are no applications or data resident on the device, there is no direct access to the underlying operating system. This makes these devices very secure and removes the need for additional ICT activities and costs related to patching and virus checking. Of course, this does assume you have a permanent Internet connection.

We will also need to consider how 'open source' software can be blended into our desktop strategy which could become a hybrid of commercial client, open source and cloud solutions.

4. Virtualisation

Warwick DC has been undertaking server virtualisation for 6 years and has virtualised 85 of its 125 servers. Currently the Council is achieving a virtual to physical ratio of 17 virtual servers to 1 physical server.

Server virtualisation means partitioning one physical server into several virtual servers, or machines. Each virtual machine can interact independently with other devices, applications, data and users as though it were a separate physical resource.

Warwick DC has gained several advantages from adopting a virtualisation strategy for its servers:

- The lower number of physical servers has reduced purchasing and hardware maintenance costs.
- The development of a standard virtual server build that can be easily duplicated has sped up server deployment.
- Less power consumption, both from the servers themselves and the facilities' cooling systems
- Better use of existing, underutilised computing resources.
- Improved business continuity – if one server crashes the load is automatically transferred to other servers.
- The ability to flex capacity based on peaks and troughs in demand.

Warwick DC will continue with its on-going strategy of virtualising servers where appropriate to do so.

In addition to server virtualisation, the desktop can also be virtualised through Virtual Desktop Infrastructure (VDI). Desktop virtualisation technology was originally piloted by the Council in 2009 as a technology to assist in the delivery of the Agile Working programme. This technology allows a user's virtual desktop to be accessed from a non-dedicated device.

However, it soon became apparent that virtual desktop technology also has the potential to reduce desktop costs by extending the life of current hardware and by reducing support costs. Therefore, the Council will continue to rollout virtual desktop technology to non-home workers whose primary activity involves the use of line-of-business applications. This minimises the risk to the Council by ensuring that if there was a significant outage in the Council's data centre, the additional loss of the user's desktop would not increase the impact on the service.

5. Telephony

A large proportion of the Council's desktop phones now use Voice over Internet Protocol (VoIP) technology. This technology uses the corporate computer network for calls rather than a separate phone network and allows greater functionality and flexibility for phone users than used to be the case.

Through the use of extension mobility, the Council's telephony system is better able to support the Council's Agile Working programme by enabling the use of 'hot desking', but the technology has failed to deliver a 'cost effective' method for providing telephony services for home workers.

The Council's VoIP technology is undergoing a major upgrade. Further work will then be required to identify an improved home working solution.

Appendix 2 – Application Strategy

Ultimately the Council's application strategy supports the corporate ICT Strategy, by being business led. At the centre of the strategy are four key aims:

- To procure, maintain and develop systems that are fit for purpose and represent best value.
- To identify opportunities to exploit our current investment, to join up and consolidate systems and to better use the data they hold.
- To extend system access to partners, contractors and other third parties, where there is an identifiable business case or customer benefit.
- To support the Council's Fit for the Future programme

The fundamental delivery agents for the application strategy will be the Council's channel strategy, which will heavily influence functionality, and systems thinking which will seek to exploit existing functionality.

To gain maximum benefit from the Council's investment in applications, the following ground rules will apply:

- All application investment must meet a recognised business need and, where significant, will be subject to a thorough investment appraisal and business case.
- The allocation and prioritisation of limited application support resources will be made by the ICT Steering Group in consultation with senior users. These decisions will be guided by the Council's corporate priorities.
- We will generally not carry out any large scale internal application development projects as we aim to purchase solutions and customise them if necessary.
- The preferred solution for customer facing web-enabled applications is to use third party applications for security and end-to-end integration reasons. Where it is unclear if there is customer demand for a service, then it would be appropriate for ICT Services to develop an on-line proof of concept to establish this prior to investing in commercial technology.
- Where applicable shared or corporate solutions should be used.

1. Corporate Property Database & Mapping

The introduction of the Local Land and Property Gazetteer (LLPG) in 2000 was seen as the beginning of a drastic re-think in property record maintenance. Indeed, previous storage of data had seen a "silo" based approach with individual departments holding their own interpretation of property addresses. Not surprisingly, this led to both inefficient duplication as well as confusion as to the validity of the data being used.

The advent of the new LLPG brought about the provision of one definitive source of accurate publicly-owned spatial address data, data which would be sent daily to a national gazetteer that contained similar information from every local authority in England and Wales.

The LLPG, and its provision of addressing information, is widely recognised internally as one of the central platforms that continually contribute to the delivery of improved services to local residents. Indeed, it feeds a number of fundamental corporate and departmental back office applications such as the Customer Service Centre, Environmental Health, Land Charges, Planning and Building Control. Furthermore, through a series of dynamic links and update procedures, it underpins vital online services such as the Planning Portal and "My Property".

"My Property" is a hugely successful and popular application that was set up to provide a vast array of property based information in one easy-to-use product. From a post code based search, this internal and external based application provides an assortment of facts and figures about a selected property e.g. Council Tax bandings, bin collection schedules and related planning details. In addition, powerful "Find My Nearest" tools exist as well as links to popular associated web sites i.e. Warwickshire County Council, NHS search and education applications as well as local BBC News and radio stations. Finally, there is an embedded map highlighting the location of the property which, when selected, transfers the user to the Council's "Interactive mapping" application.

The Council's Geographical Information System (GIS) was introduced in 2003, and was seen as an electronic replacement to the paper based cartographical work undertaken by the Council.

This powerful new tool (called GGP), gave users the ability to create and store vast amounts of spatial data which could either be used in isolation, or be called upon to be employed in conjunction with many of the Council's back office systems. In addition, a web based product (commonly known as eGGP), allowed internal and external users to interrogate a wide variety of corporately held mapping data - the external version being advertised as "Interactive Mapping".

"Interactive Mapping" is a clear pictorial view of all of the land and property based information held by the council – something that equates to over 80% of data held by a local authority. Since its introduction, this application has seen over one hundred individual spatial layers added showing a wide range of information both from within the Council and external bodies alike – data such as all post 1974 planning applications, conservation areas and corporate assets.

The application itself provides the ability to search on addresses and parishes and the ability to overlay multiple layers of information, functionality to zoom in/out, pan and re-centre.

A by-product of the application is the ability to perform detailed spatial analysis on any of the spatial information held. Resultant data can be displayed in a variety of different media ranging from paper maps to electronically exported spatial files (formats to include .jpg, .bmp and .pdf).

Moving forward, it is expected that there will be extensive improvements to both the design and content of both of the "My Property" and "interactive Mapping" applications as the council continually strives for improvements to its on-line service delivery. Some of this is likely to be realised with the improvements to automated links to both the council's environmental health and electoral registration systems.

Furthermore, the LLPG and GIS products are expected to be central to the provision of a much improved system for the processing of Planning Applications, as well as the provision of an automated Land Charges searches process, both of which are expected to provide both financial and efficiency savings.

Finally, in conjunction with route optimisation software, there will be investigation into the possibility of using the LLPG and GIS applications to help provide an improved waste management application. If successful, it is hoped that it will provide;

- Significant financial savings
- A more robust and reliable service for citizens with fewer missed bins,
- A reduction in the environmental impact of the service through reduced vehicle movements

Appendix 3 – ICT Steering Group

The ICT Steering Group consists of senior officers and will perform detailed scrutiny for all significant ICT investments. The Steering Group also balances priorities between projects. Projects which require significant resources are brought before members with appropriate recommendations.

1. Membership of the ICT Steering Group.

- Deputy Chief Executive
- Head of Finance
- Head of Neighbourhood Services
- Head of Housing & Property Services
- Head of Environmental Services
- Head of Corporate and Community Services
- ICT Services Manager
- ICT Application Support Manager
- Improvement and Performance Manager
- Website Manager

2. ICT Steering Group Terms of Reference.

2.1 Purpose

The Corporate ICT Steering Group is a high level strategic team whose overall scope is to ensure that ICT within the Council is business-led, within a corporate framework.

2.2 Terms of Reference

A council-wide corporate ICT steering group will provide for joint planning and decision-making whose terms of reference are to:

- formulate an ICT strategic plan which helps the Council deliver Fit For the Future;
- agree the ICT work programme in the light of the Council's agreed Service Area Plans and subsequent mandated changes;
- understand and help manage the relationships, risks, dependencies and cross-cutting implications between ICT projects and the agreed work programme;
- monitor the progress of the current year's programme and determine whether any reserve projects should be progressed or planned projects deferred;
- ensure that the organisation is aware of individual major developments and take a corporate view on a common product strategy to avoid duplication and integration / accessibility obstacles and maximise efficiencies;
- consult with Service Area Managers to assess the overall priorities and investment requirements of ICT projects, resolving resource conflicts where appropriate, to ensure the maximum corporate benefit is derived from the use of ICT resources.
- assess and respond to the impact of new legislation/ regulations within the ICT arena;

- develop a corporate framework for ICT skills development and other capacity building measures;
- help embed ICT developments into service standards and business operations;
- act as a forum to review ICT operational issues and initiatives which impact on front-line service delivery;
- evaluate business initiatives that identify opportunities for service improvement and/or efficiencies through the use of technology and to provide funding where appropriate (Invest to Save)
- 'own' the ICT strategic plan, be responsible for its delivery and for developing future revisions for recommendation to SMT
- consider any relevant operational issues identified by the ICT Services Manager

Appendix 4 – ICT Infrastructure Projects 2011/12

	Administration Tasks
Complete	Storage and Vmware Support contract renewal
Complete	Version control all MOSS diagrams
In Progress	Monthly Checklist
In Progress	Quarterly Checklist
	Handover XP Vista SCCM Security Patching to Helpdesk
Complete	SNOW software auditing install
	Vmware
Complete	Upgrade V Centre Server
Complete	Upgrade Vmware Vsphere
	Vmware Site Recovery Manager
	Vmware Disaster Recovery
	Investigate Antivirus for Vmware
	Investigate Windows OS Patching for Vmware
	Investigate V Centre Operation & Capacity IQ (Real Time monitoring)
Complete	Buffy Virtualisation
	Storage
Complete	Replace SAN
	File Archiving and SAN storage tiering
Complete	Investigate SAN to SAN replication
	VMView
Complete	Review Hardware and Software topology of Vmview
Scheduled	Upgrade Vmview to 5.0
Complete	Councillors VMView Roll Out
Complete	Thin Client Evaluation
Complete	Setup Test / DR VMSphere environment
	DataBase
Scheduled	Decommission VSQ1
Complete	Halley (Archibus) decommissioning
Complete	Fortis Decommissioning
In Progress	Decluster Leeta/Becka and Virtualise Becka
	Server & Active Directory
	Upgrade AD to 2008 Domain Level
Complete	Build RH DC PIPPA
Complete	Build Town Hall DC - KATYA
Scheduled	Upgrade Kamala Server to 2008 R2 (Town Hall Server)
Complete	Upgrade WAGNER DC to 2008 R2 (Riverside Hse Domain Controller)
Scheduled	Upgrade NADINE DC to 2008 R2 (Riverside Hse Domain Controller)
Scheduled	Upgrade ACORN Server to 2008 R2
Complete	Upgrade / Decom Kylie and (Riverside Hse Domain Controller)
Scheduled	Rebuild Pump Rooms Server to 2008 R2
Complete	Health Check Active Directory

	Upgrade AD to 2008
Complete	Max Physical Server Decommissioning (Housing)
Complete	Scully Physical Server Decommissioning (Planning)
	Notes Physical Server Decommissioning (Committee Management)
Complete	File Server Move to P2000 (Storage Upgrade)
Complete	Upgrade Crem Server and Backup
Complete	SCCM onto Servers
	upgrade WSUS Server to Vmware and Server 2008
	Upgrade WSUS for Desktop upgrades
	File Server Volume Shadow copy
Complete	Virtual Server for DFS target (to replace Thelma)
	Mercury Decommission and build new FTP/Wyse Server
	Cisco Network
Complete	Ciscoworks Install
In Progress	Wireless APs on Level 4
Complete	Pump Rooms Switch Upgrade
	Cisco Security Announcement Alerts
Complete	**IP Telephony**
Complete	Call Manager Upgrade (Version 8)
Complete	Spa Centre Contact Centre customisation
	Backup and DR
Complete	Review of Backup
Complete	Upgrade Data Protector to 6.2
	MOSS Backup
Scheduled	Test DR Contract with ICM
	Collate Licenses Keys for DR Contract
Complete	Vmware Backup Agents
	DR agent for Data Protector
	Monthly Restore Tests (Vmware Test Env?)
In Progress	Civica Open Revenues
In Progress	Total FMS
In Progress	Paris Income
In Progress	ActiveH Housing
In Progress	Acolaid
In Progress	IDOX Doc Man
In Progress	CMIS Committee Management
In Progress	Confirm Grounds
In Progress	Databox Spa Centre
In Progress	Express elections
In Progress	Flex
	Monitoring
Complete	Review use of ChangeAuditor
	Security

Complete	Sophos Upgrade
Complete	Brightmail Software Upgrade
Complete	Mailsweeper Upgrade
Complete	Websweeper Upgrade
In Progress	Sophos onto Servers
In Progress	Windows Update onto Servers
Complete	FIPS Compliant VPN connection
	Firewall Security Rule Review
Scheduled	Penetration Testing Review and Schedule test
	RSA Software Upgrade
Complete	ACS Upgrade
In Progress	Sophos Device Control (USB)
In Progress	CoCo Reassessment
Complete	**Fileserver Vision Tasks**
Complete	I Drive moves to Flavia (Fileserver Upgrade)

Complete	**Desktop Vision Tasks**
Complete	Login Script
	Corporate Projects
Scheduled	Exchange 2010 Upgrade
Complete	Touchdown Project (WCC Guest Wireless)
In Progress	Kenilworth Police Station
Complete	Councillors Vmview
Complete	Spa Centre move to Town Hall
In Progress	Councillors Printing
In Progress	Winter poor weather emergency home working
In Progress	Link to the Police from Riverside House
In Progress	Contact Centre - WCC Bedworth Connectivity to WDC
Complete	Night Noise Tean acces from Justice Centre

Appendix 5 – ICT Strategy Actions

Ref.	Business Initiative	Technology	Action
001	**Agile Working**	Remote Access, VDI, Telephony	To continue to rollout agile working technology
002	**Digital by Default**	Content Management System (CMS)	To assist in the review and implementation of a new CMS system.
003			To support the implementation of the Council's Channel Strategy
004		Mobile, Digital TV	To assist in the review of mobile and Digital TV applications, supporting developments where necessary.
005		Text Messaging	To assist in the review and development of text messaging where appropriate.
006	**Partnership Working**	Remote Access	To review the technology and policies required to support partnership working.
007	**Systems Thinking**		To provide technical support and to contribute to business process change in support of Systems Thinking interventions.
008	**Investing in our People**		Undertake a training needs analysis to ensure that ICT training is meeting the needs of the business.
009			To promote the use of 1-2-1 training to maximise the Council's investment in ICT and to reduce support demands.
010	**Governance**		To work with the ICT Steering Group to develop a corporate approach to evaluating and prioritising ICT projects based on business and customer service criteria.
011	**Business Continuity**	Backup Software	To undertake an annual Business Continuity test.
012			To update ICT business continuity plans as appropriate.
013	**Security**		To undertake an ISO27001 gap analysis.
014	**Green ICT**		To continue to review and promote 'Green ICT', specifically paper and power reduction initiatives

015	**Technology Developments**	Cloud Computing	To review the potential benefits of Cloud Computing prior to the commencement of the next cycle of major infrastructure investment.
016			To evaluate tactical opportunities to place applications in the cloud where business demand exceeds the provisions of the Council's corporate ICT SLA.
017		Open Source	To review the cost benefits and operational implications associated with the introduction of Open Source software.
018		Desktop	To review the future direction of desktop applications and delivery with a view to increasing flexibility while driving down support requirements and total cost of ownership.
019		Virtualisation	To continue with the existing server virtualisation programme
020			To extend the use of virtual desktops within the Council.
021		Telephony	To identify and implement an improved telephony service offering for home workers.