CITY OF YORK COUNCIL

Information and Communication Technology Strategy 2008 – 2012

A five-year vision for the use of Technology in the City of York Council

1 What is an IT Strategy?

The IT Strategy for City of York Council explains how we intend to use technology to support the organisation in the delivery of its strategic objectives. Five years is a long time in IT so this strategy will need to be regularly reviewed to ensure that it continues to be relevant and responds to changes in both technology and organisational priority. It sets out:

- The Vision we want to achieve, set out in 5 core objectives
- An explanation of how CYC intends to develop and introduce blocks of technology. Each block has been grouped under one of the 5 themes. Some technologies will deliver against more than one of these themes
- The technical architecture we will build to deliver this
- The governance structures that we will put in place to manage this
- The organisational model we will develop to support and implement this

2 Vision

The new IT strategy has five simple themes. They are the main drivers for further IT development.

1. Use technology to improve the efficiency and effectiveness of Council Services and the internal working of the Council

2. Use technology to make services easy to access, high quality and efficient, effectively managed, and responsive to the particular needs of individuals and/or Customer groups.

3. Develop our IT Infrastructure to support the move to a new headquarters

4. Use technology to make CYC a more sustainable organisation

5. Use technology to forge stronger working relationships with our partners, to enable the sharing of information and improve joint service planning commissioning and delivery.

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1 Use technology to improve the efficiency and effectiveness of Council Services and the internal working of the Council

3 System Replacement and consolidation

Issues

IT Systems deliver the specific business functionality required to support and sustain effective customer and business service delivery.

The upgrade or replacement of these key IT Systems can be driven by legislative changes, system support being discontinued, changes in business requirements that cannot be met by the old system, inability to integrate the system with other key IT Systems or components or an opportunity has been realised for System consolidation.

Objectives

- Develop a forward looking IT System replacement programme.
- Deliver the approved and funded replacement projects to replace key internal IT Systems such as Financial (FMS) HR and Payroll (Delphi) Management Systems, Social Care (Frameworki) System and Home Care monitoring.
- Migrate and consolidate ageing IT Systems onto new corporate platforms where applicable as they become redundant.

4 Business Process Re-engineering

Issues

Easy@york has made significant progress in transforming our customer contact and the York Customer Centre now provides a single point of customer contact for 16 services with more services coming on stream as part of the second phase of the programme. However we still have a large number of services that are delivered in silos and face to face contact remains largely unchanged. We are increasingly reliant upon IT systems for all aspects of our contact with customers and yet these systems are often implemented without due regard to the process changes that are needed to make the most of the new technology. This can result in poorly optimised processes giving rise to post implementation service problems. Internal and external facing business processes have evolved over time, often to feed a performance measurement framework which distorts the actual objective of the system and process.

Objectives

- Undertake BPR alongside the introduction of major transactional IT systems to ensure we deliver efficient transactions and make the most of the investment in IT systems.
- Establish an approach to developing Business Intelligence within the organisation.

5 Business Intelligence

Business intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help make better business decisions.

Issues

Local Government has a long established need to provide accurate timely and meaningful reports on performance and outcomes achieved. It also has a growing need to understand the varying needs of its customer groups and use this intelligence to plan and personalise service delivery and shape the place in which we live. The Council holds vast amounts of data; some of it structured, in hundreds of databases, much of it unstructured in word documents and spreadsheets. We need to be able to ensure the quality of the data we hold, interrogate this information to report on our performance, and mine this data to provide a view of our communities and our locality that will enable better decision making, better use of our resources and improved service planning and delivery.

The activity of Performance Management within the council is time consuming and not all service areas have sufficient access to timely, meaningful, accurate performance data. It is hard to combine data from different sources.

Objective

- Implement a Business Intelligence platform to enable us to warehouse performance data and interrogate the data to provide accurate and meaningful overview of performance. This should involve the ability to combine related data, to model the impacts of changes on the performance of services, create dashboards, set thresholds and targets, drill down into supporting data where further investigation is required.

- Take a phased approach to rolling out a Business Intelligence platform, starting with improvements to the quarterly corporate performance monitor and the monthly performance dashboard.

- Develop Business Intelligence skills within the authority to apply across different data sets.

- Develop an informal community of performance management experts who can promote the use of Business Intelligence within every service area.

- Use Business Intelligence as part of the service planning regime to identify areas for improvement/disinvestment.

6 Geographical Information System (GIS)

Issues

Geographical Information Systems use spatial data and plot data onto maps so that it can be graphically represented. We currently use GIS is many areas of the Council for diverse purposes from mapping flood plains, displaying planning applications through to logging the location of an abandoned car or mapping the most direct route for a home to school taxi ride.

The Current CYC GIS strategy identifies the need to build a single corporate GIS system based upon the Arc GIS suite, migrating away from number of other GIS systems we operate. This

would enable us to build a single repository for map layers and to develop the capability to share GIS data layers. This would ensure the accuracy of spatial data and mean that we could share and compare different data sets so that we can exploit the volume of spatial information that we now capture. We have made good progress in establishing an accurate corporate system which sits at the heart of the Planning and Building Control System and feeds the Customer Relationship Management (CRM) system. We use maps on the web site to display location information and capture co-ordinates of service requests.

However, we have still to decommission other GIS systems and we have not established a single repository for spatial data that is easily accessible when needed. Developments in GIS technology have also provided new challenges such as the development of 3D modelling techniques provides opportunities for technical design teams.

Objectives

- Undertake a review of the Current GIS Strategy and explore 3D modelling tools.
- Decommission non Corporate standard GIS solutions and replace with corporate standard.
- Develop a repository for GIS data layers with internal web based view access, controlled by appropriate permissions.
- Develop the GIS used on the internet to be more functionally rich.
- Develop method of sharing spatial data with partners.

7 Integration

Issues

The Integration of information between different IT Systems is now essential for effective delivery of local government services. This is driven by a need to join up services to customers, understand their specific needs, deliver more efficient business processes and better value for money. We are capturing information once and using it many times. Technology plays a vital part in this by enabling automated transfer of information from one IT system to another, with the application of workflow and business rules to make sense of that data when it is imported into another system. This enables us to create a better customer experience (more effective) and more efficient (reducing duplication on data entry and automating stages within a transactional process).

Traditionally, integration technologies were applied system by system through a series of point to point interfaces or data extracts/imports. This is unwieldy and unresponsive because the data flows are not in real time and cannot be programmed to apply any business logic. More recently, the use of middleware solutions has enabled a hub and spoke architecture to develop, which has vastly increased the flexibility of the solutions and reduced the number if individual interfaces which need to be procured and maintained. It also enables business rules and workflow to be applied which increase the effectiveness of the integration. CYC have been using Middleware (Biztalk) for the last two years to link the CRM to back office systems and to the web. We have now developed a dedicated team to develop the integration platform, as this is by far the cheapest way of developing and supporting our integration requirements. This platform will be important to the delivery of more efficient business processes and for the development of improved customer insight data.

Given the complexity of the technical environment we have, it is not possible to mandate a single integration method. This could be very expensive and constraining. Our strategy therefore needs to be based upon a business case appraisal of potential integration methods and the application of the guidelines below.

Objectives

- Continue to develop our hub and spoke architecture and wherever this is cost effective and technically possible.
- Use 3rd party adapters where possible.
- Develop bespoke integration requirements where this is the most cost effective delivery method.
- Only use point to point integration where other options are too expensive or not technically viable.
- Explore the use of "light" integration tools that will provide simple data handling functionality for systems where a full blown adapter based solution would be too expensive.
- As we procure new systems replace old data extracts/imports with new integration solutions.
- Continue to develop internal the skills to maintain and develop the environment.

8 Internal Processes

Issues

CYC have concentrated significant energies to redesign many customer facing business processes. Internal business processes are however largely paper based and outmoded. From paper based recruitment, invoice processing, leave authorisation and sickness absence forms through to paper based requisition forms for new IT equipment, the internal transactions of the Council are ripe for modernisation and improvement. The use of electronic forms, document management and workflow accompanied by major system replacement will improve efficiency reduce time spent on administration and reduce costs. There are however links between these changes and the organisation will need to manage internal change across directorates to ensure continuity of service and achievement of the broader benefits.

Objectives

- Replace key internal systems, Financial Management System, HR & Payroll system.
- Introduce an e-recruitment system.
- Implement corporate Electronic Document and Records Management System (EDRMS) system to scan paper and workflow to the appropriate staff**.**
- Re-engineer business processes around these systems to rationalise activity, increase speed of processing, improve management informa**ti**on and reduce cost

- Develop appropriate cross project controls to ensure that the organisation has the resources to implement change in a controlled manner

9 Intranet

Issues

The Council was an early adopter of intranet technology back in the 90's. However despite a number of re-launches, the current CouncilNet no longer meets the needs of the organisation. The user experience is poor (design, navigation, searching, functionality, usability) and it does not support modern functionality like e-forms, personalisation, video, chat forums. The support burden is also large as it has no managed content management functionality and is running on an unsupported platform.

There is also a tendency to view the current intranet as little more than a document repository. With the move towards true Document and Records Management under the EDRMS project, it is vital that the intranet is repositioned as:

- The primary communication and information-sharing channel for CYC
- A thin, narrative layer above the EDRMS and similar systems, allowing contextual and value-added access to information and applications.
- Enable a search engine to locate documents on both the corporate file store and on the intranet
- The portal through which to launch corporate applications such as e-recruitment, HR processes and procure to pay solutions

This will greatly assist the drive towards better inter-directorate working and provide the platform for new, business-facing self-service applications and corporate information-sharing processes delivered by future easy@york and IT development streams.

Objectives

- Build and deploy a CMS-based, visually engaging and narrative-driven core corporate intranet.
- Redevelop the Phone Directory and Bulletin Board facilities with enhanced interfaces and functionality.
- Deliver a new enterprise-wide search facility capable of permissions-sensitive, cross-system indexing.
- Deliver new tools (for example alerts, updates, blogs and so on) to stimulate inter-team communications.
- Develop a logical, robust and flexible intranet content taxonomy, navigation structure and publishing workflow/policy.
- Drive uptake of the resource and migration/population of content through both off- and on-line awareness activities.
- Provide an extensible platform for future intranet-facing content and application development.

2 Use technology to make services easy to access, high quality and efficient, effectively managed, and responsive to the particular needs of individuals and/or Customer groups

10 Customer Relationship Management

Issues

Customer contact occurs in many places across the Council, using many different channels, e.g. face to face, phone, internet and white mail. With the inception of the easy@york programme and the establishment of the York Customer Centre (YCC) this contact is increasingly focussed through one single point of customer contact. In order to manage this contact, a CRM is used to record customer contacts and then to workflow customer transactions throughout the organisation to effectively deliver services to customers. The CRM captures a full trail of activity so that progress can be reported.

The CRM acts as a single repository for Customer data and provides extensive management information to tell us who our customers are, where they live, what services they are requesting, where. This information is partial as only certain services are currently delivered through this route and the links needed to automatically flow changes of address from one system to another need further development.

The CRM is integrated with other customer facing technical components, such as the web site, a payment engine and a booking engine, and with existing back office systems that hold more comprehensive records for a range of Council Services (Planning system, Council Tax and Benefits System). It uses e-forms to capture customer information, apply business rules and flow the request for service through to the most appropriate member of staff to handle the request. The E-forms can be used both internally by customer facing staff or externally by customers themselves via the web site. This self-service functionality is growing rapidly and is both convenient for customers and highly cost effective. The integration with back office systems enables us to automate certain business transactions so that following the initial customer contact, if all the information has been captured and business rules can be applied, no further intervention is needed from a member of staff and a transaction can be completed automatically (e.g. a change of address for Council tax).

This solution was developed with private sector providers but is now being developed internally which is much cheaper and more responsive.

Objectives

- To exploit the integrated CRM architecture as part of easy@york Phase 2 to include more services.
- To further expand the self service channel to enable customers to use the web for more services.
- To use our integration solution to dynamically link data held in back office systems with a single customer record in the CRM so that we can deliver joined up services (e.g. change of address) and interrogate our management information to plan service delivery more effectively.

- To expand the range of our customer data so that we can develop better customer insight, understand the different requirements of our customers and understand their equalities profile.

- Where desirable and feasible, make more use of our integration capability to increase the amount of automated transactions.

- To become self sufficient in the development and support of the systems in order to constantly develop and maintain this infrastructure in an affordable way.

- Develop a comprehensive Performance Management framework for customer services to enable effective measurement of customer metrics.

11 Accessibility

Issues

The CYC Customer Strategy sets out our objectives to increase accessibility of services for customers by increasing the range of access channels, increasing the hours of possible access and making these channels easier to use. This is brought about largely by effectively designed services, technology can play a part in improving this but in turn can be a barrier to access in itself. If not well designed, the web presence can be hard to use e.g. for people with a visual impairment.

Technology can provide more information and access to services 24/7 through the web, it can ensure that all channels of access are captured and handled effectively (e.g.CRM, telephony and Document Management). In order for the organisation to offer services over an extended time window, ITT services need to be available. This means that the opportunity for taking back ups of data and undertaking out of hours maintenance and upgrade work will be much shorter.

Objectives

- Use the customer facing telephony solution to increase the volume of customers who get through to the correct person/service.

- Use CRM/Electronic Document Records Management System (EDRMS)/Web site to capture all types of customer contact and ensure that we are able to handle all channels of access effectively.

- Provide 24 hour a day web services.

- Explore the feasibility and cost of extending the availability of IT systems to support extended hours of customer service.

- Ensure the web Site complies with best practice accessibility standards W3C and AA and where possible meets the higher AAA standard.

- The web site should be accessible to people with visual impairment through the use of text reading tools such as Browsealoud and should offer translation and interpretation services.

12 Customer Consultation & Engagement

Issues

The Council is developing a Consultation and Engagement strategy as part of its Single Improvement Plan. Part of this plan will be to join up and simplify our consultation activities to make them more consistent and more useful. Surveys such as the new Place Survey will form a core data set that other consultations will need to link to this then add levels of detail ??. We will seek to reuse important opinion data from customers. We will also seek to capture customer views across a range of channels and then make this electronically accessible.

Objectives

- Increase the use of the online consultation system.
- Increase the use of the internet to feedback on the results of consultation.
- Use the EDRMS to scan and interpret paper questionnaires.
- Develop an easily accessible indexed repository for any customer consultation that we undertake so that we can reuse and cross correlate customer data and customer views.
- Build a core Customer data set that can be used to cross correlate with particular consultation exercises to increase customer insight.
- Consider using the YCC/CRM to instigate out bound phone based consultation exercises.

13 Web 2.0

Issues

The CYC web site was redesigned in 2007. It has a strong Content Management System (CMS) that enables departments to keep content refreshed and up to date. It is structured using the Local Government Services List (LGSL), a formal taxonomy that structures the information on the web site. The web site hosts a significant amount of transactional capability and is well used.

The next generation of the WWW is Web 2.0. This is not a piece of software but an approach to the use of the web that moves away from a focus on information provision towards facilitation of collaboration and informal networking. Our strong transactional focus reflects this trend however, after only 2 years, the design of the site is already looking slightly old fashioned, the search engine is inadequate, key content is missing and we do not carry multimedia content or enable informal social networking.

Though Local Government has been slow to adopt Web 2.0, it presents one way in which a local council could become more transparent, accountable and possibly increase citizen/customer perceptions of trust, by utilising Web 2.0 technologies to enable the voice of the community to be heard. This promotes the ideals of citizen empowerment, as endorsed by the recent CLG White Paper 'Communities in control: real people, real power'. One emerging trend is where councils are using Web 2.0 to engage with a wider demographic. By using social networking and social media sites such as Facebook and YouTube, they can engage with a

younger, harder-to-reach audience who would not normally read council publications, and it is a lot cheaper than other alternatives.

There is also a move away from a formally structured taxonomy towards a “folksonomy”. This allows the users of the site to tag the content using words that are familiar and appropriate to them. This helps with finding content but would also give is a clear idea of what customers are actually looking for. These tags can be displayed in tag clouds like the one below which create maps of the web site structured according to the frequency of content use.

Objectives

- Undertake a redesign of the web site to keep pace with changing styles and technology possibilities.
- Implement an off the shelf search engine to give better search capability across the web site.
- Increase the amount of online transactional capability alongside the roll out of easy@york phase 2.
- Directorates to review their content, consult with focus groups about what customers want to access and then improve the quality and volume of information available.
- Use Web 2.0 to enhance the user experience by making it more customer focused, usable and interesting.
- Consider how Web 2.0 might be used to improve the appropriateness and searchability of content.
- Trial the use of commercial social media websites such as Facebook and YouTube to reach out to a younger demographic.
- Trial the use of social networking or online community techniques within councils' own web services to directly engage with citizens.
- Consider use of third-party websites which use interactive or peer-to-peer techniques to try and improve public services, such as Google Pinpoint map functionality.
- Consider allowing employee access to social media websites for learning, sharing and facilitating connections with similar domains of interest. The impact that this would have on the corporate network must be considered, as would any policy required to control this.

14 Telecare

Issues

Telecare is the continuous, automatic and remote monitoring of real time emergencies and lifestyle changes over time in order to manage the risks associated with independent living. There are a range of devices which can be used in the home to predict problems, prevent problems or mitigate harm in the event of an emergency. Devices include movement and fall sensors, lighting sensors and exit sensors. Combined with telehealth which is the remote exchange of physiological data between a patient at home and medical staff to assist in diagnosis and monitoring, it is expected that technology will revolutionise social care in the future. CYC are currently piloting telecare in the homes of over 200 older people and this has already reduced clients' anxieties and helped people stay independent.

Telecare devices are monitored through our Warden Call system which provides a manual alarm service for almost 3,000 vulnerable customers.

Objectives

- Expand the pilot of telecare by 100 customers per year over 5 years.
- Expand the central Warden Call system to incorporate extended telecare and ensure it is robust and future proofed to enable real time monitoring and response.
- Explore links with the Primary Care Trust (PCT) to share infrastructure to enable the delivery of joined up telecare and telehealth arrangements.
- Explore the provision of telecare functionality in our own sheltered accommodation and in that of other housing providers, using wireless technology as well as the wired technology used for Warden Call.

3 Develop our IT Infrastructure to support the move to a new headquarters

15 Network.

Issues

The corporate data network is made up of three interconnected networks. The Corporate Network, delivering voice and data services for the Council, is delivered by an outsourced managed service, the second delivering broadband services for Schools and Libraries is delivered by a separate outsourced contract. The third network, delivering our Urban Traffic Management and CCTV services, is managed internally by the City Strategy and is separate and independent of the CYC IT department.

In preparation for our move to a new Headquarters and the rationalisation of the network that this will entail, we are re-tendering for a combined managed service for all three networks. This will entail a technology refresh to ensure that the new network is rationalised, remains resilient and secure and is fit for purpose for the next 7 years when higher bandwidths will be needed to

deliver faster speeds of delivery for bandwidth hungry applications such as streaming of multi media web traffic, video conferencing and IP CCTV.

The delivery of a secure, high availability, fully integrated, converged and high performing network is a key requirement across all the business areas within CYC. A strong network backbone ranks alongside the Citrix Server Farm as probably the two most important elements of CYC's IT Infrastructure and ICT service delivery.

Nationally Central Government is driving authorities to connect to its own Government Secure Intranet (GSI) through the Gov Connect Portal. This requires Public Sector bodies to comply with security standards to enable us to share electronic information and services with central government and other partners. In the future it will also make it easier to share information securely with other public sector partners such as the NHS and Police. This means that our network needs to be more secure than it has ever been.

Objectives

- Rationalise the number of different managed and unmanaged service contracts and optimise the network provision under a single managed service contract, with a single Supplier, to realise a number of benefits including:
    - Enable economies of scale to be achieved by rationalising and optimising on network infrastructure, thereby improving more effective utilization and delivery of services.
    - Provision and support of a new WAN infrastructure capable of meeting the Council's short, medium and longer term needs.
    - Provision and support on the new infrastructure required within the new HQ capable of facilitating flexible ways of working.
    - Provide an expanded converged network as the core telecommunications infrastructure that is flexible and capable of transporting different services across the same medium to enable core bandwidth to be optimised and connectivity improved.
    - Provide the network infrastructure to implement and deliver new technologies and services for the benefit of citizens, staff, elected members, partners and visitors to the City.
    - Deliver a network performance that exceeds the day-to-day needs of CYC and does not restrict or inhibit the performance of individuals or departments.
- Establish a network to support technologies which are currently available but which the existing network cannot support such as the streaming of multi-media traffic or video conferencing and new evolving technology such as IP CCTV and UTMC technology.
- Develop a more advanced network topology to provide a more resilient network.
- Where possible aggregate the bandwidth requirements of our partners to deliver a Value for Money proposition
- Establishing secure connections to relevant networks such as Government Connect.

- Continually review and enhance network security to ensure the integrity and availability of CYC information and Business applications.

16 Telephony

Issue

CYC already have a strategic telephony solution which uses Voice over IP (VOIP) to carry both voice and data signals on the same physical network infrastructure. We have over 2,700 handsets over a converged network that enables zero cost internal calls even when across the many different sites we have within CYC.

In addition we have implemented a specialist Contact centre telephony solution which includes Interactive Voice recognition, speech recognition solutions. This is the core platform for or our customer facing telephony services

Objective

- Continue to develop, expand and enhance the capabilities of the strategic telephony infrastructure (Voip) to support the business needs and facilitate new ways of working linked to the move into the new HQ. This will include,
    - Audio conference calls - handsets allow additional callers to be brought in to a call.
    - Tele Worker – the ability to have a CYC handset at home communicating over the home broadband connection providing the end user with the same telephony features as the office based work force.
    - Voice Mail – electronic answering phone facilities.
    - Follow you/follow me - the ability for users to inform the telephony solution that they are working from a different location so that they can still receive calls to their desk based extension number.
- Continue to expand the use of IVR?? and speech server telephony within the York Customer Centre (YCC)
- To develop automated and integrated processes to improve the management of user changes (e.g.: starters, leavers) to help provide a platform to enable more effective communication channels for the organisation and to enable effective and efficient control of telephone based information.

17 Unified Communications

Unified Communications (UC) – a system to manage communications channels and facilitate collaborative working.

Issues

The art of communication in the workplace is changing as staff now have a diverse range of communications tools and applications at their disposal, such as IP telephony, mobile phone, voice-mail, e-mail, and instant messaging (IM). Managing all these voice and data

communications types can be a complex and time consuming task for staff and the organisation.

The emergence of different worker styles like mobile, home based and flexible working is increasing the reliance of effective and productive communication through the many different forms of contact we now have available.

This mixture of worker styles and varied communication channels is also creating the need to increase collaborative working between colleagues, departmental and across the high number of business areas within CYC.

Objectives

- Implement a Unified Communication system integrating with existing CYC technologies that can increase productivity and business effectiveness and deliver real-time collaboration across the organisation by providing:
    - Collaboration tools including on line file and application sharing.
    - Enhanced telephony presence and control that will enable users to manage their communication channels more effectively.
    - Presence awareness - Enabling users to 'see' when individuals are available over the network. Such presence technology provides the power to reach people, almost anywhere when they are available - importantly it gives the individual user the flexibility to control how they want to be reached.
    - Instant messaging – Less formal than email but still auditable and can be tagged to help satisfy Freedom of Information (FoI) requests.
- Deploy the fuller UC software to those users who will benefit from the broader capabilities of the software e.g. Video conferencing to provide front line service or conduct meetings with diverse team/audience.

18 Flexible Working

Issues

As business practices evolve staff need to work in different ways. Most staff are no longer predominantly desk based, spending time in meetings, informal and formal discussions, on site or working from home. As part of the move to the new HQ this natural trend will become a necessity, as we will reduce the number of desks we provide to make the most effective us of our property assets. Different support models, tailored services and tools will be needed to sustain new ways of working and facilitate the move away from a traditional desk based working environment, allowing the user base to work effectively independent of their location.

The changes in working methodologies, patterns and locations will require collaboration and presence tools to facilitate effective communication. Access to information and core business applications from their location of choice or remotely are key requirements for Elected Members and staff.

CYC has already piloted homeworking but only small numbers of staff regularly work from home. More prevalent is informal homeworking where over 800 staff regularly log on from home either for an odd day or on top of their normal working week. CYC has procured a corporate

Mobile working solution that enables the deployment of back office IT systems to a range of mobile devices and it has deployed email and calendars to phones and PDAs for some years.

Objectives

- Use Citrix technology to enable formal and informal homeworking.
- Develop a full range of user profiles to support full flexible working in the new headquarters.
- Expand the hours and cover of ITT support services to meet the changing needs of the user base.
- Reduce the time taken to back up systems at night in order to enable longer operating hours.
- Provide the infrastructure and support within the new HQ to facilitate different working styles – touch down, hot desking and fixed desk working. This will need to be accompanied by the development of HR policies to support flexible working.
- Implement the corporate mobile system (Kirona) to deliver a secure and reliable remote access solution.
- Identify and provide suitable end user devices enabling mobile access to information and business applications.
- Expand the use of council integrated telephony services to sustain and improve the collaboration with the home-based work force.
- Develop video conferencing facilities where benefits could be realised including reducing the need to travel in/out or across the City.
- Develop a range of workforce management tools that will enable collaboration, ensure that staff are able to engage with their office-based colleagues, provide managers with a range of tools for managing a dispersed workforce.

19 Electronic Document and Records Management Systems (EDRMS)

Issues

CYC currently has 7 different EDRMS systems in use, some of which are embedded within back office applications and use workflow functionality to structure business processes and some of which are standalone document repositories.

There is no way of sharing scanned documents across systems or searching these repositories to reliably find documents based on their content. There are 5 million pages of paper documents stored across the Council which require scanning. There is no structured taxonomy of document types which would help us to classify documents and the document retention policy is not adhered to, or understood, preventing staff from deciding which documents we need to keep and which we need to destroy.

When we move to the new and reduced accommodation estate we have made assumptions that there will significantly less storage space than we currently have and we will therefore need

to reduce paper storage to an absolute minimum. This will require the implementation of a corporate wide EDRMS.

CYC is currently partly compliant with both its own Information Governance strategy and the Local Government Records Management Code of Practice which both represent good practice in this area. To achieve this compliance requires better management of all incoming business critical documents and electronic documents generated internally within the council.

Objectives

- Implement a Corporate EDRMS system that has electronic document storage and retrieval, workflow capability, integrates to existing EDRMS and business systems providing a search and retrieval function across all EDRMS systems.
- Update and communicate the document retention policy to identify which documents we need to keep and in what format.
- Develop a corporate taxonomy based on the Local Government Classification Scheme of document types to classify scanned and electronic documents, ensuring appropriate security and retention policies are implemented.
- Establish a centralised scanning service to undertake both back scanning and white mail scanning activities ahead of the move to a reduced accommodation estate.
- Back scan existing paper documents that are in use within the council, prioritising areas where we have large volumes of business critical paper records.
- Use workflow tools to pass documents through to the right staff at the right time as part of improved business process.
- Gradually migrate old EDRMS systems onto the corporate platform as they become redundant.
- Link the EDRMS to the Internet CMS so that we can automatically push appropriate documents from the EDRMS straight onto the website rather than duplicating documents in the CMS.
- Gradually increase the scanning of white mail so that by the time we occupy the new and reduced accommodation estate there will only be a small residual postal service.
- Store documents produced within the council in their native electronic form so that they too are subject to appropriate security, sharing and retention policies.

20 Server based Computing (Citrix)

Issues

CYC are now reliant upon the Citrix Server Farm environment to deliver over 90% of the corporate application portfolio. It is a fundamental part of our technical Architecture and it has saved us millions of pounds since it was implemented in reduced desktop hardware and software costs and reduced effort to deploy applications. As desktop equipment has no moving parts it is also a sustainable solution which ensures that we both reduce energy consumption and expand the lifecycle of our desktop equipment. Through Citrix we have been able to use desktop equipment dating back to 1994.

It is also a key enabler to facilitate remote and flexible working within CYC as this a very easy mechanism by which users can gain access to corporate applications and information from any device on the CYC network or remotely across the internet.

The Citrix Server Farm is currently based upon a Windows Server 2000 and Presentation Server 4 platform, and both these technology versions will become unsupported in the near future. Windows Server 2000 Operating System is scheduled to become unsupported by Microsoft in June 2010, however, many software vendors are no longer supporting this operating system, making it difficult to install their software on the platform and this is starting to cause issues and will become more problematic as time goes on.

Any significant failure of Citrix has substantial impact upon users and hence the availability, resiliency and security of this environment is paramount.

Objectives

- Replace the existing server hardware within the Citrix Server Farm and install Windows Server 2008 to provide additional resilience, capacity and functionality.
- Upgrade the Citrix Server Farm from Presentation Server 4 to Xenapp 5 (New name for Presentation Server).
- Enable effective management of the hardware and software being deployed to significantly reduce the risk of failure of the corporate IT infrastructure.
- Proactively manage the capacity of the Citrix Server Farm.
- Ensure all new applications are Citrix compatible. Without this compatibility the applications would need to be installed on Desktop Computers (Type B), increasing the costs and effort associated with every rollout as well as ongoing support and upgrade costs.
- Speed up the deployment of applications across our Citrix Farm and manage interoperability and stability between existing and emerging applications.
- Explore expansion of the server farm to accommodate public access PCs in libraries etc.

21 Desktop Hardware & Software

Issues

Hardware

Due to the adoption of Citrix, over the last five years we have replaced traditional fat client PC's which have an operating system loaded locally with thin client devices. Our desktop is made up

- 54% thin client devices. These are simple devices that have a cut down operating system with a Citrix client built in. They have no hard disk and use only 5% of the electricity of a PC. They can only be used to connect to applications delivered via Citrix.
- 46% Desktop PC's also known as full Fat Clients or Type B devices. They are fully featured desktop computers that can have applications installed on them as well as

accessing Citrix delivered applications. They are more expensive to purchase and support than thin client devices and they also use more power.

There is another device known as the Flexible Client, which is a hybrid solution that has the benefit of the Thin Client device such as low power consumption, lower overall purchase costs and low support costs yet they offer a full operating system that enables them to have IT Systems installed locally where required as well as accessing the majority of IT Systems via Citrix. The Flexible Client approach allows users to maintain access to their application regardless of whether it is delivered via Citrix or installed on the device and brings the ability for the applications to follow the users enabling them to become location independent.

The use of Citrix has significantly extended the life of our existing desktop hardware and many of the devices still in use date back to the last century. This has reduced the cost of replacement. However many of these older devices can no longer deliver the screen resolution required by modern applications and are approaching end of life. CYC's Desktop hardware still varies greatly and this creates a support burden to maintain and extend the life of the hardware any further. Older PCs, printers and monitors have a higher energy consumption and heat output than newer PC's (55-90% greater efficiency than their predecessors) or Thin Client devices (95% more efficient) and are also smaller which means less raw materials are consumed in their manufacture, there is less to go wrong which increases their lifespan, they are cheaper to transport and at the end of their lives there are more recyclable components to process.

We also need to ensure that the hardware that we move into the new HQ is capable of supporting flexible working i.e. users can use any device (with limitations only where they need access to a locally loaded application), with a smaller desktop footprint (thin client devices). At the moment the responsibility for replacing obsolete desktop hardware rests with each Directorate. When we start to work flexibly there will not be a Directorate "owner" of each device therefore we need to explore alternative approaches to ongoing hardware replacement.

Software

We have also reduced the number of operating systems in use but we still have two desktop operating systems and need to migrate off Windows 2000 before it becomes desupported next year. We still have a significant number of Type B users who do not use locally loaded applications and therefore do not need a Type B device.

As part of the establishing the Desktop architecture, CYC need to replace or upgrade its aging desktop Microsoft Office 2000 suite, this includes Word, Excel, PowerPoint and Access that become unsupported in July 2009, after this date no fixes or security updates will be available from Microsoft. Because of the age of Office 2000, compatibility issues are now starting to present themselves. Many software vendors will no longer integrate into Microsoft Office 2000, which limits our choice of suppliers or requires that the application is not installed on our corporate Citrix delivery environment.

Office 2000 has been superseded by Office XP, Office 2003 and now Office 2007. The next version of Office is due to be released 2009/10. Being this far behind in versions can cause issues with usability due to new staff being used to a newer version, additional features not being available, and being unable to open documents saved in Office 2007 native format.

Office 2000 will need to be replaced in the next 2 years. This will be an expensive and disruptive process as the new MS Office products differ significantly and extensive user training will be required. At this point CYC need to consider the option of migrating away from the Microsoft Office suite to an alternative Desktop application set based upon an Open source solution.

Open source software is software where the source code is freely available and as such there is no requirement to pay a license fee for using the software. It is now being considered by a number of organisations. The most well known open source software for use in the corporate environment are Linux, an open source operating system used instead of Windows XP/Vista desktops, and Open Office, an office suite used instead of Microsoft Office.

The main concern when evaluating open source software as a replacement for either Microsoft Windows or Microsoft Office is compatibility and support. IT will ensure that any decisions to use open source software will focus on maintaining the existing interoperability and compatibility that is required with existing applications.

Objectives

- Deliver a desktop experience that is fast, secure, stable, homogenous and meets the needs of customers regardless of location. This will offer a consistent interface and will fully integrate the delivery of applications whilst providing ITT with a complete centralised application deployment and management infrastructure.

- Reduce and consolidate the number of locally installed applications and maximise the centralised delivery of applications through Citrix.

- Ensure the Citrix farm is capable of supporting web technologies such as flash multimedia and streaming video.

- Reduce the requirement for Desktop PCs so that the ratio of Thin-client to Desktop PCs is 70:30 in sites subject to the Accommodation Review and 60:40 across the rest of the estate.

- Explore the potential use of Flexible Client devices to reduce PC usage.

- Remove and replace obsolete hardware and operating systems from the CYC estate.

- To actively support CYC's carbon reduction programme and sustainability goals by procuring sustainable desktop hardware.

- Seek to introduce a centrally funded hardware and software refresh programme.

- Investigate the costs, benefits, risks and impacts of adopting open source desktop software.

- Upgrade from the Current version of Office 2000 before it is de-supported.

22 Data Storage

Issues

CYC have migrated off its old Storage Area Network (SAN) and now use Network Attached Storage (NAS) to store all documents, emails and the vast majority of our system data. We have two instances of the data store for Business continuity (at different sites) and all data is written to both data stores dynamically. We will be extending out NAS capacity as part of the EDRMS project and based upon current usage patterns, we should then have enough capacity for the next 5 years. This is dependent upon some housekeeping and de-duplication.

Due to the previous SAN storage capacity limits, data storage limits were imposed to reduce and prevent the impacts of unrestricted growth that put the availability of the corporate storage service at risk. These enforced limits are causing problems for users and can lead to information being moved off the central storage system to less efficient and less secure forms of storage, an example is the use of email PST files. Storing emails in this format dramatically increases the amount of storage required and information is difficult to locate when responding to business or FoI requests.

Information stored on the central storage system is contained within a folder structure that reflects the different directorates and their multiple departments, and these folders often contains duplicate files and out of date unused documents. Permissions are granted based on out-moded organisational structures (the documents do not move when we restructure) so staff then have to have quite complex access rights to use the documents they need and retrieving documents becomes difficult. The need to share documents between directorates has necessitated a commonly accessible drive (the Z Drive) which can be used to share data but is open to all users. This clearly presents a security risk if this is used inappropriately.

Objectives

- Over time (and in conjunction with the roll out of the EDRMS system) migrate away from the current directory structure towards a subject-based taxonomy, in order to make information easier to find and improve security. This should be used as the opportunity to housekeep unnecessary files.

- Remove the existing storage limits imposed on the users and utilise the inherent storage management technology within the corporate storage system to improve storage efficiency.

- Introduce storage technologies such as single instance storage and de-duplication to remove storage inefficiencies and decrease the amount of wasted storage. These would be transparent to the users and will extend the use of the existing information storage infrastructure.

- Review and migrate the business essential information currently held in email PST files back into the central storage system.

- Provide the robust and agile platform to support and sustain the programme of work so CYC can become compliant with both its own Information Governance strategy and the Local Government Records Management Code of Practice through the EDRMS project.

4 Use technology to make CYC a more sustainable organisation

23 Reduce Power consumption

Issues

We need to become more ecologically aware and reduce our organisational carbon footprint and as ICT contributes 2% of the global CO2 emissions (as stated by Gartner) technology has a part to play in this reduction process.

Objectives

- Undertake Environmental impact assessments before making IT investment and decisions as part of the IT Development Plan and build in Sustainability criteria in to technical specifications and procurement models to ensure that wherever possible we design solutions that are sustainable (cutting down on travel/paper/energy consumption) and procure goods that are as green as can be based upon both their power consumption, their production process and their disposal.

- Implement a phased reduction of printers ahead of the move into the new Headquarters where we will drastically reduce the number of small printers and move to a smaller number of large Multi-Functional Devices (MFDs) which can print photocopy and scan.

- Expand the use of server virtualisation within the IT Data Centre. (see section 6).

- Rationalise the number of desktop devices and consolidate onto more energy efficient thin client terminals.

- Deliver more business applications through Citrix.

- Establish consolidated specialist environments within the new accommodation estate for IT, Urban Traffic Management Control (UTMC) and CCTV services.

- Ensure that the correct disposal of all IT equipment is undertaken and monitored.

- Expand the use of power management tools to reduce energy consumption.

- Encourage staff to turn off devices at the wall/ unplug them when they leave the office.

24 Reduce Paper usage

Issues

CYC are still heavily dependent upon paper-based communication. Customer contact still has a significant element of paper correspondence and many business processes are based upon paper forms. Though we have reduced the volume of paper disseminated internally there is still a lot of paper moving around the organisation, we still employ paper in the fulfilment of most of our internal process (HR, finance and even IT requisitions).

Objectives

- Developing managed centralised printing solutions to incentivise reduced paper usage, energy consumption and support effort.

- Charge for printing based upon the number of pages and the quality of print used.

- Implement corporate EDRMS to reduce copying of documents across the organisation.

- Implement mobile working technologies to remove the need to print out information for people working in the field.

- Implement electronic collaboration tools that will enable staff to share access to documents without printing them out.

- Migrate customer contact from white mail channel to self service and phone channels.
- Make internal processes paper free through the use of electronic forms e.g. expenses claims.
- Establish an electronic library of journals and publications to reduce the number of copies needed.
- Increase the amount of information available on the web and thus reduce the need for printed leaflets.

25 Reduce staff and customer travel

Issues

Thousands of customers visit a range of CYC sites every year. The majority of CYC staff travel to work every day and many staff then travel from a central base to other locations to actually undertake their work. The majority of these visits/journeys will produce a carbon emission. Technology can radically reduce the amount of travelling required by removing the need for the face to face customer contact, enabling staff to work from home (homeworking) or from convenient touch down points (flexible working) or by enabling staff to access systems and information from wherever they need to be (mobile working).

Objectives

- Increase the availability and quality of the phone and internet channels for customers to prevent unnecessary customer visits (though this needs to be balanced with the need to provide customer choice and the effectiveness of the face to face channel for some transaction types).
- Use Citrix technology to enable formal and informal homeworking and reduce the number of staff journeys to work.
- Develop Mobile working solution to deploy information to staff wherever they are to prevent having to come back to the office to be given jobs.
- Enable staff to work from wherever they need to be thus reducing travel (see section 3 on Flexible Working).

26 Procure sustainable hardware

Issues

In addition to operational based actions to reduce our carbon footprint, we can also reduce the environmental impacts through our IT procurement activities.

We need to ensure that all our procurement documentation specifies our environmental criteria for IT in line with advice being developed by the OGC Centre of Expertise in Sustainable Procurement. It should be noted that procuring environmental friendly hardware could attract higher costs.

Objectives

- In conjunction with the Corporate Procurement Team develop pre-procurement evaluation criteria that incorporates sustainability impacts.

- Ensure that all our procurement documentation specify environmental criteria for IT in line with advice being developed by the OGC Centre of Expertise in Sustainable Procurement.

5 Establish the infrastructure to enable and develop working relationships with our partners to enable the sharing of information and improve joint service planning commissioning and delivery.

27 GovConnect

Issues

The need to ensure maximum security of data has always been critically important to CYC. Following several high profile data losses within Central Government this issue is now of concern to the general public. Central Government are pushing strongly to get local authorities connected to the Government Connect Extranet (GCSx) as a trusted partner. This will allow each authority to upload and download data securely and to make use of other capability such as

- Safer, more secure transfer of information.
- Secure email.
- Secure browser access to central government applications and databases, e.g. Housing and Council Tax benefit administration data.
- Joint Working e.g.
    - Trading Standards - Ability to securely access Joint Asset Recovery Database and Moneyweb from a local authority desktop will enable financial claims against the criminal asset database.
    - Youth Justice - Establishment of secure connectivity between Youth Justice Board (YJB) and local authority based Youth Offending Teams (YOTs) for secure access to and exchange of data.
    - Crime, Community Safety and Child Protection - More secure, reliable and timely exchange of data between the Police and local authorities via email across GCSx.
    - Health, Children's Services and Adult Services - Ability to securely share information with anyone on NHS.net such as GPs via email over GCSx and replace existing paper based methods of information exchange.

In order to become a trusted partner, each authority must sign up to a Code of Connection and ensure that it meets a broad range of stringent security measures. This covers the whole network and any homeworker connections to that network. The implications for CYC are not huge as we have a relatively secure network infrastructure and the use of Citrix means that our homeworking arrangements are already compliant. We do however need to tie down our email auto forwarding (this affects Schools and Members) and we need to remove access to

removable media (USB sticks and CD writers) for some groups of staff and be able to encrypt data copied to these media for all others.

Many service areas are

Objectives

- Ensure compliance with the GovConnect Code of Connections and subsequently establish the connection.
- Maximise use of the facilities available over GovConnect.
- Implement the capability to encrypt data that is taken off site on any media.

28 Information Sharing

Issue

There is a growing need to share information with external agencies, with LSP partners with Central Government and with the NHS and PCT. CYC currently has a series of information sharing protocols that set a framework around each partnership but we do not have a joined up approach to the information management of the relationships with partners nor do we have particularly well developed arrangements for actively using shared information to develop better services or better understanding of our customers, though there are pockets of excellence. The use of GovConnect will help improve the security surrounding information sharing and ensure that the infrastructure exists to support future data sharing. CYC need to:

Objectives

- Ensure that data security protocols and technical solutions have are in place before any data sharing takes place
- Ensure that all staff are trained and aware of the Information Governance/Security policies and that compliance reviews are undertaken at a service level.
- Identify a governance mechanism to oversee the development, implementation and review of any interagency information sharing protocols.
- Develop the infrastructure to Support the Care Assessment Framework /Single Assessment Process by enabling Voluntary sector, health and housing providers to share appropriate customer information.
- Personalise social care - create the capability to establish secure, shared information repositories that can hold information from many agencies on the services that are available to customers.

29 Sharing Systems

Issues

As we develop partnership working and Shared service delivery, there is a need to access systems hosted by our partners and to enable access to our own systems to non-CYC personnel. The solutions in each area are dependent on the needs of the partnership and the

set up of both partners, therefore we need to develop information protocols, access methods and support arrangements on a case by case basis. Examples of current system sharing are: -

- Schools – who will come across the shared Broadband network with Citrix Secure Gateway to access financial and HR systems and corporate email and intranet.
- NHS Trust – Hard wired network connection and access through Citrix Secure Gateway so that staff can access both CYC and NHS systems.
- Audit Shared Service – access across the Internet using Citrix Secure Gateway to a full Citrix desktop, the Risk Management System, and file storage.

Objectives

- Establish delivery mechanisms and protocols for partnerships as the need arises.
- Ensure that all users accessing CYC systems are signed up to our CYC policies and there is an agreed escalation route deal with any failure to comply.

30 Shared Services

Issues

Shared service arrangements will bring a range of challenges for IT. They may mean that:

- CYC need to deliver IT systems and support to other agencies.
- That CYC may no longer need an IT system to support a particular service if this is delivered by another agency.
- That CYC may use the IT system of another agency to deliver its own services therefore we would need to deploy an application over our infrastructure that is hosted elsewhere.

CYC are not currently active in many shared service arrangements but is likely that this will change in future.

Objectives

- To ensure that our IT infrastructure is capable of expanding/contracting to meet the needs of any future shared services arrangements.
- To deliver the IT needs of the current Audit Shared service.
- To prepare a business case for a potential future Integrated Transport Shared Contact Centre.
- To explore the possibility of offering CYC IT services as a shared service or taking IT services from other agencies
- To explore the possibility of shared service delivery of a new HR/Payroll system as part of an open system replacement tender.

6 Technical Architecture

31 Architecture

It is important for CYC to have a clear vision of the technical and information architecture that it is developing in order to ensure that it is able to deliver the diverse requirements of its customer base. This is the overall design of the IT infrastructure that should set out the key building blocks of our infrastructure and the approaches we will and won't take to future developments. It should provide a map of the enterprise wide technical environment to deliver and sustain business and technological change. IT being an industry of change, this architecture will have to flex and change to reflect new developments.

The Current Technical Architecture is set out both in the section below or in the 5 sections setting out our Strategic Objectives.

The focus of the architecture should be to develop and implement a coherent and consistent set of technologies that will provide CYC with a robust but agile foundation that will be the base upon which projects and development activities can be implemented to achieve the key service transformation and organisational change agenda's.

Our architecture needs to be

- Agile.
- Flexible enough to embrace change and development.
- Secure
- Vendor independent.
- Component based with re-usable or expandable core elements to reduce complexity and support.
- Robust enough to deliver business critical services but with sufficient agility to respond to the changing demands.
- Components and solutions that are sustainable in terms of their deliverables and support implications within resource limitations.
- Based upon industry standard technologies where necessary.
- Built upon modular and interoperable components.

32 Security

Issue

ITT have made good progress within its security provision through the previous ITT Strategy and its continual service improvement regime. This has increased the levels of protection to

the integrity of the Council's IT Systems, information and hardware and has been achieved by implementing a range of solutions including:

- An automated anti virus and operating system patching regime to protect servers and workstations from malicious attack that would prevent or restrict user access to essential information or IT Systems.

- A secure email system that enables confidential information to be sent from CYC users to agencies or other recipients without risk of interception. This is especially important for the transmission of, for example, Child Protection and financial data where the content of the e-mail is of critical strategic or legal importance and must be sent with highest possible security.

- The use of Citrix which delivers applications without needing to store data on the device.

- Key network infrastructure components have been upgraded and added to help provide a platform to facilitate the effective control of the data traffic between external partners/3rd party providers and CYC.

In addition to technical security solutions, there is a requirement to implement clear auditable usage policies in place to help support provide IT security governance.

CYC have a number of different policies covering IT security governance issues that require a review, update and consolidation exercise supported by a training and communication process to raise the profile and awareness of IT based security within CYC.

The requirements of remote, mobile and flexible working practices increases the use of portable media devices, such as memory sticks, DVDs and CDs etc. This creates a higher security risk of data/information loss but the balance between security and with the requirements for 'agile working' must be retained when implementing IT based security solutions and reflected within the revised IT security governance policies and technical solutions.

Objectives

- Introduce an encryption solution to ensure that all removable media (memory sticks, DVDs, CDs, memory cards, mobile devices such as laptops, PDAs) is encrypted and can only be read using a password. The solution will integrate to Active Directory to apply security controls and will be flexible, robust and be as transparent to the user as possible This will ensure that if any device were lost, the data on the device would still be secure.

- Review all associated polices to incorporate into one Information and technology usage policy. This will incorporate the Electronic Communications Policy, the IT Security Policy and the IT User Guidelines. This will be supported by a communications plan and a training plan. Compliance will need to be audited.

- Revise the Laptop password regime. The passwords on laptops are set to allow sharing of the devices amongst teams. Password integrity needs firming up and bringing into line with Domain password policy.

- Increase complexity of password. The minimum complexity of user passwords will be increased to 7 alphanumeric characters; this will further reduce the chance of network access being compromised.

33 Enterprise Application Integration to Service Oriented Architecture

Issue

Enterprise application integration (EAI) is the process of linking such applications within a single organization together in order to simplify and automate business processes to the greatest extent possible, while at the same time avoiding having to make sweeping changes to the existing applications or data structures. In the words of the Gartner Group, EAI is the "unrestricted sharing of data and business processes among any connected application or data sources in the enterprise".

The majority of Public Sector applications from enterprise wide CRM systems to back office single line of business systems, typically cannot communicate with one another in order to share data or business rules. For this reason, such applications are sometimes referred to as information silos. This lack of communication leads to inefficiencies, wherein identical data are stored in multiple locations, or straightforward processes are unable to be automated. If integration is applied without following a structured EAI approach, point-to-point connections grow across an organization. Dependencies are added on an impromptu basis, resulting in a tangled mess that is difficult to maintain.

CYC have already developed an EAI approach as set out in section 7. This has many advantages: -

- Real time information access among systems.
- Streamlines business processes and helps raise organizational efficiency.
- Maintains information integrity across multiple systems.
- Ease of development and maintenance.

However it also has potential disadvantages

- Potentially high development costs.
- EAI implementations are very time consuming, and need a lot of resources.
- Require a fair amount of up front design, which many managers are not able to envision or not willing to invest in.
- Many EAI projects can become unmanageable as the number of applications increase.

Future software development will be dominated by the web and what is called Service Oriented Architecture (SOA) which is the modularization of business functions for greater flexibility and reusability. Instead of building monolithic applications for each department, an SOA organizes business software in a granular fashion so that common functions can be used interchangeably by different departments internally and by external business partners as well. The more granular the components (the more pieces), the more they can be reused. SOA is a way of thinking about IT assets as service components. When functions in a large application are made into stand-alone services that can be accessed separately, they are beneficial to several parties. These services communicate with each other by passing data from one service to another, or by coordinating an activity between two or more services.

The benefits of this approach are reduced cost and increasing reuse of software. This is not at the moment so well developed that we can start to replace our back office systems with SOA based architecture but it is already becoming a feature of our architecture and will continue to do so.

Objectives

- Develop a small range of xml based services such as payment and booking engines that can be used across a range of different back office systems.
- Review the ongoing viability of our Enterprise Application Integration and assess the potential for future development of SOA modules.

34 Server Virtualisation.

Issue

Traditionally we have hosted each IT system on its own server(s). This costs a lot to buy, takes up a lot of space, uses a lot of energy and does not make the most of the processing power we have. Virtualisation of servers (the ability to load more than one system onto a server and run them in virtual environments) has been introduced over the last three years and we now run 85 systems on 4 servers. This has successfully reduced our carbon footprint and reduced the cost of procuring hardware. It has also enabled ITT to be more responsive to the business needs by decreasing the time taken to provision and recover systems from weeks to minutes.

Objective

- Maximise the use of the existing virtual server environment and grow its capabilities.
- Deliver better value for money by implementing new systems on virtual servers unless there is a compelling business or technical justification to be implemented on a physical server.
- Develop Business continuity plans around virtual servers.

35 Consolidation and standardisation.

Issue

ITT have made good progress in standardising server hardware components and operating systems and will continue to develop plans to continue the migration and consolidation onto the new standard components and platforms. This includes the migration from a Unix server environment to a Microsoft Server environment. This maximises the use of in house technical resources which are predominantly Microsoft, helps to reduce system recovery times and ensures that other supporting technologies such as backup and storage systems are compatible and standardised further.

However, the current Desktop estate (see 20 above) varies greatly in terms of the hardware and operating system in use. The lack of a centrally funded equipment refresh programme has led to a lack of standardisation and technically obsolete hardware and software still being in use.

Objectives

- Further consolidate storage onto the central Network Attached Storage (NAS) platform and to continue to standardise on this technology as our primary storage technology.

- Undertake the previously mentioned actions to address the fragmented Desktop estate.

- Explore other opportunities of reducing the current IT Systems that are not delivered through a Microsoft server and database platform to further expand the benefits highlighted above.

36 Web delivery/access and presentation.

Issue

The delivery of services and access to information through a web browser are key elements in providing access for flexible and remote workers as this removed the need for locally loaded and maintained software.

With the appropriate levels of security and encryption supported by an effective governance regime, web based applications are a secure and relatively straightforward method of extending business functionality out to the mobile and remote workforce.

The increasing use of vendors to use Java as the method of delivering their IT Systems has increased the demands upon the Citrix Server Farm that could slow down the user response and has led to complicated deployment methods with potential for applications being incompatible and conflicting with each other.

Objectives

- To maximise the use of web based delivery for access to business applications and information where this is secure and complies with other IT Strategy objectives.

- Establish an application deployment architecture that enables the management of multiple versions of Java whist preventing conflicts from occurring.

37 Change Management

Issues

The introduction and continued development of integrated business processes and systems on a corporate infrastructure has increased the reliance upon the many different components to remain robust and stable, ensuring effective and predictable interoperability with each other.

Unplanned and/or uncoordinated changes made to any one of these components in isolation without the appropriate levels of risk assessment and testing could lead to significant disruption of front line services within CYC. As the architecture becomes more integrated the risk of unmanaged change increases and extends deep into the business. Changes to policy can now have an impact upon the technical infrastructure.

Changes are made to resolve IT faults and also in response to the implementation of new services, processes or policies. Although changes are made by teams with the relevant technical skill sets, there is a lack of formal change management processes which increases the inherent risk associated with change and this could lead to a failure of the infrastructure that enables access to essential information and business systems for the user base.

Objectives

- Establish formal change control processes for managing programme, development, business and IT Infrastructure driven change requests.

- Establish a Change Authority Group to become the formal decision making body for any change requests.

- IT to adopt and implement the service support disciplines of the ITIL Service Management Framework. This is an industry best practise framework developed by the Office of Government Commerce (OGC). The framework breaks down the IT support function into multiple disciplines and provides modular methodologies with which to manage these. It is flexible framework that allows IT to apply those parts that can help sustain structured change control environment whist not being over prescriptive and restricting.

38 Development

Issues

CYC has historically pursued a policy of purchasing off the shelf (OTS) software solutions and has avoided bespoke development and internal development on the grounds that we did not have the in house skill set to undertake this and did not want to bear the risk of having to support either bespoke developments or in house generated software. Since easy@york went live we have however developed significant in house development capability in the CRM, integration and .net areas and are growing this skills set to be able to deliver phase 2 in house. This has proved both more responsive to our needs and much cheaper. Our strategy needs to reflect this change in a niche area and yet contain the uncontrolled growth of in house development across the piece

Objectives

- Establish a robust in house capability to develop our CRM web and integration architecture.

- Maintain a policy for major system procurements to buy best of breed off the shelf systems and to avoid bespoke development wherever possible.

39 Business Continuity/Disaster Recovery

Issues

ITT provide a disaster recovery capability to key elements of the business. This is limited to business critical elements of infrastructure and systems due to the costs of having additional equipment and network infrastructure on permanent standby to continue working in the event of an unexpected catastrophic situation.

There are two levels of recovery capabilities,

- A major incident that prevents the delivery of IT services from the data centre from Museum Street for a significant period of time. This would require invoking our external disaster recovery contract to replace IT equipment and then establish a data centre at an alternative location.

- A smaller scale event affecting one or more systems where we would invoke our external disaster recovery contract but host interim solutions in our main data centre.

ITT have made significant progress in recent years and have improved its recovery capabilities for both these scenarios by:

- Introducing the use of server virtualisation technologies (see section 33).
- Automated the replication of storage of key business information on the corporate data storage system that is located in two physical locations. This has enabled ITT to reduce recovery times as information is copied using disk to disk technologies rather than relying on tape which has longer recovery times and is more susceptible to failure.
- Reducing the different number of server types in use has expanded the number of IT Business Systems that is included within the externally provided DR contract.
- Developing and testing its Departmental and Team recovery plans.
- The use of Citrix is a key enabler to facilitate effective and robust alternative working options as this a very easy mechanism by which users can gain access to corporate applications and information from any device on the CYC network or remotely in the event of a disaster. Only locally installed applications would not be available which ties back into the strategy of maximising the use of Citrix as our primary delivery mechanism (See section 19).

The main issue is the completeness of the Corporate Business Continuity Plan (BCP) that both ITT and Property Services require to help plan and invoke their recovery plans. Both underpin the Corporate BCP being two of the key elements that would provide the environment for continued CYC Service delivery in the event of major disaster.

Objectives.

- Maximise the use of the existing virtual server environment and grow its capabilities.
- Further consolidate storage onto the Corporate Data Storage platform and to continue to standardise on this technology as our primary storage technology.
- Continue to develop and test ITT Departmental and Team based recovery plans to ensure completeness and consistency.
- Support and work with Corporate BCP group as part of the Council wide response to the 2004 Civil Act.
- Since BCP and recovery is potentially a large investment area and of high importance, ITT will continue to evaluate recovery options including the use of shared recovery or externally provided recovery facilities.

40 User Administration

Issues

User administration is the collective group of processes where the Users network login account , contact and access details are established and managed.

Many of these collective processes are currently undertaken within Directorate business/IT support teams and this leads to duplication of work and the potential for incorrect or out of date information to be retained and used as contact points. Accurate and consistent information regarding User's contact details will be a key requirement as we develop and adopt the anticipated new ways of working.

ITT have started a programme of work to identify the most effective and efficient methodology to consolidate the current fragmented management of User based information and create a single entry point that will then automatically update other information stores if required.

Objectives

- Consolidate the current number of IT Systems and processes required to manage and maintain User based information.
- Develop automated and integrated processes to improve the management of user information base changes (e.g.: starters, leavers, staff transfers) to help provide a platform to enable more effective communication channels for the organisation and to enable effective and efficient control of User based information.
- Improve the stability and consistency of User base information by ensuring all changes are made in a uniform way through a structured change process using the automation tool that be audited, ensuring licensing compliance and will facilitate more effective disaster recovery.

7 Governance

IT governance is the mechanism to direct and control the existing and future use of IT within the organisation. Its purpose is to manage the allocation, deployment and use of IT to ensure resources match user needs, whilst ensuring delivery of best value for money and protecting the integrity and availability of information.

41 Policy Framework

Issues

CYC has a range of policies which seek to govern the use of technology and information by its users. The Electronic Communications Policy was drafted in 2005 and largely prescribes the use of the Internet and email. This is embedded within the Constitution.

The Information Security policy sets out how we should ensure that data is not lost or corrupted and is only accessed by those with a need to know. IT Disaster recovery plans/Business Continuity plans are well developed and tested.

There is an IT User Handbook on the intranet, which sets out a broad range of advice guidance and policy on all areas of IT usage. There is however no single document that sets out all aspects of our policy guidelines.

There is no consistent method of raising awareness and ensuring compliance with these policies. The Corporate IT Strategy Group (CITSG) have not been engaged with the

development of these policies, instead the Corporate IT Operational Group (CITOG) have provided input on Directorates behalf.

Objectives

- Review/update consolidate policy into one IT policy which incorporates electronic communications and Information security and good practice guidelines.
- Ensure this is part of staff induction and is regularly communicated to staff.
- Involve CITSG in drafting IT policy and use this group to ensure compliance.

42 Stakeholder Management

Issues

We currently have two groups who oversee the use of technology in CYC. CITSG which is formed from Business Assistant Directors in each Directorate and CITOG which is formed from Operational IT representatives/managers from each Directorate.

In 2007/8 we commissioned The Society of IT Management (SOCITM) to undertake an external review to assess the effectiveness of our arrangements. The report concluded that the CITSG was not sufficiently and effectively involved in ITT governance issues and though the framework was in place, meetings of the group were restricted to investment recommendations. The report concluded that the CITSG needed a new remit.

Objectives

- Redefine the remit of CITSG to undertake the following functions:
    - Portfolio management of IT Development Plan.
    - Make in year decisions to reprioritise IT development project activity.
    - Ensure all the Directorate based business benefits are realised.
    - Set IT Strategy.
    - Ensuring that all the IT resources are compliant with the strategies, policies and standards.
    - Ensuring that Directorates are planning their IT needs.

43 Investment

Issues

CYC has a successful track record of IT project implementations with success rates higher than average for the public sector. We have developed significant IT Procurement skills and capacity within CYC. However, we have not managed the IT Development plan as a programme of work and year on year we have faced significant under spends on the IT Development Plan largely due to the delay in commencement of a range of projects. This is often the result of a failure to resource the project activity within the business and/or a very high level commitment to work

planning as part of the IT Development plan i.e. work is agreed for the year but the timing of the work and the likely investment profile is not defined in detail when the budget allocation is made. Many IT projects also take more than one year to deliver.

The IT Development Plan enables CYC to make investment decisions based upon Corporate strategic priorities. All bids for investment are evaluated based upon risk and strategic outcomes. A business and technical appraisal is undertaken before investment decisions are made and all bids are then prioritised by the Corporate IT Strategy Group who make recommendations to Members. This is currently done on an annual cycle which makes it both unresponsive to developing priorities and difficult to plan for large-scale work where investment may be needed over several years.

Perhaps because this investment process is fairly inflexible it is not uncommon for Directorates to make IT investment decisions outside the IT Development Plan and it is then difficult to ensure that these are properly resourced. Given the limited resources available to CYC it is essential that all work is prioritised to ensure that we spend our time as well as our money on those IT projects that will deliver the most value to the organisation.

Objectives

- Manage the IT Development Plan as a Programme of work with the CITSG managing variations to the portfolio of projects in year.
- Develop a 3 year investment plan for IT, alongside the 3 year Budget setting process
- Develop more a more detailed timetable for projects and more granular spend profiles to reduce underspends
- Ensure Directorates have adequate resources to deliver IT Development Plan projects before the investment is agreed
- Make the CITSG responsible for agreeing IT development work outside the IT development plan

44 Service Level Agreements and Recharges

Issues

The current Recharge model costs out the services that the ITT Department provide. For the majority of costs this is calculated on a per user basis but for provision of applications, the cost of purchase and maintenance is calculated and then charged to the user directorate(s). There are some areas where a more sophisticated cost model is used (PDAs and remote access points). Though this is a reasonably effective way of allocating costs to the consumer, it also has the effect of ironing out any differences in consumption. If one department has desk based staff who use thin client terminals and predominantly use one system and email they will pay the same per workstation as a department with more sophisticated needs, which has a mixture of device types and applications which will inevitably generate a much higher proportion of support calls. We do not charge more for a PC than we do for a thin client terminal so we are not incentivising low support/lower cost options.

When we move to a new Headquarters we will need to revise the whole recharge model as flexible working will mean that devices could be in use by any member of staff from any Directorate. Mobile working will be more prevalent and we will be forced to introduce a more granular recharge model. Extended hours of opening will also necessitate some restructuring of

the IT support services to provide support over a longer window. This may necessitate increased costs or lower service levels.

Objectives

- Identify alternative ITT support delivery arrangements for the new Headquarters to enable flexible working particularly extended hours of service

- Identify alternative recharge models which reflect actual activity, drive out value for money and can operate in a flexible working environment.

45 Performance Management

Issues

The ITT service currently capture significant amounts of performance data across the whole infrastructure which shows the number of users, devices supported, service availability, incident reports, response times for faults and customer satisfaction levels. These are embedded within Service Level Agreements with each Directorate but the information is not routinely publicised and is only reviewed by the Operational User group. ITT operate automated alarm system that gives real time performance information on each system and sends warnings and alarms if a system fails or is performing outside set tolerances.

Objectives

- Regularly review the current Service Level Agreement with the CITSG to ensure it remains fit for purpose

- Report performance against this SLA to customers and review this at CITSG regularly

46 Project and Programme Management

Issues

CYC has successfully embraced Prince 2 Project Management and OGC Managing Successful Programmes (MSP) as the standard methodologies for implementation of IT projects and Programmes. 266 staff have been trained in Prince 2 and 19 in MSP. However there is still a lack of understanding of the difference between a Project and a Programme, not all projects use Prince 2 and not all Project managers are trained to do the job. Corporately there is a plan within the Single Improvement Plan to improve Project Management though this is initially focussing on capital building projects.

It is often difficult to resource large IT projects. The PM needs to be a dedicated role, IT project Managers are oversubscribed and business staff are either not trained Project Managers or cannot be released from their substantive role. This leads to us buying in Project Managers on contract which is very expensive or recruiting and training staff for 1 –2 years only for them to leave towards the end of the project when their contract is due to run out. This is extremely risky.

Objectives

- To develop templates and guidelines for the appropriate use of Prince 2 Project Management approaches for large, medium and small IT projects.

- Mandate that all project mangers must be trained and supported to deliver their role.
- Continue to roll out Prince and MSP training to all staff who are actively engaged in Project or Programme management activity.
- Consider the development of a corporate Project management team that can be called off to resource up major CYC projects.
- Where a group of projects are producing deliverables that contribute to a clear strategic outcome we will build them into a Programme and adopt MSP.

Organisational Model

47 Client Management

Issues

The external governance review referred to at Para 41 also looked at the client management arrangements between central ITT and the Directorates. It concluded that there was an inconsistent model of client arrangements with some Directorates employing their own IT Manager who performed many of the client side functions (developing local strategy, managing development resources, developing business cases for investment) to departments that had no IT staff and were reliant upon a Central IT Business Development Consultant to identify their IT needs and provide a view of their needs into the IT service and sometimes to manage their IT projects.

The IT Business Development Team (BDT) has only nine staff who possess a great breadth of experience and skill. They are expected to meet a huge demand for a broad range of services and this inevitably means that they are overstretched and pulled too wide to be effective.

The report concluded with a recommendation to rationalise the role of the IT Business Development Team to split out their work into Project Management, Business Analysis and Client Managers.

Objectives

- Restructure the IT BDT to split out their roles into Project Management, Business Analysis and Client Managers.
- Ensure that Client Managers have an appropriate feed in and out of Directorate DMT's.
- Ensure that Client Managers are positioned to be able to articulate and resolve business issues and concerns within ITT.
- Establish a method of supplementing the resources of the BDT where Directorates need and are able to fund supplementary resources e.g. a Project Manager.

48 Centralisation & Devolution of ICT services

Issues

The same external governance review also looked at how IT Services were being delivered centrally and by directorate based IT teams. The ITT service at CYC has operated within the boundaries of best practice advice but it is experiencing considerable pressure to deliver more with less and handle an ever increasing demand for new IT systems to transform services and deliver efficiencies.

There is no common IT structure in directorates. Some directorates have a significant in-house IT function and rely on central ITT only for support of the corporate systems. Others have only a small IT staff and, therefore, look to ITT for more support.

The directorate IT structures have evolved due to demand for IT in different services. Although it is important that the IT service reflects business need, there are indications in some areas that this is not optimum, as the pace of change has led to some IT structures being created without considering their wider impact on operating efficiency and on delivering a joined up service to citizens. The variety of structures has led to different levels of service provision, wasteful duplication of services and poor levels of support, as users may need to make a number of calls to different service desks to resolve their problem or query.

With various help desks there is no standard method of reporting, monitoring and fault resolution. This means fault analysis cannot take place to identify common problems and does not allow proactive action to ensure the fault does not reoccur. This is beginning to put strain on the current arrangements, generating the need to review the IT organisation structures to deliver an effective change management programme and IT service delivery.

Objectives

- Consolidate the fragmented service desks into a single Customer Service Desk function within central ITT as soon as possible in order to improve system reliability and customer satisfaction.
    - Upgrade and expand the Customer Support Services Desk solution so it can be used as a Corporate IT support system.
    - Define, collect monitor and report corporate performance standards for all IT service desks.
    - Use the results from the corporate IT performance monitoring system to determine the correct levels of resources for the revised functions of service desk, applications administrators and desktop support.
- Application administrators should be moved into central ITT as benefits can be realised without diluting the need for local directorate knowledge. However, any that remain in directorates should release low-level tasks (such as password resets) to the central service desk.
- Continue with the project to introduce ITIL as the method by which the ITT Customer Support Service desk and other IT teams handle incidents, problems, change and resolve faults.

- Promote the benefits of the upgraded service desk software corporately, and mandate the use of formal problem management and change management processes council wide.

49 Sourcing and Supplier Management

Issues

ITT procurement in CYC has transferred from a specialist team in ITT to the central procurement team. There is significant amount of procurement activity to implement the IT Development Plan and to undertake strategic procurement of IT support services (e.g. network management) and transformation projects (easy@york). We have used a range of procurement channels to ensure timely and value for money procurement, whilst ensuring we comply with CYC procurement strategy and policy. We have exploited the OGC Catalyst pre-tendered supplier list and we are now embarking upon a tender exercise for a new system where we seek to assess shared service options alongside traditional system procurement offerings.

Our policy to procure best of breed applications means that we have a large number of suppliers to manage. Supplier management of these relationships is currently handled by a range of staff within CYC, in both central IT and in Directorates, who call on staff in procurement and legal teams when there is a contractual issue. Though centralisation of this function might bring about some efficiencies, the balance between this and keeping control of the relationship close to the business in fact means that a mixed economy is most effective at this time. The situation does however need to be made more transparent and consistent.

Objectives

- Establish a clear framework of accountability for Supplier management for each system.
- Work with the procurement team to explore a range of procurement methods that deliver VFM outcomes.
- Centralise the storage of all IT system or service contracts as part of the EDRMS implementation.

50 Skills Management

Issues

The lack of consistency and importance attributed to IT skills based training within CYC fails to provide staff with the necessary skills to maximise the full potential and benefits of IT investment.

There are a number of recent examples where major replacement or new IT System implementation projects have suffered as a result of poor or inadequate levels of training.

The inconsistent approach to staff recruitment and induction process with CYC is another contributing factor that fails to ensure new staff joining CYC have the correct training programme required to equip them with the required IT skills for their role within the organisation.

Objectives

- Ensure all IT projects have a comprehensive and robust training plan with checkpoints to validate the required level of skills has been realised.

- Ensure recruitment processes have the base IT skill sets relevant for the post as essential criteria as part of the selection process.

- Induction processes must include general IT skills such as ECDL and IT System specific where required.

- The internal staff transfer process must identify and deliver the correct levels of training in line with the specific skill set requirements of the post.

51 Professionalisation

Issues

The fragmentation of IT Support staff between the centrally based teams and those that have evolved within the directorates has led to an inconsistent approach to job roles and their associated professional skills.

There is confusion over the naming of some job roles, for example a Systems Administrator within a directorate and a System Administrator within in central ITT are two completely different roles. This will lead to confusion over job grading and potentially confuse applicants that would reduce the benefits of recruiting the quality of staff required.

CYC has no formal staff development structure nor anyone accountable for IT professional practice across the authority. This means that different IT functions are operating to different standards and depending on which directorate staff are based in, they may or may not be given professional development.

IT Support staff development is an essential element of an effective IT support service that ensures its staff are correctly qualified to sustain and enhance its delivery of customer service.

Objectives

- The Head of Operational ITT to take on the role of the head of the IT profession and take responsibility for the professional development of IT staff across the authority.

- Establish a uniform structure for all IT support posts including standard job roles defined with clear competences preferable drawn from the Skills for the Information Age framework (SFIA) sponsored by the Cabinet office.

- Develop clear and unambiguous job specifications and professional development to ensure staff are correctly qualified and assured that the organisation is concerned for their development.

- Review job descriptions against the SFIA framework with a view to standardising roles and instigate a professional development programme as part of their performance appraisal staff are correctly qualified and assured that the organisation is concerned for their development.

Annex A - Glossary of Terms

Business intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining

Enterprise Application Integration (EAI) –the process of linking applications within a single organization together in order to simplify and automate business processes to the greatest extent possible, while at the same time avoiding having to make sweeping changes to the existing applications or data structures

Folksonomy - (from folk + taxonomy) is a user-generated taxonomy. It .is the practice and method of collaboratively creating and managing tags to annotate and categorize content. In contrast to traditional subject indexing, metadata is generated not only by experts but also by creators and consumers of the content. Usually, freely chosen keywords are used instead of a controlled vocabulary.[

Internet Protocol (IP) – the data transmission standard used by the Internet, which has now become a common base level standard for networked computing. This describes the way that data is cut up into packets and distributed.

Local Area Network (LAN) – All sites that are hard wired together in reasonably close proximity to each other. The Central CYC LAN covers St Leonard's, Museum St, De Gray House, Swinegate, the Guildhall, George Hudson St and North St

Open Source/Open System/Open Platform – Terms used to refer to programmes where the user has the legal right and the technical tools to amend and add computer code in order to change what the application does. This is unlike Microsoft programmes where the source code is copywrited.

Service Oriented Architecture - the modularization of IT system components/business functions for greater flexibility and reusability. (e.g a booking or payment engine that can be used from any other application)

Thin Client/Server Based Computing/Citrix - Terms used interchangeably to refer to the method of delivering applications from large centralised servers without using the processing power of the local PC.

Wide Area Network (WAN) - All sites that are connected together to form a network, irrespective of whether they are near each other or not. The CYC WAN includes the main central sites, all remote sites such as libraries and even Members houses that are temporarily connected.

Web 2.0 - is a term describing changing trends in the use of World Wide Web technology and web design that aims to enhance creativity, secure information sharing, collaboration and functionality of the web. Web 2.0 concepts have led to the development and evolution of web-based communities and its hosted services, such as social-networking sites, video sharing sites, wikis, blogs, and folksonomies

Virtual Server – using a single hardware platform to run/host multiple applications which reside in “virtually” separate environments this behaving as if they were running on a unique server

Unified Communications (UC) – a system to manage multiple communications channels and facilitate collaborative working.