IT Strategy 2009 - 2012
Systems Integration

Purpose

There is increasing pressure to join up business processes within the council and with partners in pursuit of efficiency, improved service delivery and service transformation. Systems integration is key to this. This section provides some more detail on integration and our approach to it.

Introduction

The council has numerous specialist IT systems deployed to support distinct business areas.

Where business processes impact multiple business areas the need arises to share information. This information sharing invariably involves the exchange of electronic data:

- between business areas within the council
- between the council and its partners

Regardless of how this information is shared, the council has the following obligations:

- to maintain privacy and disclosure regulations for the information held in our systems
- to ensure integrity and accuracy of data we maintain
- to ensure the business process makes efficient use of resources.

These obligations apply not only while the data resides within IT systems but also whilst it is exchanged between them. It is during the exchange of data, that the data is most vulnerable.

Some case studies to illustrate the principles around systems integration are included as an Appendix to this section.

Types of Integration

Different types of integration may be used depending on circumstances:

- the sensitivity of the information being exchanged
- how robust the integration needs to be to support the business process
- cost and complexity to implement and support

Point to point / Tightly-coupled integration

This is where data is exchanged directly between systems. While this is the simplest approach in straightforward situations, it has the disadvantages of:

- Loss of data if one system is unavailable
- Each integration requires a new point to point link, resulting in complex multiple links where several systems are involved.

Loosely-coupled integration

For business processes that need to be highly robust, middleware is an essential component. Middleware reduces the dependencies between systems, so integrations that use middleware are described as loosely-coupled.
The benefits of middleware are:

- Guaranteed data exchange between systems, when either system is unavailable by “buffering” data until service is restored.
- Simpler change or updates to end systems through the ability to automatically changing the format of data to accommodate changes.
- A single connection to each end system serving multiple integrations.
- Security and audit trail.
- Simpler identification of faults through isolation of systems

Generally speaking middleware is the preferred integration mechanism, and Microsoft BizTalk Server middleware is used to o provide a robust platform for this.

Standard formats and schemas

Increasingly, standard formats are being agreed for the exchange of common data between systems. In this case suppliers support the standard format knowing that it will give them maximum compatibility with other systems that they need to integrate with.

Links to IT Governance and Application Review Process

Consideration of integration requirements is a requirement of the introduction of any new system. The need and potential to share data is explored in the application review process, and standards for data exchange are specified in any procurement.

Appendix – Integration Case Studies

Example 1
A contact centre agent follows instructions from a script in the Customer Relationship Management System (CRM). At a certain step the CRM prompts them to click on a hyperlink which links to a process on www.cambridgeshire.gov.uk where a form is pre-populated with the customer's name, address and contact phone number.

Benefits
- No rekeying between CRM and online form
- Uses pre-existing process on the website

Example 2
Schools Details (i.e. Head Teacher, School name, address, contact phone numbers and term dates) are maintained within the Capita "One" system. An automated nightly database task transfers just this data into a separate database. Visitors to www.cambridgeshire.gov.uk can search this database "cache" of schools contacts.

Benefits
- No reeking between Capita "One" and the website's Content Management System.
- Information displayed to the public is kept acceptably current and accurate.
- The database script has limited permissions on Capita "One" tables so that it only sees the relevant information.
- The public can access schools details even if the Capita "One" system is unavailable.

Example 3.
In Community Learning and Development, the Central Stock Unit uses a system called Unicorn to order books for the County's Libraries. The system also processes invoices received from suppliers. In order to pay the suppliers payments must be raised on the E-Business Suite. On the Unicorn System, an authorised member of staff confirms that the invoices need to be paid. Unicorn outputs a file which is transmitted into the Automated Interface Management System (AIMS). AIMS checks that the invoices will load correctly into the e-Business Suite (suppliers have been set up correctly, budget codes are correct etc). The Stock Control Unit staff member then approves the file to be loaded and the process of loading the invoices is handled automatically. An email confirms when it has been completed. The process delivers peace of mind for the Stock Control Unit, Procure to Pay, and Internal Audit.

Benefits
- no reeking of invoices
- data quality is maintained
- AIMS stores a full audit trail

- middleware ensures that files sent from Unicorn reach the E-Business Suite

Example 4.
A Contact Centre agent receives a phone call from a customer. The agent searches for the person from a search screen on the Customer Relationship Management System (CRM). Behind the scenes the CRM system sends the search criteria through a middleware server to SWIFT (The adults social care system). The search results are sent back and the Contact Centre agent is able to link the CRM Customer Record to the SWIFT record for that person. Notes subsequently added via the CRM are automatically added to the person's record in SWIFT via the middleware and are visible to the appropriate Social Workers.

Benefits

- No reeking. Contact Centre Agents use a single system – no need to log into CRM and SWIFT.
- Social Care Teams see everything from within SWIFT – no need to have CRM access.
- Middleware audits the process and guarantees delivery of updates between the systems.