International Journal of Information Management 29 (2009) 237–243

Contents lists available at ScienceDirect

International Journal of Information Management

journal homepage: www.elsevier.com/locate/ijinfomgt

Case study

Exploring service issues within the IT organisation: Four mini-case studies

Neil McBride*

Faculty of Technology, De Montfort University, Leicester LE1 9BH, United Kingdom

ARTICLE INFO

Keywords:
IT service management
IT service strategy
Supplier management
IT service desks
Mini-case studies

ABSTRACT

This case study paper presents four mini-case studies which explore IT service management issues within IT departments. It suggests that there is a shift in focus in IT away from the technical artefacts towards customer directed services. The case studies concern a hospital, a provider of marine charts, a logistics company and the batch operations of a bank. A range of issues are discussed including the provision of customer support, the acquisition of software and services, relationships with suppliers and the development of service strategy. The mini-case study is presented as a vehicle for identifying research issues and for teaching IT service management concepts in short tutorial sessions.

1. Introduction

A majority of the work of the IT department in any organisation centres around the delivery and support of services. While new information systems are procured and implemented, the focus of the IT department has moved towards service delivery and service improvement. This shift in focus towards services has resulted in an increased interest in service processes and standards such as ITIL and ISO 20000. There is consequentially a shift away from a focus on systems development which puts the service desk or helpdesk at the heart of IT operations.

IT service management has become an emerging area for academic research. There is an increasing interest in the literature of IT Governance (Buckby, Best, & Stewart, 2009). The teaching of IT service management is growing in importance (Beachboard et al., 2007; Zhai et al., 2008). Furthermore, research is developing in the study of service process change in IT services (Cater-Steel & McBride, 2007; Hochstein, Tamm, & Brenner, 2005). Hence there is a growing need for research and case studies which explore the issues around the development, delivery and improvement of IT services in organisations.

This case study paper presents four short or 'mini-case studies' whose purpose is to highlight the range of issues which need to be developed in IT service management research. These case studies raise questions which are important in IT governance and service management. By grouping them together, particular themes emerge which are then discussed.

2. Mini-case studies

Mini-case studies are focussed, practical descriptions of the progression of IT services development and improvement over a limited period of time. Details of the organisation, its IT services and the context and challenges faced are captured in around 1000 words. History and events which have led to the current situation are explored. Current problems are identified. These current problems, being unresolved, lead to research questions and questions which can be applied in a tutorial situation. The advantage of such short pieces is that, in research an opportunity is provided to compare a number of mini-case studies, and in teaching a whole case study can be tackled in one session. Often the length of a case study will prohibit its use in brief tutorial sessions and the amount of background material and study needed may be off-putting, and may obscure the real point of the case study.

The development of a mini-case study involves the gathering of documents and materials concerning the company on which the case study can be built, these are then followed up by interviews with IT service managers and visits to the IT department. The four case studies presented in this paper were developed by following up practitioner talks delivered at several UK annual conferences of the IT Service Management Forum, an international organisation which promotes IT services and manages the ITIL IT service management standards.

The case studies aim to identify issues and generate questions, rather than offering clean solutions. Following a description of the organisation, an exploration of problems is offered, using bullet points and extracts from documents where appropriate.

Mini-case studies raise questions, which can then be a basis for research or teaching, rather than answering them. In an area which is relatively new to both industry and academia, such an approach may be valuable in developing research and teaching agendas.

* Tel.: +44 116 207 8500.
E-mail address: nkm@dmu.ac.uk.

0268-4012/$ – see front matter © 2008 Elsevier Ltd. All rights reserved.
doi:10.1016/j.ijinfomgt.2008.11.010

Table 1
Summary of mini-cases.

Title	Type of organisation	Sources	Themes	Teaching points
Norfolk and Norwich University Hospital	UK NHS acute hospital	Supplier articles on web and hospital web site. Phone interviews with IT service manager	National IT strategy. Outsourcing relationships, specifications for helpdesk systems	Outsourcing theory and practice. Defining and evaluating IT systems
United Kingdom Hydrographic Office	UK Government	Presentation at National IT Service Management Conference and organisation web site. Ministry of Defence website and telephone interview with IT service manager	Strategies for acquisition and IT tendering, managing support services and helpdesk structure	Make versus buy of systems. Software audit. Software acquisition. organisational culture
Tradeteam	Drinks distributions	Presentation at national and local IT Service Management Conferences. Visits to site and interviews with IT service manager and staff. Company literature	Configuration management systems facilities management and outsourcing service quality service catalogues	Outsourcing practice. IT service management
Barclays	Financial services	Presentation at National IT Service Management Conference and internet documents and interview with operational staff	Incident management IT service management in a batch environment	Alignment, communications and messaging

Table 1 introduces the four case studies. Following each case study the main questions are identified. The paper concludes with a discussion of themes common to the four case studies.

3. Norfolk and Norwich University Hospital Trust

The Norfolk and Norwich University Hospital (NNUH) Trust is a 989-bed hospital, founded in 1998 and opened in Colney during November 2001. NNUH replaced two previous city-centre based hospitals; the former West Norwich Hospital. In November 2001 the first and biggest phase of the hospital moves came with the move of most services from the West Norwich and Norfolk hospitals to the new hospital. Around 80 per cent of services moved over a 6-week period from the West Norwich and the Norfolk. In January 2003, the last few departments moved to the Norfolk and Norwich University Hospital. In February 2003, a new 36-bed surgical ward named Brundall was opened and took the acute bed total to 989. A year later on 5th February 2004, The Queen performed the official opening of the Norfolk and Norwich University Hospital. The hospital was financed through a Public Finance Initiative (PFI) which involved private funding including Barclay's bank. There is in excess of 5000 staff in the Trust of which around 3000 are regular users of IT.

The IT department has four sub-departments. Computer services support a variety of applications and services based on a modern IT networking infrastructure. The IT operations team ensures that services ranging from hospital information systems to specialised clinical databases are available on a 24/7 basis. The operations team covers helpdesk, technical support and networking. The Project Office supports the planning and implementation of major new systems. Information technology application support and training provides training and first line support for accident and emergency, maternity and outpatient clinics systems; and also provides training in Microsoft Office. Web services maintains web-based information systems, including the hospital's web site, the intranet and other web-based administrative systems. The web services team also keeps an eye on changing technology trends, looking for new ways IT can benefit the Trust. IT services is responsible for managing the Trust's involvement with the National Programme for Information Technology (NPfIT).

The vision of the Trust is to deploy technology around a web-based approach. This will involve participation in NPfIT, implementation of the NHS Care Records Service within the Trust, work on which started in 2004.

3.1. McKesson consultants

The IT services department implemented an advanced network at the new site. This was delivered in collaboration with an outsourcer, McKesson. Originally, the main IT services were provided by McKesson. These services included e-mail and web access, desktop support, Patient Administration System (PAS), order communications systems and picture archiving and communications systems support. This meant there were two support teams on site, one run by McKesson and one by the Trust. The outsourcing agreement was replaced in 2004 such that the Trust took back the delivery of the network management and IT service support. Now one Trust support team provides IT services and McKesson only provides software support for PAS and a few other systems it supplied. The PAS, which was a bespoke system, was still running in 2006.

Dissatisfaction with McKesson was catalysed by a lack of clarity in contractual agreements, an absence of plans for rolling infrastructure update including moving to Windows XP, a reactive approach from unskilled staff, and a dated helpdesk system. The Trust considered that it could create a better service for IT customers by insourcing which would provide a better cultural link. Now the Trust manages the delivery of all its IT services and applications using in-house staff.

3.2. Islands of technology

There are many systems within the hospital which have been procured without reference to IT services or IT strategy. There is concern as to

- Who is responsible for the day-to-day management of these systems?
- How is the maxim of 'input data once, use many times' to be implemented?
- Are these systems being properly administered?
- How do these systems contribute to overall hospital Trust strategy?
- How does IT Services liaise with the owners of these islands of technology?

3.3. IT service requirements

In order to deliver benefits to the Trust, IT services has identified the following requirements:

- Clarity between the Trust and its suppliers as to what is to be delivered, the standard it is to be delivered to and the penalties for non-compliance.
- A sound basic infrastructure with high degrees of resilience and performance.
- Systems that are easy to use, bug free and well tested.
- Capacity for growth to incorporate new applications.
- Up-to-date resource management tools.
- A strong recognition by Trust managers that IT systems often require staff to work in new ways.
- A focus on integration rather than development.
- Highly qualified, customer-focused staff.
- Centralised procurement, approved by the IT department.

3.4. IT helpdesk

The IT helpdesk service is provided purely online. There are no helpdesk operators. Customers log calls electronically and are given a reference number on screen. This can be used to track the progress of the call. Recently a new helpdesk system has been procured. This is currently being implemented. The Trust selected Hornbill supportworks. This was selected following an evaluation exercise which involved visiting reference sites. The Trust wanted a helpdesk system which supported online call logging and would be easy to use by staff throughout the Trust. Hornbill will enable electronic call logging, e-mail a call reference number to the customer, and allow customers to track calls. It was also considered to be a lot more user-friendly than the current system. Customers will be able to sign on and see which support technician is dealing with their call, escalate the call, add an update, attach a folder and close the call.

Hornbill systems has worked with many NHS organisations to provide service management solutions designed to help automate support processes and improve service delivery. Healthcare customers benefit from a service management solution that is based on Hornbill's certified ITIL compatible Supportworks ITSM solution. "The solution enables healthcare organisations to fast-track participation in the National Programme for IT (NPfIT) and also includes a suitable" "interface" to the Local Service Provider [supplier] "Hornbill Systems Website".

When the support technician finds that a call involved problems with third party software, for example as supplied by McKesson, the technician logs a call with the third party helpdesk. It may be possible for automatic logging of these calls with third parties through the Trust's new helpdesk system. There is currently no measuring of customer satisfaction. Once the new helpdesk system is implemented, customers will be called randomly and asked general questions, based on the service level agreement (SLA). Currently, the use of ITIL and BS15000 certification is not being considered by the Trust. However, the NHS is adopting ITIL to provide the governance to achieve best practice for all service management activities. Local trusts will need to comply with standards based on the ITIL framework as part of the quality management strategy.

3.5. Norfolk and Norwich University Trust questions

Is there an ambiguous relationship between the trust and NPFiT? The relationship between central policy and local implementation in public sector organisations needs attention. The relationship between the trust and McKesson changes. There are clearly unsolved problems concerning the outsourcing. How does the day-to-day operation of an outsourced service affect the services provided? Could anything have been done to overcome the problems between McKessons and the trust? There is clearly a difficult balance to be achieved between insourcing and outsourcing. Island of technology may cause a degradation of IT services because standardisation is lost and services vary between the islands. What could be done to integrate islands of technology? What is the best approach to evaluating a helpdesk system procurement? What are the inhibitors of ITIL adoption?

4. United Kingdom Hydrographic Office (UKHO)

The UKHO is a government trading organisation and part of the Ministry of Defence. Its primary activity is the provision of navigational products and services to the Royal Navy and the merchant marine in compliance with Safety Of Life At Sea (SOLAS) regulations. As such, it is an information processing organisation, collecting, checking and integrating data into maritime navigational products. Marketed under the admiralty brand, the UKHO's product portfolio offers worldwide coverage in the form of 3300 standard navigational charts and 220 navigational publications. In addition to these more 'traditional' products, they also produce a range of electronic charts known as ARCS (Admiralty Raster Chart Service). The digital portfolio includes TotalTide—a tidal prediction program exclusively designed for SOLAS shipping.

The UKHO serves both commercial and military customers. It has world-wide coverage and has more than 65% of the world market for paper navigation charts. It has a £50 million pound turnover. Based in Taunton in the South West of England, the UKHO employs nearly 1000 people across a range of specialisms including chart compilation and production, navigational textual editing and publishing, physical oceanography, Geodesy and Law of the Sea as well as finance, marketing, human resources and information technology. UKHO is a data provider, providing data which has significant safety implications for all mariners.

4.1. IT at the UKHO

UKHO started with an ICL mainframe in 1976 and began to use PCs in 1988. By 1998, IT was a centralised function, in which the principles of ITIL were being applied and processes standardised. This led to SLAs being established in 1999. Around 2003, questions were asked as to whether better value could be obtained by outsourcing various service functions including estates and IT services. One vendor who was bidding to produce a replacement for a legacy system suggested also taking over the support of the current system. This led to considering the value for money for outsourcing all legacy systems. However, the value for money case did not stack up, partly because the benchmarking was unsound. Effort was then focussed on making the internal IT service much more efficient which involved a significant downsizing.

IT services addresses two primary areas: the business network and the production network. The business network includes a SAP implementation with 700 users, office automation, e-mail, some desktop Intranet function but little e-business. While the nature of the data UKHO provides lends itself to delivery over the internet, the safety critical nature of the data means that any risk of loss of integrity of the data must be addressed. Legal issues will also need to be resolved before wider use of the internet can be made. The production network supports the production of charts. The primary product of UKHO is still paper navigation charts. A very large VMS cluster provides digital editing of charts.

An internal helpdesk supports UKHO users of the business and production networks. An external helpdesk supports customers of UKHO digital products such as Totaltide. The two helpdesks interact and there is an increasingly blurred line between them.

A small team of 18 developers produce bespoke software for UKHO. Firstly they support a number of legacy systems. Secondly they internally bid for small systems development, typically first attempts with web-based technology and small systems with minimal integration requirements. Large projects involving complex

multi-million pound software developments, typically replacing obsolete legacy systems are outsourced. Currently, about one-third of software is developed in-house and two-thirds are outsourced.

Internal service providers were merged to form a facilities team which included human resource management, training, telecoms and site services. An internal chargeback model was established in which the internal customers paid for the services they use. A service catalogue was developed which also gave the price for each service and was expanded to cover the whole range of services provided by the facilities team. The IT service desk is now responsible for all service calls.

A configuration management database (CMDB) has been developed which records all the IT assets and applications within UKHO and identifies what systems are on each desktop system. Services are defined in the service catalogue. The CMDB records IT deployments, depreciation and maintenance requests. It also now supports the logging of incidents against equipment or software (configuration items), problem management analysis and change impact assessment.

Federation Against Software Theft (FAST) certification has recently been achieved. This involved proving that a successful software audit had been completed and policies and procedures are in place to maintain the legality of all software used in the UKHO.

4.2. IT procurement at UKHO

A business systems programme has been initiated which involves IT projects to support the upgrading of UKHO business infrastructure and projects to implement new digital products and services. These projects will typically involve managing third party suppliers. Such projects apply aspects of the MOD smart acquisition approach which involves 'no longer replacing business information systems on a like-for-like basis but instead taking into account integration with other systems to achieve optimum effect and adopting a through-life approach to acquisition, rather than concentrating resources on the initial procurement.' They seek to use proven software from companies with proven track records while maintaining a degree of in-house expertise to enable us to perform the 'intelligent customer' role.

There are seven principles in smart acquisition:

- a whole-life approach, typified by applying through-life costing techniques;
- Integrated Project Teams (IPTs) with clearly identified customers;
- a better, more open relationship with industry;
- more investment during early project phases;
- effective trade-offs between system performance, through-life costs and time;
- new procurement approaches, including incremental acquisition;
- a streamlined process for project approvals.

4.3. Invitation to tender for web-hosting for UKHO

The UKHO tendered for a web-hosting services contract. According to the invitation, "The UKHO is doing its best to update its web hosting architecture in order to meet current and future business requirements and to achieve the persistent high levels of security and availability required for the UKHO's safety critical data."

The UKHO has been able to be present on the net since 1996 when a series of static HTML pages were developed in-house. Since then the company had made some steps of re-design and improvement of its website architecture and navigation structure. At the time of the invitation to tender, the UKHO had five sub-sites featuring more than 400 pages and 15 Gb of data. Interactive functionality included EasyTide, a tidal prediction service, and the admiralty online catalogue, a searchable database of the UKHO's products.

In the invitation to tender, UKHO stated: "the UKHO aims at finding the most suitable MoD-approved hosting provider to manage the hosting of its Web sites. The contract deliverables shall be specified in a detailed requirements document The contractor shall be required to propose a fully-costed hosting solution which may include a firewall, plus load balancing and data monitoring. The prospective contractor will also be required to provide a support helpdesk, monitor the integrity of the Web site data, and also to carry out a 24/7 monitoring process."

4.4. UK hydrographic office questions

Why was the benchmarking of legacy systems outsourcing unsound? There is clearly room for a discussion on the basis for selective sourcing and investigation of the role of procurement in such an organisation. On what basis is the balance between internal software development and external software development achieved? What differentiates IT services and the IT department from other services in the organisation? Is there a generic case for combining all support services and running them from one service desk as had happened at the UKHO? How should procurement approaches be evaluated? How can we effectively evaluate SMART procurement? While research on information systems evaluation may have gone out of favour, there is a need for new research into procurement processes in relation to IT. Configuration management is at the heart of IT services. How can configuration management act as a control on IT service activities and what is the relation between configuration management and IT chargeback? Finally how does the MOD culture within UKHO affect the running of IT services?

5. Tradeteam

Tradeteam is a logistics company, which was part of Exel but is now a DHL company, which provides total logistics service to the brewing industry. The total logistics service covers the complete brewing supply chain. Tradeteam evolved from being the in-house logistics operation of Bass Brewers to an independent enterprise serving multiple customers, with bass being 45% of its work. It involves, at one end, the replenishment of hop supplies and other raw materials at breweries. At the other end of the supply chain, beer barrels are delivered to pubs, clubs and student bars for a large customer base including J.D. Wetherspoon, Marstons and Interbrew. Tradeteam also manage replenishment information for brewers and orders, promotions and customer services for chains of public houses. It has 50 sites, 1000 vehicles carrying out 50,000 deliveries per week and 3700 employees.

The IT services departments supports 497 PCs, 170 laptops and 43 servers. The company has three AS/400s running applications built and supported by two companies, Coors brewers and Interbrew UK (IUK). Trade team runs a standard operating environment and 'closely locked-down workstations'. The AS/400s are managed by Digica. These mainframes are located at Digica's Coventry site where Digica is responsible for their support and maintenance. Digica is also responsible for the capacity management and general support of the AS/400s.

The Tradeteam IS organisation splits into three sections: systems development, support services which includes a helpdesk and change and configuration, management and technical support which concentrates on the hardware side. The systems development team implements major new systems. Currently, Project Mercury involves the integration of logistics systems supplied by IUK which will make the IUK system obsolete. The second project, MOSAIC, involves the implementation of a warehouse management system, Calidis-e, bought from OBS. This £8 million project arose from a procurement focus group some 4 years ago.

The IS helpdesk service is provided by Computacenter at their call centre in Milton Keynes. The helpdesk is manned by trained first line analysts who are familiar with the Tradeteam configuration. The first line analysts are supported by second line analysts and field engineers. There is a small group of Tradeteam analysts called the resolver group. In specific circumstances, calls can be passed onto third parties including Coors brewers, IUK, Digica and BT. The helpdesk will still own the problem and incidents may not be closed until the user is satisfied with the outcome. Incidents may be logged on a 24×7 basis. Server management and Priority 1 are supported 24×7, Priority 2 are dealt with on a 9.00–5.00 basis. A small IT service group at Tradeteam oversees the outsourced IT services and provides some local support at headquarters.

The development of an IT service function at Tradeteam has occurred over the last 8 years. In 1996, support was provided by Bass brewers. In 1998 the outsourcing contract with Computacenter started. A change control manager was appointed and later a support services manager and support analysts were appointed. During 1999, systems were migrated to a new managed data network and new desktops were provided. From the end of 1999, IT service management was run as a new function completely separate from Bass brewers. One of the early tasks was to gain full control of IT assets and develop a change control system. A simple MS-Access database is now used for asset management. There was also a need to develop the database so that it would meet Federation Against Software Theft standards. This involves being able to identify all invoices for software.

The development of the relationship with Computacenter involved the development of a comprehensive support contract and the writing of SLAs for individual services. These were incorporated into a comprehensive service catalogue. Performance reports needed to be reviewed and revised. Computacenter were providing reports which looked good but did not meet Tradeteam's IT service information needs. The development of performance reports involved negotiation with Computacentre. Among issues to be resolved was the mismatch between Tradeteam's incident codes and Computacenter's. The outsourcer used a set of incident codes which were generic to all its customers and did not suit the needs of Tradeteam who required more detailed codes. Tradeteam faced what they called the recidivist tendencies of the outsourcer in negotiating detail and content of performance reports. Agreement had to be reached on how Computacenter would map their codes to Tradeteam's coding requirements.

Service quality is measured using a question concerning how satisfied a user is with the service which must be filled in when a call is closed, and a more detailed electronic customer survey (eCSQ) which is send to 150 users and gets about a 50% response rate. User satisfaction hovers around the 90% level, with 50–60% considering the service to be excellent. Over the last year, Tradeteam IT service has made excellent progress in improving services. Besides developing comprehensive support contracts with meaningful service levels, an internal service charter has been produced. Performance reports, and a set of procedure have been developed. Also some effort has been put into developing a service culture. Tradeteam IT service current goals include:

- develop and maintaining the service catalogue;
- develop and maintain the policies and procedures document;
- exploit performance reports for problem management;
- identify and implement the best integrated service management tool;
- achieve and maintain FAST audit certification;
- keep nurturing the service culture;
- keep focus on supporting the business and its projects.

Tradeteam IT services continues to be involved in the itSMF and ITIL. All staff are trained in the fundamentals of ITIL best practice. ITIL processes are applied within IT services and form the basis of the policies and procedures document.

IT services faces some particular problems at Tradeteam. These were outlined as:

(1) obtaining sufficient resources, particularly since IT service is not as glamorous as the major IT systems development projects;
(2) IT services are difficult to cost justify;
(3) IT service management is dominated by the overriding demands of day-to-day support/fire-fighting;
(4) difficult to demonstrate progress in a business context that is constantly changing in size, shape and content;
(5) difficult to get users to participate in IT service development and service quality measurement;
(6) difficult to convince systems developers of the importance of the IT service function.

5.1. Tradeteam questions

How does the past outsourcing history of an IT service department like that of Tradeteam affect present IT governance? Clearly the current situation cannot be considered without reference to previous history. There is clearly a complex history of interactions with service suppliers. Communication issues develop with Computacenter which need to be resolved. How does the management of servers by Digica affect the service provision? The series of problems identified can form a basis for discussion in tutorials and for research. The theme of these problems seems to concern the relationship between the IT services and its stakeholders. How can perceptions of IT be improved? What are the factors that influence stakeholders in their acceptance of the IT department? How can a service culture be developed? What is the value of service quality questionnaire and performance measures—what should be measured? Additionally, the list of goals can be the basis for discussion on how they might be achieved and why they are worth achieving?

6. Barclays bank

IT services at Barclay's bank supports a nationwide network of branches and offices containing over 80,000 screens. Barclays is one of the largest financial services groups in the United Kingdom. It has nearly 75,000 staff split into seven major business groupings in over 60 countries.

IT services have focused on service delivery and improvement. In September 2005, a new Chief Information Officer was appointed. Also, a chief operations manager has been appointed. Her role has centred on the 'Getting IT Right programme' and providing leadership in strategy, vendor management, governance, quality assurance and reporting. Additionally, the recently appointed IT director for UK banking has been concentrating on a substantial renewal programme. IT was reorganised to use single suppliers for application development and communication. A 7-year agreement was signed with BT to provide voice, LAN, WAN and firewalls. A business process outsourcing deal was agreed with Siemens, and application development was outsourced with Accenture in a 6-year £400 million contract.

A transformation of the IT department involved increasingly centralising the IT function. This required a shift away from a federated IT business model in which, for example, asset tracking was a combination of a localised responsibility and a central responsibility. The strategic priorities of this transformation were culture, service stability, infrastructure renewal and seamless project engagement. Service execution needed to be flawless. The

value of IT services needed to be demonstrated in the context of providing world-class capability. There would be a commitment to align business requirements with IT. An overall philosophy was declared:

- to align IT services with the current and future needs of the business and its customers;
- to improve the quality of the IT services delivered;
- to reduce the long-term cost of service provision.

An early project involved examining software licence compliance with IBM. This involved examining software on 10 mainframes, 13,000 servers and 80,000 workstations. Previously software asset tracking had not been addressed; asset tracking has concentrated on hardware inventory management for the 50% of the bank's IT infrastructure that IT services was responsible for.

6.1. Barclays operational control centre

The Barclays operational control centre manages the mainframe and midrange operations. These involve the execution of the batch jobs that update accounts and record transactions. This is a sizable operation, involving 42 million batch jobs per year, 18 million UK customer accounts updated every night, 2.2 million international accounts, three million cheques per day and £1 billion BACS transmissions per day. The mainframe operation at BOCC involves managing over 7000 scheduled and emergency changes per year.

The BOCC is split into three groupings covering mainframes, midrange/tandem and service recovery management. The BOCC is sited at Knutsford, with an alternate operational control centre at Altringham. The data centre is in Gloucester, with a back-up disaster recovery centre in Greenford.

6.2. Incident management improvement project

A majority of incidents at BOCC relate to failures in batch jobs. The handling of these incidents was getting out of control. Often incidents were raised automatically by the executing job itself and provided insufficient detail to follow up. It was difficult to identify the severity and criticality of an incident and hence direct staff resources to the most critical business processes. Hence an incident management improvement project was carried out. The goals of this project were:

- to ensure the best use of resources to support the business;
- to develop and maintain meaningful records relating to incidents;
- to devise and apply a consistent approach to all incidents reported.

An ITIL toolset was used which focussed on incident management, problem management, change management and availability management.

It was found that:

- a lot of messages from incidents referred to the same type of problem,
- overruns of jobs were not being reported correctly such that job schedules were frequently changed and jobs started late. This had an effect on the service levels and the schedules that service performance managers were working to.
- There were no auditable procedures for updating operations processes.

Improvements involved:

- making sure job messages were accurate and intelligible;
- amalgamating messages;
- providing a mechanism for automatically notifying users;
- improving schedule updates and the informing of operators.

6.3. Barclays bank questions

For many IT departments strategy concerns the development and improvement of services rather than the definition and procurement of information systems. In this case the 'Getting IT Right' program concerns strategy in areas such as vendor management, quality and governance. As such these strategies require different skills and insights to traditional IT planning. Research is needed to identify what the nature of IT service improvement strategies is and how they can be created and implemented. What are the advantages and problems of sourcing IT from single suppliers? What are the advantages of centralised compared with federal structure and why do companies tend to oscillate between the two? How can culture, service stability, infrastructure renewal and seamless project engagement be achieved? Incident management is a key area of activity of IT services, yet it has received little research attention. Here the causes of the problems with incident management need to be discussed and the role of automation in actually causing the problems considered. In tutorials the implementation of the improvements should be considered.

7. Discussion

These four case studies illustrate many of the concerns that occupy IT departments and their managers. Rather than issues about systems development and the implementation of new applications and software, they are concerns about improving and delivering services in a competitive and demanding market, about the continuous provision of systems and support to organisations' internal customers and about ongoing relationships with suppliers.

7.1. The service desk

A key concern in IT Services is the effective use of the helpdesk or service desk as the customer's gateway to IT services. The capture of the right information is essential to resolve incidents and meet the customer's needs. This leads to a concern to provide the right supporting computer system. For the Norwich and Norfolk Health Trust, the implementation of the Hornbill support system provides the driver for IT services. In the case of the UK Hydrographic Office, a configuration management system is the focus for both the IT service process and chargeback. For Tradeteam the concern is how the output of the outsourced helpdesk supports IT services, and for Barclays the management of automatically generated incidents is a critical issue.

There may be more than one helpdesk. This is the case for the UKHO, where the helpdesks serve different constituencies, and in the Norwich and Norfolk and Tradeteam where multiple helpdesks are the result of the division of work between IT suppliers and the host customer.

7.2. Supplier management

IT departments are often embedded in technology supply chains where extensive outsourcing of technology and services occur. The ongoing management of the supplier relationship is critical to the success of the IT department and also a fault line where significant problems occur. These often appear at a service and operational-level. In the case of Norwich and Norfolk, the concerns that lead to the failure of the supplier relationship concern service operations, not the actual IT artefact, which continues to

run after services have been taken back in-house. In the case of Tradeteam, lack of alignment between customer and supplier service operations results in concerns about reporting and damage to the relationship. Procurement strategies, supplier relationships and service communication are all areas which require more research.

7.3. Service strategy

IT departments tend to be increasingly concerned with strategy. But the nature of the strategic exercise has moved from defining IT artefacts to defining service provision and quality (McBride, 2009). In each case study there is a concern about strategy. That strategy is focussed on service implementation and service improvement. Barclay's strategy explicitly concerns service alignment, quality and cost. Leadership issues are defined around leadership in service provision. For the UKHO, strategic issues emerge around outsourcing policy and service acquisition. In the Tradeteam case study, service strategy emerges in a historical context. For the Norwich and Norfolk strategic issues develop from the relationship with suppliers and the relationship with central government IT policy. The recently developed version 3 of ITIL encourages a focus on service strategy.

8. Conclusion

This paper has presented four case studies which suggest that the IT department environment is a service environment. The case studies illustrate the wide variety of concerns and problems faced by organisational IT as IT department shift to a service focus. There is a need for research which not only opens up the service issues in IT organisations, but also applies service concepts and brings the rich vein of service management to bear on information systems research.

Furthermore, these short, mini-case studies demonstrate the value of case studies which illustrate concepts in a manageable way and which can be used for short teaching sessions. Without losing depth, a mini-case study can draw out lessons, and identify messy problems to be explored, while stripping away unnecessary detail. There is a need for further mini-case studies which can provide catalysts for research and tools for the effective teaching of IT service concepts.

References

Beachboard, J., Conger, S., Galup, S. D., Hernandez, A., Probst, J., & Venkataraman, R. (2007). AMCIS 2007 Panel on IT service management: IT service management in the IS curriculum. *Communications of the AIS*, pp. 555–556.

Buckby, S., Best, P., & Stewart, J. (2009). The current state of information technology governance literature. In A. Cater-Steel (Ed.), *Information technology governance and service management, frameworks and adaptations* (pp. 1–43). Hershey: Idea Publishing.

Cater-Steel, A., & McBride, N. (2007). IT service management improvement—An actor network perspective. In *European conference of information systems* St Gallen, Switzerland, June 7–9th.

Hochstein, A., Tamm, G., & Brenner, W. (2005). Service-oriented IT management: benefit, cost and success factors. In *European conference of information systems* St Regensburg, Germany, June 7–9th.

McBride, N. (2009). A model for IT service strategy. In A. Cater-Steel (Ed.), *Information technology governance and service management, frameworks and adaptations* (pp. 350–363). Hershey: Idea Publishing.

Zhai, J. L., Hsu, C., Jain, H. K., Spohere, J. C., Tanniru, M., & Wang, H. J. (2008). Impact of service-centric computing on business and education. *Communications of the AIS*, 295–310.

Neil McBride is Reader in Information Technology Management in the Centre for Computing and Social Responsibility at De Montfort University. His teaching and research relate to IT service management, social issues in IT and the application of systems thinking approaches to IT management.