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## Apollo 13 v3: an ITSM case experience

"Capcom, Capcom, crew here", "Crew, crew, Capcom here". These exchanges were the background to our attempt to return Apollo 13 and its crew to safety.

Twelve IT staff from the Science Area became Mission Control for a day in a course delivered by Quanta and designed to give us experience of ITIL practices. Our task after building and launching Apollo 13, was to bring it home when the crew reported a loud bang and announced "Houston, we're having a problem".

The event was led by Quanta's Stephen Morton who took on the role of the crew, Mission Director, and Suppliers.

In Round 1 we created Apollo 13 using the strict design criteria laid out in the Operation Manual, then Stephen gave us our roles. These included Flight Director, Capacity, Change, Incident, Problem, and Specialists Managers, four technical specialists, Specialist Support and CapCom – the communications officer responsible for all communications with the crew. We planned our procedures and processes and gave the go ahead for the launch.

Round 2 started with a steady stream of incidents. It became clear fairly quickly that our procedures weren't working. We were swamped. Half of mission control were frantically trying to keep on top of resolving incidents, others were doing

nothing. Suddenly the crew reported a loud bang and we needed to act urgently to diagnose the problem and create new procedures. We failed. The crew did not get the correct set of instructions in time. They died.

We had 10 minutes to review our procedures. It was clear that we weren't separating incidents for which there was a known solution from problems which didn't. Repeated incidents should be dealt with quickly without specialist intervention. All managers needed to be part of the process. Luckily we were allowed to resurrect the astronauts for Round 3. Our changed procedures resulted in a calmer, more productive process. Separating incidents from problems was key now. If we had a solution the technical specialists could deal with it; if there was no solution then the problem manager was called in. Excellent capacity management and sharp eyed technical staff meant that sometimes we recommended crew take action before incidents were reported. The round finished as communications were restored after the craft emerged from the dark side of the moon. Not only had the crew survived but despite our more measured approach we resolved incidents more quickly and managed procedure change within the allotted time.

Round 4: it was going so well: we resolved incidents, solved problems and dealt with requests from the crew using agreed procedures. The crew were on schedule for a safe return. We had only one more task. The craft needed a final engine burn to get home. Disaster! The crew rejected our solution. What had gone wrong? We were now under severe time pressure. After a nerve-shredding few minutes the Mission Director gave us a vital piece of information which allowed us to get it right on the second attempt and the crew splashed down safely.

This is what I learnt: Good team work gets results. Separating incidents – for which there is a known solution – from problems – for which there is no current solution – is crucial to successful management of systems. Finally, strong change management and planned disaster recovery procedures ensure that unexpected events are handled confidently. I can thoroughly recommend this course.

Susan Hutchinson  
Department of Statistics



# The OUTN strategic review

Oxford University Telecommunications Network has been in existence for over 25 years, providing a telephone service to a network of over 28,000 users. Prior to its inception each College and Department procured and managed their own systems so costs were incurred for many calls within the University.

OUTN is based on Siemens systems, which remain largely as they were when first installed. Siemens have indicated to the University that they will cease providing support for these systems at the end of 2017. There are dates before then when some of the component parts will no longer be manufactured so OUTN will become increasingly reliant on the second-hand market.

Whilst the system could potentially be maintained beyond 2017, it is clear that there will be increased risks to the service as time progresses.

In 2017 OUTN's core technology will be 31 years old. That's quite an achievement for any technology product when we consider how data networks have evolved and changed over that period.

The University's business and user requirements and expectations have also changed over the last 25 years and the current systems are not able to deliver features to meet these.

When the first Siemens systems were installed at Oxford, DELL Computer Corporation did not exist, and Microsoft was still a private company, with the first version of Windows still to be launched. Data networks at that time were in their infancy and based on 10Base5coax technology.



Over the past 5 years the OUTN team has deployed some new technology for users,

based on Voice over IP technology and generically known as IP telephony (IPT). These deployments have been based on Cisco equipment, the same manufacturer who provides the technology for the core data network. About 15% of telephone users have been transitioned to this technology, whilst 85% remain on the Siemens systems. At the current rate of change only 30% of users will have been transitioned to IPT by 2017.

Over the past 6 months the OUTN team has been considering how to address the issues presented to the voice network. Following the formation of a project team, a brief was written for a consultancy assignment, and following a competitive procurement, 4C Strategies Ltd (4C) were appointed in February 2012 to undertake the work.

This article focuses on the Infrastructure Audit and Review of User Needs

**Infrastructure Audit:** The current telephony service is provided over a distinct and separate infrastructure right down to the handset.



Siemens ISDX Cabinet

With IPT the service is provided over a data network. Oxford's IPT installations to date have used physically separate data networks, however 4C have been asked to assess the viability moving towards a converged network deployment – i.e. the voice service is provided as an application across the existing data network. This deployment

model raises a number of issues including: How should power be provided to the handset? Is the network capable of supporting the configurations required to support voice effectively? Is the cabling infrastructure suitable to support data required for voice? How should support responsibilities between the user College/Department and OUCS be apportioned?

To assess these issues 4C is undertaking a sample survey of Colleges and Departments, to gain an understanding of their infrastructure and the potential impact of a converged network.

No decisions about how to proceed have been taken as yet, and this work is an opportunity for interested parties to contribute to the options analysis. It is clearly not feasible for 4C to visit and audit every College and department so the project team has

identified a representative sample. If you would like to contribute to the study or have a view that you would like to express, please email [alan.hillyer@oucs.ox.ac.uk](mailto:alan.hillyer@oucs.ox.ac.uk)

**User needs:** Whilst the current OUTN has provided reliable telephony, IPT provides an opportunity to deploy a range of new features that could benefit users. 4C have been asked to consult with Colleges and departments in order to assess the likely demand for and take up of these features and services. These include: Integration of the voicemail service with Nexus, to provide a single inbox for all messages; Offering users a choice of supported device e.g. a smartphone or tablet app as opposed to a desk handset; support for flexible working, enabling users to take their OUTN calls at work, on the move, or if working at home.



4C have been asked to complete the work and report to OUCS by June 2012. Following an internal review a management summary will be available to interested parties and the report will need to be approved through the usual processes. Depending on the recommendations a procurement may then need to be undertaken, meaning it is unlikely that any deployment of the new services will take place before mid 2013. This then affords a 4 year timeframe to migrate from the Siemens systems, an achievable but still challenging target.

Alan Hillyer  
Head of Telecoms  
Networks and Telecoms Group  
OUCS

**The date for the 2012 ICT Forum IT Suppliers' Exhibition is 13th December again at the Examination Schools on the High Street. If there are particular suppliers you would like to see present please email [its3@oucs.ox.ac.uk](mailto:its3@oucs.ox.ac.uk) with your requests. Get the date in your diary now!**

## ICT Central Coordination update and CIO profile



Prof Anne Trefethen was appointed Chief Information Officer (CIO) on 1 March, to take forward the work that she has been overseeing in the ICT Central Coordination Programme (ICCP) since July 2011, through to completion which will result in a new central ICT department for our University.

Between now and the end of July this year (Phase 2 of the Programme), she and the ICCP team will be ensuring closer engagement of the three existing central ICT departments while developing detailed plans for transition. August 1st will see the administrative creation of the new department, which will mean that top-level governance and a senior management team will be in place, the department will have a consolidated budget and an organisational structure will have been agreed.

As the three departments come together to create the new single department customers will benefit from a single web interface to material including training and a shared service catalogue – in the longer term this will mean a single helpdesk and point-of-contact.

This work in phase 2 is being undertaken by eight workstreams – there are more details on the ICCP website at <http://www.iccp.ox.ac.uk/phase2workstreams/>

“These are very exciting times for IT at Oxford,” says Anne,

“We have an opportunity to create a world-leading innovative, effective and efficient IT organisation able to respond to a fast-changing environment, and that above all, is focused on meeting the needs and improving the experience of our many users across the Collegiate University.”

“There will also be a new drive to create strategic collaborations with departments and units across the University, developing close partnerships with customers, subject experts and technology professionals. It is only through such collaboration that we will be able to deliver such responsive and user-centric services. In Phase 2, we’ll be working hard to engage proactively with the wider University.”

Anne is a Professor of Scientific Computing, a Fellow of St Cross College and Director of the Oxford e-Research Centre (OeRC). Under her leadership, OeRC has grown from a handful of individuals to a thriving interdisciplinary research centre, attracting significant research funding, developing close links with many departments across the physical and social sciences, arts and humanities and has established the Oxford Supercomputing Centre as a University-wide facility.

Anne’s career has spanned both industry and academia, including ten years in the USA, where she worked for Thinking Machines Corp and at the Theory Centre, Cornell University. Before coming to Oxford, Anne was a Director of the UK e-Science Core Programme and before this, she worked at NAG Ltd (Numerical Algorithms Group) in both management and technical roles. Anne’s research work has focused on high-performance computing and data-intensive science. Among her current research interests is the development of the software infrastructure to support the next generation of radio telescope, the Square Kilometre Array (SKA) which, in order to provide a million square metres of collecting area, demands a revolutionary break from traditional radio telescope design and will drive technology development particularly in information and communication technology.

*“We have an opportunity to create a world-leading, innovative, effective and efficient IT organisation able to respond to a fast-changing environment”*

## ICT Forum Conference: looking backwards and forwards

The 2011 ICT Forum at the Kassam Stadium was as successful as ever with around 350 delegates and six suppliers exhibiting. Plenaries covered biometrics, UCISA and novel electronic sensory devices. Workshops were provided by many Oxford and Cambridge IT people and the most popular were about



Mobile App development; Identity and Access Management; Securing web servers; Nexus Sharepoint, the Core User Directory; and Python.

A large part of the value of the ICTF Conference is the opportunity to network with ITSS from other colleges and departments as well as other Universities (some members of the UCISA Distributed IT Support Staff Group also attended). This was augmented by long breaks and a fantastic tenpin bowling session in the evening.

Looking forward to this year’s event, on 5th July 2012, organization is progressing well. We have two plenaries already confirmed including an exciting session about supporting the Olympics with IT. Workshop slots are filling fast and we have confirmed sessions on JANET

Disaster Recovery; assertiveness in

the workplace; mobile apps for research data capture, Raspberry Pi intro and demo; managed desktops (including Mac) and electronic archives. Four sponsors are already confirmed and paid up.

**The ICTF Conference is the highlight of the year for Oxford ITSS so if you are new or have never attended before do be sure to reserve 5th July now and we’ll look forward to seeing you there. Booking details will be announced towards the end of April or in early May.**



# College IT Management at the National Space Centre

Last Friday (23 March) saw the 2012 College IT Management conference, jointly run by Oxford's and Cambridge's College IT Managers. The events are always away from Oxford or Cambridge and have been held at some fascinating venues over the years, including Bletchley Park, Duxford Air Museum, the Williams F1 HQ, and Stamford Bridge. This year's event was no exception and I found myself quite childishly excited to be going to the National Space Centre in Leicester for the day. About 20 Oxford College ITSS attended out of a total of about 75 people.



The conference was a great success with a good deal of networking and sharing of best practice taking place. The plenary session was entitled "anyway, anyhow, anywhere" and given by Richard Harris, CIO of ARM. We

learned some fascinating facts. Did you know, for example, that the mission to put man on the moon used less computing power than today's average smartphone, and that, worldwide, data centres create more carbon emissions than the total world aviation industry? I was quite surprised! Minimising energy use in mobile devices (to preserve battery life) is a well known issue but it's clearly just as important to minimise energy use in data centres as much as we can too.

Richard explained how the move to mobile devices and the proliferation of different form factors are such important factors in the development of computing today. Computer use is much more personal and as mobile devices consume more and more bandwidth efficiency in network infrastructure and servers becomes ever more important. One Oxford ITSS made the wise observation that it's no longer information itself that is power, but instead, its management and interpretation.

There were twelve plenary seminars and round tables run in four sessions of three in parallel. I started at a seminar about Near Field Communications (NFC), learning about excellent possibilities for NFC integration for mobile phones so time-limited "keys" can be texted to people who are in industries like field service or home care. This sort

of application could also be useful in the College environment where room occupancy changes constantly—think of the headache it would remove if porters' lodges no longer had to handle keys!

My next seminar was about developing a college helpdesk. There were some useful principles shared and lessons learned and I was impressed at how a helpdesk system in a college can be used just as effectively for buildings maintenance and housekeeping issues as it can for IT-related issues. I was impressed that a lot of the audience questions did show a good understanding of the real costs of developing apps in-house. I couldn't help wondering if the effort would have been better-spent implementing RT or similar.

During lunch there was ample opportunity to explore a good exhibition of about 16 suppliers that had come to the event.

My first afternoon session was a fascinating overview of the Raspberry Pi given by someone from the Raspberry Pi Foundation and the Cambridge Computer Lab gave an excellent demonstration with the 'Pi hanging from a cable in the ceiling-mounted data projector! We hope to have this session as a workshop at the ICTF conference on 5th July.



My final session was a round-table discussion about Bring Your Own Device (BYOD). I was struck at how some IT officers still see the college network as "my network" rather than something they provide and support for their colleagues. There was useful discussion about remote desktops and application virtualisation and the issues around keeping College data secure on personally owned devices.

The day was rounded off with a great film in the Space Centre's planetarium about the vastness of space, some rather radio-active-looking cocktails and an excellent meal. After dinner we heard a great talk from a member of Cambridge University Spaceflight - a student-run society that does some amazing stuff with small computers and radio communications!

Tony Brett  
Head of IT Support Staff Services  
OUCS

## ICTF Steering Committee

### ICTF Chair:

Jeremy Worth (Archaeology, until 2014)

### ICTF Secretary:

Sarah Lawson (NPEU, until 2014)

### Elected Members:

Jonathan Ashton (OUCS, until 2014)

Ben Bridle (LMH and St. Hugh's, until 2014)

James Dore (New College, until 2012)

Katherine Ferguson (Bodleian Libraries, until 2013)

Natasha Heaton (Anthropology, until 2013)

Greg Jennings (Hertford College, until 2013)

### Ex officio:

Tony Brett (OUCS)

### Co-opted members:

Alan Hillyer (OUCS-OUTN, 2012)

David White (BSP, 2012)

ICTF provides a framework that promotes and facilitates excellence through collaboration incorporating the full involvement of ICT Staff in both the strategic development and day-to-day running of ICT in the Collegiate University. The ICTF Steering Committee (ICTF-SC) oversees the operation of the ICTF. The Steering Committee is led by the ICTF Secretary and meets at least once per term, usually just prior to the ICTF termly meeting.

