



Hornet for the Google Generation

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Summary

Hornet is a University of Manchester run commercial Internet service providing connectivity to over 16,500 student rooms (www.manchester.ac.uk/halls/internet). It is an enterprise class system and the premier Internet service operator running over the UK's Joint Academic Network (JaNet). The service provides high-speed, fixed cost Internet access to student accommodation. Usage is not dependent on which university the student attends within the Manchester area and Hornet is operated in conjunction with several of Britain's largest private sector student accommodation providers. Over the last few years Hornet has used different forms of media and methods of delivery to educate end users. Trials in communicating information relating to support, acceptable use and user responsibility to students have taken place. These have generated an adaptive methodology aligned to changes in learning methods and have defined business system operations and procedures.

The Google Generation

Student attitudes towards teaching and learning have changed. Beyond the notion that students no longer use the term *reading for a degree* to define their time at University, there has been a greater shift. Although students read books less, they have for many years made full use of online electronic journals to access peer-reviewed articles and content. They're still researching, but this latest generation are doing so differently to their predecessors.

The Google generation refers to a generation of young people from developed countries born in the early 1990s who have grown up in a world dominated by the Internet. According to Wikipedia, the phrase entered popular usage as "a shorthand way of referring to a generation whose first port of call for knowledge is the Internet and a search engine, Google being the most popular". This is offered in contrast to earlier generations who "gained their knowledge through books and conventional libraries". As this generation start to enter universities they are far more adapted to online learning and enrol with universities used to reading text from computer displays.

Many institutions are already delivering media through web-based learning via platforms such as Blackboard and this academic year has seen an increase in the number of students examined using computer based tests. Materials are increasingly accessible to students on demand rather than limited to building opening hours and academics are increasingly able to use central repositories for their teaching materials. The majority of students are *au fait* using the Internet as an information resource and communication tool, although they may not fully appreciate the risks of both (thus the message promoting staying safe and secure must be maintained). The result is that students are increasingly demanding that ICT services have good availability, are functional and meet their service requirements.

Last year the CIBER research group within University College London conducted a study for JISC and the British Library to investigate how the Google generation searches for information and the implications for the UK's major research collections. The study looked at whether or not as a result of the digital transition the Google generation, were researching content in new ways. It also looked at whether or not new ways of searching for content will prove to be any different from the way that existing researchers/scholars work. It followed on from the research findings of the Online Computer Library Centre from their recent global survey. This suggests that the Google generation stereotype may be broadly true:

- 89 percent of college students use search engines to begin an information search (while only 2 per cent start from a library web site)
- 93 per cent are satisfied or very satisfied with their overall experience of using a search engine (compared with 84 per cent for a librarian-assisted search)
- Search engines fit college students' life styles better than physical or online libraries and that fit is 'almost perfect'
- College students still use the library, but they are using it less (and reading less) since they first began using Internet research tools
- "Books" are still the primary library brand association for this group, despite massive investment in digital resources, of which students are largely unfamiliar

Source: OCLC (2006)

These findings are highly consistent with CIBER's research into the information behaviour. They raise enormous issues for information providers and broader educational concerns, notably whether having 'facts at their fingertips' and surfeit of information is at the expense of creative and independent thinking. (Nicholas *et al.* 2008).

Targeting Users

From a Residential Network perspective getting information to users is key. A very small number of students are so keen to get their Internet residential Internet connections live as soon as possible following their arrival at university, that they research the process by searching online and occasionally sending email queries. Recently such activity has been reduced by new mechanisms associated with Hornet that send emails to future residents explaining how the services work. For most students however, the information is only needed when they first arrive at University. In the past this has necessitated insuring that information was in available in leaflet form in arrival packs. Frequently it would be hard to draw attention to the relevant information when accompanied by a stack of other paperwork. After trials with colours, different paper types, finishes and design. The most successful result has been the use of an appropriate clean, crisp and visually contrasting graphic design and simple labelling using the universally recognised phrase 'Internet'.

A second strategy is rather than give the documentation out initially, it can be made available from reception points on demand. This has the advantage of focusing attention on the specific need to get connected to the net as something that students have to pursue. How the relevant information can be obtained can be spread virally by word of mouth within the residences, conferring the bonus of related social discussion and product awareness. It carries some disadvantages, in terms of placing sometimes unwelcome load on the staff at an already busy time of the year and may lead to resentment from students over the delay in being able to access information and enable the Internet service

The Cornell Undergraduate Information Competency Initiative explored creative and effective ways to engage students by integrating research skills into the classroom and the curriculum. The aim was to improve student education by finding ways to engage with students. Part of the problem that information providers face in dealing with the Google generation is that the web encourages skimming, bouncing, and shallow reading. What does appear to work is setting requirements – such as finding a MAC address - students seem to learn the skills to find such things pretty quickly. Although there is the temptation to think of students as lazy, it has to be realised that they respond to rewards in the same way as the rest of us.

To counter skim reading and grab attention documentation from the acceptable use policy, through to leaflets on how to get support and posters reminding students how to get connected need to be well structured, clear, concise and simple English. It has to have visual impact. In the past complex terms and legal jargon made documents difficult to understand or hard to quickly associate with a particular theme. Hornet has found that moving to clear uncluttered and bold designs have countered this and aided interpretation of text.

The Google Generation have very high expectations of ICTs since they are used to a global web culture dominated by a handful of unifying brands and research by CIBER

shows that they prefer interactive systems and are turning away from being passive consumers of information. This can be linked to a decline in passive media such as television and newspapers. It is perhaps not surprising therefore that the most recent steps for Hornet and other ISPs has been to understand this and take steps to ensure systems are in place that deliver the expected content and functionality.

It is a demand that has been met in part by advances in networking switch technology - allowing captive portals to be created. These enable students to connect their computer up in a room and hit a landing page with instructions and information on how to activate their connection. Activation moves the student from a walled garden environment with restricted access to full Internet access after registration. The need for complex leaflets or other documentation in welcome packs explaining how to get connected is reduced as the content is provided digitally.

Using Web Technologies

The emergence of social web sites is changing the nature and fabric of the World Wide Web. Social networking is of particular interest because it is part of a wider trend: users creating and posting content for themselves. Students are increasingly using the web as a social tool. The popularity sees social networking sites being used to share photos through Flickr, publicise and organise events through MySpace and use non-traditional email and chat messaging systems through sites such as Facebook. Increasingly the APIs associated with these systems are being developed to allow content to be integrated between systems and into web logs.

A number of progressive universities have started building online presences through social sites such as Facebook by creating profiles. Within the Resnet community there are many ICT managers are raising questions over whether people should adapt their approach to service support in this direction. It is too early for a solid evidence base to emerge to see whether this kind of initiative will be successful. Nicholson et al. (2008) point out that there is a big difference between 'being where our users are' and 'being useful to our users where they are' and that there are clearly dangers in trying to appear 'cool' to a younger audience. In fact, there is a considerable danger that younger users will resent what they regard as *their space* being invaded, particularly where evidence found online maybe used against them by authorities within the same institution to address misbehaviour!

The Google Generation undoubtedly prefer visual information over text. The use of video allows large amounts of information to be conveyed in a way that words cannot, but text is still important. As technologies improve and costs fall, we expect to see video links beginning to replace text in the social networking context. In many University interfaces, there is evidence that multimedia can quickly lose its appeal, providing short-term novelty (Nicholas *et al.* 2008). The challenge for managers is finding ways to keep content fresh, appealing and exciting on a limited budget. Finding new ways to finance such initiatives becomes key.

Communicating with this new generation of students may require some fresh ideas and approaches. The experience from The University of Manchester and Hornet revealed that the development of new media approaches are generally already in motion and just needs some direction and uniformity. Over the last ten years Hornet has annually reviewed how it gets information to users. This has seen a move from paper form based processes for sign up and requests for support assistance to electronic systems. It has seen a change in support processes. These have moved from trying to reach users in their rooms through hit and miss support visits, with calling cards, phone messages and notes under doors – to a chat based system with a fully audited history that allows meetings to be scheduled at mutually agreeable times. Most recently it has seen a move from text-heavy web pages with numerous screen shots to iPod compatible videos that explain key processes and stages. Videos complete with voice over and suitable on-screen visual cues and design deliver an engaging learning experience.

Work on improving the delivery of information to students has made the jobs of support staff easier. It has reduced the number of start of year issues significantly. As such problems with poor communication and misunderstanding have been eliminated. The introduction of a Hornet system that offers the same format of communication audit trail as the likes of Facebook email communications has given a fully accountable system and a portal through which students can log-in and manage their accounts.

Hitting the Mark

Is the effort put into targeting users and relaying information to them being successful? Feedback to answer this question has to be sought for the right reasons. Pursuing feedback for the sake of meeting a requirement criteria is a poor motivator. Feedback should be sought because it is recognised as vital in developing a better service. Entering into a feedback exercise you should be flexible in your views and genuinely willing and able to change how things are currently done. This might mean that when it comes to the results, you have to concentrate on those variables that are within your power to change. E.g. pricing structures and feedback mechanisms to end users, rather than how support is delivered and staffing levels.

When it comes to acquiring feedback, students get hit with lots of surveys. Surveys are seen as a cheap and easy way to gather data. Many surveys are poorly constructed, being too long, containing leading questions or an unbalanced rating system. In the face of 'survey excess' many students will not respond at all, or only respond if they have had a bad experience and have an axe to grind. Even with incentives for participation in a survey, response rates may rarely exceed 10% of the target audience.

Hornet traditionally carried out an annual survey, but for the 2007-08 academic year decided that it was no longer useful in developing the service. An independent social sciences researcher from within the university was appointed to lead an alternative to surveys - focus groups. These are comparatively resource intensive and expensive to put into practice and may not initially seem to offer as many answers, with perhaps only six discussion points being used to structure an hour long session. The advantage is

that in small groups of no more than ten students, the facilitator is able to engage with the participants and the participants with one another. It makes those involved feel like their feedback is important. The session works as a forum and gets to the root of core issues. Even in this situation with an incentive for participation (Hornet used a £15 Apple iTunes voucher or equivalent gift voucher for a partnered computer wholesaler as a lure), response rates can be low.

In the first focus group run, a random sample of 100 users who had logged a support request were targeted and invited to participate in the focus groups, only a 10% uptake was achieved. In the second session all 16,500 users were blanket emailed, which generated a fifteen fold increase in the response rate. From those who expressed an interest in being involved participants were randomly selected for different sessions based on their availability. Both sessions revealed more information and insight into what students thought of the Hornet service, how they used it, what they wanted from it and how it could be better than years of survey results combined.

The focus groups are used as a formative evaluation. The feedback from the sessions compiled into a report by the social scientist defined ways to enhance student learning, and the student learning experience – without asking students to work harder, or to be more intelligent. It allows Hornet to make things better for the next academic year or in some cases on a shorter timescale. As Cowan (2004) points out, if it is apparent, both in the way we introduce a formative evaluation activity and, more importantly, in the way we are seen to respond constructively to what we learn from it, students will come to appreciate that we really want to know – about what works for them, and why, and what does not work for them. They will also soon learn that our responses can be to their advantage.

The Future

The Internet is sinking into the background as a tool that everyone takes for granted. Increasingly the demands of students and researchers are for services that are integrated and consistent with their wider Internet experience (including Google and other tools). Information consumers – of all ages - use digital media voraciously so any barrier to access: be that additional log-ins, payment or hard copy, are too high for most consumers and information behind those barriers will increasingly be ignored.

It is increasingly clear that a one-size-fits all policy towards system design is not going to be effective: there is a great deal of diversity in today's scholarly population. Without full understanding of the target audience, how they use the Internet and their learning mechanisms, it's impossible to target services effectively. New opportunities need to be seized such as partnering with companies, organizations and other institutions to cross-promote and integrate services and their functions. This involves a need to understand eMarketing and how and when to reach the student population.

The future holds lots of opportunities as new technologies come on stream within university environments. This includes the use of the Internet2 Middleware Initiative,

Shibboleth, which offers federated access control and cross-domain single sign on. Increasingly solutions and services will become more generic allowing access to any resource for any user, particularly in the case of document resources. The use of intelligent content portals that allow students to customise their content via a series of core and optional widgets will become more widely adopted and the primary focus of initial web usage for students and content development for information providers.

This latter initiative is important because the final message is one that all information professionals should have exactly the right skills set to address. It is the need for greater simplicity. We know that the Google generation especially has only a very limited knowledge of the many services that are on offer to them. The problem is one of both raising awareness of this expensive and valuable content and making the interfaces much more standard and easier to use. The cognitive load on user in trying to work through such complexity is at present immense.

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