Introduction

In the spring term 2007 we conducted a survey open to all Bristol students to gather views on IT services. This was part of the consultation exercise on the University Information Technology strategy currently under development. It was the first time in some years that the University had attempted to systematically consult students for their views on all IT facilities.

To encourage responses a series of prizes was offered including an iPod video, two iPod shuffles, and a number of print credit vouchers. Over 1900 responses were received.

To publicise the survey, permission was obtained to email all students in the University - this was extremely effective. A number of posters were printed and distributed around libraries and the Students Union to help reach students who may not be reading their email regularly. A modest amount was spent advertising the survey on Facebook. Click through rates from Facebook flyers to the survey were disappointing.

Students across all faculties, nationalities and years were represented, including undergraduate, taught postgraduate and research postgraduate students. There was an equal response from male and female students.

Groups not well represented in the survey are part-time students and adult education students. Although we attempted to reach those students response rates were too low to draw useful conclusions for those groups. With those exceptions, we believe the survey is fairly representative of Bristol students. Although respondents to the survey were self selecting, we believe offering several very attractive prizes encouraged responses from all, not just those with a particular interest in the topic.

The survey included a number of multiple choice and freeform response questions. Responses to the freeform questions were read and categorised to identify themes.

The survey was followed by two student focus groups (results of which have been presented separately). Participants in the focus groups were not self selected, students were carefully chosen to attend from various groups to provide as representative a sample as possible.
Results show that over 70% of students own a portable computer, around 30% a desktop computer. 50% have an MP3 player, 50% a camera phone, and 65% a digital camera.

Smartphone ownership is around 15% (we defined a smartphone as a phone with web and email access). A ResNet survey in 2006 placed ownership of smartphones at over 30% - this discrepancy may be due to some confusion over the definition. Ownership of PDAs amongst students is less than 10% and declining.

There is little difference between undergraduates and postgraduates. There is a slight trend for the younger students to have the latest devices.
Students were asked how important it was that the University provides various IT facilities. The overall picture is that all the services mentioned are considered to be important or very important.

There was no particular attempt in this question to get students to rank services in order of priority – students could rate every service as important if they wished, and many did. However, we only asked about what we considered to be ‘core’ services, and evidence from the question on importance of possible future services suggests that students would have responded differently if they did not genuinely believe the service to be important.

Points that may be surprising are the continuing overwhelming importance of what some would consider ‘traditional’ services - these have not been superseded.

- Email comes out clearly as the most important service that the University must provide - despite many students also using external email accounts such as Hotmail or Gmail.
- 98% rated public computer rooms as important or very important – despite the growth in computer ownership and alternative forms of access such as wireless.

In a freeform response question we asked for any other services we had not mentioned but which the respondent considered important. Responses included:

- Departmental filestores,
- The Fluff service for sharing files,
- A wide variety of specific software packages, including EndNote, LaTeX, Maple, Matlab, ChemDraw, SignLab.
Satisfaction ratings

Students were asked how satisfied they were with the same set of services.

How do you rate the following services?

For 12 out of 14 services over 80% of students expressed that they were satisfied with the service (a response of good, excellent, or satisfactory). Excluding the responses which were merely satisfactory, for 11 out of 14 services over 50% of students rated that service as excellent or good.

Students rated the ResNet service most highly - 82% responded good or excellent. This is consistent with strong ratings for the ResNet service over many years in previous annual ResNet surveys.

Email scored highly, with 79% responding good or excellent - despite severe criticisms of the Mulberry email client from many elsewhere in the survey.

Provision of information electronically on the web scores highly, with strong ratings for the online library catalogue, electronic library resources, and StudentInfo.

There was no attempt to distinguish in this question between the quality of a service and its availability. Public computer rooms, (and some associated services such as colour printing and scanning) scored relatively poorly, as did IT skills training. The availability of these services is constrained by staff time and space available, and the ratings may reflect that.

Looking at the two questions together it could be concluded that particular attention should be paid to improving those services which students consider to be very important but which are not currently up to the standard of our other services.
On and off-campus services - frequency of use

How often do you access University IT services and resources from somewhere on campus?

87% of students are accessing IT services somewhere on campus at least once a week, with 40% accessing IT services on campus every day.

How often do you access University services and facilities away from campus? (eg home, halls, while travelling, anywhere else?)

93% are accessing University IT services away from campus at least once a week, with 66% accessing services away from campus every day.
These two questions show that students are using IT facilities very frequently, and that home working and remote access is an extremely significant issue for students, as we also know it is for staff.

Would you use each of the following possible new or extended services?

We asked students about a variety of services we offer but which could be expanded (such as wireless coverage) or do not offer but could consider (such as a business centre with PCs, copiers and fax in one location). In addition to the raw responses we asked for any comments.

Would you use the following possible new or extended services?

![Bar chart showing responses to would use questions.](chart)

There is a support for a wide range of accommodation and facilities for both University-supplied public computers and wireless for personal laptops. Public computer rooms, quiet study wireless areas, social spaces for wireless and small group rooms all score highly. Public computer rooms and quiet areas with wireless score highest. There was a sense from comments that the requirement for collaborative work is increasing. "Collaborative working is becoming more prevalent in our course - rooms to facilitate that would be great."

Some specific ideas, such as a business centre and computer supplies vending machine, could be explored as part of the Nucleus project or shorter-term works in the Computer Centre.

There was significant demand for the idea of a laptop clinic, which IS does not offer at the moment, except on a very ad hoc basis. We have recently developed a list of local firms offering such services.

Some students were quite critical of the idea of support for phones and mp3 players. A typical comment was "Mobile phones and MP3 players aren't anything to do with the university, so funds shouldn't be wasted on help for them."

We also asked students to contribute ideas for additional services they wanted. Suggestions included:

- Access to filestore from offsite (this was a particularly frequent request)
- Larger quota for file storage and email,
- Facilities for double-sided printing and printing transparencies,
- Greater availability of Mac and Linux systems
- Calendaring
- Online forums
- Better support for other email clients
Licensed access to specialist software on home PCs
- Student portal
- Swipe card access to 24 hour facility

Training

What IT training requirements do you have?

Answers to this freeform question reveal a split between those who require no IT training and those who do. This may reflect a situation where our ‘typical student’ is far more IT literate than before - but with IT now integral to education (Blackboard, online journals, etc) training for those who do need it is more important not less.

There were 665 responses. 200 (30%) responded that they required no training – although it is possible that others who felt the same skipped the question, and that this figure could be much higher.

70% wanted training on a wide variety of packages and services. Themes included:
- Specific packages; eg Office (most especially Excel), AutoCad, PhotoShop, MatLab, Macs, SPSS
- Training on accessing and searching electronic library resources
- Web design
- In depth technical training, eg programming and Linux/Unix skills
- Some requests for the ECDL, or general mentions that certificates appropriate for CVs would be beneficial.
- General computer maintenance and housekeeping – eg “basic things to do if your computer crashes”

Other points to note:
- Quite a few thought that personally they were very IT literate, but that training was necessary for others and should be provided to them.
- Some mentioned that they had required good IT training at school. At the other extreme, one said “I’d never sent an e-mail before coming to Uni so I don't think people should assume you have certain levels of IT knowledge”.
- There was confusion as to where responsibility for training on various packages lies – departmentally or centrally.
- A few felt that they would benefit from training but wouldn’t use it: “I need lots of training but I wouldn't necessarily take it up if it were offered, because of time and work” or “I prefer to give it a go and then ask if I get really stuck”
- Where students had already experienced IT training from IS or their department the feedback was generally positive.
Communication

Do you use any of the following?

- Non-university email account (e.g., Hotmail, GMail, etc): 100%
- MSN Messenger: 84%
- Facebook: 76%
- Skype: 45%
- MySpace: 26%
- Other instant messaging systems (all except MSN Messenger): 19%
- Other social network sites (all except Facebook and MySpace): 15%
- Other Internet telephony systems (all except Skype): 7%
- Second Life or similar virtual worlds: 2%

Which of the following methods would you like to be able to use to receive information from or send information to the University?

- Email: 98%
- Student portal: 53%
- Phone: 41%
- Paper mail: 33%
- Text message: 30%
- Instant messaging: 27%
- Facebook: 21%
- Skype or similar Internet telephony: 12%
- RSS feed (Web feed): 9%
- Blogs: 7%
- Other (please specify): 1%
These two questions show that the communication methods students are using already between themselves are not necessarily those that they wish to use to communicate formally with the University. In particular there was a strong reaction against using Facebook for any University purpose, with most students thinking it should be strictly social without intrusion by the University.

On text messaging reactions are more split, with some very happy to receive SMS messages from the University for urgent matters, while others see their mobile phone and texting as personal and private. Comments included:

- "I would hate the University using my private mobile number, or (relatively) private Facebook account for communications."
- "Texting would be very sufficient and easy as everybody has a mobile on them all the time"

**Online systems**

*What University processes are currently done on paper but you would like to do online?*

This was a freeform response question but students were prompted with a list of some example university processes (applications, payments, scheduling appointments, timetables, registrations).

A common response was everything - "As many university processes as possible should be online."

While others thought we were there already: "Our timetables are already online and we can register each year online so I think everything that should be done online is done online"

Requests for online processes included:

- timetables,
- initial registration,
- scheduling of appointments,
- exam results and feedback on assessed work
- pay claims for demonstrators
- inter library loans
- payment of library fines, ResNet, accommodation fees, tuition fees, print credits
- essay submissions,
- internal orders (eg component orders in Engineering or equipment in Chemistry).

Advantages given for online processes were that they saved paper, were faster and more reliable, especially where the post would otherwise be involved:

"Most of the application process could be done online, and this would save a lot of paper and postage, particularly for overseas students. It would also speed up the process - several times I was a bit anxious as to whether the forms would reach me before the deadline. Online timetables (both personal and general) would also be very useful."

Some didn’t want online processes; they were more comfortable completing them on paper. Some saw a benefit in online processes but still wanted a paper alternative.

"Applications and payments should be done on paper I think because they’re very formal things which I think should be done in this way, plus I don’t trust making payments online. However things like timetables and scheduling appointments should definitely be online because it’s extremely important to have the information straight away otherwise it’s no use. Registrations should be done in person because I feel it should have that personal touch yet it does take a lot longer and is a bit tedious at times."
The number one request for a process to be completed online was the provision of initial timetables and changes to timetables during the year:

"Timetabling is still a big problem, and as the degree progresses and more modules become optional tracking down all the possibilities are quite tricky, especially when they are cross department. A unified module search + timetable builder would be fantastic. To be of most use, it should almost be more of a calendaring service, and the lecturer should be able to easily modify it in the event that, say, a lecture is cancelled or a lecture group decide to move the time etc."

"Timetables are a mess for my department. I've got to look at three separate timetables to figure mine out. I'd like to see a standardised format with iCal or similar standards based calendaring available. Everything in halls is currently done on paper which seems somewhat wasteful since it gets emailed to us then we have to print it, write out information then hand it in to get put back onto a computer. For instance absence notification for holiday periods. If accommodation and tuition fee payment schedules could be sorted through student info or similar that would be fantastic."

One interesting response was the suggestion that exams should be conducted online (or at least with a word processor):

"EXAMS! It is always difficult (especially in this modern age) to write for three hour periods by hand when you get little to no practice as most things (assignments, letters, e-mails) are now composed on computers. As a result, people write slower than they are able to type (this didn't used to be the case). I think the option of typing in exams should be available."
Easy and convenient services

What is easiest / most convenient about IT facilities and services at the University?

This question and the remaining questions in the survey were all completely freeform text entry, to encourage any responses and hopefully avoid leading the responses. The responses were then analyzed, grouped and counted to identify themes.

As any response was permitted for these freeform questions and there was no prompt of possible responses the percentages appear low (as most students gave only one answer and could have written anything). The absolute numbers are not significant but the relative positions are useful.

<table>
<thead>
<tr>
<th>position</th>
<th>service</th>
<th>number of respondents</th>
<th>percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>email</td>
<td>139</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>ResNet</td>
<td>90</td>
<td>10%</td>
</tr>
<tr>
<td>3</td>
<td>good access to computers / availability of computers</td>
<td>85</td>
<td>9%</td>
</tr>
<tr>
<td>4</td>
<td>convenient locations of computers in all areas of campus</td>
<td>81</td>
<td>9%</td>
</tr>
<tr>
<td>5</td>
<td>electronic library resources</td>
<td>65</td>
<td>7%</td>
</tr>
<tr>
<td>6</td>
<td>blackboard</td>
<td>61</td>
<td>7%</td>
</tr>
<tr>
<td>7</td>
<td>computer rooms and labs</td>
<td>55</td>
<td>6%</td>
</tr>
<tr>
<td>8</td>
<td>Mulberry</td>
<td>53</td>
<td>6%</td>
</tr>
<tr>
<td>9</td>
<td>library catalogue</td>
<td>51</td>
<td>6%</td>
</tr>
<tr>
<td>10</td>
<td>offsite access / access from home</td>
<td>48</td>
<td>5%</td>
</tr>
</tbody>
</table>

It is not surprising that email, ResNet, Blackboard and electronic library resources were rated here as highly convenient and easy, as they also rated highly in earlier questions.

Interestingly public computer rooms are highly praised by some students here, despite being criticised by other students elsewhere in the survey. Particularly praised were the convenient location and choice of rooms all over campus, and the reliability of equipment maintained to a high standard. Points noted included:

- Quite a few computer rooms available
- Computer rooms are excellent in my department with plenty of computers and printers
- The 24 hour computer room is always available.
- The computers in the computer rooms are very reliable, as is the printing system.
- The monitors within Queens and MVB which show which computer rooms are available.

It appears likely that attitudes to computer rooms vary between students depending on the department, personal working patterns, and quality of the room most convenient for them.
One thing to change

*If there was one thing you could change about IT services and facilities at the University, what would it be?*

<table>
<thead>
<tr>
<th>position</th>
<th>request</th>
<th>number of respondents</th>
<th>percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>more public computers</td>
<td>131</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>better email program (replace Mulberry and/or Silkymail)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>better email program (replace Mulberry and/or Silkymail)</td>
<td>85</td>
<td>9%</td>
</tr>
<tr>
<td>3</td>
<td>more extensive wireless / fully wireless campus</td>
<td>57</td>
<td>7%</td>
</tr>
<tr>
<td>4</td>
<td>cheaper or free printing</td>
<td>56</td>
<td>6%</td>
</tr>
<tr>
<td>5</td>
<td>nicer working environment in computer rooms</td>
<td>24</td>
<td>3%</td>
</tr>
<tr>
<td>6</td>
<td>easier ways to buy print credits (eg online)</td>
<td>22</td>
<td>2%</td>
</tr>
<tr>
<td>7</td>
<td>24 hour access or longer opening hours</td>
<td>21</td>
<td>2%</td>
</tr>
<tr>
<td>8</td>
<td>easier remote access</td>
<td>20</td>
<td>2%</td>
</tr>
<tr>
<td>9</td>
<td>better use of blackboard by lecturers</td>
<td>16</td>
<td>2%</td>
</tr>
<tr>
<td>10</td>
<td>better spec / newer public computers</td>
<td>16</td>
<td>2%</td>
</tr>
</tbody>
</table>

There was a very strong demand in responses to this question for more public computers. Access to computer rooms was important (eg more 24 hour access, or requests for 24 hour access from students who did not realise it is already available). It was commonly thought that at times when they were needed (busy times of day, essay deadlines) there was always a queue. The number of computers with various specialist software packages was limited.

A nicer environment for computer rooms also featured strongly. The current Computer Centre 24 hour terminal room was particularly criticised as unpleasant to work in - "soulless". Requests were for "A nicer working environment in the 24-hour Computer Centre - plants, windows, fresh air, nice smell, water cooler etc".

There were numerous requests for friendlier email packages instead of Mulberry and Silkymail. Mulberry in particular came in for severe criticism, with many considering it unfriendly and difficult to use. An example comment (extreme but not atypical):

*Mulberry is the worst thing that I have had to use in my life! it is not friendly at all... it's horrible. I don't understand why I need to open my contacts directory everyday... I'd expect that Mulberry does it for me!!! It is really annoying to be "punished" everyday having to use that Mulberry*

This is despite Mulberry being praised by some in an earlier question as easy and convenient. It appears that mail clients are a highly personal and emotive issue, with responses varying widely - although those not happy with the mail client express this much more strongly than those who are.

During the period of the survey the new webmail system Squirrelmail was introduced, and that was praised as an important step forward: "The recent change to Squirrelmail from Silkymail is absolutely fantastic."
## New technologies for education

*In what way do you think new technologies could be used in education?*

<table>
<thead>
<tr>
<th>position</th>
<th>comment</th>
<th>number of respondents</th>
<th>percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Provide audio podcasts or video recordings of lectures for download and revision later</td>
<td>115</td>
<td>16%</td>
</tr>
<tr>
<td>2</td>
<td>Provide more lecture notes etc on blackboard / make sure blackboard resources are provided consistently for all courses</td>
<td>53</td>
<td>7%</td>
</tr>
<tr>
<td>3</td>
<td>we already have a tendency to overuse technology in education / contact teaching time is more important</td>
<td>40</td>
<td>6%</td>
</tr>
<tr>
<td>4</td>
<td>level of technology is about right currently, don't want more or less</td>
<td>31</td>
<td>4%</td>
</tr>
<tr>
<td>5</td>
<td>Informal quizzes for revision or online exams</td>
<td>24</td>
<td>3%</td>
</tr>
<tr>
<td>6</td>
<td>interactive lectures, eg incorporating electronic voting</td>
<td>24</td>
<td>3%</td>
</tr>
<tr>
<td>7</td>
<td>train and encourage staff to use technology and modern methods</td>
<td>22</td>
<td>3%</td>
</tr>
<tr>
<td>8</td>
<td>more use of smart digital whiteboards</td>
<td>19</td>
<td>3%</td>
</tr>
<tr>
<td>9</td>
<td>online e-books, eg to relieve textbook shortage in libraries</td>
<td>18</td>
<td>3%</td>
</tr>
<tr>
<td>10</td>
<td>to help communication between staff and students, eg instant messaging</td>
<td>14</td>
<td>2%</td>
</tr>
<tr>
<td>11</td>
<td>better visualisation / illustration, eg use of animations</td>
<td>12</td>
<td>2%</td>
</tr>
<tr>
<td>12</td>
<td>discussion boards for lecturers and other students to ask and answer questions</td>
<td>12</td>
<td>2%</td>
</tr>
<tr>
<td>13</td>
<td>text messaging for quicker notification (eg when lecture cancelled)</td>
<td>11</td>
<td>2%</td>
</tr>
<tr>
<td>14</td>
<td>videoconferencing, eg for lectures from experts abroad</td>
<td>10</td>
<td>1%</td>
</tr>
<tr>
<td>15</td>
<td>better produced online materials (eg with hyperlinks for further reading)</td>
<td>7</td>
<td>1%</td>
</tr>
<tr>
<td>16</td>
<td>more wireless coverage, including in lecture theatres</td>
<td>7</td>
<td>1%</td>
</tr>
<tr>
<td>17</td>
<td>facility to submit assessed work online</td>
<td>7</td>
<td>1%</td>
</tr>
<tr>
<td>18</td>
<td>use of simulations or virtual worlds (eg architecture, molecular modelling)</td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>19</td>
<td>online file storage and sharing for collaborative work</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>20</td>
<td>better search facility for library resources</td>
<td>3</td>
<td>0%</td>
</tr>
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</table>

By far the greatest request was for audio or video recordings of lectures, to revise material at a later date:

- *In Ordinary Differential Equations 2 in the Maths department they have been using podcasts to record lectures, this is incredibly useful, although more needs to be done to make sure it always works.*
- *Online podcasts would be brilliant for revision*
- *Video lectures available on blackboard for download, so if you missed a lecture or wanted to go over the material again nearer exam time it would be available.*

A minority, but a significant minority thought that we already had too much technology in lectures, or what we did have was not being well used:

"I really dislike the rise of powerpoint-type presentations. Half the lectures now are taken up with technology failing, and lecturers skipping through slide after slide and not engaging with
the class or subject. Bring back chalk and a blackboard, and people writing real notes, rather than downloading the lecture notes and never reading them, or filing away a handout forever."

A very common comment was that staff required more training in using online resources such as Blackboard on in-lecture facilities such as smart whiteboards. "Teach the lecturers how to use blackboard! Many don’t use it because they don’t like it or most probably don’t understand it."

Students appreciated that some departments made excellent use of the Blackboard online learning environment, but then on another course or a different department found that the same service was not available. They want to see consistent access to online resources for all courses.
Initial conclusions and suggestions for further action

- We could improve our communication and information to better publicize the services we already offer but which some students do not know about.

- Some services are split between IS and departments and would benefit from a more integrated approach. Provision of multiple systems causes confusion.

- Some responses require very careful consideration and follow up, especially where there are strong but mutually exclusive responses from different groups of students. We need to make sure we are serving the needs of all students.

- We should hold further student surveys in future years to review our progress. Future surveys could be shorter and streamlined to encourage more responses and make analysis of the results easier.

- We could also hold focus groups on specific issues, especially where we are making major changes or introducing important new services. We could also develop an outgoing relationship with existing faculty staff/student committees.

- The primary purpose of the survey was to identify areas to develop as part of the University's long term IT strategy. The information from the survey on student use of technology and thoughts on how it can be used to benefit their education will help us with that. Students however are only here for three years on average and our current students want to see quick fixes and improvements. We should also identify smaller changes we can make in the short and medium term that would benefit our current students.