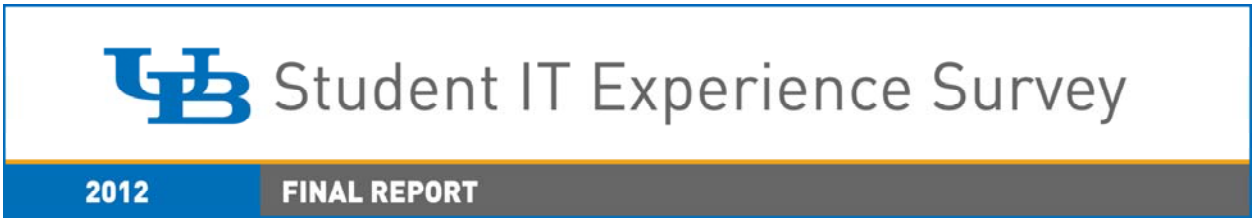


Final Report

2012 Student IT Experience Survey
UB IT Policy & Communications
Office of the CIO

Student IT Experience Survey

2012 FINAL REPORT

Introduction

The sixteenth "Student Information Technology Experience Survey" was made available October 15-29, 2012. Data were collected using Vovici™ software and further analyzed using SPSS™. The instrument contained 30 questions (a significant reduction from previous years) and was designed in consultation with Instructional and IT support staff in each technology area surveyed, as well as the University Libraries, University Campus Living staff and other campus stakeholders. There were a total of 2,914 valid unique responses. Only one question was coded to require a response, providing participants with the opportunity to skip a question if they so chose, and several questions enabled multiple responses ("check all that apply"), the response rate however, was fairly consistent across all questions (with the exception of open-ended responses). To assist with general readability of many graphics, the percentages were rounded to the nearest whole percent. With a 95% confidence level, we can assert a confidence interval of 1.7 percentage points for most questions answered by the total valid responses.

This report is available at: http://www.buffalo.edu/ubit/services/scoreboard/surveys.html

The purpose of this survey is to re-examine students' technology experiences and validate observed or reported trends, particularly with respect to the introduction of new (or modification of existing) technology services. Students were encouraged to participate in the survey through the University web portal (MyUB), and by screen "pop-up" invitations in the CIO/University Libraries public computing sites, School of Management, and Law School computing labs. Only one response was allowed per student using UBITName authentication. Several academic units also supported this effort by marketing the survey link on departmental websites. A random drawing with the prize of a $200 shopping spree at the UB Campus Tees store was offered to students to encourage participation in this year's survey.

This report is organized into eight themes:

- Demographics
- Students' choice of hardware, device(s) and OS
- Continued migration to mobile devices
- Security awareness and practices
- Software and application preferences
- IT in Residence Halls and Apartments
- Learning Spaces, and academic technology resources
- Satisfaction with IT services and recommendations

Survey Highlights

- The overall level of satisfaction of IT services rose slightly, and dissatisfaction with IT services dropped from the previous survey.
- More students are using multiple devices, and increasingly reliant on mobile devices (including laptops) as primary in-class resources, although overall use of laptops have decreased slightly.
- Adoption of Apple™ devices continues to rise slightly, along with non-Apple mobile tablets and smartphones.

- Verizon is the mobile carrier of choice for students; Apple™ OS use has risen slightly more than Android™ – and when combined represent over 90% of the OS reported by students.
- Students have strong interest in increased mobile apps to access UB services.
- 68.7% of students select security settings to automatically patch and update their personal machine.
- UB is not yet experiencing widespread adoption of any particular E-book reader, with nearly one-third of students reporting use of a laptop to access e-books. Kindle and iPad did have a significant showing at just under 10% each.
- Students continue to express desire for expanded public site and printing services, in addition to places where they can charge their devices.
- There were increased calls for easier connectivity to UB_Secure, UB's secure Wi-Fi.
- Students offered a number of helpful suggestions for how to improve "getting started with IT at UB" services, which can be found at the end of this report.

Demographics

The total number of respondents (n=2914) increased slightly from last year (Table 1), attributed to offering a participation incentive (shopping spree at Campus Tees) and by continuing marketing efforts with distributed IT partners (Figure 1).

Figure 1: Class Standing of Respondents

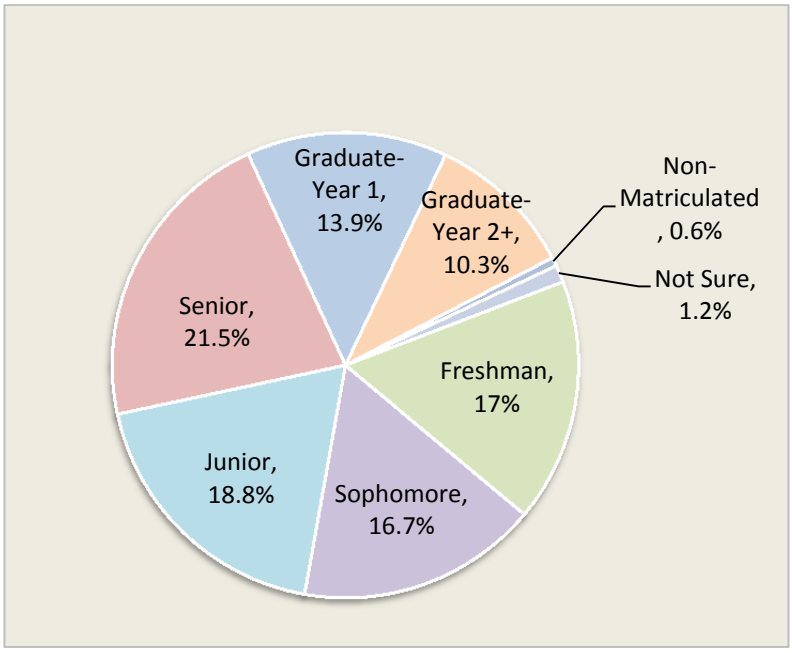


Table 1: Number of Survey Respondents

Year	N
2012-2013	2,914
2011-2012	2,421
2010-2011	996
2009-2010	816
2008-2009	3,221
2007-2008	3,434
2006-2007	1,943
2005-2006	5,548

Though students self-select whether to participate, the sample is fairly consistent and valid. Table 2 first examines the number of survey responses received by school, followed by the percentage of those responses (n=2914). This was compared with UB's Institutional Analysis enrollment figures. When compared with the actual campus population, survey responses fell within or close to the percentage of confidence overall; exceptions include the College of Arts & Sciences, which was over-represented by

18.9%, and the School of Social Work, who was under-represented by 10.8%. The responses were also examined over the past three years, which indicate relative consistency across schools over time (Table 2).

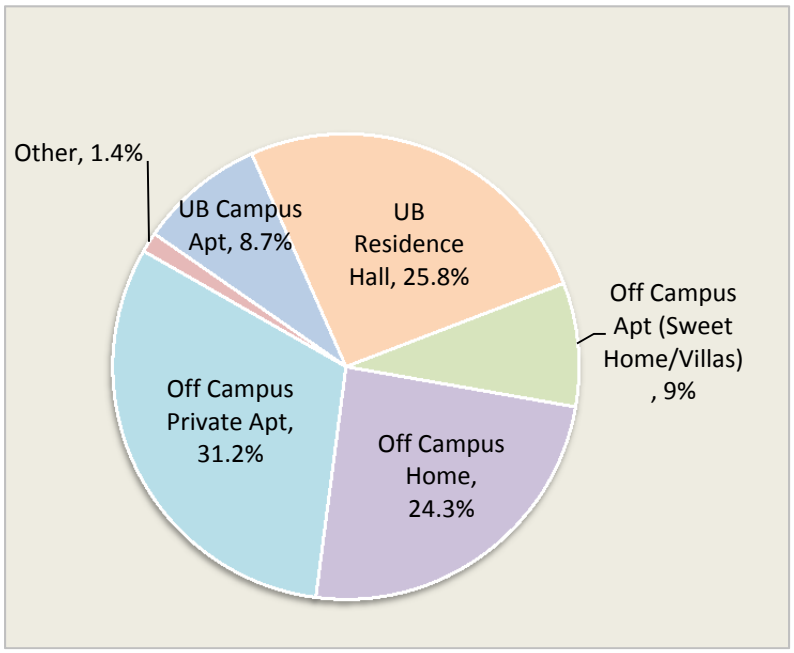
Table 2: Survey Participation as Percentage of Enrollment

With UB's "Finish in Four" initiative, students are being reported differently. "Intended" majors are no longer captured, which accounts for some of the percentage changes from 2011 in Table 2.

School	2012 Survey Response Count by School	% 2012 Response (n=2914)	% Valid Campus Population Sample by School		% 2011 Response (n=2391)	% 2010 Response (n=996)	% 2009 Response (n=838)
Architecture & Planning	52	1.8%	7.8% (-6)		1.9%	1.9%	1.8%
Arts & Sciences	784	26.9%	8% (+18.9)		28.7%	31.8%	30.7%
Dental Medicine	17	.6%	3.5%		.5%	3%	.8%
Education	94	3.2%	3.3%		4.0%	4.7%	4.3%
Engineering & Applied Sciences	602	20.7%	13% (+7.7)		20.5%	18.9%	18.2%
Law	47	1.6%	7.5% (-5.9)		3.0%	2.1%	2.2%
Management	356	12.2%	10.2%		12.3%	13.8%	14.6%
Medicine & Biomedical Sciences	202	6.9%	11.6%		5.4%	5.9%	5.6%
Nursing	111	3.8%	12.4% (-8.6)		2.9%	2.4%	2.3%
Pharmacy & Pharmaceutical Sciences	168	5.8%	12.1% (-6.3)		6.2%	4.2%	4.6%
Public Health & Health Professions	232	8%	15.9% (-7.9)		6.5%	5.1%	6.9%
Social Work	58	2%	12.8% (-10.8)		2.3%	2.7%	2.4%
Undecided	138	4.7%	5.1%		5.7%	6.1%	5.6%

A student's choice of residence may impact his or her access to quality resources, as on-campus housing has direct access to the UB network and robust bandwidth. This survey included several questions that were exposed only to students who live in UB housing to explore the role of residential network support, and how future services may be considered and configured (Figure 2).

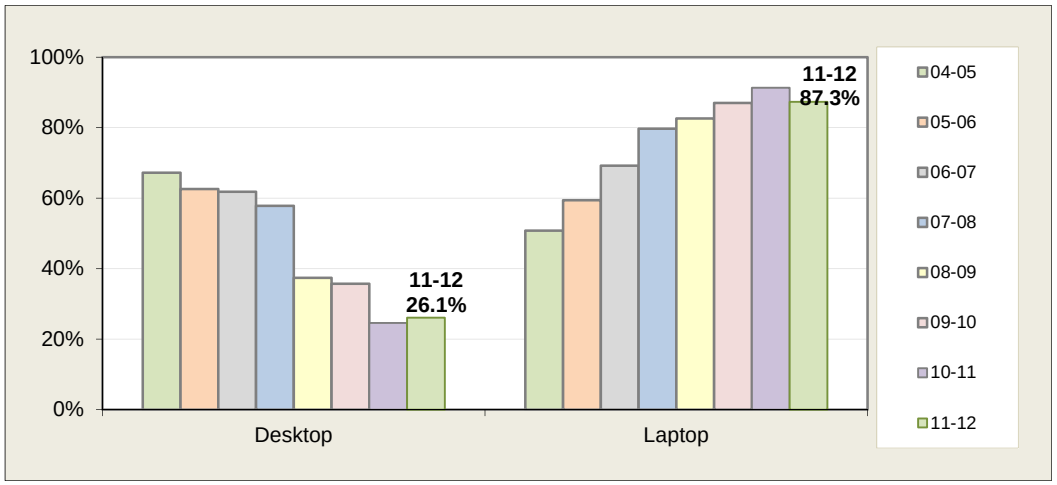
Figure 2: Primary Residence at UB (n=2914)



Students' Choice of Hardware, Mobile Device(s) and OS

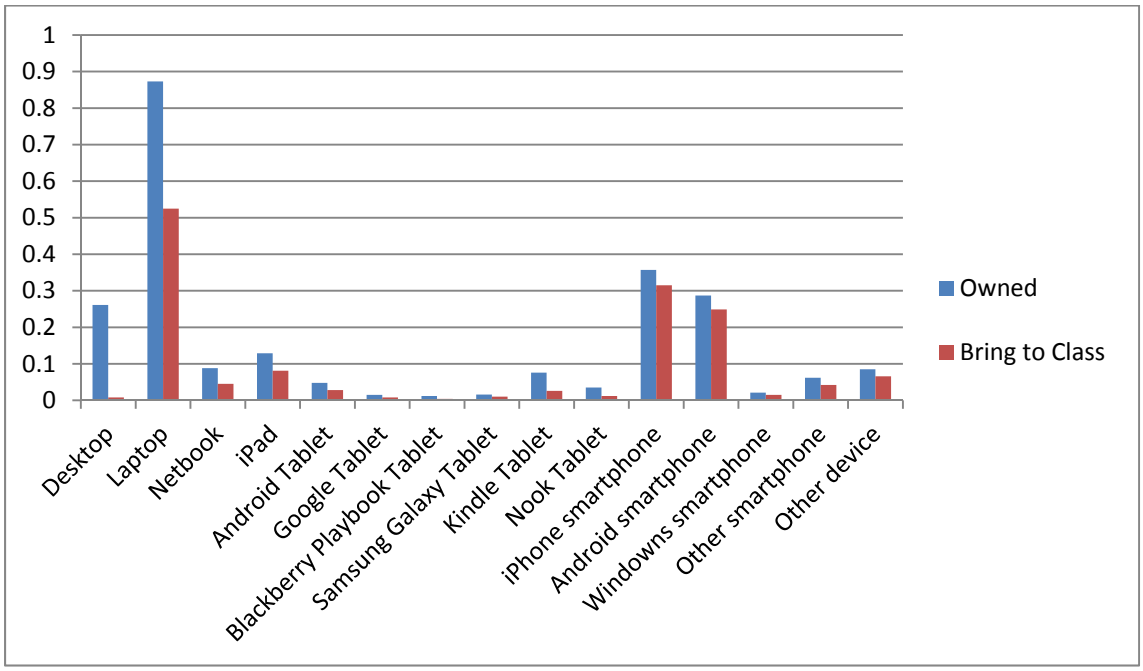
Student use of laptops decreased slightly for the first time in recent years (Figure 3), while the use of desktop machines rose slightly from last year. However, laptops are still by far the most popular device both owned and brought to class compared to other devices. Looking at the computers used primarily by school, most schools fall within a few percentage points of the laptop adoption average. Although the School of Architecture exhibits a slightly lower laptop adoption rate (76.9%) this could be readily interpreted as balanced by an increased iPad adoption rate.

Figure 3: Comparative Ownership of Laptop and Desktop Computers (2003-2011)



UB's students are tracking very similarly with national trends that suggest that students are arriving on campus with a greater diversity and combination of mobile devices that require access to the campus network and services. Although more students now rely on laptops as their primary computing device, roughly half decline to bring them to class, relying instead on public computing sites and mobile devices when outside of their residence (Figure 4).

Figure 4: Types of Hardware Students Own vs. Bring to Class



When examined at the school level (Table 3), both the School of Medicine and Biomedical Science and Public Health and Health Professions (SPHHP) students report the greatest laptop ownership with over 90%, though no school reports less than 76%. The School of Nursing reported the greatest density of iPad and iPhone devices. Education, Pharmacy and Management also indicate significant use of Apple products. Android smartphones are also most used by Engineering students.

Table 3 A/B/C: Device Use by School (Check all that Apply) n= 2914

A. Computer Use Percentage by School

Computers						
School	% Desktop		% Laptop		% Netbook	
	2011	2012	2011	2012	2011	2012
Architecture (52) 1.8%	13.3	21.2	88.9	76.9	6.7	11.5
CAS (784) 26.9%	25.9	28.4	90.8	88.4	11.6	8.5
Dental (17) 0.6%	16.7	29.4	91.7	82.4	8.3	11.8
Education (94) 3.2%	33.3	34.0	83.3	78.7	24.0	14.9
Engineering (602) 20.7%	25.5	24.9	91.4	86.5	10.0	7.8
Law (47) 1.6%	16.7	34.0	97.2	80.9	16.7	14.9
Management (356) 12.2%	27.9	25.8	93.2	87.4	7.5	7.0
Med & Bio Sci (202) 6.9%	16.2	27.7	94.6	90.6	6.9	9.9
Nursing (111) 3.8%	15.7	27.9	92.9	86.5	8.6	6.3
Pharmacy (168) 5.8%	21.5	25.0	91.9	89.9	13.4	11.3
SPHHP (232) 8.0%	21.9	13.8	87.7	90.9	9.0	6.5
Social Work (58) 2.0%	31.5	36.2	94.4	84.5	5.6	10.3
Undecided (138) 4.7%	27.2	29.7	91.2	85.5	6.6	10.1

B. Tablet Use Percentage by School

Instead of limiting responses to iPad vs. general tablets only, which was done in years past, specific tablet types were offered in the 2012 survey.

Tablets								
School	% iPad 2011	% iPad 2012	% Android Tablet 2012	% Google Tablet 2012	% Blackberry Playbook Tablet 2012	% Samsung Galaxy Tablet 2012	% Kindle Tablet 2012	% Nook Tablet 2012
Architecture(52) 1.8%	4.4	13.5	3.8	3.8	3.8	3.8	7.7	1.9
CAS (784) 26.9%	7.0	12.4	3.4	0.9	0.4	0.8	9.2	3.7
Dental (17) 0.6%	16.7	11.8	5.9	0.0	0.0	0.0	0.0	0.0
Education (94) 3.2%	9.4	18.1	4.3	0.0	0.0	1.1	16.0	4.3
Engineering (602) 20.7%	4.7	10.3	6.3	2.2	1.5	1.7	6.5	2.7
Law (47) 1.6%	2.8	8.5	4.3	0.0	0.0	0.0	10.6	4.3
Management (356) 12.2%	7.1	16.3	3.9	1.7	2.2	2.2	7.3	3.1
Med & Bio Sci (202) 6.9%	7.7	14.4	5.9	2.5	2.0	2.5	4.5	3.0
Nursing (111) 3.8%	11.4	19.8	2.7	0.0	0.9	0.9	8.1	2.7
Pharmacy (168) 5.8%	5.4	15.5	8.3	1.8	1.8	3.0	5.4	1.8
SPHHP (232) 8.0%	1.9	12.9	2.6	0.9	0.4	0.9	6.5	4.3
Social Work (58) 2.0%	3.7	8.6	6.9	3.4	1.7	3.4	8.6	10.3
Undecided (138) 4.7%	3.7	7.2	6.5	2.2	2.2	2.9	8.0	5.8

C. Smartphone Use Percentage by School

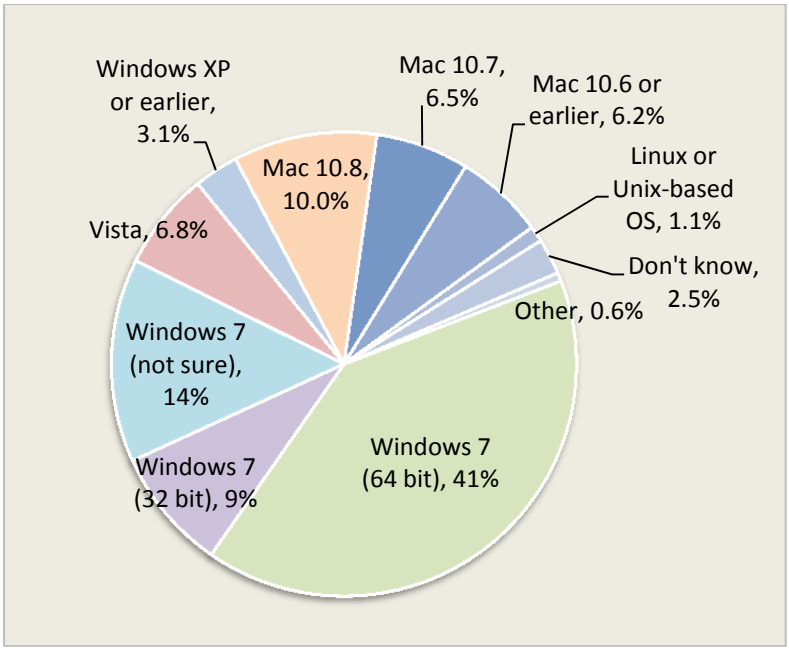
Smartphones					
School	% IPhone smartphone 2011	2012	% Android smartphone 2012	% Windows smartphone 2012	% Other smartphone 2012
Architecture (52) 1.8%	15.6	36.5	25	9.6	11.5
CAS (784) 26.9%	14.0	35.2	26.1	1.4	7.1
Dental (17) 0.6%	33.3	41.2	29.4	5.9	0.0
Education (94) 3.2%	10.4	31.9	20.2	4.3	3.2
Engineering (602) 20.7%	15.3	29.6	35.5	1.7	6.6
Law (47) 1.6%	13.9	38.3	21.3	0.0	8.5
Management (356) 12.2%	22.1	38.2	32.6	2.5	6.7
Med & Bio Sci (202) 6.9%	13.8	36.1	29.2	1.5	5.4
Nursing (111) 3.8%	18.6	45.9	22.5	0.0	5.4
Pharmacy (168) 5.8%	14.8	37.5	32.7	1.8	4.2
SPHHP (232) 8.0%	11.6	41.4	18.1	1.3	4.7
Social Work (58) 2.0%	14.8	41.4	32.8	3.4	6.9
Undecided (138) 4.7%	14.0	37.0	29.7	3.6	5.8

Windows 7 continues to lead as the most popular personal computer operating system. From information about operating systems on primary computers, we can infer hardware choices:

- 73.1% are Windows
- 22.7% are Macs
- 1% are Linux variants

This represents a three percentage self-reported increase in Macs from last year.

Figure 5: Operating Systems Used on Primary Computers (Fall 2012)



Students were slightly less aware of the 32 vs. 64 Bit version of Windows OS they are using. Last year, 10% were not sure of this detail, while this year 14.2% reported not being sure of the version. Use of Vista has again fallen by more than half (6.8%) and only 3.1% remain on Windows XP or an earlier version (Table 4).

Table 4: Comparative Operating Systems from 2010-2012

Operating System	2012	2011	2010
Windows 7 (64 Bit)	40.5%	38%	26%
Windows 7 (32 Bit)	8.5%	11%	15%
Windows 7 (not sure of Bit version)	14.2%	10%	19%
Windows Vista	6.8%	14%	24%
Windows XP or earlier	3.1%	6%	11%
Mac OS X (Mountain Lion) (10.8)	10%	N/A	N/A
Mac OS X (Lion) (10.7)	6.5%	8%	N/A
Mac OS X (Snow Leopard) 10.6 (or earlier)	6.2%	11%	10%
Linux or other Unix-based OS	1.1%	1%	1.6%
Don't Know	2.5%	1.5%	1.2%
Other	.6%	0.5%	1.3%

Finally, related to device ownership, students ranked their most likely source of help when experiencing hardware or device problems:

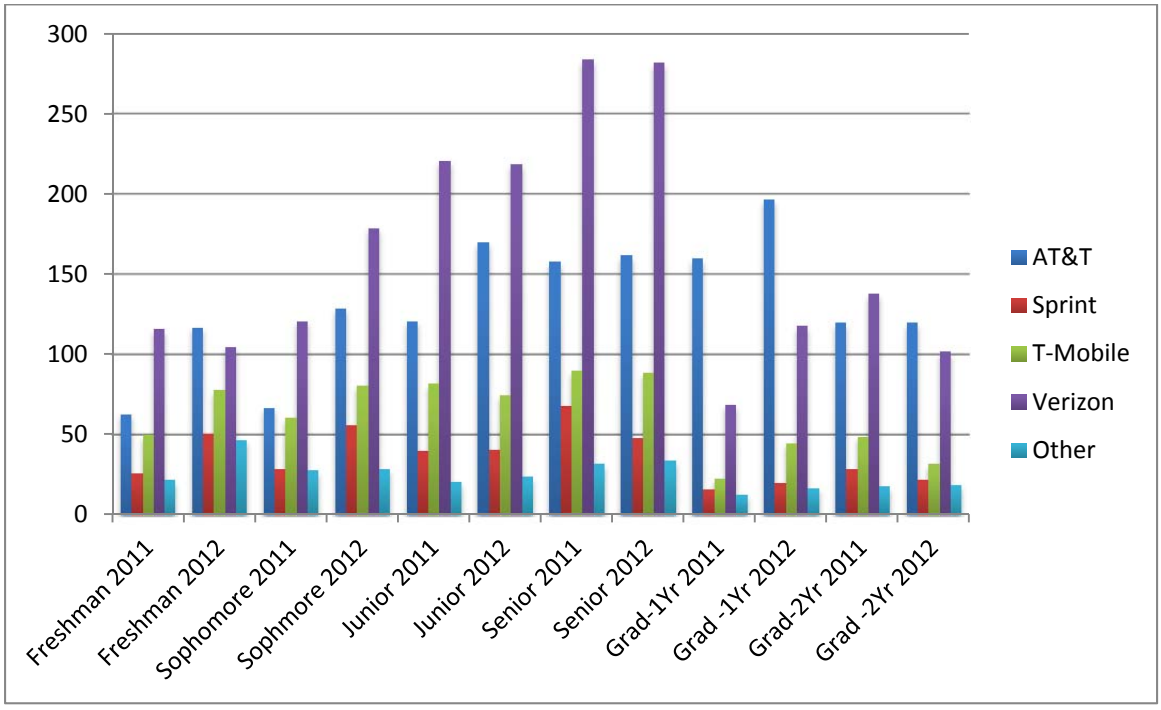
1. Fix myself, or fixed by a friend- 29.1%
2. Call IT Help Desk on-campus- 21%
3. Send back to the manufacturer for repair- 17%
4. Go to an off-campus repair center- 16.5%
5. Go to computer repair at VITEC Solutions- 16.4%

Students Continue Mobile Migration

Watching students during class changes, it is apparent how they depend on their mobile devices to keep them continuously connected. As in past surveys, we requested details regarding their choice of mobile device service providers and their preference for mobile operating system. Knowing these preferences helps UBIT understand cellular coverage problems on campus grounds, and influences how we plan support options based on usage trends.

The vast majority of students reported using large cellular provider services. Figure 6 compares service provider usage divided by class standing, and looks at the trend from usage numbers reported in the 2011 survey.

Figure 6: Mobile Device Carrier by Class Standing- Two Year Comparison



Overall, students report using Verizon Wireless 39%, AT&T 32%, T-Mobile 14%, Sprint 8% and other carriers (Cricket, Virgin Mobile, TracFone, MetroPCS, US Cellular) 7%. The only significant adoption trend is with freshmen and sophomore students' preference for AT&T nearly doubling.

Figure 6 is a two-year comparison of students' preference for smartphone operating system. A major gain of 12% for iOS comes at a loss for the BlackBerry OS (-8%) further underlying the popularity of Apple mobile devices. Android usage also continues to grow, but at a slower rate.

Table 5: Use of Mobile OS

Which Operating System do you have on your Smartphone?	2012	2011
Apple IOS	50%	38%
Android	41%	37%
BlackBerry	6%	14%
Windows Phone	3%	4%
Palm Web	<1%	2%
Symbian	<1%	1%
Other	<1%	4%

Students were asked to identify locations around campus where they are having difficulty receiving a reliable cellular telephone signal. 2,233 suggestions were received, with 891 requesting the reception in Knox Hall be improved. The next three locations most often identified were Capen Hall (185 suggestions), Natural Sciences Complex (119 suggestions) and the Student Union (118 suggestions). The next tier included The Ellicott Food Court, Baldy, Clemens, Alumni and Ellicott. Some suggestions covered broad areas such as "all of North Campus" or named a variety of locations categorized as "basement, tunnels and walkways." A detailed analysis has been provided to the teams working on signal quality and service expansion.

In this year's survey, students were asked for their feedback of the UB*learns* mobile app. This app has been in service for one year. Out of the 800 comments, 322 were positive (40%). Some sample comment excerpts included:

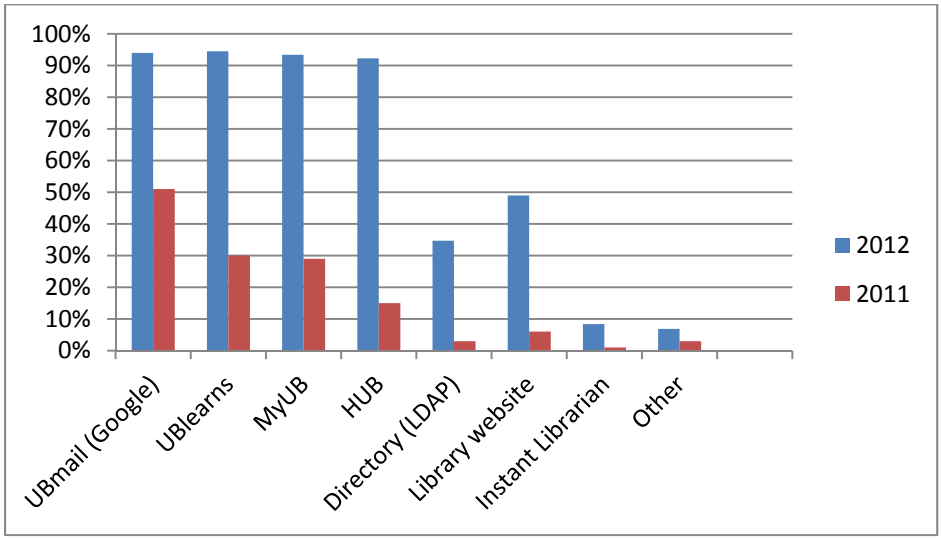
- *It works on any product I use*
- *It was very easy to navigate and worked just like on a computer*
- *It's easy to use on a mobile device*
- *Time saving and efficient*

Less favorable comments focused on log-in problems and general dysfunction:

- *I have trouble logging into MyUB through my smartphone browser*
- *Sometimes it crashes at the login screen*
- *It's not very mobile friendly and it takes a long time to load*
- *You can't watch the online videos of lectures*

Students were asked to identify the UB services they access with their mobile device or tablet. UB*learns* was second only to Email in frequency of mobile access (Figure 7).

Figure 7: 2012 UB Web Services Access by Smartphone or Tablet



Between 2009-2011, Email remained the highest ranked UB service accessed through mobile devices. After that, the priorities clearly shifted as the result of implementation of the UB*learns* mobile app pilot and introduction of HUB, the student information services system that students access via MyUB. In 2012, students ranked UB*learns* just slightly higher than UBmail, followed closely by MyUB and HUB. Use of HUB has greatly increased in the past year, from just 15% in 2011 to more than 92% in 2012.

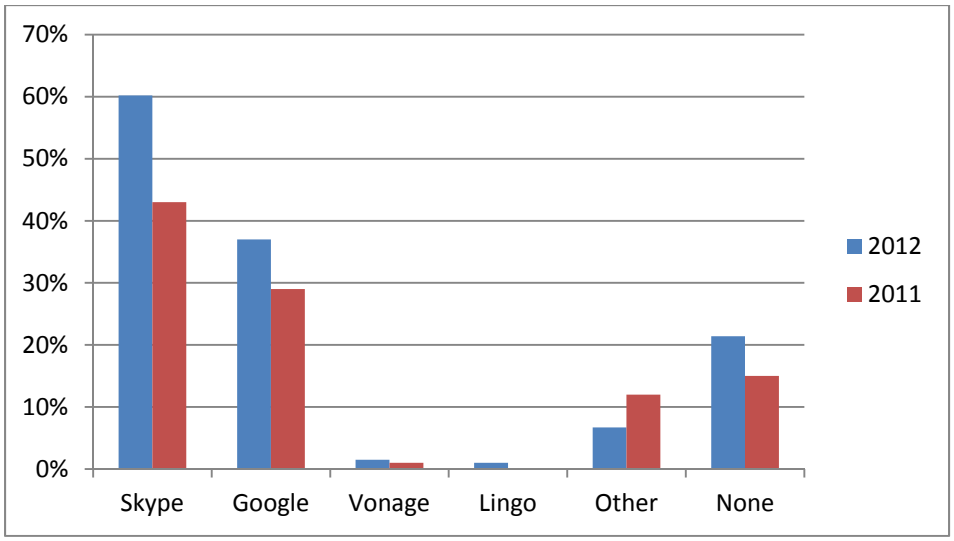
When asked about the level of interest in future mobile apps, students selected whether they were *currently using* an app, *interested in* using a specific app, or were non-committal ("*don't know*" or "*does not apply*") (Table 6).

Table 6: Level of Interest in Mobile Apps for UB Services

App Function	Currently Using	Interested	Don't Know, Does not apply
Read my UBmail	72.2%	18.4%	9.4%
Use UB*learns*	64.2%	24.6%	11.2%
Use MyUB	62.8%	25.8%	11.4%
Search UB's web	45.5%	27.6%	26.8%
Look up UB events	38.5%	36.5%	25%
Find information from the Library website	38.5%	42.5%	18.9%
MyUBCard	38.2%	36.5%	25.3%
Find shuttle information/alerts	36.3%	23%	40.8%
Check shuttle schedules	33.9%	28.2%	37.9%
Maps (campus buildings/bus stops)	31.6%	38.8%	29.5%
Emergency.buffalo.edu	25.8%	44.6%	29.6%
Use Directory to find people	18.8%	34.5%	46.7%
Traffic and parking alerts	18.1%	43.3%	38.5%
Transportation tracker	13.4%	43.1%	43.5%
Ask a librarian for help with research	9.1%	40.8%	50.1%

Figure 8 illustrates student selection from a list of popular "softphone" or VoIP software (if any). Skype remains the clear choice, followed by Google. Nearly one-quarter (21.4%) indicated they did not use any VoIP services on their mobile devices.

Figure 8: Use of VoIP or "Softphones"



Security Awareness and Practices

Security and privacy continue to be a challenge in the university environment. October 2012 was National Cyber Security Month and UB's information campaign was centered on Keep It Legal: staying out of trouble with illegal downloading of media. This effort, combined with raising awareness of UB's secure Wi-Fi network, UB_Secure, help to emphasis safe computing practices for UB students.

As a gauge to measure the effectiveness of our copyright awareness campaigns, we asked students again to tell us their preferred method for accessing media (music, videos, games, etc.) from the Internet. Table 7 reveals a trend towards use of streaming services as the most preferred method, away from use of subscription download services, such as iTunes, and peer-to-peer (essentially illegal) downloading apps. This trend is a significant change from past years and represents safer computing choices by students.

Table 7: Preferred Method for Accessing Media (music, videos, games, etc.) Online

What's your preferred method for accessing media (music, videos, games) online?	**2012**	**2011**
Streaming services (e.g. Stitcher, YouTube, Pandora, Spotify)	72%	56%
Download sites (e.g. iTunes, Amazon, Rhapsody)	15%	24%
I don't use any of these services	6%	8%
Peer-to-peer download apps (e.g. BitTorrent…)	5%	10%
Other	<1%	2%

UB_Secure is UB's secure, encrypted wireless network. Table 8 reports the percent of students reporting use of UB_Secure compared over the past three years. Adoption of UB_Secure remains steady, improving from 2011. The usage rates of the other UB Wi-Fi networks were not collected in 2010 or 2011. Students continue to use UB_Wireless at a high rate (49%), although this network does not provide the level of protection afforded by UB_Secure.

Table 8: Students Wi-Fi network usage

What Wi-Fi network are you using?	2012	2011	2010
UB_Secure	74%	67%	75%
UB_Wireless	49%	-	-
UB_Guest	17%	-	-
Other	3%	-	-

As in past years, we asked students who reside on campus to indicate how they get a Wi-Fi connection in their residence hall or campus apartment (Table 9). UB_Secure continues to be the most popular Wi-Fi network in use, but significant usage of UB_Wireless continues.

Table 9: Resident Students Use of UB Wi-Fi options

How do you get a Wi-Fi (wireless) connection in your residence hall room or apartment?	2012
UB_Secure	27%
UB_Wireless	18%
UB_Guest	7%
My own wireless router	3%
I can't get a Wi-Fi connection	2%
Someone else's router	1%
I don't need a Wi-Fi connection	1%
Other	1%

We asked students why they are not using UB_Secure for their on-campus Wi-Fi connectivity. Students (n=512) told us they:

- Had problems using the service (coverage, drops, difficult to setup) (45%)
- Had no specific reason (16%)
- Didn't know how (14%)
- Had no knowledge of UB_Secure and that they could use it (13%)
- Were already using UB_Wireless or UB_Guest successfully (10%)

On average, three-quarters of students indicated they set their machine to automatically accept updates. Less than a third manually download and install updates.

Table 10: How Students Keep Systems "Patched & Secure"

Patched & Secure Method	2012	2011	2010	2009
Automatic Updates Enabled	69%	73%	73%	72%
Manually Download/Install Updates	29%	27%	24%	24%
Install Additional Security Software	17%	17%	17%	9%
Don't Regularly Patch or Update	6%	5%	6%	4%
Not Sure	6%	6%	7%	5%
Other	<1%	<1%	N/A	N/A

Students' Use and Preferences for Software

The UB2020 Hardware and Software standards committee continues to monitor the use of various software needs and distribution methods across campus. Each year in November the committee compares students' reported use and preference for specific software, trends in the industry (including updates and major releases), and UB's ability to provide support for specific software.

Apart from information regarding student device ownership, operating systems and mobility (reported previously), we asked students for their browser preference. Google Chrome has become the overwhelming browser of choice, while use of Firefox and Internet Explorer decreased by more than half.

Table 11: Browsers used by Students (Check all that Apply)

Response	2012	2011	2010	2009	2008
Google Chrome	51.2%	52%	37%	21%	6%
Firefox	33.5%	69%	68%	68%	45%
Safari	23%	23%	19%	17%	10%
Internet Explorer	14.3%	39%	46%	46%	36%
Opera	.9%	3%	4%	4%	2%
Other	.6%	1.2%	1.2%	2%	2%

IT in Residence Halls and Apartments

Some questions were asked only of residential students within the survey (n=1005, 34.7% of the respondents after combining UB Residence Halls with On Campus Apartments.)

Table 12: UB Residences (n=1005)

Response	Count	Percent		Response	Count	Percent
Clement	66	6.6%		Hadley Village	104	10.3%
Clinton	30	3%		Lehman	36	3.6%
Creekside Village	14	6.8%		Porter	55	5.5%
Dewey	35	3.5%		Red Jacket	97	9.6%
Fargo	66	6.6%		Richmond	78	7.8%
Flickinger Court	15	1.5%		Roosevelt	42	4.2%
Flint Village	75	7.5%		South Lake Village	45	4.5%
Goodyear	56	5.6%		Spaulding	49	4.9%
Greiner	75	7.5%		Wilkeson	68	6.8%

The first issue probed was the strength and quality of the cell phone signal received within these locations. Students were asked "how many bars" they received on their device (Tables 13, 14).

Table 13: Overall Strength of Cell Phone Signal in Residence Hall Rooms or Apartments (n=1005)

Signal Strength	Percent
I don't get a signal	.3%
0-1 bars	7.6%
2-3 bars	39.3%
4-5 bars	51.7%

Table 14: Strength of Cell Phone Signal in Specific Locations (By Count)

Location	No Signal		0-1 Bars		2-3 Bars		4-5 Bars	
	2011	2012	2011	2012	2011	2012	2011	2012
Clement			2	**3**	26	**30**	37	**31**
Clinton			1	**2**	13	**10**	5	**18**
Creekside Village			2	**3**	14	**2**	8	**9**
Dewey			3	**3**	16	**11**	9	**21**
Fargo			4	**2**	19	**31**	17	**33**
Flickinger Court				**1**	7	**5**	13	**7**
Flint Village	1	**1**	7	**8**	21	**32**	36	**34**
Goodyear		**1**	3	**3**	12	**21**	35	**31**
Greiner			5	**5**	19	**27**	22	**43**
Hadley Village	1		5	**7**	33	**33**	37	**64**
Lehman			1	**5**	13	**18**	6	**13**
Porter	1		9	**3**	31	**24**	20	**27**
Red Jacket		**1**		**8**	27	**39**	21	**48**
Richmond			4	**3**	10	**31**	12	**43**
Roosevelt			8	**2**	24	**18**	4	**22**
South Lake Village	1		3	**7**	26	**15**	11	**21**
Spaulding			7	**3**	20	**19**	10	**26**
Wilkeson			6	**9**	22	**29**	12	**30**

Note: blank spaces indicate no report.

Some students correctly point out that a measure of "bars" depends upon the scale the device displays, but it was assumed that students used these choices as a relative guide to report the quality of signal reception within their UB residence.

As we can see from the table above, there have been significant improvements in many locations' cell phone signals in on-campus apartments and residence halls.

The most visible improvements in cellular reception from 2011-2012 include:

- Hadley Village
- Red Jacket
- Richmond
- Greiner
- Fargo
- Flint Village
- Wilkeson

Comments received regarding signal quality were:

- *My room in Goodyear has really bad service. Everywhere else is good.*
- *All locations indoors except my dorm room at the Richmond Quad.*
- *In the Wilkeson laundry room; in the tunnel with the vending machines near Perks, and in the dining area near Sizzles and Hubies. Also in the bus tunnel.*

Next, students were asked how they received and accessed a wireless signal. Anecdotal evidence suggests that as UB wireless access has expanded, the need for students to personally own and share wireless routers has decreased (Table 15).

Table 15: How Residential Students Receive a Wireless Connection (Check all that Apply)

Response	Count	Percent
UB_Secure	787	27%
UB_Wireless	474	16.3%
UB_Guest	193	6.6%
Personally owned wireless router	84	2.9%
Someone else's router	34	1.2%
Can't get a wireless connection	43	1.5%
I don't need a wireless connection	17	.6%

Some residence hall students clearly have a number of devices attached to the University network. It appears that freshman, followed by sophomores and seniors have the most devices accessing services (Table 16), whereas last year, sophomores had the most devices.

Table 16: Residence Hall Devices Accessing the Network by Class Standing

Number of Devices	Fresh	Soph	Junior	Senior	Grad year 1	Grad year 2
0-1	12.9%	12.3%	8.9%	6.9%	2.2%	2.3%
2-4	58%	42%	21.3%	15.7%	9.2%	3.4%
5+	1.6%	1.0%	0.2%	1%	0%	0.7%
Other	0%	0%	0%	0%	0%	0%
Total Count	354	266	164	146	46	19

Learning Resources

Although this survey is primarily concerned with the hardware and systems that support Information technology (infrastructure), it is important to understand how this infrastructure supports academic technologies, and the level of satisfaction students report around IT services (Table 17).

Table 17: Level of Satisfaction with Learning Technologies Supported by IT

Level of Support	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Very Dissatisfied	DK/NA
UB*learns*	44.9%	38.8%	10.4%	3.6%	1.1%	1.2%
Public Printing (iPrint)	38.6%	39.1%	6.9%	4.8%	3.2%	7.4%
Public Workstations	33.4%	42.2%	11.3%	4.8%	1.2%	7.1%
HUB Student Center	28.2%	31.5%	14.7%	13.7%	10%	1.8%
Library Website	25.1%	28.6%	22.3%	3%	.9%	20%
Laptop Support (e.g. adequate space/power)	23.2%	28.4%	18.5%	8.1%	4.3%	17.4%
Mobile Device Support	17.5%	26.8%	23.1%	7.6%	3.9%	21.2%
Course Capture/Recording	15.5%	19.5%	20.1%	4.9%	2.5%	37.5%
Library E-books	15.2%	18.2%	22.6%	3.6%	.8%	39.6%
UBclicks	12.1%	15%	21.5%	2.5%	1.7%	47.2%
iTunesU	11%	11.3%	22.6%	1.9%	.9%	52.2%

Over three-quarters of students report being very or somewhat satisfied with UB*learns*, public workstations, and iPrint – which are very high volume and high profile services. Satisfaction with HUB has greatly increased –in 2011, the majority of students reported being somewhat or very dissatisfied, but more than half now report being very or somewhat satisfied with the service.

There is increasing awareness and interest in e-books to both contain textbook cost and provide enhanced convenience. In order to assist with planning, students were asked which type of device they most used to access e-books. Though over a quarter reported not accessing e-books (34.9%) and just under one-third (27.6%) reported using a laptop, it is significant that 651 students reported using an iPad, Kindle or Nook as text readers, which is double the amount from last year (Table 18).

Table 18: Devices Most Used to Read E-books (n=2878)

Response	Percent
I do not read e-books	34.9%
Personal Laptop or Notebook	27.6%
Amazon Kindle	9.8%
iPad	9.5%
iPhone or other smartphone	8.3%
Barnes & Noble Nook	3.4%
Desktop computer	2.9%
Android Tablet	2.6%
Other (please specify)	.9%

When reviewing the "other – please specify" comments, 21 students (.7%) responded indicated use of another tablet (Samsung or Sony) or iPod to access e-books. Only .2% of students use Kobo.

Qualitative Responses –Suggestions and Critical Feedback

In order to reduce the overall instrument length and time required to complete this year's survey, the qualitative questions were reduced to probe just two major themes:

- Technology Resources to Assist Study and Research Needs
- What would have made it easier for you to get started with IT at UB?

Emerging Theme Analysis based on key words was used to identify service themes. In many cases, more than one comment was provided by a respondent regarding different services. After coding each response into five different categories (see Table 19), each category was counted and reflected below. The major themes identified were largely consistent with those expressed in past surveys.

Table 19: Technology Resources to Assist Study and Research Needs (n= 1042)

Theme Analysis	Count
Availability of Technology (i.e. software, computers, power outlet)	**341**
Technology Resources (i.e. recorded lectures, e-books, e-journals)	**333**
Connectivity Issues: (Need for better/stronger connection; better wireless internet availability and connection on campus, etc.)	**163**
N/A	**130**
Satisfied in General; positive	**75**

The majority of the comments were requesting more technology, and more technology resources available to students. Some of the major themes regarding these two categories are reflected in the comments below:

- *I wish there were more places to charge your devices on campus. Also if the computers were updated more regularly. Last year for example Flash wasn't updated which was annoying since some websites wouldn't open up. Also, since I didn't find somewhere to post this, but the Wi-Fi isn't always working especially in the SU. I find this annoying, especially since I was told this has been looked into for "weeks."*

- *More express computing sites, especially in Norton & Knox.*

- *More public printing stations.*
- *I am still discovering more resources offered within the information technology at UB. It would be great if there was a HUB app for android or an app for UB learns on android. A UB Learns app would definably be helpful for studying since my professors' use it frequently.*
- *Wireless that works more than 75% of the time. More mobile-friendly campus resources.*
- *Stronger service allover campus for Wi-Fi and cell phones.*
- *E-textbooks made available from the University.*
- *I think north campus needs more supply of computers because when it's busy hour it's hard to find a computer to print out stuff.*

Some positive comments that reflect satisfaction with the services IT at UB provides:

- *Nothing more, so far I'm very impressed with what is offered.*
- *It's already very helpful.*
- *They provide everything that I need.*
- *I feel like UB provides adequate technology resources. However, I feel that students are not taught or given enough opportunities to utilize these resources to their maximum potential.*

Getting Started with IT at UB

The second question focused on how students "get started" with IT at UB, to help ascertain how incoming students may be better served in the future. Many students also interpreted the question more broadly, offering comments regarding current improvement needs. The three themes below represent the majority of the comments that were received.

1. **Connecting to the Internet:** (i.e. UB_Secure, UB_ Wireless)
    - *Make it easier to set up UB_Secure on your computer.*
    - *Connecting to the network.*
    - *It was difficult connecting to Internet for the first time; it was just assumed everyone knew how it worked.*
    - *I had a difficult time hooking up my smartphone to UB webmail and initially putting my computer on UB secure. Took some elbow grease.*
    - *UB_Secure instructions in orientation.*

2. **Accessing UBmail**

   Comments reflecting this:

   - *I never received any literature in the mail outlining a step-by-step process of how to get set up with UBmail.*
   - *Clearer directions on how to set up Mail on iPad/iPhone. Mine still doesn't work.*
   - *Accessing UBmail & sending from email software (Outlook, iPhone/iPad) as opposed to using Gmail.*
   - *I was never made aware of UB mail until classes started. The main website is not user friendly.*

3. **More information** (i.e. seminars, written materials, tutorials, emails) **on how to use all of UB IT's services**

   Comments reflecting this:

   - *A better introduction to these services during orientation.*
   - *A detailed info page given to me on the first day outlining important resources.*
   - *A tour of the website that is mandatory for all freshmen before the semester starts.*
   - *If I had an intro session UB IT. Especially confused about wireless printing*
   - *More in depth instructions on help websites.*

To read additional unedited comments on getting started with IT at UB, please visit http://www.buffalo.edu/content/dam/www/ubit/pdfs/Reports/GettingStartedwithUBIT-2012survey.pdf

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