



Private Colleges: Bandwidth and Information Technology Report

February 2010

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Executive Summary

Xwires Communications conducted this research in January and February of 2010 in reaction to bandwidth and other related questions clients have asked regarding what other private colleges across the country are doing regarding a number of current issues and challenges. Therefore, the purpose of this study is to provide a bandwidth and technology research resource private college IT professionals can use to support their planning processes and to support Xwires' product development efforts.

The intent is to repeat the research each year. In fact, this is the study's second year, so this year's summary report contains trending analysis showing how the environment has changed since the 2009 study.

There were 1443 colleges that were invited to participate in the research study. From that universe, a total of 142 colleges (four were small public universities) responded and participated in the electronic survey for a participation rate of 9.8%. This was an increase of 30 participants from the 2009 study. The size of institutions varied considerably. However, the average college that responded had 1289 students living in their residence halls and a median IT staff of 13. Both of these numbers are somewhat larger than last year's participants (average of 1059 students living in their residence halls and a median IT staff of 10).

The study focused on a number of bandwidth and technology related issues and challenges, including:

- Demand for bandwidth and related trends
- Internet support
- Network integrity issues
- Residence hall internet access
- Wireless technology and trends
- IT Budget and staffing trends
- Outsourcing

The results of the research was quite revealing regarding how private colleges are reacting to a number of market trends and challenges. In a broad sense, the study uncovered the following trends and concerns:

- Reacting to accelerating demand, private colleges are adding new bandwidth at a very high rate (even more than the elevated rates from the 2009 study)
- The cost of new bandwidth appears to be falling
- With the acceleration of bandwidth demands, colleges are beginning to feel the stress of providing quality internet support to their users
- No surprise, network integrity issues (virus protection), wireless, Internet support, up-to-date network, and Internet speed are top priorities

- Schools are aggressively deploying wireless access in their residence halls and general campus and they have made considerable progress since the 2009 report
- Colleges are aggressively removing land-line phones from their residence halls
- As a consequence of the current economic climate and resulting impact to endowments, more IT budgets were cut than were increased this year. However, expectations for next year are more balanced
- As anticipated, the comfort level for outsourcing various IT functions has not changed much from the 2009 results, but the comfort level of individual functions varies considerably. The comfort level for outsourcing functions such as residence hall television service and email was quite high. However, the comfort level of for outsourcing IT staffing and classroom services was quite low.

The remainder of this paper provides a more detailed summary of each of primary components of the study. For even more detail, please contact Xwires Communications.

Bandwidth Trends

The average amount of bandwidth coming into the campuses that participated in the research study was surprisingly high. Figure 1 shows the percentage of colleges at varying bandwidth levels. As expected, bandwidth increased with the size of the institution (measured by students living on campus). Notice, many colleges are well above the DS3 and OC3 range to satisfy their bandwidth requirements.

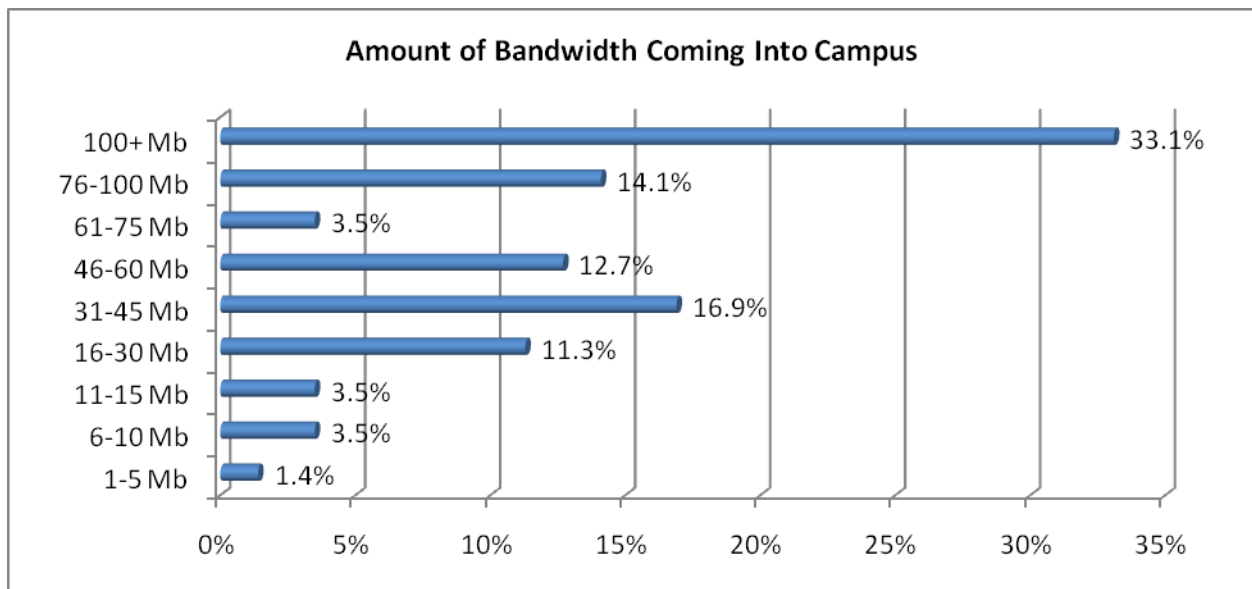


Figure 1: Provides a summary of total bandwidth coming into campus. The percentages represent the relative number of schools falling into each variable bandwidth level.

Even more surprising than the amount of existing bandwidth is the pace at which bandwidth is being added. While figure 2 clearly shows that over 88% have added bandwidth within the last 2 years (the same pace as the 2009 report showed), figure 3 shows that when schools add bandwidth, they are adding it in relatively large increments (most adding at the DS3 or multiple

T-1 level). Remarkably, this year’s report showed colleges added far more bandwidth than last year. Over 57% added more than 30 Mb versus only 33% adding over 26 Mb in the 2009 report. This frequency and scale of bandwidth expansion is evidence of the ever increasing bandwidth demand college IT professionals are dealing with.

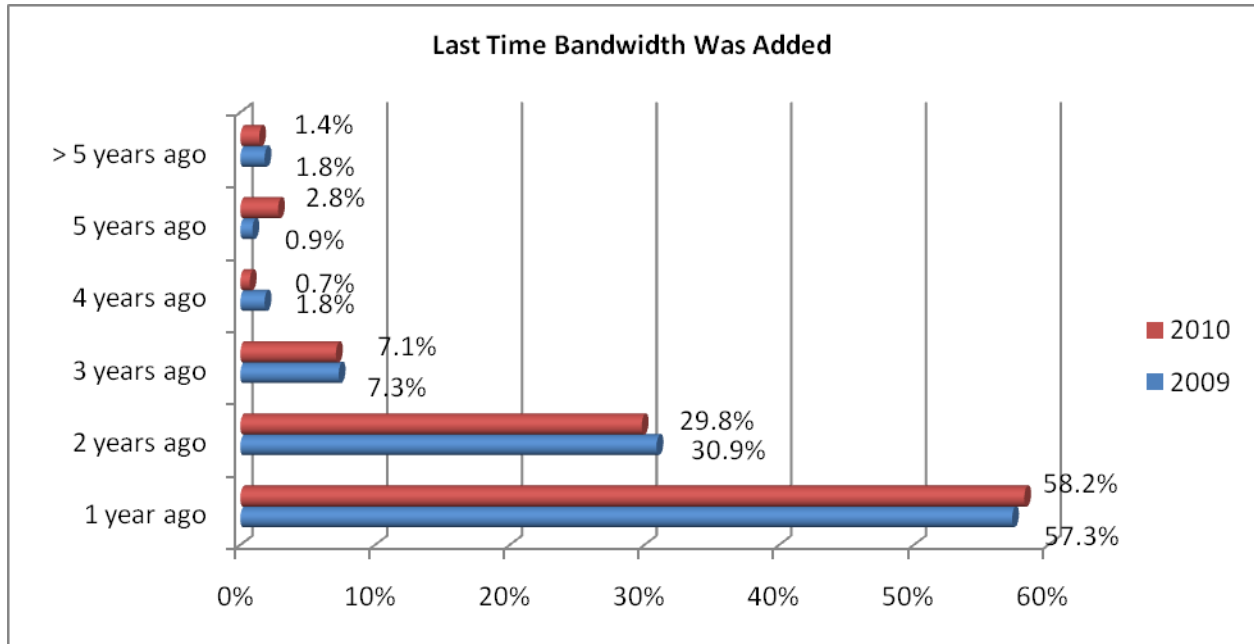


Figure 2: Clearly shows that schools have recently added bandwidth to keep pace with demand

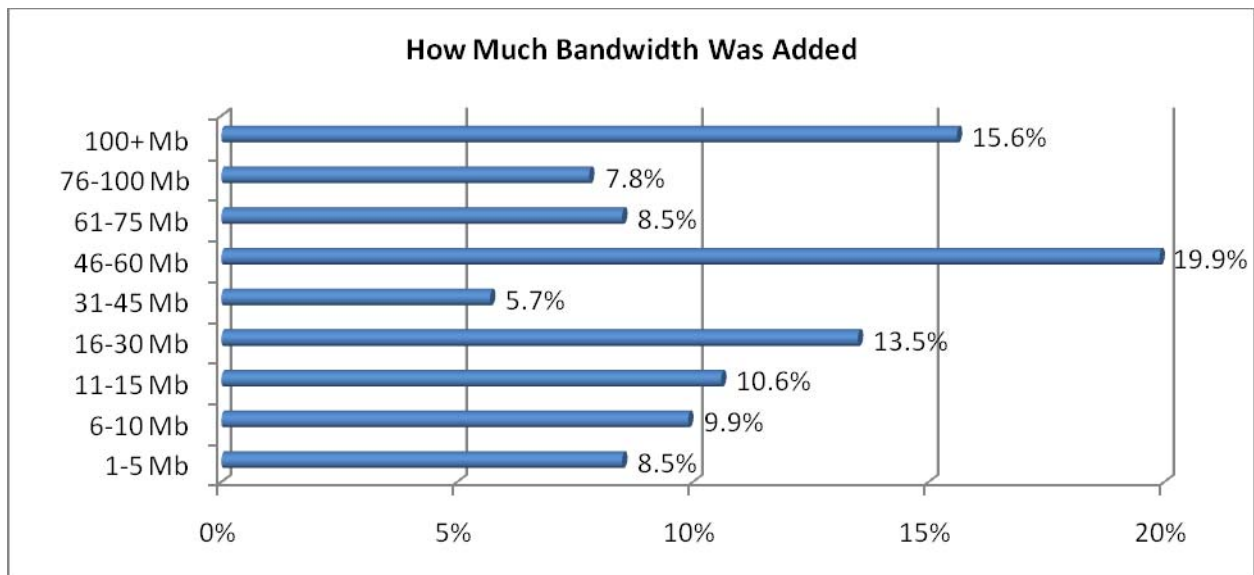


Figure 3: Shows the amount of bandwidth that was most recently added

Despite the amount of recent bandwidth that has been added, 50% of the schools that participated still report that student bandwidth is saturated during the academic year (about

the same as last year – 51%). However, about 71% report they have adequate bandwidth (several are willing to have marginal demand exceed supply), but 64% of them are still looking for new solutions (up from 61% last year). This suggests that due to accelerating demand, colleges are constantly looking for alternatives to stay ahead of the demand curve.

The study also confirmed that there are considerable economies of scale with respect to the amount versus the cost of bandwidth. Figure 4 clearly shows that the cost/Mb of bandwidth drops sharply with volume. It also suggests that the recent bandwidth colleges have added came at lower cost than their pre-existing bandwidth.

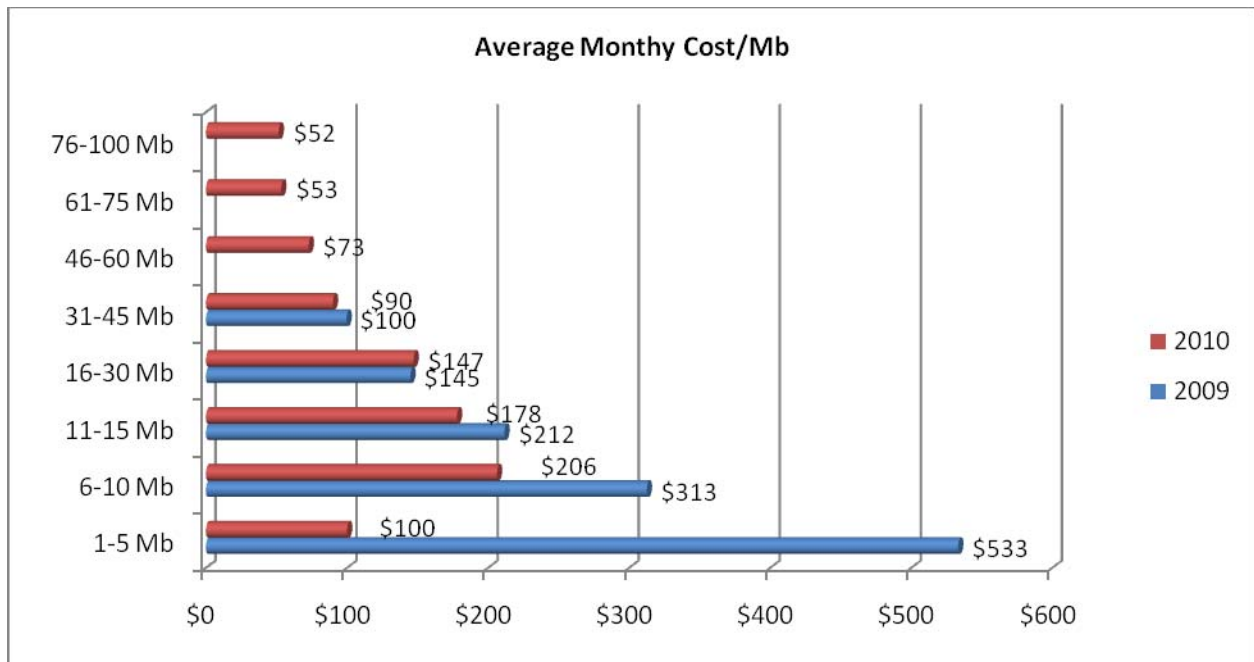


Figure 4: Shows the approximate average cost/Mb based on the amount of bandwidth coming into a college.

Two other interesting facts:

- 3% of schools are charging a separate fee for residence hall internet access (up from 2% last year)
- 33% suggested they would benefit from charging students an incremental fee for additional bandwidth (down considerably for the 46% in last year’s report – interesting in light of budget issues)

Internet Support

The study addressed three issues regarding Internet support. The first issue dealt with support hours. Figure 5 shows that the most popular support hours are extended business hours (8:00 am to 10:00 pm). This is quite a change from last year’s results which showed 46% operated their internet support just during normal business hours.

While many colleges moved to extended support hours, several also moved away from operating 24X7 support hours. This may be due to budget issues (detailed later) pressuring colleges to look for ways to save dollars and resources.

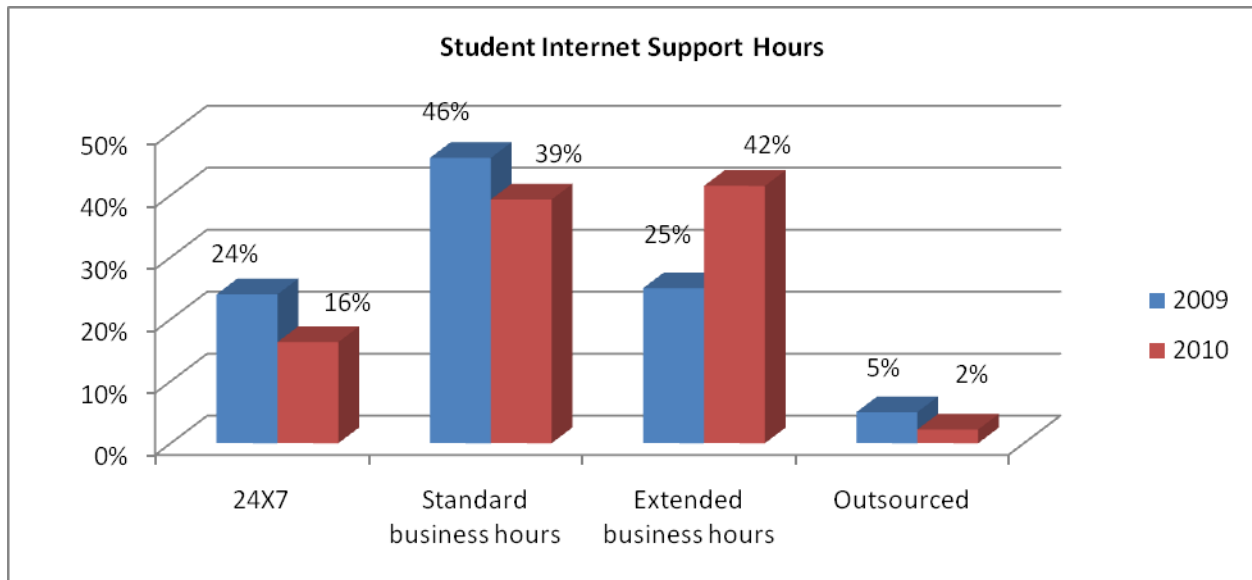


Figure 5: Hours colleges are supporting Internet service on campus.

The second Internet support issue was the number of weekly IT staff hours colleges are devoting to Internet support. The number of staff hours spent on internet support is slightly down this year versus last year. This year, 49% reported spending more than 10 staff hours per week on internet support versus 55% last year. This may suggest schools are using more students as their internet support resource. Several schools also commented that the number of weekly Internet support hours spikes at the beginning of each academic semester.

The third Internet support issue was the relative importance of providing quality Internet support and the associated satisfaction level IT professionals have regarding the quality of that support. Both were rated on a scale of 1-5 (with 5 being very important and a high satisfaction level). The importance of quality Internet support scored a 3.88 (down considerably from 4.38 last year). However, the satisfaction level rated only 3.66 (down from 3.85 last year). This indicates that on average, colleges would like to upgrade the quality level of the Internet support they provide. See figure 7 for a complete stack rank of issues, including quality Internet support.

Network Integrity Issues

The research also highlighted the importance of network integrity issues. Not surprisingly, a primary concern of private college IT professionals is network reliability and integrity policies and procedures. Figure 6 shows the popularity of a number of network reliability and integrity policies and procedures that are being employed by colleges today. The most popular policies are Packet shaping as well as managing and blocking specific traffic types. Though the stack

rank is in the same as last year's study, the top three policies have all experienced an increase in popularity this year, suggesting that colleges are stepping up their network management efforts even more.

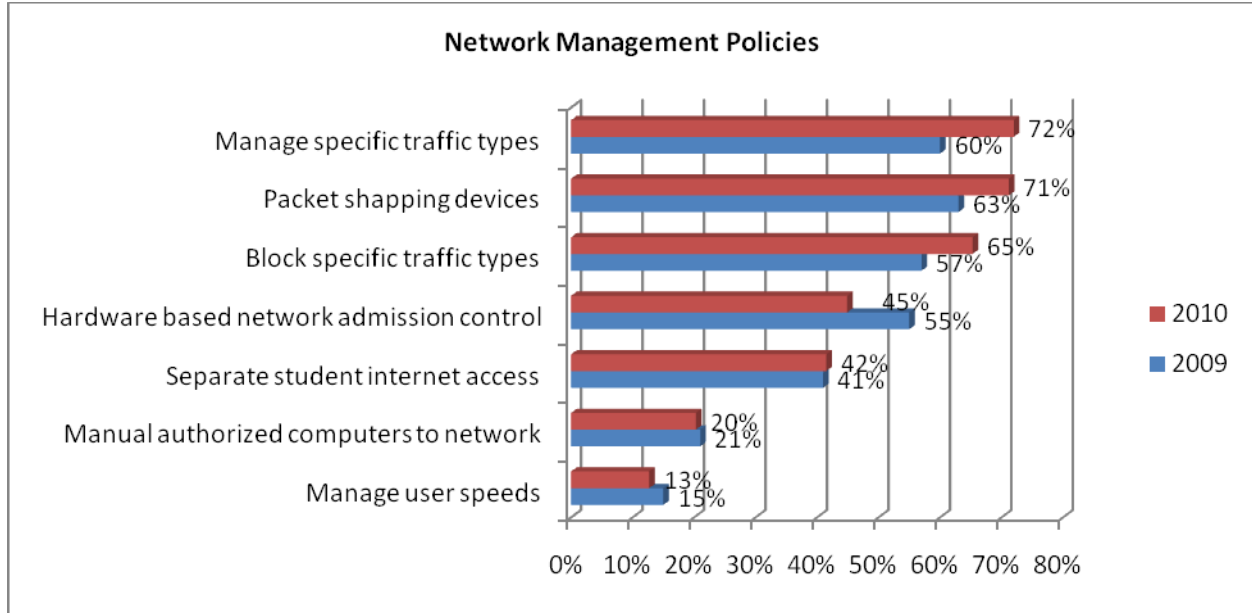


Figure 6: Common network management policies colleges are employing today (responders were asked to select all that were appropriate)

Some additional data supporting figure 6 includes:

- 80% of the schools provide LAN access for gaming (up from only 65% last year). However, 53% of them apply restrictions
- 52% permit the use of peer to peer software (up from 49% last year). However, 69% place restrictions on it

Consistent with these network reliability and integrity issues is the concern for virus protection. Virus protection received the very highest relative ranking for importance (see figure 7). It's also interesting to note that 41% of the schools are separating student access from their academic networks as another strategy to protect their networks (see figure 6 above).

Figure 7 below shows some additional data regarding IT professional issues and concerns. The table summarizes the relative importance and associated satisfaction levels of a variety of relevant issues. Each issue is ranked in importance on a scale of 1-5 (with 5 being very important and 1 being not important) and satisfaction on a scale of 1-5 (with 5 being very satisfied and 1 being dissatisfied). The issues are stack ranked based on the far right column (Delta). The delta shows the relative difference between importance and satisfaction for each issue. Those at the top, in yellow with negative deltas, have an importance rating that exceeds

the satisfaction rating, indicating a high importance and a potential desire to improve delivery. As noted earlier, providing effective virus protection received the highest importance rating, followed by wireless access, meeting faculty and staff Internet expectations and quality internet support.

The issues at the bottom of the list have positive deltas which indicate the relative satisfaction exceeds the relative importance level. These issues could be considered over delivered since satisfaction exceeds importance. It's also interesting to note that with the exception of administration's expectations for student Internet, the issues with positive deltas are also the issues of least importance.

From last year to this year, the most significant change is student internet speed has risen to the top of the delta stack rank. This indicates it is now the issue which has the greatest gap between importance and satisfaction. The other notable change is wireless in residence halls had a negative delta last year but a positive delta this year, suggesting the colleges have made satisfactory progress with their residence hall wireless efforts.

Satisfaction Versus Importance - 2009 Versus 2010						
Issue	Satisfaction		Importance		Delta	
	2009	2010	2009	2010	2009	2010
Student internet speed	3.78	3.26	3.98	4.06	-0.20	-0.80
Virus protection	3.97	3.74	4.69	4.43	-0.72	-0.69
Faculty/Staff internet speed	4.04	3.26	4.39	4.18	-0.35	-0.92
Up-to-date network	3.84	3.67	4.22	4.09	-0.38	-0.42
Adm's exp for student internet	4.00	3.26	3.89	3.51	0.11	-0.25
Quality internet support	3.85	3.66	4.38	3.88	-0.53	-0.22
General campus wireless	3.85	3.99	4.40	4.19	-0.55	-0.20
Digital millennium compliance	N/A	3.71	N/A	3.91	N/A	-0.20
Wireless in residence halls	3.73	3.98	3.93	3.91	-0.20	0.07
24X7 internet support	3.25	3.62	2.84	2.71	0.41	0.91

Figure 7: Relative importance and satisfaction of a variety of IT issues and challenges.

Wireless

The 2009 report showed a high priority level that colleges have for quality wireless deployments. Note: The general campus wireless and residence hall wireless received high rankings in importance in figure 7 (4.40 and 3.91 respectively). Given the priority of wireless, the 2010 study included new wireless questions to better understand the trends. Figure 8 clearly shows the priority of wireless deployments. About 56% of schools have deployed wireless coverage across at least 76% of their campuses and 29% are in the process of expanding their wireless deployments. The dominant wireless technology used in residence halls is 802.11g (70%) and 28% of schools permit wireless routers in their residence halls (up from 22% in 2009).

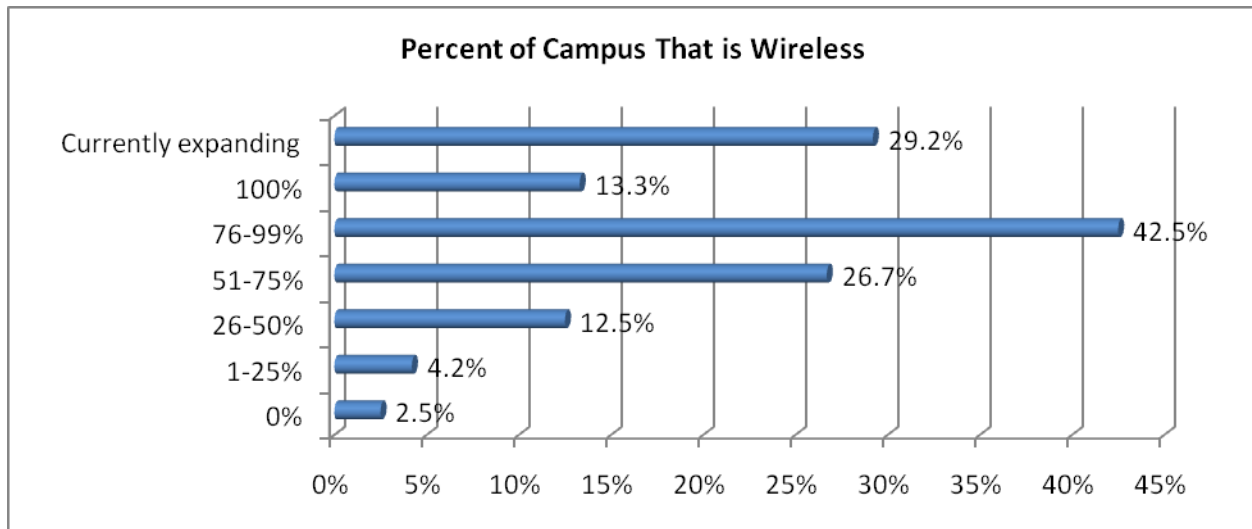


Figure 8: Percent of campus that is wireless.

Land-Line Phones

The 2010 study also included a question regarding the status of land-line phones in residence halls. Figure 9 clearly shows that colleges have either removed or are in the process of aggressively removing land-line phones. No doubt, the proliferation of cell phones is likely driving the change. However, removing land-line phones could also be a cost saving move as well.

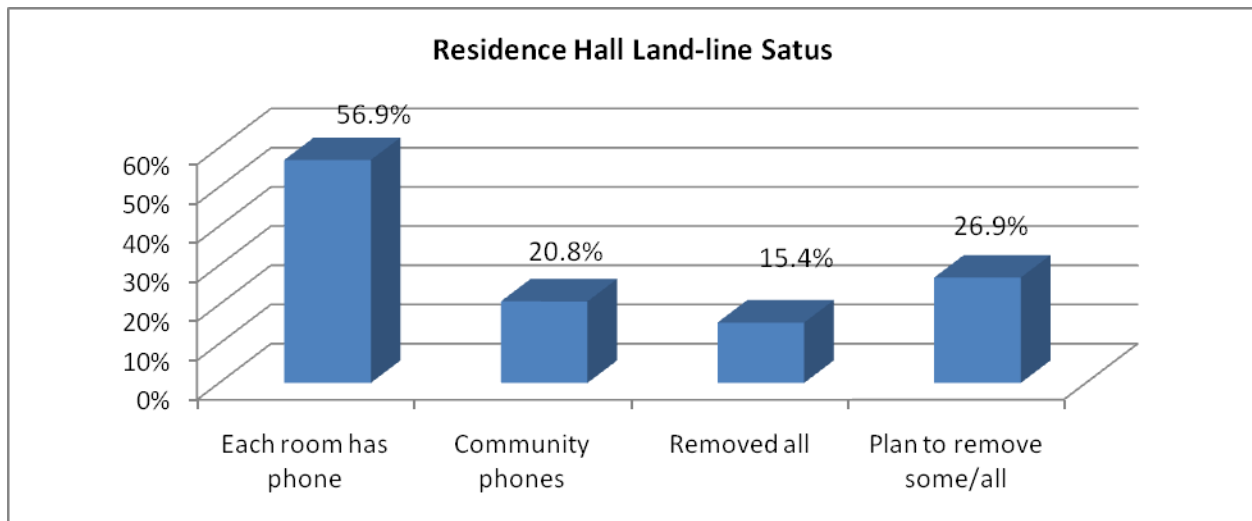


Figure 9: Status of college land-lines

Budget Trends

The research left little doubt the current economic climate is having an impact on private college IT budgets. Figure 10 shows IT budget trends from the last two fiscal years. From 2008

to 2009, only 27% experienced an IT budget cut. However, from 2009 to 2010, 38% experienced a budget cut.

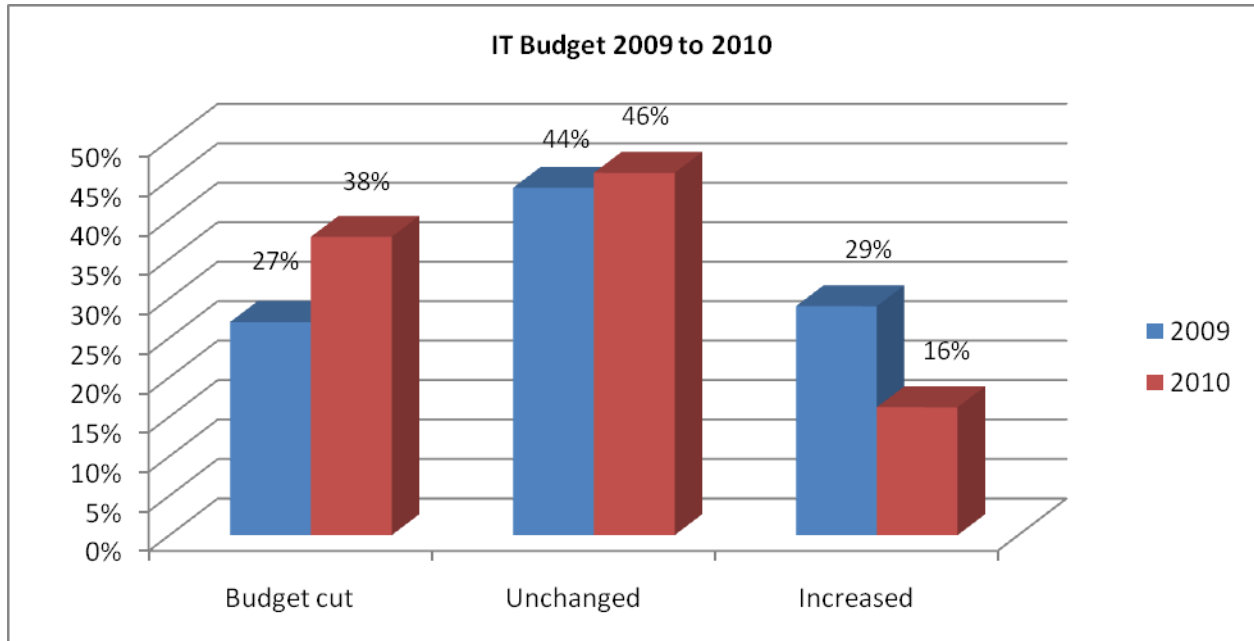


Figure 10: Budget changes from year to year.

Figure 11 below shows budget expectations for two years. As expected the 2009 forecast for the 2010 budget showed 35% expected a budget cut. However, the 2010 to 2011 forecast revealed an improving budget situation with 25% expecting a budget cut and an equal 25% expecting a budget increase (with the balance expect no change in their budget).

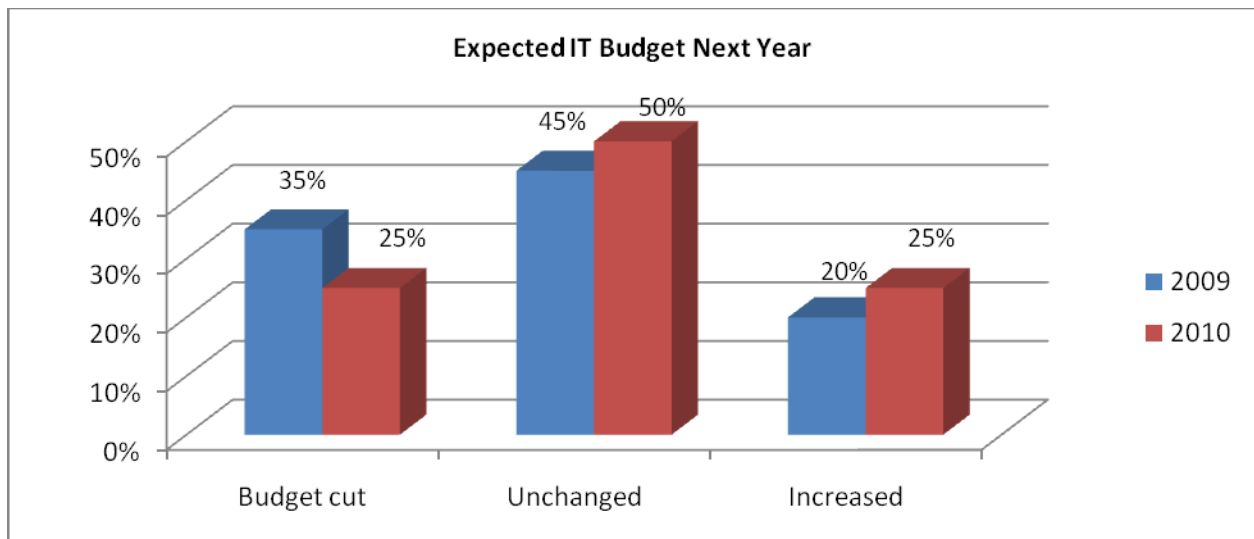


Figure 11: Expected budget changes.

For sizing purposes, the median IT budget for the schools that participated in the study was \$1 million (last year, the median budget was \$800,000). The median IT staff consisted of 13 members (the median staff last year was 10).

Outsourcing

The research study asked one question regarding outsourcing. Figure 12 shows the relative comfort level on a scale of 1-6 (1 is very uncomfortable, 5 is very comfortable, and 6 is already outsourced) for outsourcing a variety of IT functions. Notice the comfort level for outsourcing residence hall television service, Email, PBX/phone support, and residence hall internet access all had comfort level ratings greater than 3, indicating they are the most likely to be outsourced. Conversely, IT staffing, classroom resource servers, and end user Internet support all have comfort levels less than 3, indicating a relative reluctance to outsource these services.

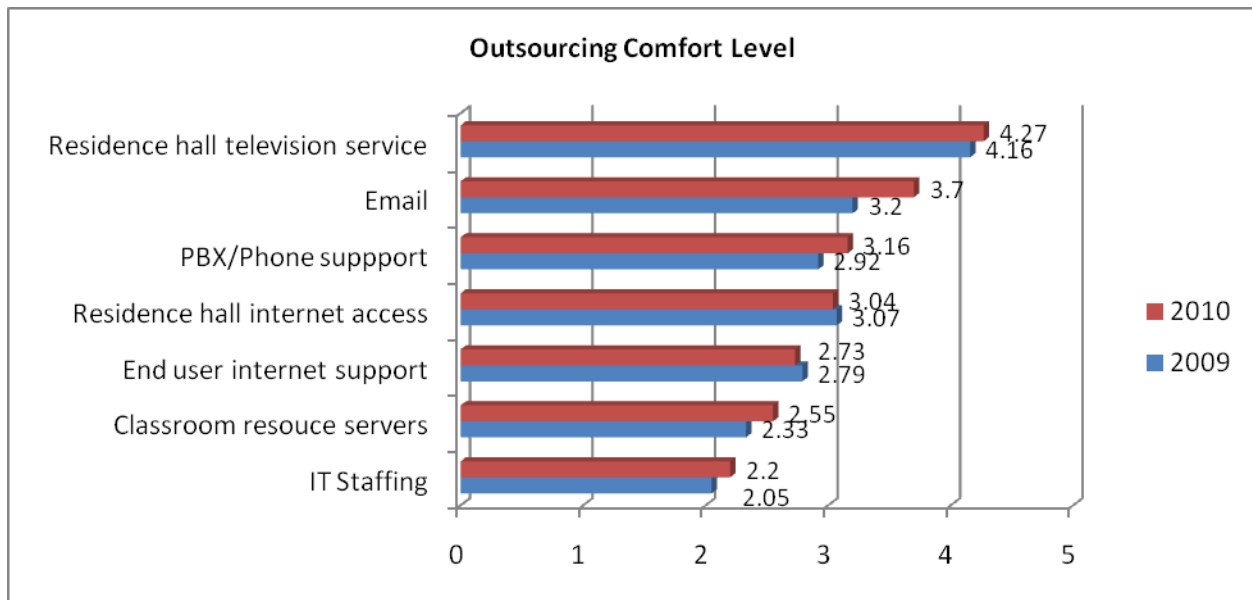


Figure 12: Shows the relative comfort level of outsourcing various IT service on a 1-6 scale where 1 is very uncomfortable, 5 is very comfortable, and 6 is already outsourced.

There wasn't much difference in the outsourcing stack rank from 2009 to 2010. However, the 2010 results suggested that colleges are becoming more comfortable with the concept of outsourcing.

The question also asked and tracked which services were already outsourced. That stack rank is consistent with the stack rank in figure 12.

Final Thoughts and Conclusions

In order to track long term trends and challenges, Xwires Communications plans to repeat this study every year. This, being the second year for the study provides the first opportunity to measure and track longer term trends and challenges. For the purposes of these first two

studies, there were expected results as well as a number of surprises. The main observations included:

- There is tremendous demand for bandwidth and demand appears to be accelerating
- Fortunately, new bandwidth appears to cost less than existing bandwidth and there are considerable economies of scale associated with the amount of bandwidth
- Quality Internet support is very important to colleges and several appear to be expanding their support hours. It will be interesting to watch how this dynamic trends as bandwidth demands continue to increase and budgets remain pressured
- Colleges are increasing the number of tactics they use to maintain the reliability and integrity of their networks. It will also be interesting to monitor future trends to evaluate how colleges are dealing with reliability and integrity trends in an environment of increasing bandwidth demands, budget pressures, the ever increasing sophistication of users, and rapidly changing technologies
- The study confirmed the importance of wireless networks. Today's students expect high tech environments and colleges are aggressively meeting that expectation
- Outside of residence hall television, internet access, and general Email service, colleges have been somewhat reluctant to outsource. However, they appear to be more favorable to outsourcing in 2010 than they were in 2009

Xwires Communications would like to thank the IT professionals that participated in this study. We value your input and look forward to your participation next year.

About Xwires

Xwires Communications is a managed service provider of custom Cable TV, Data, and Voice solutions for off-campus student housing managers.

Through our unique knowledge of student needs, flexible service offerings, and turn-key managed solutions, student housing managers can now offer the amenities that attract student rentals without the complications of managing their own service delivery.

Xwires History

Xwires was founded in 2002 as an Internet management, resource and support services company, specializing in higher education and other complex multi-user environments. Through a dedication to quality solutions and outstanding customer service, Xwires' customer base quickly grew to over 40 property owners serving more than 125 buildings. In 2010 Xwires was acquired by Campus Televideo, a leading provider of Cable TV, VOIP, and ResNet data services to over 220 colleges and universities nationwide. Today, Xwires operates as a division of Campus Televideo, combining 25 years experience in higher education with the same dedication to service to provide the highest quality Cable TV, VOIP, and Data services to off-campus student housing managers at a competitive price.

To learn more about Xwires Communications, visit www.xwires.net

To learn more about Campus Televideo, visit www.campustelevideo.com

About Dynamic Marketing Solutions

Dynamic Marketing Solutions provides a variety of marketing services to small and medium sized organizations. To learn more contact Randy Snyder at 319-364-3178 or by email at randy.snyder@dynamicmrktg.com.