

Telecom Trends and Expenditures: US Education

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Executive Summary

The education sector welcomes advances in technology, and integrates them into the curriculum to enhance and improve the overall educational experience. Studies suggest that when technology is effectively integrated into the curriculum, it improves performance by providing students access to a host of on-line digital content and interactive learning opportunities.

As schools work to enhance and improve the overall educational experience, there are also some simple realities that need to be considered, including a shortage of qualified teachers, rising costs, less available aid per student and an increasing emphasis on security.

The objective of enhancing the educational experience and balancing the reality of today's education marketplace, combine to provide healthy growth for telecom services and wireless equipment in this sector.

In order to achieve this balance, telecom managers in the education sector are focusing on improving customer service and employee productivity, reducing costs and providing new services. As part of this, they are implementing technology solutions that support these key business objectives by extending and improving service and reducing operational costs.

Trending in technology deployment indicates that the education sector is utilizing advances in network security to enhance privacy, increasingly making applications available over the Web to extend cost effective access, implementing wireless solutions to enhance the educational experience, implementing VPNs to extend service reach and updating contact centers to improve service to students, parents and school staff.

Survey data also indicates that this sector is implementing some of these technologies at a rate greater than the overall marketplace.

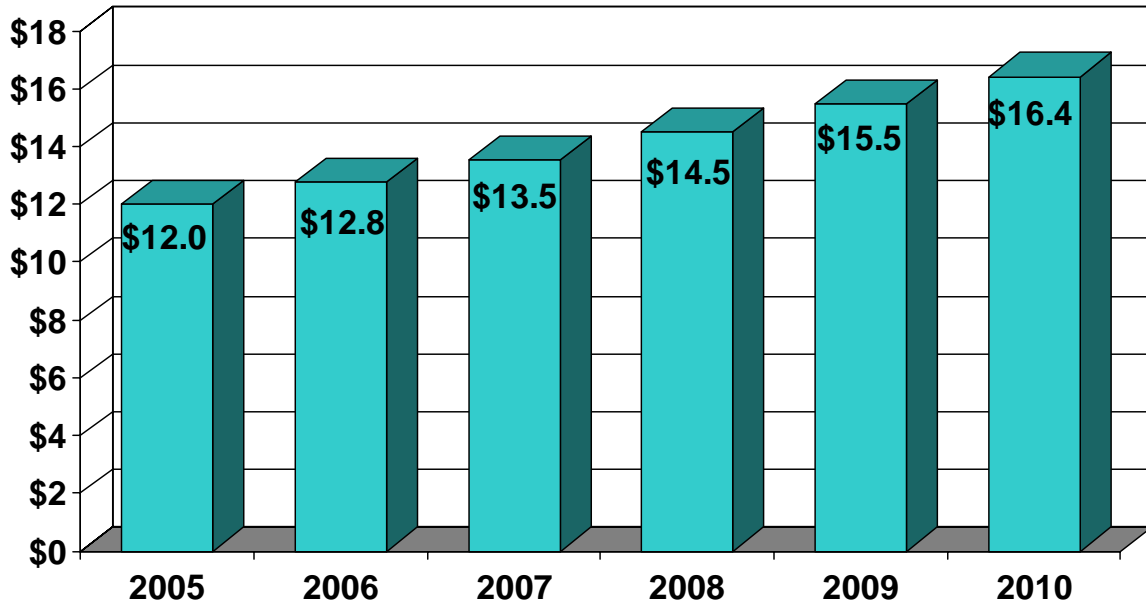
Industry demographics indicate that this sector will continue to see moderate growth in the numbers of schools, as well as continued small growth in the number of students.

HIGHLIGHTS

- US Education to spend an estimated \$12B on wireless/wireline telecom services and wireless equipment in 2006.
- Revenues projected to exceed \$16B in 2010, with a CAGR of 7%.
- Wireline data services account largest portion of spending and this will continue through 2010.
- Wireline voice service revenues continue to drop.
- On a percentage basis, wireless data will experience the largest growth.
- Improving customer service is the number one objective for education technology managers.
- Network security leads telecom implementation priorities.
- Education is a leading adopter of web-enabled applications.
- Wifi implementation is a key priority for this sector.
- Faced with a shortage of qualified teachers, education managers look to technology to increase employee efficiency and extend the classroom.

For the education sector, In-Stat sees steady, healthy growth of telecom services and wireless equipment. In 2006, the education sector is expected to spend an estimated \$12 Billion on telecom wireline/wireless services and wireless equipment (reference Figure 1). Looking forward, the education sector will continue to be a growth area for telecom, with revenues expected to exceed \$16 Billion, based on a projected 2010 CAGR of 7% (reference Table 1).

Figure 1. Telecom Spending (US\$ in Billions)—Education, 2005–2010



Source: InStat, 9/06

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Introduction

The US Education sector is a critical element of our social and economic fabric. Facing many challenges, this sector strives to use telecommunications technology to improve the quality of the educational experience. Knowing the key role played by the Education vertical, this report provides detailed spending forecast information and insight into the drivers that affect this sector. Specifically, this report:

- Provides information on the business and technology trends that are specifically affecting telecom spending in the Education sector.
- Provides detailed market forecasts for telecom spending in the US Education sector across five broad categories:
 - Wireline Voice Services
 - Wireless Voice Services
 - Wireline Data Services
 - Wireless Data Services
 - Wireless Equipment
- For each of these forecasts, detail is shown for the US level of education sub-segments in this market:
 - K–12
 - Higher Education
- Education sector demographics are also outlined in this report.

Business and Technology Trends in the US Education Sector

The need for qualified teachers, competition for students, shirking aid and the integration of technology in the classroom create many challenges for today's education sector. In response to this environment, the education system is increasingly focused on technology initiatives that improve the services provided to students, facility and administration and increase the productivity of the staff, as well as reduce costs.

Business Trends:

Taking a broad view, there are certain key trends that are shaping today's education sector. These include:

Security of Information

Education faces challenges in terms of information security. As an increasing amount of information is stored and shared student records need to be protected. This includes not only personal data, but financial information also. Access to grade and schedule information must also be protected from tampering from unauthorized access. Malicious damage from unauthorized access must also be prevented. Higher education also faces the challenge of protecting valuable research from on-going projects.

Student Aid

Tuition costs are reaching an all time high. At the same time, the number of students seeking a college education is rising. Although the federal government has kept the money available for student aid somewhat consistent, the rising number of students makes the amount available per student smaller.

Competition for Qualified Teachers

Drawn by higher paying positions in other industries, educational institutions are faced with the challenge of recruiting and retaining qualified teachers. This is especially true in inner-city and rural environments, where the teacher shortage is the most pronounced.

Competition for Qualified Students

Colleges and Universities are increasingly competing for qualified students, recruiting not only in the US, but overseas as well. They are also aware that the schools' implementation of technology is now an evaluation criteria being used by prospective students in selecting schools of higher education. Because of this, Colleges and Universities are also using technology implementations as a competitive tool in the recruitment process to attract prospective students.

General Technology Integration in Education

The simple fact is that technology is increasingly becoming integrated into the overall education sector.

Technology is no longer used in education just for administrative purposes. It is part of many classroom experiences. The use of a PC is now an everyday occurrence for many students.

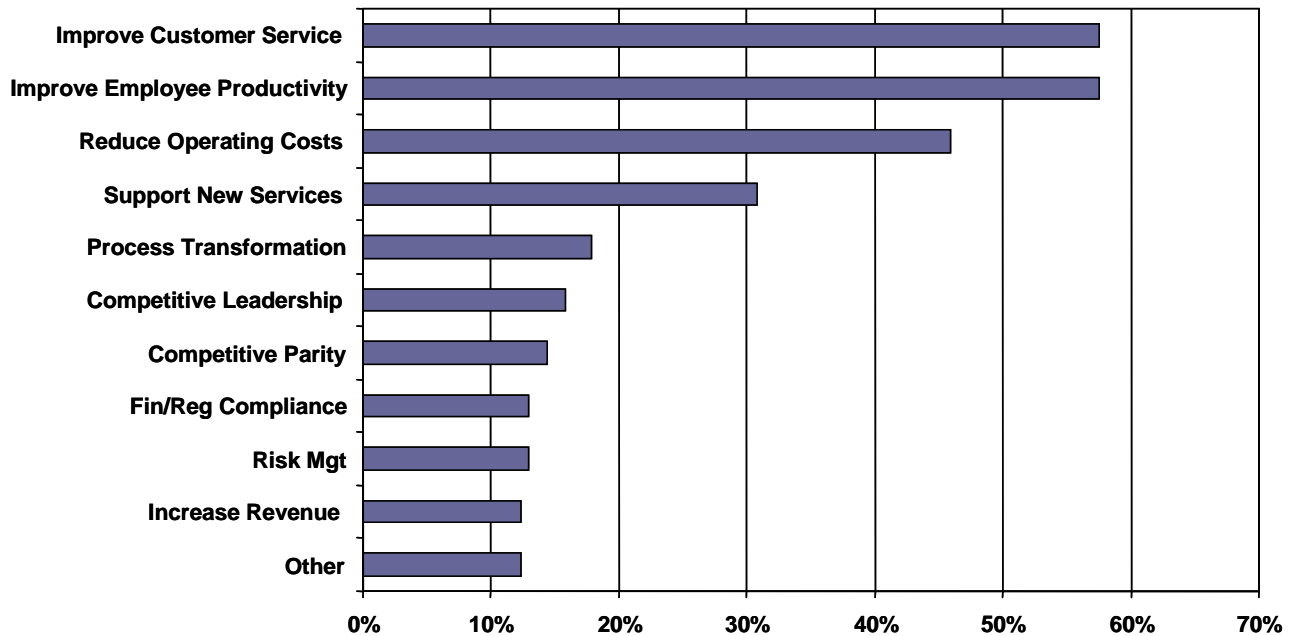
Classroom PCs are becoming increasingly networked, both within the school and to the outside world, and this trend is expected to continue.

Current Business Objectives in Education

In order to get a more granular view of business trends, In-Stat surveyed education professionals to determine what current, specific business objectives were driving their technology decisions:

- Education focuses on continuous improvement of the educational experience, striving to provide the best services for students, faculty and administration. Not surprisingly, improving customer service is the tied for the most important objective for technology initiatives (reference Figure 2).

Figure 2. Business Objectives to Be Supported by Technology Initiatives—Education



Source: In-Stat IT Spending Survey, 12/05

N=146

- The availability of skilled educators is also major issue in the education sector. Faced with a shortage of qualified teachers, education managers focus on technology initiatives that assist in increasing the productivity of the existing staff, and in conjunction with improving customer service is considered most important objective for technology initiatives.
- Reducing costs is a key consideration and ranks as the second most objective associated with their technology initiatives.
- Whether its providing access to scheduling information or increasing access to research material, education managers consider the launch of new services an integral part of their 2006 technology initiatives.

- Rounding out the top business objectives for technology initiatives is the ability to process transformation with educational institutions, thereby implementing more efficient and effective management for operational processes such as registration, billing and student ID cards.

Technology Trends:

As with all sectors, business trends drive technology trends, and the education sector is responding with effective technical approaches. These include:

Security

As schools must deal with an increasing amount of sensitive student information that must now be maintained and shared, the educational vertical is stepping up its security efforts. To guard against unauthorized access to student information, as well as tampering and malicious access, network administrators deploy firewalls and intrusion detection systems to protect the network perimeter from external attacks. To counter the growing threat posed by the increased use of wireless computer devices in the classroom, security efforts are focused on providing protection from attacks generated from within the network environment. A variety of intrusion detection software is being utilized to provide an early warning on abnormal behavior that could compromise system performance. This security software prevents unauthorized access to protected information. The increased use of wireless LAN technologies on campus requires that the latest standards for wireless security, including encryption and Radius server authentication standards, be implemented to protect communication across the wireless environment.

The rapidly changing user population requires that schools adopt constant training and reinforcement on established security policies. Teachers and students need to have a clear understanding of what is expected to properly adhere to current policies. In addition to conducting regular system audits to detect vulnerabilities, system performance and compliance must be evaluated on an on going basis to enable administrators to respond to the latest threats and evaluate the effectiveness of current security measures over time. As the K–12 schools increasingly access online digital content to enhance the educational experience for students, administrators need to ensure that the latest Internet filtering software is available to block access to inappropriate web sites.

Remote Access

Educational institutions are faced with the challenge of recruiting and retaining talented teachers. Remote access enables teachers to be more productive outside the classroom. Providing teachers with remote access capabilities to perform administrative tasks and extend learning opportunities contribute to a positive working environment that enhances a teacher's sense of accomplishment and overall job satisfaction. With the demands on a teacher's time steadily increasing, efforts are being made to enable anywhere, anytime computing, to allow teachers to devote more of their time in the classroom engaging with students. To meet the No Child Left Behind requirements for highly qualified teachers, the education vertical is looking to e-learning solutions to expand educational opportunities and choices for teachers. Over the past few years there has been an explosive growth in organized online instruction, making it possible for teachers to receive high quality supplemental instruction personalized to their needs.

To meet the demands of an increasing mobile student population, the educational vertical is implementing flexible platform solutions that provide for remote access to on-line digital content, campus networks and web portals. E-learning applications, like video conferencing, enhance the learning experience for students by providing access to remote subject matter experts or students from different cultures to enhance learning opportunities in the classroom. With remote access, groups of students from several locations can collaborate on a variety of group projects or experiments, discussing and modifying the results as they work together. Remotely accessing the variety of educational content that is available online allows schools to move away from a reliance on textbooks that are increasingly expensive and quickly outdated.

WEB Portals

Web portals enable a self-service environment for the efficient provisioning of a host of student and facility services. A key benefit is that web portals enhance communication between parents and teachers, enabling parents to stay informed on their child's performance in the classroom. Web-based tools allow parents and teachers to log onto the school's secure websites to track grades, exchange information, schedule meetings, and provide homework assignments, as well as information about upcoming events.

Web portals provide teachers with access to a personalized, customizable web environment to access an array of online resources, including professional development information, on-line classes and digital content to support student learning. Teachers can use these portals to access practice tests for state exams for multiple grade levels. Students have access to grade-level study aids, customized homework set up by their teachers, and advanced high school and honor courses.

Process Improvement

There are many applications that administrators can deploy to enable process improvement and promote cost savings and efficiency. Administrators can now access browser-based analysis tools to track attendance, student test results, and compliance information. Communication between parents and facility can be facilitated with software applications that enable schools to send emergency or routine messages to telephones, cell phones, pagers, email, and PDAs in English and Spanish. The provisioning of Web-based services creates a 24x7 environment that improves overall efficiency and the timely delivery of essential services by allowing students to save time and effort in the scheduling and withdrawal from classes. In addition, students can access information about their grades and monitor their progress in the classroom. Web-based applications promote self-service and quality, while providing a seamless and paperless student service environment.

Teachers improve the educational process utilizing instructional software that improves student motivation, retention, and satisfaction. Teachers can now guide learning by employing a variety of instructional strategies when a student has difficulty with a particular concept. These programs allow teachers and students to demonstrate concepts, do simulations, and analyze data. In addition, access to digital content provides on-demand information that can supplement existing instructional material.

Wireless Access

A key focus of investment for the educational vertical is in the deployment of Wi-Fi networks that provide connectivity to web portals and administrative networks from anywhere on campus. Providing wireless access from anywhere on campus helps satisfy the needs of an increasingly mobile academic population, aids in efforts to attract new students and assists in the goal to retain talented staff.

The use of wireless devices is an effective tool for those times when students or faculty are off campus. Although small in size, a wireless enabled handheld device is a powerful tool for students and university personnel. The use of these devices in the classroom or outside assists students in a variety of ways in the collection, comprehension and organization of information. Using the beaming capabilities inherent in these devices reduces paper consumption by allowing teachers to beam assignments to students instead of distributing photocopies.

Wireless devices offer students an opportunity to work together more effectively in groups, building their collaboration and mentoring skills. These devices also allow teachers to move about the classroom and interact with students for personalized instruction. Teachers can enter notes on student achievement and personalized instruction information that can be captured in real time at a centralized database.

WAN Network Upgrades

Enhancing WAN connections is essential to maximizing the investment in interactive multimedia tools, video on demand and video conferencing solutions. Reaping the educational benefits of the wide array of online digital content available today requires sufficient bandwidth to ensure the timely delivery of this information in the fast paced teaching day.

The educational sector is, although at a somewhat slower pace than the over industry, also spending on IP-based convergence technology solutions. IP convergence will generate cost savings in the near term by removing the inefficiencies inherent in maintaining separate voice, data and Internet connections. In addition, compression and dynamic bandwidth allocation techniques available over IP trunks enable more efficient bandwidth utilization. Administrators can then begin the migration to those IP-based features including integrated messaging and presence applications that promote more efficient communication with parents. IP-based features allow for process improvements in the completion of administrative tasks, allowing teachers to spend more time with their students. As IP-based networks are deployed in the educational space, administrators will look to providers to assist in the design of these converged networks to ensure optimum performance for voice, data and Internet applications.

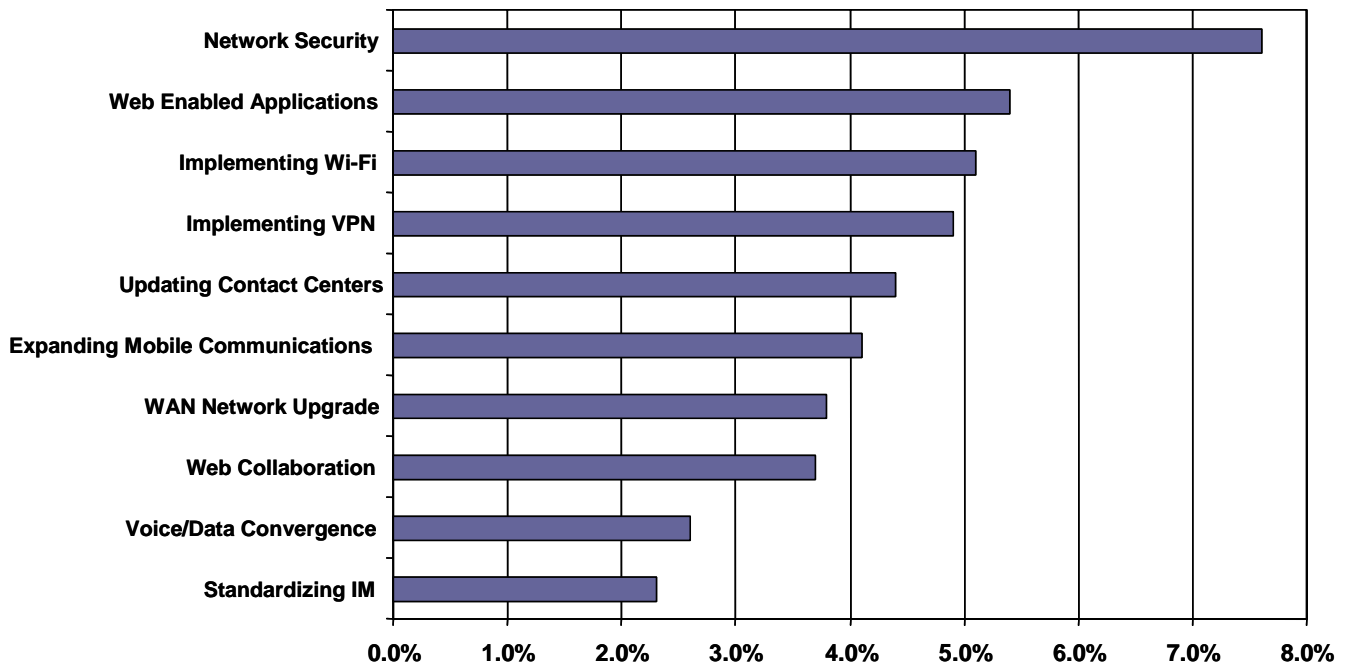
Current Technology Deployment in Education

In order to determine what technology is being focused on, In-Stat surveyed education professionals in reference to their ongoing implementation activities. Participants were asked to respond to a set of weighted questions in reference to a series of technologies, as follows: fully implemented (10), on-going implementation (8), budgeted for implementation in 2006 (6), under review in 2006 (4) and no plans to implement (-0.5), upon which an index was developed. Participants were queried in reference to both

"IT-Centric" and "Telecom-Centric" technologies. This report outlines the responses received for "Telecom-Centric" technology implementations (see Figure 3).

- Concerned with both privacy and warding off tampering and malicious attacks, education professionals realize that network security is a critical element in this effort and are addressing this as the highest priority item. Survey data suggests that efforts to provide network security in the education sector slightly outpace the overall market.

Figure 3. Use of Telecom-Centric Technologies—Education



Source: In-Stat IT Spending Survey, 12/05

N=150

- Education managers realize that web enabled applications provide an easily accessible, well understood and cost efficient vehicle for providing access to information, executing transactions and connecting communities of interest, placing 2nd. Survey data also suggests that the education sector is a leading adopter of web enabled applications.
- Implementing Wi-Fi is another area where survey data shows that education leads the overall marketplace in implementation, with this being the 3rd most important telecom implementation in 2006.
- In an effort to support the requirements of remote access in a secure, manageable fashion, VPN deployment is a key program. Survey data indicates that VPN deployment is the 4th most cited technology implementation in the education sector.
- In line with the objective to improve customer service, many sectors, including education, view contact centers as a strategic tool in meeting this goal. As such, updating contact centers to more effectively serve students, parents and staff is a high priority initiative, rounding out the top 5.

- It is important to note that other leading technologies are also being adopted in the education sector. These include voice data/convergence (i.e. VoIP), support for collaboration utilizing web based services, MPLS and Ethernet services, expanding the use of mobile communications off-campus, as well as instant messaging.

Telecom Expenditures

In 2006, the education sector is expected to spend an estimated \$12 Billion on telecommunications services (wireless/wireline) and equipment (wireless). This is approximately a 6% increase over 2005. Looking forward, the education sector will continue to be a growth area for telecom, with healthy, steady, growth, and revenues expected to exceed \$16 Billion. Overall, we project a 2010 CAGR of 7% (reference Table 1).

Table 1. Telecom Spending (US\$ in Billions)—Education, 2005–2010

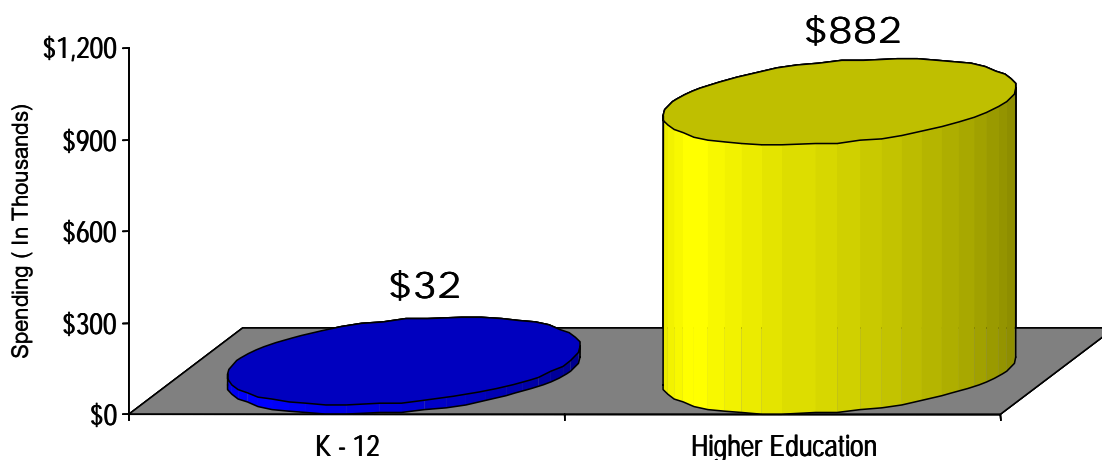
Education	2005	2006	2007	2008	2009	2010	CAGR
	\$11,989	\$12,756	\$13,543	\$14,508	\$15,503	\$16,429	7%
% Change	8%	6%	6%	7%	7%	6%	

Source: In-Stat, 09/06

Telecom Spending by Level of Education

In-Stat estimates that the average school will spend approximately \$82K on telecom services and products in 2006. The projected 2006 average spend varies significantly by level of education, with K–12 expected to spend an average of \$32K per school, and higher education expected to spend an average of \$882k per firm (reference Figure 4).

Figure 4. 2006 Average Telecom Spending per School by Institution Type (US\$ in Thousands)—Education



Source: In-Stat, 09/06

Institutions of higher education account for the greatest percentage of telecom spending in the education sector, and this trend is expected to continue. These institutions are expected to spend approximately \$8B in 2006, and looking forward are expected to reach spending of approximately \$10.5B in 2010, with a projected CAGR of 7%. Current estimates show that K–12 will reach spending of approximately \$6B in 2010, with a projected CAGR of 6% (reference Table 2).

Table 2. Telecom Spending by Institution Type (US\$ in Millions)—Education, 2005–2010

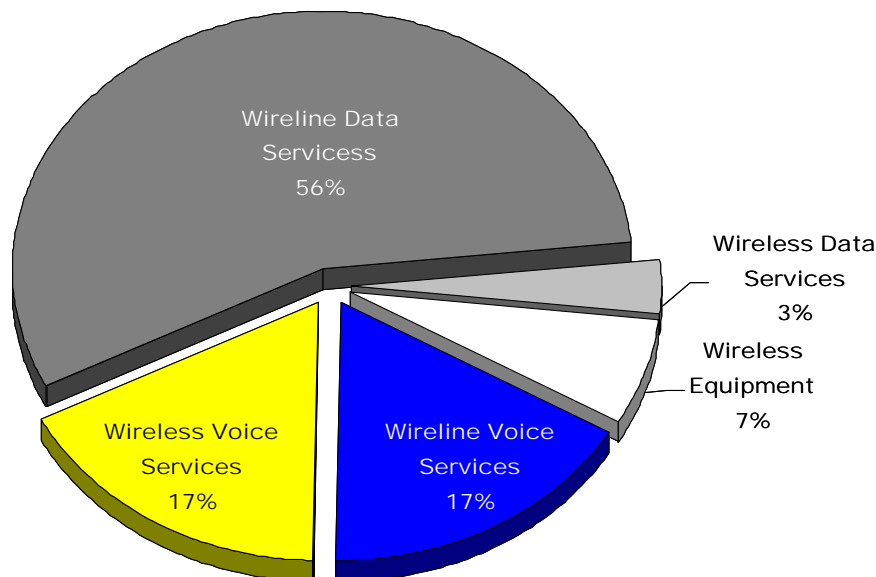
	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 11,989	\$ 12,756	\$ 13,543	\$ 14,508	\$ 15,503	\$ 16,429	7%
% Change	8%	6%	6%	7%	7%	6%	
% US Total	7%	7%	6%	6%	6%	6%	
K-12	\$ 4,489	\$ 4,725	\$ 4,975	\$ 5,287	\$ 5,602	\$ 5,904	6%
% Change	7%	5%	5%	6%	6%	5%	
% Education	37%	37%	37%	36%	36%	36%	
Higher Education	\$ 7,500	\$ 8,031	\$ 8,568	\$ 9,221	\$ 9,901	\$ 10,525	7%
% Change	9%	7%	7%	8%	7%	6%	
% Education	63%	63%	63%	64%	64%	64%	

Source: In-Stat, 9/06

2006 Allocation of Telecom Expenditures

In 2006, In-Stat estimates that educational institutions will have their largest spend in wireline data services, expected to account for 56% of the year's total telecom spending (reference Figure 5). In 2006, the percentage contribution of wireline voice and wireless voice were virtually the same, at 17%. Wireless Equipment (7%) and wireless data services (3%) will make the smallest contribution to overall spending in 2006.

Figure 5. 2006 Telecom Spending Allocation—Education



Source: In-Stat, 09/06

Telecom Spending by Category

Overall, telecom spending by category in the education sector is in line with general market trends, i.e. positive growth in wireless voice services, wireline data services, wireless data and wireless equipment, with declining revenues in wireline voice services (reference Table 3).

Table 3. Telecom Spending by Type (US\$ in Millions)—Education, 2005–2010

	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 11,989	\$ 12,756	\$ 13,543	\$ 14,508	\$ 15,503	\$ 16,429	7%
% Change	8%	6%	6%	7%	7%	6%	
% US Total	7%	7%	6%	6%	6%	6%	
Wireline Voice Services	\$ 2,345	\$ 2,163	\$ 1,971	\$ 1,798	\$ 1,635	\$ 1,475	-9%
% Change	-5%	-8%	-9%	-9%	-9%	-10%	
% Education	20%	17%	15%	12%	11%	9%	
Wireless Voice Services	\$ 2,063	\$ 2,178	\$ 2,256	\$ 2,314	\$ 2,356	\$ 2,382	3%
% Change	7%	6%	4%	3%	2%	1%	
% Education	17%	17%	17%	16%	15%	15%	
Wireline Data Services	\$ 6,535	\$ 7,156	\$ 7,836	\$ 8,709	\$ 9,655	\$ 10,581	10%
% Change	13%	10%	10%	11%	11%	10%	
% Education	55%	56%	58%	60%	62%	64%	
Wireless Data Services	\$ 263	\$ 409	\$ 559	\$ 675	\$ 748	\$ 788	25%
% Change	58%	56%	36%	21%	11%	5%	
% Education	2%	3%	4%	5%	5%	5%	
Wireless Equipment	\$ 783	\$ 850	\$ 921	\$ 1,012	\$ 1,111	\$ 1,202	9%
% Change	10%	9%	8%	10%	10%	8%	
% Education	7%	7%	7%	7%	7%	7%	

Source: In-Stat, 9/06

Wireline Data Services

Wireline data services are estimated to account for approximately \$7.2B in the education sector 2006. When compared to 2005, this is an overall increase of 10%. Strong growth is expected to continue through 2010, with spending exceeding over \$10.5B, based on a projected CAGR of 10%.

The education sector tends to lead adoption in many areas, as they continue to implement the new technologies. Web-enabled applications, increased remote access, expanding interconnectivity with other institutions and continually growing demand from a bandwidth hungry student population will drive this growth. Taking a longer term view, like most vertical markets, the education vertical is facing raising costs, expanding access requirements and growing bandwidth intense applications. Education managers are expected to increasingly adopt the leading wireline services such IP VPN and Ethernet technologies, along with VoIP.

This strong, continued growth is anticipated to be seen across K–12 and higher education, with both levels of education expected to have a 10% CAGR through 2010. The higher education segment is anticipated to continue to generate the largest spending, reaching \$6.6B in 2010 (see Table 4).

Table 4. Wireline Data Services Spending by Institution Type (US\$ in Millions)—Education, 2005–2010

	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 6,535	\$ 7,156	\$ 7,836	\$ 8,709	\$ 9,655	\$ 10,581	10%
% Change	13%	10%	10%	11%	11%	10%	
% US Total	10%	10%	9%	9%	9%	9%	
K-12	\$ 2,490	\$ 2,715	\$ 2,963	\$ 3,279	\$ 3,612	\$ 3,942	10%
% Change	12%	9%	9%	11%	10%	9%	
% K-12	55%	57%	60%	62%	64%	67%	
% Education	38%	38%	38%	38%	37%	37%	
Higher Education	\$ 4,045	\$ 4,441	\$ 4,873	\$ 5,431	\$ 6,043	\$ 6,640	10%
% Change	13%	10%	10%	11%	11%	10%	
% Higher Education	54%	55%	57%	59%	61%	63%	
% Education	62%	62%	62%	62%	63%	63%	

Source: In-Stat, 9/06

Wireless Data Services

Wireless data services are estimated to account for approximately \$409M in the Education sector in 2006. This is an overall increase of 56% when compared to 2005; however, keep in mind that in relative terms, this is still a new technology area, and the increase is on a small number base, when compared to wireline data. That being said, on a percentage basis, this area projects the largest growth, with spending expected to reach just under \$788M in 2010 and a CAGR of 25% (reference Table 5).

Survey data shows that education tends to lead adoption of Wi-Fi oriented implementations, with wireless laptops on campus being a significant factor. Conversely, education tends to lag slightly behind the overall market in the implementation of other mobile communications, such as blackberries. In general, educational staff members tend to work from a single location, primarily in a school building or campus area. That being said, it is anticipated that both the convenience and efficiency of mobile data, primarily with handheld devices, will become increasing evident to education professionals, with strong growth expected. In-Stat anticipates that on a percentage basis, higher education will see the largest compounded annual growth rates through 2010 of 25%. K–12 will follow close behind, with a compounded annual growth rate through 2010 of 24%.

Table 5. Wireless Data Services Spending by Institution Type (US\$ in Millions)—Education, 2005–2010

	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 263	\$ 409	\$ 559	\$ 675	\$ 748	\$ 788	25%
% Change	58%	56%	36%	21%	11%	5%	
% US Total	6%	6%	5%	5%	5%	4%	
K-12	\$ 81	\$ 126	\$ 172	\$ 207	\$ 227	\$ 238	24%
% Change	57%	55%	36%	20%	10%	5%	
% K-12	2%	3%	3%	4%	4%	4%	
% Education	31%	31%	31%	31%	30%	30%	
Higher Education	\$ 181	\$ 283	\$ 387	\$ 468	\$ 520	\$ 549	25%
% Change	59%	56%	37%	21%	11%	6%	
% Higher Education	2%	4%	5%	5%	5%	5%	
% Education	69%	69%	69%	69%	70%	70%	

Source: In-Stat, 9/06

Wireline Voice Services

The education sector is expected to spend roughly \$2.2B on wireline voice services in 2006, representing an 8% decrease from 2005 estimates. In line with overall market trends, spending on traditional voice services is also declining in the education sector. In-Stat anticipates this erosion to continue on an overall consistent basis, with spending expected to shrink to just over \$1.4B in 2010, with a negative CAGR of 9% (reference Table 6).

In addition to the use of cellular voice services, In-Stat is of the opinion that the erosion of wireline voice services is also driven from other significant sources as well. The most important of these is the implementation of VoIP services. Additionally, other forms of communications such as text messaging and IM are now alternatives to traditional telephone service. People are also increasingly connecting to web enabled applications, instead of picking up the phone, when seeking information or making a transaction.

Although education lags slightly behind the overall marketplace in the use of VoIP, implementation is taking place, with the economic and feature benefits expected to increase adoption. On the other hand, the education sector is the leading adopter of web enabled applications, which also diverts wireline voice usage. Based on similar dynamics, it is anticipated that erosion of wireline data services will be a somewhat similar rate for both K–12 and higher education, with a negative CAGR of 9% through 2010.

**Table 6. Wireline Voice Services Spending by Institution Type (US\$ in Millions)
Education, 2005–2010**

	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 2,345	\$ 2,163	\$ 1,971	\$ 1,798	\$ 1,635	\$ 1,475	-9%
% Change	-5%	-8%	-9%	-9%	-9%	-10%	
% US Total	5%	5%	5%	4%	4%	4%	
K-12	\$ 1,044	\$ 959	\$ 872	\$ 792	\$ 716	\$ 644	-9%
% Change	-6%	-8%	-9%	-9%	-10%	-10%	
% K-12	23%	20%	18%	15%	13%	11%	
% Education	45%	44%	44%	44%	44%	44%	
Higher Education	\$ 1,300	\$ 1,203	\$ 1,099	\$ 1,006	\$ 919	\$ 832	-9%
% Change	-5%	-7%	-9%	-9%	-9%	-9%	
% Higher Educator	17%	15%	13%	11%	9%	8%	
% Education	55%	56%	56%	56%	56%	56%	

Source: In-Stat, 9/06

Wireless Voice Services

In-Stat estimates the education sector will spend just under \$2.2B on wireless voice services in 2006. This represents a 6% increase in spending over 2005. Looking ahead, overall, the number of subscribers is still increasing, coverage is expanding and usage is up. On the hand, overall growth in subscription rates is slowing, and as more competition appears and the technology matures, there continues to be increasing pressure on rates. The combination of these factors will produce continued, moderate, steady growth for standard wireless voice services. In-Stat anticipates that spending on wireless voice services in the education sector will reach just under \$2.4B in 2010, with a CAGR of 3% (reference Table 7).

**Table 7. Wireless Voice Services Spending by Institution Type (US\$ in Millions)
Education, 2005–2010**

	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 2,063	\$ 2,178	\$ 2,256	\$ 2,314	\$ 2,356	\$ 2,382	3%
% Change	7%	6%	4%	3%	2%	1%	
% US Total	4%	4%	4%	4%	4%	4%	
K-12	\$ 610	\$ 640	\$ 661	\$ 674	\$ 681	\$ 686	2%
% Change	6%	5%	3%	2%	1%	1%	
% K-12	14%	14%	13%	13%	12%	12%	
% Education	30%	29%	29%	29%	29%	29%	
Higher Education	\$ 1,453	\$ 1,537	\$ 1,595	\$ 1,640	\$ 1,674	\$ 1,696	3%
% Change	7%	6%	4%	3%	2%	1%	
% Higher Educator	19%	19%	19%	18%	17%	16%	
% Education	70%	71%	71%	71%	71%	71%	

Source: In-Stat, 9/06

Wireless Equipment

Spending on wireless equipment is estimated to account for just under \$850M in the education sector for 2006, and represents an overall increase of 9% when compared to 2005. As the use of wireless voice and data increases, the demand for cellular phones, wireless PDAs and other mobile accessories will also increase. This area shows strong future growth, with spending expected to reach just over \$1.2B in 2010 and a CAGR of 9% (reference Table 8). Higher education is expected to account for the largest amount of the spending, with revenues of \$808M in 2010. Spending in K–12 is expected to reach \$394M by 2010.

Table 8. Wireless Equipment Spending by Institution Type (US\$ in Millions)—Education, 2005–2010

	2005	2006	2007	2008	2009	2010	CAGR
Education	\$ 783	\$ 850	\$ 921	\$ 1,012	\$ 1,111	\$ 1,202	9%
% Change	10%	9%	8%	10%	10%	8%	
% US Total	6%	6%	6%	5%	5%	5%	
K-12	\$ 263	\$ 284	\$ 307	\$ 335	\$ 366	\$ 394	8%
% Change	9%	8%	8%	9%	9%	8%	
% K-12	6%	6%	6%	6%	7%	7%	
% Education	34%	33%	33%	33%	33%	33%	
Higher Education	\$ 520	\$ 566	\$ 614	\$ 677	\$ 745	\$ 808	9%
% Change	10%	9%	9%	10%	10%	8%	
% Higher Educator	7%	7%	7%	7%	8%	8%	
% Education	66%	67%	67%	67%	67%	67%	

Source: In-Stat, 9/06

US Education Market Demographics

Number of Schools

In-Stat estimates that the US education sector will consist of approximately 155 thousand schools by the end of 2006.

- The number of schools is projected to reach just under 187 thousand firms by the end of 2010 (reference Table 9), reflecting a 5% CAGR.
- Institutions serving grades K–12 account for approximately 94% of all US schools in 2006, with this percentage expected to remain consistent looking forward.

Table 9. Number of Schools—Education, 2005–2010

	2005	2006	2007	2008	2009	2010	CAGR
Education	147,988	154,985	162,114	169,565	177,741	186,752	5%
% Change	4%	5%	5%	5%	5%	5%	
K-12	139,490	145,875	152,238	158,922	166,248	174,296	5%
% Change	4%	5%	4%	4%	5%	5%	
% Schools	94%	94%	94%	94%	94%	93%	
Higher Education	8,498	9,110	9,876	10,643	11,493	12,457	8%
% Change	7%	7%	8%	8%	8%	8%	
% Schools	6%	6%	6%	6%	6%	7%	

Source: In-Stat, 5/06

Number of Students

In-Stat estimates that the US education system will support just under 71.8M students in 2006.

- Looking forward, the US student population will have continued slight annual growth, and is projected to reach just under 73M by the end of 2010 (reference Table 10).
- The student population in grades K–12 accounts for approximately 76% of all students in 2006, with this percentage expected to remain consistent looking forward.

Table 10. Number of Students (in Thousands)—Education, 2005–2010

	2005	2006	2007	2008	2009	2010	CAGR
Education	71,294	71,794	72,069	72,292	72,597	72,927	0%
% Change	1%	1%	0%	0%	0%	0%	
K-12	54,615	54,907	55,049	55,124	55,223	55,386	0%
% Change	0%	1%	0%	0%	0%	0%	
% Enrollment	77%	76%	76%	76%	76%	76%	
Higher Education	16,679	16,887	17,020	17,168	17,374	17,541	1%
% Change	1%	1%	1%	1%	1%	1%	
% Enrollment	23%	24%	24%	24%	24%	24%	

Source: National Center for Education Statistics, 5/06

Conclusion

The education vertical welcomes advances in technology and makes them part of the curriculum to enhance and improve the overall educational experience. There are a many innovative and effective technology tools available to help students develop the problem solving and critical thinking skills required to succeed in today's environment. There are many examples of school districts and institutions of higher education across the country utilizing technology to broaden the learning experience for students by getting them more engaged and excited about learning. Studies suggest that when technology is effectively integrated into the curriculum, it improves performance by providing students access to a host of on-line digital content and interactive learning opportunities.

As schools work to enhance and improve the overall educational experience, there are also some simple realities that also need to be considered. These realities include a shortage of qualified teachers, rising costs, less available aid per student and an increasing emphasis on security, to name a few. The education vertical is using technology to attend to these as well.

With the objective of enhancing the educational experience and balancing the reality of today's education marketplace, this sector has key business objectives that it expects technology initiatives to support. Currently, available technology offers to help the education sector in addressing these issues:

- Advances in network security and VPN technology assist in protecting the privacy of information, while increasing access and extending the reach of the classroom.
- Web enabled applications allow for expanded, cost efficient and improved gateways to information and tools.
- Developments in contact center technology allow the education sector to provide more efficient and effective interaction between the school, students and parents.
- Advances in wireless technology allow for a more integrated classroom experience, extend reach to important information throughout the campus environment and improve efficiency by providing anywhere, anytime access beyond the campus boundaries.
- Upgrades to the WAN infrastructure provide higher capacity and greater interconnectivity, improving and extending access to greater volumes of information and collaboration.

The return on investment for these technologies comes in many forms, including improved student achievement, freeing teachers' time by using productivity tools that save time in the performance of administrative tasks, allowing for additional services to be provided over a greater area and reducing costs and attracting students who see the value of an advanced infrastructure.

Methodology

- This report is based on In-Stat's ongoing demographic research of the US business market. A variety of sources, including In-Stat's proprietary market research, are used to develop the forecasts and market segmentation projections provided in this report. Lastly, estimates and data are calculated to a higher degree of precision than shown. As a result, some estimates may not sum exactly.
- In-Stat's business segmentation forecasts, which include market demographics, usage and adoption statistics, and business expenditures, are built by leveraging multiple sources across In-Stat. These sources include, but are not limited to, government data and research, primary end-user research, supply-side market research, and secondary sources, as well as interviews with key decision-makers in the high-tech industry regarding their market strategies for specific business segments.
- Each data source is selected to provide the greatest level of data accuracy, stability, and consistency over time, as well as to enhance In-Stat's market intelligence and technical expertise on specific markets, such as network hardware, computer systems, software, and telecom. These data sources are then assimilated to develop size-of-business specific models of certain markets, which are then projected forward in 5 to 6-year forecasts.
- These forecasts are then benchmarked with relevant outside data sources, where available, which include, but are not limited to, the US Census, Bureau of Labor Statistics, Department of Commerce, and the Federal Communications Commission. Both industry and government statistics are used as benchmarks in forecasting the entire business market's spending behavior, as well as to validate the assumptions made within each of the sub-segments. Particular attention is paid to maintaining the continuity of estimates and market projections from year to year, where appropriate.
- In-Stat recommends that vendors use these market forecasts as measures of market growth, relative measures of contribution from the size of business perspective, and estimates of market potential.
- This report contains information gathered in an "IT Spending" survey conducted by In-Stat in December, 2005.
- In this year's report, the revenue associated with Wireline Voice Equipment has been removed and will be available in In-Stat's *Business Infrastructure Spending* series.

Definitions

Wireline Voice Services: dial tone related services, where voice calls are delivered over the public switched telephone network. This category includes local and long distance access charges, as well as “enhanced” services related to voice, such as voicemail, call forwarding, call waiting, caller ID, and Centrex.

Local Services: dial tone related services providing local and/or intra-LATA access to the public switched telephone network for voice connectivity. This category includes “enhanced” services related to voice, such as voicemail, call forwarding, call waiting, caller ID, and Centrex, but does not include wholesale access or termination charges paid by competitive local access providers or long distance providers to incumbent local exchange carriers.

Long Distance Services: dial tone related services providing inter-LATA and/or long haul voice services charged either on a per-minute or a flat fee basis.

Wireless Voice Services: dial tone related services, where voice calls are delivered over a wireless network. This category includes per-minute charges, base charges in flat-rate plans and for-fee, value-added services related to wireless voice transport, i.e., voice-activated dialing, voicemail, call forwarding, call waiting, and caller ID.

Wireline Data Services: for-fee data transport services over the public switched telephone network or an in-ground private data network (IP, ATM, Frame Relay, Ethernet etc.). These services include, but are not limited to, high speed Internet access (DSL, cable, and ISDN), T1+ transport services (local access charges not included), frame relay, ATM, Ethernet MAN services, and hosted services provisioned directly to the customer by a telecom service provider (co-location, Web hosting, applications hosting, infrastructure hosting, managed network services). This category could also include voice services, so long as they are transported over the wireline network in packet format, such as IP Centrex, VoIP, VoDSL and VoCable.

Internet Access Services: This category includes charges for access to the public Internet, including dial-up and broadband services. Expenditures on private lines provisioned for solely Internet access are included.

Private Line Services: This category includes expenditures on dedicated T1 and higher lines, including fractional T1 lines. Both local and long distance charges are included.

ATM Services: This category includes expenditures on Asynchronous Transfer Mode network services. One-time setup/integration charges are not included.

Frame Relay Services: This category includes expenditures on Frame Relay network services. One-time setup charges are not included.

Ethernet Services: This category includes expenditures on Ethernet network services. One-time setup charges are not included.

Managed Network Services: The management of premise-based or hosted network infrastructure, services, and applications including network security, network storage, WAN/LAN management, web and applications hosting, and voice and telephony systems and services. Firms contract with third-party managed service providers to manage network elements and applications on an operating-expense basis and include lifecycle management functions (design, procurement, management, and maintenance).

Network-based IP VPN Services: This category includes IP VPN transport that uses network-based services, especially MPLS and carrier provided SSL.

Wireless Data Services: for-fee data transport services over a wireless network, even when sessions are terminated on a wireline network. This category includes fixed wireless; satellite broadcast Internet services; wireless Web services and private/proprietary wireless data network services, as well as one-time service-related charges such as equipment set up (not related to applications integration). This category does not include hosting fees for wireless-accessible applications, one-time applications integration or equipment rental.

Wireless Equipment: wireless handsets, mobile computing devices and accessories.

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Related In-Stat Reports

Additional detailed information on the current education marketplace can be found in the following In-Stat reports:

#IN0603097DDED *Education Vertical Market Deep Dive: IT Spending*, June 2006

#IN0603308DDED *Information Technology in Higher Education*, June 2006

#IN0603096DDED *Education Adoption of VoIP, IP VPN and Converged Solutions*, August 2006

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