DIFFERENT BY DESIGN™

Mobile device usage is skyrocketing on campuses

OVERVIEW
Higher Education Requires High-Density Wireless Networks

Today's competitive world of higher education must meet an expanding list of student criteria. It not only includes excellent professors, small classes, and a wide choice of curriculum, but robust wireless connectivity is critical for attracting and retaining the brightest young minds too. According to a recent study, approximately 94 percent of students use mobile devices for academic purposes.[1] With these devices, they access digital textbooks, check into class and use a growing number of applications anywhere, anytime; therefore, making ubiquitous wireless connectivity not just a convenience, but an expectation (see Figure 1). This coverage must not only be pervasive, but students also expect it to be fast, secure and reliable.
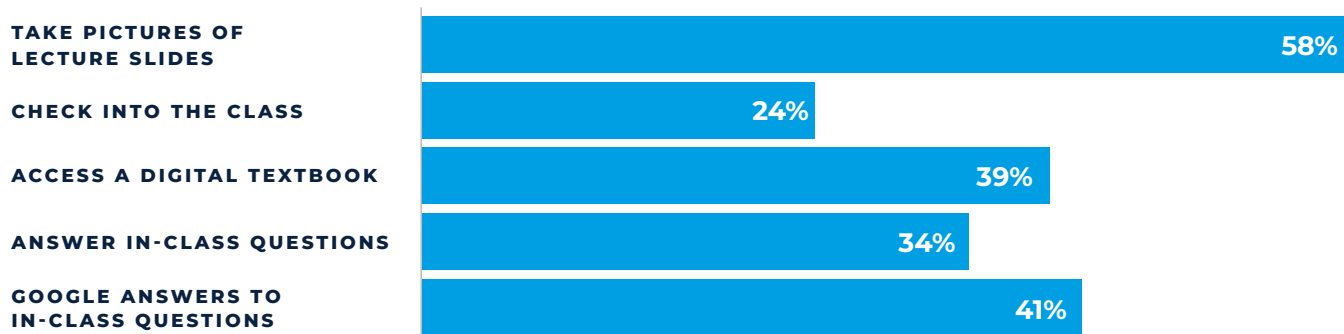
SITUATION
CIO Challenges

Chief Information Officers (CIOs) are taxed with many mobile communications issues on campuses. The main concern a few short years ago was coverage, but now it is about capacity per user. Adequate capacity must be available anywhere, anytime on campus – in lecture halls, dorms and stadiums. Thousands of students converge on these locations and expect the wireless network to support their voice, video, and data needs. When planning a wireless network, CIOs must consider densification, a term carriers use to describe these dense areas of subscribers with a high demand for mobile connectivity. In addition to managing the densification issue, IT departments must also ensure the wireless signals from surrounding cellular towers are not impeded by the construction of these facilities. Large stadiums are constructed of concrete and steel, two materials, which cause cellular connectivity issues. Institutions often have expansive outdoor grounds where students expect wireless coverage too. These areas are used to study, play intramural sports, listen to concerts, and more. However, the cellular antennas across a campus can be unsightly; therefore, concealment options are key to maintaining the beauty of the outdoors while still ensuring cellular connectivity.

A campus' wireless network must be able to support a variety of applications, beyond voice, video and data. It may be used for mobile learning, finding available parking, or public safety. As the Internet of Things (IoT) continues to grow it is key that institutions map out their mobile strategies. According to Gartner, by 2020 there will be 20.4 billion connected things, up from 8.4 billion in 2017; therefore, it is critical to deploy a wireless network that can support future applications.

Figure 1: Which of the following ways have students used smart phones during class over the past year?

TAKE PICTURES OF
LECTURE SLIDES — 58%

CHECK INTO THE CLASS — 24%

ACCESS A DIGITAL TEXTBOOK — 39%

ANSWER IN-CLASS QUESTIONS — 34%

GOOGLE ANSWERS TO
IN-CLASS QUESTIONS — 41%

Source: 2017 Student Pulse Survey sponsored by Top Hat

SOLUTION
Effective Wireless Solutions

The innovative solutions from JMA Wireless can enable the fast, reliable, secure and pervasive wireless connectivity students expect. The portfolio includes the leading edge TEKO DAS (distributed antenna system), state-of-theart antennas, FUZE™, world renowned compression connectors and jumpers, and XRAN™.

The TEKO DAS, a modular solution supporting multiple operators and multiple bands, can be installed on campus or off-premise. On campus DAS deployments first involve precise and careful placement of the low and high power remote units (RUs). This cost-effective solution uses a single optical fiber per RU to distribute multiple frequency bands and multiple carriers from the rack mounted master unit. This configuration uses at least 50 percent less fiber than competitive offerings. The TEKO DAS supports the different power level units automatically and brings the proper level to the BTS (base transceiver station).

The FUZE platform is perfect for addressing heterogeneous networks on college campuses. It offers integrated IDF mounting and cabling kits for DAS and Wi-Fi delivery. In addition, it provides Digital Electricity™, which is the ideal solution to address wireless connectivity not only across campuses, but in large sports venues too. Digital Electricity provides centralized power; therefore, the need for metal conduits is eliminated. And, it provides power up to over one mile away.

The portfolio of NWAV antennas from JMA Wireless include FRO (Fast Roll-Off) technology, which ensures increased data throughput without compromising coverage. The horizontal beam produced by this technology increases the signal to noise plus interference ratio (SINR) by eliminating overlap between sectors. The increased SINR results in higher throughput, which is particularly critical at events such as football games, concerts or commencement. Furthermore, the horizontal beam produced by FastRoll-Off technology reduces harmful interference between adjacent cells, making them especially useful in these dense environments.

Finally, JMA Wireless offers XRAN, the industry's first 100 percent software baseband solution that runs on off-the-shelf servers. It is a cost-effective and flexible RAN alternative, enabling high capacity support for multiple operators and different services for public venues such as a college campus.

RESULT
An Equipment Manufacturer and More

JMA Wireless not only manufactures wireless communications equipment, but also has relationships with the most knowledgeable system integrators and many service providers to ensure the best solutions are installed for its customers. As a dedicated partner, JMA Wireless is involved in every step of a wireless deployment, providing expertise and experience unmatched in the industry.

[1] 2017 Student Pulse Survey sponsoredby Top Hat

JMA

About JMA Wireless

JMA Wireless is the leading global innovator in mobile wireless connectivity solutions that ensure infrastructure reliability, streamline service operations, and maximize wireless performance. Employing powerful, patented innovations, their solutions portfolio is proven to lower the cost of operations while ensuring lifetime quality levels in equipment and unrivaled performance for coverage and high-speed mobile data.

JMA Wireless solutions cover macro infrastructure, outdoor and indoor distributed antenna systems, small cell solutions, and virtualized RAN software. JMA Wireless corporate headquarters are located in Liverpool, NY, with manufacturing, R&D, and sales operations in over 20 locations worldwide.

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