

# Smarter campuses – Finding room for innovation through IoT in higher education

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# Ovum view

## Summary

The higher education industry faces a crisis that is driving college and university leaders, policymakers, and academics to reconsider how teaching, learning, and research will be delivered for the next generation of students. The degree to which institutions are able to bring these new models to life successfully will depend, at least in part, on their ability to reallocate scarce resources from commodity functions to those that differentiate the core service. The 'Internet of Things' (IoT) offers considerable potential as it enables institutions to create smarter campuses through the automation of routine functions and application of powerful analytics. However, all solutions are not created equal and institutions that seek out vendor partners with the combination of deep industry expertise and a commitment to future-proofing their solutions will be more likely to build capacity for innovation from their investments in IoT.

## The next era in higher education will require a new model

Over the next decade, a myriad of macro forces will create considerable challenges for the higher education industry and likely lead to the emergence of new business models. At a time when access to higher education is increasingly critical to long-term financial health, the potentially devastating impact of an affordability crisis looms large. Consequently, college and university leadership, policymakers, academics, and even entrepreneurs are putting forward bold, new ideas about how higher education services might be delivered and consumed by an increasingly diverse, global, and demanding student body and funded in a far more accessible and financially sustainable way.

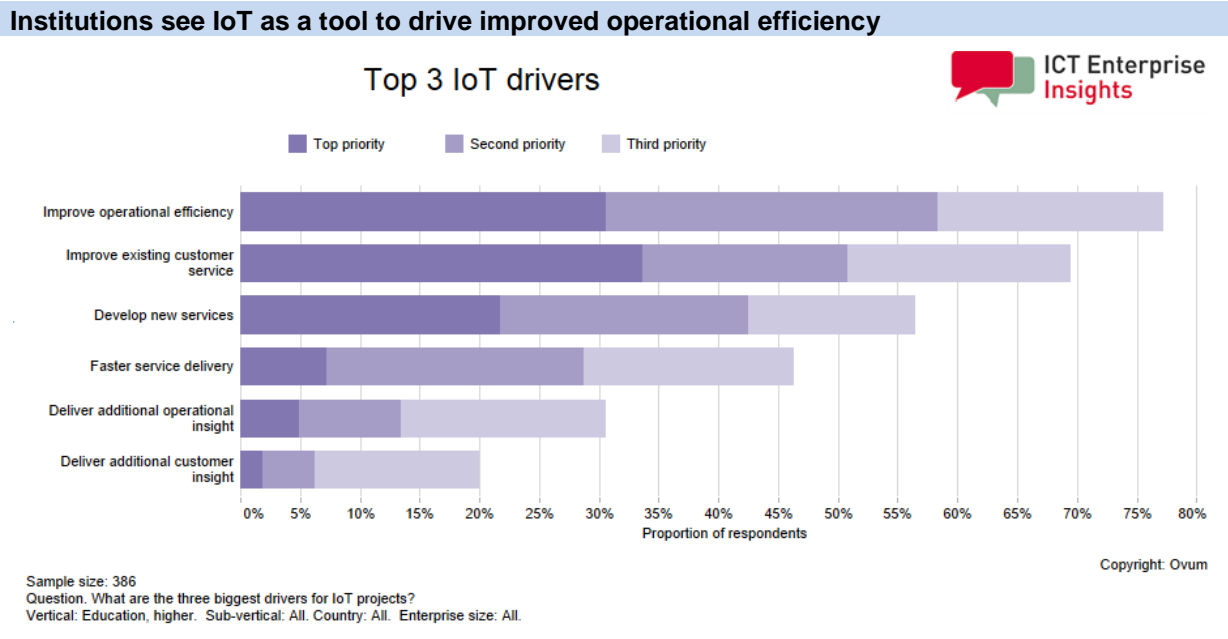
The ability for institutions to capitalize on these new models will depend, in large part, on their ability to build capacity for innovation, become more agile and flexible, and find efficiencies that advance the quality of teaching, learning, and research. Unfortunately, increasing already stretched institutional budgets to support these developments is not an option. Instead, organizational efficiencies must be found in order to fund them. Ovum believes that this is not the time-honored journey of asking faculty and staff to do more with less, but rather one that drives college and university leadership to reconsider programs, services, and processes, in terms of whether they differentiate the core services or are commodity functions of the institution.

Too often, particularly when it comes to technology investments, institutions are spending the bulk of their resources maintaining commodity functions and only a fraction on innovation. This is frequently referred to as the 80:20 paradigm. Thriving, or even just surviving, in the next era of higher education will require the adoption of more cost-effective mechanisms for delivering commodity functions in order to 'flip the paradigm' and drive resources towards innovation. Outsourcing and cloud services are critical to accomplishing this goal, but new technologies and smarter ways of working also have a powerful role to play.

## Embrace new technologies and new ways of using them

IoT has captured the world's imagination, with its ability to deliver such prosaic things as estimate the arrival of a city bus to such profound ones as reduce carbon emissions through better management of residential power consumption; all based on capturing and analyzing sensor data on the devices and objects we use every day. While IoT adoption is not yet pervasive in higher education, technology decision makers already see its potential to drive not only important operational efficiencies but

improve the constituent experience as well. Ovum's recent ICT Enterprise Insights Survey found that operational efficiency and customer service were the most important drivers of IoT adoption with 30.6% and 33.7%, respectively, rating them as the top priority.



Source: Ovum ICT Enterprise Insights Survey, 2015-2016

The inherent value of IoT is that it helps institutions to become smarter by:

- leveraging their physical resources more effectively;
- automating routine processes to increase efficiency; and
- applying powerful analytics to transform the efficacy of non-routine ones.

Consider the immense value offered to the director of the physical plant who can see, in real-time, power usage across campus and then make appropriate adjustments or the campus security manager who can track where campus safety personnel are on campus and then direct the closest resource as events arise. When applied to automating routine tasks, such as using student identification cards to track attendance or provide access to dining facilities, it is easy to see how efficiencies are garnered.

However, when analytics are introduced into the mix, IoT has the ability to create smart workspaces where the efficacy of non-routine tasks is transformed. The director of the physical plant instead of determining when it is most energy efficient to house a summer soccer camp based on experience and data stored in spreadsheets, with IoT receives automated recommendations about and controls for lighting, HVAC, and even security, based on the enrollment and scheduling parameters of the program. Similarly, academic advisors receive automated alerts on which students are routinely missing breakfast, because their ID cards are not being swiped in the dining hall, as it is an early warning sign of a retention risk. While these are just two examples, they clearly elucidate how the power of analytics and automation offered through IoT enables institutions to apply valuable resources against differentiating the core service rather than using them to collate data. Faculty, staff, and administrators work smarter rather than harder, discovering the capacity for true innovation.

## Seek out partners that understand the higher education context

Determining which institutional programs and processes are commodity functions and which differentiate the core service is a challenging task. Add in the application of rapidly evolving technology, such as IoT, to garner efficiencies and improve institutional effectiveness and it can quickly become a quagmire for even the most sophisticated college or university leader.

Consequently, Ovum advises colleges and universities to seek out vendor partners that can combine deep expertise in the higher education industry with enterprise-grade technological and services capabilities.

At the end of the day, technology is just a tool or an enabler. While IoT offers considerable potential to transform higher education in important ways, the ability to realize value from that potential depends, in part, on the ability of the vendor and institution to work collaboratively to identify real and pressing business challenges for its application. In order to accomplish this aim, the vendor must have a deep understanding of the higher education context including the programs, processes and services of the institution. When it comes to IoT, it is not simply a matter of connecting things to the Internet in order to create smarter workspaces. Instead, it is about understanding where insight about how things are used will help faculty, administrators, and staff improve the services of the institutions.

While IoT has existed in some form for many years, it is a technology that is evolving rapidly. Consequently, it is critical for institutions to protect their investments by partnering with vendors committed to future proofing their solutions through robust product development, open standards, and extensive partner ecosystems. Best-in-class solution providers will offer institutions complete IoT solutions with considerable flexibility and deployment options. By seeking out these types of vendor partners, colleges and universities are able to reduce the deployment times and reach a return on investment more rapidly from IoT.

# Appendix

## Further reading

*Making the Move from IT Maintenance to Innovation in Higher Education*, IT0008-000269 (May 2016)

*Understanding the IoT Opportunity: An Industry Perspective*, IT0058-000003 (November 2015)

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## Ovum Consulting

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