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[O]ur intelligence tends to produce technological and social change at a rate faster than our institutions and emotions can cope with...we therefore find ourselves continually trying to accommodate new realities within inappropriate existing institutions, and trying to think about those new realities in traditional but sometimes dangerously irrelevant terms.

Gwynne Dyer, War: The Lethal Custom

Why This, Why Now?

What is qualitatively different today from two years ago—or five years ago—about technology emerging from the consumer market and spreading into an organizational environment? Well, the short answer is “not much.” That said, the furor over bring your own device (BYOD) and the consumerization of IT have recently become part of the contemporary discourse of IT professionals in higher education. These developments raise understandable concerns about IT infrastructure, planning and governance, security and compliance, support strategies, teaching and learning, and fiscal implications. ECAR is addressing these issues by conducting research to answer questions including those that follow:

- What is the state of current policy, practice, and experience with BYOD in higher education?
- What are the exemplary practices for strategically managing BYOD?
- What strategic innovations are on the horizon for BYOD?

The ECAR Minute:

Helping Higher Education Make a Case for Decisions about BYOD

To paraphrase John P. Kotter, professor emeritus at the Harvard Business School, the rate of change is not going to slow down anytime soon; if anything, competition in most industries will probably speed up even more in the next few decades. This statement is apropos to higher education and the consumerization of information technology. In order to maximize the benefits and to minimize the risks associated with the widespread application of user-provisioned technologies for school- and work-related purposes, higher education institutions need to know their options, understand their experiences relative to their peers, and look toward the future to gain insight about the forthcoming challenges and opportunities.

Preliminary Discoveries

Figure 1 offers a visual depiction of the most important issues that higher education institutions are presently facing regarding the consumerization of IT. This figure provides a framework for the forthcoming ECAR work on BYOD. Each of the six areas of investigation is partnered with a statement about the ideal BYOD environment in higher education and a brief description of an interrelated opportunity. The full ECAR report will explore each of these content areas in greater detail, with the purpose of providing actionable recommendations for higher education IT leaders to proactively address or accommodate BYOD.

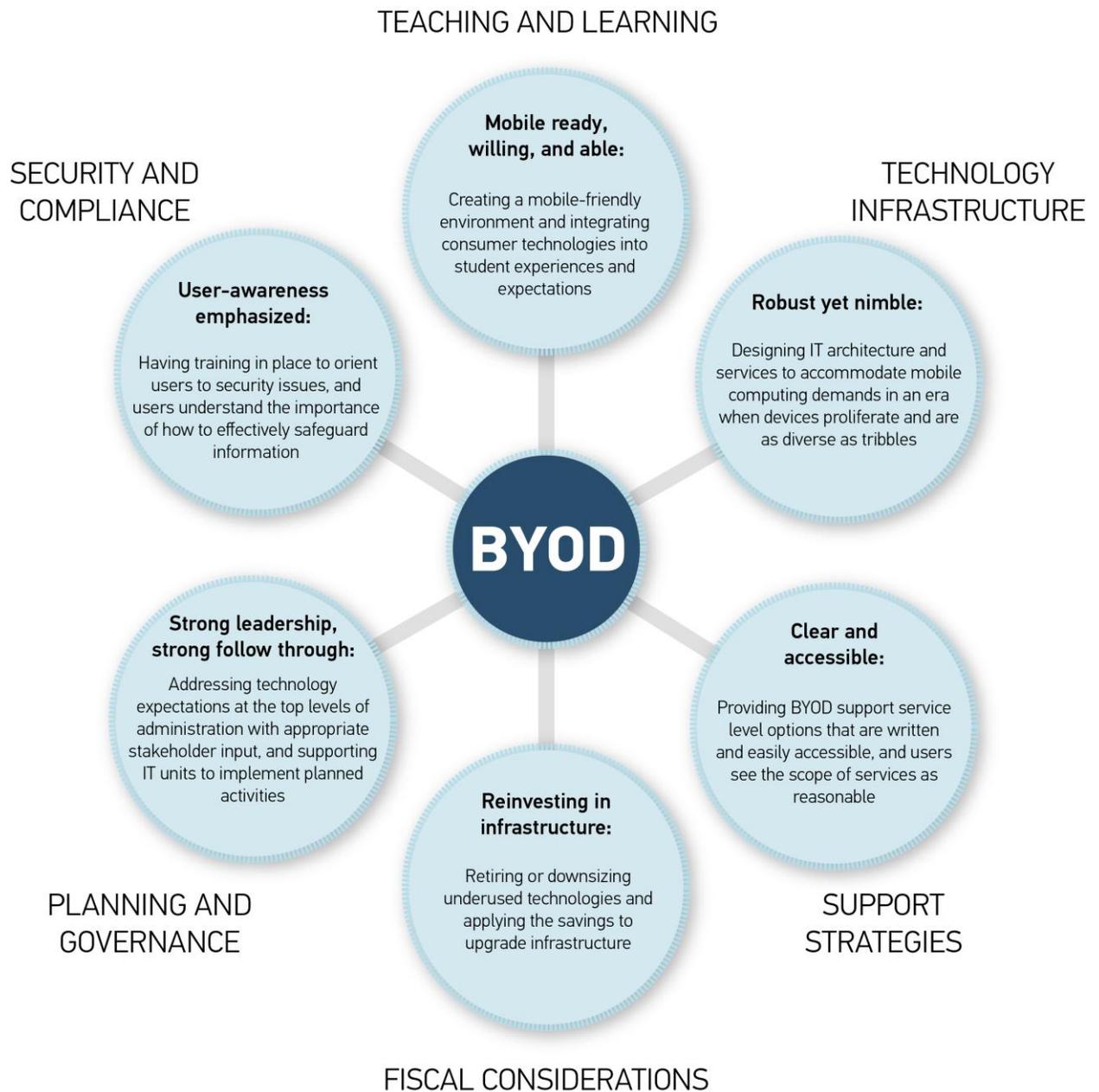


Figure 1. ECAR Framework for Studying BYOD

BYOD is here, it's happening, and it will continue to happen at greater rates and with diversified technology (both services and devices) for the foreseeable future. This is true for all industries, education included. The prospect that most excites IT leaders in higher education about BYOD is the opportunity to diversify and expand the teaching and learning environment. This was the united message among participants of ECAR interviews and focus groups. The thematic recommendations that emerged included:

- Increasing student engagement with technology
- Walking the talk of extending “the classroom” to anytime, anywhere
- Making campuses desirable places to engage with technology and technology-enabled learning

Among the greatest challenges IT leaders identified in ECAR interviews and focus groups were issues that pertained to faculty and staff use of their own devices for work-related purposes. It is interesting that all of the challenges that emerged were one step removed from teaching and learning. Among these challenges were security, support strategies, and technology infrastructure related issues:

- Securing institutional assets, intellectual property, data, and integrity of the network(s)
- Standardizing and virtualizing desktop computing environments
- Providing service (even simply best-effort support), or service alternatives, to faculty and staff who have been accustomed to contacting IT for technology-related issues
- Educating users about the risks and benefits of using their own technology, while knowing that enforcement of formal policies and practices is a luxury rather than common practice
- Maintaining and upgrading infrastructure to accommodate more devices and technologies that cross paths with IT domains, predicting what the next technology will be in order to proactively be ready to accommodate it
- Transitioning or adapting technology infrastructure—or vendor products—so enterprise systems work across a diverse array of user-provisioned devices

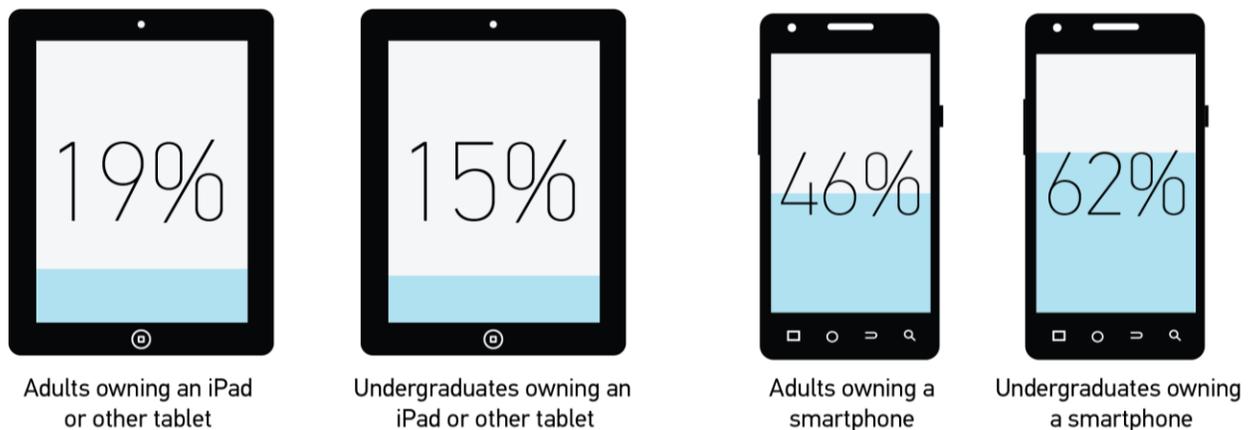
Looking past the challenges and opportunities BYOD brings to higher education institutions, ECAR interviews and focus groups revealed a culture of inquiry around exemplary practices and strategic innovations. Among interviewees, there were few examples of archetypal strategies for approaching the consumerization of IT in higher education. Instead there was keen interest in best practices around specific areas, including:

- Supporting planning and governance
- Supporting faculty and staff in using their own devices for work-related purposes
- Securing data (and complying with institutional standards and in some cases FERPA and other laws)
- Providing appropriate and robust technology infrastructure
- Capitalizing on teaching and learning opportunities
- Proactively considering the fiscal implications (which ranged from optimistically positive to conservatively negative) that BYOD offers

The general sense was that BYOD is happening and institutions are accommodating to the best of their abilities, but not necessarily in a systematic way that is proactive or with the end in mind. “Even the most strategic and flexible IT organization may, at times, need to be reactive. Institutions need to learn to adapt to and leverage personal computing environments, not proscribe them.”¹

Data Mine

The state of the consumer market as it pertains to smartphone and tablet ownership among undergraduate students can be summed up by this simple statement: mobility is pervasive and devices are prolific. From 2004 to 2012 there was a greater than 5,000% increase in smartphone ownership in the undergraduate student population.² Nearly two out of every three undergrads (62%) owned a smartphone in 2012, and they are increasingly being used as academic tools.



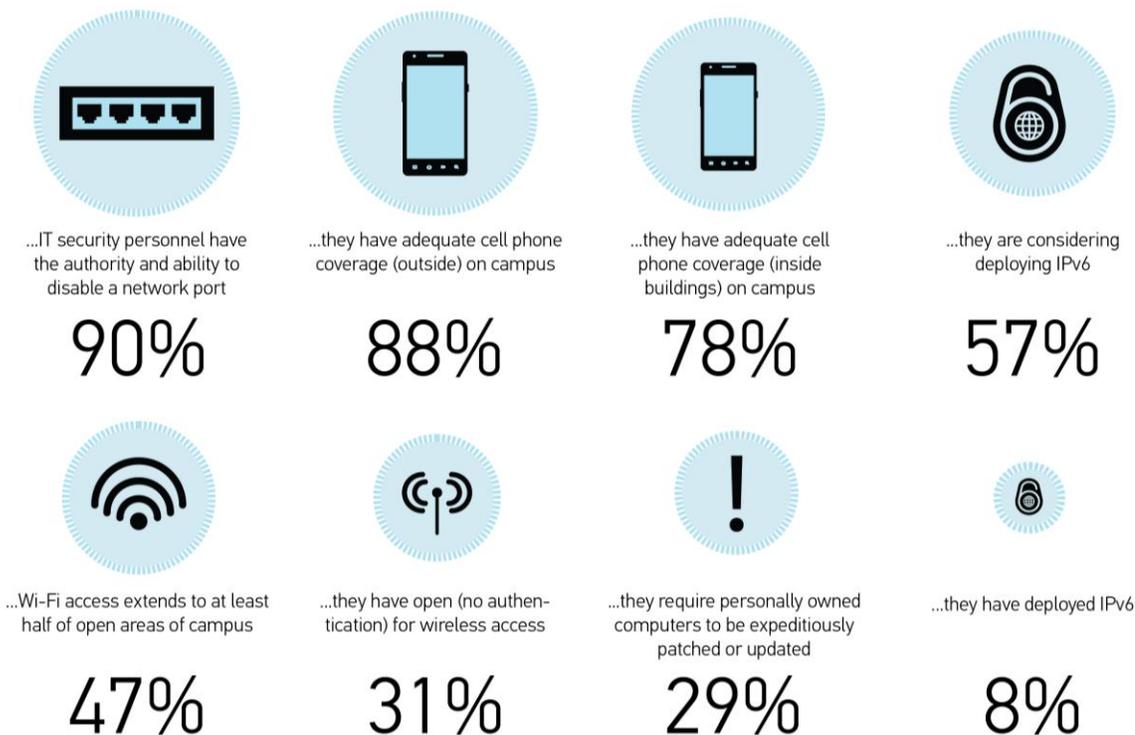
Data sources: ECAR Study of Undergraduate Students and Information Technology, 2012; Pew Research Center's Internet & American Life Project, 2012

Figure 2. Tablet and Smartphone Ownership, 2012

As consequential as student ownership and use of technology, faculty and staff are increasingly bringing and using their own devices as work-related resources. According to the Pew Research Center's Internet & American Life Project, 46% of adults own a smartphone and 19% own an iPad or other tablet.³ These rates are likely to go up before they plateau, and there are implications for individuals and units responsible for information technology oversight and management at higher education institutions.

The EDUCAUSE Core Data Service (CDS) offers insight about current practices that directly affect, or are influenced by, more extensive use of user-provisioned devices.⁴ CDS provides opportunities to benchmark current institutional practices against what similar institutions are doing. A sampling of these data are shown in Figure 3, and the CDS Reporting Tool can be used to further explore practices at peer institutions.

Percentage of institutions that say that...



Data source: EDUCAUSE Core Data Service, 2012

Figure 3. Current IT Practices

ECAR is conducting primary research through focus groups, interviews with subject matter experts, and a survey. Secondary research will be carried out by applying literature and experiences from other industries to higher education. A summary of these findings will be released in an ECAR report in March 2013.

The ECAR Queue

This research preview is designed to provide context and insight for the work ECAR is undertaking to understand how the consumerization of IT is affecting higher education. In 2013, ECAR will produce a series of publications on this topic, and we are experimenting with opportunities to provide content throughout this research effort by releasing aspects of the study monthly. This preview is the first in the series. Two research briefs focused on findings around technology infrastructure and security will follow in January and February, respectively. The complete report and supporting materials will be released in March. The project research hub (<http://www.educause.edu/library/resources/byod-and-consumerization-it-higher-education-research-2013>) will be updated as information about this project emerges.

- Technology infrastructure preview report (Jan. 2013)
- Technology security preview report (Feb. 2013)
- Full ECAR consumerization of IT/BYOD report (Mar. 2013)
- Infographic, slide deck, and support materials (Mar. 2013)

This suite of resources will provide actionable recommendations, which can be useful in developing or refining those elements of a comprehensive BYOD strategy that are within the purview of IT leadership, as well as perspectives about BYOD issues for which IT may not be directly responsible but that IT leaders will benefit from understanding.

About the Authors

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Notes

1. Susan Grajek, the 2011–2012 EDUCAUSE IT Issues Panel, and Judith A. Pirani, "Top-Ten IT Issues 2012," *EDUCAUSE Review* 47, no. 3 (May/June 2012), 40, <http://net.educause.edu/ir/library/pdf/ERM1232.pdf>.
2. Eden Dahlstrom, with a foreword by Charles Dziuban and J.D. Walker, *ECAR Study of Undergraduate Students and Information Technology, 2012*, Research Report (Louisville, CO: EDUCAUSE Center for Applied Research, September 2012), available from <http://www.educause.edu/ecar>.
3. Aaron Smith, "46% of American Adults Are Smartphone Owners," Research Report (Washington, DC: Pew Research Center, Internet & American Life Project, March 2012): 2, <http://www.pewinternet.org/~media/Files/Reports/2012/Smartphone%20ownership%202012.pdf>; and Lee Rainie, "Tablet and E-Book Reader Ownership Nearly Double Over the Holiday Gift-Giving Period" (Washington, DC: Pew Research Center, Internet & American Life Project, January 23, 2012), <http://pewresearch.org/pubs/2176/tablet-computers-ebook-readers>.
4. EDUCAUSE Core Data Service, 2012, <http://www.educause.edu/cds>.