

Global Education Sector Technology Spending to Exceed US\$67.8 Billion in 2015

27 February 2015 — Social and economic pressures are forcing senior education leaders to rethink business models and consider a range of new technologies, to bring down the cost of administering education institutions and scale the business, according to research from Gartner, Inc.

According to Gartner vice president and distinguished analyst Jan-Martin Lowendahl, traditional educational business models are being fundamentally challenged by digitalization.

"An increasing number of technical innovations and technology trends are emerging from within the industry, but most will emerge outside the industry, driven by major forces such as digital business and the consumerization and industrialization of IT," Mr. Lowendahl said. "Education sector CIOs need to take a broad approach and consider technologies from outside the education community, as well as looking for lessons from their peers. Focus on those that are most appropriate to your institution's strategy."

Worldwide education sector spending is forecast to grow 2.3 percent to reach \$67.8 billion in 2015, according to Gartner. This forecast includes higher education as well as primary and secondary schools. Education institutions in Australia will spend A\$2.6 billion on technology products and services in 2015, up 4.9 percent from 2014. In New Zealand, technology spending in the education sector will total NZ\$362 million in 2015, an increase of 1.9 percent over 2014.

Gartner has identified the top 10 strategic technologies for the education industry in 2015 and provides recommendations to education CIOs and IT leaders regarding adoption and benefits. It is not a list of what education CIOs spend the most time or money on; rather it is a list of strategic technologies that Gartner recommends education CIO should have a plan for in 2015:

1. Adaptive Learning

Adaptive learning is a concept that traces its roots back to at least the 1950s, but the ability to capture learner data through online learning has provided a breakthrough. True adaptive learning is a type of crowdsourcing and big data collection. The real value of adaptive learning lies in the metadata attached to each learning "morsel," which must then be combined with enough empirical data of students trying to master the topic to allow personalized learning. It is extremely valuable in designing the pedagogy of the future.

2. Adaptive E-Textbooks

Unlike traditional print materials, e-textbooks can be edited to include up-to-date information, be assembled or disassembled, or include content from other sources and social interaction. Adaptive e-textbooks add the element of tracking student interaction with the text, and adapting to the learning style. E-textbooks are the first key step of going from analog to digital education.

3. CRM

Customer relationship management (CRM) is now a widely recognized tool for tracking and managing relationships with constituents, including prospective and current students, parents, alumni, corporations, benefactors and other friends of the institution. However, institutions are grappling with the difficulties of standardizing and integrating the institutional data to achieve success with these solutions, and to enable rapid and informed decision making on their campus.

4. Big Data

Big data in education is associated with collecting vast amounts of data from the digitized activities of students, parents, faculty and staff, transforming that into information, and producing or recommending actions aimed at improving institution outcomes. Big data in higher education has been around for decades, mainly focused on research. Now, it is a very promising technology-based strategic capability that has the possibility to improve the whole education ecosystem.

5. Sourcing Strategies

Not a technology in itself, sourcing strategies represent a collection of technologies and vendor services, from hosting to cloud, homegrown to open

source, to subscription models for acquiring software/hardware capabilities. A sourcing strategy is a set of scenarios, plans, directives and decisions that dynamically define and integrate internal and external resources and services required to fulfill an enterprise's business objectives. Strategic sourcing helps IT to focus from administrative transactions and operational support toward activities that enable differentiation and innovation for the institution.

6. Exostructure

Exostructure strategy means acquiring the critical capability of interoperability as a deliberate strategy to integrate the increasing numbers of partnerships, tools and services in the education ecosystem. When done right, an exostructure approach enables institutions to leverage services from the cloud, rather than having to bring them inside the campus walls. Enabled by standards, it can allow the institution to adapt faster. With the increasing interdependencies in the education ecosystem, Gartner sees it rising in importance for at least the next decade. The future belongs to exostructure rather than to infrastructure.

7. Open Microcredentials

Microcredentials in the form of various badges or points have existed for some time in digital social environments in general, and in learning environments in particular. A key problem is that these environments are proprietary, which makes it difficult to display achievements outside of them. The aim of open microcredentials is to remedy that problem. For education institutions, issuing open microcredentials is a low-cost, high-value, technology-based capability that will provide more value and motivation to students. Open microcredentials is still relatively immature as a technology, but it is gaining traction in the education community. Gartner sees it as a clear strategic technology with a relatively small investment involved, thereby making it a low-hanging fruit with good ROI.

8. Digital Assessment

Assessment within education is in itself a vast and complicated area. Digital assessment is ultimately about being able to do any assessment digitally, to remove the need for physically tethered as well as human-proctored tests and improve modes of testing, grading and data analysis. The first-level application of digital assessments is to increase trust in online education by applying identification mechanisms, such as keystroke identification or cloud-based face recognition. Digital assessment is a very practical technology with a clear high-level goal, but with many problems in the implementation. However, good digital assessment is a necessity for trustworthy and scalable online or hybrid (digitalized) education, and will remain a strategic technology until it is solved.

9. Mobile

Mobile is a popular term for pervasive access via many types of devices. Mobile is not simply a synonym for mobile smartphones or tablets. Mobile in education includes use in all aspects of the academy — administration, education and research. However, the domain is maturing surprisingly slowly. Inhibitors in 2014 still include smartphone cost, device limitations (such as battery life), the development of m-learning course materials, lack of skills and the wide diversity of mobile devices. Education CIOs will need to treat mobile as a strategic technology for several years

10. Social Learning

Social learning gives learners the ability to establish a presence or social profile that reflects their expertise and interest; to create, discuss, share and capture learning content as learning objects; to organize and find learning objects from a variety of sources, such as search or peer ratings; to interact with peers in their social networks and be able to reach beyond their networks to other trusted sources of information; to engage in experience-based learning exercises; and to receive real-time online coaching and support.

The experience from massive open online courses (MOOCs) shows the importance of "social" in learning platforms and is influencing the acceptance of social learning platforms. However, a significant number of faculty and students prefer to use open social platforms such as Google Sites or Facebook to complement traditional learning-management systems (LMSs) rather than the now-built-in social features in the learning platforms. Vendors and institutions are still trying to figure out the perfect mix in the learning stack.

More information on these trends is available in the Gartner report "Top 10 Strategic Technologies Impacting Education in 2015" available to Gartner clients at www.gartner.com/doc/2926323 and the accompanying report "Top 10 Business Trends Impacting Education in 2015" on Gartner's website at <http://www.gartner.com/doc/2926717>.

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