Beyond the Technology: The Broader Context of Enterprise IT

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EDUCAUSE/NACUBO Enterprise IT Summit

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Who Needs to Know about the Higher Education Business Model?

- Faculty, Staff, CFOs and CIOs
- Students and Parents
- Donors
- Rating agencies
- Sponsors
- State and Federal Legislators/government
- Governing Boards

Source: Figure 1 Who Wants Financial Information? Reporting Reimagined, Business Officer, January 2014

Percentage of Adults Age 25-34 with Postsecondary Education

(Associate Degree or higher in U.S. per 2014 Current Population Survey, U.S. Census Bureau)

Source: OECD Education at a Glance 2015, Table A1.4a Population with tertiary education (2014)
Share of 25-34 year-olds with a Tertiary Degree across OECD and G20 Countries (2020)

Median Earnings and Tax Payments of Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2011

Sources: U.S. Census Bureau, 2012, Table PINC-03; Internal Revenue Service, 2010; Davis et al., 2013; calculations by the authors.
Fundamental Questions About the Business Models

- Is the Revenue Model Sustainable?
  - State Appropriations
  - Net Tuition
  - Endowment Support
  - Federal Support

- What is the Impact of Public Attitude and Policy?

- What are the Key Challenges to Making Changes?

Will Enrollment Grow?
- Student Demographics
- Price Sensitivity

Public FTE Enrollment and Educational Appropriations per FTE, US Fiscal 1989-2014

Source: Figure 4. State Higher Education Finance FY2014. State Higher Education Executive Officers Association

Annual Percentage Change in Inflation-Adjusted Per-Student State Funding for Higher Education and in Tuition and Fees at Public Institutions, 1984-85 to 2014-15

Source: Figure 16A. Trends in College Pricing 2015. The College Board
Average Tuition Discount Rate: First-Time, Full-Time Freshmen and All Undergraduates

Source: 2014 NACUBO Tuition Discounting Study.

Average Change in Net Tuition Revenue per Undergraduate and Inflation Adjusted*

Source: NACUBO 2014 Tuition Discounting Study. Note: *Dollars were adjusted using the Higher Education Price Index (HEPI).
Average Annual Net Returns*  
U.S. College and University Endowments, Fiscal Years 2005 to 2015

<table>
<thead>
<tr>
<th>Year</th>
<th>Net of Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>9.3%</td>
</tr>
<tr>
<td>2006</td>
<td>10.8%</td>
</tr>
<tr>
<td>2007</td>
<td>17.2%</td>
</tr>
<tr>
<td>2008</td>
<td>19.2%</td>
</tr>
<tr>
<td>2009</td>
<td>11.9%</td>
</tr>
<tr>
<td>2010</td>
<td>-3.0%</td>
</tr>
<tr>
<td>2011</td>
<td>-18.7%</td>
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<tr>
<td>2012</td>
<td>-0.3%</td>
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<tr>
<td>2013</td>
<td>11.7%</td>
</tr>
<tr>
<td>2014</td>
<td>15.5%</td>
</tr>
<tr>
<td>2015</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

*Net of fees.  
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Average Aid per Full-Time Equivalent Student in 2014 Dollars, 1994-95 to 2014-15

Source: Figure 1, Trends in Student Aid 2015, The College Board
Total Undergraduate Student Aid By Source and Type (in Billions), 2014-15

Source: Figure 2A, Trends in Student Aid 2015. The College Board

Total Pell Grant Expenditures, Maximum and Average Pell Grant in 2014 Dollars, and Number of Recipients, 1979-80 to 2014-15

Student Demographics

High-School Graduates Through 2027-28

After a peak in 2010-11, the number of high-school graduates nationally is expected to dip and then rise, both modestly, with totals from 3.2 million to 3.3 million for the next several years.

Source: Western Interstate Commission for Higher Education. © Copyright 2010, The Chronicle of Higher Education. Reprinted with permission. This material may not be posted, published, or distributed without permission from The Chronicle.

Projected change in the number of high school graduates, 2010-11 to 2020-21

Source: Western Interstate Commission for Higher Education. © Copyright 2010, The Chronicle of Higher Education. Reprinted with permission. This material may not be posted, published, or distributed without permission from The Chronicle.
Tuition Ceiling

Inflation-Adjusted Published Tuition and Fees Relative to 1985-86, 1985-86 to 2015-16 (1985-86 = 1.0)

Source: Figure 6, Trends in College Pricing 2015, The College Board.

Perceived Reasons for Loss of Enrollment at Institutions that have Lost Freshmen Enrollment from AY2010-AY2013

Source: Figure 5, NACUBO 2013 Tuition Discounting Study.
Need for New Business Models

- Centralized/Shared Services
- Consolidations
- Expense Flexibility
- Programmatic Review
- Space Utilization
- Faster Completion
- New Market Outreach
- Online Education
- Tuition Pricing Strategies
- Reform Student Financial Aid

Challenges to Change

- Leadership and Governance Model
- Strategic Resource Allocation
- Labor Intensive Business Model
- Availability of Capital
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Some institutions will address some of these issues and will survive. Others will successfully address most of these issues and will then need to prepare for the next seismic change in higher education: The Great Unbundling.

Old Model of IT
centralized hierarchical
total automation of business

1. IT Management
   CIO
   CTO
   Governance
   Enterprise Architecture
   Program Management

2. IT Staff
   Developers
   Analysts
   Project Managers
   Team Leaders
   Operations

3. Stakeholders & Providers
   Business Users
   Sponsors
   Support Units (Legal, HR, Compliance)
   Contractors
   Service Providers
   Vendors

- Applies technology to what the business does today
- Good at maintaining status quo
- Focus on efficiency, economy of scale, continuity
- Well-defined processes designed for monolithic IT

New Model of IT
decentralized network enablement
of digital transformation

Developers
Analysts

Change Managers
Network Leaders

Operations
Business Users
Sponsors
Change Agents
Vendors
Service Providers
Support Units (Legal, HR, Compliance)
Contractors

- Explores how technology re-imagines the business
- Good at managing constant technology change
- Focus on responding to opportunities at scale
- Dynamic self-organizing processes for small IT in volume

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Strategic Technologies in place at >30% of institutions in 2013

- Cloud-based academic applications
- Data warehouse
- PCI-DSS standards
- Enterprise identity and access management
- Cloud-based e-mail for faculty and staff
- Cloud-based video streaming solutions

Source: 2014 Top-10 IT Issues

Strategic Technologies in place at >30% of institutions by 2015

- Cloud-based academic applications
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- Cloud-based e-mail for faculty and staff
- Cloud-based video streaming solutions
- E-portfolios
- Online courses on mobile devices
- E-book readers and e-textbooks
- Mobile app development
- Mobile apps for enterprise applications
- BI (business intelligence) reporting dashboards

- Degree advising analytics
- Administrative or business performance analytics
- Federated ID management
- Database encryption
- Digital repositories for researchers and scholars
- Cloud-based high-performance computing
- Digital preservation of research data
- Cloud-based office productivity suites
- Institutional support for public cloud storage
- Digital repositories for researchers and scholars

Source: 2014 Top-10 IT Issues
Strategic Technologies in place at >30% of institutions by 2017

- Emergency/mass notification services
- Document management solutions
- Customer relationship management system (CRM) for student admissions and enrollment
- CRM for alumni and institutional advancement
- Service desk workforce management tools
- Enterprise identity and access management solutions
- 802.11ac wireless networking standard
- Network capacity planning and management tools
- BI/reporting dashboards
- Mobile app development (HTML5, responsive design, hybrid, etc.)
- Tablet access for applications
- Unified communication and collaboration
- Mobile apps for enterprise applications
- Virtual desktop or virtual PC applications
- Cloud-based office productivity suites
- Federated ID management
- Incorporation of mobile devices in teaching and learning
- Courses on mobile devices: blended/hybrid (part online/part classroom)/course
- Institutional support for public-cloud storage (e.g., Box)
- Database encryption
- Administrative/business performance analytics
- Data center capacity planning and management tools for campus-based data centers
- Mobile apps for teaching and learning
- IT asset management tools (e.g., CMDB)
- 3D printing
- Cloud-based video/streaming solutions
- Learning analytics: Degree advising
- E-portfolios
- Database audit and protection tools
- Multifactor authentication (two factor, tokens, smart cards) for critical applications
- Private-cloud computing (locally hosted)
- E-textbooks
- Service-level/reporting tools for campus-based services
- Mobile device management (MDM)
- Distributed denial of service (DDoS) protection products and services
- Cloud-based administrative/enterprise applications
- Digital repositories for researchers and scholars
- IPv6
- E-mail encryption
- Mobile data protection
- Security information and event management (SIEM)
- Learning analytics: Course level
- Data center capacity planning and management tools for hybrid campus and cloud data center configurations
- Digital preservation of research data
- Next-generation learning management systems that support new models of learning, like computer-based learning
- Courses on mobile devices: Fully online
- Data collection and sophisticated analytics methodologies
- HPC as a research core service
- Enterprise governance, risk, or compliance (GRC) systems
- Ethernet fabrics/fabric data centers
- E-discovery software to facilitate identification, preservation, analysis, etc., of electronically stored information
- Private-cloud computing (externally hosted)
- E-signatures
- IT risk management automation to manage risk assessment, incident management, compliance mapping/reporting, etc.
- Hybrid-cloud computing
- Use of big data in analytics (mining massive amounts of structured and unstructured data)
- Support for use of personal cloud services
- Predictive analytics for administrative/business performance
- IT accessibility assessment tools

Source: 2014 Top 10 IT Issues

UNCOMMON THINKING FOR THE COMMON GOOD

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The Cloud

Cloud First

Opportunistic Cloud

Cloud Experimentation

Cloud Aware

http://www.educause.edu/library/resources/preparing-4-organization-cloud
Transforming the IT Organization: Changing Roles

“IT Liaison”

Overall IT Governance Maturity

- Excellent: 1%
- Strong: 9%
- Developing: 22%
- Emerging: 37%
- Weak: 31%

Only 32% say IT governance is strong or developing

Source: 2014 Core Data Survey
Information Security Shared Responsibility

If these tectonic shifts in the focus of IT organization management occur as predicted, IT as we have known it may evolve into something unrecognizable.

ECAR Service Delivery Report
How do we meet those challenges?

1. Adapt our funding profiles
2. Develop new capacities and competencies
3. Confront our workforce issues
4. Broaden the conversation

We need to adapt our funding profiles

• To be flexible enough to support new ways of delivering technologies and services
• To fit a different model where capital expenses give way to operating expenses
• To align with institutional mission
• To make space for growth and innovation
We need to develop new capacities

- In change management
- In vendor management
- In contracts
- In costing our services
- In being a broker and partner vs. provider
- In managing collaborative relationships across our institutions

The ability gap for CIOs

Source: Today's Higher Education IT Workforce, Jacqueline Michael, ECAR, January 2014
https://library.educause.edu/resources/2014/1/todays-higher-education-it-workforce
IT Workforce Issues

We need to confront our workforce issues

- By hiring people with skills that address our new needs
- By focusing on people skills
- By helping our staff members understand the role of IT as partner and team member
We need to broaden the conversation

- By better understanding the priorities and goals of business and academic units
- By enhancing IT governance
- By ensuring that IT is positioned strategically

Source: Today's Higher Education IT Workforce, Jacqueline Bichsel, ECAR, January 2014

Strategic Positioning

CIO on the president’s or chancellor’s cabinet

57%
Influence scales, control does not – we need a new leadership style.

Peter Sondergaard
SVP Gartner Research
Thank You

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Framing Questions

• What are the key risks to my institution’s revenue model, and how willing are the leaders of my institution to recognize these challenges, and search for solutions?
• How does IT fit into my institution’s risk management strategy?
• To what extent do data about cost and revenue influence institutional decision making at my campus?
• How is technology strategically positioned at my institution already? How should/can this be strengthened?
• How can I contribute to the process of innovation and the spirit of creative risk-taking on my campus?
• How are technology leaders and business officers working together now? How should/can this be strengthened?