A BALANCING ACT:
STABILITY VS. INNOVATION
IN HIGHER EDUCATION IT

EDUCAUSE
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Welcome

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Setting the Stage

Key Topics

- Introductions
- Higher Ed IT Operating Models
  - Traditional Model
  - Innovation Model
- Components of Balance
  - Organizational Models
  - Alignment of Business & IT
- Questions & Answers

Poll Question #1

WHAT IS YOUR INSTITUTION TYPE?

1. 4-year public
2. 4-year private
3. 2-year community college
4. For Profit
Higher Ed Trend Watch

Limited Impact (0-10%)
- Cross-institutional and international scholarly and research collaborations
- Ubiquitous digital services and streams (social media, ETS, systems and applications, OERs, etc.)
- Freedom of speech
- Bimodal IT (managing two separate IT delivery models, one focused on stability and the other on agility)
- Adaptive learning
- Internet of Things
- Alternative credentialing models
- National and global political uncertainty
- Declining international enrollments
- Use of algorithms to influence institutional and individual choices
- Climate change
- Artificial intelligence (AI)
- Deregulation of higher education

Worth Understanding (21-40%)
- Blending of roles and blurring of boundaries between IT and academic/administrative areas
- Agile approaches to change
- User-centered design
- Solution providers bypassing IT to work directly with business-areas leaders
- Cross-institutional partnerships and consortia
- Concerns about institutional sustainability or even survival
- Lifelong learning
- New business models for higher education / Financial Uncertainty
- Changing faculty roles (teaching, advising and student success, growth in adjuncts, etc.)
- Incorporating open standards into antierisc (AI) architecture
- Exploration of scholarly and research data (visualization, discipline-specific tools, etc.)
- DevOps movement to bring development and operations staff together
- Reduced reliance on service desks as the primary model for support (includes shift to self-service, automated provisioning, BYO, etc.)

Taking Hold (41-60%)
- Compliance environment
- Institution-wide data management and integration
- IT as an agent of institutional transformation and innovation
- Changing enterprise system architectures, integrations and workflows
- Business process redesign
- Incorporating risk-management approaches into IT strategy and service delivery
- Online degrees or certification programs
- Campus safety
- Diversity, equity and inclusion
- Managing mobility (people, data, institutional resources)
- Digital transformation
- Evaluation of technology-based instructional innovations
- Changing demographics influence on enrollment
- Shared services
- Service management (ITSM, ITIL)
- Higher education's reputation and relevance
- Moving from transactional to strategic vendor-institution relationships

Most Influential (61+%)
- Growing complexity of security threats
- Student success for all learners
- Data-driven decision making
- Increasing complexity of technology architecture, data
- Contributions of IT to institutional operational excellence

Source: ECAR Higher Education’s 2019 Trend Watch and Top 10 Strategic Technologies

IT Operating Models Overview

Two operating models, inherently at odds with each other

Traditional Model
- Demands a robust operating environment (i.e., infrastructure, support functions and administrative systems) within a decentralized environment

Innovation Model
- Requires keeping pace with and rapidly responding to changes in technology (i.e., cloud computing, data analytics, artificial intelligence and IoT)

Business / IT Alignment
Traditional Model

90% of resources in Higher Ed are dedicated to activities related to “keeping the lights on”

Services
- Network
- Telecom
- ERP
- Security
- Data Center
- Client Services

Characteristics
- Robust Environments
- Operational Stability
- Security
- Waterfall methodology

Challenges
- Internal IT
  - Long lead times
  - Responsiveness
- External
  - Shift to Cloud solutions
  - Rapidly shifting business priorities

Traditional Model External Challenges

IT organizations face disruption along multiple dimensions

Shift to Cloud solutions
- Funding shift from CapEx to OpEx
- Shadow IT (Business led)
- Integrated shared service models
- Shift in IT capabilities and skills

Implications
- Traditional funding models in Higher Ed are not structured to address significant increases to OpEx
- Subsequent unfunded support
- Integration complexity
- Disruption and fragmentation of IT organizations
- Development and programming
- BAs with deep functional knowledge
- Integration capabilities
- Cloud bursting compute capacity
- Change & Relationship Management

Rapidly shifting business priorities
- IT ability to react to shifting demand
- Waterfall model inhibits responsiveness & time to delivery
Innovation Model

0-10% of resources are dedicated to activities related to “grow / transform”

<table>
<thead>
<tr>
<th>Services</th>
<th>Characteristics</th>
<th>Challenges</th>
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</thead>
<tbody>
<tr>
<td>Customer centric (Students,</td>
<td>Speed to market</td>
<td>Business alignment</td>
</tr>
<tr>
<td>Faculty, Administration)</td>
<td>Agility &amp; responsiveness</td>
<td>Traditional IT operating model</td>
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<tr>
<td></td>
<td>Experimentation</td>
<td>Skills &amp; capabilities</td>
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<td></td>
<td>Uncertainty and ambiguity</td>
<td>Use cases</td>
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<td></td>
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<td>Tolerance for failure</td>
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Evolution of the Business/IT Alignment Model

The biggest barriers keeping CIOs and CFOs from collaborating closely

<table>
<thead>
<tr>
<th>(Please select the top two)</th>
<th>CEO</th>
<th>COO</th>
<th>CFO</th>
<th>CIO</th>
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</thead>
<tbody>
<tr>
<td>Conflicting responsibilities and priorities</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>CFO's lack of sufficient technical expertise</td>
<td>35%</td>
<td>31%</td>
<td>20%</td>
<td>29%</td>
</tr>
<tr>
<td>CIO's lack of business expertise</td>
<td>34%</td>
<td>46%</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Conflicts arising over traditional reporting structure</td>
<td>38%</td>
<td>34%</td>
<td>35%</td>
<td>29%</td>
</tr>
<tr>
<td>Lack of incentives to work more closely together</td>
<td>18%</td>
<td>42%</td>
<td>18%</td>
<td>32%</td>
</tr>
<tr>
<td>CFOs have outdated attitudes about the primary role of the CIO</td>
<td>45%</td>
<td>23%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>No clear mandate from CEO/board</td>
<td>3%</td>
<td>0%</td>
<td>16%</td>
<td>11%</td>
</tr>
<tr>
<td>There are no significant barriers</td>
<td>3%</td>
<td>0%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Forbes Insights 2017: IT Transformation: Success hinges on CIO/CFO collaboration
Poll question #2
WHAT BUSINESS ALIGNMENT MODEL IS YOUR INSTITUTION IN?

1. Past
2. Present
3. Future
Achieving Balance
Considerations for achieving balance

- IT Operating Model
- IT Organization Model
- IT Workforce (Skills and Capabilities)
- IT Funding
- IT / Business Alignment

Achieving Balance - IT Operating Model
Achieving Balance - IT Operating Model

TRADITIONAL
- Enterprise priorities
- Unified business case
- Robustness and business continuity
- Security

INNOVATION
- Specific use cases
- Co-creation and experimentation
- Time to delivery
- Continuous
- Tolerance for failure

Achieving Balance
Considerations for achieving balance

- IT Operating Model
- IT Organization Model
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Achieving Balance: IT Organization Model

Recognition of the need for organizational structures to facilitate balance

Achieving Balance

Considerations for achieving balance

- IT Operating Model
- IT Organization Model
- IT Workforce (Skills and Capabilities)
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Poll question #3
WHERE ARE YOUR SKILLS / CAPABILITIES SHORTAGES?

1. Security
2. Business Analysis
3. Big Data/Analytics
4. Enterprise Architecture
5. Project Management
6. Other - Specify

Higher Ed Skills Shortage

Which functions do you feel suffer from a skills shortage? (Top 5)

- Enterprise Architecture: 42%
- Business Analysis: 40%
- Big Data/Analytics: 39%
- Project Management: 37%
- Security and Resilience: 36%

Source: 2018 Harvey Nash/KPMG CDO Survey – Education Sector
Achieving Balance – Capabilities and Skills

Advent of Cloud technologies requires a shift in mix of functions & skill sets

**Cloud (SaaS) technologies**
- Programming vs. configuring
- BA’s with deep knowledge of the business
- Relationship and Change management (adoption of standard business processes)
- Involvement of Security & Compliance early in the process
- Systems Integrations

**Cloud (CoLo, IaaS, PaaS, etc.) technologies**
- Reduced Data Center Operations and facilities
- Even more robust network
- Breaking down traditional infrastructure siloes to enable Software Defined Everything

**On Demand Software Development capabilities**
- Advanced capabilities (AI, RPA, IoT, etc.)
- Partner externally

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Achieving Balance – Additional Operations Levers

The resources required to maintain existing services and absorb new ones increase over time

**Additional Levers**
- Automation (RPA)
- Sunset existing systems
- Forgo Routine support (Self-help)
- Efficient tools and technologies
Poll question #4
HOW MANY OF YOUR INSTITUTIONS HAVE DEDICATED FUNDING FOR INNOVATION?
IS IT SPORADIC OR SUSTAINED?

1. Sporadic
2. Sustained

Achieving Balance
Considerations for achieving balance

- IT Operating Model
- IT Organization Model
- IT Workforce (Skills and Capabilities)
- IT Funding
- IT / Business Alignment
Achieving Balance – IT Funding

Many institutions are insufficiently prepared for the shift to subscription models

**Cloud technologies**
- Shift from CapEx to OpEx – not insignificant!
- Disappearing cross-subsidies (e.g. Telecom charges)
- Funding for embedded IT staff to be borne by units

**Innovation**
- Centrally managed, dedicated “subvention pool”
- External revenue sources e.g. DAS
- Prepare for / Secure additional ongoing OpEx as these services mature and become mainstream

Achieving Balance

Considerations for achieving balance

- IT Operating Model
- IT Organization Model
- IT Workforce (Skills and Capabilities)
- IT Funding
- IT / Business Alignment
Business IT Alignment

Percentage of CIOs who are members of the president’s or the chancellor’s cabinet

- On cabinet: 42%
- Not on cabinet: 58%

Frequency of CIOs engaging in strategic activities, by cabinet appointment

- Discussing the IT implications of institutional decisions with senior campus leadership
- Shaping or influencing institutional administrative directions
- Shaping or influencing institutional strategic directions
- Shaping or influencing institutional academic directions

Source: ECAR - The Higher Education CIO, 2019

Achieving Balance – Business / IT Alignment

IT as a strategic partner

The CIO Has a Seat at the Table
- Part of strategic decision-making bodies* on campus comprised of senior leadership
- Builds relationships
- Recognizes opportunities and bridges the conversation as to how technology can play a vital role

Governance
- Business partnership at all levels
- Clarity of decision rights and escalation paths
- Collaborative development of IT Strategy
- IT Strategy development is an ongoing process
- Formalized demand management

*President’s Cabinet / Council, Institutional Governance Board
Visit us at EDUCAUSE in Chicago
Meet with our experts on the exhibit hall floor at Booth #1430

Create a Campus in the Cloud.
Transform with Huron, today.

THANK YOU

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