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Enabling the Data Driven Leader: A Collaborative IT/R Model
Presenters: Jonathan Gagliardi, Timothy Chester, Gina Johnson
Delivery format: Interactive Presentation
2020 Top 10 IT Issues

Tariq Al-idrissi, Trent University
Opinder Bawa, University of San Francisco
Susan Grajek, EDUCAUSE
Kellie Campbell, Vermont Technical College
Sasi Pillay, Washington State University
Agenda

1. Overview and Themes for 2020’s Top 10 Issues  
   Susan Grajek, EDUCAUSE

2. Having a Seat at the Table and Extending a Hand…  
   Kellie Campbell, Chief Technology Officer, Vermont Technical College

3. Privacy is Not Dead, Keep Up the Good Fight,  
   Tariq Al-idrissi, Associate Vice President-IT, Trent University

4. Sustainable Funding,  
   Opinder Bawa, VP and CIO, University of San Francisco

5. Student Centric Higher Education Ecosystem, Student Retention and Completion  
   Sasi Pillay, Washington State University
2020 Top 10 Issues

*Simplify, Sustain, Innovate: The Drive to Digital Transformation Begins*

Susan Grajek

EDUCAUSE
Setting the Stage: Higher Education’s Grand Challenges

- **Student success**
  - Persistence, retention, completion
  - Engagement
  - Outcomes

- **Financial health**
  - Enrollment
  - Costs
  - Funding
  - Natural disasters

- **Reputation and relevance**
  - Affordability
  - Political climate
  - Teaching
  - Academic programs
  - Research

- **External competition**
  - Alternative credentials
  - Employer-based learning
  - Talent
  - Global HE
EDUCAUSE 2020 Top 10 Issues

1. **Information Security Strategy**: Developing a risk-based security strategy that effectively detects, responds to, and prevents security threats and challenges

2. **Privacy**: Safeguarding institutional constituents' privacy rights and maintaining accountability for protecting all types of restricted data

3. **Sustainable Funding**: Developing funding models that can maintain quality and accommodate both new needs and the growing use of IT services in an era of increasing budget constraints

4. **Digital Integrations**: Ensuring system interoperability, scalability, and extensibility, as well as data integrity, security, standards, and governance, across multiple applications and platforms

5. **Student Retention and Completion**: Developing the capabilities and systems to incorporate artificial intelligence into student services to provide personalized, timely support
EDUCAUSE 2020 Top 10 Issues

6. **Student-Centric Higher Education**: Creating a student-services ecosystem to support the entire student life cycle, from prospecting to enrollment, learning, job placement, alumni engagement, and continuing education.

7. **Improved Enrollment**: Using technology, data, and analytics to develop an inclusive and financially sustainable enrollment strategy to serve more and new learners by personalizing recruitment, enrollment, and learning experiences.

8. **Higher Education Affordability**: Aligning IT organizations, priorities, and resources with institutional priorities and resources to achieve a sustainable future.

9. **Administrative Simplification**: Applying user-centered design, process improvement, and system reengineering to reduce redundant or unnecessary efforts and improve end-user experiences.

10. **The Integrative CIO**: Repositioning or reinforcing the role of IT leadership as an integral strategic partner of institutional leadership in supporting institutional missions.
EDUCAUSE 2020 Top 10 Issues

**Simplify**
4. Digital Integrations
9. Administrative Simplification

**Sustain**
1. Information Security Strategy
2. Privacy
3. Sustainable Funding
8. Higher Education Affordability

**Innovate**
5. Student Retention and Completion
6. Student-Centric Higher Education
7. Improved Enrollment
EDUCAUSE 2020 Top 10 Issues

Simplify

4. Digital Integrations
9. Administrative
   Simplification
EDUCAUSE 2020 Top 10 Issues

Simplify

4. Digital Integrations: Ensuring system interoperability, scalability, and extensibility, as well as data integrity, security, standards, and governance, across multiple applications and platforms

9. Administrative Simplification: Applying user-centered design, process improvement, and system reengineering to reduce redundant or unnecessary efforts and improve end-user experiences
Simplify: Two-Year Change in Related Trends Incorporated into IT Strategy

- Institution-wide data management and integrations: 61% in 2020, 60% in 2018
- Changing enterprise architectures, integrations, workflows: 56% in 2020, 50% in 2018
- Shared services:
  - 2018: 42%
  - 2020: 39%
- User-centered design: 33%
Simplify: Hopes in 3-5 Years

- We develop standards and tools to simplify out of the box integrations and facilitate better analytics
- Institutional services are as easy to use as consumer apps
- Institutions direct more of their efforts toward students’ needs, from student mental health, to retention, to recruitment, to debt avoidance, to job placement.
Simplify: Takeaways

• Break down the silos
• If the whole is more than the sum of the parts, there needs to be a whole in the first place.
EDUCAUSE 2020 Top 10 Issues

*Simplify*

4. Digital Integrations
9. Administrative Simplification
EDUCAUSE 2020 Top 10 Issues

Sustain
1. Information Security Strategy
2. Privacy
3. Sustainable Funding
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EDUCAUSE 2020 Top 10 Issues

**Sustain**

1. Information Security Strategy: Developing a risk-based security strategy that effectively detects, responds to, and prevents security threats and challenges

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8. Higher Education Affordability: Aligning IT organizations, priorities, and resources with institutional priorities and resources to achieve a sustainable future
Sustain: Two-Year Change in Related Techs

Percentage of institutions that implemented technology

<table>
<thead>
<tr>
<th>Technology</th>
<th>2018</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNS security</td>
<td>35%</td>
<td>41%</td>
</tr>
<tr>
<td>Security analytics</td>
<td>11%</td>
<td>39%</td>
</tr>
<tr>
<td>E-signature technologies (e.g., DocuSign, Adobe Sign, and SignNow)</td>
<td>24%</td>
<td>39%</td>
</tr>
<tr>
<td>DDoS prevention products and services</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td>Cloud-based security services (e.g., Duo, Qualys ThreatPROTECT, cloud-based email security solutions)</td>
<td>35%</td>
<td>55%</td>
</tr>
</tbody>
</table>
Sustain: Hopes in 3-5 Years

- We adopt a data common framework
- Privacy is as important as information security
- Institutions understand IT’s value to business models and missions, and fund it accordingly.
- Other parts of the higher education ecosystem share accountability for affordability as a societal good
Sustain: Takeaways

• Data is the currency of the institution
• We have to have a sustainable strategy for both our currencies
EDUCAUSE 2020 Top 10 Issues

Sustain

1. Information Security Strategy
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EDUCAUSE 2020 Top 10 Issues

Innovate
5. Student Retention and Completion
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EDUCAUSE 2020 Top 10 Issues

Innovate

5. Student Retention and Completion: Developing the capabilities and systems to incorporate artificial intelligence into student services to provide personalized, timely support

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7. Improved Enrollment: Using technology, data, and analytics to develop an inclusive and financially sustainable enrollment strategy to serve more and new learners by personalizing recruitment, enrollment, and learning experiences
Innovate: Two-Year Change in Related Techs

Percentage of institutions that have implemented technology

- **Incorporation of mobile devices in teaching and learning**
  - 2018: 40%
  - 2020: 39%
- **Open educational resources**
  - 2018: 26%
  - 2020: 38%
- **Technologies for planning and mapping student educational plans**
  - 2018: 32%
  - 2020: 38%
- **Predictive analytics for student success**
  - 2018: 29%
  - 2020: 29%
- **Digital microcredentials**
  - 2018: 12%
  - 2020: 6%
- **Uses of the Internet of Things for teaching and learning**
  - 2018: 5%
  - 2020: 10%
Innovate: Hopes in 3-5 Years

- Institutions begin to see how many of their credentials, or “products,” need to be refactored, why, and how
- Different institutions focus on different types of students and thereby differentiate their offerings
- Today’s rudimentary success metrics give way to measures that capture the contribution of HE to people’s ability to thrive in life, however they define it
Innovate: Takeaways

- People, process, technology, product
- From doing things differently to doing different things
EDUCAUSE 2020 Top 10 Issues

Innovate
5. Student Retention and Completion
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7. Improved Enrollment
Drive to Dx

10. The Integrative CIO: Repositioning or reinforcing the role of IT leadership as an integral strategic partner of institutional leadership in supporting institutional missions
## Drive to Dx: Related Trends’ Influence on IT Strategy

<table>
<thead>
<tr>
<th>Trend</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT as an agent of institutional transformation and innovation</td>
<td>52%</td>
</tr>
<tr>
<td>Digital transformation</td>
<td>48%</td>
</tr>
<tr>
<td>Higher education’s reputation and relevance</td>
<td>44%</td>
</tr>
<tr>
<td>Institutional innovation strategy</td>
<td>42%</td>
</tr>
<tr>
<td>Blending of roles and blurring of boundaries between IT &amp; the business</td>
<td>41%</td>
</tr>
<tr>
<td>Financial uncertainty for the institution</td>
<td>41%</td>
</tr>
<tr>
<td>New business models for higher education</td>
<td>34%</td>
</tr>
</tbody>
</table>
Drive to Dx: Hopes in 3-5 Years

- CIOs have the transformation skills and strategic mindset to provide solutions to propel institutions and our sector forward.
- Institutions recognize the value CIOs bring, even for discussions that don’t directly involve IT.
- Innovation is a common capability of higher education institutions.
Driving to Digital Transformation

Which changes first: the CIO or the institution?
What is Digital Transformation?

- Efficient use of available technology.
- Innovation
- Automation. Stop the manual madness.
- Being connected to Gen Z, who are digital natives.
- Re-thinking how we provide service to our students, in an innovative way.
- Information anywhere all the time.
- Getting rid of paper
What is Digital Transformation (Dx)?

Digital transformation (Dx) is a series of deep and coordinated culture, workforce, and technology shifts that enable new educational and operating models and transform an institution’s operations, strategic directions, and value proposition.
Digital Transformation in context

**Digitization**
- Changing from analog or physical to digital form
- Digitize information
- Organize information
- Automate processes
- Streamline processes
- Transform the Institution

**Digital Transformation**
A series of deep and coordinated culture, workforce, and technology shifts that enable new educational and operating models and transform an institution’s operations, strategic directions, and value proposition.
Digital Transformation Signals: Is Your Institution on the Journey?

by Malcolm Brown, Betsy Reinitz and Karen Wetzel  
Wednesday, October 9, 2019  
Enterprise Connections

Is Your Institution Driving to Digital Transformation?

Technology Shifts

IT leaders must adapt innovative practices and create digital environments that provide unprecedented agility and flexibility. At the same time, they must also manage a complex and ever-changing technology ecosystem in a way that enables the institution and its academic and business units to rapidly and efficiently achieve its strategic aims. New technologies do not by themselves bring about Dx. Institutional Dx initiatives can succeed only through the strategic application of a changing set of technologies in support of new institutional directions.

- Is there evidence of these shifts in technology?
  - Agility
  - Intentional strategy for securing technology-related services (e.g., cloud, on premises, shared services, consortial arrangements)
  - Technology architecture with agility and flexibility as key priorities
  - Focus on business outcomes

Culture Shifts

Dx requires a new approach to how campus leaders interact with each other—an approach that entails a laser focus on progress toward institutional goals, a broad emphasis on change management, and an increase in institutional agility and flexibility to meet rapidly changing needs.

- Is there evidence of these shifts in culture?
  - Focus on institutional goals
  - Focus on institutional differentiation
  - Strategic innovation aimed at key institutional ambitions
  - Focus on student and faculty success
  - Leaders willing to consider new strategic directions
  - Reliance on data and analytics to adjust institutional course
  - Shift from risk aversion to risk management
  - Institutional flexibility and agility

Workforce Shifts

Changes related to Dx not only are having an inexorable impact on the day-to-day work of higher education professionals but also are creating a need for new skills and competencies across the institutional community. These changes are creating new opportunities and threats and demanding a reinvention of human resource management.

- Is there evidence of these shifts in workforce?
  - New jobs and roles (e.g., chief data officer, chief innovation officer, vendor management, business relationship management)
  - Familiarity across roles with the "business" of higher education
  - Increasing importance of enterprise architecture
  - Expanding IT liaison roles that align with institutional strategy
  - Roles that cross boundaries (e.g., positions residing in an academic department with close ties to the IT organization)
  - Agility involving new and shifting competencies across many roles
  - Improved communication and collaboration (individuals, departments, units, institutions, and industries)
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EDUCAUSE 2020 Top 10 Issues
Having a seat at the table and extending a hand...

Kellie Campbell, Ed.D.
Chief Technology Officer, Vermont Tech
Is this thing on repeat?

• **Information Security Strategy**: #1 in 2020, #1 in 2019
• **Privacy**: #2 in 2020, #3 in 2019
• **Sustainable Funding**: #3 in 2020, #7 in 2019
• **Digital Integrations**: #4 in 2020, #5 in 2019
• **Higher Education Affordability**: #8 in 2020, #10 in 2019
• **Integrative CIO**: #10 in 2020, #9 in 2019
Does this all hinge on the Integrative CIO?

- Wenhong (2016) emphasizes inclusion of the CIO in top management teams - indicator of how the organization prioritizes technology as a strategy.

- “The members of the President’s Senior Staff, which I’m one of… these are the strategic conversations that we’re having…we understand these challenges” (Campbell, 2018).
Can we really do this alone?

•“Real strategic change requires inventing new categories, not rearranging old ones” (Mintzberg, 1994).

•Know your core, but be willing to extend a hand. From Campbell (2018):
  •“…where does IT belong? Who should control IT, because IT should never be a special interest group for any one department. We need to be functional for the entire institution to be successful”.
  •“…we can’t continue to operate the way we always have”
  •“I think we’re going to end up with strategic, deeper relationships …rethink some things we’ve done independently”.

Noted in Becker et al (2018), cross-institution and cross-sector collaboration considered a major trend as higher education looks out over the next five years. Some of the efforts include shared data efforts, or shared/merged resources, for example.
References


Privacy is Not Dead, Keep Up the Good Fight

Tariq Al-idrissi, Associate Vice President-IT, Trent University
Definition

privacy  noun
pri·va·cy | \ˈprī-və-sē\, especially British ˈpri-
plural privacies

Definition of privacy

1  a  : the quality or state of being apart from company or observation : SECLUSION

   b  : freedom from unauthorized intrusion

   // one's right to privacy

https://www.merriam-webster.com/dictionary/privacy
...and I should care, why?
Yahoo Takes $350 Million Hit in Verizon Deal

eBay Sees Revenue Decline Due to Breach

Australian National University hit by huge data breach

Marriott to be fined nearly £100m over GDPR breach

British Airways faces record £183m fine for data breach

Equifax to pay up to $700M in U.S. to settle data breach, but Canada is not included

Target to pay $18.5M for 2013 data breach that affected 41 million consumers

Uber fined £385,000 for data breach affecting millions of passengers

LinkedIn Lost 167 Million Account Credentials in Data Breach

Personal data of 9.4 million passengers of Cathay Pacific and subsidiary leaked, airlines say

417,000 Augusta University Health patient records breached nearly one year ago

Judge Gives Final OK to $115M Anthem Data Breach Settlement
Do I really know where my data is?

Do I have a data governance committee?

Do I have a policy on handling sensitive information?

Have I classified my data?

Are there real consequences to mishandling data within my institution?

Do I know how vendors are handling my data?

Accountability

Identify Purposes

Consent

Limit Collection

Limit Use, Disclosure, Retention

Accuracy

Safeguards

Openness

Individual Access

Challenging Compliance

Compliance

Limit Use

Data Protection

Data Breach

Data Privacy
References

- https://www.wired.co.uk/article/british-airways-data-breach-gdpr-fine
Sustainable Funding

Opinder Bawa, VP & CIO, University of San Francisco
Raise your hand if you would buy …

• A car that works ~40% to ~60% of the time?
Raise your hand if you would build …

• A house that leaks ~40% to ~60% of the time?
Raise your hand if you would work for …

• An airline that cancels \(~40\%\) to \(~60\%\) of its flights?
Raise your hand if you would send a package …

• Using a company that delivers ~40% to ~60% on time?
Then, how do we accept these graduation rates …

**Six-Year College Completion Rates by Institution Type**

Students First Enrolled in Fall 2011

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>Did not complete, no longer enrolled</th>
<th>Did not complete, still enrolled</th>
<th>Completed at a different institution</th>
<th>Completed at starting institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>31%</td>
<td>12%</td>
<td>11%</td>
<td>45%</td>
</tr>
<tr>
<td>Four-Year Public</td>
<td>24%</td>
<td>11%</td>
<td>12%</td>
<td>54%</td>
</tr>
<tr>
<td>Four-Year Private Nonprofit</td>
<td>17%</td>
<td>7%</td>
<td>11%</td>
<td>64%</td>
</tr>
<tr>
<td>Four-Year Private For-Profit</td>
<td>54%</td>
<td>13%</td>
<td>11%</td>
<td>22%</td>
</tr>
<tr>
<td>Two-Year Public</td>
<td>47%</td>
<td>15%</td>
<td>11%</td>
<td>27%</td>
</tr>
</tbody>
</table>

www.forbes.com
Historically …

IT viewed as just a cost center … and funded as such
We have the power to change our future …

To be viewed as a core part of the business …
Examples of other industries…

![Change in IT Operational Budgets from Prior Year: All Sectors](image)

**Source:** Computer Economics, 2019
Technology spend trends …
We need to change the cheese we are chasing …
We need to change our narrative …

… we are a *business* and have one *customer* … the student

- Believe enrolling the right student is your responsibility
- Believe retaining the student is your responsibility
- Believe graduating the student is your responsibility
- *This* is your business, not technology
- Become strong teller of stories, not procedures
- Become courageous marketer of value, not justification
- Become fluent in return-on-investment, not cost
- *You* are a business person, who happens to specialize in technology
Sustainable funding follows …

Funding is often viewed as, but seldom is, the problem … it’s a question of business priority

So make it a business priority, funding will follow
Student Centric Higher Education Ecosystem
Student Retention and Completion

Sasi K. Pillay,
VP of IT Services & CIO
Washington State University
Current Situation

• Student Information is contained in multiple systems
• No integrated view of the student
• Multiple data owners
Why Does it Matter?

• Social responsibility
• Student success depends on understanding a 360 degree view
• Inability to address all the needs of the student
• Multi-domain analysis increases the success of predictive analytics
• Value of an 80 year relationship
• Preserves past investment in the student
• Increases revenue for the university
Student Centric Higher-Ed Ecosystem

• Identification of promising prospects

• Providing just-in-time remediation
  • Academic performance
  • Financial ability
  • Sense of belonging
  • Health & wellness

• Focused career counseling

• Becoming a successful alum
Student Centric Higher-Ed Ecosystem

- Identification
- Recruitment
- Retention
- Successful Outcomes
- Alumni Relations
- Career Placement
  - Internships
  - Co-op positions
  - Permanent Jobs

Academics
- Learning Analytics
- Mitigation Strategies

Lifestyles
- Social Media
- Financial Profile
  (Part-time Jobs)

Student Centric Ecosystem
Methodology

• Create a Data Governance Council
• Architect an Information Hub
• Conduct pilots with known data
• Create algorithms that can predict outcomes
  • Identification of prospects
  • Increase success of students
  • Improve alumni relations
  • Promote life-long learning
Tariq Al-idrissi, Trent University
Opinder Bawa, University of San Francisco
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