Higher Education’s 2016 Top 10 IT Issues:
How to Cultivate a Digital Strategy

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TOP TEN IT ISSUES OF 2016

1. Information Security
2. Optimizing Educational Technology
3. Student Success Technologies
4. IT Workforce Hiring and Retention
5. Institutional Data Management

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Three Themes

1. Information Security
2. Optimizing Educational Technology
3. Student Success Technologies
4. IT Workforce Hiring and Retention
5. Institutional Data Management
6. IT Funding Models
7. BI and Analytics
8. Enterprise Application Integrations
9. IT Organizational Development
10. E-Learning & Online Education

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CIOs are Shifting Their Management Focus

In 2015, CIOs focused more on managing infrastructure and technical resources.

Projected in 10 years:

In 10 years, CIOs predict a shift to focus on managing vendors, services, and outsourced contracts.
Institutional Demand for External Services is Growing
Drivers of IT Service Delivery

- Cloud
  - Enterprise-scale applications can be deployed rapidly and on demand, without consultation with central IT.
  - IT is shifting from being a technology provider to a trusted consultant and partner across campus.
  - Building relationships
  - IT as a Service
  - Shared ownership

- Data and Analytics
  - Data are being used for better decision making and student success, but this use raises security and governance concerns.
  - Business of higher education

- Strategic Alignment
  - organizational strategy

- Drivers
  - More flexibility in funding approaches is needed to support new service models.

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Institutional Data Management: Improving through standards, integration, protection, & governance
“Institutions should begin with identifying a framework for data management decisions: a data governance model. Ensure the model provides for accountability as well as agility. Data must be managed, but in a way that still allows for rapid development of new applications of the data.”

– Director of Information Security
Institutional Data Management: Improving through standards, integration, protection, & governance

WHAT WE KNOW
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Relevant Major Trends for 2016

- Increasing complexity of technology, architecture, data
- Data-driven decision-making
- Enterprise data management
- Data integration
- Increasing adoption of personal clouds
- Internet of Things
- Access for all kinds of endpoints and objects

Source: Top 10 Strategic Technologies, 2016 ©2016 EDUCAUSE. CC by-nc-nd
Data governance is the starting point for managing data

- Data governance considers data an institutional asset and helps with:
  - maintaining data integrity
  - controlling access
  - securing data storage

- Example: Notre Dame’s five pillar program:
  1. Quality and consistency
  2. Policies and standards
  3. Security and privacy
  4. Compliance and retention
  5. Archiving
Rationale for data governance

**Benefits**

- Official versus ad hoc data definitions
- Clear responsibilities
- Using both structured and unstructured data
- Capacity for analytics
- Competitive advantage

**Risks**

- Operational uncertainty
- Failures of security, privacy, and audit and compliance
Data privacy trends and concerns

- Quick results are taking precedence in the rush to use data to improve retention and time to degree
- Data quality deserves greater focus
- Expanding digitization provides more data about students
  - Online learning platforms
  - Card swipes
  - Mobile device logs
  - Personal health trackers
- Need to clarify how much students know or care about collection, retention, and reuse of personal data.

Source: Privacy In the Age of Analytics Report of a CNI Executive Roundtable Held April 13, 2015. Published August 2016
Data privacy trends and concerns

- Risk and liability lurk everywhere here, including unintentionally stored data
- Shift to centralizing data from individual faculty or departments to institutional level
- Contracts with external providers
  - Standard contract language to address data privacy issues
  - Influence faculty not to accept licenses as individuals that might give away control of data
- Many, many stakeholders and partners, including:
  - Campus police, other law enforcement, Student Life (life safety, suicide prevention and more)
  - Athletics
  - Libraries

Source: Privacy In the Age of Analytics Report of a CNI Executive Roundtable Held April 13, 2015. Published August 2016
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REINVEST
The Purpose Alignment Model

DIFFERENTIATE

High

MARKET DIFFERENTIATION

Low

PARTNER

DIFFERENTIATING

WHO CARES

PARITY

Low

High

MISSION-CRITICAL

Relevant Major Trends for 2016: E-learning and Analytics

- Data-driven decision-making (Most influential, 61%)
- Personalized learning
- Internet of Things (Limited impact, 0-20%)

- Taking hold (41-60%)
  - Enterprise data management
  - Data integration
  - Active-learning classroom design
  - Flipped classroom
  - Evaluation of technology-based instructional innovations

Source: Top 10 Strategic Technologies, 2016 ©2016 EDUCAUSE. CC by-nc-nd
Student Success Technologies: Improving student outcomes that leverages technology
Student Success Technologies: Improving student outcomes that leverages technology

“Institutions must be able to generate the appropriate alerts for their students, and if institutions can’t participate in tweaking algorithms that might be proprietary to a vendor, that’s a red flag for me.”

– AVP, Digital Education and Engagement
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3

Student Success Technologies: Improving student outcomes that leverages technology

WHAT WE KNOW
THE CHALLENGE  
Students take too long to graduate or don’t graduate at all

35% in bachelor’s programs and just 10% of students in associates programs graduate on time

THE SOLUTION  
Integrated Planning and Advising for Student Success (iPASS)

- **Academic maps**
  - allow students to plan their course schedules with the most efficient and effective path to graduation, and provide institutions with data to develop course schedules that align with students’ plans.

- **Progress tracking**
  - helps students stay on the path to degree or certificate completion, eliminating potential dead-end course registrations and reducing higher education cost and debt.

- **Advising/counseling**
  - provides students with access to campus resources, provides advisors and counselors with data about students, and reduces barriers to following up with students.

- **Early-alert systems**
  - enable faculty and advisors to send manual alerts or to trigger automated alerts providing students with reasons for the alert, recommendations, and next steps.
Why do institutions use iPASS solutions?

iPASS services account for an important part of student success initiatives. The top motivators for institutions to adopt them are:

- Strategic priority of student success
- Reorienting institution from access/enrollment to completion culture
- Need to better identify at-risk students and appropriate interventions

Retention of at-risk students increased 10% among pilot participants.
(Northeast Wisconsin Technical College)

iPASS TOOLS

Numerous, wide-ranging tools and technologies support student success. Some have been more broadly adopted than others.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Deployed</th>
<th>In planning</th>
<th>Experimenting/considering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree audit/progress tracking</td>
<td></td>
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<tr>
<td>Advising center management</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Credit transfer/articulation system</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Academic early alerts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Advising/case management tracking student interactions</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Education plan creation/tracking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Career assessment and development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course/program recommendation</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Deployment at a targeted set of early-adopter institutions using student success and iPASS tools.
iPASS

- Financial Planning
- Career Planning
These tools work to improve community college student outcomes.³

- Students enrolled in a program utilizing iPASS tools
  - Credits earned within 3 years: 48 credits
  - Completed associate's degree in 3 years: 40%
  - Transferred to 4-year institution within 3 years: 25%

- Students not enrolled in a program utilizing iPASS tools
  - Credits earned within 3 years: 39 credits
  - Completed associate's degree in 3 years: 22%
  - Transferred to 4-year institution within 3 years: 17%


Both faculty and students are interested in:

- Personalized dashboards that give students real time feedback
- Suggestions about academic resources
- Alerts about course progress
- Guidance about future courses

Source: 2015 ECAR study of faculty and information technology
You can benchmark your institution!

EDUCAUSE members:
1. Complete the Core Data Survey this fall.  
   www.educause.edu/coredata
2. Receive access to the EDUCAUSE Benchmarking Service in mid 2017.  
   www.educause.edu/benchmarking
Student success technologies maturity

Source: 2014 EDUCAUSE Core Data Survey

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Student Success Technologies: Improving student outcomes that leverages technology

**BOTTOM LINE:**
Both students and faculty are interested in these technologies. If you aren’t already planning or implementing, it’s time to start.
BI and Analytics: relevant to institutional priorities and decision making
“In order for institutions to continue to expand their analytics capabilities a focused and dedicated effort is needed. No matter the approach, institutions are recognizing that analytics can no longer be an add-on to someone’s existing responsibilities.”

– VP for Information Technology and College Services
BI and Analytics: relevant to institutional priorities and decision making
Analytics in Higher Education!

ready... set... Go!
Focus on addressing major issues

Two of the top 3 factors for investing in **learning analytics** and **institutional analytics** overlap

- Improve student course-level performance
- Demonstrate the value of higher education
- Improve retention
- Optimize resources
Analytics in Higher Education!

ready... set...
MCCC’s Timeline

- 2003: Noel Levitz SSI
- 2004: ATD Data Team
- 2005: iStrategy, CCSSE
- 2006: Performance Point Enrollment Dashboard
- 2007: Proclarity Dashboards
- 2008: Academic Program Review Reports
- 2009: SENSE, CROA
- 2010: Blackboard Analytics for Learn
- 2011: Ad Astra – Platinum Analytics
- 2012: Civitas Learning Illume
- 2013: Pyramid
- 2014: Starfish
- 2015: Academic Affairs Student Dashboard
- 2016: Student Planning

*Analytics-based decision making*
Analytical Ascending Model

- **Descriptive Analysis**: What happened?
- **Diagnostic Analysis**: Why did it happen?
- **Predictive Analysis**: What will happen?
- **Prescriptive Analysis**: How can we make it happen?

Value vs. Difficulty graph with stages:
- **Information**: We are here
- **Hindsight**: Why did it happen?
- **Insight**: What will happen?
- **Foresight**: How can we make it happen?
Analytics as a priority

 Investments in analytics

Learning analytics

Institutional analytics

Major investment  Minor investment  Little or no investment

Source: EDUCAUSE 2015 Analytics study

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Analytics maturity in higher education

2012

- Investment 2.7
- Expertise 3.0
- Data/reporting/tools 3.2
- Governance/infrastructure 3.6
- Process 3.5
- Culture 3.5

Composite 3.2

2014

- Investment/resources 2.9
- Policies 3.5
- Decision-making culture 3.4
- IR involvement 3.7
- Data efficacy 3.4
- Technical infrastructure 3.4

Composite 3.4

Source: EDUCAUSE 2012 Analytics study
Source: EDUCAUSE 2014 Core Data Survey
Overall analytics maturity

- Excellent: 0.2%
- Strong: 13.0%
- Developing: 64.0%
- Emerging: 21.4%
- Weak: 1.4%

Percentage of Institutions

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Staffing needs

- Analysis and modeling skills
- Data management skills
- User support activities

**More people!**
- 80% of institutions have 2-8 FTEs devoted to analytics (median = 4 FTEs); ~25-50% are in Central IT.

Source: EDUCAUSE 2015 Analytics study

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Biggest concerns about analytics

- **Affordability**: 48% Major concern, 35% Moderate concern
- **Keeping pace**: 40% Major concern, 39% Moderate concern
- **Misuse of data**: 30% Major concern, 43% Moderate concern
- **Regulations requiring questionable metrics**: 36% Major concern, 35% Moderate concern
- **Regulations requiring more reporting**: 32% Major concern, 36% Moderate concern
- **Inaccurate data**: 23% Major concern, 43% Moderate concern

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### Biggest concerns about analytics

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<th>Moderate Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy for changing vendors</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>Proprietary vendor algorithms</td>
<td>22%</td>
<td>31%</td>
</tr>
<tr>
<td>Inability of higher education to use data to make decisions</td>
<td>16%</td>
<td>35%</td>
</tr>
<tr>
<td>Insufficient ROI</td>
<td>16%</td>
<td>31%</td>
</tr>
<tr>
<td>Black-box algorithms</td>
<td>16%</td>
<td>31%</td>
</tr>
<tr>
<td>Students' privacy rights</td>
<td>13%</td>
<td>30%</td>
</tr>
<tr>
<td>Vendors profiting from higher education data</td>
<td>18%</td>
<td>25%</td>
</tr>
<tr>
<td>Vendor access to data</td>
<td>12%</td>
<td>25%</td>
</tr>
<tr>
<td>Faculty privacy rights</td>
<td>12%</td>
<td>25%</td>
</tr>
<tr>
<td>Staff privacy rights</td>
<td>9%</td>
<td>21%</td>
</tr>
</tbody>
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Biggest concerns about analytics

- Another means of running higher education like a business: 4% Major concern, 17% Moderate concern
- Inability to measure higher education: 3% Major concern, 17% Moderate concern

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Adoption of analytics technologies

- Adoption of analytics technologies
- Uses of the Internet of Things
- Learning analytics
- Predictive analytics for learning
- Information security analytics
- Mobile apps for BI/reporting dashboards
- Predictive analytics for institutional performance
- Talent/workforce analytics
- Use of big data in institutional analytics
- Business performance analytics
- Use of big data in learning analytics

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- Use of big data in learning analytics
- Talent/workforce analytics
- Text/content
- Uses of the Internet of Things

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BI and Analytics: relevant to institutional priorities and decision making

BOTTOM LINE:
Begin with the end in mind: What decisions do you need to make that would benefit from data? Are your data ready to support the decisions you need to make?
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Questions?

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Thank you!

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