INNOVATING TOGETHER IN 2015-16

Amir Dabirian
VP for Information Technology & CIO
April 15, 2015
High Tech Trivia

What unit of measurement is equal to 1,000 zettabytes??
High Tech Trivia

1 Bit = Binary Digit
8 Bits = 1 Byte
1000 Bytes = 1 Kilobyte
1000 Kilobytes = 1 Megabyte
1000 Megabytes = 1 Gigabyte
1000 Gigabytes = 1 Terabyte
1000 Terabytes = 1 Petabyte
1000 Petabytes = 1 Exabyte
1000 Exabytes = 1 Zettabyte
1000 Zettabytes = 1 Yottabyte
1000 Yottabytes = 1 Brontobyte
1000 Brontobytes = 1 Geopbyte
High Tech Trivia

What are the most popular social media applications among teenagers??
Social Media

300 million Instagrammers.
70 million photos and videos each day.
41% of users are under 24 years old

100 million Snapchat active users
400 million snaps a day
71% of users are under 25 years old
97% of U.S. consumers have a choice of at least 3 carriers.

123

U.S. wireless penetration exceeds 104%

It's Your Choice!

Wireless penetration in the U.S. now exceeds 104%, and 97% of consumers may choose from at least three carriers.

Adobe and Tablet Technologies
Gartner’s Top Trends of Technology - 2015

- Computing Everywhere
- The Internet of Things
- 3-D Printing
- Advanced, Pervasive and Invisible Analytics
- Context-Rich Systems
- Smart Machines
- Cloud/Client Computing
- Web-Scale IT
On average Gen Y's spend 2 HOURS A DAY on their smartphone and use 6 APPS PER DAY. They will make up 50% of the workforce by 2020.

96% of executives cite a LACK OF COLLABORATION or INEFFECTIVE COMMUNICATION for workplace failures.

Employees using social business tools, including mobile apps, have seen a 39% INCREASE IN 'CONNECTEDNESS'.

Only 11% of businesses cite 'CREATING MOBILE APPS FOR INTERNAL COMMUNICATIONS' as a digital priority in 2014.

Barclays Banks launched its MY ZONE mobile app in 2013 to help connect staff in its branches. The app now has 10,000 users and a dedicated team of Digital Eagles who travel from branch to branch to train staff.

"There is no such thing as 'business as usual' in the organisation any more."

-- Dave Shepherd, Head of Frontline Help, Barclays
Computing Everywhere

As mobile devices continue to proliferate, Gartner predicts an increased emphasis on serving the needs of the mobile user in diverse contexts and environments, as opposed to focusing on devices alone.
Context-Rich Systems

Ubiquitous embedded intelligence combined with pervasive analytics will drive the development of systems that are alert to their surroundings and able to respond appropriately.
The Internet of Everything

- The Internet will expand as physical items and assets are connected to the Internet
- Potential of the Internet of Things is Difficult to Quantify
- The Internet of Things' Size and Diversity Hinder Identification of Business Opportunities
  - The Distraction of Size
  - The Confusion (and Illusion) of Diversity
- IT Leaders are Well-Placed to Identify New Opportunities
Hybrid and IT Cloud Computing

• The Internal Cloud Services Brokerage (CSB) role is becoming an important strategic responsibility of many IT organizations.

• Provisioning and Consumption of various cloud based services needs to be improved and integrated at some levels.

• The CSB role will allow IT organizations to continue and build its value in the face of a changing, cloud-based environment.
Cloud/Client Architecture

• Enterprises are faced with the increasing power of mobile devices, the advantages of cloud computing as a delivery model for applications, and the need for better and more-differentiated user experiences.

• The client-cloud application model sits at the intersection of these trends.
Smart Machines

• Collaboration between people and smart machines will make some people far more effective (ultimately reshaping the structure and competitive balance of industries). IT leaders need to actively deal with the threats and opportunities now, while time is on their side.

• Enterprises will see cost- and risk-cutting opportunities created by replacing some employees and contractors with smart machines. IT has the opportunity to provide leadership, or be relegated to a passive, execute-only role.
Microsoft HoloLens
Unmanned Aircraft Systems (UAS)
Academic Uses of Unmanned Aircraft Systems (UAS)

- Geographic Information Systems Mapping
- Archaeology
- Vegetation Analysis
- Landform/Landscape Change
- Aeronautical Engineering
- Agricultural Science
- Civil Engineering
- Wildlife Conservation
- Journalism
- Filmmaking
- Meteorology
- Environmental Science
3D Printing

• The hype about the consumer 3D printing market masks immediate opportunities for organizations of all sizes and types
• 3D printing technology will have a transformational effect on the retail industry
• 3D printing enables marketing and operations management personnel to transition from restrictive design for manufacturing to manufacturing of the ideal design
• The potential for 3D printing to revolutionize the supply chain means IT professionals must develop a framework for evaluating its impact
EDUCAUSE 2015 Top-Ten Information Technology Issues in Higher Education

1) Hiring and retaining qualified staff, and updating the knowledge and skills of existing technology staff
2) Optimizing the use of technology in teaching and learning in collaboration with academic leadership, including understanding the appropriate level of technology to use
3) Developing IT funding models that sustain core service, support innovation, and facilitate growth
4) Improving student outcomes through an institutional approach that strategically leverages technology
5) Demonstrating the business value of information technology and how technology and the IT organization can help the institution achieve its goals
6) Increasing the IT organization’s capacity for managing change, despite differing community needs, priorities, and abilities
7) Providing user support in the new normal — mobile, online education, cloud, and BYOD environments
8) Developing mobile, cloud, and digital security policies that work for most of the institutional community
9) Developing an enterprise IT architecture that can respond to changing conditions and new opportunities
10) Balancing agility, openness, and security
FIGURE 2. Technology Adoption Curve for Higher Education Institutions

- **3%**
  - We are usually among the very first to adopt new technologies.

- **27%**
  - We strive to be early adopters of new technologies where we see exceptional benefits.

- **43%**
  - We tend to adopt new technologies at the pace of our peers.

- **24%**
  - We tend to adopt new technologies after our peers do so.

- **3%**
  - We are one of the last to adopt new technologies.

*Source: Susan Grajek, Higher Education's Top 10 Strategic Technologies in 2015, research report (Louisville, CO: ECAR, January 2015).*
**Issue #1: Hiring and Retaining Qualified Staff, and Updating the Knowledge and Skills of Existing Technology Staff**

**FIGURE 3. Top Reasons IT Management and Staff Leave Their Jobs**

<table>
<thead>
<tr>
<th>Reason</th>
<th>CIOs</th>
<th>MANAGERS</th>
<th>STAFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>At high risk of leaving*</td>
<td>1 in 8</td>
<td>1 in 6</td>
<td>1 in 5</td>
</tr>
<tr>
<td>Personal career goals are unattainable</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Not recognized for value, aside from compensation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>No opportunities to learn and grow in the past year</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional mission does not make me feel my job is important</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Not compensated fairly</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

*Based on rated importance of working in higher education combined with reported likelihood of pursuing opportunities outside the institution.

Issue #2: Optimizing the Use of Technology in Teaching and Learning in Collaboration with Academic Leadership, Including Understanding the Appropriate Level of Technology to Use

**FIGURE 4. Integrating Technology into Courses**

“I could be a more effective faculty member if I were better skilled at integrating this technology into my courses.”

- Free, web-based content
- Online collaboration tools
- LMS
- Simulations or educational games
- E-books or e-textbooks
- Lecture capture/recordings
- E-portfolios
- Social media as a teaching and learning tool
- Non-keyboard or non-mouse computer interfaces
- 3D printers

**Source:** Eden Dahlstrom and D. Christopher Brooks, ECAR Study of Faculty and Information Technology, 2014 (Louisville, CO: ECAR, July 2014).
Issue #3: Developing IT Funding Models That Sustain Core Service, Support Innovation, and Facilitate Growth

**FIGURE 5. IT Spending on Institutional Activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running the institution</td>
<td>76%</td>
</tr>
<tr>
<td>Institutional growth</td>
<td>15%</td>
</tr>
<tr>
<td>Transformative change</td>
<td>9%</td>
</tr>
</tbody>
</table>

*Source: EDUCAUSE Core Data Service, 2013*
Issue #4: Improving Student Outcomes through an Institutional Approach That Strategically Leverages Technology

FIGURE 6. Technology for Supporting Education Planning, Advising and Counseling, and Early Alerts

- Early alert systems: 46%
- Academic advising: 66%
- Education planning/academic progress tracking: 73%

Percentage of institutions

Source: EDUCAUSE Core Data Service, 2013
Issue #5: Demonstrating the Business Value of Information Technology and How Technology and the IT Organization Can Help the Institution Achieve its Goals

**FIGURE 7. Percentage of Institutions with a Service Catalog**

- Doctoral Public: 62%
- Doctoral Private: 56%
- Master’s Public: 40%
- Master’s Private: 29%
- Bachelor’s: 17%
- Associate’s: 32%

*Source: EDUCAUSE Core Data Service, 2013*
Issue #6: Increasing the IT Organization's Capacity for Managing Change, Despite Differing Community Needs, Priorities, and Abilities

**FIGURE 9.** Percentage of Institutions That Have Implemented the ITIL Change Management Process

- Doctoral Public: 44%
- Doctoral Private: 44%
- Master's Public: 30%
- Master's Private: 25%
- Bachelor's: 13%
- Associate's: 23%

*Source: EDUCAUSE Core Data Service, 2013*
FIGURE 10. Percentage of Institutions That Have Implemented Self-Service Support

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral Public</td>
<td>89%</td>
</tr>
<tr>
<td>Doctoral Private</td>
<td>80%</td>
</tr>
<tr>
<td>Master's Public</td>
<td>74%</td>
</tr>
<tr>
<td>Master's Private</td>
<td>67%</td>
</tr>
<tr>
<td>Bachelor's</td>
<td>66%</td>
</tr>
<tr>
<td>Associate's</td>
<td>59%</td>
</tr>
</tbody>
</table>

*Source: EDUCAUSE Core Data Service, 2013*
Issue #8: Developing Mobile, Cloud, and Digital Security Policies That Work for Most of the Institutional Community

**Figure 11.** Distribution of Balance between IT Risk Control and Functionality/Openness

- Percentage of institutions
- Risk control is our priority
- Balance is our priority
- Functionality/openness is our priority

**Figure 13.** Mobile Device Management Practices

- In place at institutions: 10%
- Being implemented: 16%
- Being planned: 18%
- Being tracked: 27%
- Not in place: 26%
- Respondents don’t know what mobile device management is: 3%

Issue #9: Developing an Enterprise IT Architecture That Can Respond to Changing Conditions and New Opportunities

**FIGURE 14. Institutional IT Architecture Approaches**

- We follow the architecture of a primary system or suite. 32%
- We locally integrate the architectures of multiple major systems. 56%
- We have local IT architecture standards and conform our local and vendor systems to that architecture. 10%
- I don’t understand this question 2%

*Source: Susan Grajek, *Higher Education’s Top 10 Strategic Technologies in 2015*, research report (Louisville, CO: ECAR, January 2015).*
Issue #10: Balancing Agility, Openness, and Security

**FIGURE 15. Percentage of Institutions with Federated Identity Management in Place**

- **Doctoral Public**: In place - 57%, Implementing - 19%
- **Doctoral Private**: In place - 38%, Implementing - 14%
- **Master’s Public**: In place - 24%, Implementing - 8%
- **Master’s Private**: In place - 11%, Implementing - 5%
- **Bachelor’s**: In place - 15%, Implementing - 15%
- **Associate’s**: In place - 7%, Implementing - 33%

*Source: Susan Grajek, *Higher Education’s Top 10 Strategic Technologies in 2015*, research report (Louisville, CO: ECAR, January 2015).*
Division of Information Technology
Strategic Plan 2014 – 2018

**OUR VISION**
The Division of Information Technology strives to be a strategic, innovative, and best-in-class IT organization that provides a leading-edge technology environment for students, faculty and staff to advance the University mission and goals.

**OUR MISSION**
We advance the vision and goals of our university by contributing to educational innovation and providing agile, cost-effective, and reliable technology services and facilities to our campus community.

**OUR GUIDING PRINCIPLES**
**Digital First** moves away from paper and paper processing to leveraging processes and tools for sustainable and secure operations.

**Mobile First** considers and creates applications with functionality considerations first for mobile devices, second for web, and third for desktop presentation.

**Cloud Ready** considers application and data services first in a private or public cloud while maintaining efficiency, compliance, and security.

**Enterprise Ready** takes into account the baseline needed by most while allowing for customization when necessary.

**Data Primacy** looks at de-duplication, validated data, common data sources, and content management to facilitate educated data driven decision making

**OUR VALUES**
Collaborative & Service Oriented
Innovative & Secure
Accountable & Transparent
Agile & Efficient
Strategic Goals for the Division of Information Technology

Goal 1: Student Success

- Empower students, faculty and staff with technology-based solutions that promote curricular and co-curricular success (Aligned with University Goals 1 & 2)

Objectives

- Implement the University assessment plan for Information Technology
- Ensure that at least 75% of CSUF students participate in an advising system that integrates academic, career and personal development components
- Increase the overall 6-year graduation rate, such that the Fall 2012 cohort of first-time full-time freshman is at least 10 percentage points higher than that of the Fall 2006 cohort
- Increase the 4-year transfer graduation rate, such that the Fall 2014 cohort is at least 10 percentage points higher than that of the Fall 2008 cohort
- Reduce, by at least half, the current 12% achievement gap between underrepresented and non-underrepresented students
- Increase participation in High Impact Practices (HIPs) and ensure that 75% of CSUF students participate in at least two HIPs by graduation
Strategic Goals for the Division of Information Technology

GOAL 2: INNOVATIVE TECHNOLOGIES

- Maximize use of digital technologies and mobile connectivity so that the campus community can easily collaborate, innovate and facilitate the exploration and adoption of new tools that support pedagogy, academic vision and learning (Aligned with University Goals 1 and 2)

Objectives

- Upgrade technology in 25% of our classrooms to support collaborative and active learning environments
- Design and implement technology in support of interactive physical spaces in the library and Library of the Future project (LOFT)
- Expand the use of the proven technologies to increase student achievement in bottleneck, gateway and low success rate courses
- Streamline at least 25% of enterprise business processes by eliminating unnecessary redundancies and mobilizing applications
- Increase awareness of digital media into teaching and learning
- Upgrade the mobile applications to push user notifications and messages to students
- Implement 24x7 student helpdesk
GOAL 3: ORGANIZATIONAL EXCELLENCE

• Invest in professional and intellectual development of IT staff. Establish an enterprise IT governance that is participative and transparent (Aligned with University Goal 3)

Objectives

• Assess the information technology climate and utilize results to identify and implement retention and engagement strategies
• Implement an IT staff training work plan to increase professional development and promote career advancement
• Build a diversified information technology organization
• Implement a comprehensive IT governance structure
• Establish an Employee Recognition Award program
• The IT Project Management Office (IT PMO) will manage all IT enterprise projects
Strategic Goals for the Division of Information Technology

GOAL 4: DYNAMIC AND SECURE INFRASTRUCTURE

• Build and expand agile and secure technology infrastructure to provide reliable, effective and sustainable services (Aligned with University Goals 1, 2, 3 and 4)

Objectives

• Deliver high performance computing environments that are elastic, scalable and secure and ensure at least 25% of the enterprise information technology services are in the cloud
• Deliver a modern high performance network and increase capacity by at least 50% to support widespread video applications, large data transfers, and cloud-based services
• Increase campus-wide wireless (WiFi) coverage to 90%
• Establish a disaster recovery program for all mission critical services
• Implement a next-generation IT security management plan
• Provide infrastructure support to university advancement services
• Implement an enterprise recruitment application in support of hiring diverse faculty and staff
CSU Fullerton has been increasing its reliance on a variety of Cloud Services such as:

- Adobe Creative Cloud
- lynda.com
- Office 365
- CourseSmart
- Dropbox
- Google Apps
- Qualtrics
Student Success Initiative (SSI) Updates

IMPROVE YOUR INSTRUCTIONAL EXPERIENCE

- Instructional software
  - Office 365 (Over 12000 students)
  - Adobe Creative Cloud (Over 3000 students)
  - Lynda.com

- Classroom technology updates
  - Converting all chalkboards in classrooms to whiteboards
  - Creating four model classrooms
    - Traditional style
    - Auditorium style
    - Two types of Active Learning classrooms
Sample Active Learning Classroom
Student Success Initiative (SSI) Updates ... cntd

• **ACCESS UPGRADED TECHNOLOGY**
  
  ▪ Expand Wi-Fi and network
    ▪ Doubled the capacity and significantly enhanced the network bandwidth for Pollak Library and common areas such as Langsdorf Hall, Education Classroom, and Mihaylo Hall.

  ▪ Improve library technology environment
    ▪ We have enhanced the Library main floor with new furniture and increasing the number of iPad and laptop checkouts by spring 2015
      – Installed 8 charging stations in the Library

  ▪ 24/7 IT help desk for Students
    – We have implemented a limited student helpdesk starting Spring 2015. The 24x7 helpdesk will be fully operational by Fall 2015.
New Spaces in the Library

• Student Spaces – Library north 1st floor
  – Information Learning Commons
    • Moved Titan Computer Lab and combined with Information Learning Commons
    • Moved new Student Genius Corner
      – Incorporate new Student Helpdesk
  – Spring 2015
    • New carpet in the first floor
    • New chairs and active learning furniture

• Digital Printing Service
  • 3D Printing
Active Learning Spaces in the Library
New Spaces in the Library ... cntd

- Faculty Commons—Library South 2nd floor
  - Created a one stop shop for faculty
    - ATC, FDC, OASIS, Faculty/Staff helpdesk
    - Moving both FDC and OASIS to 2nd floor of the library
    - Two training rooms
      - One Active classroom style
      - One traditional
    - One conference room
    - Self-service recording studio
CSUF Dropbox for Business – Faculty/Staff

• Dropbox for Business is now available to all faculty/staff
  – Unlimited storage
  – Faculty/staff allowed to have both CSUF and personal Dropbox accounts
  – Place all your files in Dropbox.com including Level 2 Data
  – Rollout of Departmental Dropbox accounts
  – [http://www.fullerton.edu/it/dropbox/](http://www.fullerton.edu/it/dropbox/)
CSUF Dropbox for Business – Students

- Dropbox for Business is now available to currently enrolled students as a pilot program
  - 50GB of storage capacity
  - There are **5,000 student licenses** available during the initial pilot rollout
    - Licenses will be available to the first 5,000 that sign up
  - Additional student licenses may be available next semester (Fall 2015), depending on the outcome of this pilot program
  - Upon graduating, students will have the option of purchasing Dropbox Pro at a discounted rate
- [http://www.fullerton.edu/sts/software/dropbox/](http://www.fullerton.edu/sts/software/dropbox/)
Other IT Projects

• Office 365 for iPad/iOS devices
  – PowerPoint, Word, and Excel is now available on your iPad.
  – [http://www.fullerton.edu/it/faculty-staff/office365/](http://www.fullerton.edu/it/faculty-staff/office365/)
• Enterprise Qualtrics available on portal
  – Faculty/Staff/Student
• iPad refresh
  – In process of replacing all iPad 2 with iPad mini or iPad Air
• New iFullerton 2.0
New iFullerton 2.0

Attendance
New iFullerton 2.0 Attendance
Classroom with iBeacon
New Service to Faculty & Staff

Lync 2013
Audio Video Conferencing
Lync 2013 Transition to Skype for Business

What is new:
• New look and feel
• Skype directory integration
• Dual user experience
• Call Monitor
• Rate My Call
• Quick access to call controls
New Way of Thinking

- Tablet as Your Laptop
- Laptop as Your Desktop
- Personal Cloud for High Power Computing
Exploring New Technologies
ChronoZoom as New LMS
Questions
ELECTRONIC REFERENCES


http://www.globalwebindex.net/

http://www.comscore.com/

http://www.gartner.com/newsroom/id/2867917

http://www.barclays.com/

http://educause.edu/ero/article/top-10-it-issues-2015-inflection-point
Thank You

We hope you enjoyed this session. Please help us to improve and turn in your survey.

Visit our vendor partners at the Exhibit Hall.