Data, Data, Data: University Strategy for Improving Decisions

Marc Hoit
Vice Chancellor for IT
January, 24, 2011
Importance & Availability of Information to the Enterprise

- Data & analytics are a top 10 issue in IT
- Public & private available data is enormous
  - But, needs to be converted to information
- University has history of using data
  - Research, admissions, enrollment management, fiscal information, reporting, localized metrics, etc
  - We need better, more integrated information to help inform decisions
- Strategic plan will require tracking metrics of progress & success
Examples of Publically Available Data
Things We Share When Browsing the Internet

These items normally shared without your permission are shared when using a web browser:

**Web Browsing History** – web searches and selections are known by Google, Yahoo or Bing. This is not shared with everyone, but your search engine knows it.

**Browser Referrer** – The site you visit before or after the one you are looking at now is shared with every web site you visit.

**Tracking Cookies** – allow access to the browser history, time, date and number of visits to a website

**Web Analytics Information** – web access statistics on how you surf are collected and reported to web search engines (Yahoo, Google, Bing, etc.) but are also provided to marketing companies like Compete.com, Alexa and Quantcast

**Style Sheet History** – Using the history of loaded style sheets, it is possible to tell what Facebook groups you use or what email accounts you have.
Recapping the week: Breakaway results for Apple as Jobs steps away

Google's Larry Page must prove he has CEO skills

Inflation is coming - just not yet

State of the Union a "fundamental moment" for Obama

Squalid Abortion Clinic Escaped State Oversight

In Giffords frenzy, security keeps public at distance

Senate Republicans to Oppose Obama's Spending Plans

Hammer vs. Timberlake: Who'd You Rather?

Assassination Case Against Conner Likely To Take Years

Chasing the China Bandwagon

Obama marks anniversary of abortion rights case

Search for missing 4-year-old boy "on "never-ending" trail

Band of Brothers' Unit Loses Another Hero

Prop 8, the measure that overturned traditional marriage

Apple exceeds 10 billion apps downloaded

UK Woman Wins Bids for Apple App Store's $1 Billion Challenge

Rep. Gabrielle Giffords and 5 other profiles in perseverance

Ireland's Greens Pull Out of Government, Speeding Elections

Afghan Lawmakers Reach Compromise With Karzai

Chasing the China Bandwagon

Brains fluid buildup could delay Giffords' rehab

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Federal center hopes to spur drug research

Officials fear teen sexts becoming the new big drug menace

Brain fluid buildup could delay Giffords' rehab
MIT Persona’s – How the web sees you
http://personas.media.mit.edu/personasWeb.html
Facebook maps how happy its users are, based on the words in their profiles.

From Fast Company, fastcompany.com
## Year: 2008

All dollars are reported per FTE Student, in 2008 dollars (CPI adjusted).

### Table: Net Financials

<table>
<thead>
<tr>
<th>Institution</th>
<th>Carnegie</th>
<th>Net Tuition (a)</th>
<th>State and Local Appropriations (b)</th>
<th>Private Gifts, Investment Returns, and Endowment Income (c)</th>
<th>Federal Appropriations and Federal, State, and Local Grants and Contracts (d)</th>
<th>Auxiliary Enterprises, Hospitals, Independent Operations and Other Sources (e)</th>
<th>Total Revenue (f) = (a+b+c+d+e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina State University at Raleigh</td>
<td>Public Research</td>
<td>$5,328</td>
<td>$17,674</td>
<td>$1,772</td>
<td>$8,093</td>
<td>$6,627</td>
<td>$39,496</td>
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<tr>
<td>Ohio State University*</td>
<td>Public Research</td>
<td>$10,451</td>
<td>$8,401</td>
<td>($1,134)</td>
<td>$11,690</td>
<td>$37,500</td>
<td>$67,018</td>
</tr>
<tr>
<td>Purdue University-Main Campus</td>
<td>Public Research</td>
<td>$10,845</td>
<td>$8,052</td>
<td>$3,193</td>
<td>$7,942</td>
<td>$6,990</td>
<td>$35,932</td>
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<tr>
<td>University of Florida</td>
<td>Public Research</td>
<td>$5,210</td>
<td>$13,820</td>
<td>$540</td>
<td>$17,331</td>
<td>$3,633</td>
<td>$40,533</td>
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<tr>
<td><strong>Selected Comparison Group</strong></td>
<td>Median</td>
<td>$7,890</td>
<td>$11,190</td>
<td>$1,156</td>
<td>$9,887</td>
<td>$6,784</td>
<td>$40,064</td>
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<tr>
<td><strong>Selected Comparison Group</strong></td>
<td>Mean</td>
<td>$7,050</td>
<td>$12,027</td>
<td>$1,093</td>
<td>$11,282</td>
<td>$13,680</td>
<td>$46,020</td>
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</table>
Data.gov Catalogs

Use the Data.gov catalog below to access U.S. Federal Executive Branch datasets. Click on the name of a dataset to view additional metadata for that dataset. By accessing the data catalogs, you agree to the Data Policy. Data.gov offers data in three ways: through the "raw" data catalog, using tools and through the geodata catalog. The "Raw" Data Catalog provides an instant download of machine readable, platform-independent datasets while the Tools Catalog provides hyperlinks which may lead to agency tools or agency web pages that allow you to mine datasets.

"RAW" DATA CATALOG

Search "raw" data by keywords

Search "raw" data by single/multiple category

Search "raw" data by file type

Search "raw" data by single/multiple agency

Climate Reference Network Hourly02 Product
The U.S. Climate Reference Network is designed specifically to monitor national climate change with best scientific practice and adherence to the accepted principles of c..

Rating: ★★★☆☆
Agency: DOC/NOAA
Size: 149.3 MB

Formal Enforcement Actions Fiscal Year 2009
The annual data tables contained in this document provide summary statistics on the civil enforcement activities of the United States Trustee Program. These tables summa..

Rating: ★★★☆☆
Agency: DOJ/USTP

Informal Enforcement Actions Fiscal Year 2009
The annual data tables contained in this document provide summary statistics on the civil enforcement activities of the United States Trustee Program. These tables summa..

Rating: ★★★☆☆
Agency: DOJ/USTP

RSS Feed for SW Atlantic and Caribbean Sea Offshore Waters Forecast
The National Weather Service (NWS) National Hurricane Center uses regularly updated RSS feeds to disseminate SW Atlantic and Caribbean Sea Offshore Waters Forecast .
nc.youdop.org – mortality data
NC State Data Mart Project

- Developing data marts for University information
- Using SAS for the toolset
- Designed for distributed access and manipulation (with appropriate security)

Status:
- Proof of concept complete
- Implementing admissions & graduate school
  - Replacing Business Objects for Grad School
  - UPA, Grad School, R&R participating
- Other domains to be added once operational
Why a Data Mart?

**Charge:** Develop a data mart with query tools and dashboards that will provide easily-accessible historical, current, and predictive views of operations data for executive officers, deans, department heads and key staff to support data driven decision-making and reporting.
University Data Mart – Vision
Existing NC State Databases

- Student data (courses, demographics, grades, etc)
- Faculty and Staff (demographics and employment information)
- Door and gate security (approved locations you can enter (if electronic))
- Library access (books, reservations, etc)
- Room reservations (both classes and ad-hoc)
- Fiscal (budgets and expenditures for units)
- Facilities
- Motorpool info (fleet inventory, reservations, etc.)
- Property insurance
- Bookstores
- Hazardous materials tracking
- Surplus and inventory management
- Asset management (capital and non-capital)
- Maxient (Office of Student Conduct)
- Student Health system
- All Campus Card
- Ticket Central (Ticketing systems for ArtsNCState)
- MySoft in ComTech (Phone & Network)
- Remedy (Help Desk requests and IT service)
- Transportation Ticketing system
- Research Grant Proposal system - PINS
- Software Licensing Access
- Anti-Virus Information
- Advancement data (donor profiles, giving records, etc.)
- Conference services
- Research (grants and effort reporting in addition to proposals)
- Teaching licensure tracking
- Athletics Data
Proof of Concept Examples
Admission Dashboard
Admission Reports

Ability to Drill Down by Category

Legend
Freshman Drill Down Report

Applied filters: Admit Term equal to Fall '09

By Gender

<table>
<thead>
<tr>
<th>College</th>
<th>Female</th>
<th>Male</th>
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<tbody>
<tr>
<td>Agriculture and Life Sciences</td>
<td>314</td>
<td>570</td>
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<tr>
<td>Design</td>
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<td>33</td>
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<tr>
<td>Education</td>
<td>145</td>
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<tr>
<td>Engineering</td>
<td>265</td>
<td>1,201</td>
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<tr>
<td>Humanities and Social Sciences</td>
<td>243</td>
<td>385</td>
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<tr>
<td>Management</td>
<td>184</td>
<td>260</td>
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<tr>
<td>Natural Resources</td>
<td>42</td>
<td>139</td>
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<tr>
<td>Physical and Mathematical Science</td>
<td>94</td>
<td>132</td>
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<tr>
<td>Textiles</td>
<td>141</td>
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By Plan

<table>
<thead>
<tr>
<th>Plan</th>
<th>Female</th>
<th>Male</th>
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<tr>
<td>Aerospace Engineering Unmatric</td>
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<td>Bio Engineering Unmatric</td>
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<td>65</td>
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<tr>
<td>Chemical Engineering Unmatric</td>
<td>35</td>
<td>54</td>
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</table>
Average SAT Scores by Year


<table>
<thead>
<tr>
<th>Year</th>
<th>Score</th>
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<tbody>
<tr>
<td>2006</td>
<td>608</td>
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<tr>
<td>2007</td>
<td>603</td>
</tr>
<tr>
<td>2008</td>
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<tr>
<td>2009</td>
<td>612</td>
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<tr>
<td>2010</td>
<td>611</td>
</tr>
</tbody>
</table>

SAT Test

- SAT Math
- SAT Verbal
- SAT Writing

Average SAT Scores published on UPA Admission Website.

Custom branding

Link to external web sites for reference.

Date/time stamps

Wednesday, October 13, 2010 11:09:33 AM EDT
"In God we trust," she said. "All others, bring data."

~Margaret Spellings~
Secretary of Education