Hallmarks of the Data-Driven University

Preview of Our Data-Driven Enterprise Research

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Road Map for Today’s Discussion

1. Welcome
2. Our Directive from Members
3. Roadblocks to Sustainable Data Governance
4. Hallmarks of Data-Driven Enterprises in Higher Education: Focus on Data Governance
5. Diving Deeper: One Example Tactic
6. What to Look Forward to at Our National Meeting
## EAB’s IT Forum

### 90 Members and Growing

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What Should We Research?

What Our Members Told Us

Data-Driven Enterprise

Student Success Road Map

Transforming Administrative Services

Rightsizing Security Strategy

Sustainable Data Governance

Accountability for Data Management

Access and End User Support

BI Organization and Strategy

Source: EAB interviews and analysis.
Our Methodology

Process for Our Data-Driven Enterprise Research

Discovering Best Practices for the Data-Driven Enterprise

- Comprehensive literature review of news updates and scholarly publications
- Assessment of practices for results, against root causes, and for replicability
- Roundtables in Washington, DC, to present research findings
- 75+ interviews with CIOs, directors of BI, and private industry thought leaders
- Creation of a best practice study

May-June | July-Sept | Oct-Nov | Dec-March
Why Now?

Data an Increasingly Necessary Element of Decision-Making

Increasing Competition for Vital Resources

- Widespread funding shortfalls and budget cuts
- Rise of performance-based funding and budgeting models
- Changing national demographics, with the number of domestic high school students forecasted to decrease over the next decade

Gut Decisions No Longer Making the Cut

- Decisions based on assumptions lead to sub-optimal allocation of resources

“We’re missing opportunities to improve the university. We’re missing opportunities to increase our retention rates; we’re missing opportunities to get students graduated in four years; we’re missing opportunities to understand where we need to be recruiting.”

CIO, Master’s University

Source: EAB interviews and analysis.
The Data-Driven University Already Exists…

The Concept of Business Intelligence Is Nothing New

When Did You Start Your BI Initiative?

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Have yet to start, but have a plan</td>
<td>11%</td>
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<tr>
<td>Just starting now</td>
<td>21%</td>
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<td>1 to 3 years ago</td>
<td>25%</td>
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<tr>
<td>Between 3 and 5 years ago</td>
<td>18%</td>
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<tr>
<td>More than 5 years ago</td>
<td>25%</td>
</tr>
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</table>

n = 28, with 3 skipped

Source: EAB interviews and analysis.
...And Everyone’s Doing It
All Corners of the Campus Already Using Data for Decision Making

Distributed Analytics Staff Appearing across Campus

*In Schools*

- Dean
  - Data Analysis Division
    - Director of Data Analytics
    - Reporting Analyst

*In Business Units*

- VP of Enrollment Management
  - AVP of Enrollment Analytics
    - Reporting Analyst
    - Reporting Analyst
    - Reporting Analyst

15 Distributed Cognos licenses discovered at one research university at the start of a coordinated BI effort

Source: EAB interviews and analysis.
So What’s Broken?

Roadblocks to Effective Data-Driven Decision Making

Data Definitions
- No standard definitions
- No access to data definitions
- Variations in existing definitions
- No central staff to resolve inconsistencies

Data Collection
- Data fields not collected
- Open field entries not defined
- Place-holder data used
- Fields misappropriated
- No checks on data entry quality

Data and Systems Architecture
- Static system structure not aligned to the institution
- Improper system implementation
- Existence of suboptimal shadow systems
- No standardized data practices

Source: EAB interviews and analysis.
Key Elements of the Data-Driven University

**Data Governance Structure**
Structure data governance with long-term sustainability as a top priority

**Institutional Strategy**
Establish BI as an all-in, enterprise effort

**Data Management**
Make data quality problems visible to procure participation in data management efforts

**Disciplined BI Software Spend**
Eliminate redundant and inefficient distributed BI spend

**Organizational Structure**
Centralize BI leadership efforts to expand the abilities of distributed data users

**End User Support**
Empower end users through self-service BI

Source: EAB interviews and analysis.
Today’s Focus

Hallmarks of Sustainable Data Governance

Data Governance Structure

Structure data governance with long-term sustainability as a top priority

1. Invest in better data governance before expanding the BI tool portfolio.

2. Put one full-time staff member in charge of data governance efforts.

3. Structure data governance into two main committees: 1) a prioritization committee of university executives, and 2) a definition/access committee of data custodians who are aligned with functional units and understand the organizational use of data.

4. Make attendance at data custodian committee meetings voluntary for all but the data governance director and the unit with the most responsibility for the data in question at each meeting.

Source: EAB interviews and analysis.
A Culture Problem, Not a Tech Problem

Don’t Invest in More Technology Before Investing in Data Governance

Data Problems

- Administrators at a private research university in the Northeast frustrated with data problems across the university

New ERP System

- University purchases Workday, thinking it will solve the data management problems

Data Problems

- Same data management problems persist

“If Cognos has 100 functions, we’re using two or three.”

Chief Data Officer, Public Research University

“A data-driven institution is very transparent, very open, and sharing is everywhere. And that particular value set is not part of our institution at this moment in time.”

CIO, Public Research University

Source: EAB interviews and analysis.
Hallmark 1: Prioritize Investment in Data Governance

Setting up for Success

BI Maturity vs. Data Governance Maturity

Characteristics

Determining BI Maturity

- Our data resides in departmental silos
- Institutionally, data is viewed as a shared asset
- Decisions are validated with data from central sources
- We align BI initiatives with institutional priorities

Data Governance Maturity

- Fragmented: zero or few processes govern the input, collection, definitions, usage, and access of data
- Focused: within a narrow terrain (e.g., reporting) policies, definitions and processes exist
- Enterprise Perspective: common policies and standards in effect, centrally-managed KPIs

Source: EAB interviews and analysis.

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Staffing for Data Governance Often Nonexistent

Follow the Leader

Typical Failure Points of Data Governance Related to Leadership

Staff Responsibility Changes
Person with side responsibility for data governance moves to another position; data governance responsibilities not reassigned.

No Shepherd of the Flock
No leader exists to hold committee members accountable to complete follow-up tasks from meetings. Committee disbands due to frustration among members.

Source: EAB interviews and analysis.
Rise of a New “Chief” Position

Chief Data Officers Appearing in Higher Education

US Higher Education

- 8 CDOs found in higher education

Example Institutions:
- Cornell University
- Kennesaw State University
- Purdue University
- Savannah State University
- University of South Carolina
- University of Wisconsin
- University System of Georgia
- Wichita State University

Global Organizations

- ~250 Estimated CDOs across the world by end of 2014

Example Organizations:
- Cambia Health Solutions
- City and County of San Francisco
- IBM
- Nationwide Insurance
- ShopAdvisor
- State of Colorado
- TD Bank
- Wells Fargo

...But Uncertainty Abounds about the CDO’s Role

“If someone today tells you they know how to do the chief data officer's function, they're lying to you.”

Richard Wang, Director of MIT’s CDO and Information Quality Program

### Hallmark 2: Dedicated Data Governance Director

**Who’s Needed Right Now?**

Two Roles for Advancing the Use of Institutional Data

Comparing the CDO to the Data Governance Director

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<th>Chief Data Officer</th>
<th>Data Governance Director</th>
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<tbody>
<tr>
<td><strong>Core Responsibilities</strong></td>
<td>Leads data definition creation</td>
<td>Leads data definition creation</td>
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<tr>
<td></td>
<td>Coordinates data governance meetings</td>
<td>Coordinates data governance meetings</td>
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<tr>
<td></td>
<td>Oversees data quality processes</td>
<td>Develops data governance policies</td>
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<tr>
<td></td>
<td>Develops data management policies</td>
<td>Advises campus members on data management and data use</td>
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<tr>
<td></td>
<td>Oversees the design of the data warehouse and data integration</td>
<td>Maintains the data dictionary</td>
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<tr>
<td></td>
<td>Encourages use of BI for decision-making and strategic planning</td>
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<tr>
<td><strong>Desired Attributes and Skill Sets</strong></td>
<td>Experience with data architecture, data management, and development of data governance</td>
<td>Broad understanding of higher education operations</td>
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<tr>
<td></td>
<td>Strong communication skills for both executive-level and technical</td>
<td>Experience with higher education data (from one or more functions)</td>
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<td></td>
<td>implementation discussions</td>
<td>Respected among colleagues on campus</td>
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<td></td>
<td></td>
<td>Project management skills</td>
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<tr>
<td><strong>Estimated Salary</strong></td>
<td>$145-165K</td>
<td>$80-110K</td>
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</table>

Source: EAB interviews and analysis.
Perils of the Single Committee Structure
Committees Doomed to Fail from the Start

Roadblocks to Data Governance Committee Success

Committee turns into a prioritization committee, disagreeing on what to do next (and never getting to it)

Committee lacks the appropriate level of staff to think strategically about data assets across the institution

Committee members consider the group a one-time project, not a long-term process

Committee turns into a group of delegates, as members aren’t held accountable to anyone

No arbiter exists to resolve disputes as there is no true leader of the committee

No show of support from institution executives leads to loss of interest

Source: EAB interviews and analysis.
Hallmark 3: Bicameral Data Governance Committees

Separate Strategy from Operation
Two Committee Structure Best for Achieving Execution

Data Strategy Committee
- **Role/purpose:** Direction setting (the “what”)
- **Seniority:** VP- to AVP-level
- **Composition:** Cross-functional data trustees (IT, Provost’s office, CBO’s office, Registrar’s office, etc.)
- **Size:** 5-10
- **Time commitment:** Minimal (one hour per quarter or semester)
- **Agenda:**
  - What areas of the university may benefit most from better data?
  - What has the data governance committee done since the last meeting, and what should they focus on until our next meeting?

Data Governance Committee
- **Role/purpose:** Execution (the “how”)
- **Seniority:** AVP- to director-level
- **Composition:** Cross-functional data custodians (IT, Provost’s office, CBO’s office, Registrar’s office, etc.)
- **Size:** 12-20
- **Time commitment:** High (one hour per week or month)
- **Agenda:**
  - What should the definition and security level for these terms be?
  - What standard terms do we not have that are causing problems?
  - Who across campus should be a data custodian?

Source: EAB interviews and analysis.
Hallmark 4: Opt-in Definition Creation

Why Am I Here?
Typical Data Governance Meetings Fail to Maintain Members’ Interests

Representative Data Governance Committee Meeting

“I’m the AVP of Research. Why am I talking about building codes?”

“When are we going to get to the terms I actually care about defining?”

Results

Low Engagement among Members

Drop-off in Attendance

Members Send Delegates

Committee Stops Meeting

Source: EAB interviews and analysis.
Inclusive Doesn’t Have to Mean Big

Process for Term Definition at the University of Notre Dame

**Project Identification**
- BI strategy committee determines project priorities
- Data governance director and relevant unit directors determine terms necessary to define

**Role Selection**
- Data governance committee members self-select their roles in definition creation

**Term Definition**
- Data governance committee members who opt-in to definition creation meet to define terms
- Committee meets once per week for 60-75 minutes

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**Data Governance Committee Member Roles: RACI**

- **Responsible**: Owns the definition and leads the effort to accurately develop it
- **Accountable**: Answers for the completeness and correctness of definitions across the institution
- **Consult**: Participates in the development of the definition
- **Inform**: Is kept informed on the development of definitions. Provides tacit agreement to the term’s definition

Source: EAB interviews and analysis.
Matching the Right People to the Right Terms
Opt-in Process Promotes Engagement and Sustainability

Opt-in Survey

Faculty Status

Indicates whether an individual holds a current appointment to the faculty and, if so, whether they hold an appointment to the Regular faculty, as defined in Article III, Section 1, Subsection (e) of the University of Notre Dame Academic Articles.

- Responsible
- Accountable
- Consult
- Inform
- No Stake

Data Governance RACI Matrix (excerpt)

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Source: EAB interviews and analysis.
Hallmark 4: Opt-in Definition Creation

A Win-Win-Win

Seeing Results in Engagement, Efficiency, and Effectiveness

<table>
<thead>
<tr>
<th>Number of People Attending Meeting</th>
<th>Time Needed to Define a Term (in Minutes)</th>
<th>Terms Requiring Revisions</th>
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<td>Typical Process 20</td>
<td>Opt-in Process 6</td>
<td>Typical Process 15</td>
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<td></td>
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<td>Opt-in Process 8</td>
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<td></td>
<td>Typical Process 10%</td>
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<td></td>
<td>Opt-in Process 5%</td>
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300+ Terms defined by Notre Dame’s process

600+ Director-level and above staff hours saved per year (conservative estimate)

Source: EAB interviews and analysis.
What to Look Forward to

More Hallmarks of Data-Driven Universities

**Data Governance Structure**
*Structure data governance with long-term sustainability as a top priority*

**Institutional Strategy**
*Establish BI as an all-in, enterprise effort*

**Data Management**
*Make data quality problems visible to procure participation in data management efforts*

**Discipline BI Software Spend**
*Eliminate redundant and inefficient distributed BI spend*

**Organizational Structure**
*Centralize BI leadership efforts to expand the abilities of distributed data users*

**End User Support**
*Empower end users through self-service BI*

Source: EAB interviews and analysis.
Services Available to IT Forum Members

Helping Your Team Work Smarter and Faster

Insight Centers
- Immediate access to web-based resources for members of your team trying to get smart on an issue quickly
- Example insight centers:
  - Data-Driven Enterprise
  - Academic Information Services

Webconferences
- Hour-long educational sessions that focus on select case studies from best practice research or emerging issues
- Example webconferences:
  - IT Security Breach Preparation & Response
  - Rationalizing University Technology Investments
  - Innovations in Delivering Quality Instruction at Scale

Onsites
- One-to-two hour formal presentations with Q&A or half-day facilitated interactive sessions on selected issues
- Example uses:
  - Strategic planning
  - Consensus building
  - Board education
Services Coming Down the Road
Teaching You Our Identified Best Practices

Roundtable Meeting
- A concise presentation of the year’s most promising research, reserved for CIOs. The roundtable meeting is limited to 25 to 35 attendees to ensure robust discussion and sharing of ideas
- Multiple roundtables will be held to accommodate busy member schedules
  - Dec 2-3, Washington (at capacity)
  - Jan 13-14, Washington
  - Feb 24-25, Washington
  - Mar 17-18, Chicago

Best Practice Study
- Innovative ideas—all proven and put into practice at other colleges and universities—addressing the data governance and BI challenges facing IT leaders across the country

Toolkits and Resources
- Implementation guides and diagnostic tools to help you put best practices in place at your institution (e.g., hallmark maturity diagnostic, data quality problem identification survey)
Thank You

Contact Information for IT Forum Team Members

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Education Advisory Board Website

- [www.eab.com](http://www.eab.com)
- Open to all members of your institution with an @____.edu or @____.ca email address
Existing EAB Data-Driven Research

Perspectives from our CBO-focused research

Developing a Data-Driven University

Research study with strategies and best practices for increasing reporting and analytical capacity to improve institutional effectiveness.

- Forum: Business Affairs Forum
- Audience: CBOs, CIOs, BI Directors
- Year: 2010
- Learn How To:
  - Overcome data denial
  - Increase analytical and reporting capacity
  - Drive awareness of data and analytics
  - Inspire use of data in decision-making

Webinar Sessions on Developing a Data-Driven University

Part One:
This webinar provides an overview of how progressive institutions have liberated scarce analytical resources to focus on internal assessment versus external accountability requirements.

Part Two:
The session profiles the dashboards, key performance indicators, and business intelligence capabilities that are emerging as the new gold standard for university decision support.