

University Metrics and Measurement: Where We Are and What's Next

Robert H. Bruininks

President

Robert B. Kvavik

Associate Vice President for Planning

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Context

[The regents shall] make a report annually, to the Legislature ... exhibiting the state and progress of the University ... and such other information as they may deem proper, or may from time to time be required of them ...

- University charter, 1851 Territorial Laws, Chapter 3, Section 16



Context

We must align our metrics and measurement strategies to support the goal of becoming **one of the top three public research universities in the world**, with similar high aspirations for our coordinate campuses and state-wide centers according each one's aspirations, historic strengths, and opportunities.



A Commitment to Excellence

VISION: Improve the Human Condition
Through the Advancement of Knowledge

MISSION: Extraordinary Education • Breakthrough Research • Dynamic Public Engagement

GOAL: Become one of the Top Three Public Research Universities in the World

EXCEPTIONAL STUDENTS
Recruit, educate, challenge, and graduate outstanding students who become highly motivated lifelong learners, leaders, and global citizens.

EXCEPTIONAL FACULTY AND STAFF
Recruit, mentor, reward, and retain world-class faculty and staff who are innovative, energetic, and dedicated to the highest standards of excellence.

EXCEPTIONAL ORGANIZATION
Be responsible stewards of resources, focused on service, driven by performance, and known as the best among our peers.

EXCEPTIONAL INNOVATION
Inspire exploration of new ideas and breakthrough discoveries that address the critical problems and needs of the University, state, nation, and world.

FOUNDATION FOR SUCCESS: Foster Culture of Excellence • Cultivate International Learning
Advance Interdisciplinary Frontiers • Build Diverse Community • Generate Critical Resources • Account for Results



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Framing Questions

What do we currently measure? Perhaps a better question is, “What *don't* we measure?”

What *should* we measure? Why, and how?

What frameworks and tools are available to us?
Which are most promising to promote alignment, prioritization, and informed decision-making?

And most importantly: What's next?



Why Measure?

The short answer: Accountability

Accountability to whom?

- University credibility and public expectations:
a changing environment
- Establishing a culture of evidence



Accountability to Whom?

Accountability is an elusive term in higher education, and the chameleon requires definition.

Who is accountable to whom, for what purposes, for whose benefit, by which means, and with what consequences? (Burke, 2005)

Accountability faces in every direction – upward, downward, inward, and outward. (Corbett, 1996; Vidovich and Slee, 2000)



Defining Accountability

Multiple publics have a myriad of expectations about accountability.

“Accountability for something only has meaning if there is A PERSON that can be held accountable and that what they are accountable for is clearly defined and the person has the tools to get the job done.”

– Senior Vice President Frank Cerra



Multiple Demands

We must demonstrate with data our performance across multiple dimensions:

Achievement of the articulated mission (strategic)

Quality of programs and services provided (strategic)

Serving public needs (operational and strategic)

Efficiency, effectiveness, productivity – accounting for resources used and outcomes produced by those resources (operational)


Demonstrating that authority is used properly and purposively (operational)

Outside Forces

Peer review versus new regulations and externally imposed quantitative outcome measures by accrediting bodies

Reputation versus access, affordability, responsiveness, and performance

Trust versus the demand for evidence combined with fiscal performance incentives – most often tied to assessment of student performance




Defining Metrics

Metrics are a set of measurements that quantify performance and results.

Operational Metrics are indicators that provide insight into the question: How are we doing with regards to the quality, efficiency, and satisfaction with services we provide to the University and external community?

Strategic Metrics are indicators that provide insight into the question: How are we doing with regards to our articulated goals and strategic plan?



Defining Metrics

Metrics are used to:

Assess progress on strategic goals

Inform decision-making

Benchmark with peers and historical performance

Determine return on investment

Measure achievement in operational areas

Provide accountability

Provide credibility



Metrics and Strategic Positioning

<i>Metric objectives and outcomes</i>	Exceptional Students	Exceptional Faculty and Staff	Exception Organization	Exceptional Innovation
Progress on strategic goals	Learning outcomes	Awards and recognition	Interdisciplinary facilities	New fields of discovery
Informed decision-making	Enrollment management measures	Performance reviews	Facility performance	Facility requirements
Benchmark performance	Measure of student performance	Sponsored funding trends	Model energy practices	Number of patents and royalties
Return on investment (ROI)	Cost of instruction and affordability	Compensation	Cost reduction and containment	Sponsored research \$ per asf lab space
Performance of operations	Satisfaction with student services	Satisfaction with services	Model service practices	Grants management
Credibility	Application numbers	Retention and recruitment	Campus appearance	News coverage

Criteria for Decision-Making and Related Measures

1. Centrality to mission (strategic)

2. Quality, productivity, and impact (strategic and operational)

- What are the most appropriate measures to apply?
- Are measures being applied consistently and transparently?
- How do we measure the quality of a program or service?
- How do we measure output?
- What is the impact of the program or service?

Criteria for Decision-Making and Related Measures

3. Uniqueness and comparative advantage (strategic)

4. Enhancement of academic synergies (strategic)

5. Demand and resources (strategic)

- Do accurate measures project a rise or fall in demand for this program or service over the long term?
- Does the program or service have sufficient resources to support it?

Criteria for Decision-Making and Related Measures

6. Efficiency and effectiveness (operational)

- Are the organizational outcomes achieved at acceptable levels of quality and cost?

7. Development and leveraging of resources (operational)



A Typology of Measures and Accountability

Goal/Audience	Internal	External
Strategic	<ul style="list-style-type: none"> • Leading institutional measures: aspiration goal • Measures monitoring strategic positioning • Measures of the impact of strategic initiatives • Measures supporting the University Senate Resolution on Student Development and Learning Outcomes 	<ul style="list-style-type: none"> • University plan, Performance, and Accountability Report • New legislative performance measures • Assessment of student performance – learning outcomes, progress • AAU/NASULGC metrics • Regional and Specialized Accreditation
Operational	<ul style="list-style-type: none"> • Financial: revenues and expenditures • Organizational productivity (efficiency and effectiveness) • Service quality and satisfaction • Staff development • Best practices 	<ul style="list-style-type: none"> • Regulatory and compliance reporting: US. Department of Education, NSF, HIPAA, FERPA • AAU's VSA initiative • IPEDS data collection • ROI and productivity improvements

Analytical Framework

Technology Platforms

- **Enterprise Data Warehouse**
- **Data mart(s)**
- **Operational Data Store**
- **Transaction System**

Applications

- **Transaction reporting**
- **Monitor operational performance**
- **What-if decision-support**
- **Predictive modeling and simulation**
- **Alerts and automatic triggers**

Tools

- **Business Intelligence Software**
- **Balanced scorecards**
- **Dashboards**
- **Performance reports**
- **Smart reports**
- **Statistics**

A Typology of Measurement and Accountability Tools

Goal/audience	Internal	External
Strategic	<ul style="list-style-type: none">• Trend analysis• Measures of quality• Business intelligence software• Balanced scorecard	<ul style="list-style-type: none">• Descriptive data• Trend analysis• Measures of quality
Operational	<ul style="list-style-type: none">• ROI (all versions)• Dashboards• Survey data/quality assurance• Smart reports	<ul style="list-style-type: none">• Descriptive data• Trend analysis

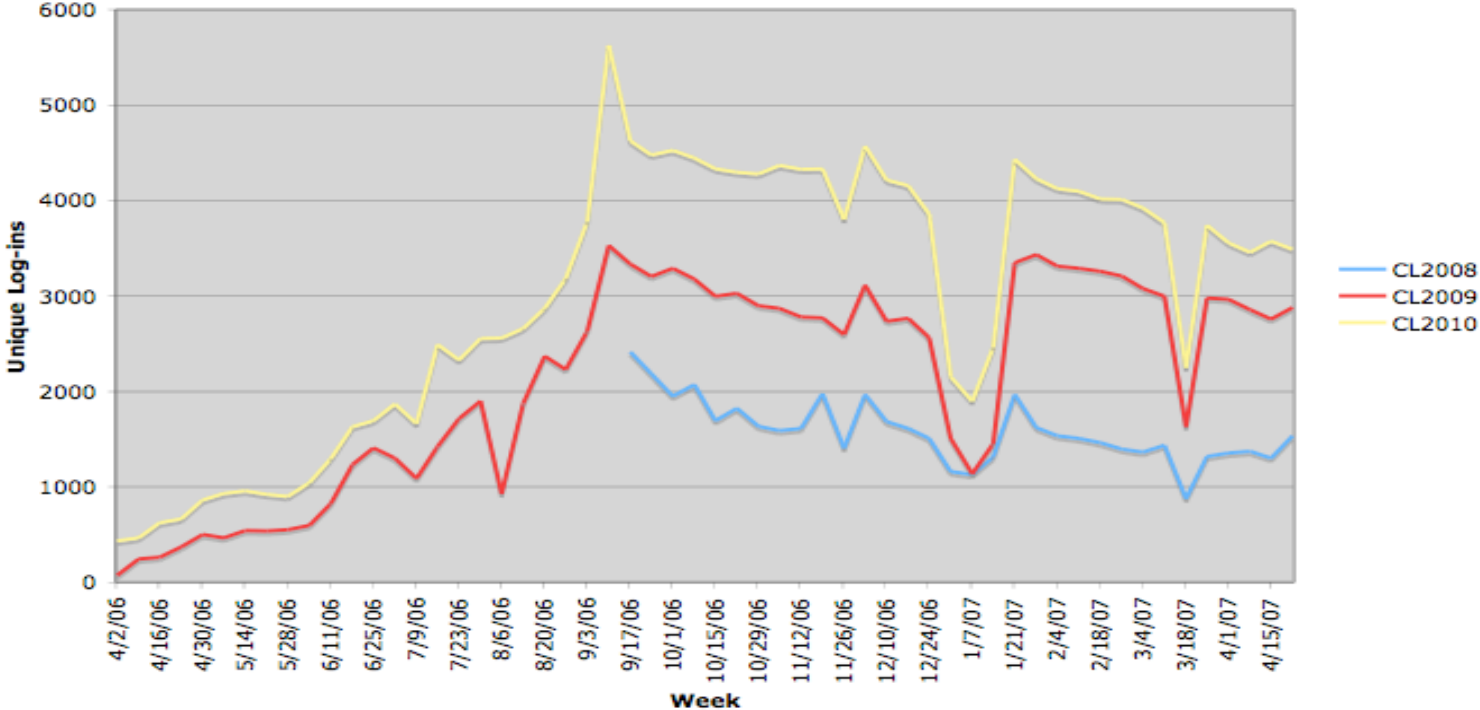
Dashboards

OCM DASHBOARD



Portal Usage

2010/2009/2008 Comparison



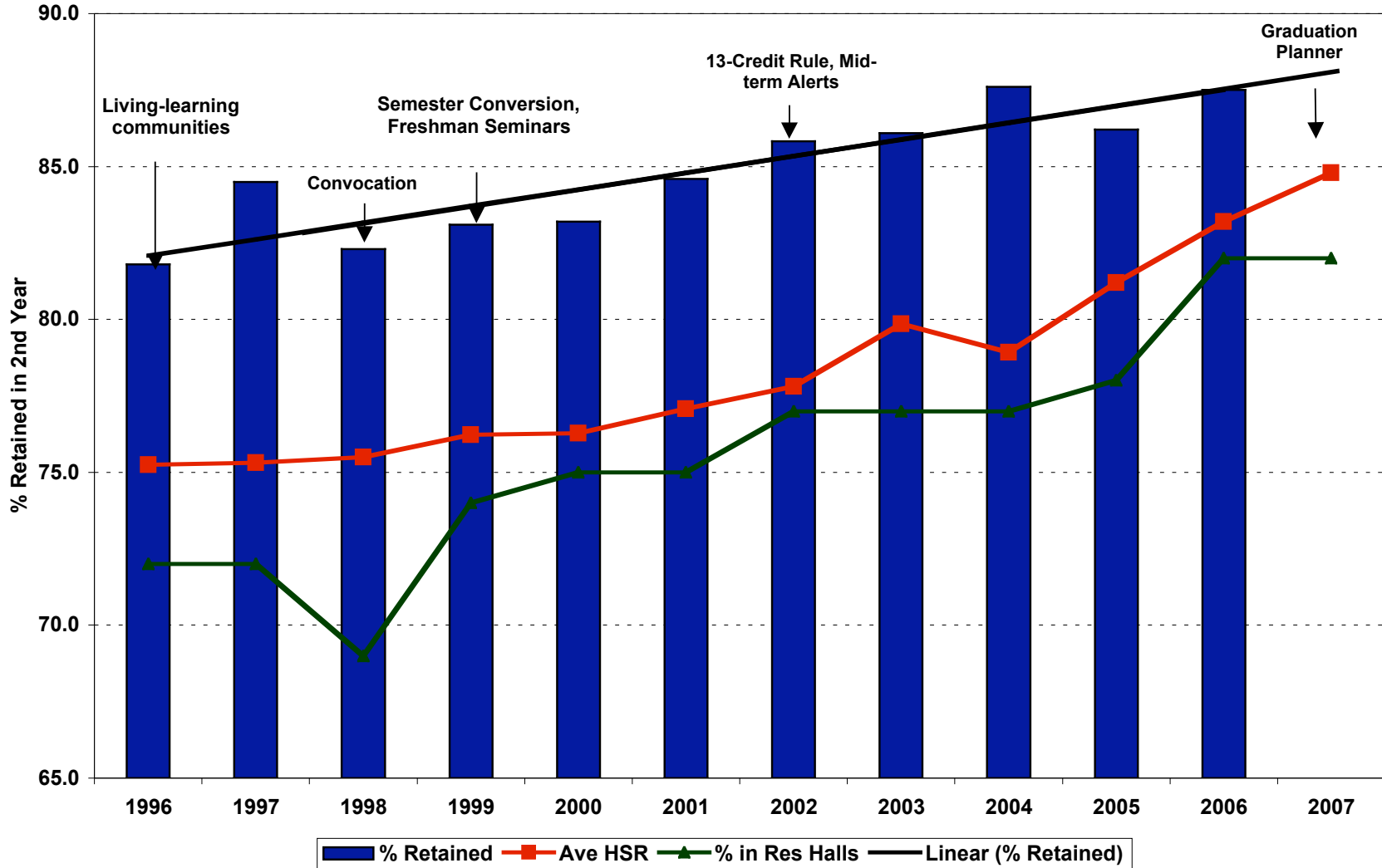
Data compiled by Orientation First-Year Programs

Measuring Goals in a Policy and Investment Context

**Board policies and institutional investments impact
institutional goals: the example of student retention**



First Year Retention of Twin Cities Campus Fall NHS Cohorts By Average High School Rank Percentage, Percentage in Residence Halls, and Program Initiation Milestones

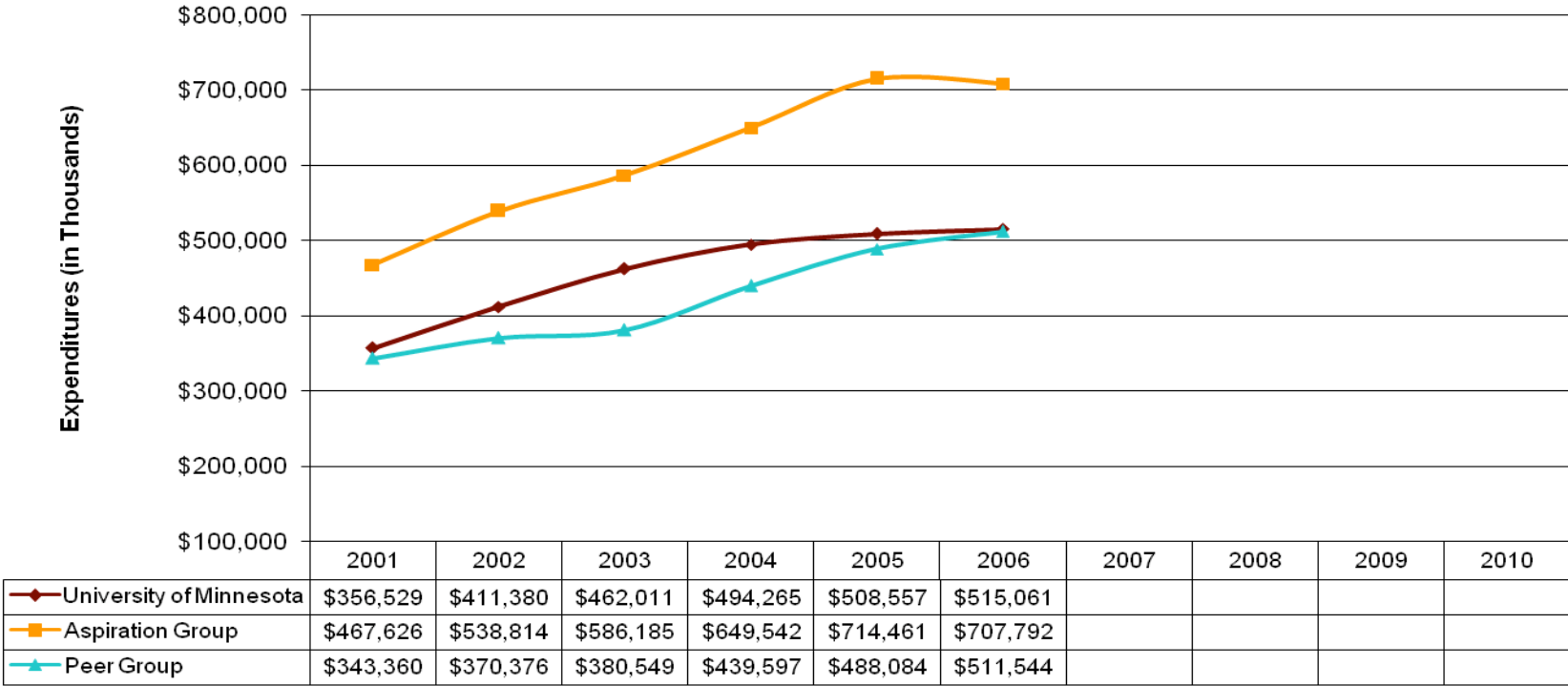


Trend Analysis and Benchmarking



Trend Analysis

**Total Research Expenditures (2002-2006):
 University of Minnesota, Aspiration Group, Peer Group**



Benchmarking

NSF Research Support Category	UMN Research Expenditures	UMN Rank among 17 “peers”	#1 Research Expenditures
Federally Sponsored Research	\$308 Million	10th	\$625 Million (U Washington)
State & Local Government Sponsored Research	\$50 Million	4th	\$80 Million (U Florida)
Institutional Research Support	\$70 Million	13th	\$210 Million (U Wisconsin)
Industry Sponsored Research	\$22 Million	12th	\$86 Million (Penn State U)
All Other Sources	\$76 Million	3rd	\$123 Million (UCLA)

What's Next?

The Example of Facilities. Facility performance can be separated into three criteria:

- Condition
 - Utilization
 - Functionality
- 

The Example of Facilities

Facility-mission alignment: Develop metric(s) focusing on the relationship capital projects have to achieving the University's desired strategic positioning outcomes

Strategic measure: Determines how critical a particular capital project is to strategic positioning

Operational measure: Measure a facility's readiness to perform goals established by strategic positioning

The two measures generate a *mission-alignment measure*, which is a function of the two measures above assigned to each facility

The combination *reduces decision-making risk* by using both a strategic and operational perspective to link mission importance of particular facilities



CHANGE DRIVERS		
Reduced Space Use on Campus	Changed Use Within Same Space Envelope	Increased Space Use
Increased efficiency – extended teaching hours	Increased faculty, students, and staff numbers	
Increased distance learning/IT usage	New teaching methods and paradigms	New research fields and specialized facilities
Backroom services off campus	Lifelong learning requiring new space mix	Enhanced community use of facilities/new access and safety demands
Increased student/staff ratios	Move to higher value activities	Reduced student/staff ratios
Workplace-based learning	Changed approached to library use	Pressure for higher quality facilities
Space redesign/restructuring of functions		New central infrastructure demands
Changed subject requirements		

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