

Variations in the Impact of Institutional Research Offices in Data-Driven Management

An iceberg floating in the ocean. The tip of the iceberg, which is visible above the water, is relatively small and jagged. The much larger part of the iceberg is submerged below the water surface, illustrating the concept of hidden or unobserved data.

Lawrence J. Redlinger and Sharon Etheredge
The University of Texas at Dallas
Presented at AIR 2005
May 30, 2005

THE TIP OF THE IR ICEBERG IS.....THE TIP!

Our purpose is to discuss the structural conditions and processes by which IR can enable a “data-driven” perspective given its location within a college or university.

While data accuracy is paramount to credibility, examination of which data streams have elevated importance tell IR researchers much about their organizations.

Moreover, every data system and the reports that emanate from them have hidden and unquestioned assumptions and policy emphasis built into their design.

What we measure has major effects on how we sense the environment. Which data streams an institution elevates in importance for making choices over time is a neglected but an extremely important area for researchers interested in organizational decision-making and institutional research.

Data Driven Management is:

- Participation in the framing of the question;
- Defining relevant methodologies;
- Preparation of analyses and scenarios;
- Active participation in the decision-making process;
- Formative and summative evaluations of implementation and impact.

An Example of what Data Driven Management is not:

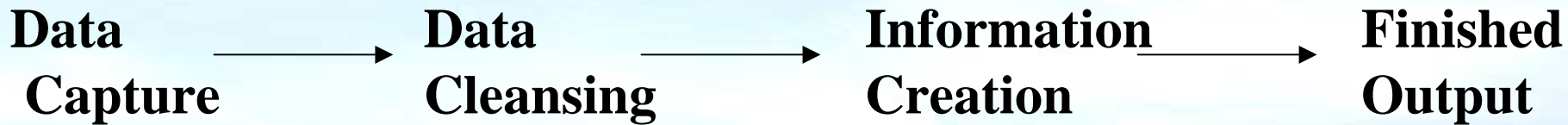
IR data is used as a “decision support.” I.e. the decision has already been made; IR is to provide the legitimizing data, to delimit the data to fit the decision as opposed to influence the process by which the decision is made.

Part of the Mass of the IR ICEBERG are

Caveat! Every data system and the reports that emanate from them have hidden and unquestioned assumptions and policy emphasis built into their design.

- 1. Transactional data systems. Designed to impose structure on a well-defined process -- such as registration, or graduation. Even though these applications are source specific and detailed-oriented, they have within them programming decisions (embedded policy) that impact data storage, calculations and output.**
- 2. Input-Output “snapshot” reporting systems which generate descriptive statistics. (E.g., THECB reports) Attempts to institute Operational Data Stores, etc... are efforts to reduce the “age” of the data.**
- 3. University Intelligence Systems—adaptive to what decision-makers WILL need, mission critical.**

Data Accuracy & Output Cycles



**Mainframe Base
Systems: SIS
HRS; FRS**

**Middleware
FOCUS & SAS**

**PC (Access, Excel,
& PC SAS)**

Architecture Issues
System Navigation Issues
Data Representation Issues
Security & Access Issues

Cleansing
Filtering
System Knowledge
Initial Output &
Packaging

Final Packaging
Presentation
Easy, widely used
format

Data Capture

110 Academic Program Maintenance Student, Joe

Screen: ___ SID: 999999999 Course: _____ Term: _____

UTD - MAIN

MATRICULATION HISTORY

Seq Acad Program Cls Car Ent Exit
 1 SS PHD PAFF PHD GR 04F 05S
 2 SS PHD POEC PHD GR 00S 04U
 3 SS MPA MPA MT GR 94F 96S
 4 GS BA IS SR UG 92F 94S
 5 SS BA GOVT JR UG 92S 92S
 6

MATRICULATION RECORD

Col: SS School of Social Sciences
 Deg: PHD Doctor of Philosophy
 Maj: POEC Political Economy
 Class: PHD Class Rule: PH Residency: R
 Career: GR Grade Rule: GR G Level: G
 Prev Schl: 1009741 University of Texas at Dal
 TASP Stat: PT TSI/TASP Obligation Maj Typ:

Term/Date Action/Reason
 Entry: 00S Y GR Graduate
 Exit: 04U EP End of Program

Final:

Exp Rtn Leave: Degree Ca
 Exp Grad Term: 05S Deg Ckout
 Deg Ckout Term: Degree Awarded: Delete:
 CBM Grad Rptg:

4-© 1 OS390 xxx.xxx.xxx.xx TCP496 4/10

206 Admission Decision

Student, Joe

Screen: ___ SID: 999999999 Application#: 1 Test ID: _____

Admiss Rep: SS	Col Deg	Maj Lvl	Min Pgm	Req	Class Rule	Adm Stat	Refer	Rsn	PGI	
Preferred -	SS PHD	POEC G			PHD GR	CO	04-11-02	TC		
Alternate -										
Admit to -	SS PHD	POEC G			PHD GR	CC GR	04-10-02			
04F										
Appl Term: 02F	Rpt Flg 21:	Appl Fee Stat: P					Last Letter: 01-06-99 1			
Exit Term: 07S	Rpt Flg 22:	Appl Fee Rcvd:					Profile: Y			
Time Stat: F	Rpt Flg 23:	Fee Rcvd Date: 04-04-2002					Label: A			
Resident: R	Rpt Flg 24:	Tuit Deposit: TC					Deposit Date: 04-04-2002			
Housing: O	Rpt Flg 25:	Web Type: Web Stat:					Returned:			
TOEFL Req'd: N	Rpt Flg 26:	Deposit Source: COPY								

Delete:

REQUIRED TEST SCORES
 GRE VERB 610 QUAN 680 TOT 1290 ANAL 600 WRIT

Appl Date: 04-04-2002

Initial Admit Date: 04-10-2002

Purge Flag: Y

4-© 1 OS390 xxx.xxx.xxx.xx TCP496

4/10

Data Cleansing

Initial Output & Packaging

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Dallas TX77777 US PL 2TOEFL20031001O 0 0 0 233 0 0 0 0 .IN
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. 4GREWA20031223T 25 0 0 0 0 0 0 0 .IN
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Grand Cooooo LA77777 US555-555-5555 P 999990 0 .00 0IN
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. 2SAT 20010101O 420 530 950 0 0 0 0 0 .AD
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Weatherm Dr Richardson TX77777-777US555-555-5555 R
. 460030 0Y .00 0AD 101019520040924LT
xxxxxxxx. MGTA BS .NRFR SRFTCC 05S10010101TF .00 .00 29602 Liiii Fairway Dr
Rowlett TX77777 US PL .AD .20040924LT
  
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“E-Print” Output File

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DATE RUN 09/20/04 University of Texas at Dallas
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TIME RUN 12:10:10 STUDENT INFORMATION SYSTEM
PROGRAM ID MBT002

PAGE 1
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1 03 02 02 02 Cgggggg M 19830127 6 745 05 02 05 1 13 06
2 00 02 01 01 Hkkkk F 19831125 6 734 05 02 05 1 03 13
1 01 03 01 04 Nnnnnn M 19860123 1 330 05 01 07 1 08 06
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0 15 00 01 04 Aaaa M 19860925 1 227 05 01 05 1 06 08
1 03 03 01 05
000000011 Ddddd
0 12 00 01 03
  
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Information Creation and Final Output

Applications for Fall 2004 as of August 30, 2004

Student Classification	Total Applied	Admitted	Complete	Incomplete	Rejected	Withdrawn
Freshmen	4,923	2,725	5	858	1,335	0
Sophomore	1,289	957	3	200	129	0
Junior	1,317	1,013	10	233	61	0
Senior	422	302	6	96	18	0
Total Undergraduate	7,951	4,997	24	1,387	1,543	0
Non-Degree Seeking	603	525	6	52	20	0
Master's	2,658	1,731	20	289	618	0
Doctoral	808	452	16	138	202	0
Total Graduate	4,069	2,708	42	479	840	0
University Total	12,020	7,705	66	1,866	2,383	0

Application Tracking for Fall 2004 from This Time Last Year to August 30, 2004

Student Classification	Applied This Time Last Year	Applied as of 08-30	% Difference	Admitted This Time Last Year	Admitted as of 08-30	% Difference
Freshmen	5,434	4,923	-9.40%	2,658	2,725	+2.52%
Sophomore	1,302	1,289	-1.00%	895	957	+6.93%
Junior	1,384	1,317	-4.84%	1,070	1,013	-5.33%
Senior	487	422	-13.35%	329	302	-8.21%
Total Undergraduate	8,607	7,951	-7.62%	4,952	4,997	+0.91%
Non-Degree Seeking	758	603	-20.45%	575	525	-8.70%
Master's	3,248	2,658	-18.17%	2,021	1,731	-14.35%
Doctoral	977	808	-17.30%	484	452	-6.61%
Total Graduate	4,983	4,069	-18.34%	3,080	2,708	-12.08%
University Total	13,590	12,020	-11.55%	8,032	7,705	-4.07%

Instant & Active Wide Dissemination

September 8, 2004	Freshmen (FR)	Sophomore (SO)	Junior (JR)	Senior (SR)	Graduate Non-Degree (GRS)	Master's (MT)	Master's (GM)	Master's (GX)	Master's (PHM)	Doctoral (PHD)	Doctoral (PHN)	Doctoral (PHQ)	Doctoral (PHU)	Doctoral (PHX)	Total	%
Arts & Humanities	116	126	258	241	36	121	53	12	0	149	12	0	0	1	1,125	7.9%
Behavioral & Brain Sci.	104	117	308	278	24	130	74	33	23	76	14	1	0	0	1,182	8.3%
EE & CS	453	249	474	655	116	755	15	2	20	205	5	6	0	0	2,955	20.7%
Exec. Prog. in MGT	0	0	0	0	5	136	0	0	0	0	0	0	0	0	141	1.0%
Graduate Studies	0	0	0	0	159	0	0	0	0	0	0	0	0	0	159	1.1%
General Studies	20	70	310	403	129	49	0	0	0	0	0	0	0	0	981	6.9%
GS2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Human Development	0	2	1	0	0	1	0	0	0	3	1	0	0	0	8	0.1%
Management	218	285	878	886	136	1,746	0	0	22	66	2	0	1	0	4,240	29.7%
MG2 - MEDM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	0.0%
MG3 - EMBA	0	0	0	0	0	80	0	0	0	0	0	0	0	0	80	0.6%
Nat. Sci. & Math	324	205	316	404	73	149	44	19	52	115	8	0	0	0	1,709	12.0%
Social Sciences	97	134	367	237	50	134	0	0	29	105	6	30	1	0	1,190	8.3%
Undergrad. Studies	266	131	71	31	0	0	0	0	0	0	0	0	0	0	499	3.5%
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total	1,598	1,319	2,983	3,135	729	3,302	186	66	146	719	48	37	2	1	14,271	100.0%
Percent	11.20%	9.24%	20.90%	21.97%	5.11%	23.14%	1.30%	0.46%	1.02%	5.04%	0.34%	0.26%	0.01%	0.01%		
	% Lower Div.	20.44%	% U. D.	42.87%	5.11%			% Masters	25.93%				% PHD	5.65%		

September 10, 2003	Freshmen (FR)	Sophomore (SO)	Junior (JR)	Senior (SR)	Graduate Non-Degree (GRS)	Master's (MT)	Master's (GM)	Master's (GX)	Master's (PHM)	Doctoral (PHD)	Doctoral (PHN)	Doctoral (PHQ)	Doctoral (PHU)	Doctoral (PHX)	Total	%
Arts & Humanities	66	83	218	194	34	82	64	9	1	115	15	1	0	1	883	6.4%
Behavioral & Brain Sci.	5	15	17	78	9	21	4	15	0	6	0	1	0	0	171	1.2%
EE & CS	460	281	553	735	137	832	102	22	25	220	13	4	0	0	3,384	24.4%
Exec. Prog. in MGT	0	0	0	0	5	135	0	0	0	0	0	0	0	0	140	1.0%
Graduate Studies	0	0	0	0	180	0	0	0	0	0	0	0	0	0	180	1.3%
General Studies	27	68	317	316	169	58	0	0	0	0	0	0	0	0	955	6.9%
GS2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Human Development	85	111	261	153	15	86	62	27	12	65	13	5	0	0	895	6.4%
Management	247	308	873	835	182	1,651	0	0	33	55	2	2	2	0	4,190	30.2%
MG2 - MEDM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0%
MG3 - EMBA	0	0	0	0	0	65	0	0	0	0	0	0	0	0	65	0.5%
Nat. Sci. & Math	281	182	333	314	71	93	34	19	47	99	11	6	1	0	1,491	10.7%
Social Sciences	93	130	276	196	56	153	0	0	9	56	4	17	0	0	990	7.1%
Undergrad. Studies	312	110	90	28	0	0	0	0	0	0	0	0	0	0	540	3.9%
Total	1,576	1,288	2,938	2,849	858	3,177	266	92	127	616	58	36	3	1	13,885	100.0%
Percent	11.35%	9.28%	21.16%	20.52%	6.18%	22.88%	1.92%	0.66%	0.91%	4.44%	0.42%	0.26%	0.02%	0.01%		
	% Lower Div.	20.63%	% U. D.	41.68%	6.18%			% Masters	26.37%				% PHD	5.14%		

MT = Terminal Master's
GM = Master's (Promotable)
GX = Master's (Promotion to PHD Pending)
PHM = Beginning Doctoral (Master's Funding)
PHD = Doctoral (Doctoral Funding)
PHN = Doctoral (Non-Funded)
PHQ = Doctoral (Funding category to be determined by Census Day)
PHU = Doctoral (Non-Funded, Fall 99 or later)
PHX = Doctoral (Unidentified Funding)

September 20, 2004	LOWER DIVISION HOURS	UPPER DIVISION HOURS	MASTER'S HOURS	DOCTORAL HOURS	Total	%
Arts & Humanities	13,326	5,981	1,518	950	21,775	15.01%
Behaviorial & Brain Sciences	3,107	7,393	2,985	731	14,216	9.80%
Eng. & Comp. Science	4,293	8,628	5,763	1,878	20,562	14.18%
General Studies	459	4,935	368	0	5,762	3.97%
Management	3,935	13,435	14,238	614	32,222	22.22%
Nat. Sci. & Math	20,263	8,982	1,902	1,212	32,359	22.31%
Physical Instruction	300	0	0	0	300	0.21%
Social Sciences	6,798	8,505	1,481	827	17,611	12.14%
Undergraduate Studies	208	0	0	0	208	0.14%
99	24	0	0	0	24	0.02%
Total	52,713	57,859	28,255	6,212	145,039	100.00%
Percent	36.34%	39.89%	19.48%	4.28%		

Compared to last year:

September 22, 2003	LOWER DIVISION HOURS	UPPER DIVISION HOURS	MASTER'S HOURS	DOCTORAL HOURS	Total	%
Arts & Humanities	12,623	4,981	1,230	879	19,713	14.17%
Behaviorial & Brain Sciences	2,501	6,576	2,468	766	12,311	8.85%
Eng. & Comp. Science	4,808	9,672	7,346	1,836	23,662	17.00%
General Studies	515	4,710	280	0	5,505	3.96%
Management	3,609	12,795	12,672	520	29,596	21.27%
Nat. Sci. & Math	19,775	7,615	2,724	1,069	31,183	22.41%
Physical Instruction	303	0	0	0	303	0.22%
Social Sciences	7,963	6,850	1,366	575	16,754	12.04%
Undergraduate Studies	124	0	0	0	124	0.09%
Total	52,221	53,199	28,086	5,645	139,151	100.00%
Percent	37.53%	38.23%	20.18%	4.06%		

**FOR THIS DATA TO HAVE ANY
IMPACT IT MUST BE WIDELY AND
ACTIVELY DISSEMINATED ACROSS
ALL STAKEHOLDERS.**

**IR MUST LINK THE DATA TO
STRATEGIC CONCERNS OF THE
INSTITUTION.**

DOES THIS DATA HAVE ANY IMPACT?

What colleagues have said to us:

We cleaned the data and made it error free. We used the same sophisticated methodological and statistical tools the faculty do. Well why don't the administrators and faculty accept our results and change their behaviors?

There are five partial answers:

1. Defined Employee working conditions (e.g. 44% of all faculty are covered under union contracts, Rhoades, 1998).
2. Administrators prefer policy-centered approaches and incremental budgeting.
3. There is considerable structural inertia and resistance to change.
4. There is a conflict in how stakeholders think about governance.
5. And fundamentally

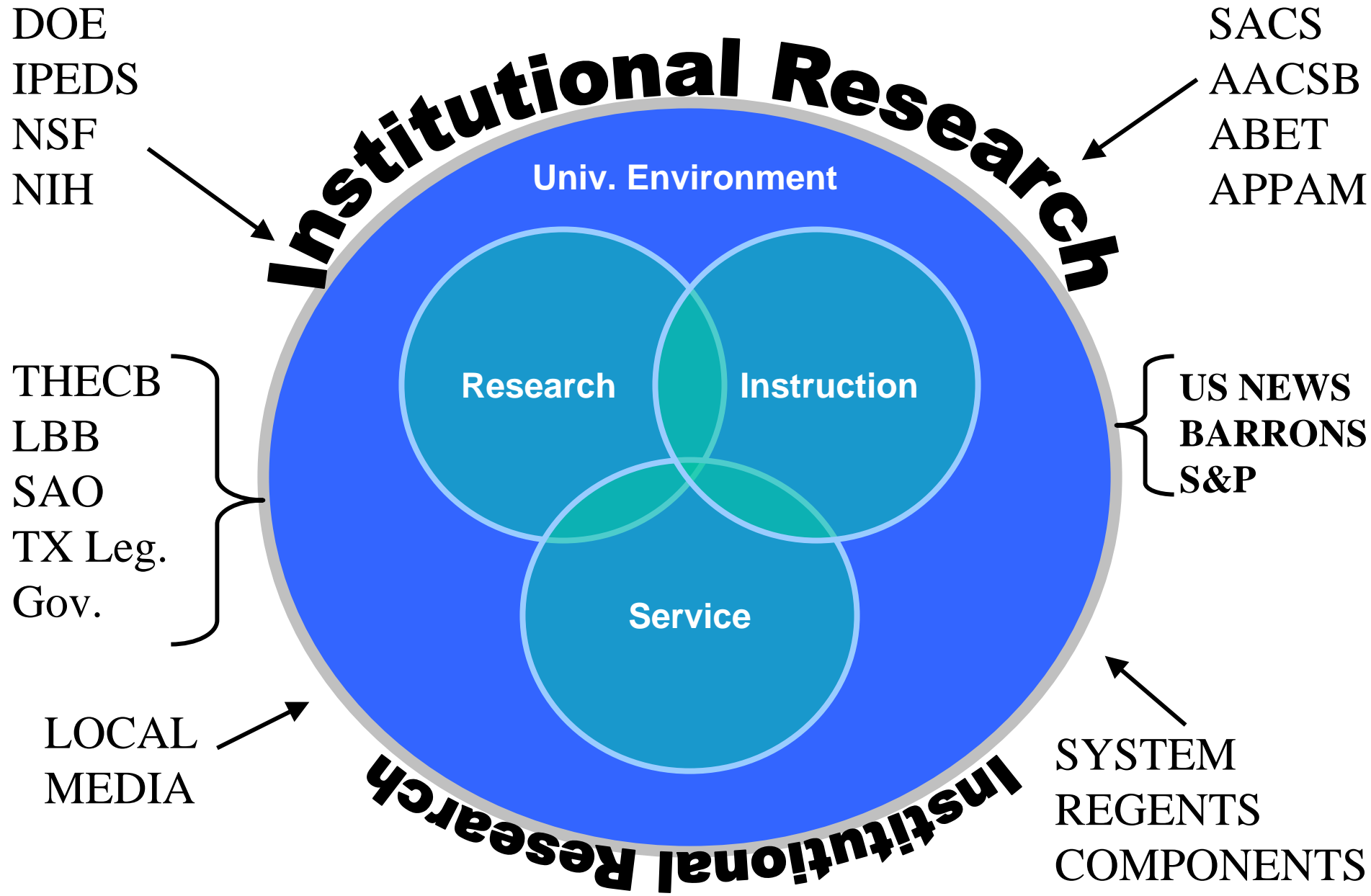


IR's most critical function is first:

Buffer the technical core from environmental regulatory agencies

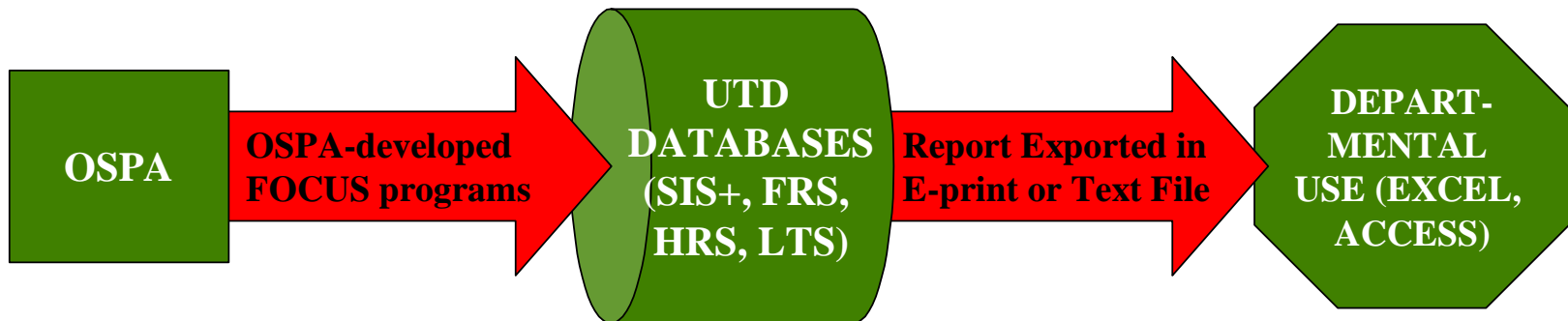
Secondarily providing data for internal consumption to (a) enable and (b) assess the technical core.

Buffering the Technical Core



Enabling The Technical Core: Example 1

WORK-PROCESS IMPROVEMENT AND PROGRAM SERVICES OSPA PROVIDES TO OTHER DEPARTMENTS



Departments currently served by OSPA developed programs:

Admissions Office (Admissions Data)

Provost Office (Distance Education Courses)

Enrollment Services (Admissions Data)

International Student Services (Student Data)

Registrar's Office (Student, Course, Distance Education and Facility Data)

Library (Enrollment per Course)

Financial Aid (Student Financial Aid)

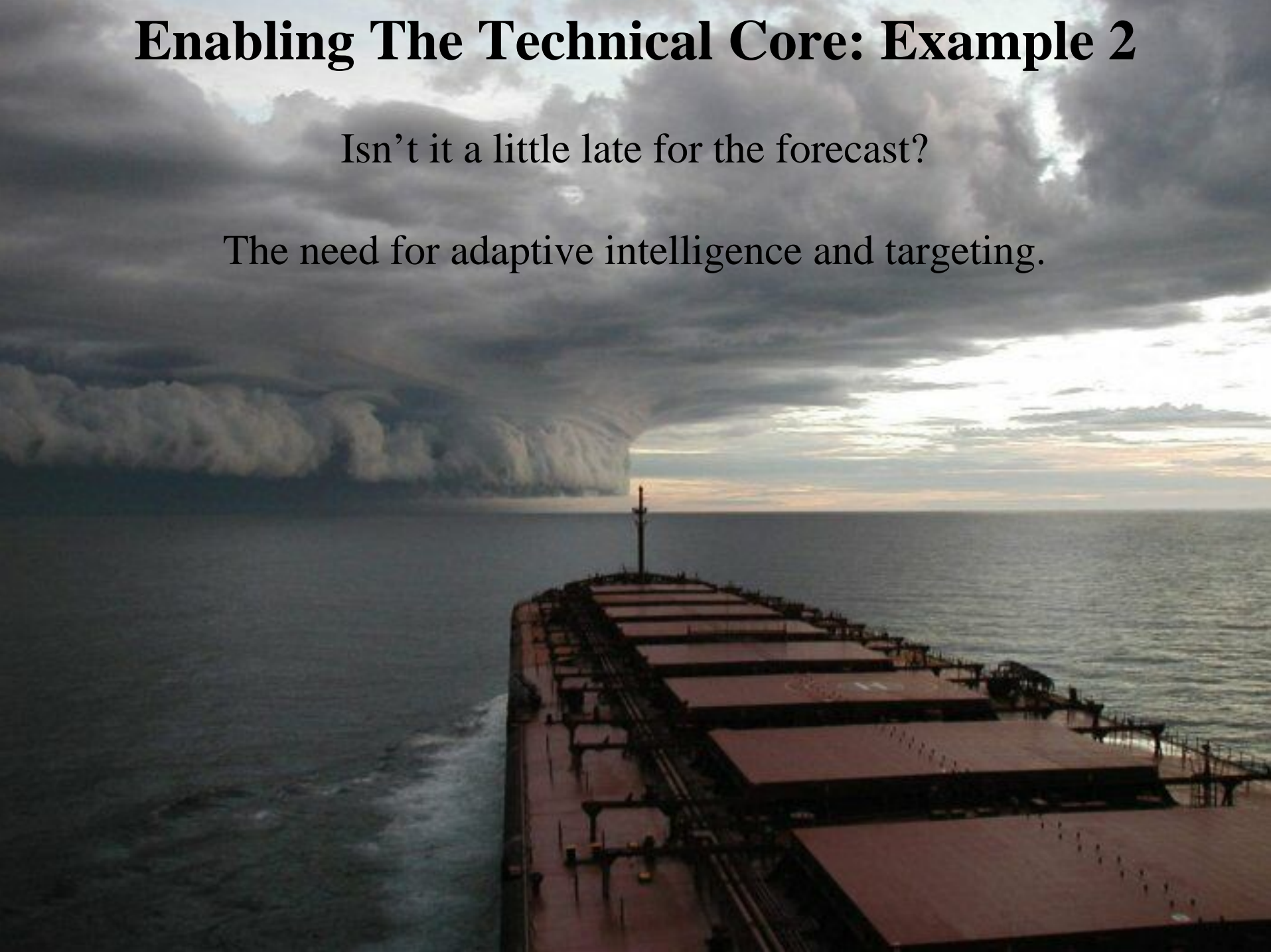
BBS (Student Psychology Exam Credits)

ECS (Enrollment Data for ECS Advisors)

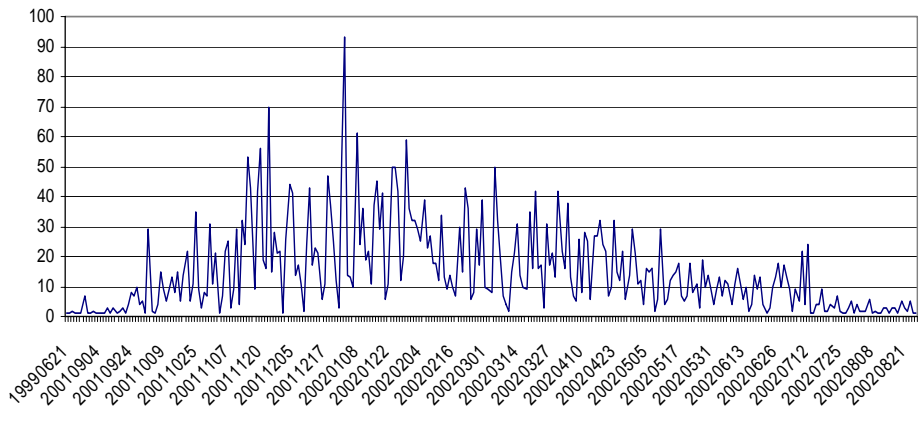
Enabling The Technical Core: Example 2

Isn't it a little late for the forecast?

The need for adaptive intelligence and targeting.



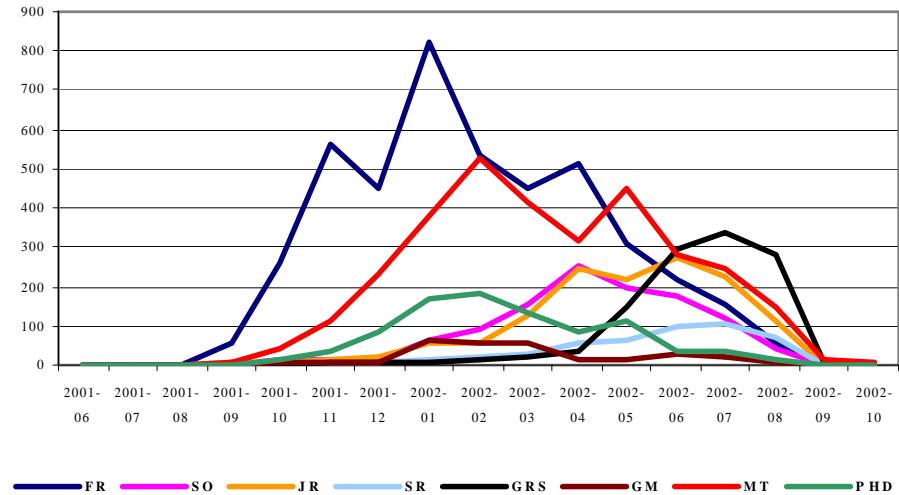
Count of Freshman Applications Fall



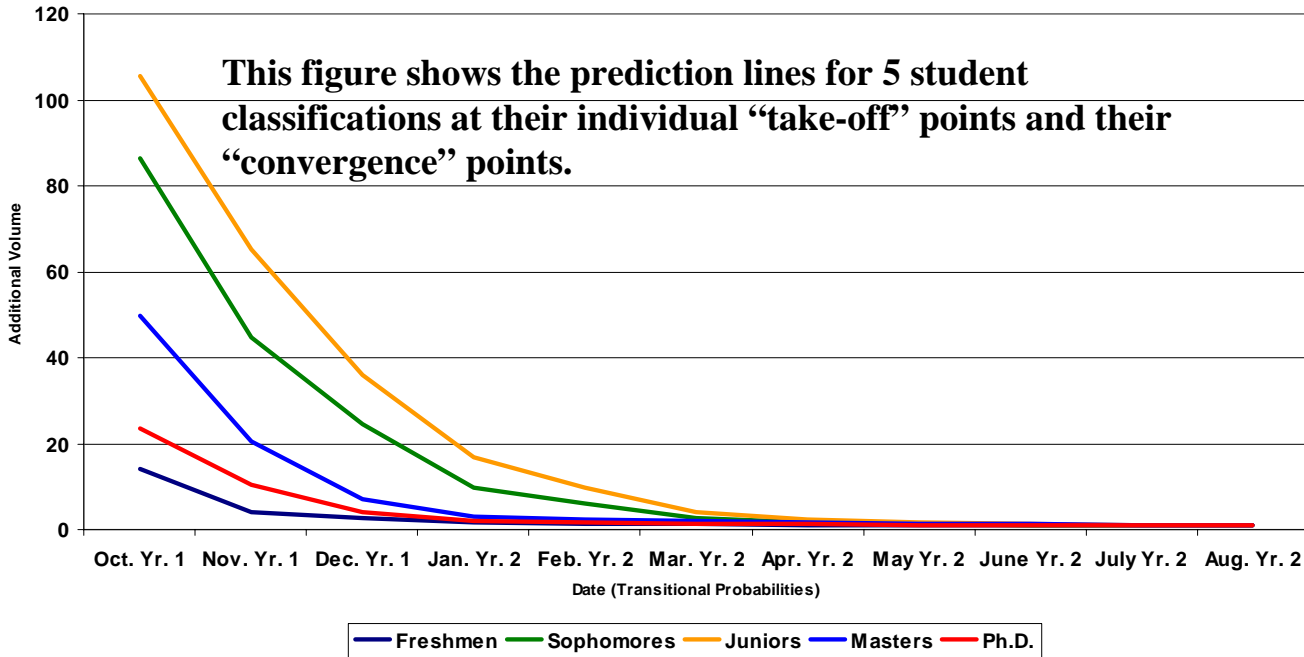
Depicting Activity in Meaningful Displays

Noisy Data to
Smoothed Trend lines

Applications by Student Classification

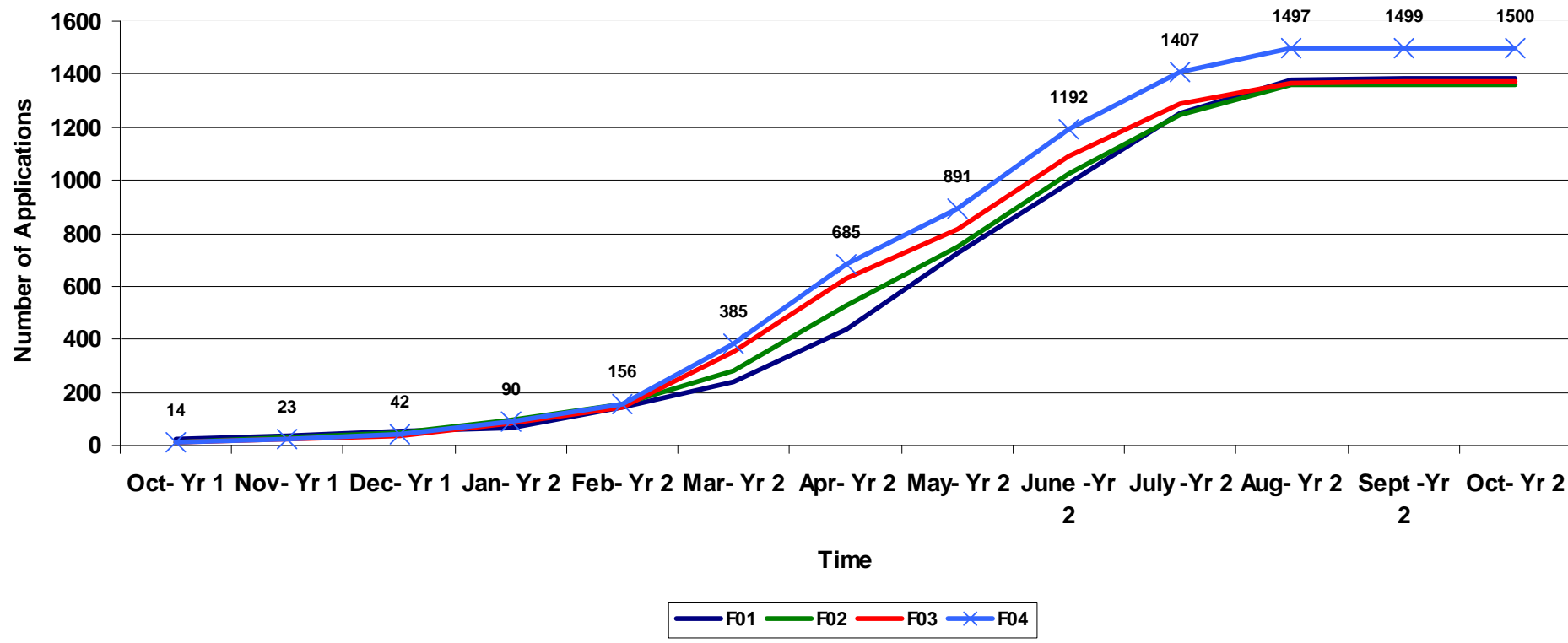


Prediction Lines for Selected Applications by Student Classifications, Fall Semester 2003



The data drives and organizes work activities to achieve Enrollment targets

Cumulative Junior Applications For Fall Semesters 2001,2002, 2003 and F04 Target



Assessing the Technical Core

Institutional Research

Facilities analyses
Space utilization
Renovation tracking
Master plan

Univ. Environment

Faculty:
R&D
Achievements
Funding Trends
Publications
Workload

Research

Instruction

Student satisfaction
Retention Analyses
Teaching Assessment
Completions Analyses
Course Scheduling &
Course Sequencing
Demand Analyses

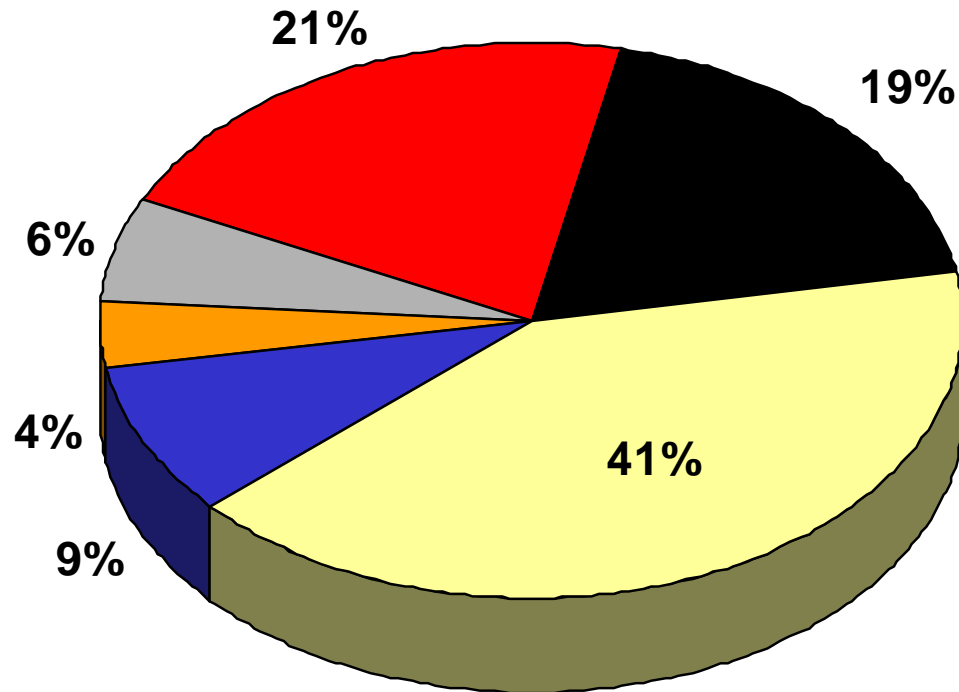
Service

Institutional Research

Location...makes a real difference



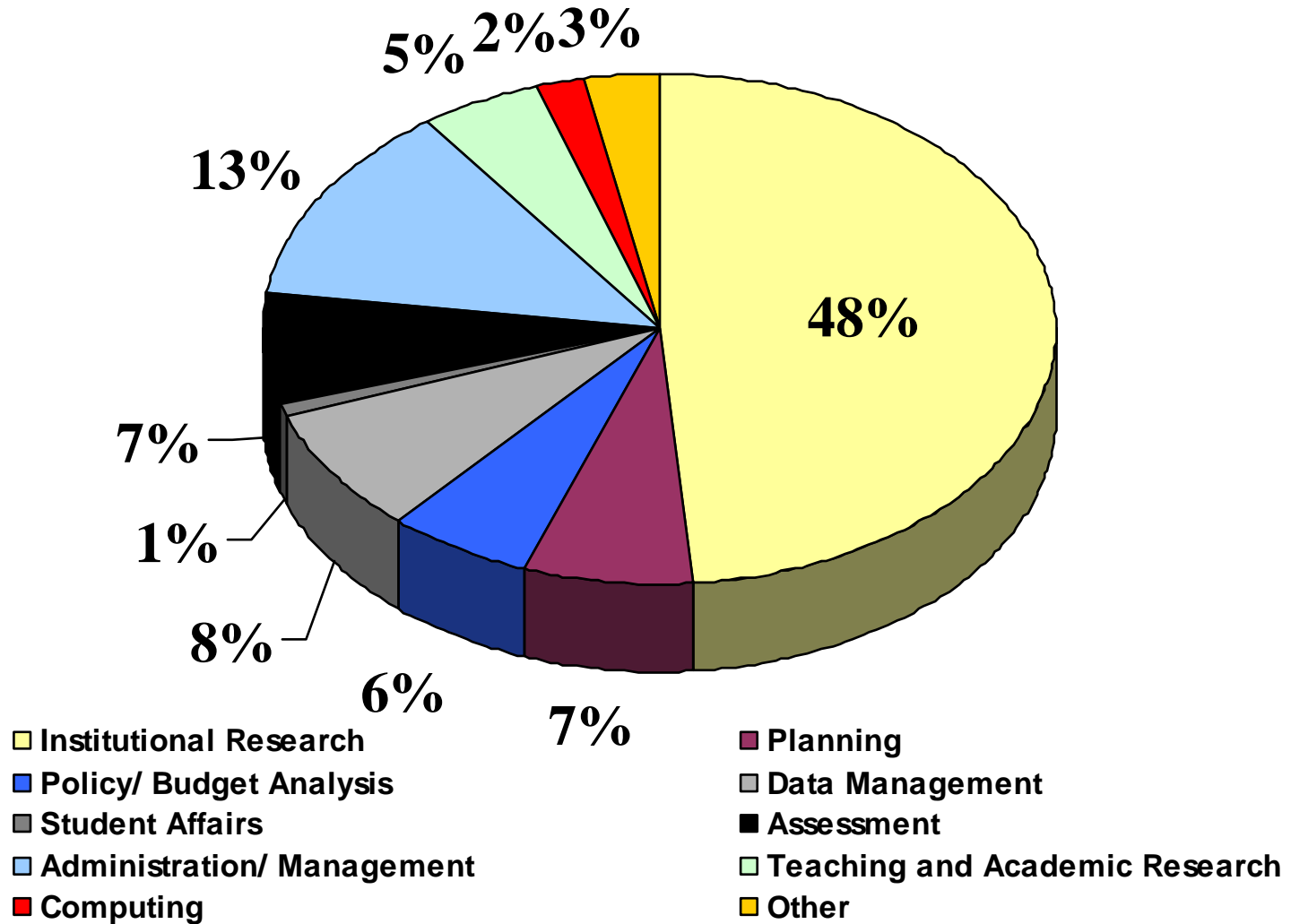
If you are employed by an educational institution, in which area is your position located?



- Academic Affairs
- Student Affairs
- Business Affairs
- Institutional Development
- President/ Chancellor
- Other

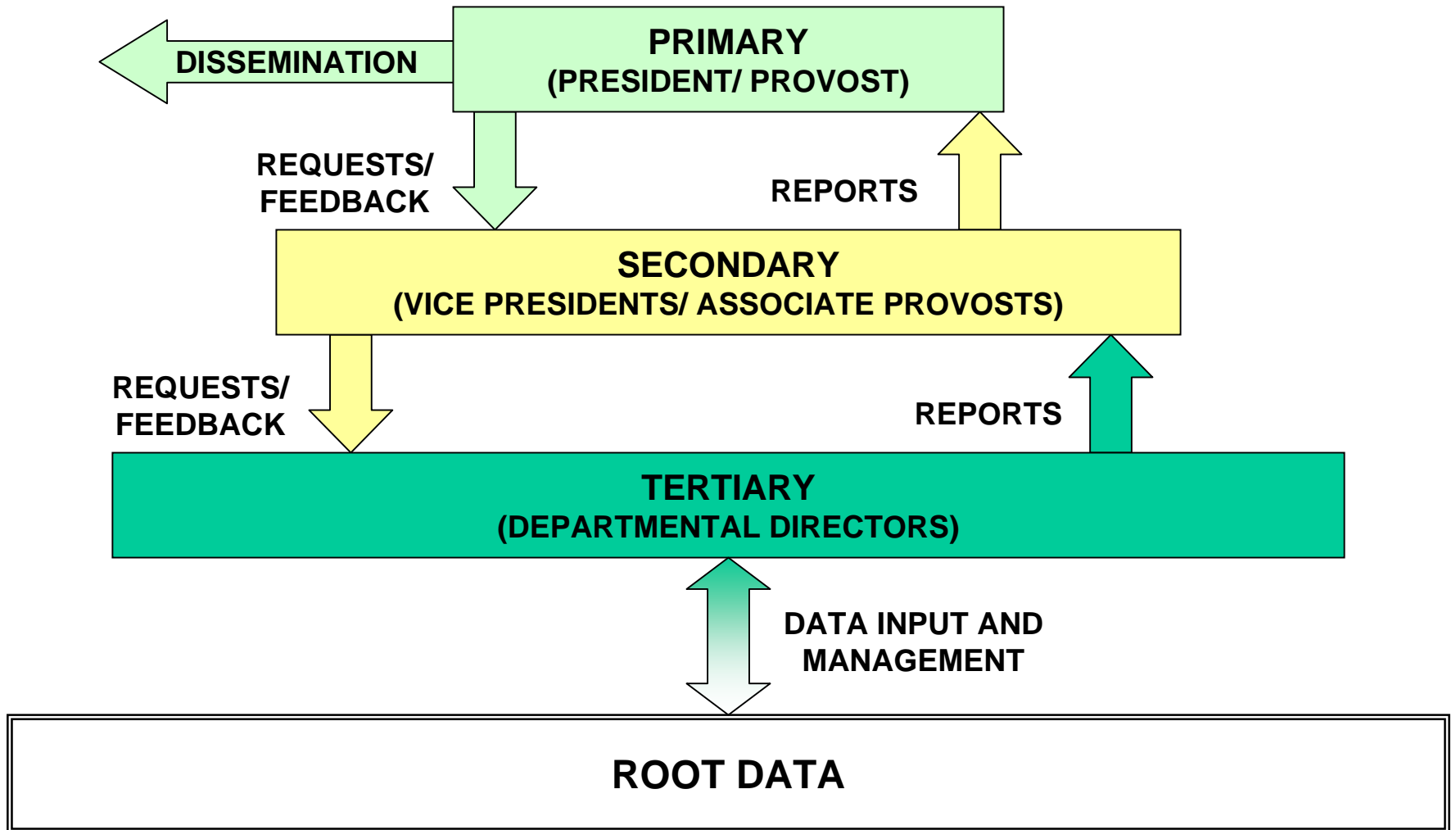
N = 812 129 missing

Of the tasks below, on which ONE do you spend the most time?



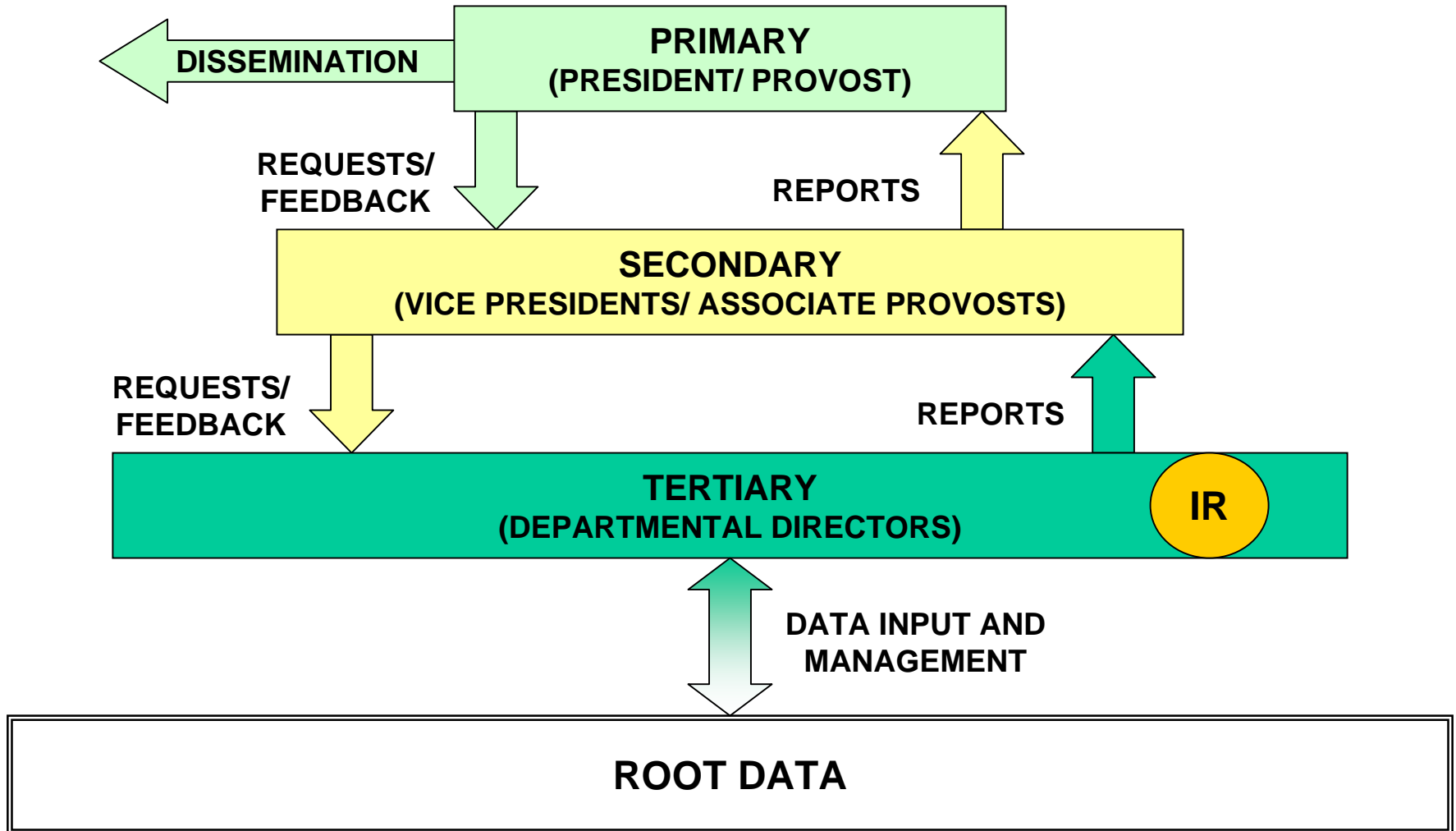
N = 850 91 missing

DATA FLOW AT TYPICAL UNIVERSITY



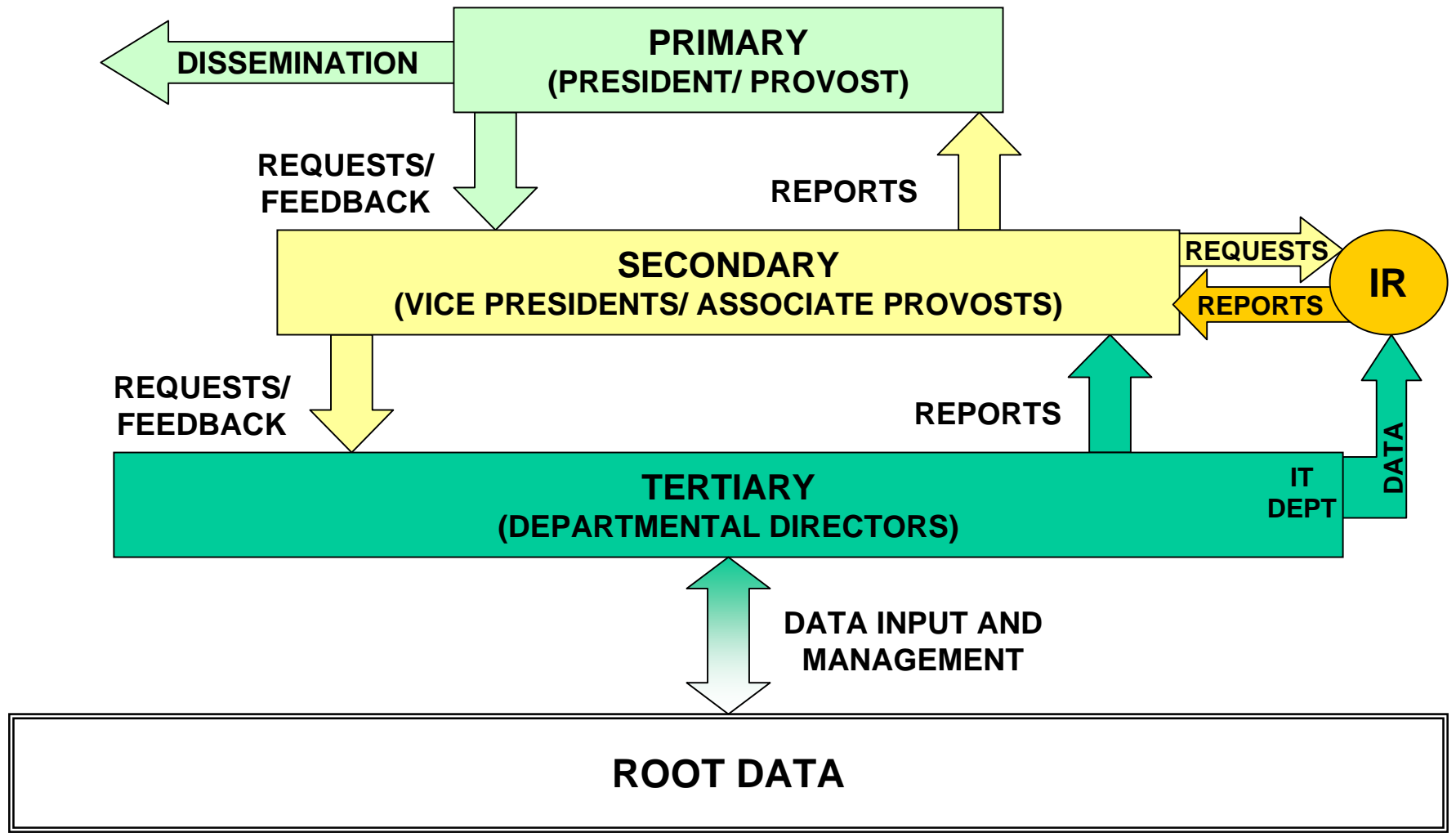
INSTITUTIONAL RESEARCH OFFICE – PASSIVE/ SUPPORTIVE MODEL

Responds Primarily to Needs of Immediate Supervisor



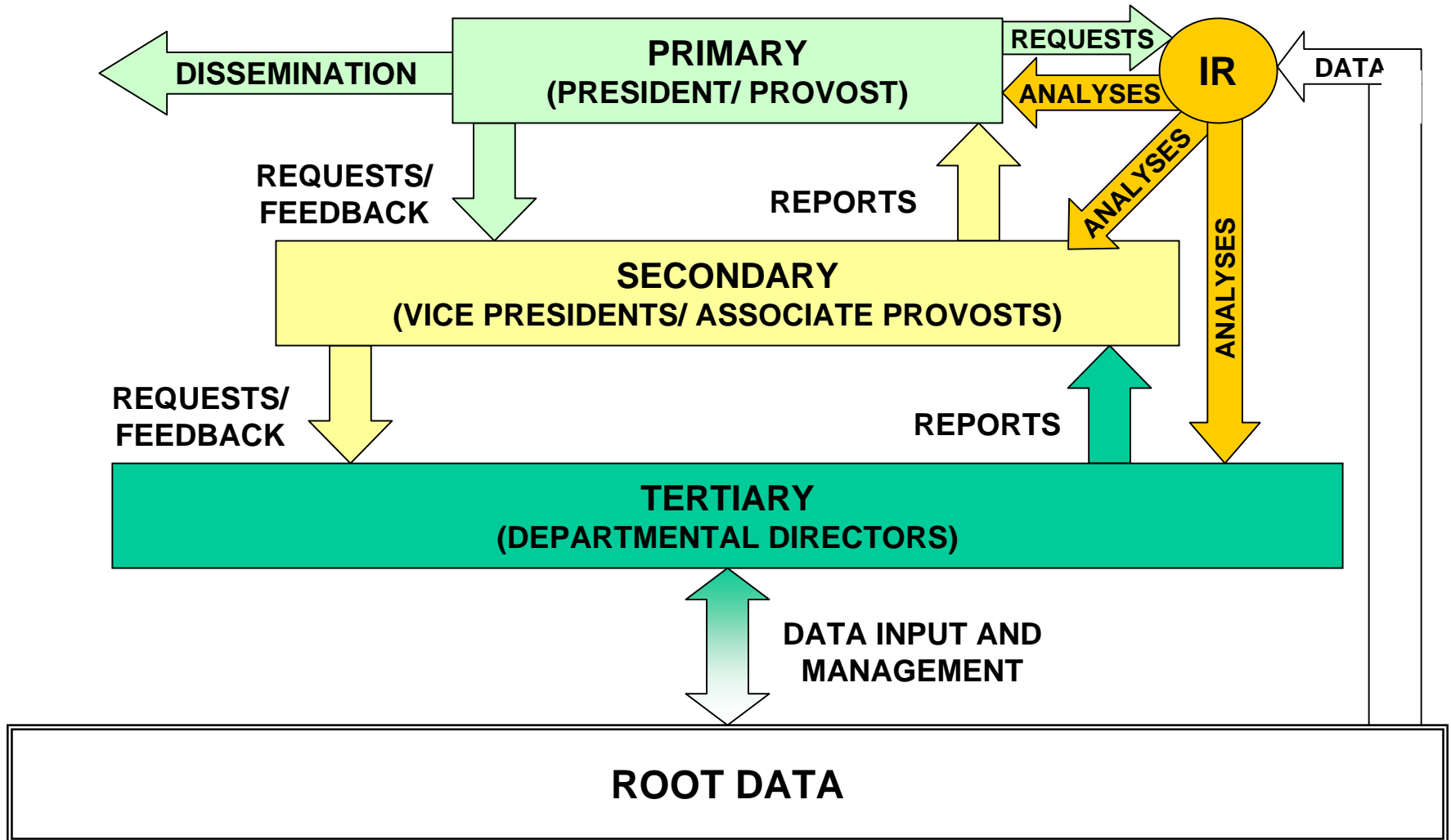
INSTITUTIONAL RESEARCH OFFICE – INTERACTIVE MODEL

Most Common Model: “Statistics Factory” for University



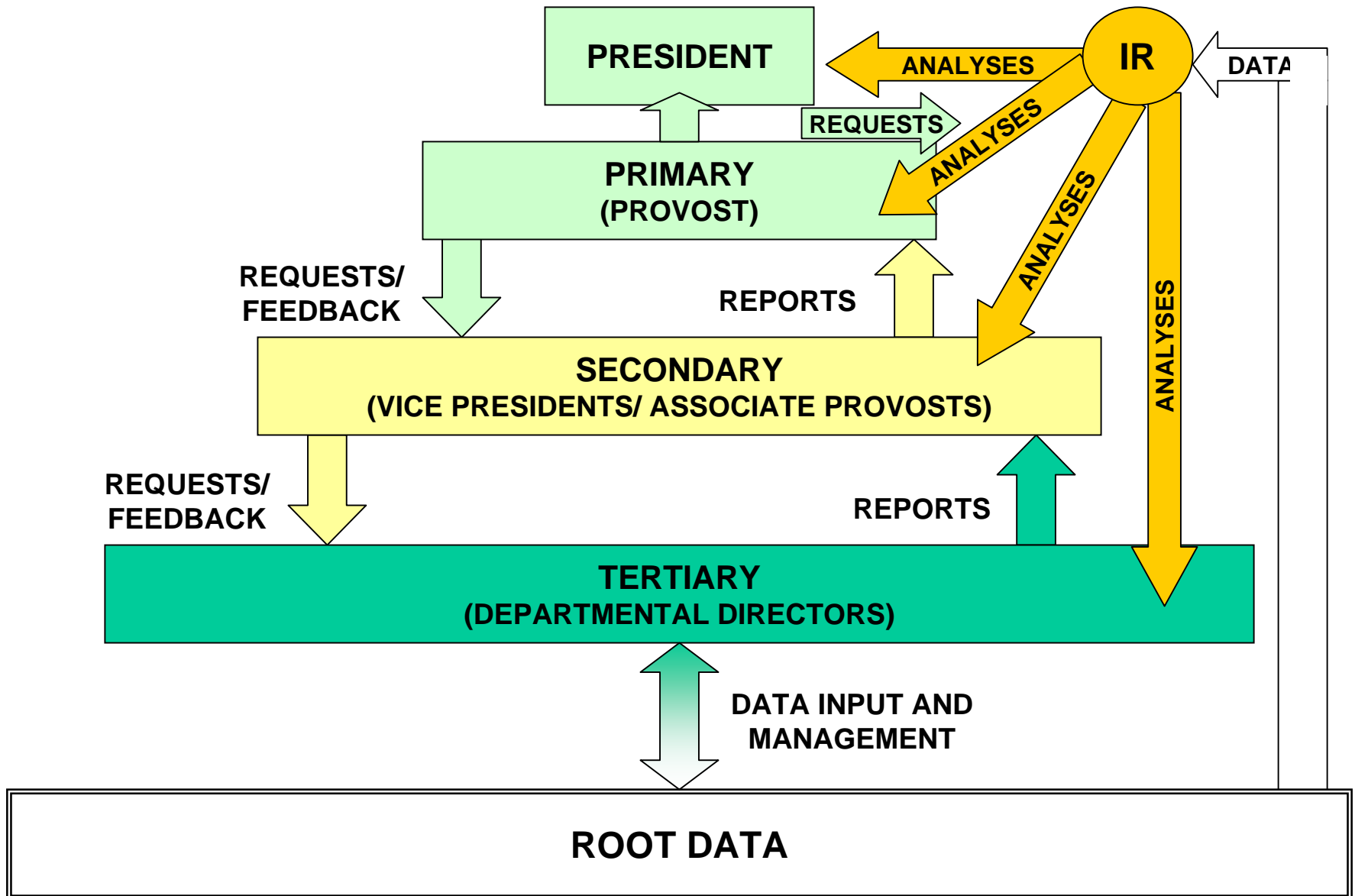
INSTITUTIONAL RESEARCH OFFICE – PROACTIVE MODEL

University's "Think Tank"



INSTITUTIONAL RESEARCH OFFICE

Strategy Driven Independence



Organizational Variables Influencing IR

“Institutional Power”

- **Communications flows** from IR upward and outward, to whom DII flows, and what these **clients** do with the information are important organizational conditions enhancing or limiting the impact of the office and its output.
- Conditioning the **placement** of IR in the organizational hierarchy, and the **bundles of functions** performed are **institutional characteristics** such as size, public-private, and age.
- The higher up in the **administrative hierarchy** the office is attached the greater the power
- The more **data flows** (e.g., student, faculty, financial, R&D) **aggregated by IR**, the greater the power
- The greater the **access to multiple data sets** the greater the power (research functions)
- The more **integrative** the office is in **providing intelligence** as opposed to data the greater the power.
- The more **exclusivity** of IR to data the greater the power. Conversely, **the more data providers** there are to senior management, the lesser the power of IR.

Organizational Variables Influencing IR

“Institutional Power”

- The **more transparent and distributed** the data and information are, the greater the power of IR. Conversely, the fewer the number of faculty/staff with access the less the power of IR.
- The greater the **power of the faculty** in running the institution the lower the power of IR.
- The more the **loci of organizational power** is distributed to academic units, the more decoupled the technical cores are from the central administration, the lower the power of IR.
- Conversely, the greater the power lodged in the **managerial and administrative culture** the more likely that IR will have more power.
- The greater the **perceived technical competence** of IR staff, the greater the power.
- The **higher the demand for accountability** by external stakeholders, the great the power of IR.
- Collaterally, the closer the institution is to **important accreditation**, the higher the power of IR.

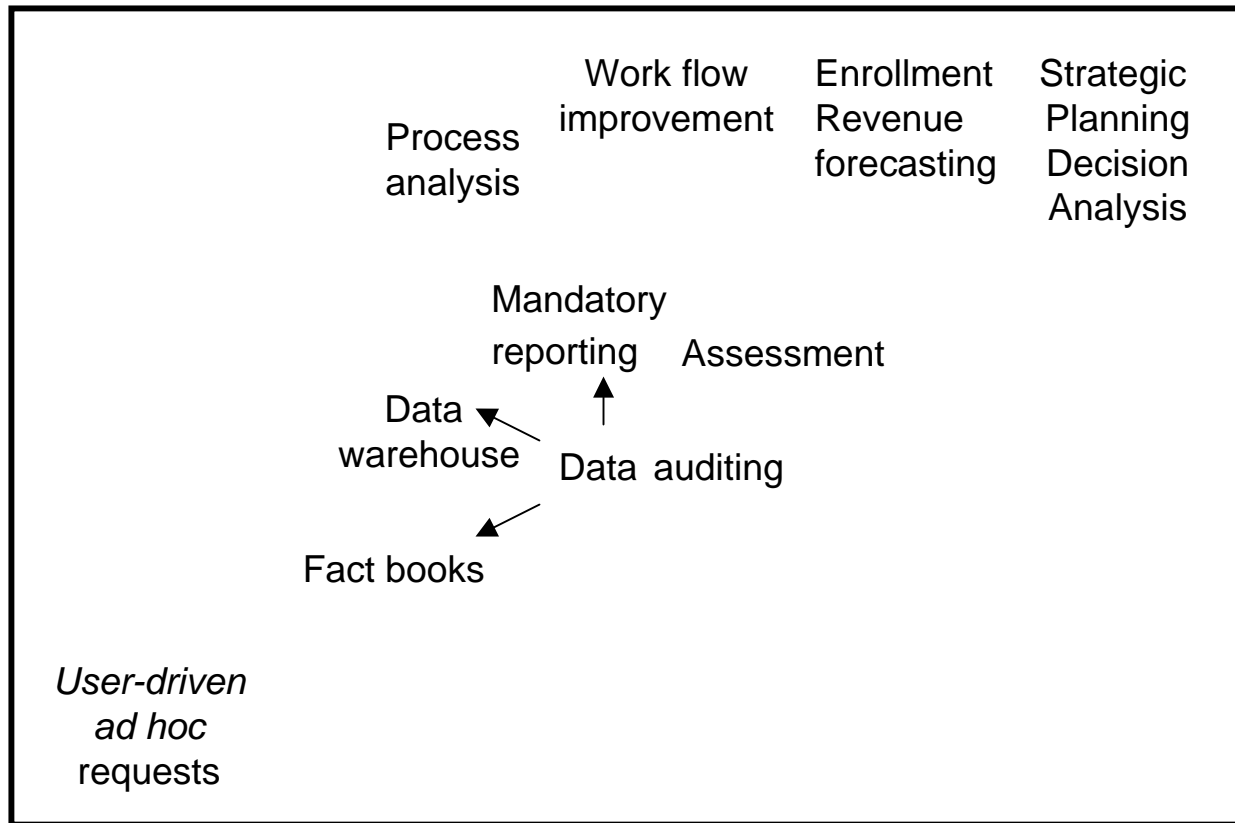
REPORTING STRUCTURE AND RESPONSIBILITIES OF VARIOUS INSTITUTIONAL RESEARCH OFFICES

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Primary
Access

Secondary
Access

Tertiary
Access



Passive

Supportive

Interactive

Proactive

PRIMARY FUNCTION(S)

PARADIGMATIC TENSIONS AND I.R.

Collegial

Managerial

Undergraduate students	Learners	Customers; credit hour generators
Graduate students	Apprentices	Employees
	Learners	Customers; “Employees who provide service for other customers (undergraduates)”
Faculty	Researchers and teachers	“Revenue maximizers and value creators”— production employees
	Tenured and on-track	“Contingent” jobbers, itinerants
Universities	Publicly supported good	Privatized “capitalized” business
	Learning centers	Managed professionals

AGREE WITH ME NOW:



*Ashleigh
Brilliant*

IT WILL SAVE SO MUCH TIME.

COLLEGIAL INSTITUTIONS: Idealized Type

1. Rely on tradition, precedent and informal power structures.
2. Faculty Driven Policies.
3. Emphasize equality of faculty standing, thoroughness of deliberation, consensus building, lengthy time frame for decision-making.
4. President “first among equals” who relies on expertise and relationships as opposed to coercion and rewards to bring about incremental change.
5. The external environment is sealed off from the internal, which tends toward being a closed system.
6. Relatively small in size and unlikely to have professional schools.
7. IR’s role: Buffer the Technical Core from the Outside

BUREAUCRATIC INSTITUTIONS: Idealized Type

1. Likely to be of mid-size, community college or state university.
2. Emphasis on job descriptions, reporting lines.
3. Partitioning of Authority. Delegation of administration.
4. Rational planning, equity, fairness, competency-based rewards are examples of idealized goals in such a system.
5. Friction between bureaucratic administrative controls and professional (faculty) governance.
6. Role of IR: buffering + measuring efficiencies, effectiveness, outcomes as defined by location in organization

Bureaucratic control may be more effective at institutions where fewer faculty have doctorates, have weak professional ties, and low expectations of involvement in decision-making (Birnbaum, 1988: 127).

From a managerial point of view IR should gather data to answer questions like:

- Do educational outcomes suffer when faculty teach a three course load versus a two course load?
- Do students exposed to a tenured faculty member learn more than a student exposed to a non-tenured member and/or a part time lecturer?
- Do educational outcomes suffer from instruction delivered by on line, on demand courses as opposed to classroom instruction?

From a faculty point of view, while such questions *may* be interesting, they challenge fundamental values of the academy.

THE TECHNICAL CORE OF THE UNIVERSITY

(carried out primarily by faculty)

Research

--involves tenured or tenure-track faculty, graduate students (although some undergraduates may be included) and granting agencies.

--may involve laboratories, cooperative work with colleagues outside the institution, specialized library materials, vivariums, data gathering work off-campus, and attached coursework.

The processes involved are complex, not uniform, and not predictable.

How much of the richness of these processes are captured by institutional research?

Service

--varies in scale, scope and importance to different institutions.

--the technologies involved can be continuing education, “workshops, consulting, extension centers, policy analyses, “out reach” and communications with community agencies.

THE TECHNICAL CORE OF THE UNIVERSITY

(carried out primarily by faculty)

Teaching --the process by which teachers teach and students learn with the implication that there are causal relationships between the two events with teaching being the initial, precursor event.

The teaching-learning process involves three essential steps:

1. Knowledge is discovered, acquired, captured through some course of action, method, search, research or procedure by the teacher
2. The teacher organizes the knowledge into transmittable packages and presents these packages in some prearranged and agreed upon format for processing.
3. The knowledge package is transmitted, the knowledge is shared; the learner “learns” the knowledge and is enriched (value-added).

FOUR LENSES THAT COMPRISE THE “HOW PEOPLE LEARN” FRAMEWORK

Assessing the Technical Core:

Four Research Areas for Data-Driven IR

Knowledge Centered: A careful analysis of what do we want people to know when they finish and the provision of foundational knowledge, skills and attitudes. How is curriculum connected together?

Learner Centered: How is what we teach connected to the strengths, interests and frames of learners? How do we help them learn about themselves as learners?

Assessment Centered: the provision of multiple opportunities for formative evaluation and revision and the provision of summative assessments aligned with knowledge-centered learning goals.

Community Centered: providing an environment where students feel safe asking questions, develop life long learning skills, learn to work collaboratively and learn to use appropriate technologies.

Lessons Learned:

The central questions

1. What data and information will most effectively support the stated objectives of the institution given the technical system and the characteristics of the environment?

2. How best to achieve the widest possible dissemination, accountability and actionable consequences?

Lessons Learned: Effects on Traditional Structures

- Data-driven management is an acid—cutting across traditional organizational lines and prerogatives.**
- As information becomes more distributed and outcomes more transparent, hierarchical and divisional barriers often become stressed.**
- When data as opposed to tradition, policy or politics is used to drive decisions, there often ensues a need for rethinking taken-for-granted areas of university life.**

Lessons Learned: Effects on Institutional Research

- 1. Data auditing, cleansing, passive reporting will continue to be the foci because these routines are essential to buffering the Technical core--the # 1 function of IR.**
- 2. Structural variables influence the degree to which an IR office can have any impact on the technical core of the university. IR is seen as an arm of the managerial culture unless IR actively involves faculty constituencies.**
- 3. Even so, internal impact is more likely in areas not threatening to the collegial value/behavior system (e.g., facilities management, admissions workflow improvements).**
- 4. Much of the most important information produced by IR will never make its way to the “Fact Book.”**

THE TIP OF THE IR ICEBERG IS.....THE TIP!

