From T-Squares & X-Acto Knives to Pivot Tables and Beyond:

Some Perspectives based on 25 Years of Institutional Research

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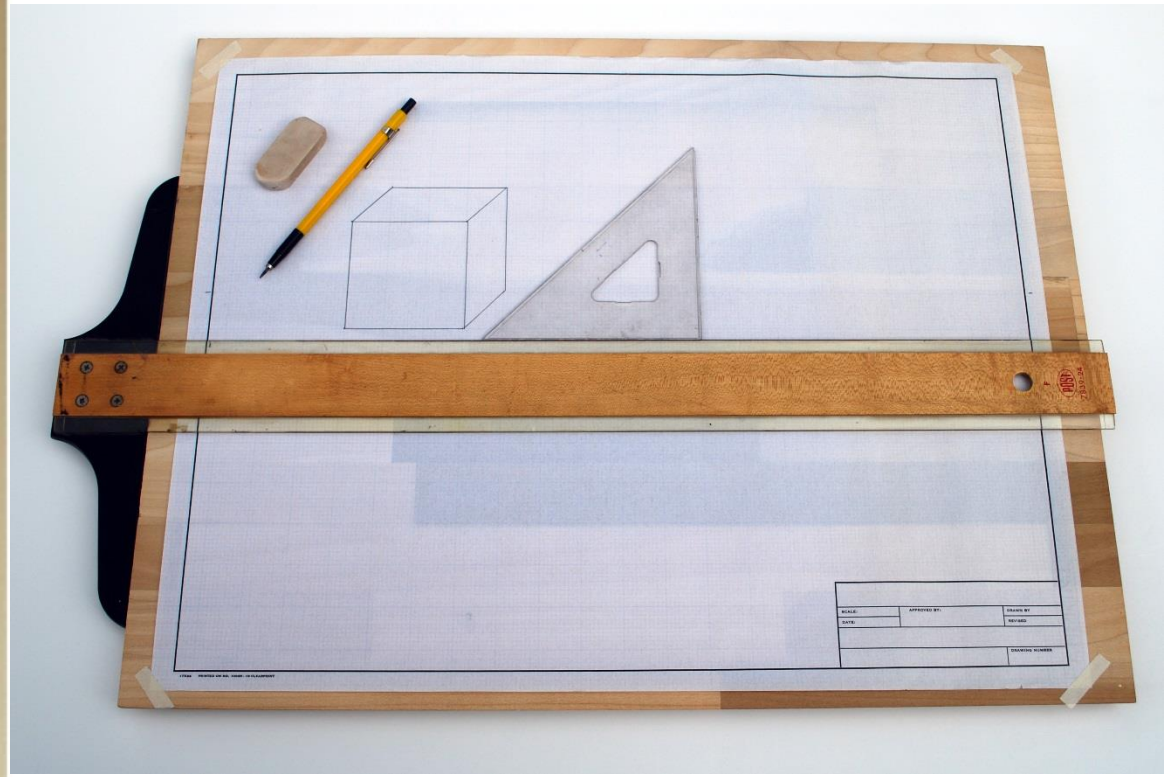
Some of the things I found in January 1989.



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The Early Days: IBM clone, 286 computer

Hardware configuration:

- 8 MHz processor
- 40 MB hard drive
- 5.25” floppy drive
- 3.5” floppy drive
- 8 MB of RAM
- 4800 BAUD modem
- Monochrome monitor

The Times They Are A Changin’ – Bob Dylan

1989-1990’s

- External reports (40%)
- Standard reports (30%)
- Complex studies (25%)
- Daily numbers (5%)

2000+

- External reports (40%)
- Daily numbers (35%)
- Standard reports (20%)
- Complex studies (5%)

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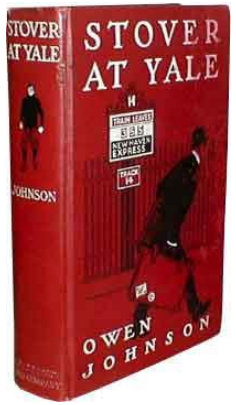
Technology often drives business processes

Before email, requests arrived via paper memorandum or telephone call. Often, more careful thought went into those requests.



92% of students prefer reading a printed book over an e-book (New Republic, January 2015), but printed fact books are largely gone from institutional research offices.

We use web surveys that are easy to administer, but email filtering and student fatigue has led to typical response rates of 10% to 25% that are still dropping.

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Large samples are not a solution to low survey response rates; some questions really are stupid

"I'm sorry, but I only complete surveys in odd-numbered years"

-- Student reply to an email inviting participation in the defunct Customer Satisfaction Survey that my cover letter described as a required part of the State Agency Plan "in even-numbered years"

"Question: Do you think moving sidewalks would be a good solution to the hilly walking terrain at Texas State?"

-- One response: How would moving the sidewalks help?

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Pivot tables and other automated tools have let us provide more data in a flexible form

Enrollment by Fiscal Year at Texas State University

College	(All)
Department	(All)
Major_Degree	(All)
Major_Concentration	(All)
Major	(All)
Status	(All)
Level	Undergraduate
Age_Group	(All)
Continent	(All)
Country	(All)
State	(All)
TX_Region	(All)
County	(All)
MSA	(All)
Admit_Category	(All)
Age	(All)
Class	(All)
Ethnicity	(All)
Ethnicity2	(All)
Gender	(All)

Sum of Headcount	TxSt_FYear													
TxSt_Semester	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
Fall	20,179	21,089	21,974	22,402	22,986	23,568	24,038	24,810	26,001	27,448	28,959	29,458	31,005	32,177
Spring	19,009	19,864	20,433	20,866	21,582	22,041	22,502	23,199	24,514	25,948	27,050	27,526	28,633	
Summer	8,918	9,006	8,799	8,814	9,050	9,223	9,495	9,300	9,779	9,977	9,641	9,750	10,279	
Grand Total	48,106	49,959	51,206	52,082	53,618	54,832	56,035	57,309	60,294	63,373	65,650	66,734	69,917	32,177

http://www.ir.txstate.edu/ir-self-service/txstate-data.html

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In this age of technological tools, never underestimate the value of your data knowledge, report design, and interpretation skills

- General lesson: You probably know the data better than most.
- Banner lesson: Many do not understand how decisions about data structure can impact the usability of data for reporting.
- Decentralization lesson: Many have poor skills in report design.

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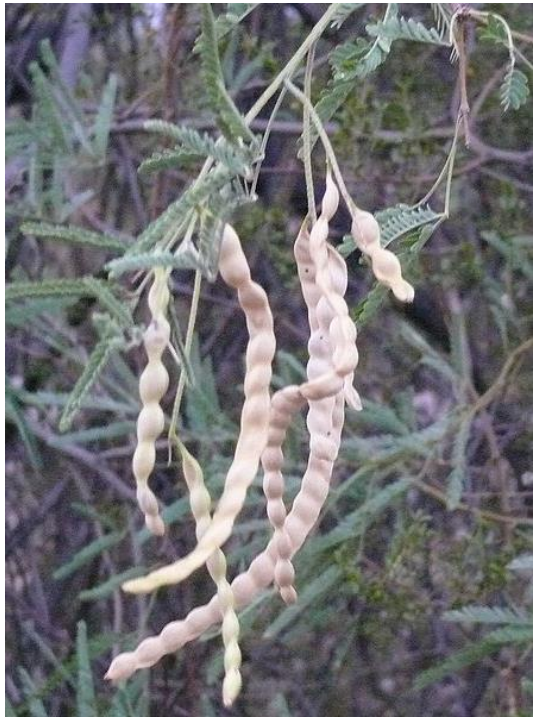
One of the first things I learned: Plants are more predictable than people

As a student in graduate school, I became accustomed to R-squared values in the .80 to .90 range when modeling growth of Prosopis glandulosa var. glandulosa.



As an institutional researcher, I became more accustomed to R-squared values in the .10 to .20 range when trying to model academic performance and retention of students.

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Another thing I learned early:
Some people are not very good researchers

"Take out the students who made D's and F's since those students would not have benefited from the course."

-- Faculty member in charge of an optional freshman experience course, who wanted to demonstrate that students who took the course benefited, so that he could argue the course should be a requirement for all freshmen.

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Discretion is the better part of valor: Some studies should never be done

"Joe, this kind of thing could get you fired!" – Administrator to me.

There is wide variability in grades awarded by faculty members to the extent that students who earn C's under really tough graders may earn higher grades in the following sequence courses than students who earn A's under easier graders. Faculty senators were not so excited about the finding and neither was the vice president.

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Be open-minded and flexible: Some peers are more peer-like than others

Selected peers may depend on the purpose of a study

- If you work at Texas State University, the 5th-largest public university in Texas, it may make sense to look at staffing ratios at the ten largest Texas public universities due to issues like economy of scale.
- If you work at Texas State University, an institution that is 25 miles from U.T. Austin and 50 miles from Texas A&M University, it may not make sense to compare the percentage of freshmen recruited from the top 10% to students at the ten largest Texas public universities.

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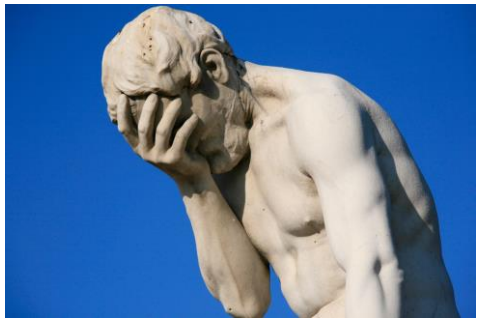
Be skeptical: Findings should not only be statistically significant, but should also make sense.



"Look at this fascinating result—the less familiar Hispanic students are with the undergraduate catalog, the more likely they are to be academically successful!"

--administrator on the results of dozens of t-tests at 95% confidence

"Freshmen who attend summer orientation are retained at a much higher rate than those who attend just-in-time orientation. We will require all freshmen to attend summer orientation."

-- a policy decision based on data

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Be politically aware: Often how a measure will be used is an important consideration

Administrator: “Joe, I need a student-to-faculty ratio”

Me: “Do you want a high ratio or a low ratio?

Administrator: [Laughter] “I’d like a high ratio, because I want to argue that we need additional money to hire more faculty members”

Me: “Okay, then I’ll use the Coordinating Board’s definition.”

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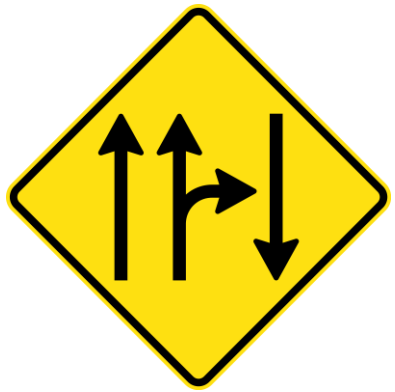
There are many paths to a destination, but administrators don't really care.



Institutional research does not have a single definition for many measures. For example, there are about fifty ways to calculate a student-to-faculty ratio.

- Decentralization and lack of standard definitions increases the chances for results that do not match.
  - Administrators usually don't like it very much when numbers do not match (even if they are very close).

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Tell me what you want and I'll give you what you need – The Doobie Brothers

If you have something similar to what is requested, do yourself a favor by offering it rather than creating something new and similar. You may find it meets the client's needs and saves you a lot of time.

Requestors often do not know what data exist and are available to you. By asking questions to understand what they are trying to accomplish, you may be able to offer them something more useful than what they have requested.

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You can make a difference! Some studies have surprisingly clear and actionable results

- Annual evaluations of dean and chair performance by faculty members has resulted in replacements.

- A large-scale survey of faculty, students, and staff showed that large majorities wanted more campus green space and had an enormous impact on the Texas State University campus master plan.

- A finding that students who completed two semesters of English before taking writing-intensive courses are more academically successful than students who do not resulted in a change in the ordering of core curricula.

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But, admit it: Some projects are done even though they are mostly a waste of time.

- Don’t be afraid to recommend abandoning projects that are keeping you from working on more important things. We no longer produce student contact lists and are getting out of Gainful Employment reporting.

- We participate in the CUPA-HR faculty salary survey that collects salary data by discipline and rank so that we can use results from their Data-on-Demand system as a source of market data.

- We participate in the AAUP faculty salary survey, which does not collect salary data by discipline and rank, only because all the other large Texas public universities participate.

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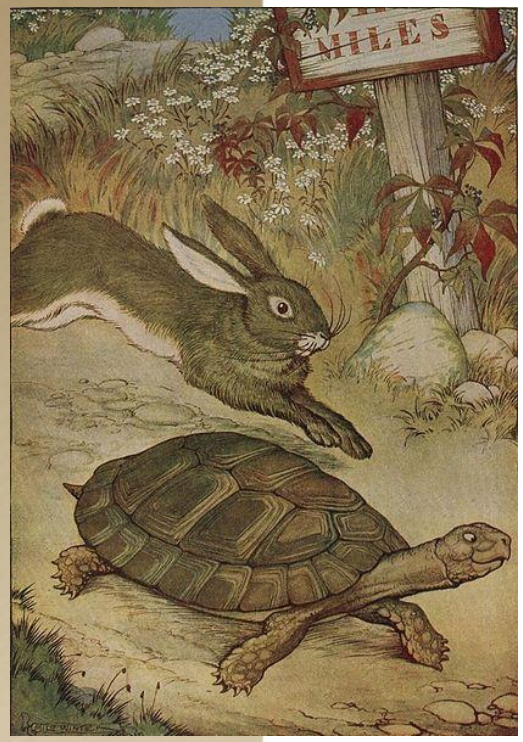
People lessons I've learned:
Courtesy costs nothing and gains you a lot



- Value the differences in people.
- Acknowledge your faults, even to your staff.
- Be honest and correct your mistakes.
- Do a little more that what was requested.
- Don't act like a task is tedious, even if it is.
- Follow the golden rule.

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Is the result of your approach likely to be a net gain or a net loss?

"We have a computer replacement program to buy a new computer every 3 years, but are going to give yours to Joe since he is a power user. We will give you his old one." – Administrator

"The way you are doing that is not a very efficient approach. Do it this way instead." – Me

"If you had said that to me, it would have pissed me off." – My wife after I told her an employee seemed irritated with me.

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Are these changes good or bad?

Some Pros

- More people are using data to guide decisions.
- Reports are more numerous
- Reports are more visually appealing.

Some Cons

- More people are misusing data to guide decisions.
- Less time for in-depth studies
- More time goes into making reports visually appealing.

Answer: Neither. Technology provides us with useful tools for working with data, but your skills are more valuable than technology.

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