

# It's Always Been About the Data

Colleges and universities are often flush with assorted technology tools that create large amounts of data. For a variety of reasons, unfortunately, many institutions struggle to effectively orchestrate all of their data. Making matters worse, the proliferation of data visualization tools allows novice users to easily create beautiful and compelling images of their data. But, are these creations telling the right stories? Let's spend some time together raising awareness about enterprise data and talking about how data can be used to build information, develop knowledge, and provide wisdom.



**Eric Satterly**  
**CIO**

**Bellarmino University**

# A little about me...

- Master of Engineering - Electrical Engineer
- HVAC Control Systems and Manufacturing (5 years)
- Internet Banking (13 years)
- Higher Education (12 years and counting)



**North American Executive Advisory Council**

Ellucian

Jan 2020 - Present · 3 yrs 8 mos



**Supervisory Committee Member**

Commonwealth Credit Union

Jan 2022 - Present · 1 yr 8 mos



**Board Member & Ellucian Colleague Cohort Co-Chair**

The Higher Education Systems & Services Consortium (HESS)

Jan 2017 - Present · 6 yrs 8 mos



**Board Member**

Technology Association of Louisville Kentucky (TALK)

Oct 2019 - Present · 3 yrs 11 mos

# So, who let the IT guy in?

- For several years Institutional Research & Effectiveness was part of Information Technology at Bellarmine University
- Leadership changed and so did our organizational structure
- I accept my bias, BUT those were our Glory Days



# Plan for our time together...

- Super quick history lesson
- Describe “the problem”
- How did we lose our way? ... chasing shiny things
- A **true story** of opportunity knocking
- How do we find our way? ... some frameworks and approaches
- Special guest appearance by a true unicorn
- Q&A

Apr 8, 2013, 09:16am EDT

# A Very Short History of Information Technology (IT)



**Gil Press** Senior Contributor ⓘ

Enterprise & Cloud

*I write about technology, entrepreneurs and innu*

<https://www.forbes.com/sites/gilpress/2013/04/08/a-very-short-history-of-information-technology-it>

<https://www.forbes.com/sites/gilpress/2013/04/08/dell-oracle-and-the-future-of-the-it-industry>

Several of the next slides share ideas presented in these articles



## Three Significant Developments

**1945:** John Von Neumann published the *First Draft of a Report on the EDVAC*, the first documented discussion of the stored program concept and the blueprint for computer architecture to this day. (*Binary computation, not Decimal*)

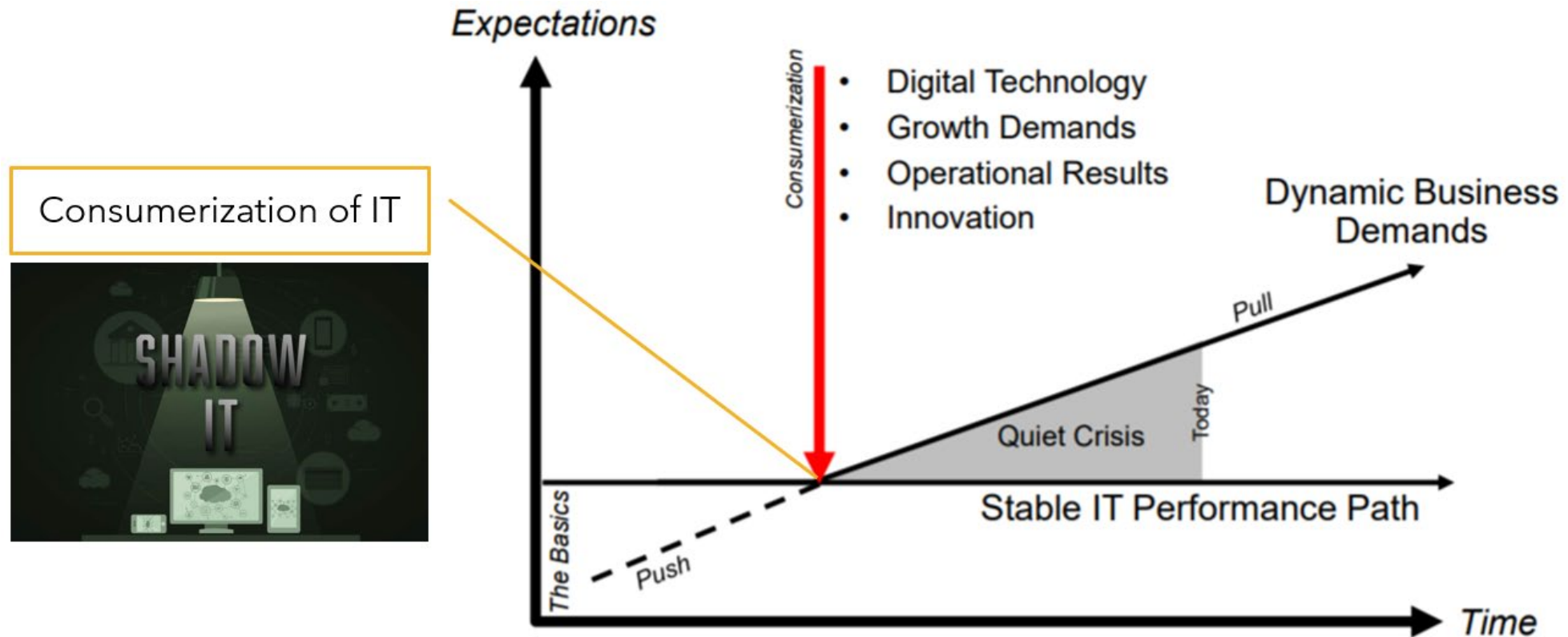
**1973:** Bob Metcalfe “banged out the memo inventing Ethernet” at Xerox Palo Alto Research Center (PARC).

**1989:** Tim Berners-Lee circulated “Information management: A proposal” at CERN in which he outlined a global hypertext system.

Connecting people in a vast and distributed network of computers increased the **amount of data generated** and created excitement about the **value** of data.

This launched a new wave of enterprise applications focused on digitization which enabled the creation of even more data.

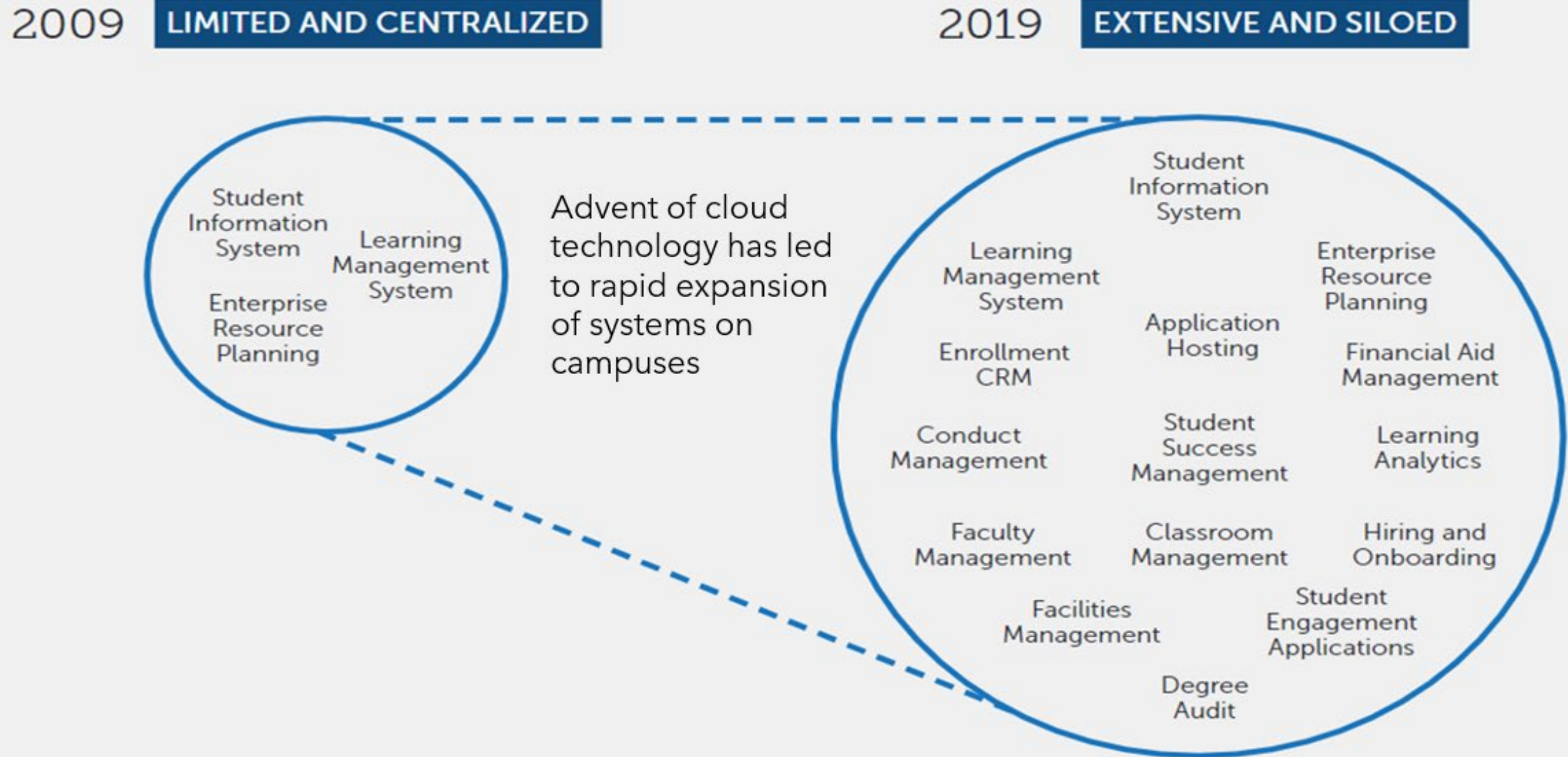
# Exploding Data and the Cloud enabled the Quiet IT Crisis



*Customer, consumer, and constituent expectations are changing; and at a rate which will sweep us along, ready or not, willing or not.*



# The “Consumerization of IT” brings this reality

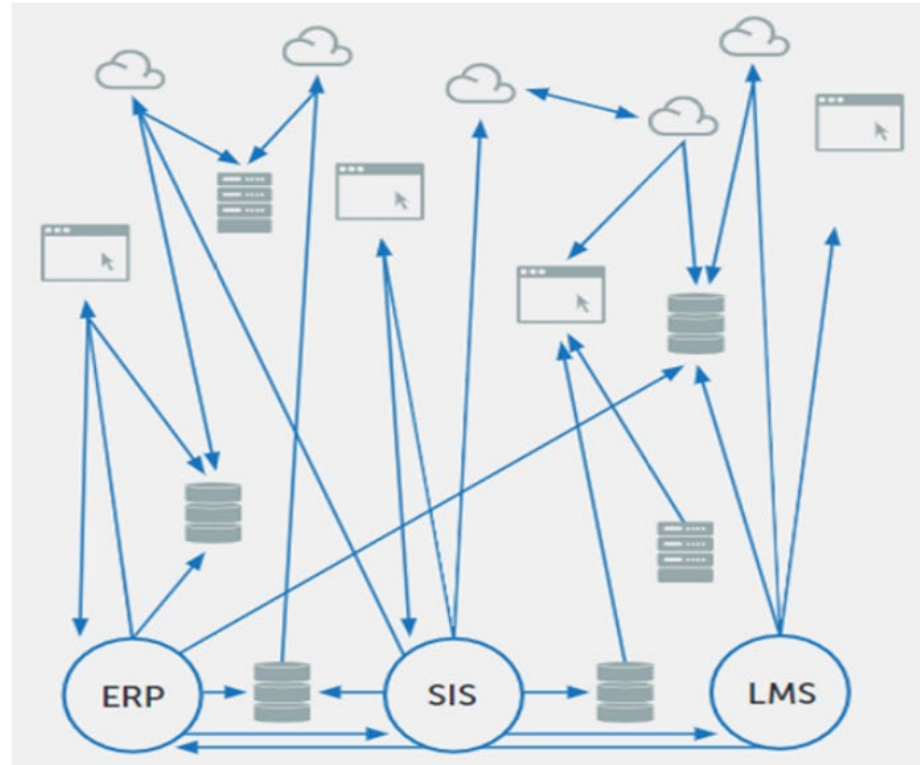


Increased Risk of Diminished Value to Existing Data Assets and Technology Investments

Source: EAB

The result is  
“Architecture by  
Accident” which  
cripples traditional IT  
Innovation with things  
like Tack-on Systems,  
Shadow Storage, and  
Brittle Integrations

and MORE data



1

**Higher risk of failure** across increasing number of hand-coded integrations

2

**Growing maintenance costs** as the data and integration footprint expands

3

**Decreased agility** as disparate systems become more intricately dependent

Source: EAB

*But we have data, lots of data...*

- Student Information Systems
- Course Evaluations
- LMS Activity
- Outcomes Data
- Engagement Data
- Facility Usage
- Financial Data

*... we're just bad at dealing with them*



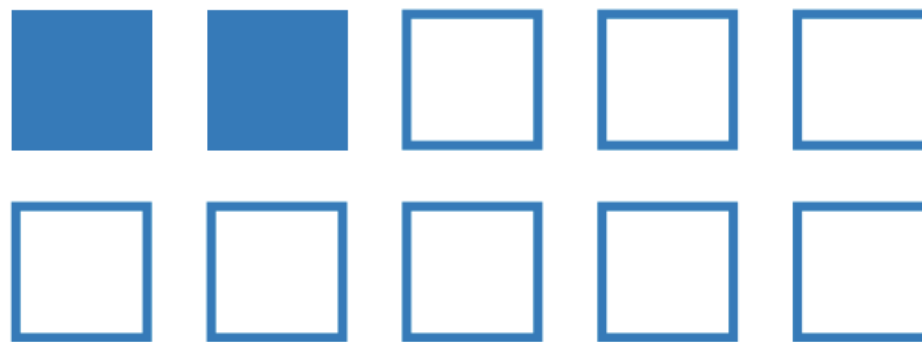
**We hear frustration around incomplete or incoherent data from nearly every institution we talk to. Decisions like whether they can afford a program or whether to merge with another organization ... These are urgent, existential questions. Not having holistic, quality data impedes their ability to make those decisions."**

Dave Kieffer, Principal Analyst  
Tambellini Group



**8 in 10**

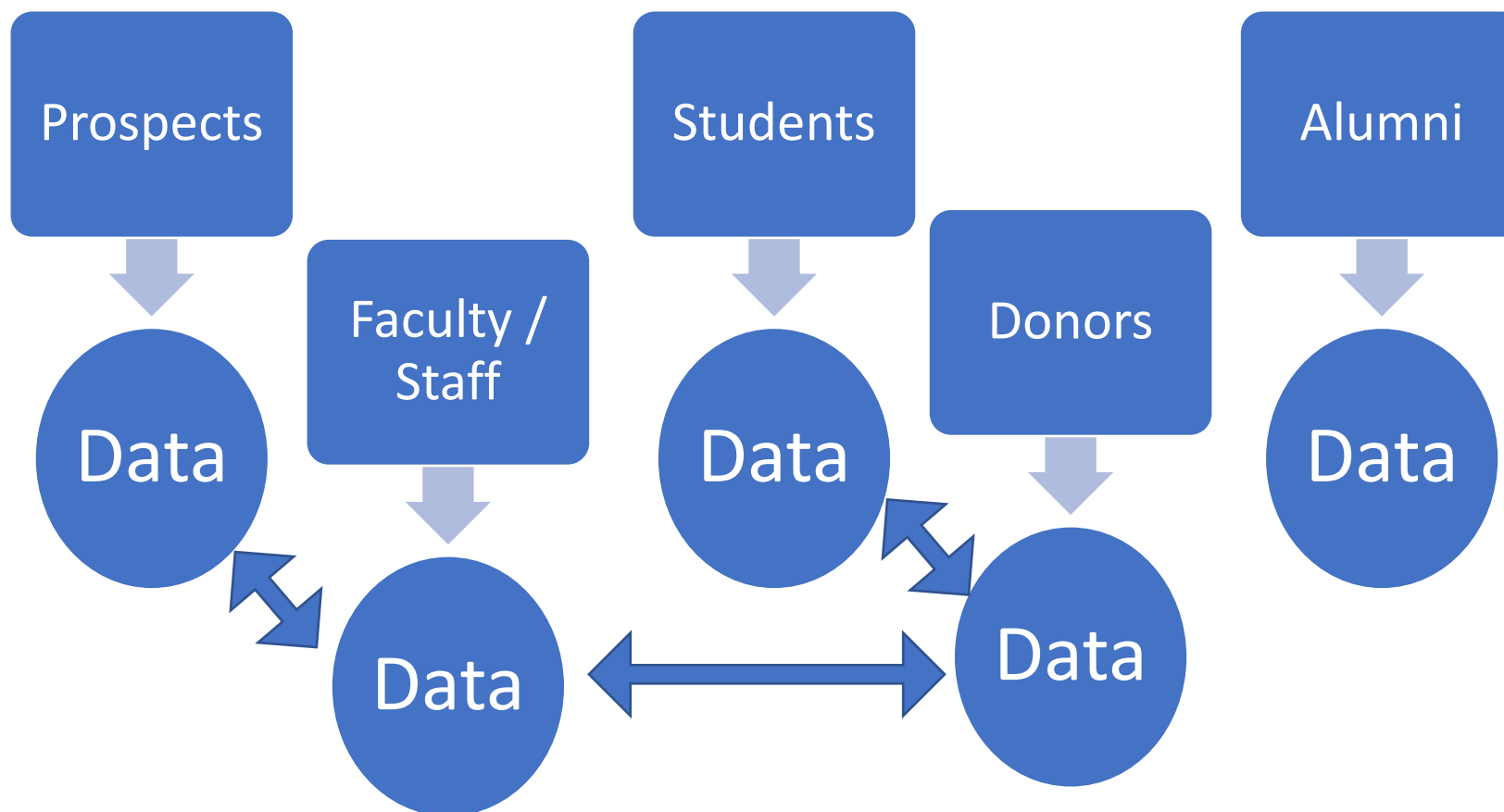
Higher ed leaders say it would be “very” or “extremely” helpful to have a **single source of unified data** across systems and departments.



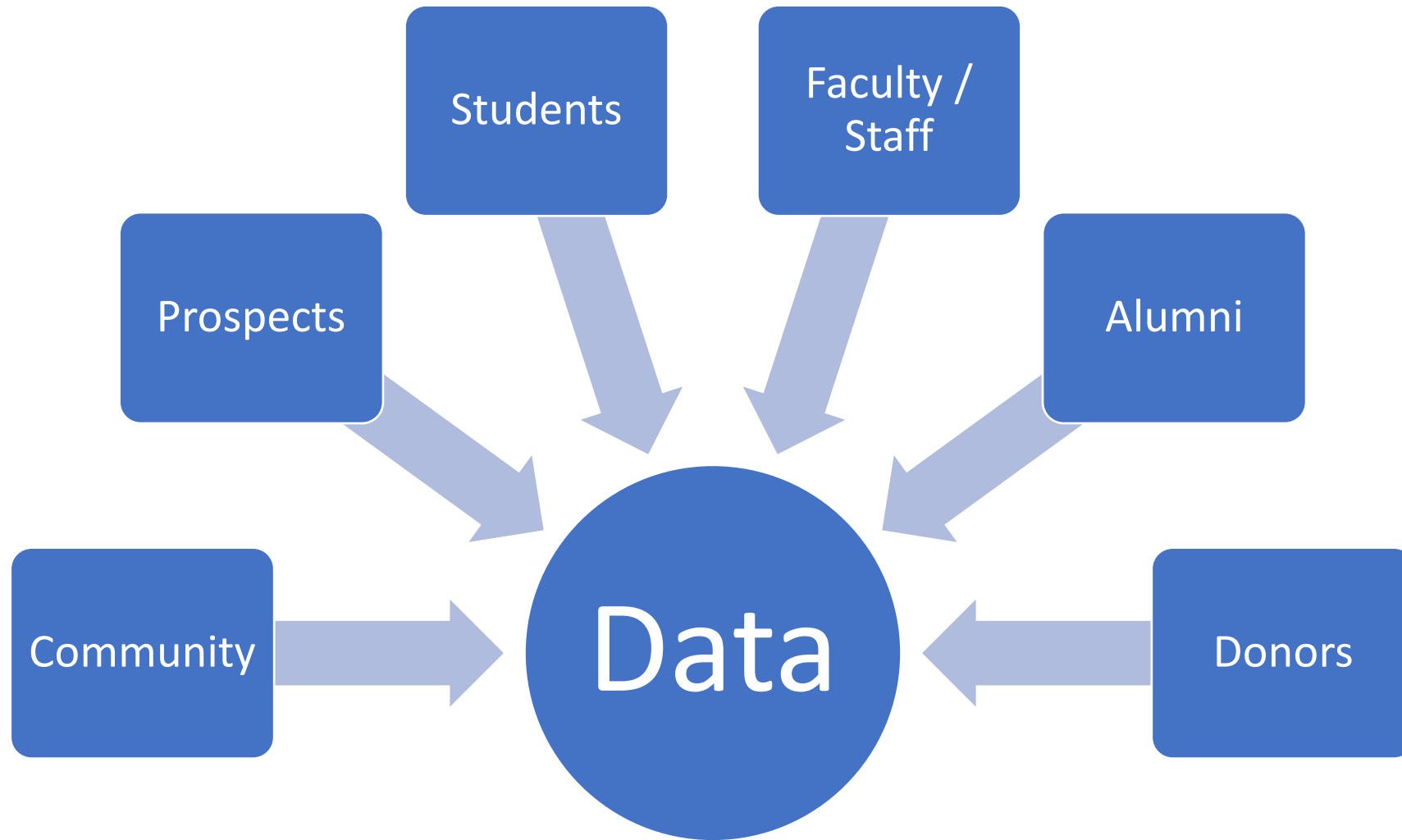
**2 in 10**

Higher ed leaders have that capability today.

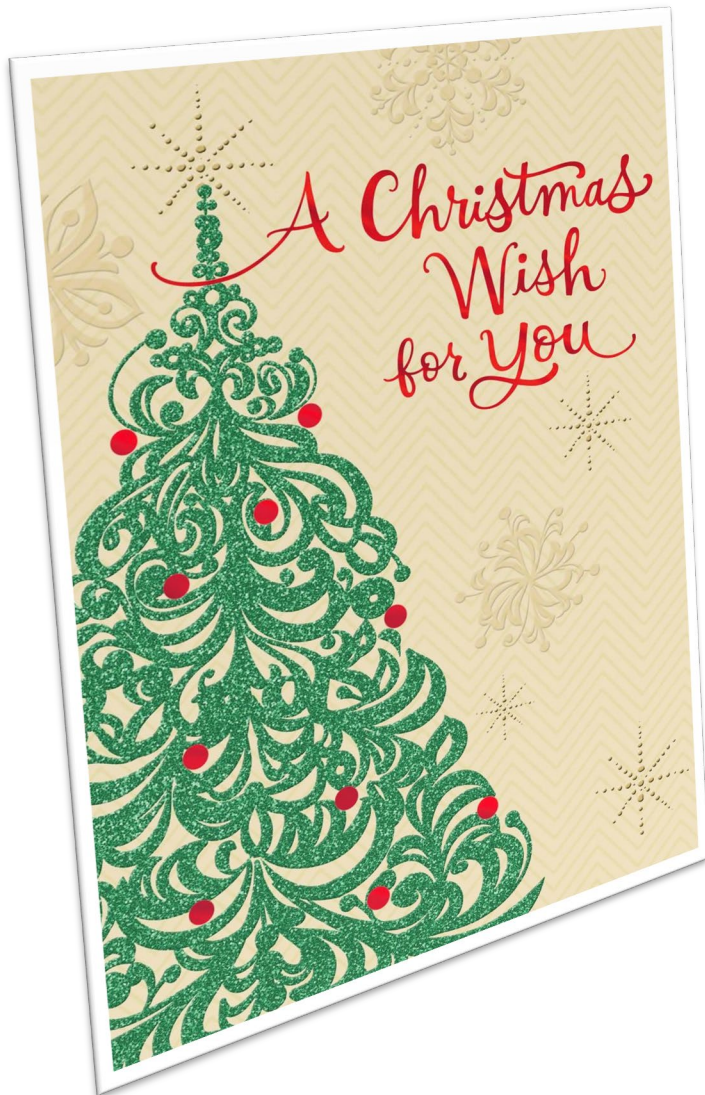
We need to move from this model...



...to this model







Story  
TIME





## EXPERIENCE

Enrich our community by enhancing the user experience while creating value through this framework

## SERVICE

Maintain a Service/Product Portfolio that supports the strategic initiatives of the organization

## CAPACITY

Provide users with enough technology and understanding so that they are capable to meet their objectives

## FUNCTIONALITY

Deliver stable and feature-rich technical resources that meet the actual needs of the community

## MAXIMIZATION

Optimally utilize the people, processes, equipment, systems, licenses and facilities in place

## RESILIENCY

Design and operate systems able to withstand the most common and predictable outage events

## RECOVERABILITY

Build to Recovery Point Objectives and then work to develop Recovery Time Objectives based on system maturity

## SECURITY

Constantly evaluate information security, provide protection and proactively monitor for incidents

## RELIABILITY

Data must be safely stored, preserved and be dependable; information duplication should be avoided

## GOVERNANCE

Implement metrics, controls, and standards to create order and stewardship of our information

Framework for Value Creation through Information Technology  
Bellarmino University - Office of Information Technology

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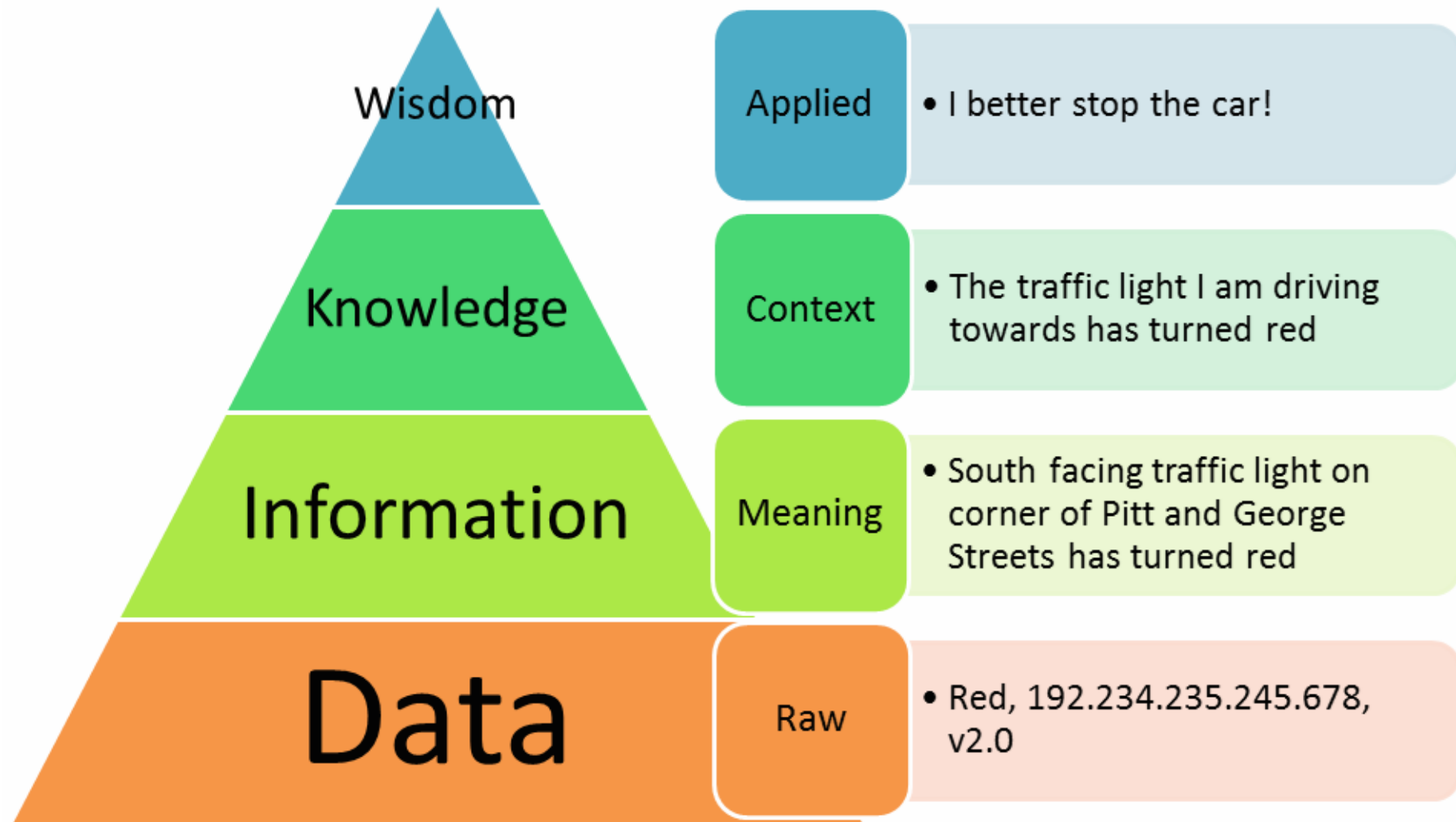


Wisdom

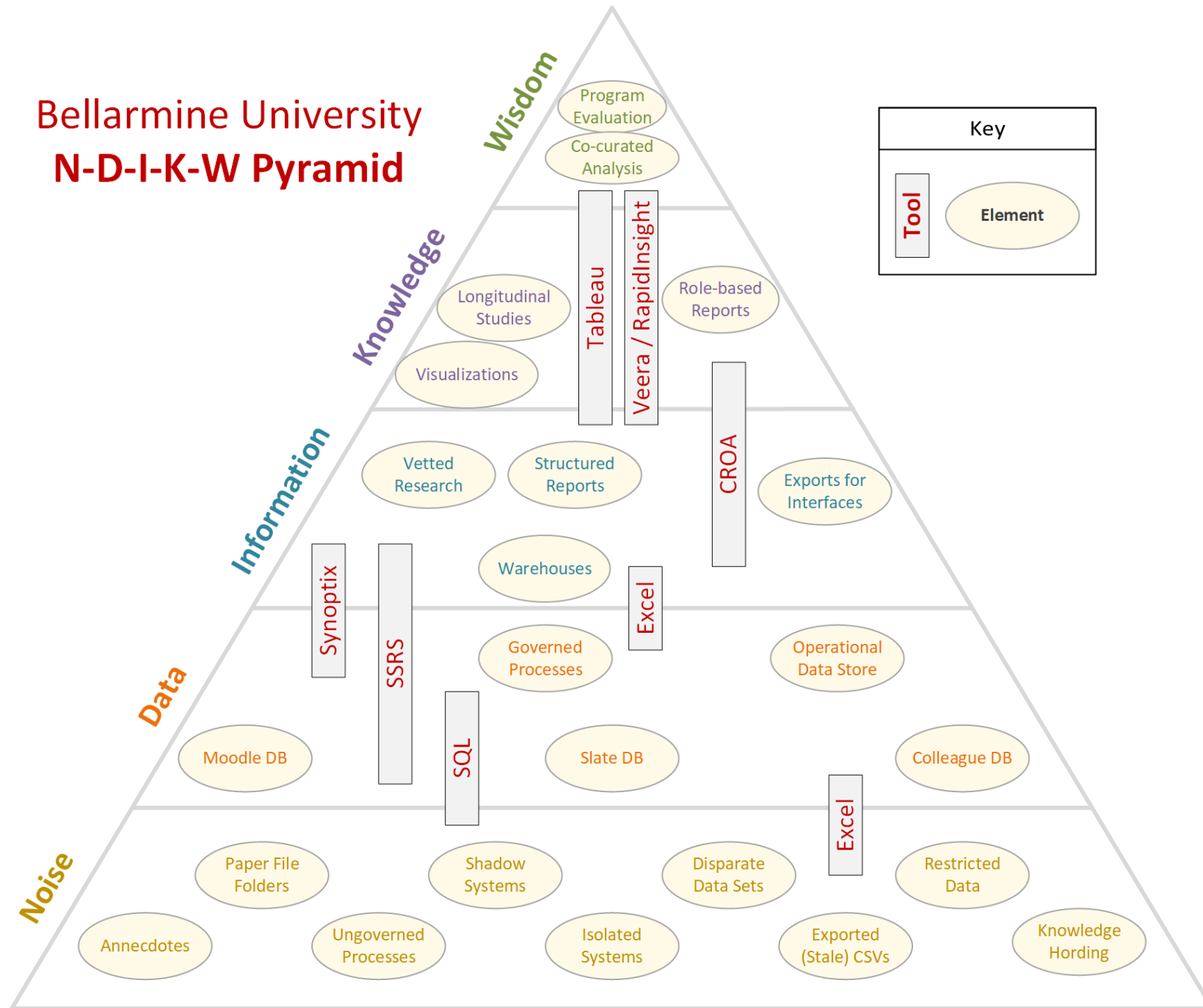
Knowledge

Information

Data



# Bellarmino University N-D-I-K-W Pyramid





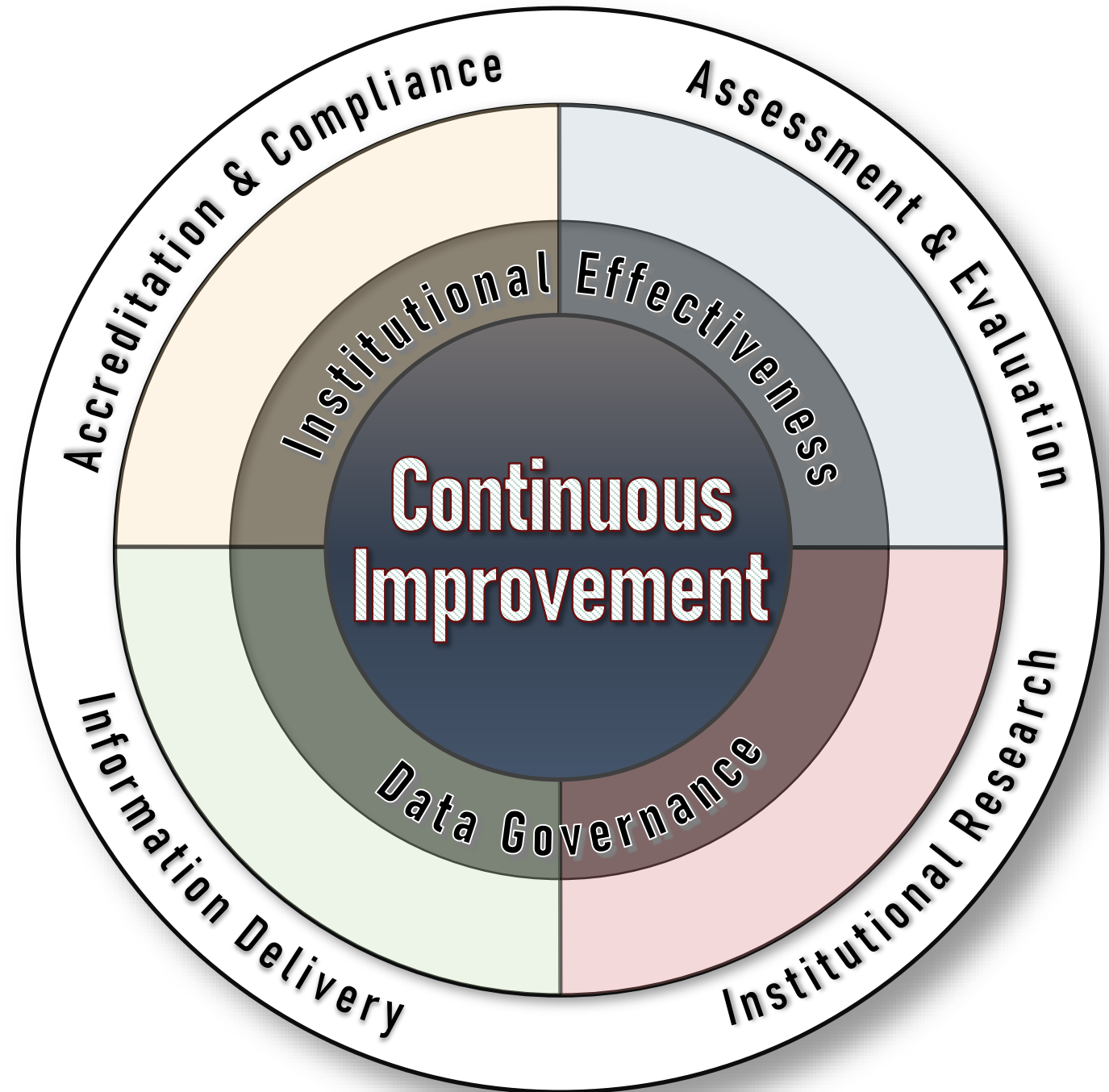
**Drew Thiemann** (he/him/his) · 1st

Executive Director of Institutional Research & Decision Support

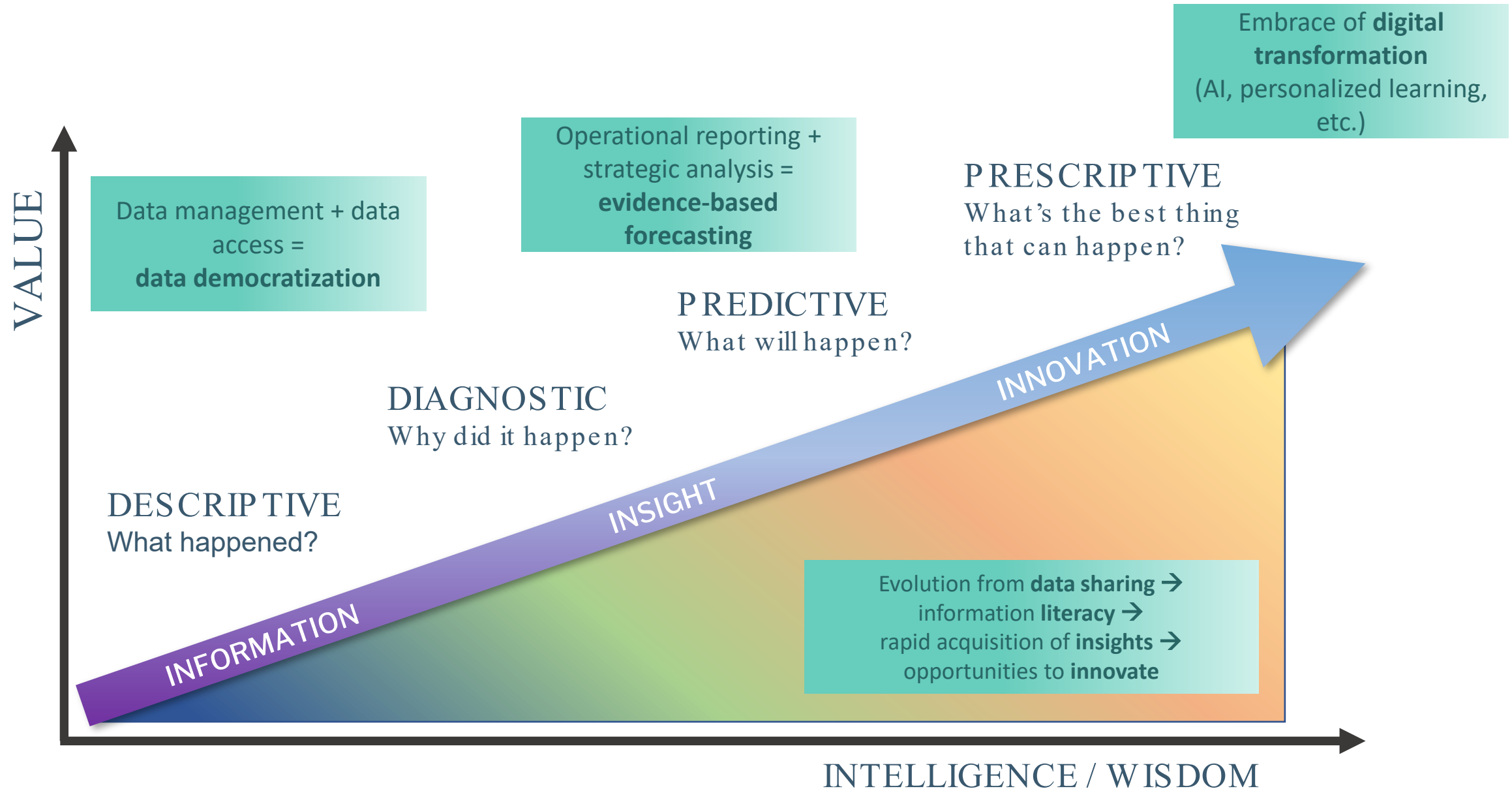




The Value-Added  
Onion that you get  
when combine  
IT / IR / IE



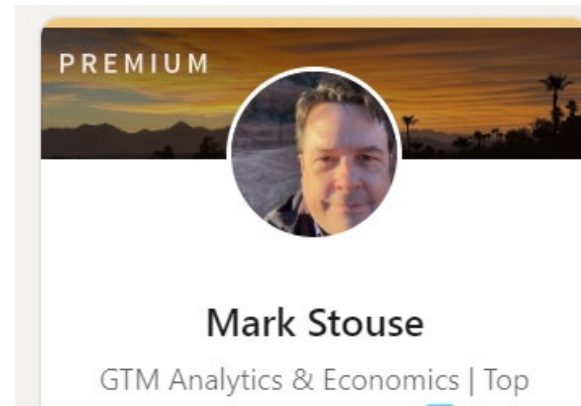
# A Basic Illustration of the Data Maturity Trajectory





# A Cautionary Tale

I had a conversation yesterday with a mid-range company CFO who said, “I understand the need for technology. I understand the need for data management structures. But that’s not what I’m buying. I’m buying the consistent ability for everyone to make better and better decisions. We fired our CDO recently, not because he was technically inadequate but because he led his team to waste millions of dollars and years of time in the pursuit of data management infrastructure but could not deliver scalable, relevant business insights when we needed them.”





# It's Always Been About the Data Questions, Comments, Snide Remarks?

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