

"Practice isn't the thing you do once you're good. It's the thing you do that makes you good." <u>Malcolm Gladwell</u>

Applied Data Strategy





ter.aiken@anythingawesome.com +1.804.382.5957

Peter Aiken, Ph.D.

- I've been doing this a long time
- My work is recognized as useful
- Associate Professor of IS (vcu.edu)
- Institute for Defense Analyses (ida.org)
- DAMA International (dama.org)
- MIT CDO Society (iscdo.org)
- Anything Awesome (anythingawesome.com)
- Experienced w/ 500+ data management practices worldwide
- 13 books and dozens of articles
- Multi-year immersions
 - US DoD (DISA/Army/Marines/DLA)

<mark>Beyond</mark> Byte\$

LITERACY

- Nokia
- Deutsche Bank
- Wells Fargo
- Walmart
- HUD ...

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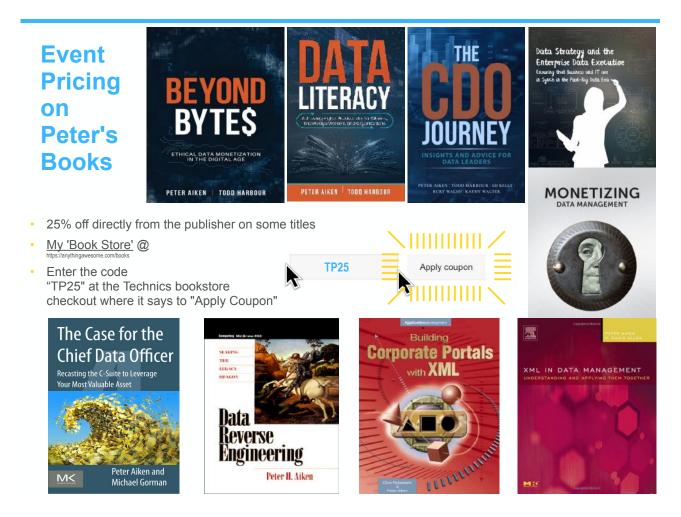


BII

JOURNEY

The Case for th





Context

- Strategy
 - Inherently a repetitive process that can be easily improved
- Dependency
 - Data strategy exists to support organizational strategy
- Evolution
 - Focus on improving data capabilities
- Output
 - Plans are of limited value anyway and always discount obstacles
- Overemphasizing Technology
 - People and process challenges are 95% of the problem
- Nirvana
 - Q: How do I get to Carnegie Hall?
 - A: Practice Practice Practice







- Program **verview**
 - A data strategy specifies how data assets are to be used to support the organizational strategy
 - What is strategy?
 - What is a data strategy?
 - How do they work together?
 - A data strategy is necessary for effective data governance
 - Improve your organization's data
 - Improve the way people use their data
 - Improving how people use data to support their organizational strategy

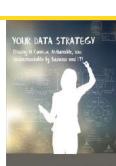
Effective Data Strategy Prerequisites

- Lack of organizational readiness
- Failure to compensate for the lack of data competencies
- Eliminating the barriers to leveraging data, the seven deadly data sins
- Data Strategy Development Phase II–Iterations
 - Lather, rinse, repeat
 - A balanced approach is required
 - Establish various data value chains



Program **verview**

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DATA-ED

Online

DATAVERSIT



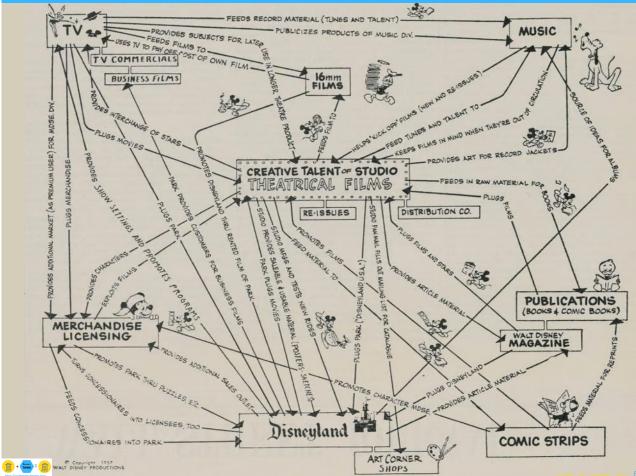




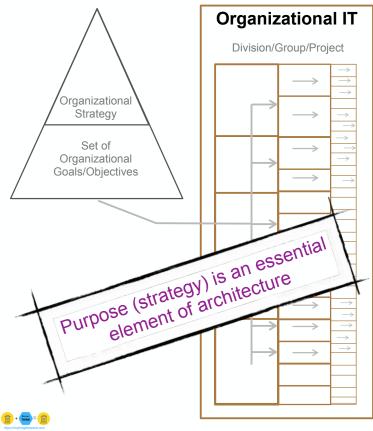






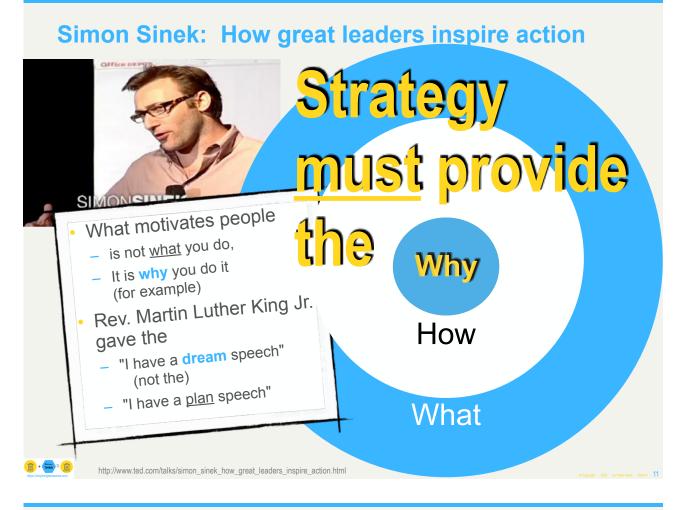


Strategy is Difficult to Perceive at the IT Project Level



- If they exist ...
- A singular organizational strategy and set of goals/ objectives ...
- Are not perceived as such at the project level and ...
- What does exist is confused, inaccurate, and incomplete
- IT projects do not well reflect organizational strategy

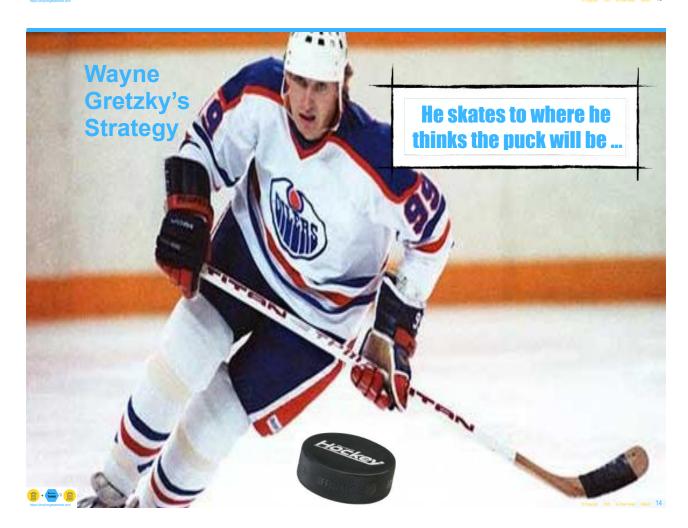






Former Walmart Business Strategy

Every Day Low Price



Strategy in Action: Napoleon faces a larger enemy

- Question?
 - How do I defeat the competition when their forces are bigger than mine?
- Answer:

💼 + 🛲 = 🛅

- Divide and conquer!
- "a pattern in a stream of decisions"



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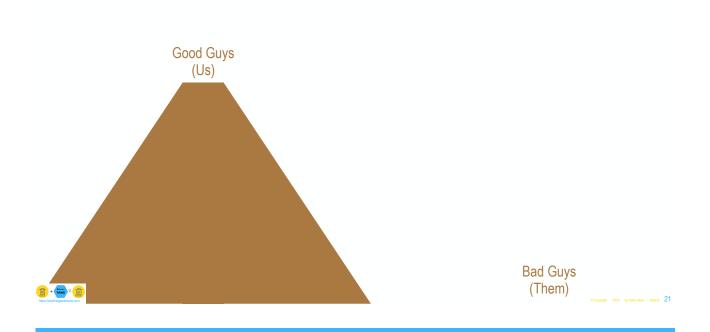


Contextually Important Strategy Example 1

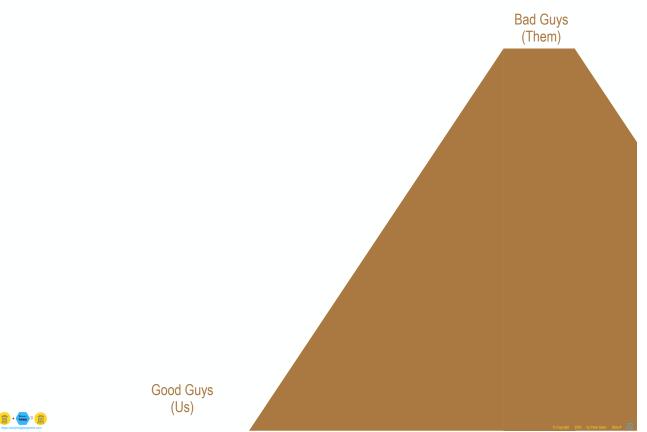


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Contextually Important Strategy Example 2



Contextually Important Strategy Example 3



Strategy Guides Workgroup Activities

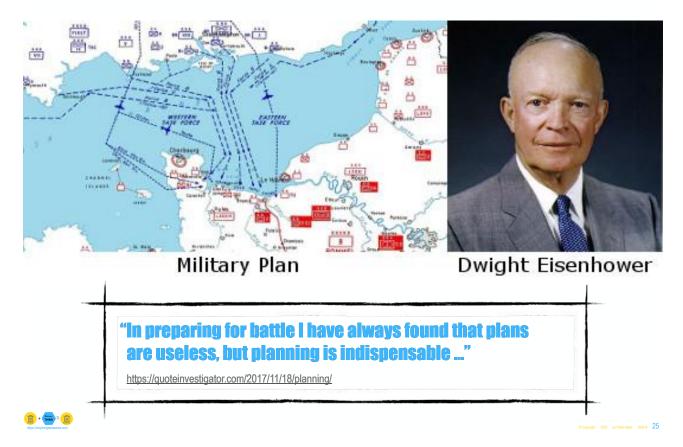
A pattern in a stream of decisions

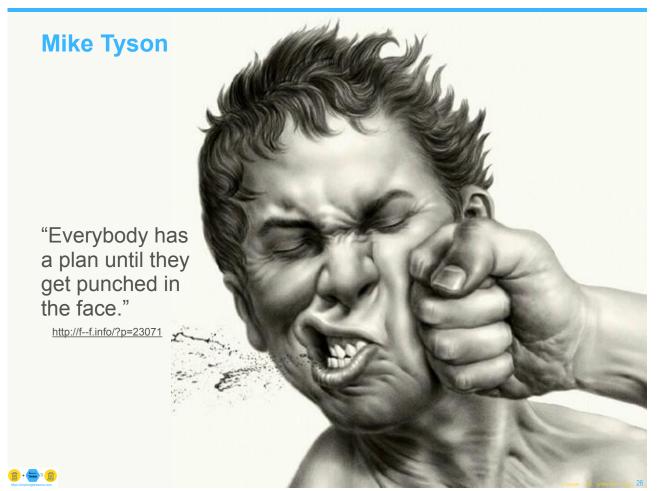
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Strategy that winds up only on a shelf is not useful

+ trans

General Dwight D. Eisenhower



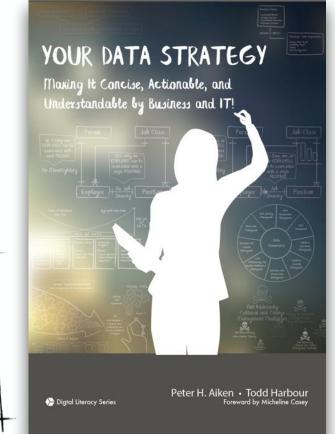


Your Data Strategy

- Highest level data guidance available ...
- Focusing data activities on business-goal achievement ...
- Providing guidance when faced with a stream of decisions or uncertainties

Data strategy most usefully articulates how data can be best used to support organizational strategy

 This usually involves a balance of remediation and proactive measures



Data Strategy Measures

- Effectiveness
 - Over time
- Volume (length)





- Should be not a whole lot longer than the organizational strategy https://www.gartner.com/en/webinars/3994588/the-art-of-the-1-page-strategy-storytelling-enables-business-gro
- Versions
 - Should be sequential (with score keeping)
- Understanding
 - Common agreement can be measured







Information Management Strategy On A Page

Statement of Information Management Strategy: Shift the focus of IT investment and skills toward information management with the goal of providing employees with attainable and useful information and boosting their capability to exploit that information for competitive advantage.

State of IM in 20XX

the Initial State

•Percentage of IT budget

analytics projects = 23%

devoted to information and

Percentage of budget spent

Percentage of information

Target number of analytic

Percentage of employees

who are informed skeptics =

subjects targeted for

harmonization and

integration > 80%

tools = 1-3

38%

on employee capability < 5%

Top 5-7 IM Initiatives

- 1. Launch an information management and analytics Top 5-7 Metrics Describing center of excellence.
 - 2. Redesign IT's opportunity-identification process to make it proactive and informed by observation of distinct employee segments.
 - 3. Identify analytic capabilities used by employees and offer a portfolio of tools to meet those nee
 - Develop and hire usability and in 4 sian skills in IT Coach employees to boost their 5.
 - foster informed skepticism. Harmonize and integrate a sma
 - 6. subjects where there is greate

Top 5-7 Underlying Beliefs and

- The number of opportunities to drive grows information management will equal or outstrip the opportunities for process automation.
- 2. Many of our employees lack the skills and judgment to use information effectively for decision making.
- 3. Not all information needs to be harmonized or integrated at enterprise level. Similarly, some information needs higher levels of quality than others.
- 4. Our business partners will take the lead in information stewardship
- 5. Employee reliance on external information sources and on unstructured information will continue to rise.

Example courtesy of Dr. Chris Bradley - chris.bradley@dmadvisors.co.uk

State of IM in 20YY

Top 5-7 Metrics Describing the End State

 Percentage of IT budget devoted to information and analytics projects = 40-50%

ntage of budget spent Spirationa 10/% tion Target number of analytic tools = 8-12

> Percentage of employees who are informed skeptics = 59%

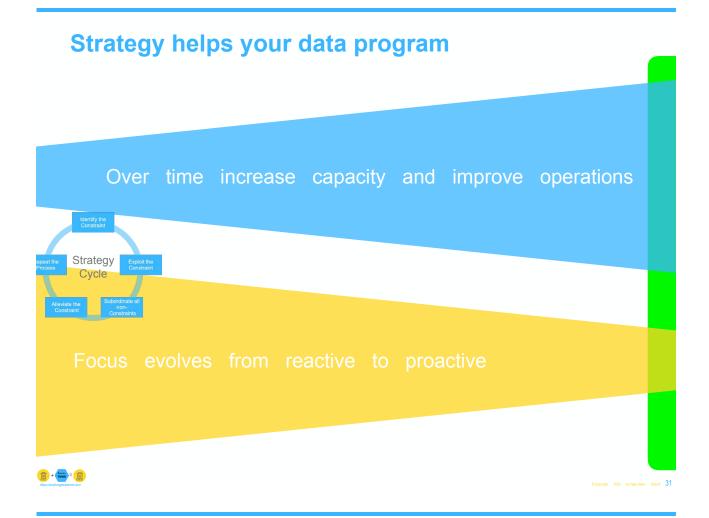
> > Store 20



Use iterative strategy cycles

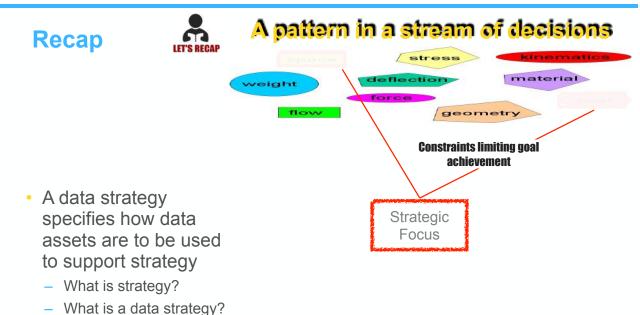
Incorporate corrective feedback on initial assumptions



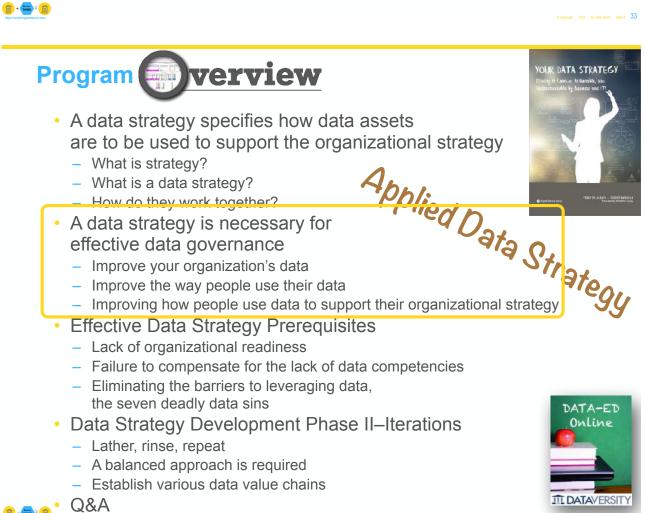


Other recent data "strategies"





- How do they work together?
- Strategy evolves periodically





7 Data Governance Definitions

- The formal orchestration of people, process, and technology to enable an organization to leverage data as an enterprise asset – The MDM Institute
- A convergence of data quality, data management, business process management, and risk management surrounding the handling of data in an organization – Wikipedia
- A system of decision rights and accountabilities for information-related processes, executed according to agreed-upon models which describe who can take what actions with what information, and when, under what circumstances, using what methods – Data Governance Institute
- The execution and enforcement of authority over the management of data assets and the performance of data functions – KiK Consulting
- A quality control discipline for assessing, managing, using, improving, monitoring, maintaining, and protecting organizational information – IBM Data Governance Council
- Data governance is the formulation of policy to optimize, secure, and leverage information as an enterprise asset by aligning the objectives of multiple functions – Sunil Soares
- The exercise of authority and control over the management of data assets – DM BoK





Elevator Pitch Image: State of the state of



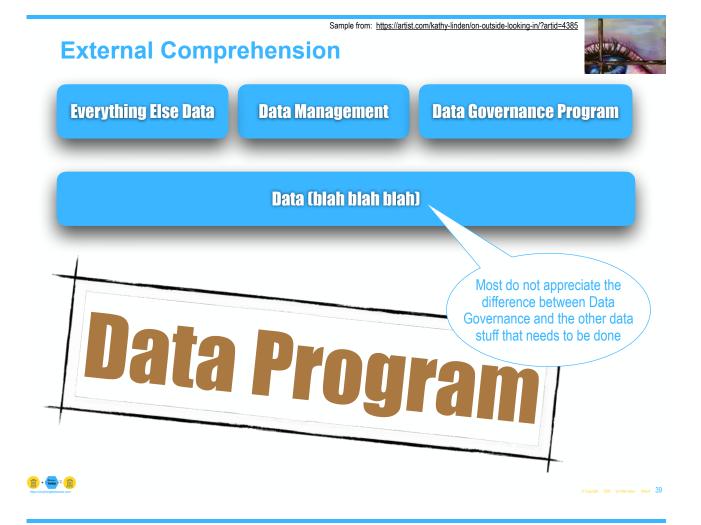
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Go Ask Anyone!™

Would you want your sole, nondepletable, nondegrading, durable, strategic asset managed <u>without</u> guidance?

what is Data Governance? Managing Data Data Decisions with Guidance

Go Ask Anyone! Would you want your sole. nondepletable. nondegrading, durable, strategic asset managed without guidance?



Data Assets Win!

Asset: A resource controlled by the organization as a result of past events or transactions and from which future economic benefits are expected to flow [Wikipedia]

- Today, data is the most powerful, yet underutilized and poorly managed organizational asset
- Data is your
 - Sole (only)
 - Non-depletable
 - Non-degrading
 - Durable
 - Strategic
- Asset
 - Data is the new oil!
 - Data is the new (s)oil!
 - Data is the new bacon!
- · As such, data deserves:
 - It's own strategy
 - Attention on par with similar organizational assets
 - Professional ministration to make up for past neglect

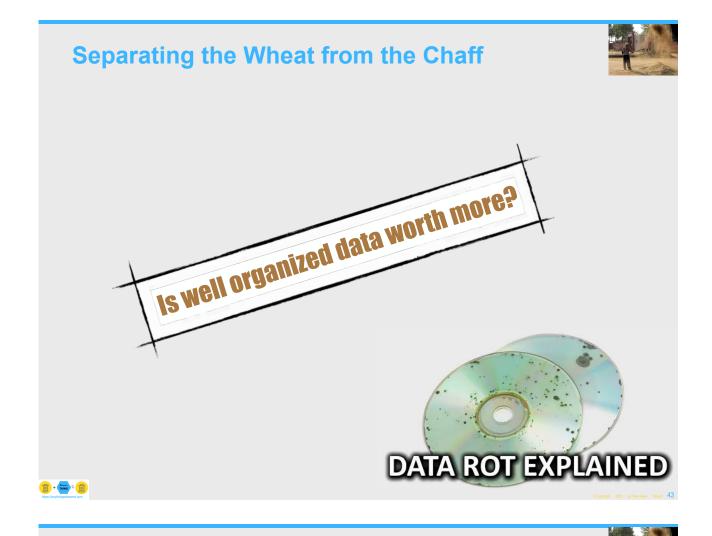
	Data Assets	Financial Assets	Real Estate Assets	Inventory Assets
Non- depletable	Available for subsequent use	Can be used up		Can be used up
Non- degrading	\checkmark	\checkmark	Can degrade over time	Can degrade over time
Durable	Non-taxed		\checkmark	\checkmark
Strategic Asset			\checkmark	\checkmark

2020 American Airlines market value ~ \$6b AAdvantage valued between \$19.5-\$31.5 2020 United market value ~ 9\$b MileagePlus ~ \$22b



It is not as easy to visualize the cost of Data Debt or that it depletes organizational resources: • Slowing progress • Decreasing quality • Increasing costs • Presenting greater risks





Pre-Information Age Metadata

- Examples of information architecture achievements that happened • well before the information age:
 - Page numbering
 - Alphabetical order
 - Table of contents
 - Indexes
 - Lexicons
 - Maps
 - Diagrams



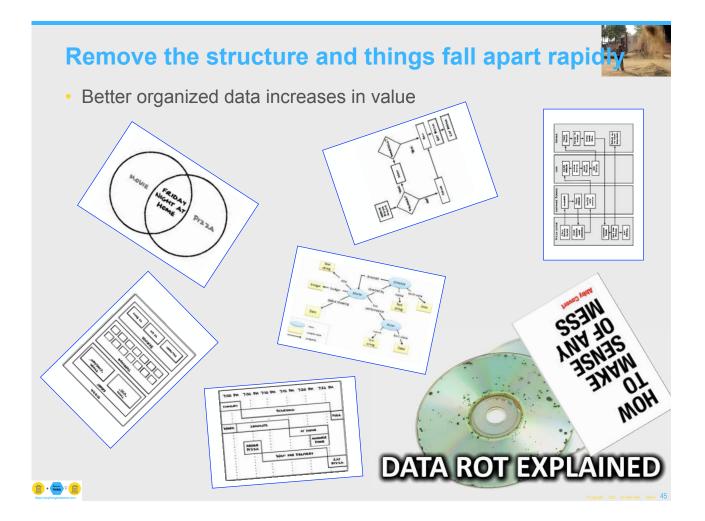
https://www.youtube.com/watch?v=r10Sod44rME&t=1s https://www.youtube.com/watch?v=XD2OkDPAI6s

"While we can arrange things with the intent to communicate certain information, we can't actually make information. Our users do that for us."

Example from: How to make sense of any mess by Abby Covert (2014) ISBN: 1500615994







Separating the Wheat from the Chaff

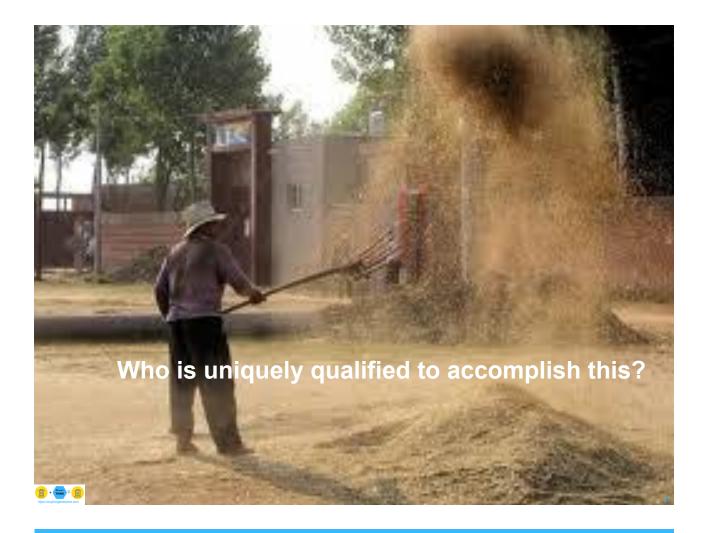
- Better organized data increases in value
- Poor data management practices are costing organizations money/time/effort
- 80% of organizational data is ROT
 - Redundant
 - Obsolete
 - Trivial
- The question is which data to eliminate?
 - Most enterprise data is never analyzed



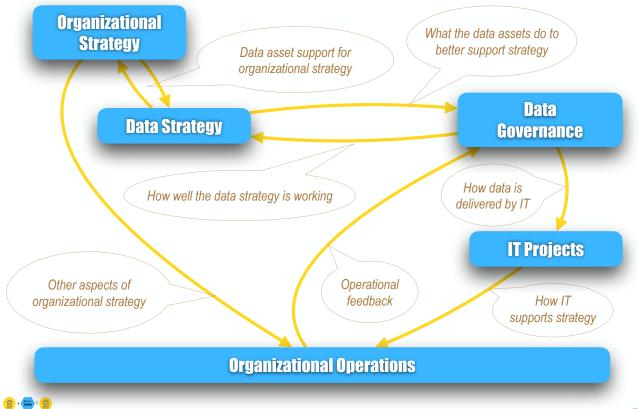
HOW TO MAKE

SENSE OF ANY MESS

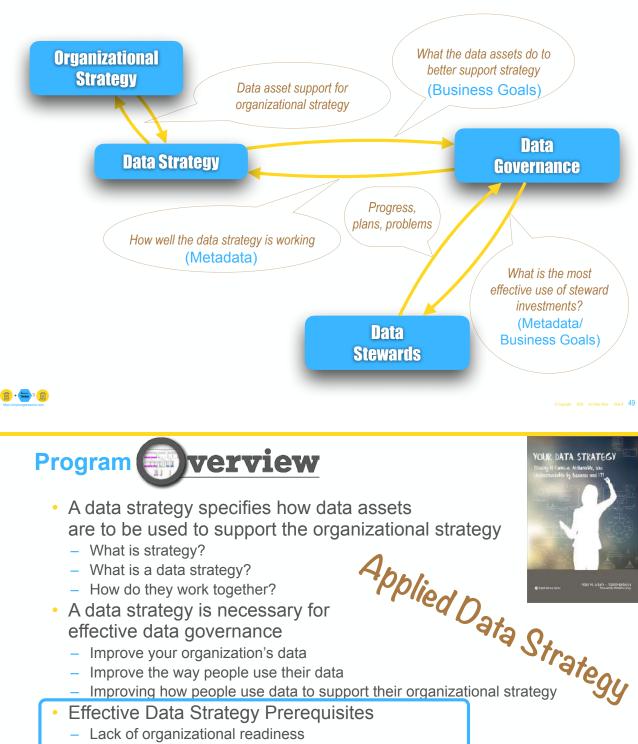




Data Strategy and Governance in Strategic Context



Data Strategy and Governance in Strategic Context

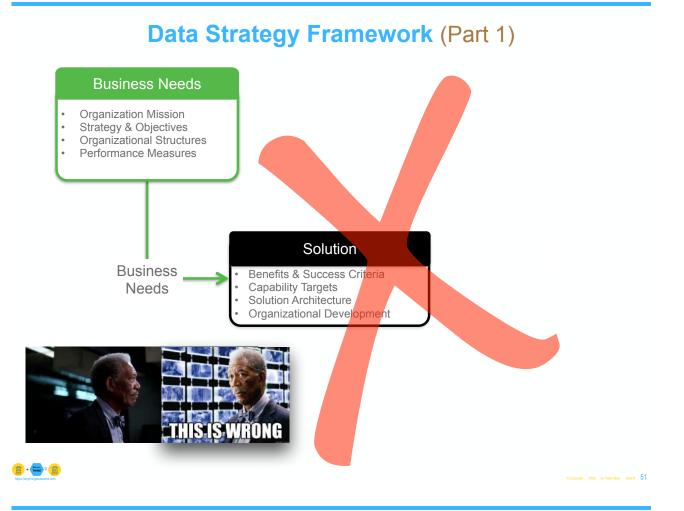


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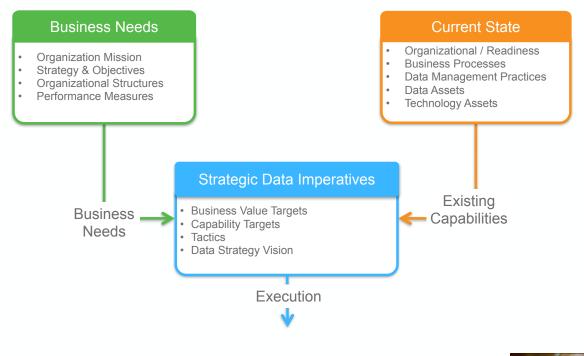


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Q&A

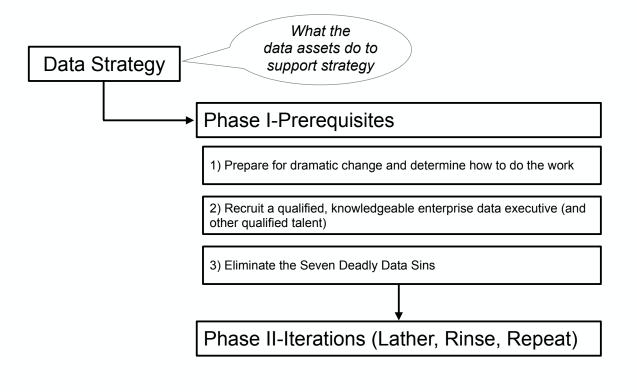


Data Strategy Framework (Part 1)



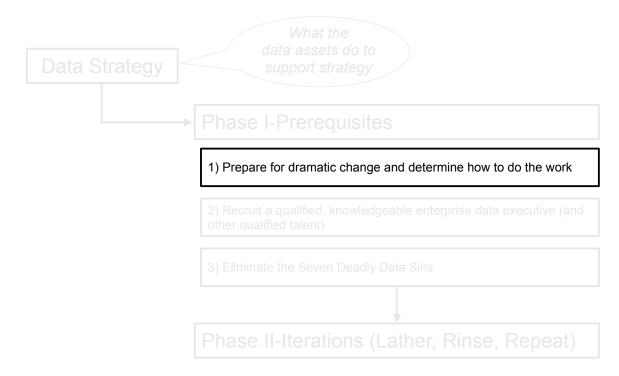


Data Strategy is Implemented in 2 Phases



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Data Strategy is Implemented in 2 Phases



CIOs aren't



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CDO Job Description

There are more Chief Digital Officers than there are Chief Data Officers

Reporting to senior leadership, the CDO is the data leader responsible for evolving data practices to better support the organizational mission.

Improving organizational data practices extends the CDO's responsibilities to every knowledge worker in the organization. Empowering knowledge workers with better data practices is the single most important productivity improvement that organizations can make. The CDO is responsible for growing not just an organizational data team but for operationalizing an organization-wide conversation and focus on data innovation, improvement, and value.

The CDO establishes, fiduciary responsibilities through stewardship, aimed at leveraging data assets and organizational capabilities and creating a climate of data sharing. Some of this can be accomplished by leading the organizational data governance program to effectiveness. The data leader will be required to understand how to appropriately incorporate change management capabilities to the substantive people, process, and ethical challenges that will support the new data focus.

As an organization's sole, non-depletable, non-degrading, non-rivalrous strategic asset, its data has likely been suffering from data debt. The CDO must nurture programs to improve useful subsets of organizational data and simultaneously reduce the impact of data debt. Data volume and debt necessitate prioritization and the CDO must incorporate a strategic approach to improving the value of an organization's data.

For data's true value to become apparent, it needs to be understood as a defined part of the organizational value chain. The CDO is responsible for appropriate aspects of monetization to the organizations data. This requires architecting organizational data requirements in the context of present and future business operations. These requirements identify data products directly supporting business value.



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The Case for the Chief Data Officer

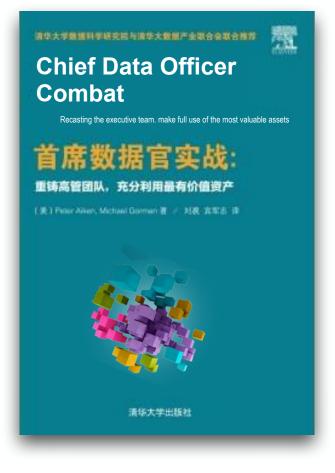
Recasting the C-Suite to Leverage Your Most Valuable Asset



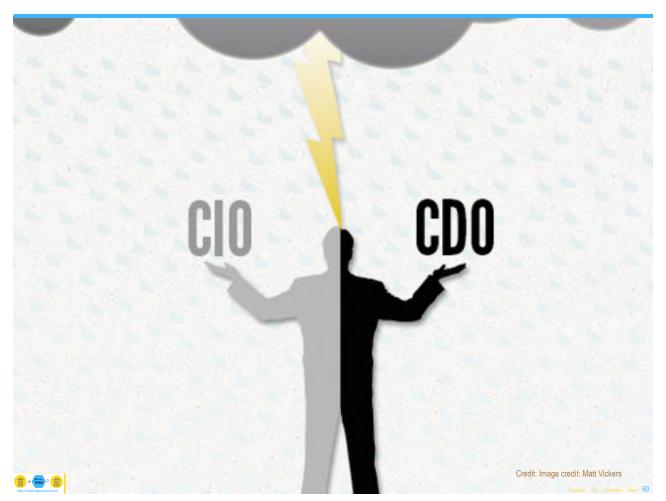
Peter Aiken and Michael Gorman











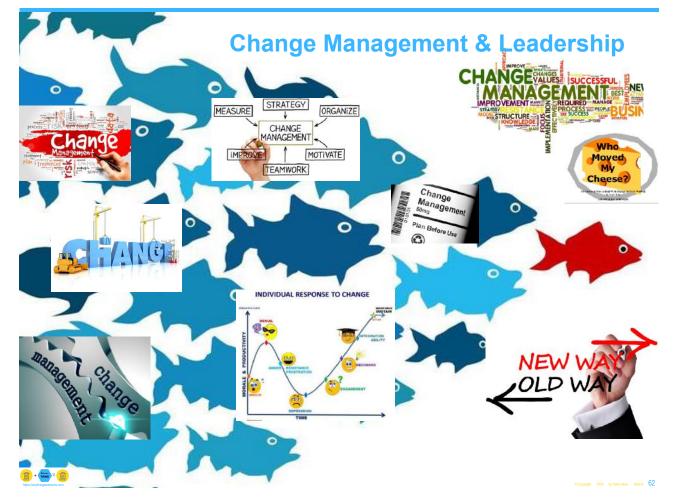
Change the status quo!

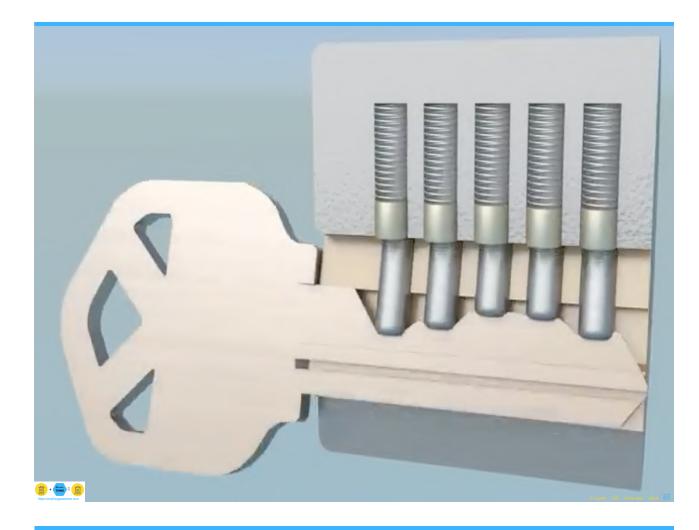
- Keep in mind that the appointment of a CDO typically comes from a high-level decision. In practice, it can trigger an array of problematic reactions within the organization including:
 - Confusion,
 - Uncertainty,
 - Doubt,
 - Resentment and
 - Resistance.
- CDOs need to rise to the challenge of changing the status quo if they expect to lead the business in making data a strategic asset.

Mar

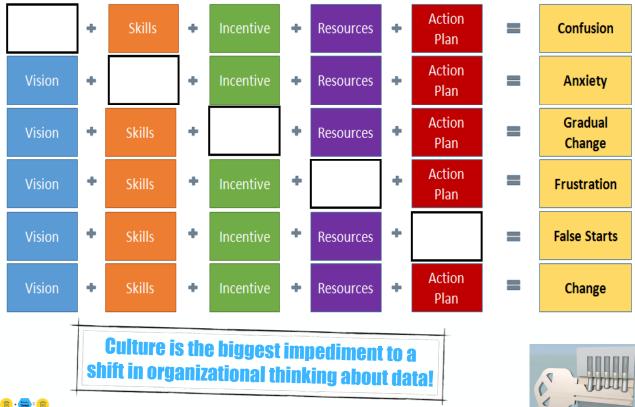
 from What Chief Data Officers Need to Do to Succeed by Mario Faria
 https://www.forbes.com/sites/gathergroup/2016/04/11/what-chief-data-officers-need-to-do-to-succeed/#734d53a8434a





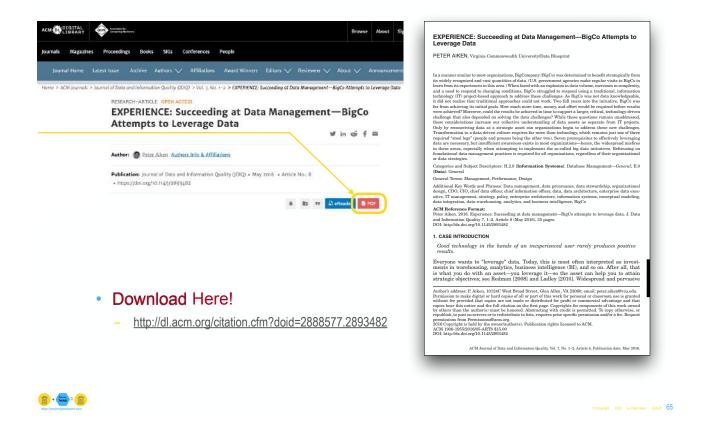


Diagnosing Organizational Readiness

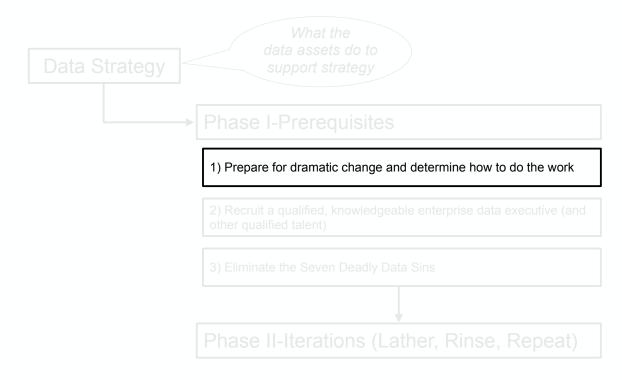




No cost, no registration case study download

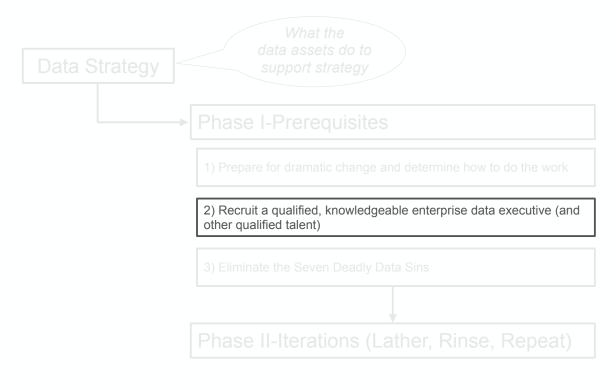


Data Strategy is Implemented in 2 Phases





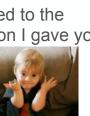
Data Strategy is Implemented in 2 Phases



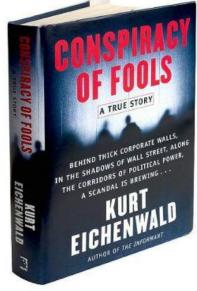


Enron

- Fortune named Enron "America's Most Innovative Company" for six consecutive years
- Suffered the largest Chapter 11 bankruptcy in history (up to that time)
- August 2001: $\$90.00 \rightarrow \$42.00 \rightarrow \$0.26$
- Dynegy (several \$ billion) attempted rescue
- Enron spends entire amount in 1 week
 - Any person can write a check at Enron for
 - Any amount of money for
 - Any purchase at
 - Any time ...
- Enron goes back to Dynegy for more \$?
- Dynegy: What happened to the several \$ billion I gave you last week?
- Enron:







http://en.wikipedia.org/wiki/Enron



CFO Necessary Prerequisites/Qualifications

- CPA
- CMA
- Masters of Accountancy
- Other recognized
 degrees/certifications
- These are necessary but insufficient prerequisites/ qualifications





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What do we teach knowledge workers about data?

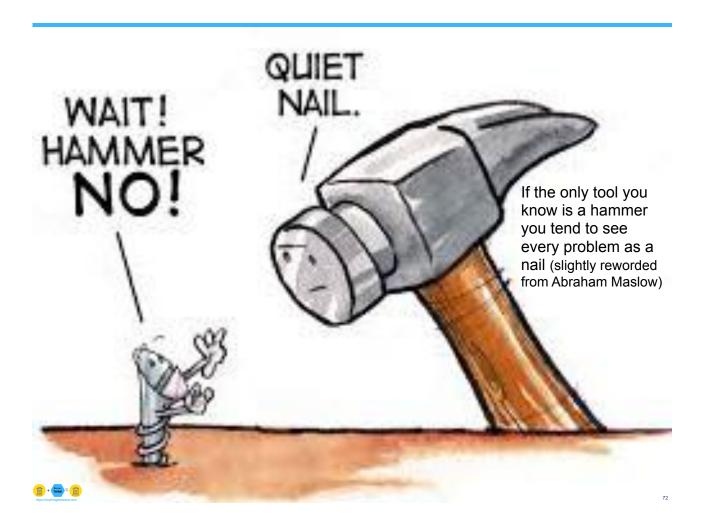


What do we teach IT professionals about data?

- 1 course
 - How to build a new database
- What impressions do IT professionals get
 - from this education?
 - Data is a technical skill that is needed when developing new databases

Angen THING

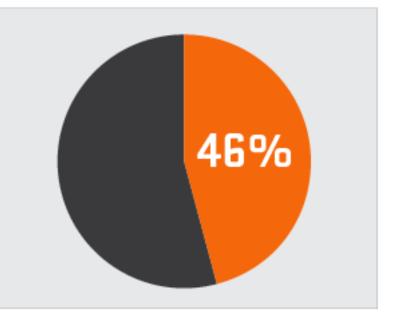
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Bad Data Decisions Spiral

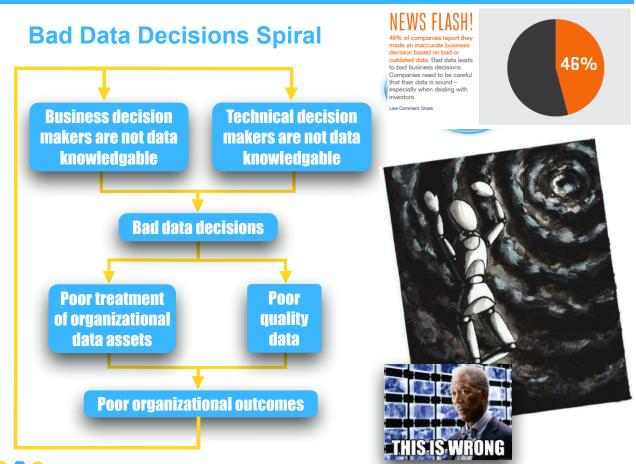
NEWS FLASH!

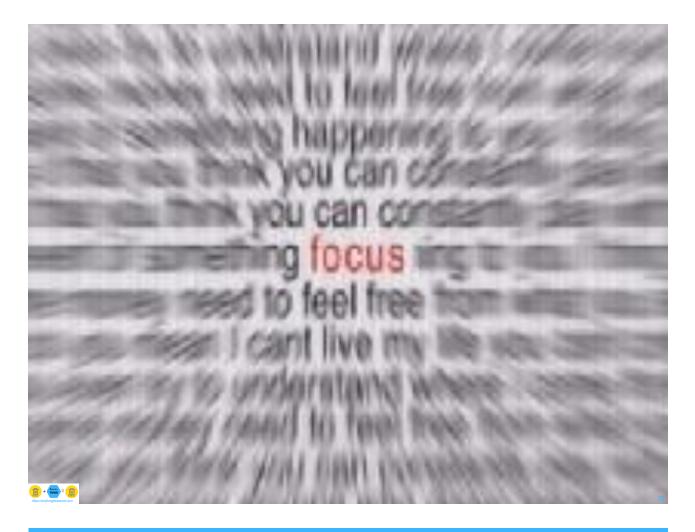
46% of companies report they made an inaccurate business decision based on bad or outdated data. Bad data leads to bad business decisions. Companies need to be careful that their data is sound – especially when dealing with investors.



Like Comment Share

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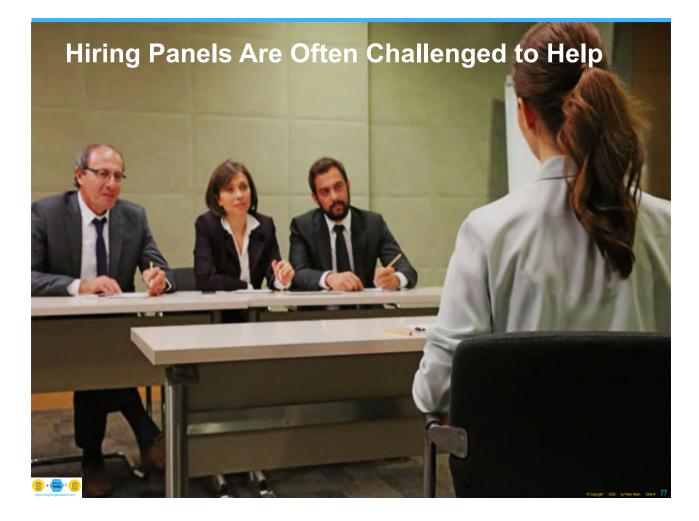


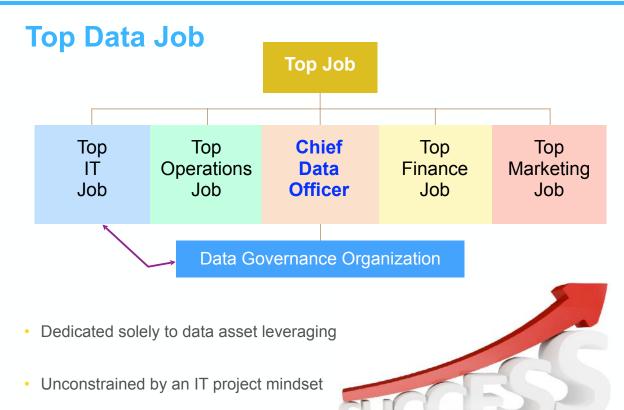
A Single Focus

- Chief
 - The head or leader of an organized body of people; the person highest in authority: the chief of police
- Chief Financial Officer (CFO) ← does not balance books
 - Individual possessing the knowledge, skills, and abilities to be both the final authority and decision-maker in organizational financial matters
- Chief Risk Officer (CRO) ← does not test software
 - Individual possessing the knowledge, skills, and abilities makes decisions and implements risk management
- Chief Medical Officer (CMO) ← does not perform surgery
 - Responsible for organizational medical matters. The organization, and the public, has similar expectations for any of chief officer – especially after the Sarbanes-Oxley bill.







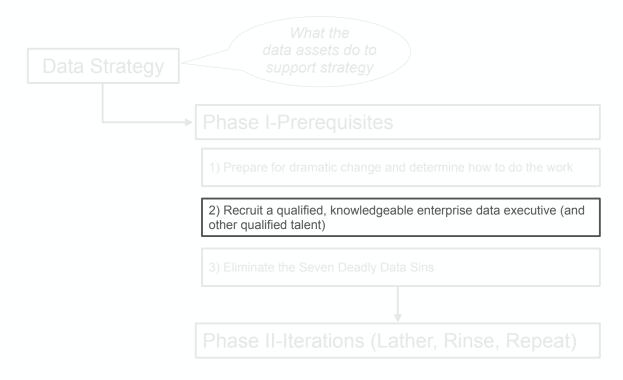


Reporting to the business



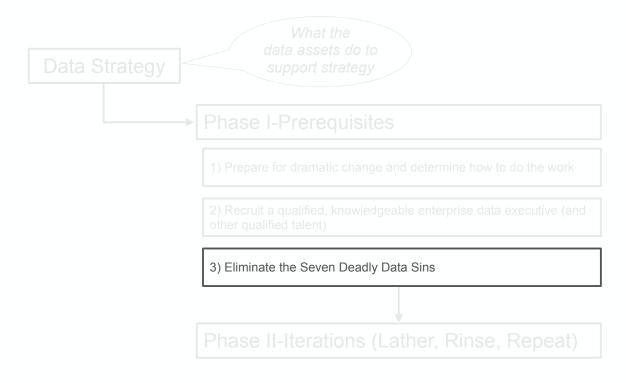


Data Strategy is Implemented in 2 Phases





Data Strategy is Implemented in 2 Phases









Exorcising the Seven Deadly Data Sins



Not Understanding Data-Centric Thinking

Lacking Qualified Data Leadership

Not implementing a Robust, Programmatic Means of **Developing Shared Data**

Not Aligning The Data Program with IT Projects

Failing to Adequately Manage Expectations

5 6 Not Sequencing Data

A Strategy Implementation



Failing To Address Cultural And Change **Management Challenges**



the Data Doctrine[®] (V2)

THE DATA DOCTRINE

We are uncovering better ways of developing IT systems by doing it and helping others do it. Through this work we have come to value:

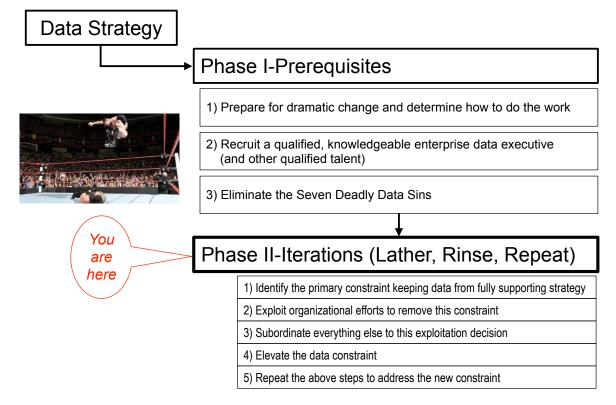
data programmes driving IT programs informed information investing over technology acquisition activities stable, shared organizational data over IT component evolution data reuse over the acquisition of new data sources

> That is, while there is value in the items on the right, we value the items on the left more.



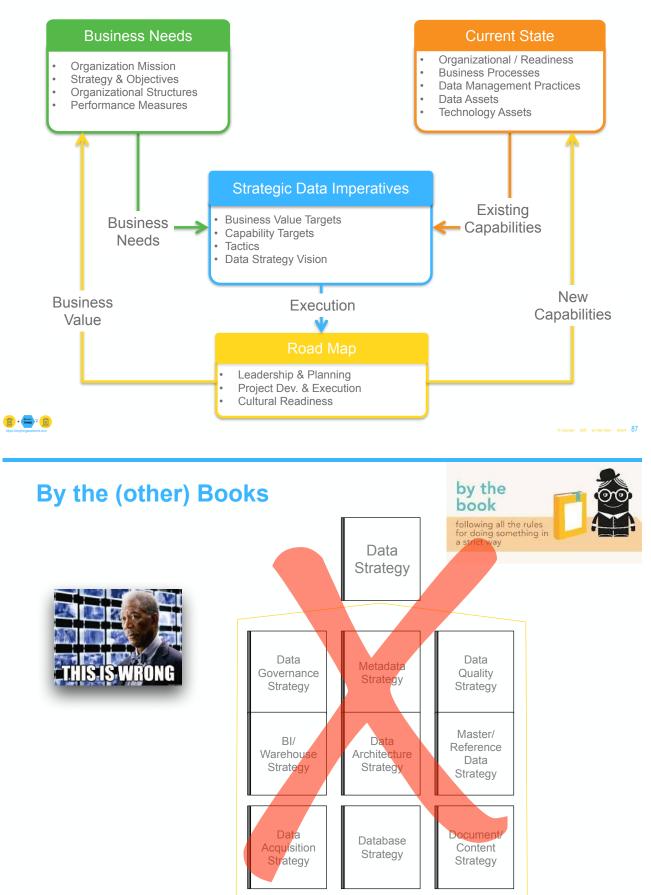


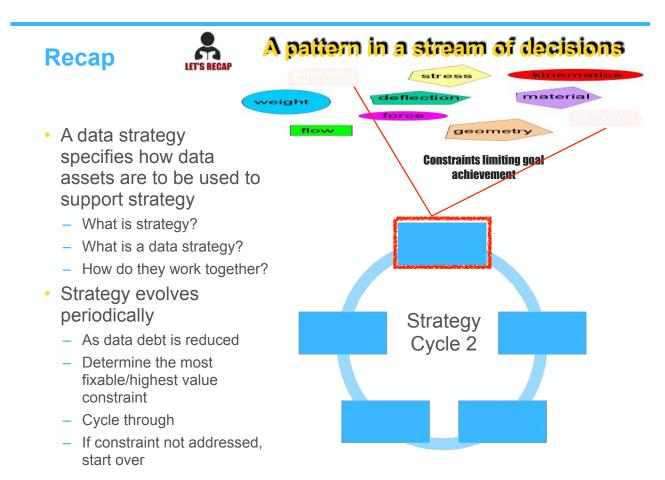
Data Strategy is Implemented in 2 Phases





Data Strategy Framework (Part 2)





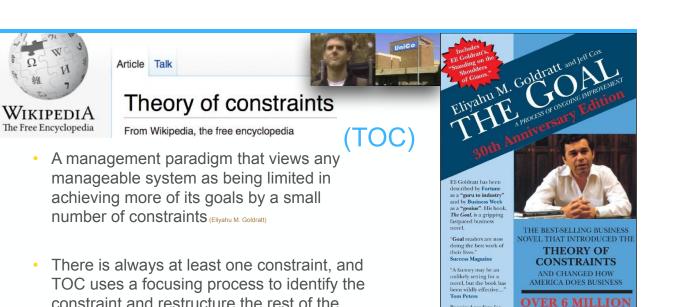


The Goal

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Eliyahu M. Goldratt and Jeff Cox PROCESS OF ONGOING IMPROVEME Eli Goldratt has been described by Fortune as a "guru to industry" and by Business Week as a **"genius"**. His book, *The Goal*, is a gripping fastpaced business novel. THE BEST-SELLING BUSINESS "Goal readers are now NOVEL THAT INTRODUCED THE doing the best work of **THEORY OF** their lives. Success Magazine **CONSTRAINTS** "A factory may be an AND CHANGED HOW unlikely setting for a novel, but the book has AMERICA DOES BUSINESS been wildly effective " Tom Peters OVER 6 MILLION Required reading for COPIES SOLD Amazon's management. Amazon's management





organization to address it

constraint and restructure the rest of the

TOC adopts the common idiom "a chain is no stronger than its weakest link," processes, organizations, etc., are vulnerable because the weakest component can damage or break them or at least adversely affect the outcome

Required reading for

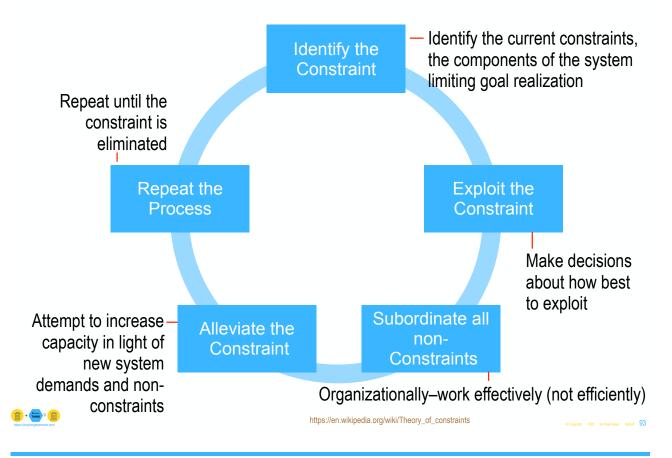
OVER 6 MILLION

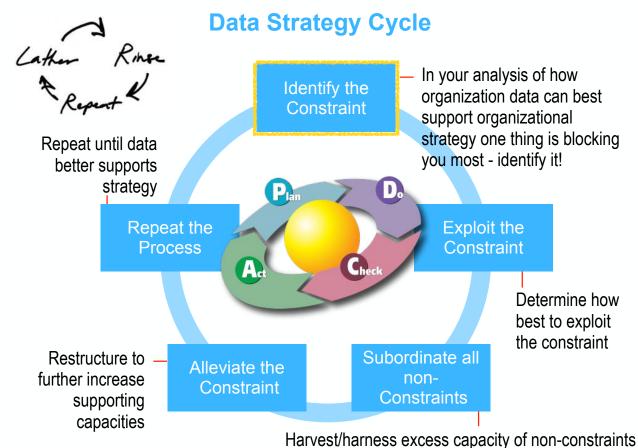
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https://en.wikipedia.org/wiki/Theory_of_constraints



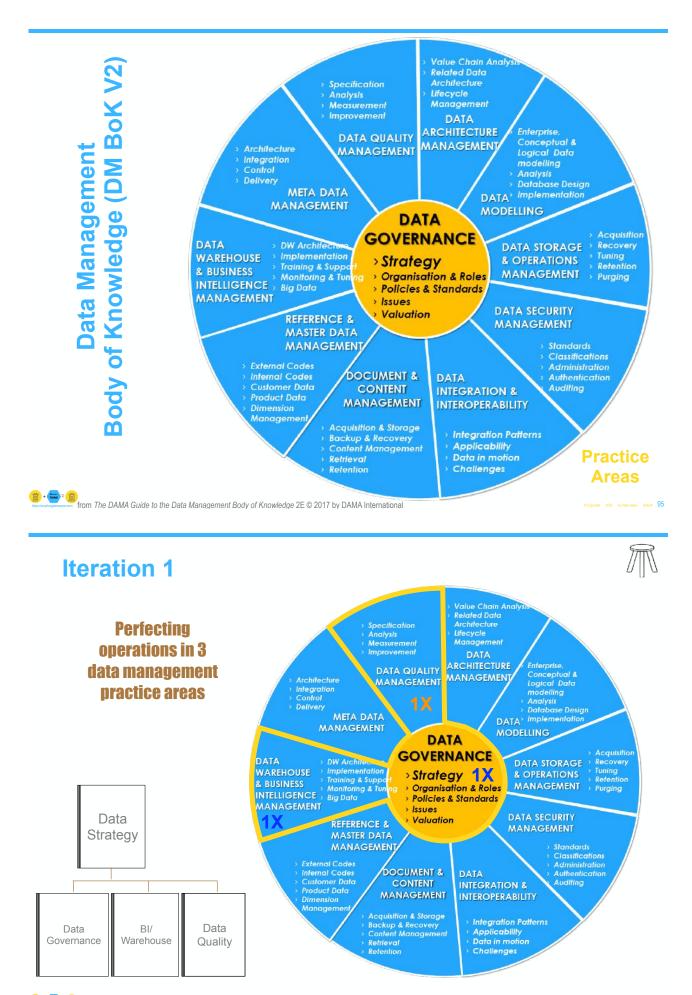
Theory of Constraints - Generic



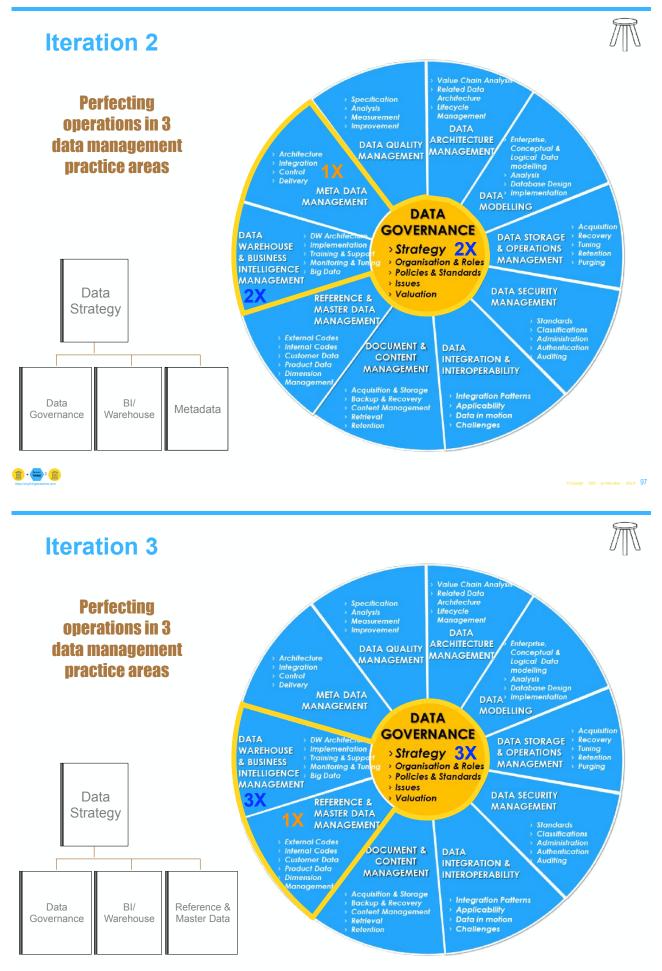




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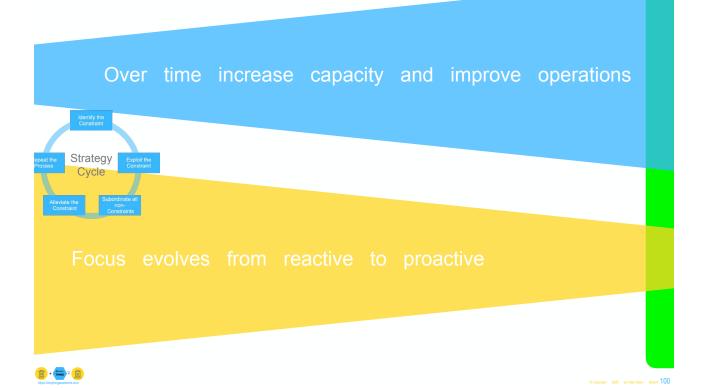
+ tang = the https://anythingawesome.com



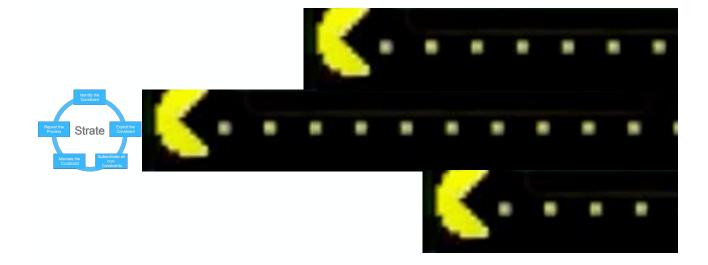
Value Chain Consider who **3 Steps to Value** • knows? **Chain Analysis** Data professionals? Knowledge workers 10x multiplier A sequence of intellectual tasks **IDENTIFY VALUE** DETERMINE IDENTIFY ACTIVITIES' VALUES COMPETITIVE by which CHAIN ACTIVITIES ADVANTAGE AND COSTS knowledge workers List all the primary **OPPORTUNITIES** Determine the value and secondary build their that each business Analyze your value activities that go into employer's unique activity adds to the chain through the lens your service's creation. process, along with of your competitive competitive associated costs. advantage goals. advantage [1] and/ or social and environmental Harvard Business School ¥ benefit. [https://online.hbs.edu/ blog/post/what-is-value-chain-analysis]



Strategy helps your data program



Increasing Implementation Effectiveness



Program **verview**

- A data strategy specifies how data assets are to be used to support the organizational strategy
 - What is strategy?
 - What is a data strategy?
 - How do they work together?
- A data strategy is necessary for effective data governance
 - Improve your organization's data
 - Improve the way people use their data
 - Improving how people use data to support their organizational strategy
- Effective Data Strategy Prerequisites
 - Lack of organizational readiness
 - Failure to compensate for the lack of data competencies
 - Eliminating the barriers to leveraging data, the seven deadly data sins
- Data Strategy Development Phase II–Iterations
 - Lather, rinse, repeat
 - A balanced approach is required
 - Establish various data value chains





• Q&A

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Bottom Line Up Front (BLUF)

- Multi-dozen+ page data strategies are less useful than the process of creating them, especially at first
- Too much time spent writing the perfect plan is accomplished at the expense of the equal effort required to become proficient implementing data strategically
- Cycling through a series of improvements is a better way to think about using data strategically than a grand plan



Upcoming Events

Data Modeling Fundamentals 11 February 2025



Time: 19:00 UTC (2:00 PM NYC) | Presented by: Peter Aiken, PhD

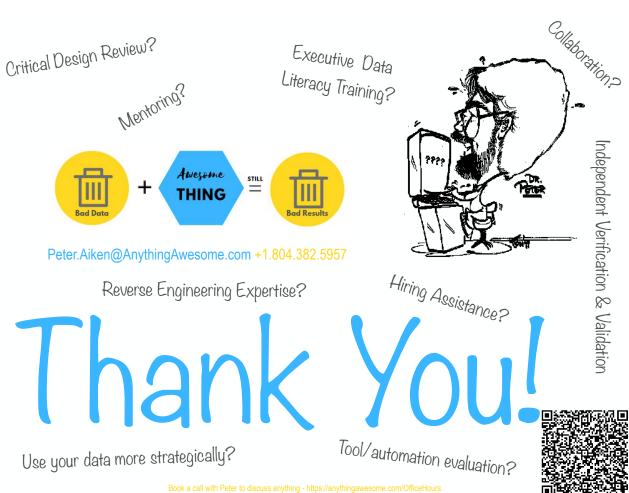
The Roles of Data Stewards 11 March 2025

Reference vs Master Data Management 8 April 2025

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Book a call with Peter to discuss anything - https://anythingawesome.com/OfficeHours