

Triple Play

Leveraging data requires leadership, value & strategy

Peter Aiken, Ph.D.

datablueprint.com

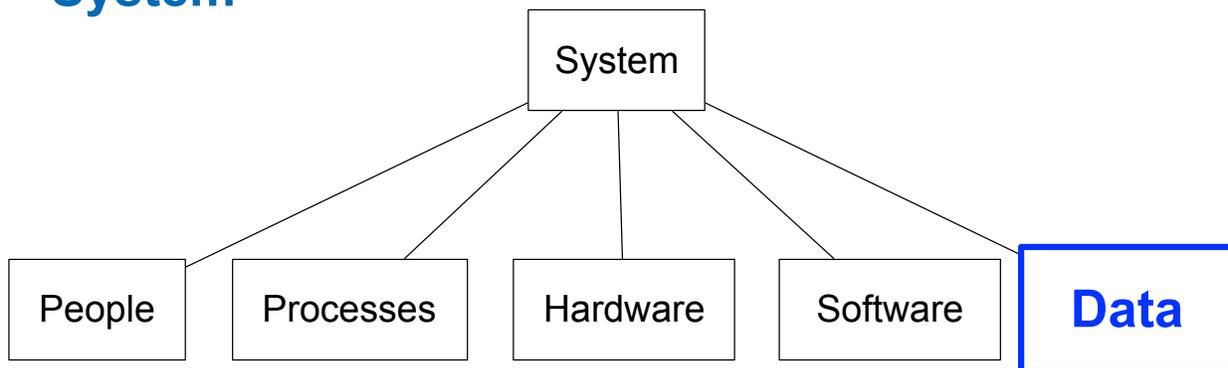
Peter Aiken, Ph.D.

- I've been doing this a long time
- My work is recognized as useful
- Associate Professor of IS (vcu.edu)
- Founder, Data Blueprint (datablueprint.com)
- DAMA International (dama.org)
- 10 books and dozens of articles
- Experienced w/ 500+ data management practices worldwide
- Multi-year immersions
 - US DoD (DISA/Army/Marines/DLA)
 - Nokia
 - Deutsche Bank
 - Wells Fargo
 - Walmart
 - ...





System



- A set of detailed methods, procedures, and routines established or formulated to carry out a specific activity, perform a duty, or solve a problem.
- An organized, purposeful structure regarded as a whole and consisting of interrelated and interdependent elements (components, entities, factors, members, parts, etc.). These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system, in order to achieve the goal of the system.

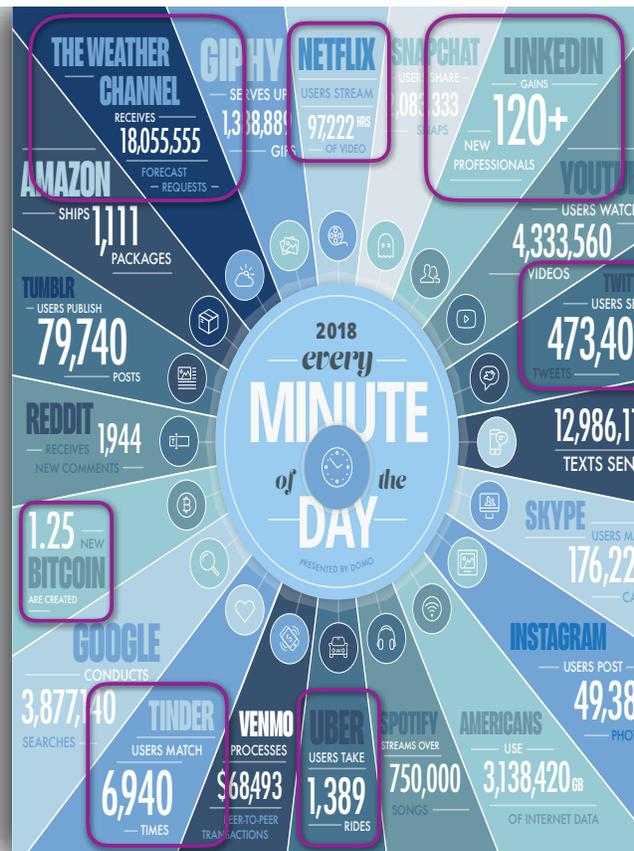
<http://www.businessdictionary.com/definition/system.html#ixzz23T7LyAjJ>

How much Data, by the minute!

For the entirety of 2018, every minute of every day:

- 18 million weather forecast requests
- Netflix streams almost 100,000 hours of video
- LinkedIn adds 120+ individuals
- 1,300 Uber rides
- (almost) a half million tweets
- 7,000 Tinder matches
- 1.25 new cryptocurrencies are created
- ...

<https://www.domo.com/learn/data-never-sleeps-6>



UNLOCKING BUSINESS VALUE



As articulated by Micheline Cas



UNLOCKING BUSINESS VALUE

Triple Play - is the rare act making three outs during the same continuous play



 data
blueprint

UNLOCKING BUSINESS VALUE



 data
blueprint

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Triple Play: Leadership, Value & Strategy

Strategy

Leadership

Value

Data Architecture

data blueprint

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The Case for the Top Data Job (TD...)
Rethinking the Future of a Critically Lacking Mission Function
Peter Allen

MONETIZING DATA MANAGEMENT
Unlocking the Value in Your Organization's Most Important Asset
PETER AIKEN WITH JUANITA BILLINGS
FOREWORD BY JOHN BOTTICA

Data Strategy and the Enterprise Data Executive
How to Build Success into IT
A Tale of the Path to Data Excellence



DEPARTMENT OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

MAY 9 2003

CHIEF INFORMATION OFFICER

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND EVALUATION
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DEFENSE
DIRECTOR OPERATIONAL TEST AND EVALUATION
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTOR, FORCE TRANSFORMATION
DIRECTOR, NET ASSESSMENT
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: DoD Net-Centric Data Strategy



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<https://ctb.ku.edu/en/table-of-contents/structure/strategic-planning/develop-strategies/m>



<https://www.cio.com/article/3088208/leadership-management/how-to-avoid-a-digital-strategy-failure.htm>

What is a Strategy?

strat·e·gy

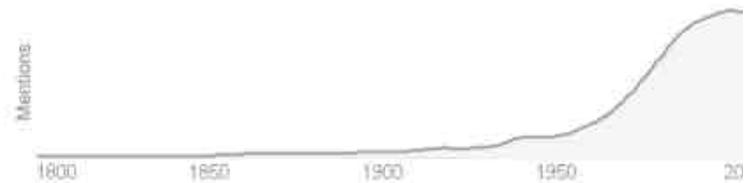
/stratəjē/

noun

1. a plan of action or policy designed to achieve a major or overall aim.
"time to develop a coherent economic strategy"
synonyms: master plan, grand design, game plan, plan (of action), action plan, policy, program; More

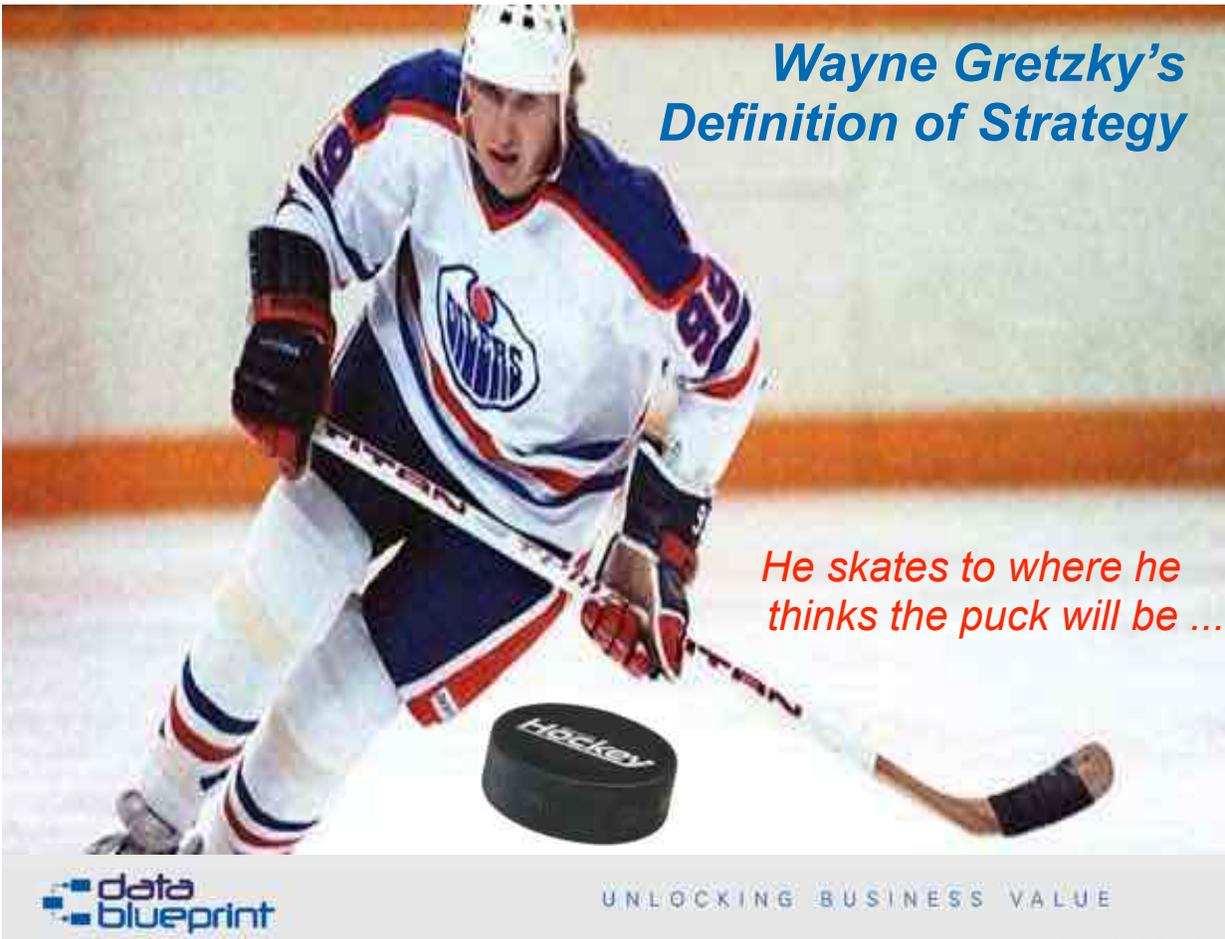
- Current use derived from military
- "a pattern in a stream of decisions" [Henry Mintzberg]

Use over time for: 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”



Supply Line Metadata
(as part of a divide and conquer strategy)





Complex Strategy

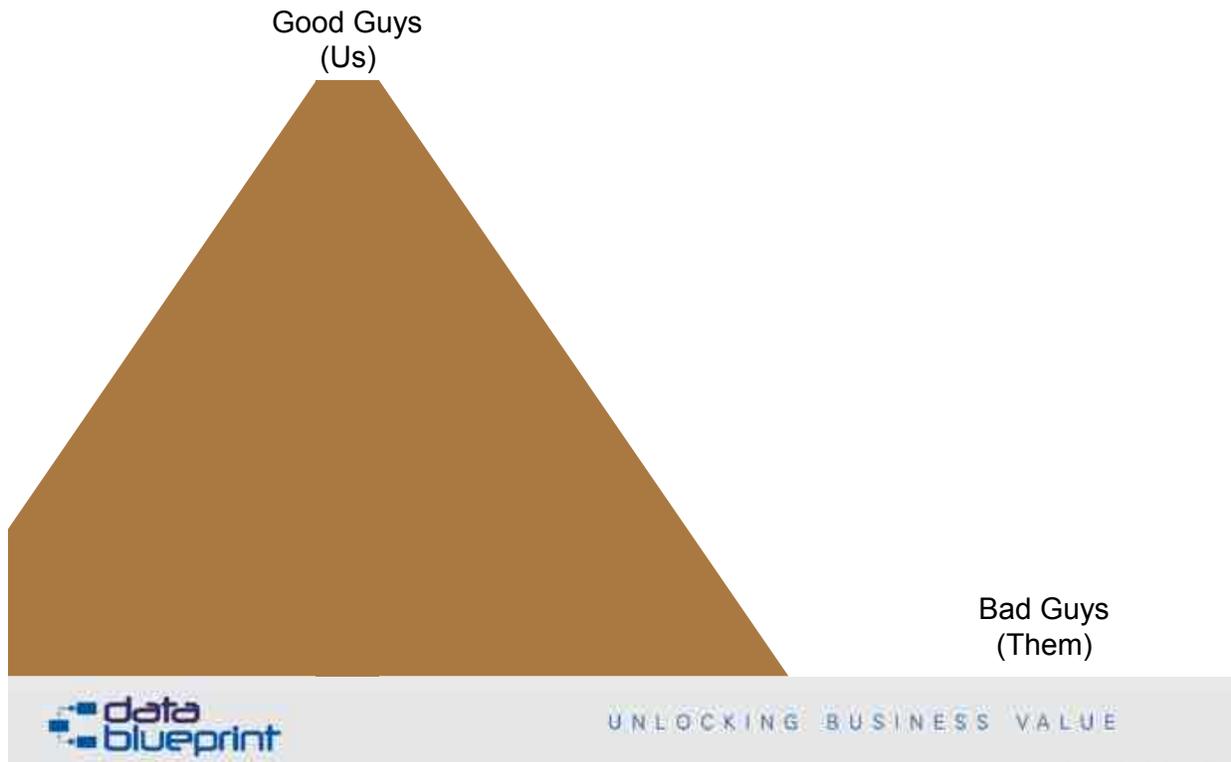
- First
 - Hit both armies hard at just the right spot
- Then
 - Turn right and defeat the Prussians
- Then
 - Turn left and defeat the British



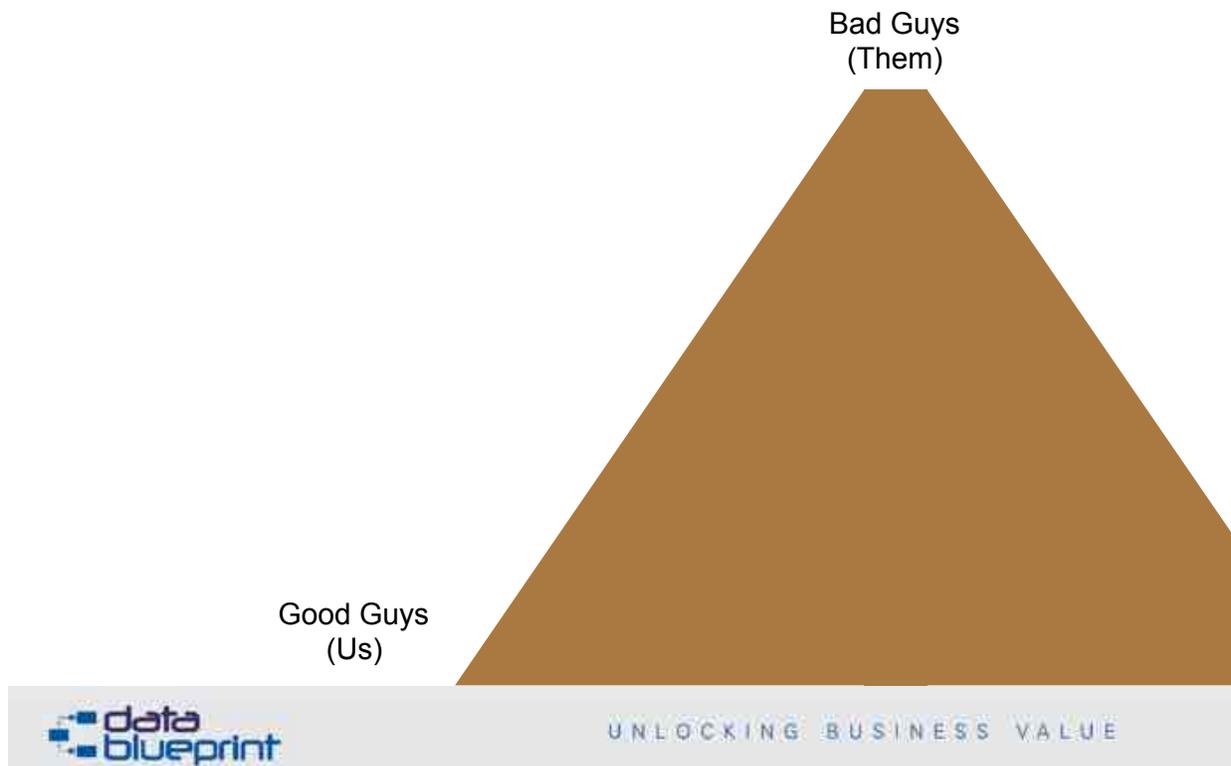
While someone else is shooting at you!



Strategy Example 1



Strategy Example 2



A Musical Analogy

Musical score for "STAYIN' ALIVE" by BEE GEES. The score includes a drum key, tempo markings (104-108 bpm), and musical notation for various instruments.

+

Handwritten list: 1. Practice, 2. Practice, 3. Practice

=

Stylized word "MUSIC" with musical notes and instruments.

<https://www.youtube.com/watch?v=4n1GT-VjVs&frags=pl%2C>

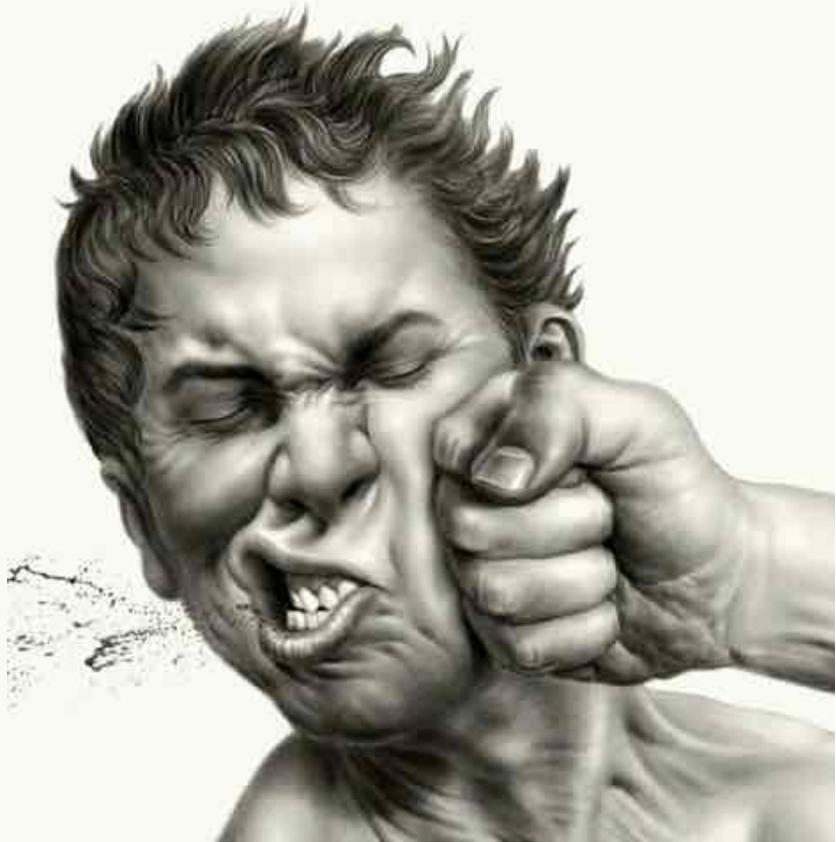
Strategy that winds up only on a **shelf** is not useful



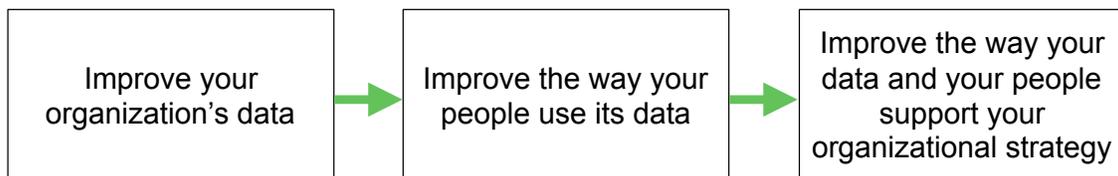
Mike Tyson

- “Everybody has a plan until they get punched in the face.”

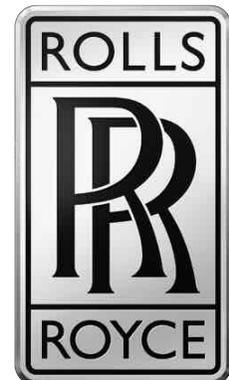
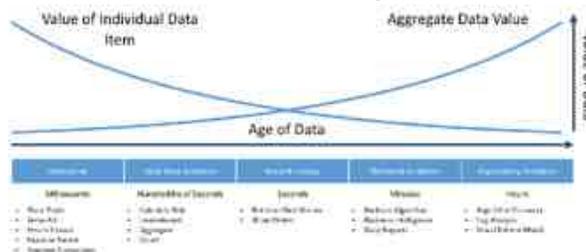
– <http://f-f.info/?p=23071>



Reasons for a Data Strategy



- Because data points to where valuable things are located
- Because data has intrinsic value by itself
- Because data has inherent combinatorial value
- Valuing Data
 - Use data to measure change
 - Use data to manage change
 - Use data to motivate change
- Creating a competitive advantage with data



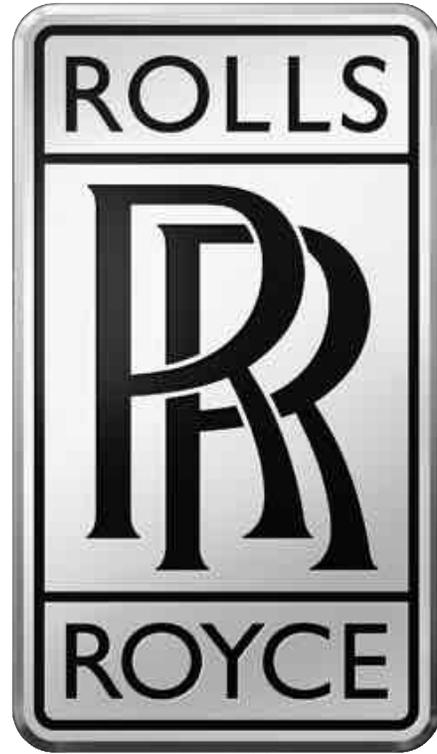
What did Rolls Royce Learn from *Formula 1*

- Old model
 - Sell jet engines
- New model
 - Sell hours of thrust power
 - Power-by-the-hour
 - No payment for down time
 - Wing to wing
 - When was it invented?

Rolls-Royce celebrates 50th anniversary of Power-by-the-Hour

Rolls-Royce, the global power services leader, has announced the 50th anniversary of Power-by-the-Hour, a pioneering payment-by-use model that has revolutionized the way the world's airlines and other customers pay for engine power.

Power-by-the-Hour is a Rolls-Royce engine-by-use contract that allows the user to pay for engine power by the hour, rather than by the engine. This model has been a key driver of Rolls-Royce's success in the power services market, and it is now being expanded to other markets.



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Triple Play: Leadership, Value & Strategy

Strategy

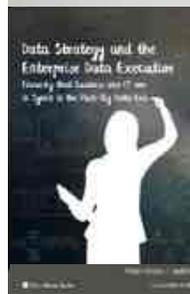


MONETIZING DATA MANAGEMENT

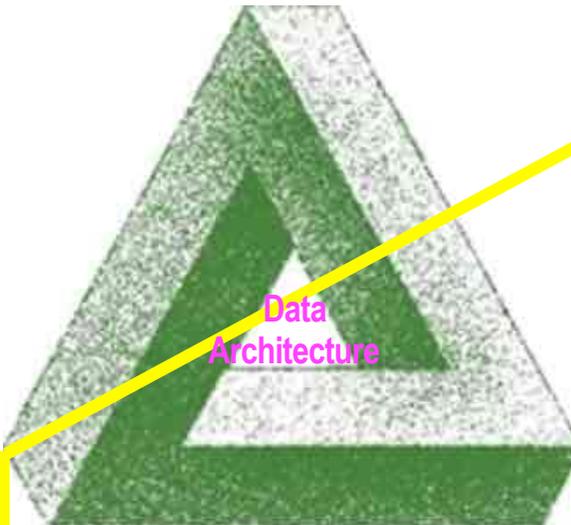


Unlocking the Value in Your Organization's Most Important Asset

PETER AIKEN WITH JUANITA BILLINGS
FOREWORD BY JOHN BOTTICIA



Data Architecture



Value



Leadership

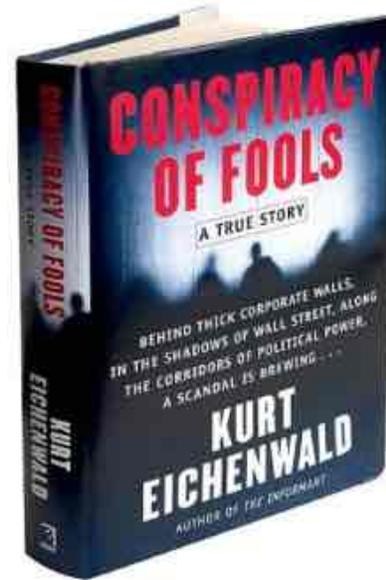


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Enron

- 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 → \$42.00 → \$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>



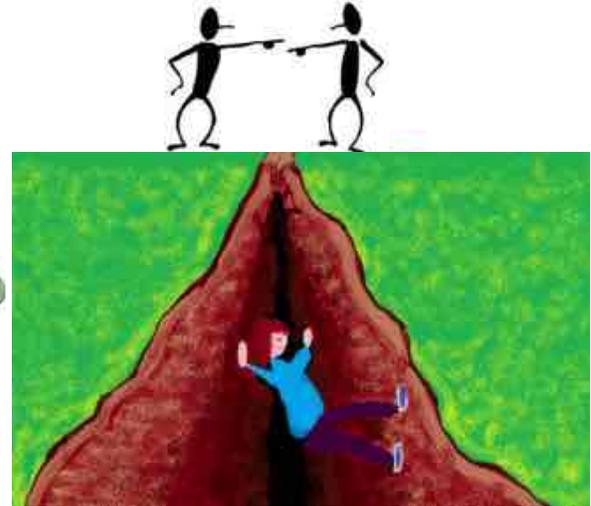
CFO Necessary Prerequisites/Qualifications

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



Confusion

- IT thinks data is a business problem
 - "If they can connect to the server, then my job is done!"
- The business thinks IT is managing data adequately
 - "Who else would be taking care of it?"



What do we teach knowledge workers about data?

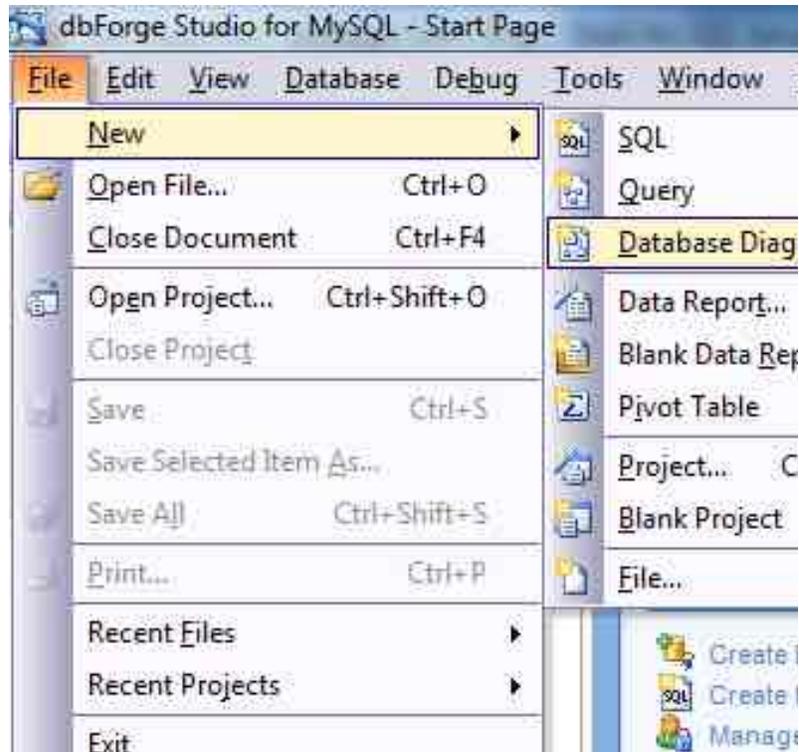


What percentage of the deal with it daily?

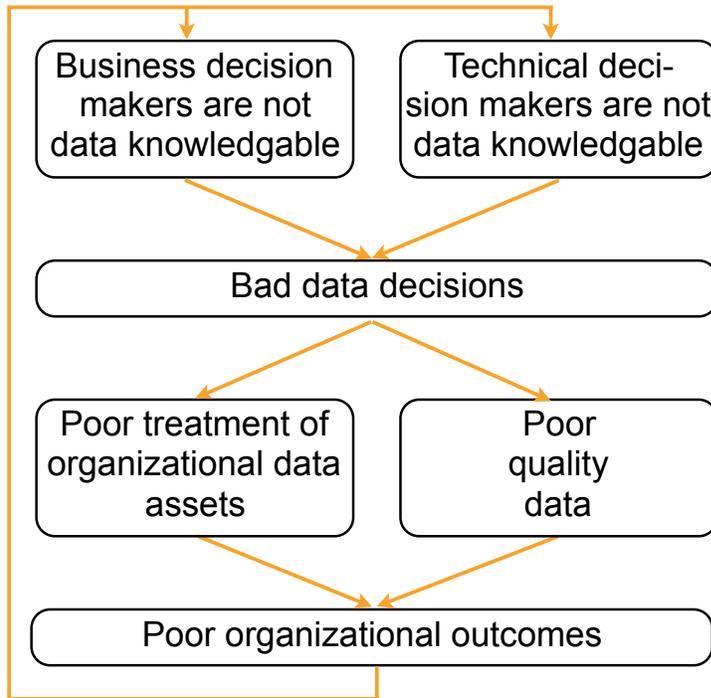
100%

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



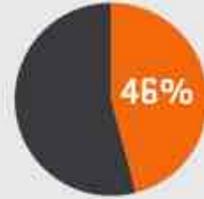
Bad Data Decisions Spiral



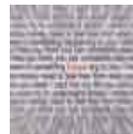
NEWS FLASH!

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 vendors.

InfoComm Group



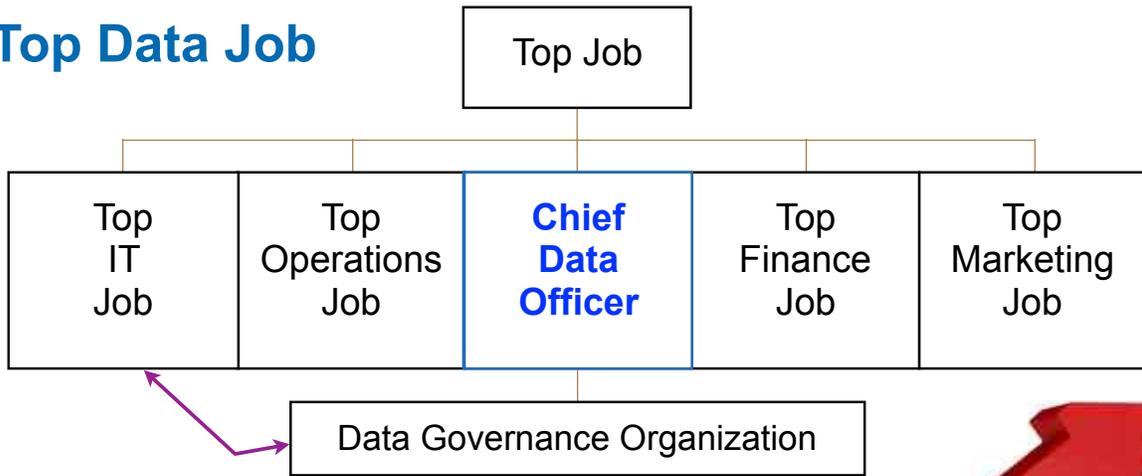
A Singular Focus



- 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.

[dictionary.com]

Top Data Job



- Dedicated solely to data asset leveraging
- Unconstrained by an IT project mindset
- Reporting to the business
- *90 Percent of Large Global Organizations Will Have Appointed Chief Data Officers By 2019*
(Gartner website accessed January 26, 2016 <http://www.gartner.com/newsroom/id/3190117?>)



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CDO Agenda

Manage data as an organizational asset in an attempt to obtain a strategic advantage (achieve the organizational mission)!

AGENDA

- Develop the first version of an organizational data strategy
- Inventory data assets-> decrease data ROT
- Monetize your organization's data



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Triple Play: Leadership, Value & Strategy

Strategy



Leadership



Data Architecture



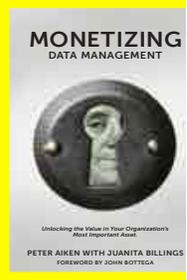
Value



The Case for the Top Data Job (TD)



MONETIZING DATA MANAGEMENT



YOUR DATA STRATEGY



data blueprint

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Tacoma Narrows Bridge/Gallopin' Gertie



- Slender, elegant and graceful
- World's 3rd longest suspension span
- Opened on July 1st, collapsed in a windstorm on November 7, 1940
- "The most dramatic failure in bridge engineering history"
- Changed forever how engineers design suspension bridges leading to safer spans today.



Similarly data failures cost organizations minimally 20-40% of their IT budget



Data Footprints

- SQL Server
 - 47,000,000,000,000 bytes
 - Largest table 34 billion records 3.5 TBs
- Informix
 - 1,800,000,000 queries/day
 - 65,000,000 tables / 517,000 databases
- Teradata
 - 117 billion records
 - 23 TBs for one table
- DB2
 - 29,838,518,078 daily queries



Repeat 100s, thousands, millions of times ...



 data
blueprint

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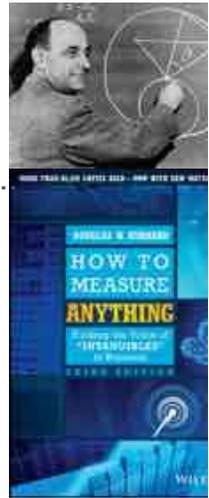


 data
blueprint

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Enrico Fermi (Nobel Prize Physics 1938)

- How many piano tuners in the city of Chicago?
 - Without using existing lists such as yellow pages, google ..
 - Current population of Chicago (3 million at the time)
 - Average number of people per household (2 or 3)
 - Share of households with regularly tuned pianos (1 in 3)
 - Required frequency of tuning (1/year)
 - How many pianos can a tuner tune daily? (4 or 5)
 - How many days/year are worked (250)



- Tuners in Chicago \approx Population/people per household
times % households with tuned pianos
times tunings per year
divided by (tunings per tuner per day
times workdays/year)



Mobile Phone Policy



- Must turn in if not used for 90 days
- Many providers of mobile phones
- Warehouse integration strategy
 - Months and millions to develop technologies
 - Dozens of ETL streams to feed the warehouse
- Does not address some fundamental questions
 - *It has been 88 days, it that close enough?*
 - *It has been 92 days, should I wait a bit more?*
- Reset - 3 billing cycles
 - Eliminates technology need - work level is clerical not technical



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Logistics Company

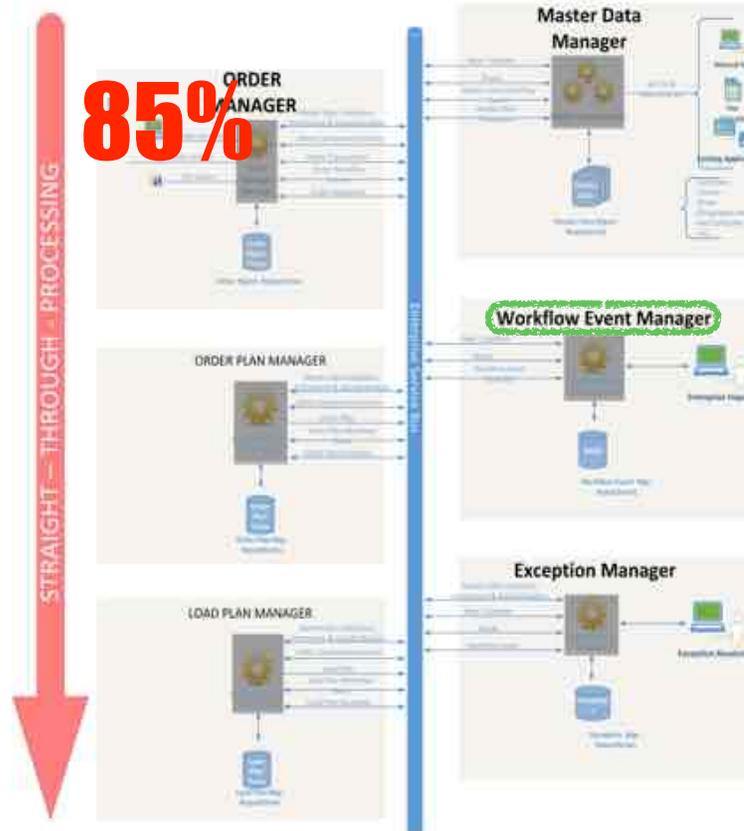
- Fortune 450
- Room of 100 associates
- Manually correcting every item on every customer invoice
- Upon noting this to the responsible manager - the reply was:
 - *This is the best quarter*
 - *Of the best year*
 - *I've ever had*
 - *Perhaps I need to double the number in that room?*



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Example : Data Integration and Platforms

- Straight Through Processing
 - Auto Everything
- Workflow Event Mgr
 - 360 View of the order
- Exception Manager
 - Alert and Notification system when human involvement is needed



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Improving Data Quality during System Migration

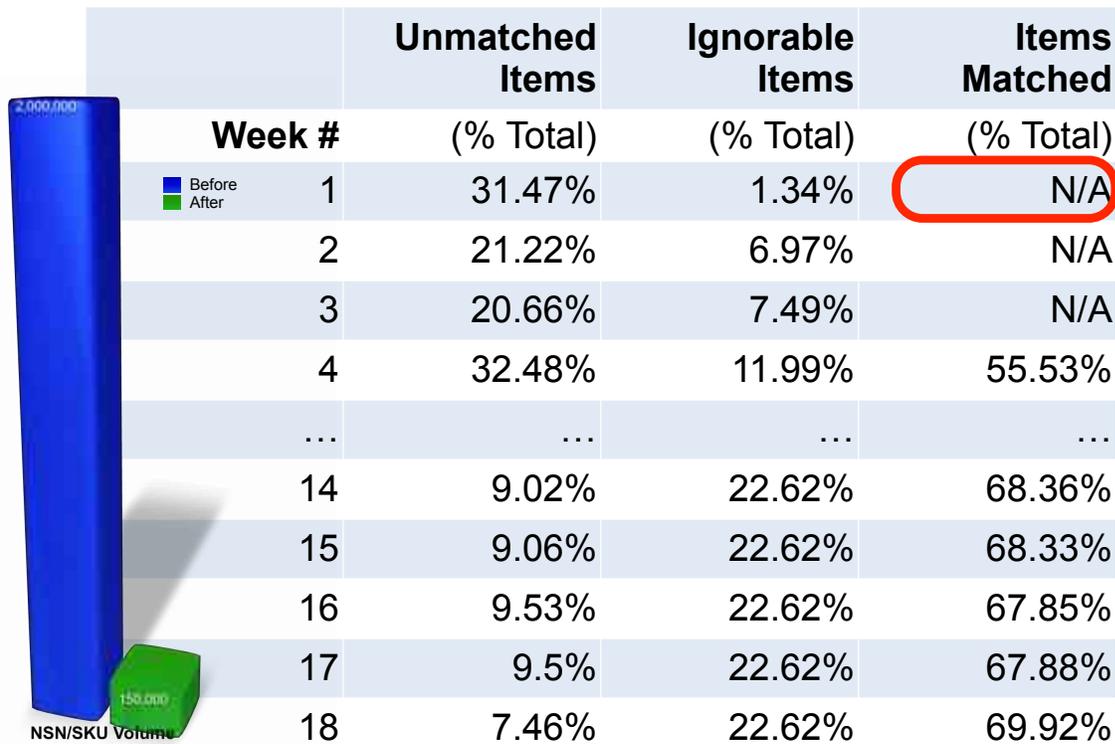
- Challenge
 - Millions of NSN/SKUs maintained in a catalog
 - Key and other data stored in clear text/comment fields
 - Original suggestion was manual approach to text extraction
 - Left the data structuring problem unsolved
- Solution
 - Proprietary, improvable text extraction process
 - Converted non-tabular data into tabular data
 - Saved a minimum of \$5 million
 - Literally person centuries of work

Data Catalog



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Determining Diminishing Returns



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Quantitative Benefits



Time needed to review all NSNs once over the life of the project:

| | |
|---|------------|
| NSNs | 2,000,000 |
| Average time to review & cleanse (in minutes) | 5 |
| Total Time (in minutes) | 10,000,000 |

Time available per resource over a one year period of time:

| | |
|-------------------------|---------|
| Work weeks in a year | 48 |
| Work days in a week | 5 |
| Work hours in a day | 7.5 |
| Work minutes in a day | 450 |
| Total Work minutes/year | 108,000 |

Person years required to cleanse each NSN once prior to migration:

| | |
|-------------------------------|------------|
| Minutes needed | 10,000,000 |
| Minutes available person/year | 108,000 |
| Total Person-Years | 92.6 |

Resource Cost to cleanse NSN's prior to migration:

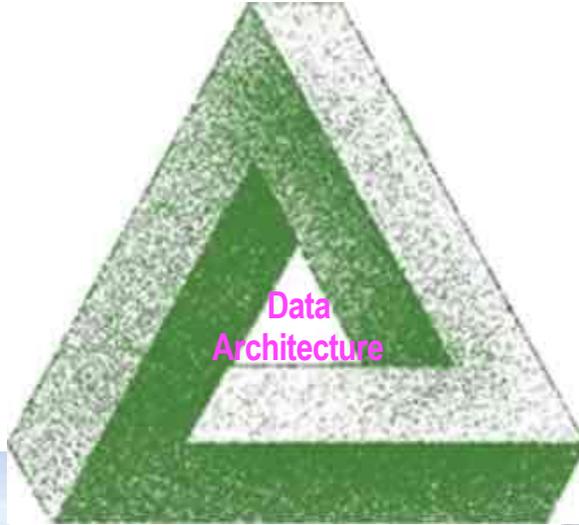
| | |
|---|---------------|
| Avg Salary for SME year (not including overhead) | \$60,000.00 |
| Projected Years Required to Cleanse/Total DLA Person Year Saved | 93 |
| Total Cost to Cleanse/Total DLA Savings to Cleanse NSN's: | \$5.5 million |



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Triple Play: Leadership, Value & Strategy

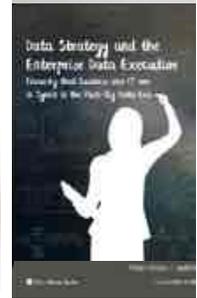
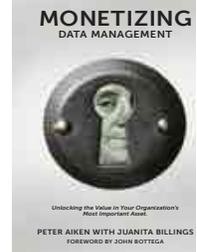
Strategy



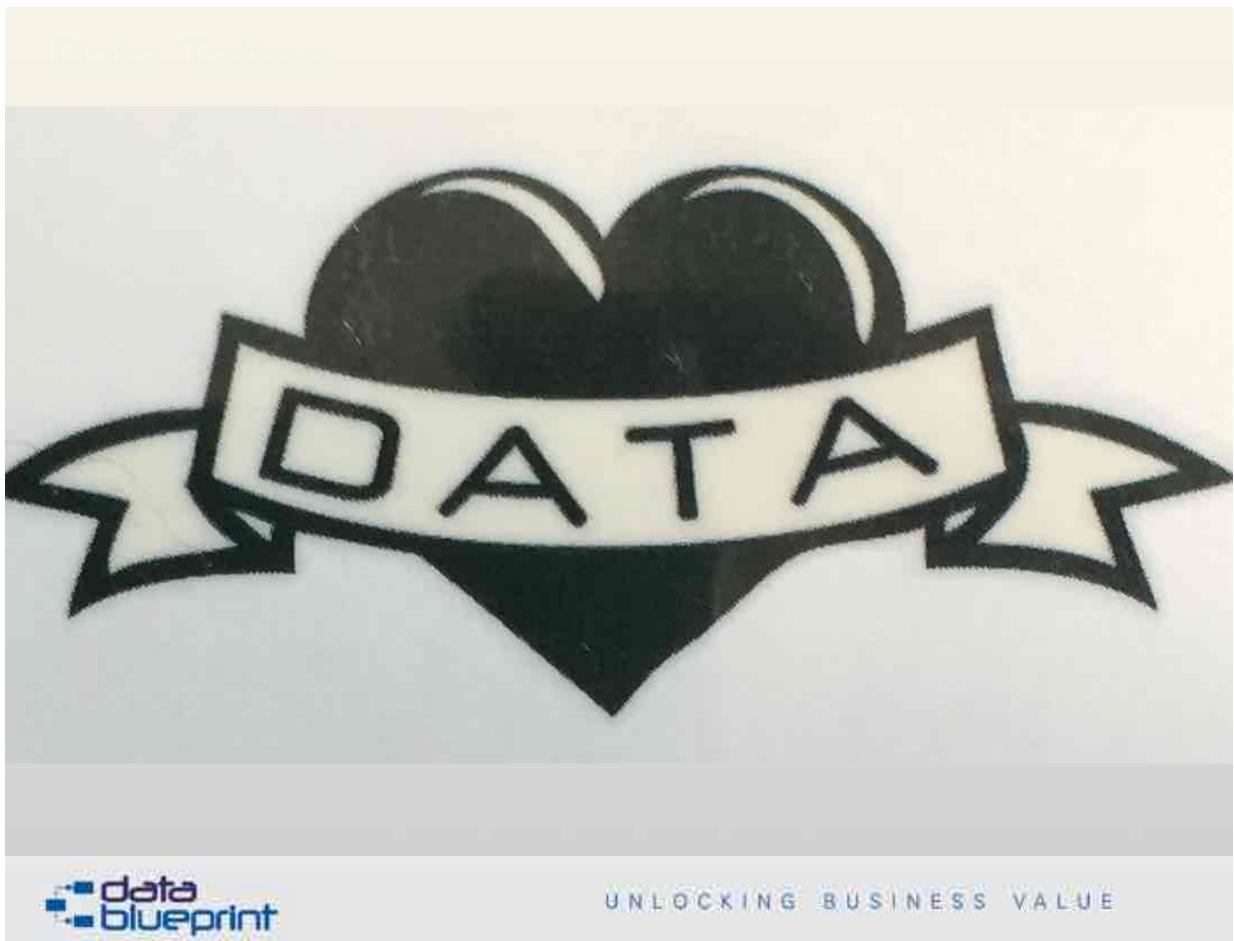
Value



Leadership

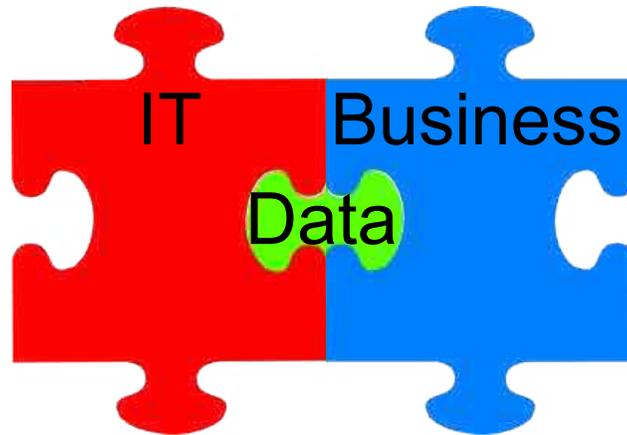


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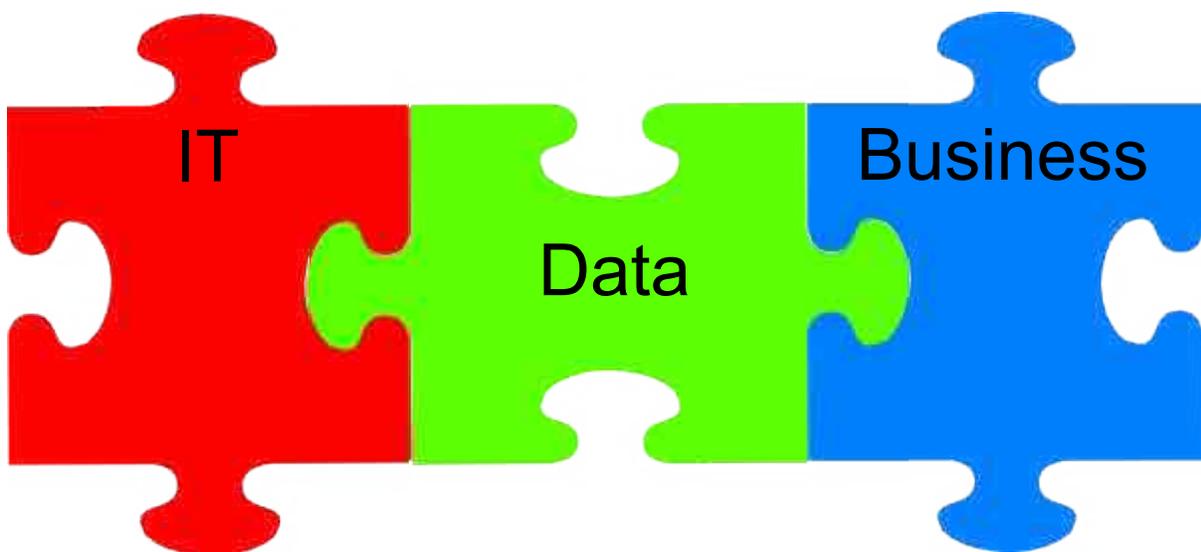


UNLOCKING BUSINESS VALUE

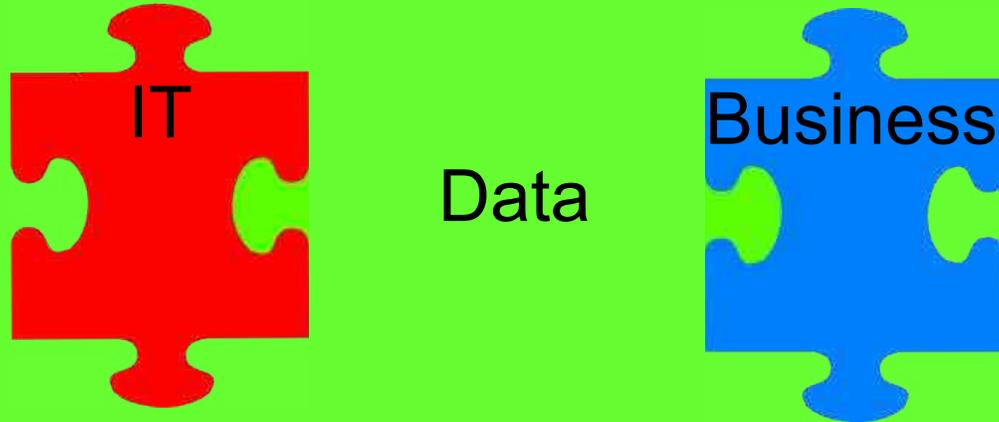
Perceived State of Data



Desired To Be State of Data



The Real State of Data



It isn't possible to go digital

Digital

By just spelling 'data'

Dat



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It requires more work

Data



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Lady Ada Augusta King Rule

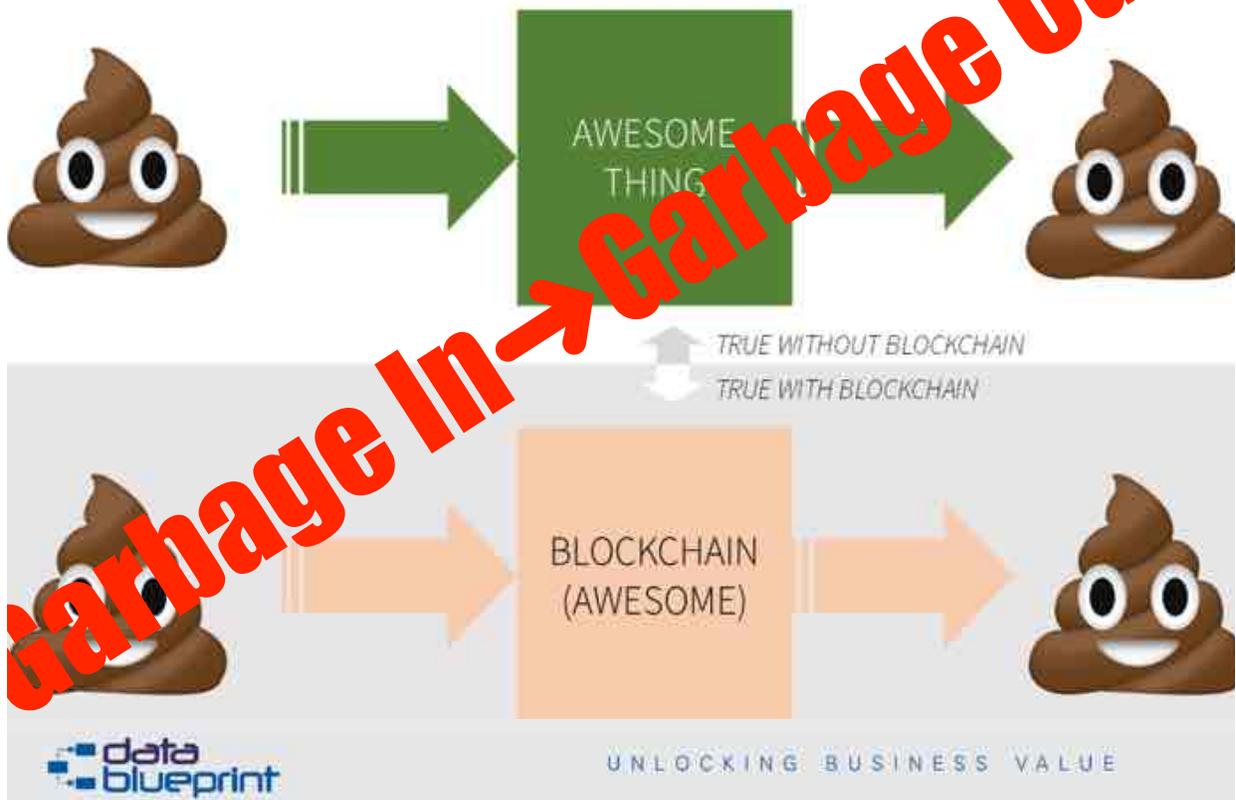


<https://people.well.com/user/adatoole/bio.t>



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Recent Technology Realization



Garbage In → Garbage Out!



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Garbage
Data

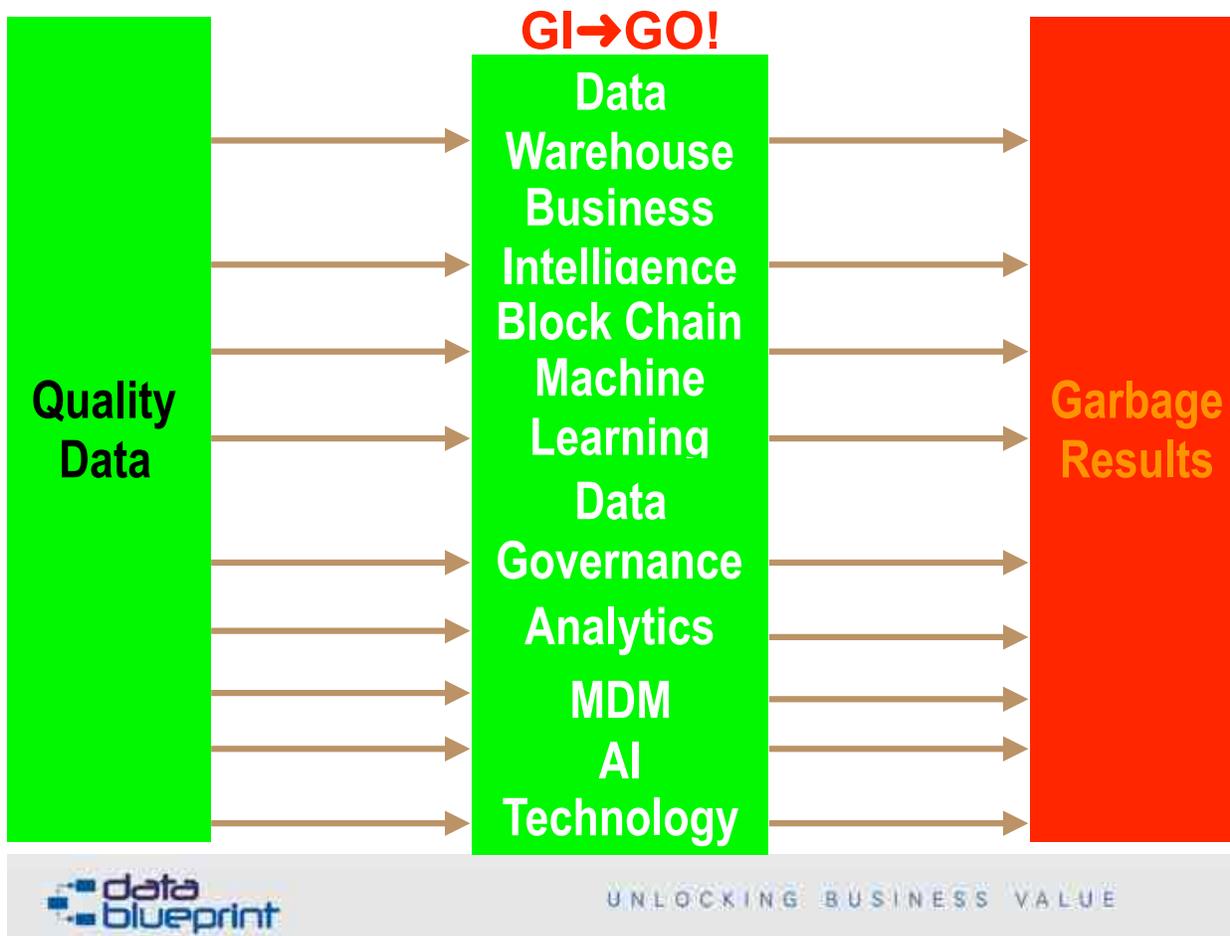
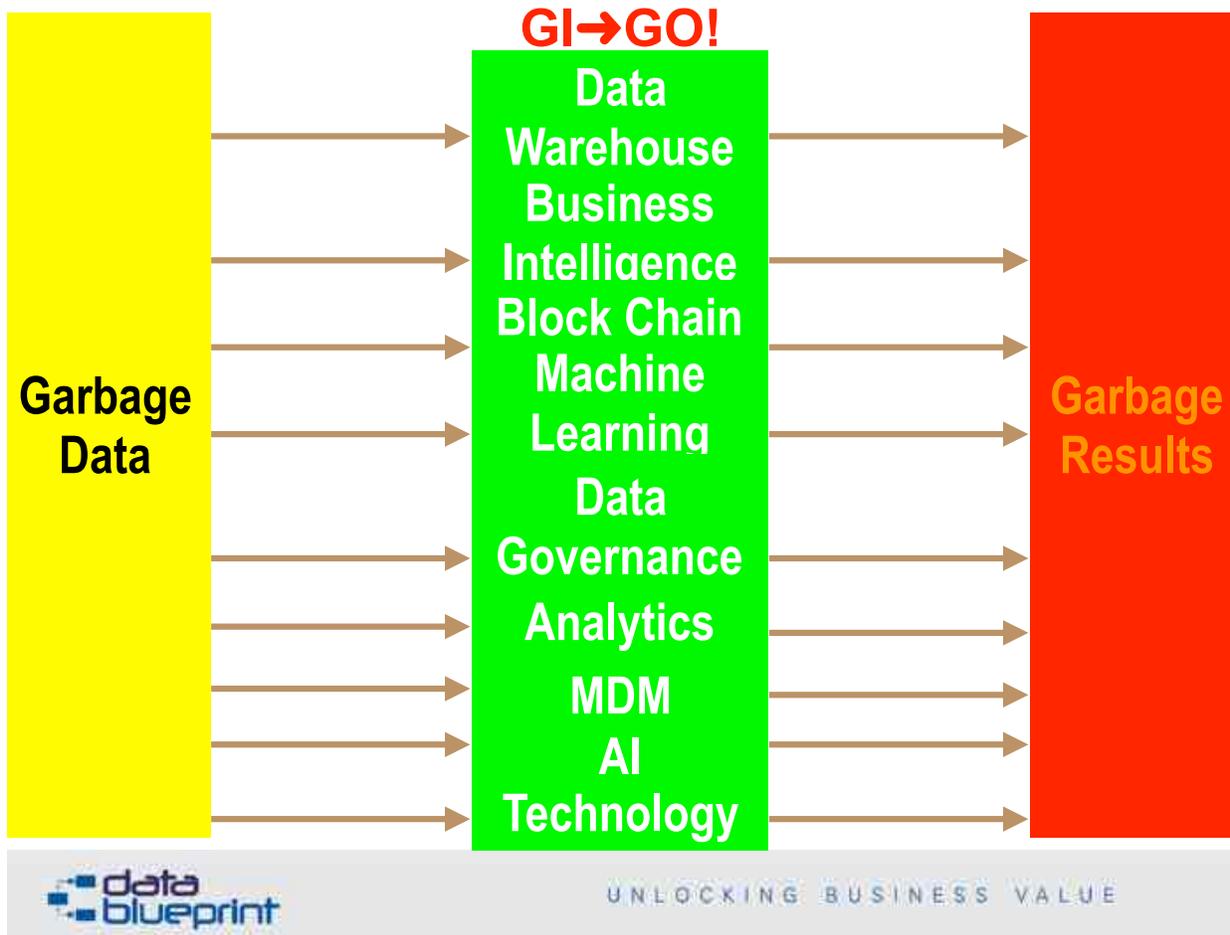
GI→GO!

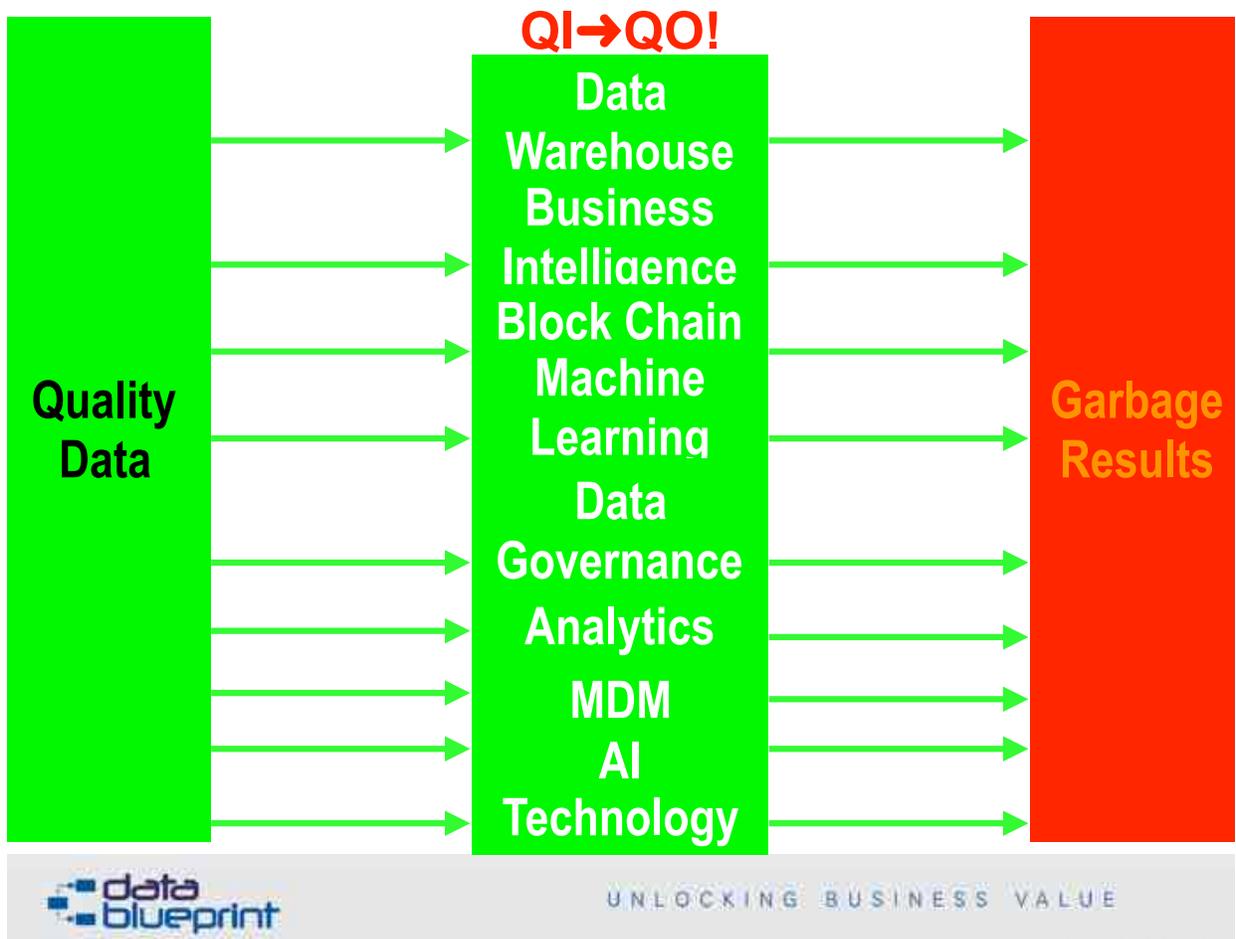
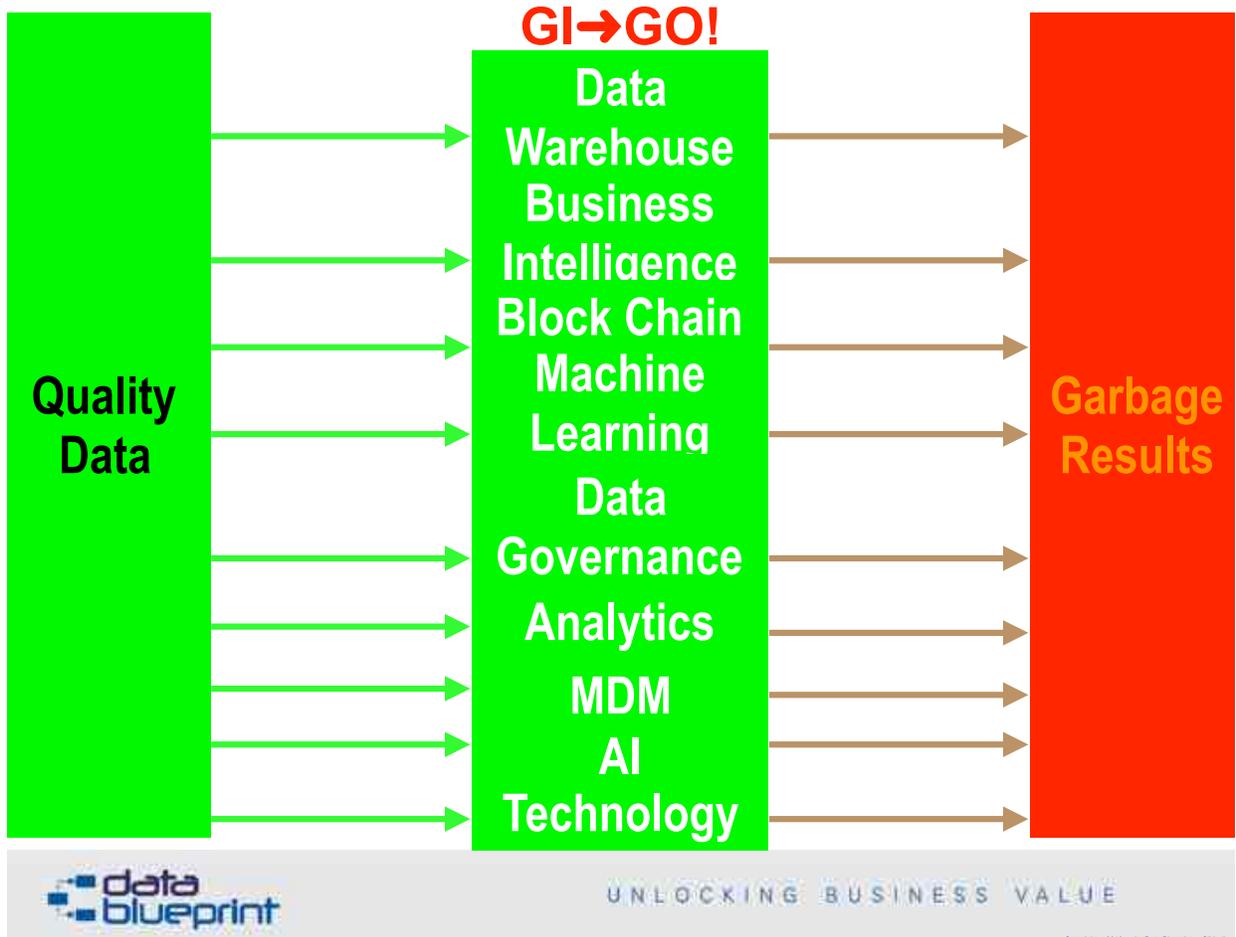
Technology

Garbage
Results

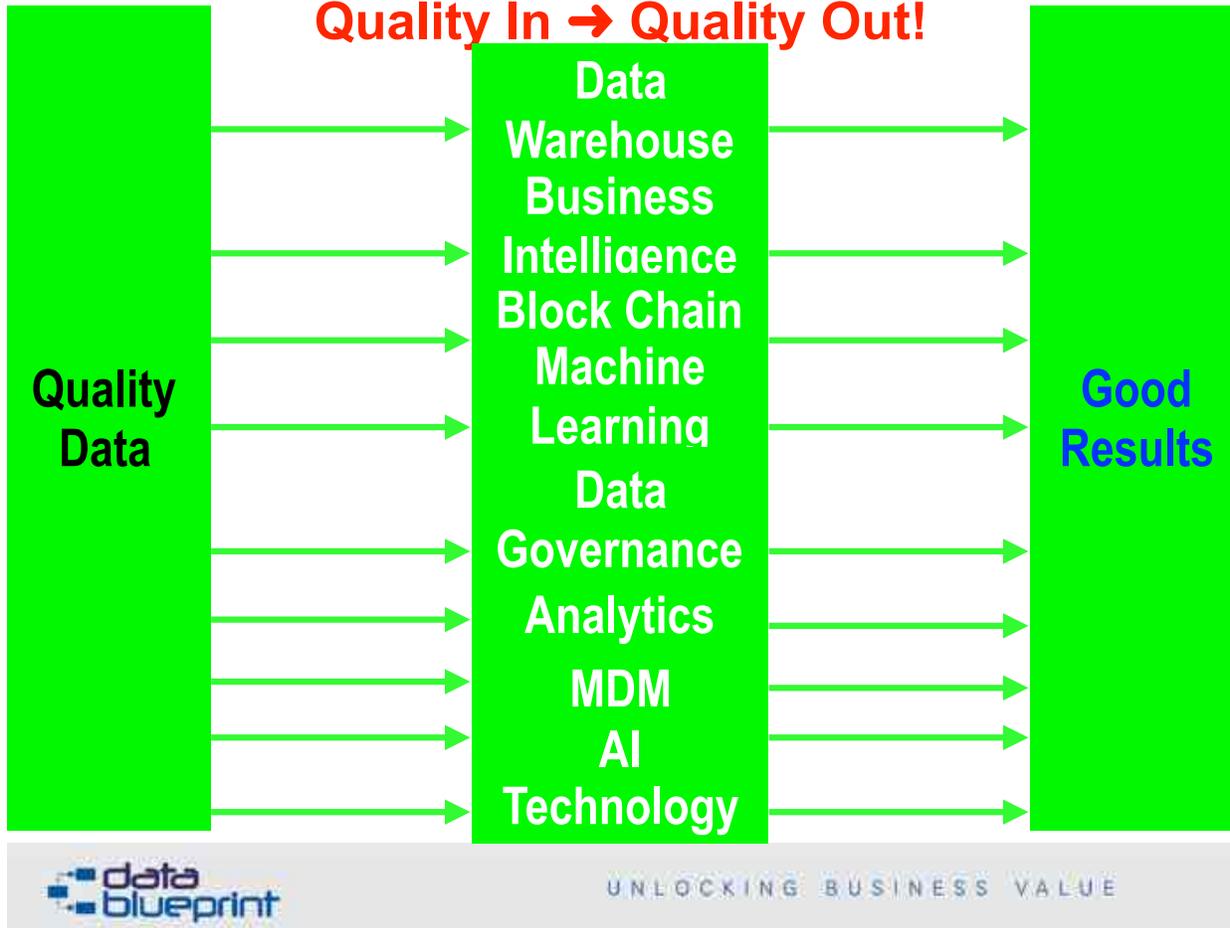


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Quality In → Quality Out!



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A collage of images illustrating the concept of asking questions. It features a young child pointing upwards, a red button labeled "Ask Questions", a lightbulb, a keyboard key with a question mark, and a person wearing a headset. Several large black question marks are scattered throughout the collage.

It's your turn!
Use the chat
feature or Twitter
#dataed) to submit
our questions now!



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