Evidence-Based Decision-Making...

The Role of Data-Science & Analytics

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GA Gateway Analytics Network

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PCS

Our time today. Answer…

- *Who **makes decisions** and how do they make them**?***

- *What will **the journey** to improve decision-making look like?*

- ***What's going to help** make good decisions?*
  - *the deliverables, experiences, feelings, etc.*

- *What are the **underlying processes**?*
  - *Data-to-Change*
  - *Forecasting, Planning, Analytics, Reporting (Big Data)*
  - *Strategic, Operational, and Technological Workstreams*
  - *Governance*

- *What **model/framework** will prove helpful? **Example**.*

- *Review and discuss what we **learned**.*

Why are we doing analytics?

Who are we doing it for?

What value can/should it deliver?

Do we know the business problem we're solving for?

Are we searching for a disruptive innovation?

What if we, as leaders,...

- *had the insight we needed when we needed it?*

- *created product, service, and pricing strategies that optimized sustainable profitability?*

- *inspired the individual, team, and organizational change we desired?*

"What if…"

What does being awesome at this look like?

Can we make it happen?

Yes!

"The beginning of wisdom is calling things by their right names."

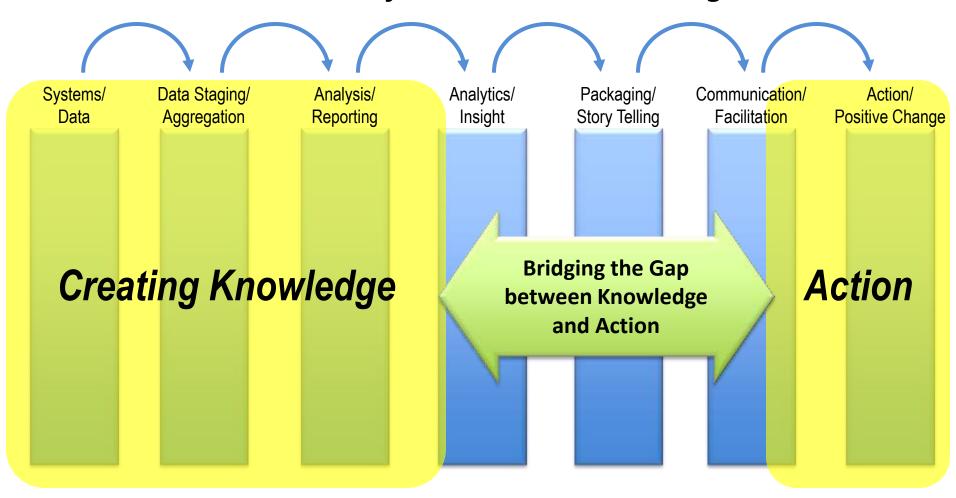- *Chinese proverb*

What's all this About?
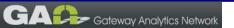
- **Improving Performance**

- **Reducing Risk**

The Deliverable?

- **Insight**

The Data-to-Change™ Process:

Do Actions Reflect Data-Driven Insight?

Systems/ Data	Data Staging/ Aggregation	Analysis/ Reporting	Analytics/ Insight	Packaging/ Story Telling	Communication/ Facilitation	Action/ Positive Change

Creating Knowledge
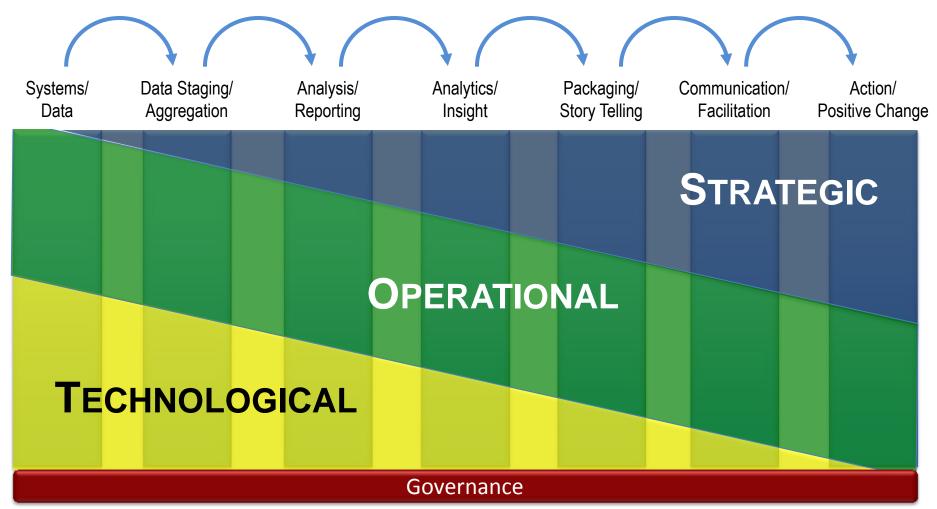
Bridging the Gap between Knowledge and Action

Action

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The Data-to-Change™ Process:
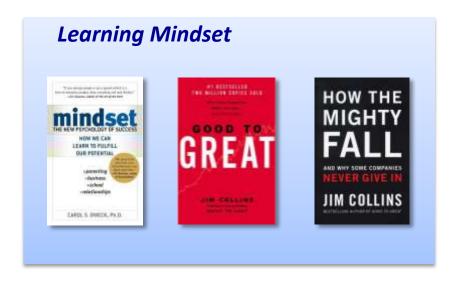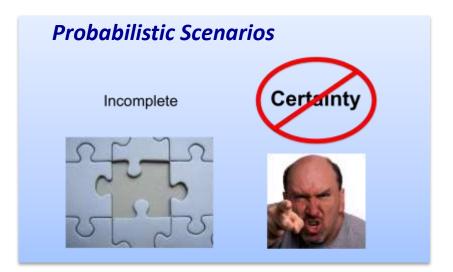
Do Actions Reflect Data-Driven Insight?

| Systems/
Data | Data Staging/
Aggregation | Analysis/
Reporting | Analytics/
Insight | Packaging/
Story Telling | Communication/
Facilitation | Action/
Positive Change |

STRATEGIC

OPERATIONAL

TECHNOLOGICAL

Governance

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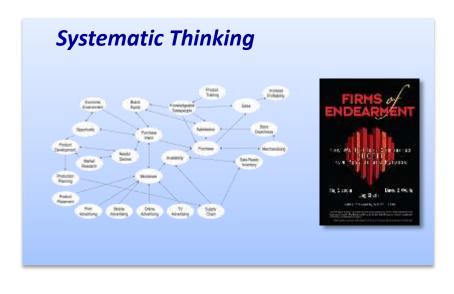
Critical Attributes of Modern Analysts

Learning Mindset

Systematic Thinking

Probabilistic Scenarios

Incomplete

~~Certainty~~

Expert Communicators/Facilitators

Intake

Express

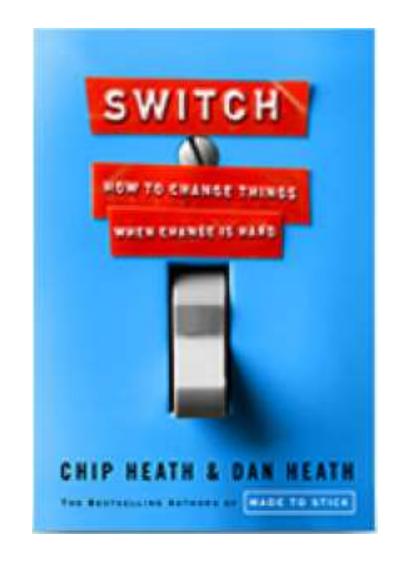# *Driving Change…*

Direct the Rider

= Data + Context

Motivate the Elephant

= Visualization + Communication
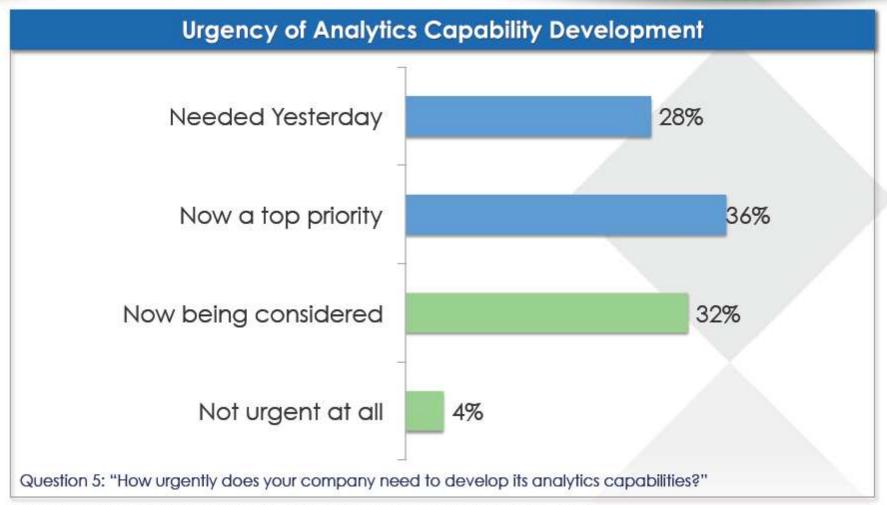
Shape the Path

= Where we're going +
How we going to get there

Objectives
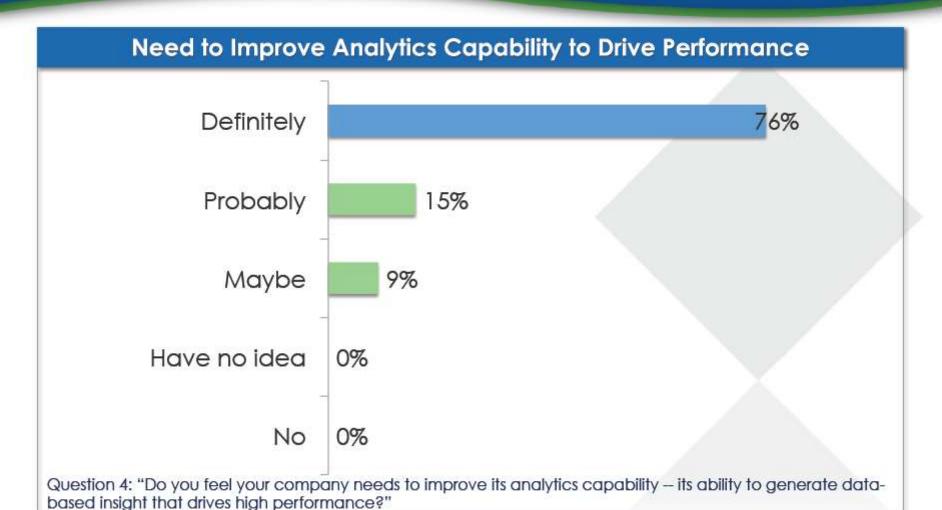
Educate

Inspire

Clarify

Nearly 2/3 (64%) said their company needs to develop analytics capabilities urgently. 28% said "Needed Yesterday" and 36% said "Now a Top Priority".

Urgency of Analytics Capability Development

Needed Yesterday — 28%

Now a top priority — 36%

Now being considered — 32%

Not urgent at all — 4%

Question 5: "How urgently does your company need to develop its analytics capabilities?"

Source: PIVOT Strategic Marketing 2014 Analytics Capability Development Survey

PIVOT
STRATEGIC MARKETING
a IBC m Thinking

Three-quarters (76%) said their company "Definitely" needs to improve it ability to generate insights that drive high performance

Need to Improve Analytics Capability to Drive Performance

Definitely — 76%

Probably — 15%

Maybe — 9%

Have no idea — 0%

No — 0%

Question 4: "Do you feel your company needs to improve its analytics capability — its ability to generate data-based insight that drives high performance?"

70% say they are pretty far (51%) or super far (19%) from "world class" analytics organizations

Comparison to World Class Analytics Organizations

Category	Percentage
Pretty far from them	51%
Super far from them	19%
Have no idea	14%
Almost there	14%
We're right with them	3%

Question 21: "How does your organization compare to world-class analytics organizations?"
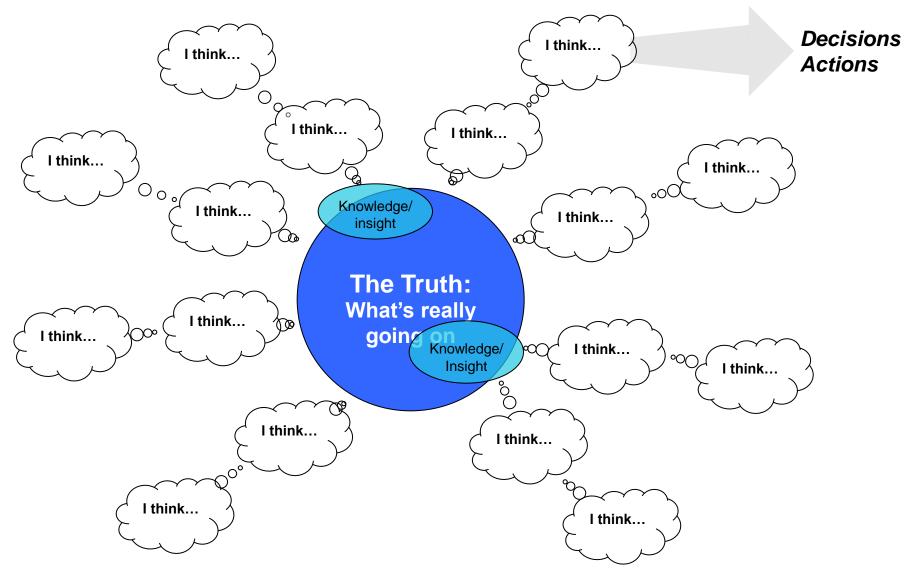
PIVOT
STRATEGIC MARKETING
a leg in Thinking

NO respondents said they had a clear vision for high performing analytics capabilities. 51% said their company was in the process of creating a vision.
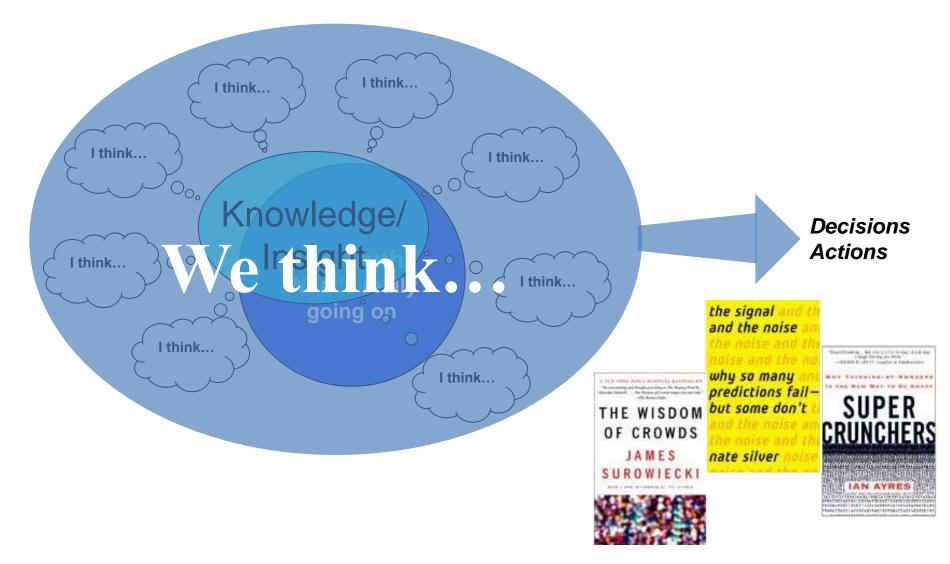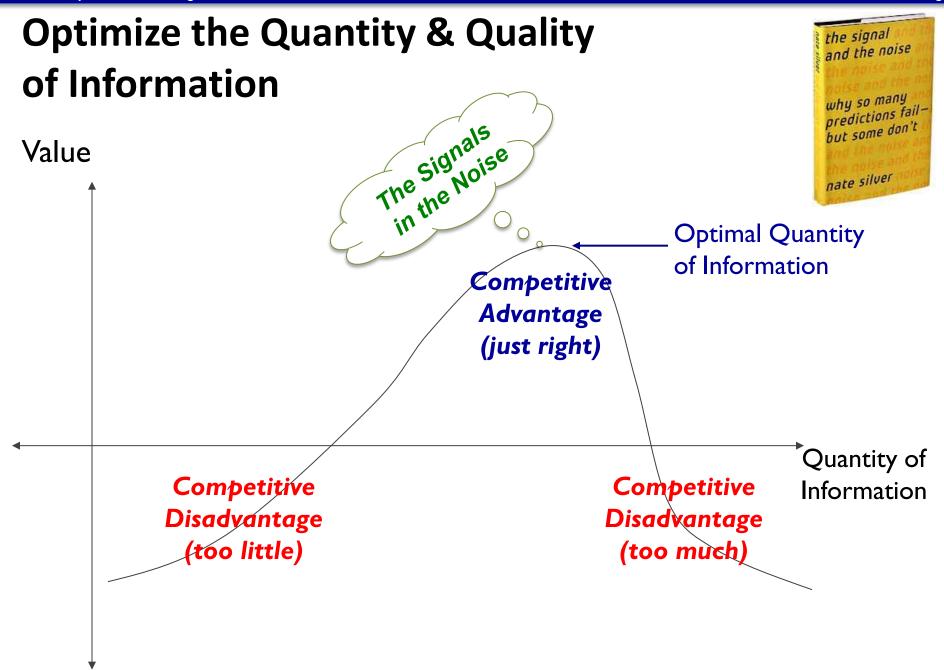
Vision for High Performance Analytics

No Vision

49%

51%

In Process of Creating Vision

Question 7: "Does your organization have a clear and documented vision for what a high performing analytics capability looks like"

PIVOT
STRATEGIC MARKETING
a 180 = Thinking

What's going on? Why? And what to do?

What's going on? Why? And what to do?

Optimize the Quantity & Quality of Information

The Value Proposition

Better Processes → **Better Technologies** → **Better Data**

Better Data → **?**

Reduced Anxiety ← **Increased Control** ← **Better Insight**

Reduced Anxiety → **Increased Confidence**

Increased Confidence → **Better Decisions** → **Better Performance***

* individual, team, and organizational

Supplier   **Partner**   **Customer**

1)

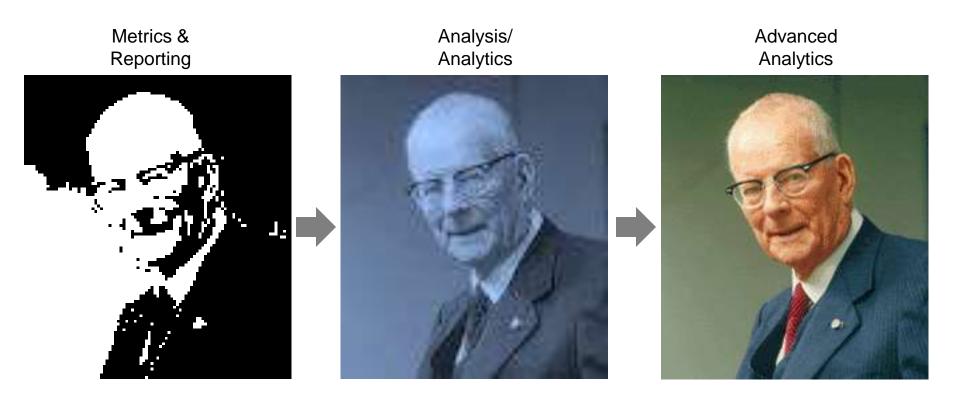*Information & Insight*   *Context & Communication*   *Consumption & Decisions*

2)

3)
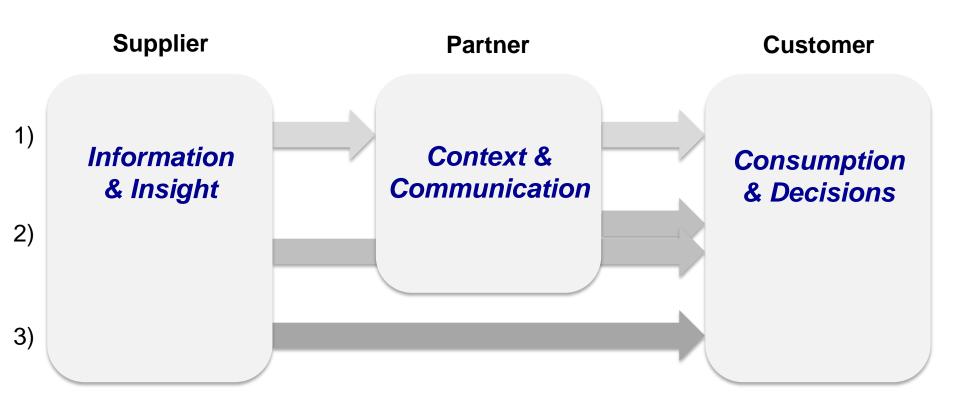
Confidence

*"The feeling or belief that you can rely on
someone or something to perform in a certain way
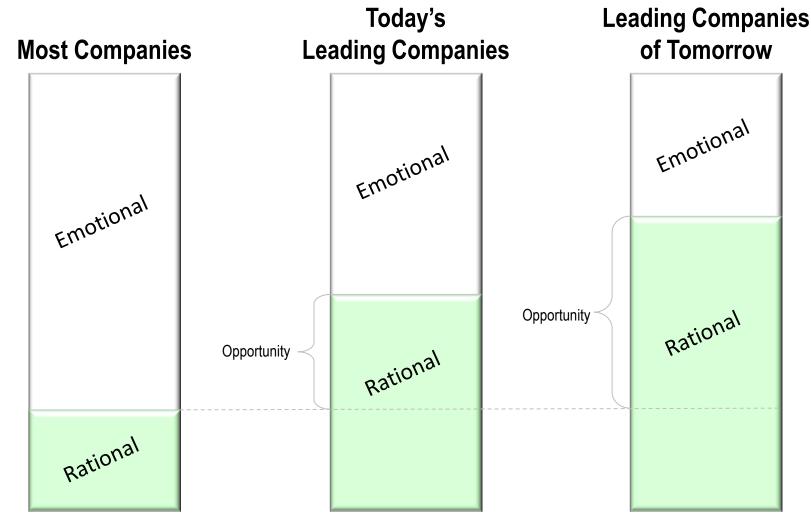at a known time in the future; firm trust"*

Moving from Vagueness to Clarity

Metrics &
Reporting

Analysis/
Analytics

Advanced
Analytics

"In God we trust. All others bring data."

Evidenced-Based Decision-Making

Decision Making

Most Companies

Today's Leading Companies

Leading Companies of Tomorrow

Emotional

Rational

Emotional

Opportunity

Rational

Emotional

Opportunity

Rational

"Opportunities abound to employ simple analytic methods to marginally or substantially increase profitability, especially in large businesses…" Dr. Gary Loveman, Chairman of the Board, President and CEO, Harrah's Entertainment, Inc.

What Can Be Done Now?

What Can Be Done Now?

Value/Impact →

Advanced Analytics
- What can be leveraged? Risk?
- What's the probability of success?
- Predictive Modeling/Optimization
- Linkage Research, Regression

Planning & Analysis
- Where did things happen and why?
- What's the plan and why?
- Forecasting, Scenario Planning
- Cluster Analysis, Data Mining, ROI

Metrics & Reporting
- What is happening?
- Where is it happening?
- Scorecards, Recurring Reports
- Ad hoc Reports

Time/Effort

Analytics Maturity Progression

Value/
Impact

Analytics Hopeful

Analytics Doer

Analytics User
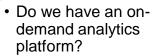
Analytics Competitor

Stage 1:
Get Data Right

Stage 2:
Create Context

Stage 3:
Use Insight

Stage 4:
Operationalize Insight

When Yes ➡

When Yes ➡

When Yes ➡

- Do we have an on-demand analytics platform?
- Are those doing analytics influencing change?
- Are insights being used in the field?
- Are dashboards w/ meaningful metrics (KPIs) being used?

- Insight is repeatedly used to formulate Product & Business Strategy.
- Insight is repeatedly used by Managers in the field.
- Insight is obtained quickly & accurately from an on-demand platform.

- Can we aggregate and structure data in a usable way?
- Do we have people experienced in analytics?
- Do key metrics now have a story around them?
- Is there a growing demand for insight?

- Do I have good data to work with?
- If not, what must I do to improve it? Improve it.
- Do I have the people in place to perform analytics?
- Do I have the necessary technologies?

Time

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Analytics Maturity Progression

Value/
Impact

Analytics Hopeful   **Analytics Doer**   **Analytics User**   **Analytics Competitor**

Stage 1:   Stage 2:   Stage 3:   Stage 4:
Get Data Right   Create Context   Use Insight   Operationalize Insight

- Insight is repeatedly used to formulate Product & Business Strategy.
- Insight is repeatedly used by Managers in the field.
- Insight is obtained quickly & accurately from an on-demand platform.

LEARNING
"PRACTICE!"

- Do I have good data to work with?
- If not, what must I do to improve it? Improve it.
- Do I have the people in place to perform analytics?
- Do I have the necessary technologies?

Time

The Decision Sciences of Business

Discipline		Decision Science		Key Activities
Accounting	→	Finance	→	Financial Planning & Analysis *(FP&A)*
Sales	→	Marketing	→	Market & Customer Research
Operations	→	Supply Chain Mgmt.	→	Operations Research & Process Optimization
HR	→	Talent Management	→	Workforce Planning & Analytics *(WP&A)*
Technology	→	Information Mgmt.	→	Infrastructure, Data Govern. & Publishing

Aggregating & Analyzing Data
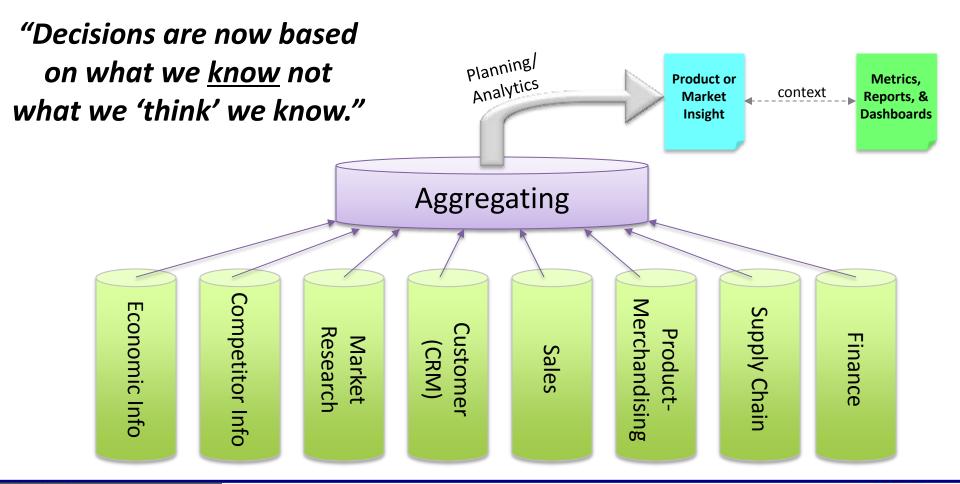
Most organizations (nearly all) do not extract a level of value from their IT investments commensurate with the money, time, and effort devoted. Analytics & Advanced Analytics helps organizations maximize the value derived from IT investments (a.k.a. "data assets"). In turn, the insight generated serves as a unique, hard-to-replicate competitive advantage as leaders are able to make more effective decisions.

"Decisions are now based on what we know not what we 'think' we know."

Planning/ Analytics

Aggregating

Product or Market Insight

context

Metrics, Reports, & Dashboards

Economic Info

Competitor Info

Market Research

Customer (CRM)

Sales

Product-Merchandising

Supply Chain

Finance

The 8 Steps to Generating & Communicating Data-based Insight

1. *Understand the needs of the internal customer (begin with the end in mind)*

2. *Audit available data*

3. *Stage it for analysis/analytics*

4. *Analyze it*

5. *Visualize it*

6. *Package it*

7. *Communicate it*

8. *Facilitate change with it (put forth a position or recommendation)*
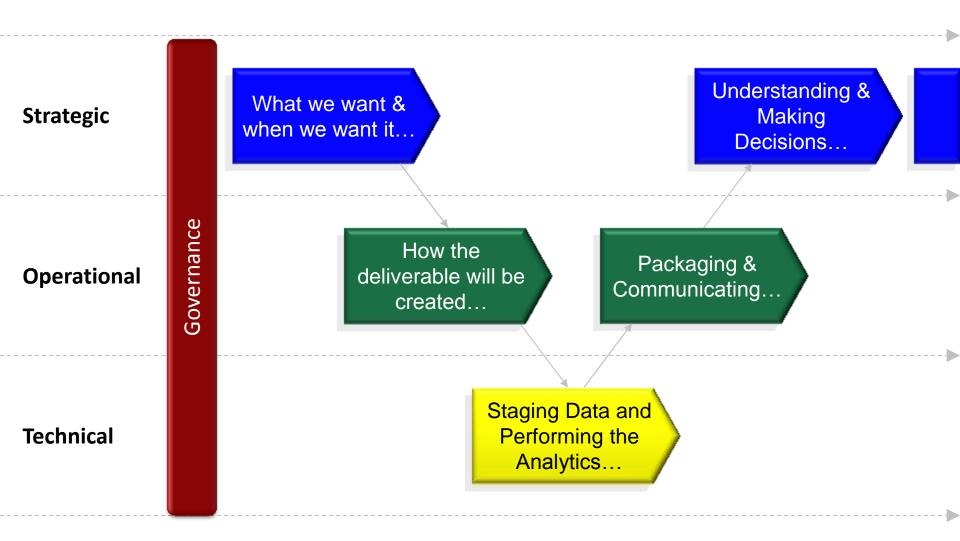
A Few Notes on this Thing Called Big Data

"Big Data are high-***volume***, high-***velocity***, and/or high-***variety*** information assets that require new forms of processing to enable enhanced decision making, insight discovery, and process optimization."
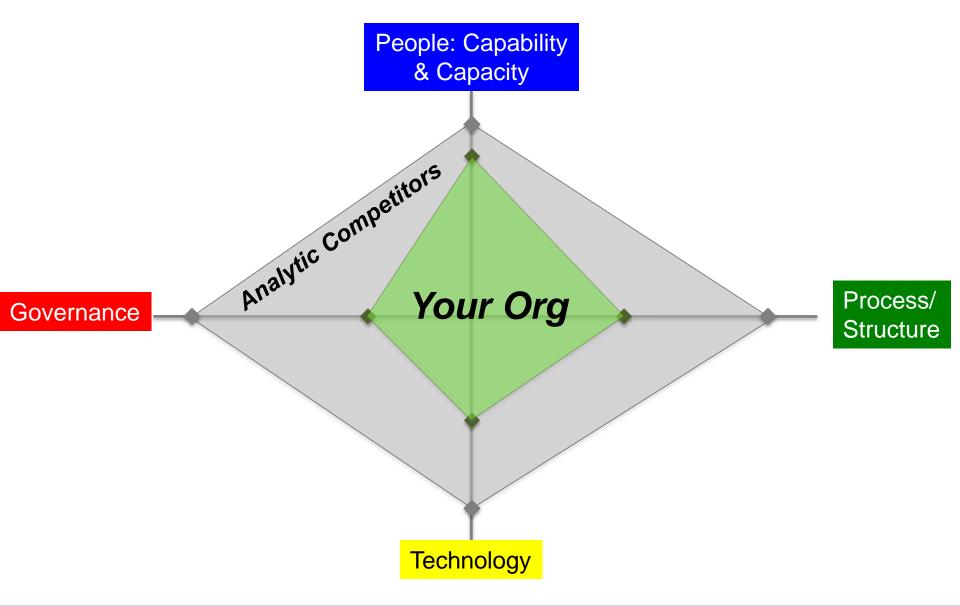
Gartner Research, 2012

Insight A

Insigh   The Story

Variety

Insight C

Three Work-streams

Strategic

Operational

Technical

Governance

What we want & when we want it…

Understanding & Making Decisions…

How the deliverable will be created…

Packaging & Communicating…

Staging Data and Performing the Analytics…

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Analytics Maturity Model

Analytics Framework: The Mental Model

The Balanced Scorecard

The Enterprise Linkage Model™

Leadership

Marketing & Sales Strategy		Finance Strategy
	Prospects & Customers	**Financial Outcomes**	
	Leaders, Managers, & the Workforce	**Internal Operations**	
Talent Strategy		Operating Strategy
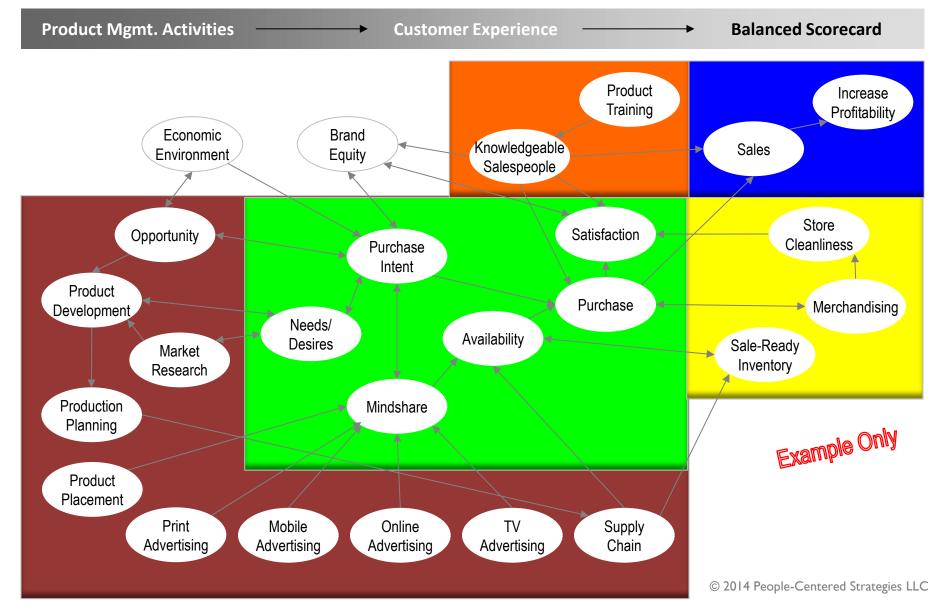
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The Enterprise Linkage Model™

Product Mgmt. Activities	Customer Experience	Balanced Scorecard

Example Only

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Dynamic Learning through Story

Example Only

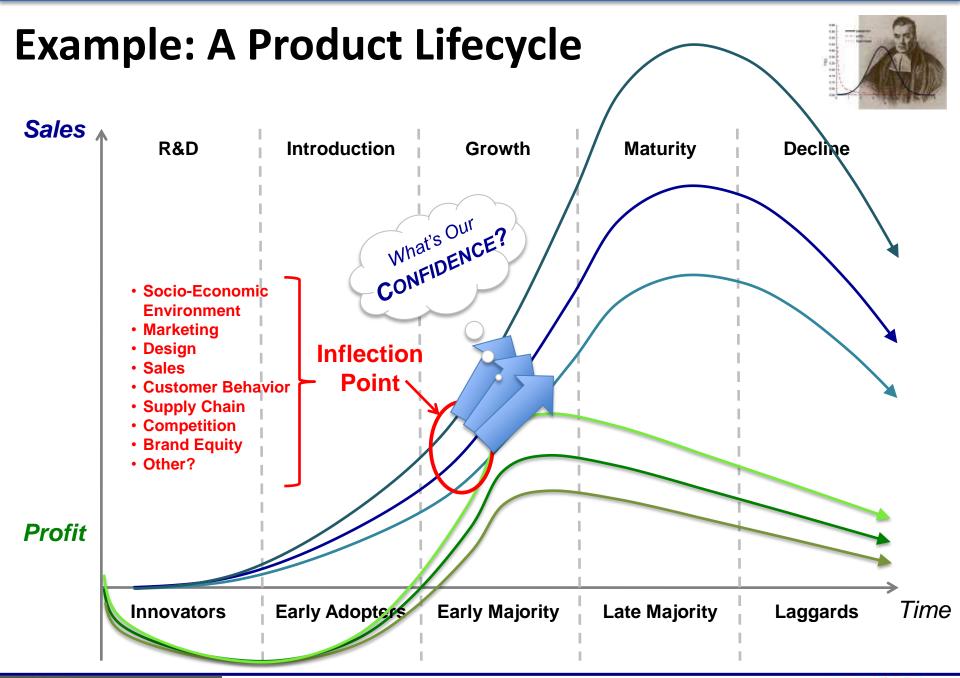| Supply Chain	→	Availability	→	Customer Purchase	→	Sales
$8M		**1M** units		**900K** units in < 4 mos.		**$36M** in < 4 mos.

An initial $8M investment in **Product A** produced 1 million units. These units were available for purchase in-store and online beginning October 2012. The perceived availability of product among desired customer segments, emphasized by marketing efforts, elevated mindshare and purchase intent which, in turn, led to 200K units being sold in the first month, followed by 250K in the second, 300K in the third, 150K in the fourth, 125K in the fifth, and 145K in the sixth. Due to strong initial sales, an order of 1.2M units was initiated at the beginning of December, in time for the inventory to be replenished early in the new year. *With an 80% degree of confidence, mindshare of product functionality and design (derived from marketing) and perceived product availability (derived from customer surveys) were the primary factors in driving actual purchase behavior. These factors proved to be collinear, thus potentially co-dependent.*

Example: A Product Lifecycle

Tools of the Trade

Statistical Tools:
SAS, SPSS, R,
Minitab

Spreadsheets, Simple
Database Applications:
Excel, Access, etc.

Business Intelligence :
Business Objects,
Cognos, Hyperion, MS
Analytics Services, etc.

**Tools for
Planning &
Analytics**

Data Visualization:
Advizor, Corda,
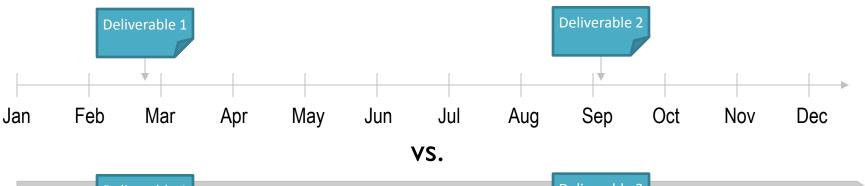DSPanel, Tableau,

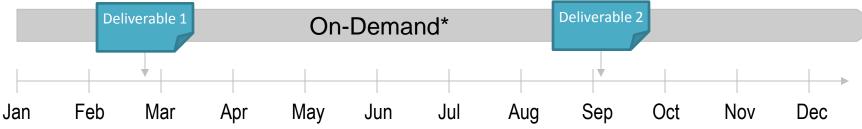Spotire, Qlikview

Enterprise
Applications:
Oracle, SAP,
Lawson

Reporting Solutions:
Actuate, Crystal,
Xcelsius, etc.

Event-Driven Process vs. Ongoing Capability

⇨ Prioritize Research Agenda

  ⇨ Formulate Hypotheses

    ⇨ *Aggregate and Stage Data*

      ⇨ *Perform Analyses*

        ⇨ Package Deliverable

          ⇨ Socialize Findings & Recommendations

            ⇨ Present & Communicate Deliverable

⇨ Prioritize Research Agenda

  ⇨ Formulate Hypotheses

    ⇨ *Aggregate and Stage Data*

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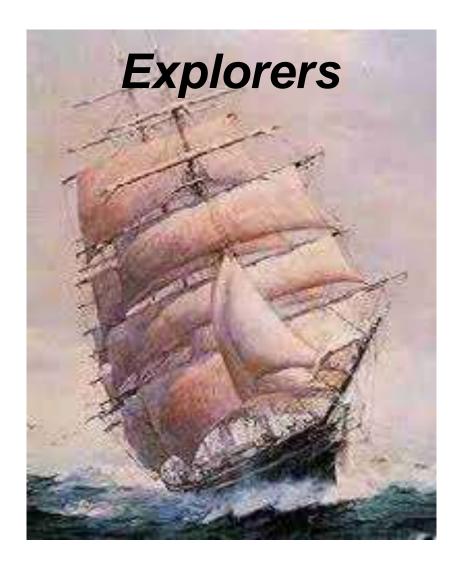
            ⇨ Present & Communicate Deliverable

| Deliverable 1 | | | | | | | Deliverable 2 | | | | |

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

vs.

| Deliverable 1 | | On-Demand* | | | | | Deliverable 2 | | | | |

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
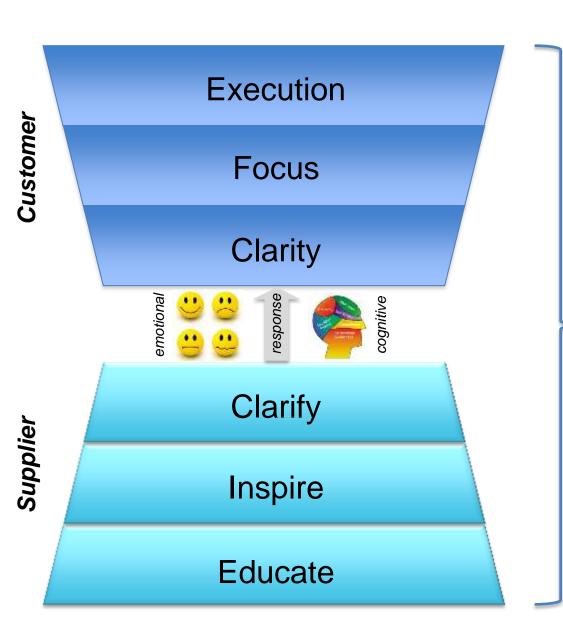
* Leveraging an integrated data-warehouse or mashing

We are…

Explorers

Creators

What we did. We answered…

- *Who **makes decisions** and how do they make them**?***

- *What will **the journey** to improve decision-making look like?*

- ***What's going to help** make good decisions?*
  - *the deliverables, experiences, feelings, etc.*

- *What are the **underlying processes**?*
  - *Data-to-Change*
  - *Forecasting, Planning, Analytics, Reporting (Big Data)*
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- *What **model/framework** will prove helpful? **Example**.*

- *Review and discuss what we **learned**.*

Evidence-Based Decision-Making:
The Role of Data-Science & Analytics

Thank You!

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