



Institute for
High Performance

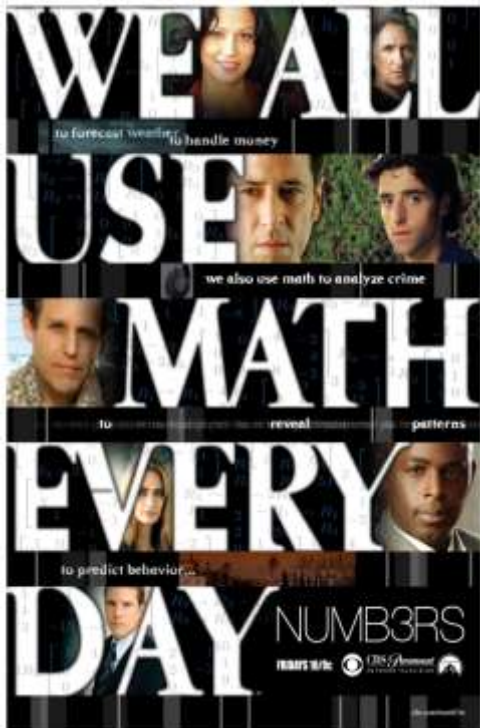
Analytics at Work: Secrets of Data-Charged Organizations

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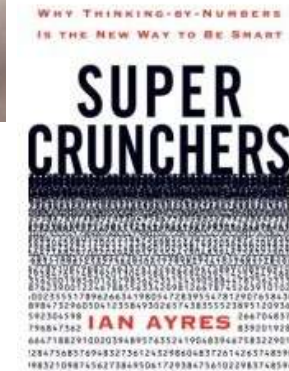
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Dawn of the Golden Age of Analytics?



“We all use math every day. . . To forecast the weather, to handle money. We also use math to analyze crime, to predict patterns and to predict behavior.”



How do companies compete – and win – with analytics?



These high performers have discovered the power of analytics to ***out-think*** and ***out-execute*** the competition.

Analytics Move to Center Stage

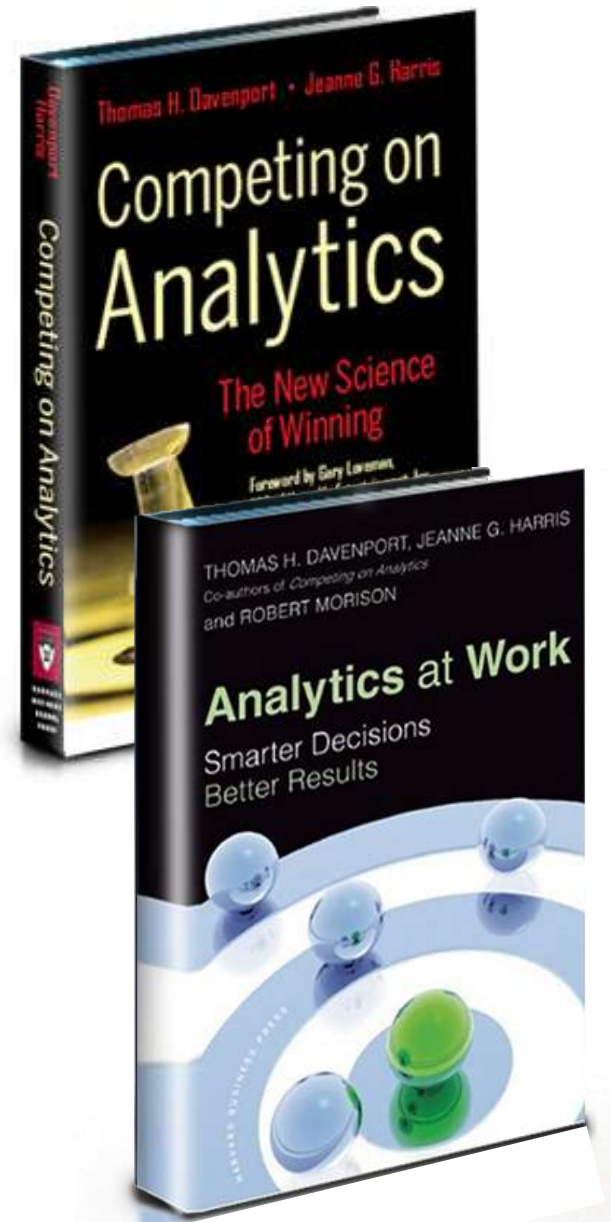


- **Analytics:** The extensive use of data, statistical and quantitative analysis, explanatory and predictive models and fact-based management to drive decisions & actions.
- Analytics, statistics, and fact-based decisions are not new to businesses
- DSS, ESS, BI, etc were important and provided value, but were often marginal to the mainstream of the business
- With firms that compete on analytics, the capability moves to center stage.

“Analytics is the new plastics.” -- John Ridding, Financial Times CEO

Research Background

- 2000 study of 20 companies and how they built analytical capabilities
- 2005 study of 32 companies with business intelligence initiatives; resulted in “Competing on Analytics” article in HBR
- Additional interviews with 50+ companies for book research
- Accenture surveys of 217 and 402 companies in 2002 and 2006 to determine frequencies of analytical activity among large companies with enterprise systems
- A year of research with the business research consortium of 27 companies
- Talent Engagement, Attitudes and Motivations Survey of 1367 US respondents, including 799 analysts



Why make decisions on facts and analytics instead of your gut?



40% of major business decisions are not based not on data and facts, but on “gut instinct”

– Accenture research

- Extensive evidence that having experts is good, but experts using analytics is much better.
- Statistical predictions consistently outperform “gut based” predictions.
- Expert intuition is best only when there is little time, limited data and few variables.

decision

making

V

V

“The unexamined ~~life~~ isn’t worth ~~living~~”

-- Socrates

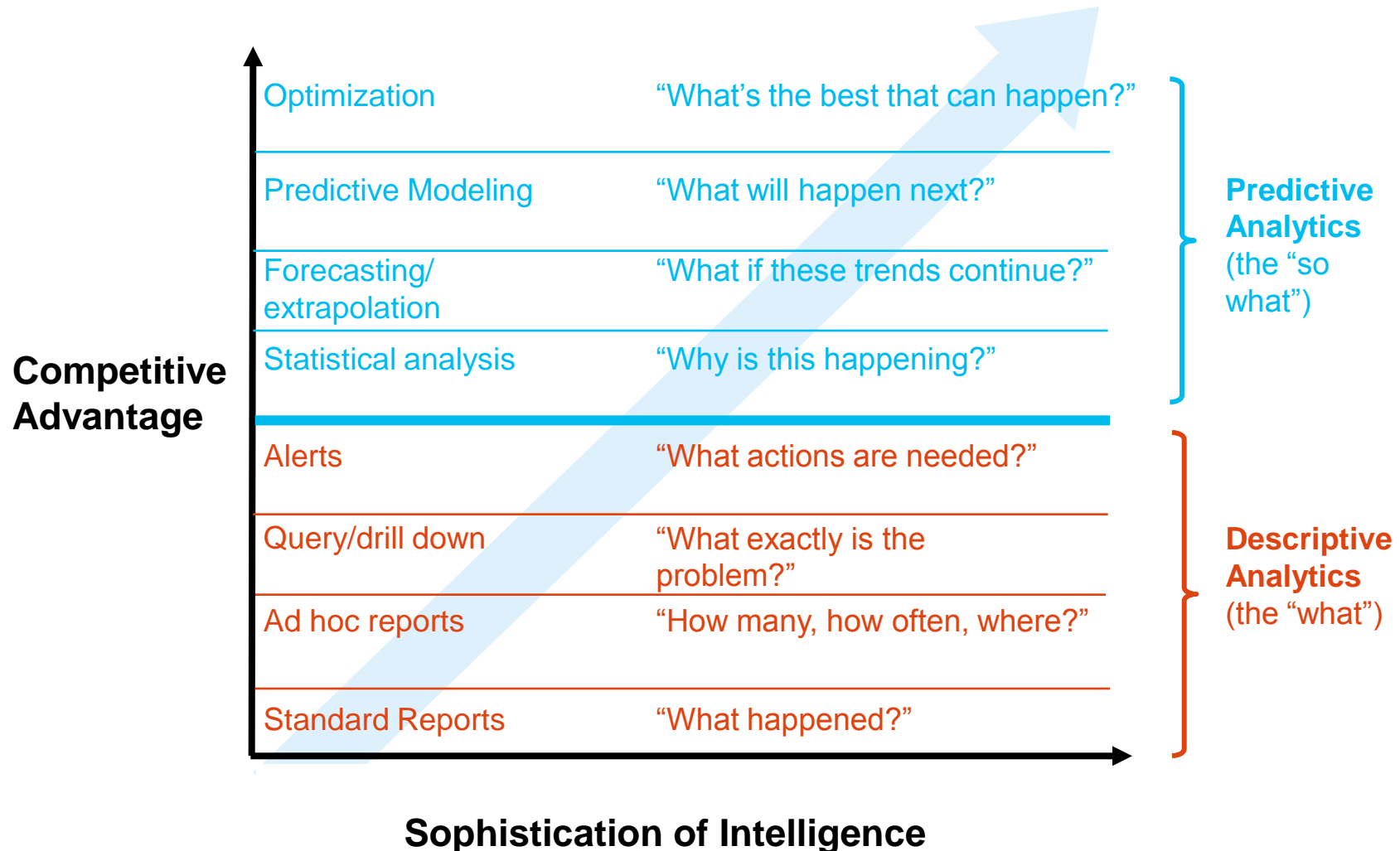


Analytical Capabilities Can Create Sustainable Competitive Advantage.

- Executives increasingly recognize that the power of IT is not just to improve operational efficiency but to help make better decisions.
- One time analytical initiatives can be valuable but they rarely create a lasting market advantage.
- A robust analytical capability is **how** these firms routinely out-smart, out-maneuver and out-execute the competition.
- Embedding analytics into core business processes creates sustainable competitive advantage.



Leading organizations are embedding the full scope of analytical capabilities across their business.



Analytically oriented companies are found in every industry around the world.



Financial Services

- Wellpoint
- Progressive Insurance
- Barclay's Bank
- Capital One
- Royal Bank of Canada

Industrial Products

- CEMEX
- John Deere & Company

Telecommunications

- O2
- Bouygues Telecom

Consumer Products

- Anheuser-Busch
- E&J Gallo Winery
- Mars
- Procter & Gamble

Pharmaceuticals

- Astra Zeneca
- Solvay
- Vertex

Transport

- FedEx
- Schneider National
- United Parcel Service

Hospitality and Entertainment

- AC Milan
- Harrah's Entertainment
- Marriott International
- New England Patriots
- Boston Red Sox

Retail

- Amazon
- Tesco
- Wal-Mart
- JCPenney

eCommerce

- Google
- Netflix
- Yahoo

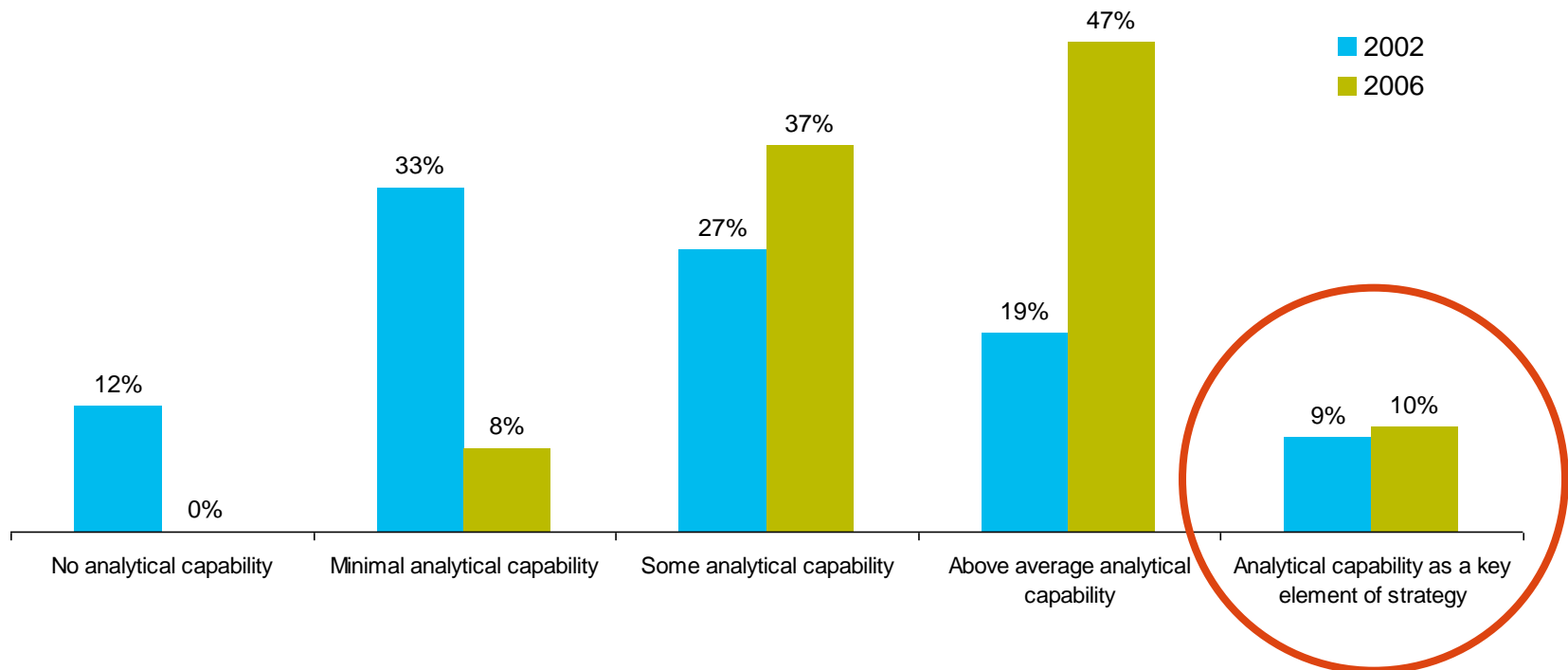
Netflix is an Analytical Competitor



- **Founded in 1997, Netflix has grown to \$1.36 billion in 2008 revenues.**
- **Netflix is a company built on an algorithm.**
 - Cinematch is a **movie-recommendation “engine”** based on proprietary, algorithmically-driven software. It analyzes customers’ choices and customer feedback on movies and recommends films that both delight the customer and optimizes inventory conditions.
 - Netflix balances the **distribution of shipping requests** across frequent-use and infrequent-use customers. Infrequent-use customers are given priority in shipping popular titles over frequent-use customers.
 - Analytics give Netflix a decided competitive advantage when deciding what to pay for the **distribution rights** to DVDs.

Organizations are becoming more analytical.

15% of top performers vs. 3% of low performers indicated that analytical capabilities are a key element of their strategy.



High performance is associated with more extensive and sophisticated use of analytical capabilities.



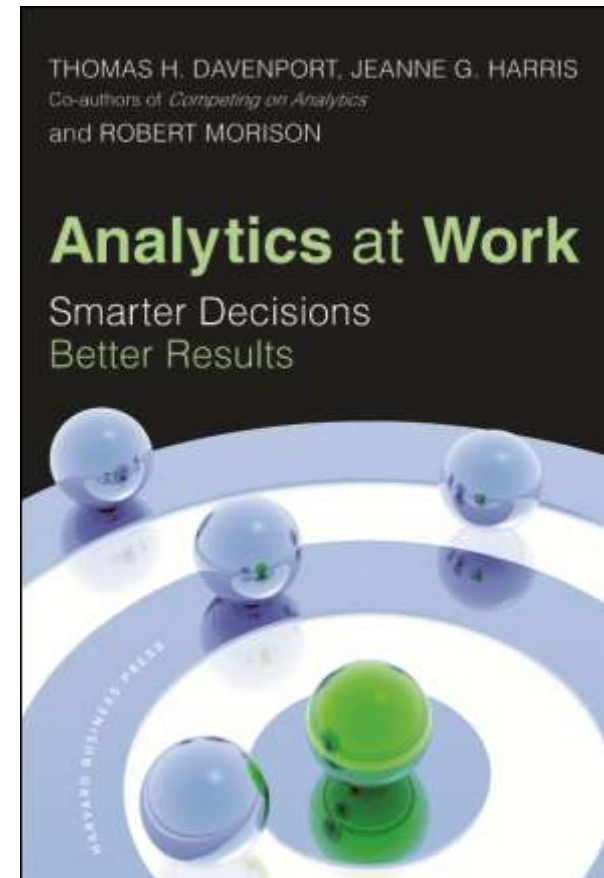
High performers have a greater analytical orientation than low performers.

Low Performers		High Performers
23%	Have significant decision-support/analytical capabilities	65%
8%	Value analytical insights to a very large extent	36%
33%	Have above average analytical capability within industry	77%
23%	Use analytics across their entire organization	40%

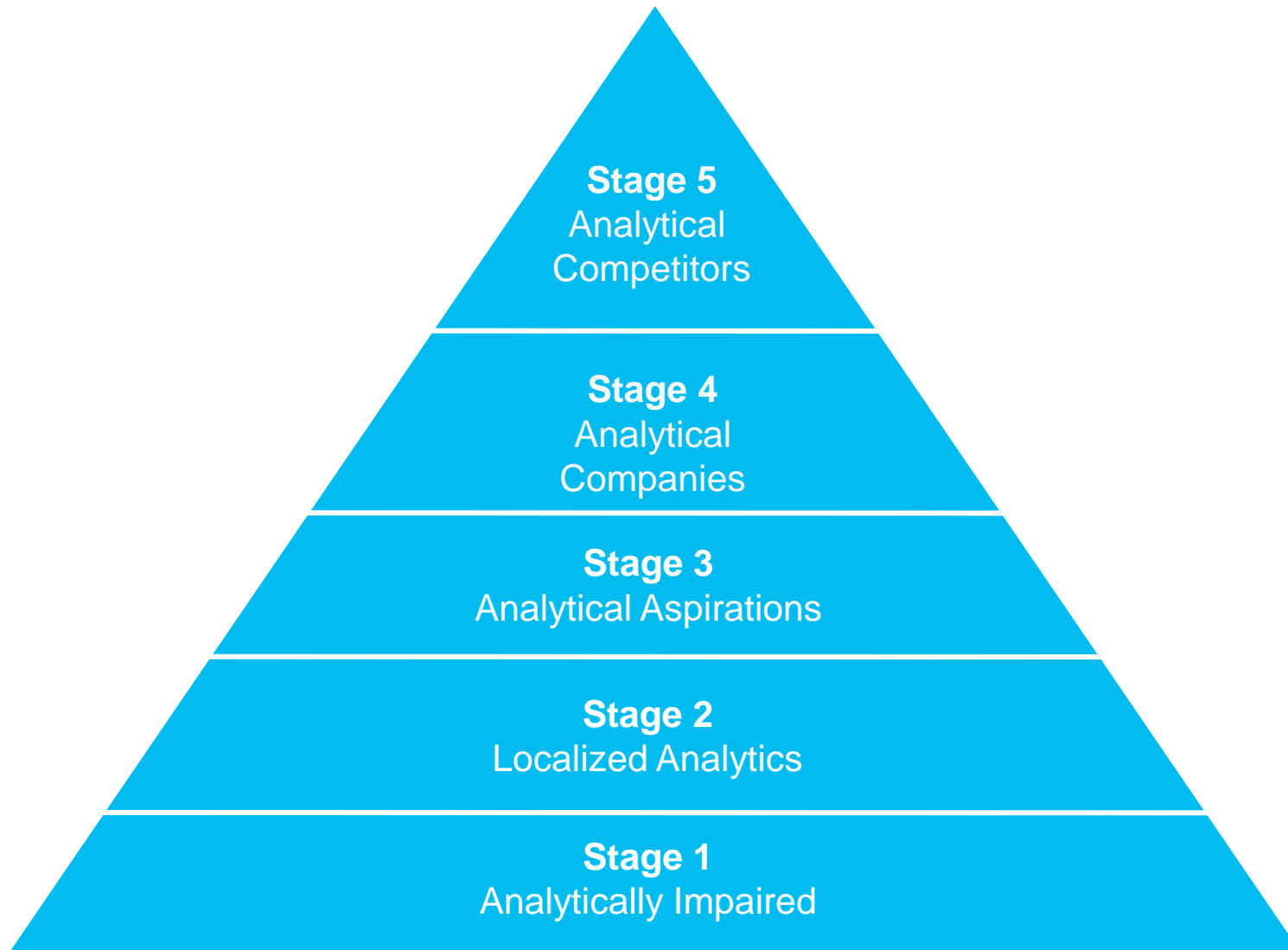
Analytics at Work: Smarter Decisions, Better Results



- Not every company is going to use analytics as a means of competitive differentiation.
- But every organization can benefit by improving how they:
 - use data to gain deeper insights
 - make smarter decisions
 - execute decisions more consistently
 - get better results.
- Analytics at Work shows analytically-oriented managers how to guide their organizations toward greater analytical maturity.



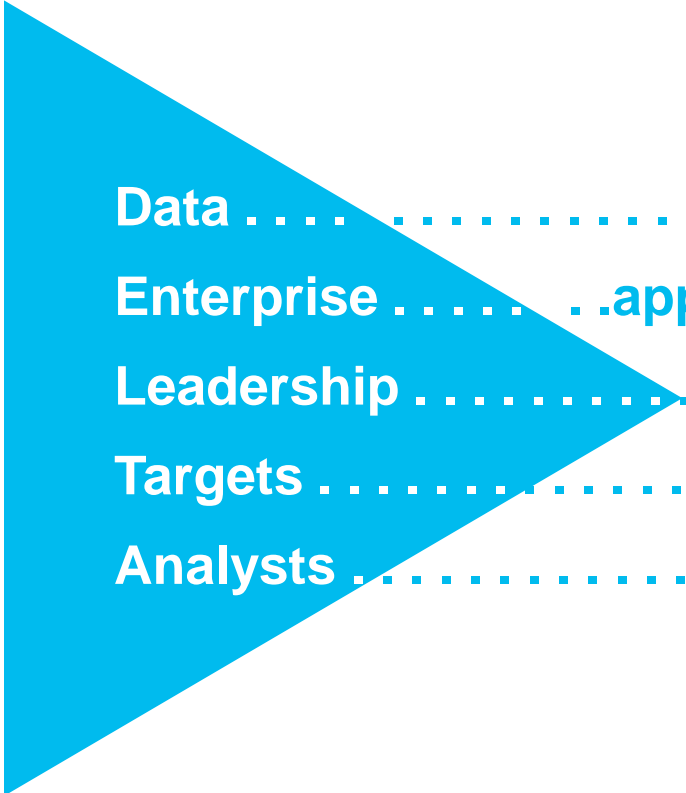
Analytical Maturity Model



The Analytical DELTA



DELTA  **: change**



Data **breadth, integration, quality**
Enterprise **approach to managing analytics**
Leadership **passion and commitment**
Targets **first deep, then broad**
Analysts **professionals and amateurs**

Data and More Data!

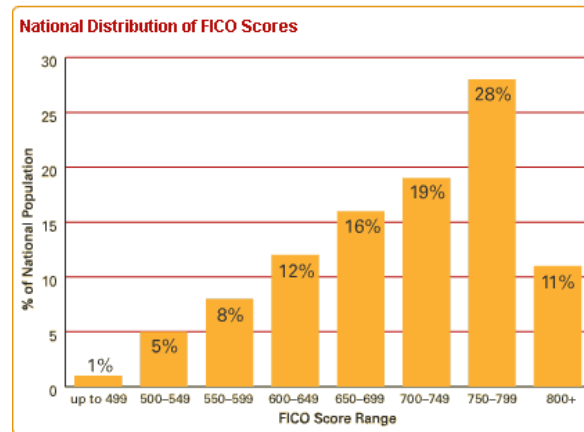


- **Prerequisite for everything analytical**
- **Clean, common, integrated**
- **Accessible in a warehouse**
- **Sources include:**
 - Maturing enterprise systems
 - Internet, suppliers and customers
 - Growing standardized external information
 - Sensors provide data about the physical world
- **Measure something new and important**

Look Beyond Traditional Data Sources to Create New Metrics



Wine chemistry



Credit Score



Smile Frequency



Driving behavior



Health Behaviors

Take an Enterprise Approach



- If you're serious about analytics, it doesn't make sense to manage them locally
 - No fiefdoms of data, software, or people
 - Not by spreadsheets alone
 - Avoid multiple versions of the truth
- Firms may also need to upgrade hardware and infrastructure
- **Required to address core issues of business performance and organizational competitiveness such as:**
 - Which performance factors have the greatest impact on future growth and profitability?
 - How can we anticipate and influence changing market conditions?
 - How should we optimize investments across our products, geographies and marketing channels?
 - Are decisions aligned with company strategy, or just promoting someone's self interest?

Analytical Performance Metrics



VICTORIA'S SECRET

- “ For every 5% improvement in customer retention this year, we will grow revenue by 1.1% next year.”
- “ If we grow our share of customer gaming budgets by 1%, our share price increases by \$1.10.”
- “ For every 10th of a point increase in employee engagement, we increase operating income by \$100,000.”
- “ Raising the conversion rate by 1% brings more than \$35 million in sales and more than \$15 million in operating profit.”

Role of Top Leadership



“Do we think or do we *know*?”

“It is not my job to have all the answers, but it is my job to ask lots of penetrating, disturbing and occasionally almost offensive questions as part of the analytic process that leads to insight and refinement.”

“Vision and analytics are not mutually exclusive paradigms.”

—Gary Loveman, Chairman of the Board, President and CEO



Have the Right Skills and Mindsets in Key Leadership Roles



CFO

- Champion analytics vision and potential
- Leads financial and EPM analytics initiatives
- Monitors financing and success of projects

Financial executives

- Develop analytical processes in finance
- Work with IT to specify systems
- Hire analytical talent
- Decide when analytical vs. intuitive decisions are appropriate

IT

- Leads efforts to improve data, processes, IT infrastructure and embed analytics into technology, decisions and processes.



Analytical Targets Vary by Industry and Business Strategy



- **Financial services:** credit scoring, fraud detection, pricing, program trading, claims analysis, underwriting
- **Retail:** promotions, replenishment, shelf management, price and merchandising optimization
- **Manufacturing:** supply chain, product customization
- **Transportation:** scheduling, routing, yield management
- **Health care:** drug interaction, preliminary diagnosis, disease management
- **Hospitality:** pricing, customer loyalty
- **Energy:** trading, supply, compliance
- **Services:** call center staffing, service/profit chain
- **Government:** fraud detection, case management, crime prevention, revenue optimization
- **Agriculture:** crop management
- **Online:** web metrics, site design, recommendations
- **Every business:** performance management

Wellpoint: Applying Actuarial Insights to Pricing Strategy



- “ I’m not interested in data; I’m interested in translating data into information for decision making. . . . So you take data, you turn it into information, you apply it, and you make better decisions because you know more than anybody else. I think that's real power—and that was **our hidden advantage** for years. “
- “ The most important thing for us is our actuarial data, which helps us price our premiums. . . . Our analysis showed that the so-called cycle in health insurance—three good years, three bad years—is simply a function of pricing discipline and pricing mistakes. There isn't any doubt that the **companies with the best pricing are less cyclical. . . . We have no cycles at all.**”

Leonard Schaeffer, CEO (retired)

Analytics in public and non-profit sectors

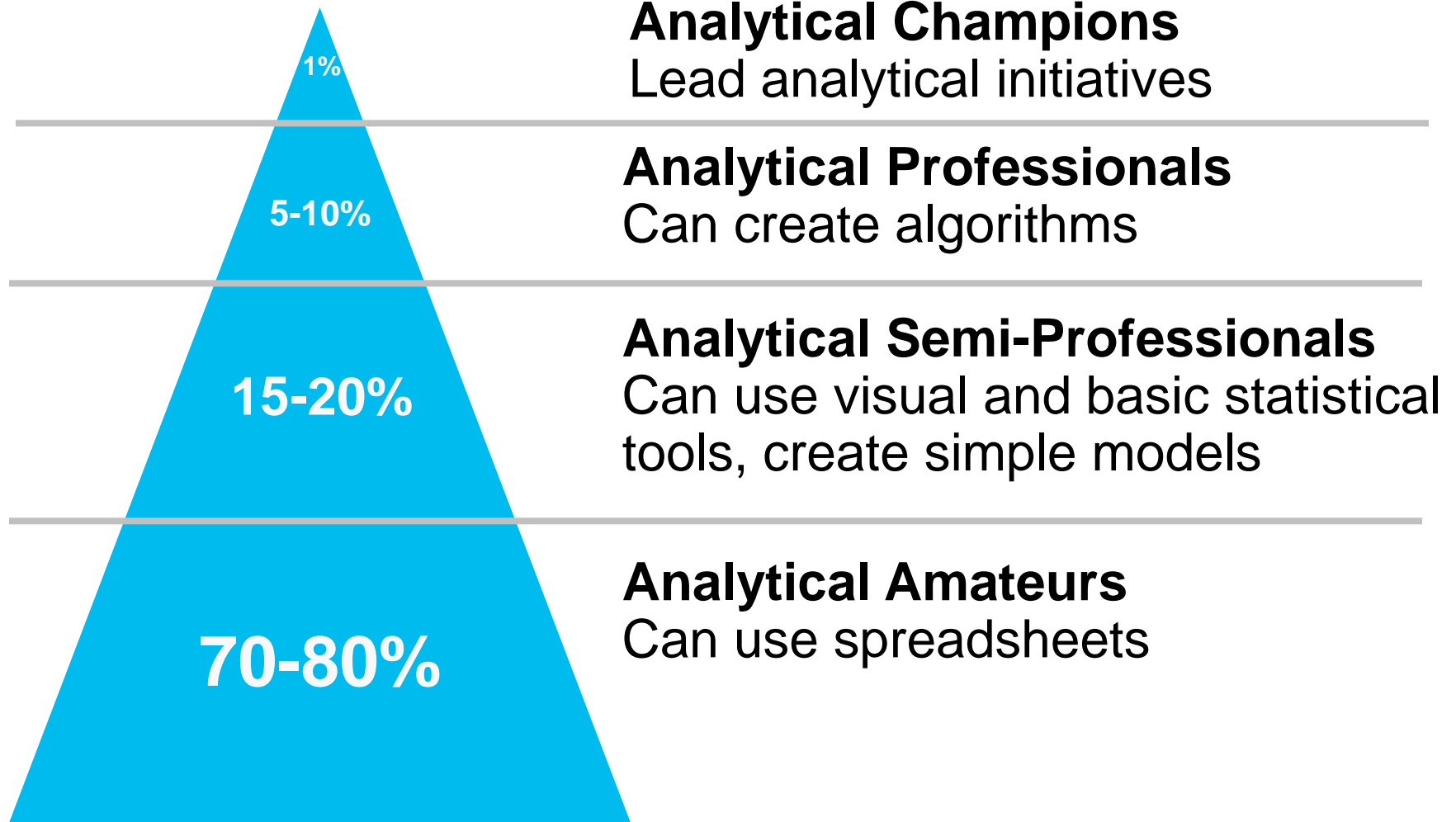


"We share many of the same pains as business. We may articulate them differently, but we still need to show the best possible return on our investment."

-- Calvin Johnson, Director of the Office of Research and Evaluation Court Services and Offender Supervision Agency for the District of Columbia

- **Allocate Resources Effectively**
DC Court Services and Offender Supervision Agency
 - Predictive model creates a risk assessment profile for probationers
 - Used to allocate resources, match probationers to officers and programs to optimize chances of success.
- **Improved Transparency for Enterprise Performance**
New York City Citywide Performance Reporting (CPR)
 - Gives New Yorkers access to 300 constantly updated performance metrics from city agencies.
- **Revenue Optimization**
Royal Shakespeare Company
 - Examined seven years of ticket sales to optimize its share of wallet among its existing customers—and to identify new audiences.
 - Increased the number of “regulars” by more than 70 percent.

Analysts Across the Enterprise

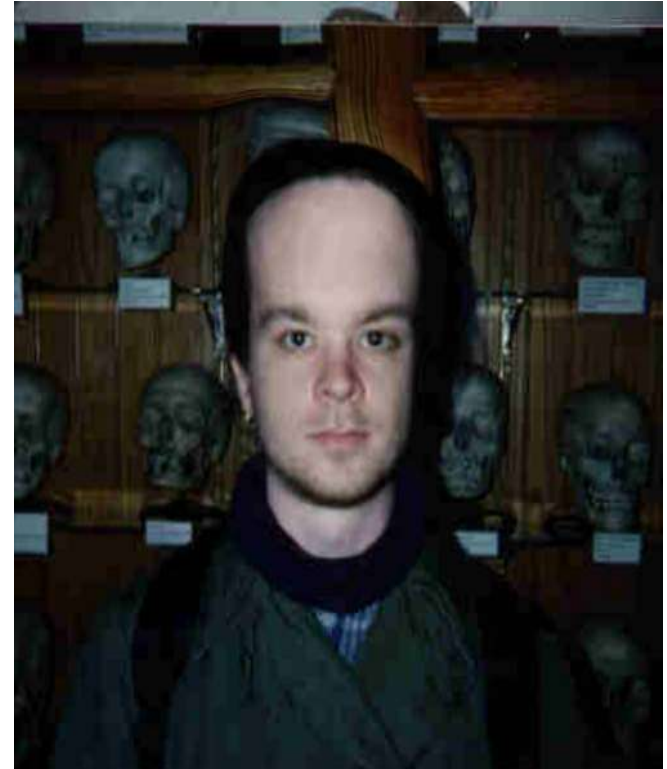


* percentages will vary based upon industry and strategy

Building an Enterprise Wide Analytical Capability



- Uber-analysts
 - Hire “Ph.D.s with personality”
 - Build a critical mass of analysts — centrally or dispersed
 - Allocate resources to strategic problems
- Analytical amateurs
 - Empower information workers and decision makers across the enterprise
 - Build capabilities through:
 - Training to build skills and understanding
 - Bring smart tools out of the ivory tower
 - Embed analytics into business processes, applications and workflow.



Analytics at Work in the Entertainment Industry



Will Smith is the only Hollywood star whose films predictably earn \$120M+

- **Track record of high performance:**
 - Named by Forbes as 2009's most bankable star ¹
 - Higher opening weekends and average box office receipts than any other male lead (Except Harry Potter)²
 - **I Am Legend**: record box office for December: \$77 million.
 - **Hancock** grossed over \$625 million worldwide despite poor reviews.
 - **Seven Pounds** has generated \$160M WW to date
- **Will and his business manager studied the 10 top-grossing films of all time and said, "O.K., what are the patterns? We realized that:**
 - 10 out of 10 had special effects.
 - 9 of 10 had special effects with creatures.
 - 8 of 10 had special effects with creatures and a love story."
- **Smith calls himself a "student of universal patterns." Studies box office results after every weekend, looking for patterns of success.**



¹ R. Grover, "Box Office Brawn," *Business Week*, January 14, 2008, p. 18.

² R.W. Keegan, "The Legend of Will Smith," *Time*, November 29, 2007.

³ J. Burman, "Hollywood's Most Valuable Actors" *Forbes*, February 10, 2009.

Decision-making analytics



Using analytics to improve individual business processes allows managers to:

- Ask smarter questions
- Get better insights
- Make better decisions
- Execute decisions faster and more consistently

But many decisions affect multiple business processes

The final frontier:
Managing decisions as a meta-process

- Inventory/prioritize key decisions:
 - Top 10 decisions required to execute our strategy?
 - Top 20 decisions that need to be consistently correct to meet our financial goals?
- Meta-decision analysis
- Evaluate managers by the quality of their decisions

We're all headed towards a more analytical future.



- More organizations will build enterprise-wide analytical capability.
- Recognition that analytics are only valuable when they result in *smarter decisions* that lead to *better results*
- Key challenges on the way:
 - Building an analytical capability using the DELTA framework.
 - Understanding the causal factors that lead to high performance.
 - Judiciously combining the **science** of quantitative analysis with the **art** of sound reasoning.
 - Sustaining an analytical capability by:
 - Embedding analytics in major business processes.
 - Reinforcing an analytical culture.
 - Continually reviewing assumptions, market conditions and analytical models

Full disclosure



If you build an analytical capability, you will:

- Make better strategic, tactical and operational decisions
- Better ability to solve problems
- Better business processes
- Make faster decisions and get more consistent (and predictable) results.
- Able to anticipate shifting trends and market conditions.
- Better business results

An analytical capability will NOT:

- Ensure that every decision will be right every time
- Be the only thing you need to make good decisions
- Be the only way to be successful.
- Prevent (or insulate you from) changing market conditions
- Necessarily make you a big movie star
- Be built in a day (but neither is any other sustainable competitive advantage).

Building an Analytical Capability Doesn't Happen Overnight . . .so Start Now.



- Takes a while to put data and IT in place, and even longer to develop human capabilities, a fact-based culture, and “success stories”
- UPS – “We’ve been collecting data for six or seven years, but it’s only become usable in the last two or three, with enough time and experience to validate conclusions based on data.”

“In business, as in baseball, the question isn’t whether or not you’ll jump into analytics. The question is *when*. Do you want to ride the analytics horse to profitability...or follow it with a shovel?”

Rob Neyer, ESPN



To learn more . . .

- **Competing on Analytics: The New Science of Winning** (HBP, 2007)
- **Analytics at Work: Smarter Decisions, Better Results** (HBP, 2010)
- *What People Want (and How to Predict It)* and *Prediction Lover's Handbook*, Sloan Management Review, Jan 2009
- *Counting on Analytical Talent*, Accenture Institute for High Performance, Mar 2010
- *How to turn data into a strategic asset*, Outlook Journal, June 2010
- More research and insights at www.analyticsatworkbook.com and www.iianalytics.com

