

**Knowing Beats Guessing**  
*Analytics in the Public Sector*

>  
**accenture**

Institute for High Performance Business

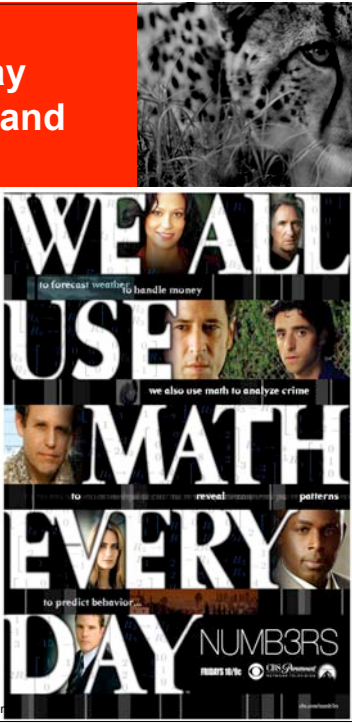
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June 2008

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**Analytics are changing the way people learn, make decisions and compete.**

“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.”

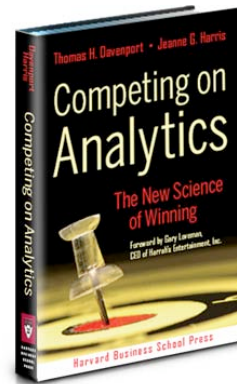


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## Research Background



- 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 25+ 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 Analytics Concours, now 27 companies



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## 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.

- Enhance customer relevance
- Out-execute competitors
- Differentiate a commodity
- Drive enterprise agility



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## Capital One's Information Based Strategy



- Capital One uses analytics in every aspect of their business, which they refer to as their “Information Based Strategy”
- Analytics are used extensively to:
  - Identify and target unique customer segments
  - Assess credit and risk
  - Evaluate income and spending behaviors
  - Determine revenue potential
  - Predict and prevent fraud
  - Optimize collections
  - Tailor customer offers/terms

## Public sector is also starting to “win with analytics”



***Progressive federal, state, and city governments are increasingly turning to analytics to enhance policy and operational decisions.***

- Deter crime and improve services (New York City, Baltimore)
- Identify and intervene with “at risk” individuals (London, WDC)
- Identify and analyze terrorist behavior (Natl intelligence, FBI)
- Improve debt collection (Arizona, California, Kansas, Texas, New York, Virginia, Massachusetts, Missouri)
- Evaluate social service and unemployment programs (Minnesota, Nevada, New Jersey, South Carolina, Washington, New York City, Charlotte)
- Assess taxpayer noncompliance risk (New York, Australia)
- Minimize social program fraud and improve outcomes (Medicare, VA, HHS)

## Analytics Move to Center Stage

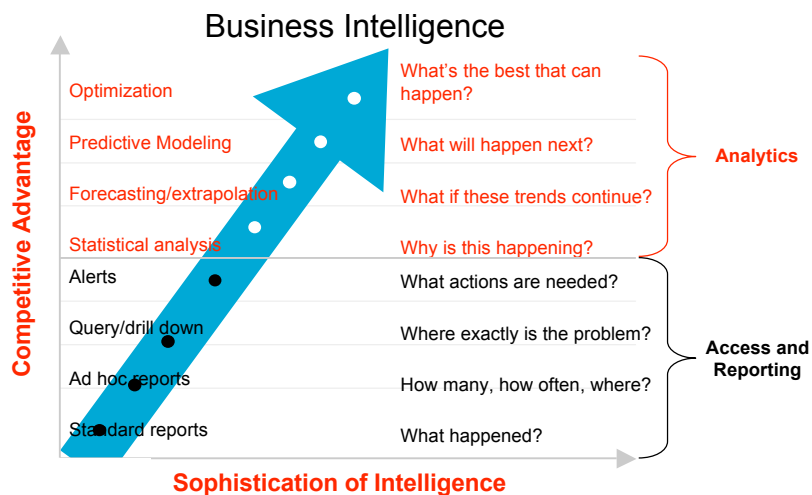


- **Analytics:** The extensive use of data, statistical and quantitative analysis, explanatory and predictive models and fact-based management to drive decisions & actions.
- Analytics, statistics, and fact-based decisions are not new to businesses
- DSS, ESS, BI, etc were important and provided value,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

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## Business Intelligence technologies use data to understand, analyze and guide business performance.



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## Forces Driving Trend to Use Analytics.



- **Data**
  - Maturing enterprise systems.
  - Growing standardized external information.
  - More data about the physical world.
- **Technology**
  - Maturing IT infrastructure and analytical architecture.
  - Sophisticated analytical techniques.
  - Massive processing power.
  - Automated applications with embedded rules and models.
- **Demand**
  - Doing more with less.
  - New generation of analytical leaders.
  - Growing financial oversight requirements.
  - Increasing importance of customer-centric strategies

## Why Use Analytics in the Public Sector?



- Revenue agencies rely on “experts” (e.g.: collectors and auditors) to drive decisions about how to collect overdue taxes and which taxpayers to audit.
- Extensive evidence that having experts is good, but experts using analytics is much better.
- Statistical predictions consistently outperform “gut based” predictions.
- Experts are best only when there is limited data and a limited number of variables.

## Analytically Oriented Companies



### Analytic Competitors are Found in a Variety of Industries:

#### Financial Services

- Barclay's Bank
- Capital One
- Progressive Insurance
- 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

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

#### Retail

- Amazon
- JCPenney
- Tesco
- Wal-Mart

#### eCommerce

- Google
- Netflix
- Yahoo

## CSOSA: Risk Assessment and Resource Allocation

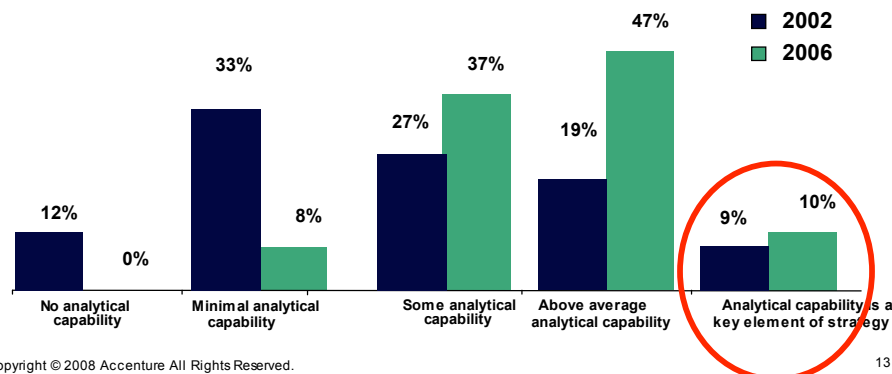


- Court Services and Offender Supervision Agency for the District of Columbia (CSOSA) must allocate its scarce resources to protect Washington D.C.'s citizens and help offenders reintegrate into society.
- A predictive model creates a risk assessment profile for each of the agency's probationers.
- The model generates a prescriptive supervision plan designed to improve the chances of successful rehabilitation.
- Officers use the risk assessment score and supervision plan to develop a program tailored for each offender that statistically has the best chance of success.

## 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.



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

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## Progressive Insurance: “Skimming the cream . . .”

- Progressive Insurance excels by seeking desirable sub-segments of undesirable risk pools.
- All motorcycling enthusiasts are not the same.
  - Hell’s Angels
  - Weekend suburbanites
  - Urban commuters
  - Stunt riders



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## Revenue Examples

- National revenue agency:
  - Analytics uncovered that voluntary compliance by taxpayers would increase by improving customer service.
  - By making it easier, cheaper and more personalized for clients to deal with the tax authority, voluntary compliance rates significantly increased.
  - Its moves are very public – again to improve voluntary compliance.
- State revenue agency:
  - Faced with the need to “do more with less”
  - Creating a “revenue road map” to build their analytical capabilities to enhance both voluntary compliance and revenue generated from compliance programs

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## Opportunities for Revenue Administrators



**Analytics provide actionable insights into critical questions such as:**

- What taxpayer characteristics are predictive of non-compliance or tax evasion?
- How should we optimize our audit budgets and staff to maximize revenue?
- What is the correlation between customer education and compliance enforcement programs on overall voluntary compliance?
- How can customer service and compliance programs be integrated to influence taxpayer compliance patterns?
- When should filing errors be addressed through education rather than compliance enforcement?
- How can audit programs be leveraged to impact the filing and reporting habits of similar taxpayers who have not been audited?

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## How to Become an Analytical Competitor



- Find your distinctive capability and use analytics to support it
- Manage analytics at the enterprise level
- Commit to invest and change at the Commissioner level
- Have large-scale ambition and results!

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## Role of Senior Management



**“ 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,

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Harrah's

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## Design Fact-based Processes to Enhance Effective Capability



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

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## Embed Analytics in Processes: From “Craft” Analytics to “Industrial”

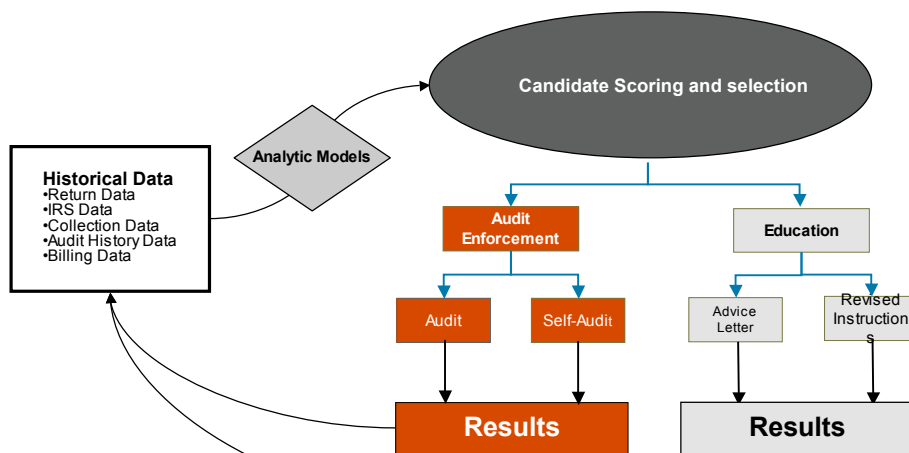


	CRAFT	INDUSTRIAL
<b>Pattern</b>	Ad hoc, project-oriented	Embedded
<b>Purpose</b>	One-time decision or event support	Ongoing process performance support
<b>Benefit</b>	One-time	Recurring
<b>Investment</b>	Low, one-time	Higher, recurring
<b>Time to Implement</b>	Brief	Lengthy
<b>Speed of Analysis</b>	Same as time to implement	Fast or instantaneous
<b>Staff</b>	Labor-intensive	Informed or automated
<b>Memory of analysis</b>	Saved for reuse or lost	Maintained and improved

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## Increasing the Reach of Audit Programs



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## It Doesn't Happen Overnight . . . So Get Started Now.



- Takes a while to put data and infrastructure in place, and even longer to develop human capabilities, a fact-based culture, and “success stories”
- Barclay’s five year plan for “Information-Based Customer Management”
- 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?”**

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- Rob Neyer, ESPN 23



## QUESTIONS

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