Analytics 3.0: The Era of Impact

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ANALYTICS 3.0

The Era of Impact

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IIA is an independent research firm that guides organizations to better leverage the power of analytics. Working across a breadth of industries, IIA uncovers actionable insights, learned directly from our network of analytics practitioners, industry experts and faculty. We deliver critical information that helps your business run smarter.
# THE ANALYTICAL DELTA

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Adapted from *Competing on Analytics*, Davenport, and Harris, 2007
LEVELS OF ANALYTICAL MATURITY

Adapted from Analytics at Work, Davenport, Harris and Morison, 2010
BUSINESS INTELLIGENCE AND ANALYTICS

Descriptive Reporting and Access

Degree of Intelligence and Competitive Advantage

Predictive and Prescriptive Analytics

(The “So What”)

Optimization
“What’s the best that can happen?”

Predictive Modeling/Forecasting
“What will happen next?”

Randomized Testing
“What happens if we try this?”

Statistical Analysis
“Why is this happening?”

Alerts
“What actions are needed?”

Query/Drill Down
“What exactly is the problem?”

Ad Hoc Reports
“How many, how often, where?”

Standard Reports
“What happened?”

Adapted from Competing on Analytics, Davenport and Harris, 2007
ANALYTICS 3.0 | FAST BUSINESS IMPACT FOR THE DATA ECONOMY

1.0 Traditional Analytics

2.0 Big Data

3.0 Fast Business Impact for the Data Economy
$2B initiative in software and analytics

Primary focus on data-based products and services from “things that spin”

Will reshape service agreements for locomotives, jet engines, and turbines

Gas blade monitoring in turbines produces 588 gigabytes/day—7 times Twitter daily volume
Traditional Analytics

- Data sources relatively small and structured, from internal systems;
- Majority of analytical activity was descriptive analytics, or reporting;
- Creating analytical models was a time-consuming “batch” process;
- Quantitative analysts were in “back rooms” segregated from business people and decisions;
- Few organizations “competed on analytics”—analytics were marginal to strategy;
- Decisions were made based on experience and intuition.
More than 90% of the analysis activity involved descriptive analytics, or some form or reporting.
Stay in the back room—as far away from decision-makers as possible—and don’t cause trouble

Take your time—nobody’s that interested in your results anyway

Talk about “BI for the masses,” but make it all too difficult for anyone but experts to use

Look backwards—that’s where the threats to your business are

If possible, spend much more time getting data ready for analysis than actually analyzing it

Keep inside the sheltering confines of the IT organization
1.0 Traditional Analytics

2.0 Big Data

- Complex, large, unstructured data sources
- New analytical and computational capabilities
- “Data Scientists” emerge
- Online firms create data-based products and services
This era was led by pioneering internet and social network companies, where big data could stand alone and be the only focus of analytics.
Fast flow of data necessitated rapid storage and processing

Parallel servers running Hadoop for fast batch data processing

Unstructured data required “NoSQL” databases

Data stored and analyzed in public or private cloud computing environments

“In-memory” analytics and “in-database” analytics employed

Machine learning methods meant the overall speed of analysis was much faster (from days to minutes)

Visual analytics often crowded out predictive and prescriptive techniques
Be “on the bridge” if not in charge of it
“Agile is too slow”
“Being a consultant is the dead zone”
Develop products, not PowerPoints or reports
Information (and hardware and software) wants to be free
All problems can be solved in a hackathon
Share your big data tools with the community
“Nobody’s ever done this before!”
ANALYTICS 3.0 | FAST BUSINESS IMPACT FOR THE DATA ECONOMY

1.0 Traditional Analytics

2.0 Big Data

3.0 Fast Business Impact for the Data Economy

- Analytics integral to running the business; strategic asset
- Rapid and agile insight delivery
- Analytical tools available at point of decision
- Cultural evolution embeds analytics into decision and operational processes
- All businesses can create data-based products and services
The most important trait of the Analytics 3.0 era is that every company—not just online firms—can create data and analytics-based products and services that change the game.
Not just supplying data, but customer offers and guides to decision-making

Hybrid technology environments incorporating new options for data storage and analysis and attempts to eliminate the ETL step

Use “data exhaust” to help customers use your products and services more effectively

Start with data opportunities or start with business problems? Answer is yes!

Need “data products” team good at data science, customer knowledge, new product/service development

Opportunities and data come at high speed, so quants must respond quickly

Chief Analytics Officers
ANALYTICS 3.0 | IN ACTION

Multiple Data Types, Often Combined

Integrated and Embedded Analytics

The Rise of Prescriptive Analytics
ANALYTICS 3.0 | FAST BUSINESS IMPACT FOR THE DATA ECONOMY

1.0 Traditional Analytics
- Primarily descriptive analytics and reporting
- Internally sourced, relatively small, structured data
- “Back room” teams of analysts
- Internal decision support

2.0 Big Data
- Complex, large, unstructured data sources
- New analytical and computational capabilities
- “Data Scientists” emerge
- Online firms create data-based products and services

3.0 Fast Business Impact for the Data Economy
- Seamless blend of traditional analytics and big data
- Analytics integral to running the business; strategic asset
- Rapid and agile insight delivery
- Analytical tools available at point of decision
- Cultural evolution embeds analytics into decision and operational processes

Today
RECIPE FOR A 3.0 WORLD

- Start with an existing capability for data management and analytics
- Add some unstructured, large-volume data
- Throw some product/service innovation into the mix
- Add a dash of Hadoop
- Cook up some data in a high-heat convection oven
- Embed this dish into a well-balanced meal of processes and systems
- Promote the chef to Chief Analytics Officer
Innovate.
Optimize.
Transform.

Presented by

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