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DATA-DRIVEN COMPANY LEADING PRACTICES & TRENDS

COMPANIES CAN BE CATEGORIZED INTO FIVE STAGES OF DATA & ANALYTICS MATURITY...



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...AND PROGRESSION IS LINKED TO CERTAIN CORE ELEMENTS THAT NEEDS TO EVOLVE...



...TO DRIVE VALUE THROUGH DATA

LEADING PRACTICES AND TRENDS IN THE CORE ELEMENTS

"DATA IS A KEY STRATEGIC BUSINESS ASSET AND WITH THE INCREASING LEVELS OF AVAILABLE DATA AND COMPUTING POWER IT BECOMES A COMPETITIVE ADVANTAGE"

DATA

Data Explosion Data Complexity Data Monetization Data & Design Thinking

OPERATING

Analytics Talent

War for

Rise of

Analytics

COEs

CAO / CDO

MODEL & TALENT



ANALYTICS CAPABILITIES

Cognitive Computing Data Discovery Insights Marketplace Visual Analytics Real Time Analytics



TECHNOLOGY

Hybrid Ecosystems Open Source Cloud & As-a-Service New IT





DATA EXPLOSION

Big data was characterized by an explosion of data. Now, in addition to big data volumes, we are seeing an explosion in the number of data sources and the speed of data.

DATA COMPLEXITY

The number of data formats is growing, from unstructured data such as images and audio/video to IoT. The ability to capture and act on multi-speed data is a core requirement for next-gen analytics.

DATA MONETIZATION

Companies are realizing the economic value of their data and are making strategies to directly or indirectly monetize it.

DATA & DESIGN THINKING

Driven by Data Explosion, Complexity and Monetization, businesses are re-designing business processes withand-for data to provide points of action rather than just points of information. All of which is enabled by data.

DATA EXPLOSION

"By 2019, 75% of analytics solutions will incorporate 10 or more exogenous data sources from secondparty partners or third-party providers"

TREND SHIFT FROM TO Internal focused External (3rd Party, (ERP, CRM) partners, syndicate) Batch Streaming/Real Time (IOT, Logs) Processing Customer Customer transaction data interaction data RENDSETTERS

IMPLICATIONS

- Inexpensive computing, cloud based resources and technology advances will enable organizations to effectively capture external, streaming/real time (IOT, Logs) and customer interaction data from evolving data sources.
- Business should ask about what decisions they could make if they had access to all those new data sources and plan their approach accordingly.

Source: © Gartner 100 Data and Analytics Predictions Through 2020, Mar 2016

DATA COMPLEXITY

"By 2018, 90% of deployed data lakes will be useless as they are overwhelmed with information for uncertain use cases"

Source: © Gartner Three Architecture Styles for a Useful Data Lake, Jul 2016

TREND SHIFT FROM TO Structured, Unstructured, organized, emerging, single data set multiple datasets New formats Traditional formats (audio, video, (numbers, text) logs, sensors) "One speed" data "Multi-speed" data TRENDSETTERS NEXT BIG

IMPLICATIONS

- Enterprise Information Management (EIM) programs with focus on data governance and data quality would play a key role in managing data complexity within the organization and significantly improving business outcomes.
- With increasing size and complexity of data, expectations from data storage would be to stay agile, easy to use and cost effective. Organizations would evaluate new storage technologies of solid state, cloud, open source solutions to meet these expectations.

DATA MONETIZATION

"By 2020, 10% of organizations will have a highly profitable business unit for productizing and commercializing their information assets"

Source: © Gartner: Must-Have Roles for Data and Analytics, 2017, Nov 2016

TREND SHIFT FROM TO Data capturer, Data provider, Cost center Profit center Data managed Data & insights valued as an asset as an asset Indirect Direct monetization monetization TRENDSETTERS Every with helps Alibaba Group

IMPLICATIONS

- Explore data monetization as a way to build business ecosystem that transcends traditional business boundaries.
- Establish the framework needed to put economic significance to information and execute information value initiatives.

DATA & DESIGN THINKING

"This isn't just about providing employees with an iPadcontrolled dashboard with a glut of data. It is about creating points of action instead of points of information"

Fjord



IMPLICATIONS

- Build the ecosystem needed to approach problem solving with a fine balance between data/number crunching and actionable design.
- Establish design thinking as an enabler of a sustained competitive advantage and/or differentiator for the analytics product/service.

ANALYTICS CAPABILITIES

COGNITIVE COMPUTING

Computer inherently building a human brain that moves from a storage device to abilities of selflearning, data mining while instant pattern recognizing capability.

DATA DISCOVERY

Rapid exploration of data to identify patterns out of large pools of data (using Big Data concepts).

VISUAL ANALYTICS

Business users are demanding more interactivity and flexibility in the way they consume and explore data (more intimate relationship with data).

REAL TIME ANALYTICS

Moving from looking at historical results to a continuous feed of data which allow to support artificial intelligence.

INSIGHTS MARKETPLACE

Development of Amazon-like enterprise insights marketplace for users to consume and exchange insights through one unifying channel.

COGNITIVE COMPUTING

"By 2018 half of all consumers will interact with services based on cognitive computing on a regular basis"

Pattern recognition
Pattern learning

Human intelligence
Machine learning

powered
Augmented

Human interaction
Augmented

analytics
Augmented

Intelligence
analytics

TO

IBM. C

TREND SHIFT

FROM

IMPLICATIONS

- This is a technology that is built on self learning, so accuracy will increase with time and those who are early adopters will benefit from the longevity.
- Expect this to be tailored for the consumer market first, where it can be hidden, the impacts to white collar jobs may make it difficult to gain adoption on mass.

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Source: © IDC: Market Analysis Perspective: Worldwide Content Analytics, Discovery, and Cognitive Systems, Aug 2015

DATA DISCOVERY

"According to Gartner, 40% of organizations currently have adopted some form of data discovery; this will grow to 55% by 2020"

Source: $\ensuremath{\textcircled{\sc only}}$ Gartner: Forecast Snapshot: Data Discovery, Worldwide, Feb 2016

TREND SHIFT FROM TO Accelerated Latent insights insights Visual data Smart data discovery, discovery, multistructured data structured data Data Data Centralization. Democratization. Skilled data Citizen data scientists scientists TRENDSETTERS



IMPLICATIONS

- Assess and plan adoption of smart data discovery to complement existing visual discovery tools and initiatives with a goal to deliver advanced insights to broad range of business users.
- Data discovery will continue to build on already existing visual data discovery and self service capabilities within organizations and cater to increasing data complexity and demand from business to get insights faster to remain competitive.

INSIGHTS MARKETPLACE

"By 2020, 30% of enterprises will use a Data as a service(DaaS) approach to provide consistent, ondemand and reusable data delivery"

TREND SHIFT FROM TO Fragmented point-Connected solutions Solutions Self-service Do-it-for-me analytics. analytics, silo collaborative approach approach Need-based Value-based insights insights TRENDSETTERS Johnson Johnson

IMPLICATIONS

- Creating an analytics market place requires a buy in from early adopters before getting to the rest of the organization, while building one has its difficulty, adoption of all parties brings a larger challenge.
- User experience will be core to insights marketplace, a platform that allows to build customizable solutions for different business problems and questions.

Source: © Gartner Determine Whether Data as a Service Is a Suitable Architecture for Your Digital Business Strategy Nov 2016

VISUAL ANALYTICS

"Visual data discovery tools will grow 2.5 times faster than rest of the business intelligence market"

Source: @ Dataversity: Trends in Business Intelligence

FROM TO Providing data Producing insights Hard-copy, static reports Digital, interactive, dynamic visuals Traditional decision support Next best action / Automated decisions TRENDSETTERS Image: Comparison of the sector of the sect

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♥FiveThirtyEight

IMPL

IMPLICATIONS

- People will start to visualize their data to explore questions, uncover insights, and share stories with both data experts and non-experts alike. Visual analytics will serve as the common language, empowering people to reach insights quickly, collaborate meaningfully, and build a community around data.
- With the combination of advanced analytics and data visualization integrated as a component of any business intelligence initiative, more emphasis will be put on making insights more visually appealing and diverse, so actions can be taken quickly.

REAL TIME ANALYTICS

"By 2018, 50% of agent interactions will be influenced by real-time analytics"



IMPLICATIONS

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- Real time analytics opens up possibilities on how you interact with your customers, instant feedback solutions will be driven of doing more real time analysis.
- Larger shift will use real-time to drive other analytics in artificial intelligence that requires constant feedback.



ANALYTICS COE

Shift from business intelligence competency centers to analytics centers of excellence that no longer report directly into IT.

RISE OF CAO/CDO

Companies are beginning to build entire business units focused on analytics with senior representations reporting directly into the c-suite.

WAR FOR ANALYTICS TALENT

Inability to source, develop, grow, and retain advanced analytics talent. Plus analysts are spending more time gathering data doing analysis.

ANALYTICS COE

By 2018, 75% of technology-oriented BICCs will have evolved into strategyoriented analytics centers of excellence

Source: © Gartner: Predicts 2016, Analytics Strategy

TREND SHIFT FROM TO **Enterprise Analytics BI** Operating Model Operating model BICC and lack of ACOE and clearly defined career path career growth Intuition led – many Analytics culture, lingua-franca interpretations TRENDSETTERS MillerCoors Johnson Johnson

IMPLICATIONS

- Enterprise should consider evaluating their BI Operating model and Analytics capabilities to consider range of services and requirements that would be more suitable to be offered through Analytics COE.
- Analytics COE discussions should have tenets of relevant business use cases, maturity benchmarks, business value aligned metrics, people, process, technology and data elements supported by an agile governance model.

RISE OF CAO/CDO

"Gartner has noted that the number of CDOs has grown from 15 in 2010 to over 1400 in 2016"

Source: $\ensuremath{\mathbb{G}}$ Gartner: Survey Analysis: The Career Path to the Chief Data Officer Role

TREND SHIFT

FROM

Data & analytics as an afterthought in management

Managing the volume and storage of data

Solely sourced from candidates with strong IT background Technical backgrounds with a strong knowledge of the business

Strong commitment

with leadership at

Treating data as a

strategic corporate

the C-level

asset







TO

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IMPLICATIONS

- Look beyond wanting ready-made candidates, who are hard to find; instead seek individuals who can grow into the role and mold teams around them.
- The role of the CDO is information-centric and driven by business value. While a degree of technology awareness is required, the CDO is not a technical role.

WAR FOR ANALYTICS TALENT

"On average, there are 160 resources in the analytics organization and 43% of companies expect that number to increase moderately over the next 3 years"

Source: Accenture Analytics Operating Model Benchmarking Survey 2015

FROM	то
Workload restricted to In-house employees	Flexible capacity models
No clear training curriculum	Internal online university programs
Siloed efforts with limited feedback loop	Collaborative wikis
TRENDSETTER	s 🙉

IMPLICATIONS

- Look for people who can look at different pieces of data and stitch them together in a way that makes sense and tells an important story.
- Develop proper career paths and diversity of working experience to foster retention rate of analytics-minded employees.

TECHNOLOGY

HYBRID ECOSYSTEM

Industrializing and scaling analytics solutions requires Hybrid Architectures that integrate the strengths of big data tools and tech with the strengths of traditional and pre-existing systems.

OPEN SOURCE

The advent of cheap storage, high-speed networks and world-wide communication has driven a renaissance of software development, allowing companies to use cutting-edge software for free.

CLOUD & AS-A-SERVICE

Cloud & As-a-Service providing the means to quickly and easily trial new solutions without paying the highentry and/or -effort toll that characterized on premise solutions.

NEW IT

Technology has become the business. The world's fastest growing companies leverage technology to deliver their products at previously impossible speeds and costs.

HYBRID ECOSYSTEM

"More than 10% of enterprises have some form logical data warehouse (LDW) architecture, and it has emerged as the primary enabling architecture to support bimodal demands on data management for analytics"

Source: © Gartner: The Data Warehouse and DMSA Market: Current and Future States, June 2016

TREND SHIFT

FROM

Uniform service level requirements for analytics

Difficult to scale

Slow build times for custom environments

TRENDSETTERS



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TO Diverse service level requirements for analytics

Everything is a service which is always-on and ready-to-scale

Intelligent platforms modular by design

IMPLICATIONS

- Availability of distributed processes via platforms such as Hadoop, semantic tiers (data virtualization/federation), Cloud technologies, advances in database management systems coupled with traditional analytics approach, supports evolution of hybrid technology ecosystem.
- Build analytics use cases within the organizations for different service level requirements and understand how hybrid ecosystem of technologies would support them.

OPEN SOURCE

"By 2016, at least 25% of the major advanced analytics vendors will offer functionality via analytics open source software communities"

Source: © Gartner: Benefits and Compromises of Open-Source and Corporate Software Suites for Advanced Analytics

TREND SHIFT FROM TO Commercial usage **Proof of Concepts** with business using open source facing teams Maturity and Availability of open scalability of open source source Programming Advanced analytics languages, collaborative platform repositories TRENDSETTERS

IMPLICATIONS

- Organizations should combine corporate software with open-source software to be able to support both bimodal Mode 1 (engineered) and Mode 2 (innovative) approaches.
- Undertake no- or low-cost pilot projects using real data in order to engage the business community, validate the suitability of new analytics tools and deliver immediate business value.

CLOUD & AS-A-SERVICE

"By 2019, 14% of Bl software will be deployed in a SaaS model"

Source: © Market Insight: Understanding the Flavors of Analytics-as-a-Service Offerings

TREND SHIFT

FROM

Data "Center of Gravity" on Premise

TO

Data "Center of

Gravity" on Cloud

Analytics solutions

Evolving Analytics

skills and innovative

as competitive

advantage

engagement

models

Analytics Technology as competitive advantage

Traditional Analytics skills and simple engagement models

TRENDSETTERS



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IMPLICATIONS

- The shift to cloud & as-a-service requires a reconceptualization of how technology supporting Analytics is organized, how assets, services, and software are procured, and how are things measured and managed.
- Cloud & As-a-service are generally not an allin proposition. Organizations should assess the need for these offerings and make a gradual shift focused on deployment, sustainability and agility and not just cost savings.

NEW IT

"By 2017, fewer than 50% of IT organizations will have tried to put a bimodal IT organizational structure in place; half of them will struggle through multiple attempts before reaching a working state"

Source: © Gartner: 2016 Strategic Roadmap for Storage

TREND SHIFT FROM TO IT is the enabler IT is the blocker and/or business Incremental, Iterative, Lean, waterfall delivery Agile delivery Traditional single **Dual Speed IT** speed IT TRENDSETTERS DISNEP Discoverv

IMPLICATIONS

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