The Data-Driven Organisation: Preparing for the future

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Agenda
What I’ll cover today

- What is a data driven organisation?
- The main challenges of creating a data driven organisation
- Building a data driven capability – the role of business and IT
- The central importance of a business aligned Data Strategy
- Data definition, cataloguing & the role of MDM
- Brief example use case
- Q&A
How can we transform business through data?

Business Optimisation
Becoming a *Data-Driven Company*

- Making the Business More Efficient
  - Better Marketing Campaigns
    - Higher quality customer data, 360° view of customer, competitive info etc.
  - Better Products
    - Data-Driven product development, Customer usage monitoring, etc.
  - Better Customer Support
    - Linking customer data with support logs, network outages, etc.
  - Lower Costs
    - More efficient supply chain
    - Reduced redundancies & manual effort

Business Transformation
Becoming a *Data Company*

- Changing the Business Model via Data – data becomes the product
  - Monetisation of Information: examples across multiple industries including:
    - *Telecommunications*: location information, usage & search data, etc.
    - *Retail*: Click-stream data, purchasing patterns
    - *Social Media*: social & family connections, purchasing trends & recommendations, etc.
    - *Energy*: Sensor data, consumer usage patterns, smart metering, etc.

How do we do what we do better?

How do we do something different?
The new landscape of the digital, data driven business
‘Big’ Data – volumes

2.5 QUINTILLION GRAINS OF SAND ON EARTH

7.5 QUINTILLION BYTES OF NEW DATA CREATED EVERY DAY

90% OF ALL DATA HAS BEEN CREATED IN THE LAST 2 YEARS

AVERAGE BUSINESS DATA VOLUMES DOUBLE EVERY 1.2 YEARS
The 3D data-driven age
How the challenge of managing data will change

• **Decentralisation**
  - Data created, stored and processed on a wider variety of systems, platforms & devices
  - Much of this data is in sources which fall outside core enterprise systems & platforms
  - Increasingly, much of the data is created outside internal IT platforms – Open Data, Social Media data et al
  - More organisational data held outside company boundaries on external Cloud based platforms

• **Democratisation**
  - Data-driven digitisation requires more data democracy
  - Data must be more accessible to all people who need it, when they need it
  - Self-service becomes the predominant model – users want to acquire, manipulate & use data, and do it for themselves

• **Devolution**
  - The IT Department no longer has monopoly control of data creation and storage
  - It can no longer dictate all technology and must accept some degree of chaos
But it can go wrong...
A recent data failure (1) - Energy

- Several UK gas suppliers confused the two meter types
- Outcome:
  - Some customers overcharged by 130% per annum for 15 years
  - OFGEM (UK Regulator) ordered repayment of overcharges
A recent data failure (2) – UK Government

SPOT THE DIFFERENCE BETWEEN THESE TWO UK COMPANIES......

- UK Government Companies House confused the two
- Published that Taylor & Sons Ltd. had been shut down
- In fact, Taylor & Son Ltd. had ceased trading

- **Outcome:**
  - Companies House had to pay £8.8 million as it ‘irreparably destroyed’ the successful business
The current state of data in digital business

**Digitisation**
71% of interviewees expect digitisation to grow their business. But 70% say the biggest barrier is finding the right data; 62% cite inconsistent data

*Source: Stibo Systems 2015*

**Self-Service Analytics**
Data Scientists & BI professionals spend 50% - 90% of their time cleaning & reformatting data before using it

*Source: DataCenter Journal 2015*

**Big Data Lakes**
Lack of effective Data Governance and the absence of shared data definitions and metadata cited as main impediments to the success of Data Lakes

*Source: Radiant Advisors 2015*

**Analytics Data Quality**
Correcting poor data quality is a Data Scientist’s least favorite task, consuming on average 80% of their working day

*Source: Forbes 2016*

**Sub-optimisation of Data Assets**
Only 0.5% of all data is currently analysed although 33% of data is seen to have potential analytics value

*Source: Dataversity 2015*
Building the foundations of a Data-Driven Business
A lesson from Ancient Greece

For Digital Transformation Success, it’s important to anchor Digital Innovation with Foundational Technology

**DIGITAL INNOVATION**
- Big Data
- IoT
- Artificial Intelligence

**FOUNDATIONAL TECHNOLOGY**
- Master Data Management
- Data Quality
- Architecture & Design
Building an Enterprise Data Strategy
A Successful Data Strategy links a Business Strategy with Technology Solutions

“Top-Down” alignment with business priorities

Managing the people, process, policies & culture around data

Leveraging & managing data for strategic advantage

Coordinating & integrating disparate data sources

“Bottom-Up” management & inventory of data sources
A BUSINESS STRATEGY is a medium to long term business plan which details the aims & objectives of a business and how it means to achieve them.

A DATA STRATEGY is a medium to long term plan for the improvement, management & exploitation of data across a business, and how it is to be achieved.
Business & Data Strategy – the interdependency

- Business Strategy
  - Sets Requirements for
- Data Strategy
  - Informs & Guides
What a data strategy is NOT … or 8 certain ways to make sure it fails

- Encompass all corporate data & information
- Owned and actioned by the IT Department
- A technology shopping list
- Led and developed exclusively by middle managers
- A general strategy, reused from elsewhere
- A set of noble principles & aspirations
- Long term, with no immediate benefits
- Set in stone and never changed
What a data strategy IS

... or 8 certain ways to ensure it succeeds

- Closely focused on the key data that the organisation depends on
- Actively owned by senior business executives
- Unique to the specific organisation
- Holistic, encompassing People, Process & Technology
- Developed & maintained collaboratively across business & IT
- An action roadmap, with milestones & deliverables
- Include ‘quick wins’ but keep sight of the longer term goals
- Evolutionary & dynamic, adapting to the changing needs of the organisation
How do you develop a data strategy?
The essential components

- **VISION & MOTIVATION**
- **KEY DATA IDENTIFICATION**
- **MATUREITY BASELINE**
- **KPIs & MEASURES**
- **BUSINESS OWNERSHIP OF DATA**
- **DATA ACCESS & QUALITY IMPROVEMENT**
Vision & motivation

“You have to work hard to get your thinking clean to make it simple. But it's worth it in the end because once you get there, you can move mountains.”

Steve Jobs
1955 - 2011
Vision & motivation: typical deliverables

**MOTIVATION** – Why does the organisation need to do this?

**BUSINESS CASE** – What are the predicted benefits and costs?

**STRATEGY** – How are we going to do it?

**2 / 10 / 30 MINUTE PRESENTATIONS** – How will we communicate this?
Artful Art Supplies

Corporate Mission
To provide a full service online retail experience for art supplies and craft products.

Corporate Vision
To be the respected source of art products worldwide, creating an online community of art enthusiasts.

External Drivers
- Digital Self-Service
- Increasing Regulation Pressures
- Online Community & Social Media
- Customer Demand for Instant Provision

Internal Drivers
- Targeted Marketing
- 360 View of Customer
- Revenue Growth
- Brand Reputation
- Community Building
- Cost Reduction

Goals & Objectives

Accountability
- Create a Data Governance Framework
- Define clear roles & responsibilities for both business & IT staff
- Publish a corporate information policy
- Document data standards
- Train all staff in data accountability

Quality
- Define measures & KPIs for key data items
- Report & monitor on data quality improvements
- Develop repeatable processes for data quality improvement
- Implement data quality checks as BAU business activities

Culture
- Ensure that all roles understand their contribution to data quality
- Promote business benefits of better data quality
- Engage in innovative ways to leverage data for strategic advantage
- Create data-centric communities of interest

- Corporate-level Mission & Vision
- May already be created or may need to create as part of strategy
- Data-Centric Drivers
- External Drivers are what you’re facing in the industry
- Internal Drivers reflect internal corporate initiatives
- Specific, Data-Centric Goals & Objectives
- Starting point of strategic Roadmap
Key data identification
High priority data items and attributes

- Identify Key Business Drivers
- Filter Data Elements Aligned with Business Drivers
- Focus Strategy Efforts on Key Data

**e.g. Launch a New Product** – Marketing Campaigns require better customer information

Targeted Projects in the Data Strategy to Deliver Short-Term Results

- Customer
- Product
- Region
- Partner
- Vendor
Key data identification: creating a Business Glossary

The Importance of Definitions

- Definitions are as important as the data elements themselves
- Many data-related business issues are caused by unclear or ill-defined terms

- What do you mean by “customer”?
- How are we defining a “household”?
- What’s the difference between an “ingredient” and a “raw material”?
- Sales is using a different “monthly calendar” than Finance.
- We’re calculating “total sales” differently in each region!
- “API” as in “Application Programming Interface?” or “American Petroleum Institute”?
- What’s an “equity derivative”?
- What’s a “PEG ratio”?
The critical role of Master Data (Management)

MDM as a focal point of implementing a Data Strategy

Key Data Objects & Attributes

Business Strategy

Data Strategy

New Data Platforms & Sources

Established Data Platforms

Data Governance & Ownership

Data Definitions & Business Rules

Business Data Glossary

Data Standards / KPIs & Measures

Data Improvement & Enhancement

SOCIAL MEDIA

OPEN DATA

HADOOP

CLOUD

IOT

PRODUCT MANAGEMENT

CRM

BILLING & INVOICING

OPERATIONS & SUPPORT

BI & DATA WAREHOUSES
Maturity baseline – plotting your digital strategy

CURRENT MATURITY / READINESS FOR BEING DATA DRIVEN

AS IS

DATA STRATEGY & ROADMAP

THE DATA DRIVEN DIGITAL ENTERPRISE

TO BE

“KNOW FROM WHERE YOU CAME. IF YOU KNOW FROM WHERE YOU CAME, THERE ARE ABSOLUTELY NO LIMITATIONS TO WHERE YOU CAN GO”

James Baldwin
Author & Poet
Business ownership of data

Applying a structured Data Governance Framework
Creating the data improvement ‘Sweet Spot’ – focus on key data

Improving core data through Data Governance, Data Quality & MDM

DATA GOVERNANCE
A management framework for data accountability & data improvement

DATA QUALITY
Approaches & tools for improving data accuracy, completeness & consistency

MDM
Techniques & tools for storing key data in one location so that it provides a common & shared point of reference

CORE DATA
Data which is widely used by many people & processes across the business and which is critical to business success

Data Governance

Master Data Management (MDM)

Data Quality

Core Data ‘Sweet Spot’
Mapping business drivers to data management capabilities

Creating the Roadmap

**Business Drivers**

**External Drivers**
- Digital Self Service
- Increasing Regulation Pressures
- Online Community & Social Media
- Customer Demand for Instant Provision

**Internal Drivers**
- Targeted Marketing
- Brand Reputation
- 360 View of Customer
- Community Building
- Revenue Growth
- Cost Reduction

**Challenges**

1. **Lack of Business Alignment**
   - Data spend not aligned to Business Plans
   - Business users not involved with data

2. **360 View of Customer Needed**
   - Aligning data from many sources
   - Geographic distribution across regions

3. **Integrating Data**
   - Siloed systems
   - Lack of combined view
   - Need for Historical data

4. **Data Quality**
   - Bad customer info causing Brand damage
   - Completeness & Accuracy Needed

5. **Cost of Data Management**
   - Manual entry increases costs
   - Data Quality rework
   - Software License duplication

6. **No Audit Trails**
   - No lineage of changes
   - Fines had been levied in past for lack of compliance

7. **New Data Sources**
   - Exploiting Unstructured Data
   - Access to External, IoT & Social Data

**Data Governance**
- Strategy

**Master Data Management**
- Data Warehousing
- Business Intelligence
- Big Data Analytics
- Data Quality
- Data Architecture & Modeling
- Data Asset Planning & Inventory
- Data Integration
- Metadata Mgt

Shows “Heat Map” of Priorities
Use Case: consumer energy company

Business transformation via data

• For the consumer energy sector *Big Data and Smart Meters are transforming the ways of doing business* and interacting with customers
  • Moving away from traditional data use cases of metering & billing
  • Smart meters allow customers to be in control of their energy usage
    • Control over energy usage with connected systems
    • Custom energy reports & usage
    • Smart Billing based on usage times

• As energy usage declines, *data is becoming the true business asset* for this energy company.
  • Monetisation of non-personal data is a future consideration

• While the Big Data opportunity is crucial, equally important are the traditional data sources
  • New data quality processes and tools in place for operational and Data Warehouse data
  • Data Governance programme established
  • Business-critical data elements identified, defined, measured and improved
Use Case: data-driven business evolution

Data is a key component for new business opportunities

**Traditional Business Model**
- Usage-based billing
- Issue-driven customer service

**More Efficient Business Model**
- More efficient billing
- Faster customer service response
- More consumer information re: energy efficiency etc.

**New Business Model**
- Consumer-Driven Smart Metering
- Connected Devices, IoT
- Proactive service monitoring
- Monetisation of usage data

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**Databases**

**Data Governance**

**Data Quality**

**Master Data Management**

**Big Data**
The data driven organisation
Preparing for the future

• More & more organisations are transforming the way they do business through data
  • More efficient ways of doing business
  • New business models

• Documenting Business Drivers & Motivation is key to success
  • Mission & Vision
  • External & Internal Drivers
  • Data Strategy Goals & Objectives
  • Action Roadmap

• While it’s important to tailor & prioritise your Data Strategy, core components are common to all:
  • Aligning Business Strategy with Data Strategy
  • Focus on the important data needed to support and deliver the Business Strategy
  • Baseline the important data, assign KPIs & measures, deliver improvement & enhancement projects, track progress
  • Data Governance, Data Quality & MDM are core ‘must haves’ of any successful Data Strategy
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