The Influence of Big Data Analytics on Digital Transformation

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Presented by…

Knut Veltjens

**Vice President BI & Big Data**

As Vice President Knut Veltjens is responsible for Big Data Analytics for CGI in Germany and is a member of the international Practice Council. In addition to his management tasks, he is in charge of the strategic positioning and portfolio development. Due to many customer projects in diverse industries, he has comprehensive knowledge about current Big Data Analytics trends as well as operational scenarios on international markets.

Steffen Scheller

**Director Consulting Services BI & Big Data**

With more than 25 years in the information technology industry, Steffen Scheller has a wide range of experience providing a track record in BI & Big Data Analytics. He has successfully managed multiple large projects in Telecommunication and Automotive Industry focused on harmonizing and standardizing BI & Big Data landscapes across big companies. At CGI he is in charge of a team with more than 40 BI & Big Data professionals. The team provides services on SAS, Teradata and Microstrategy technologies as well as Big Data Analytics based on Hadoop.
The World Is Our Home: The CGI Company

**High-end**

business and IT consulting

Serving 4,500+ clients from over 400 offices around the world

100+ leading IP-based solutions

**End-to-End**

IT and business process services

68,000 professionals; 75% shareholders

CAD$ 10B annualized revenue

Focused industry and domain expertise

39 years of successfully partnering with our clients

Client proximity model complemented by unique global delivery network

CGI is the world’s 5th largest independent information technology and business process services company
Agenda

1 Setting the scene
2 Digital Challenges in the Financial Industry
3 How Big Data and Analytics can support
4 Conclusions
Defining Digital Transformation

CGI Definition

• Digital Transformation describes the adaptation of a company’s value proposition, technology strategy and operational model to the fundamental changes brought about by digital technologies (PAC)

• Most enterprises, and public organizations, have multiple touch points, with customers, citizens, suppliers, employees, regulators

• Digital transformation **reinvents these touch points**, in the way data is exchanged, transactions are fulfilled, insights are gained and value is created

• It is **creating disruption** across all sectors. It challenges how we **manage data**, ensure **security**, and adapt **legacy systems**

• Digital Transformation is not just about technology and data. It is about **people and processes, organizations, culture and business vision**
CGI’s approach to Digital Transformation – bringing all the elements together
Digital transformation is a priority in all industries

| COMMUNICATIONS | BANK RETAIL | BANK CORP. | BANK CAP MARKET | MANUFACTURING | GOV. CENTRAL | GOV. DEFENSE | GOV. LOCAL | UTILITIES | TRANSPORT | POST & LOGISTICS | OIL & GAS | INSURANCE | POST & LOGISTICS | OIL & GAS | INSURANCE | POST & LOGISTICS | OIL & GAS | INSURANCE | POST & LOGISTICS |
|----------------|-------------|------------|----------------|---------------|--------------|--------------|------------|----------|-----------|----------------|-----------|------------|----------------|-----------|------------|----------------|-----------|------------|----------------|-----------|------------|----------------|
| • Customer experience  
• New services & revenue  
• Support Biz agility & cost optimization | • Customer 360°  
• New services | • Customer expectations  
• Data governance | • Secure end to end risk Management  
• Flexibility in monitoring for new regulatory framework | • Intelligence For Smart Manufacturing  
• Increasing customer focus & interaction | • Efficiency of digital services  
• Support open data  
• Intelligence for security | • Facilitating decision making in new long term contracts  
• Providing patterns model in cyber security | • Maximizing revenue and efficiency  
• Enhance citizen experience | • Optimize production performance  
• Secure efficient and reliable networks  
• Drive customer profits | • Pax & goods real time  
• Network improvement | • Move to customer centric model  
• Support Multi-modal transformation | • Applied Data analytics  
• Drive value from data | | | | | | | | | | | |
Focus on the financial industry

Insurance

**Key Industry trends**

- Consumer/partner expectations: 76%
- External/regulatory challenges: 59%
- Increasing sources of data: 55%
- Internet of Things: 45%
- Impact of new competition: 39%

Banking – Corporate and Transactional

**Key Industry trends**

- Regulation and control: 86%
- STP and real-time: 64%
- Industry standards: 36%
- Disruptive technologies and competition: 32%
- Corporate experience: 23%

Banking – Retail

**IT priorities**

- Omni-channel build out: 69%
- Big data analytics: 62%
- Cybersecurity/fraud: 57%
- Regulatory implementation: 55%
- Out of the box/SaaS: 39%

Banking – Capital Markets

**Key Industry trends**

- Regulation and control: 80%
- Exponential use of data: 60%
- Scalable platforms: 50%
- Trade lifecycle digitalization: 45%
- Prime market and equities: 40%
- Focus on profitable business: 40%
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Banks as we knew them are fading away…

Banks are considered an important factor in private wealth and risk management and the demand is increasing…

… but Banks are challenged by market conditions, shrinking margins and a growing need for investments and operational costs

The changing world of Banks

Source: https://bankenverband.de/
How it all started…

To optimize their margins banks have very early started to push for Self-Services and the usage of Online Services

Online Banking Usage became more common but also is considered commodity

Source: https://bankenverband.de/

The changing world of Banks
Digital Structural Change

At this point, digital technology is now becoming a thread for banks...

1. Technology – enabled services are becoming a commodity and customers get used to new/changed products and services.

2. New players enter the classical (banking) market.

3. Established Players are caught with a legacy cost base while new players take over profitable portions of the business.

4. So the Players aim to change themselves or partner with various players e.g. FinTechs.

5. Further consolidation is therefore likely.

The changing world of Banks
To Bank or Not to Bank…
The eBay ecosystem

Source: Forrester Research Online Retail Forecast, 2013 to 2018 (Western Europe)

Source: PayPal & Own Research

The changing world of Banks

57 Financial trading networks including 15,000 banks supporting 26 currencies processing about 180 BN USD in 2013 / 9 M Txn per day

15 Mio Active Buyers in Germany and 152 M Worldwide

50,000 Seller Accounts in Germany with 77% of offering cross border sales

*Plus Pilots for Online Payment and P2P Payment
Top 5 Customer Request

1. **Reward me for my business**
   - 81%

2. **Give me anytime, anywhere access to my balance**
   - 61%

3. **See me as a person**
   - 58%

4. **Provide me with wealth-building advice**
   - 55%

5. **Tell me what I am spending money on and how can I save**
   - 52%

Customer satisfaction

Are you satisfied with your bank’s services? Would you consider switching to a bank that offered better services?

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CGI recommends six actions based on the findings of this survey to help banks on their digital transformation journey.

- **Know customer and put first**
- **Innovate and deliver**
- **Build brand across channels**
- **Reward customers**
- **Become trusted advisor**
- **Prepare for next phase**

Source: CGI Case Study Understanding Financial Consumers in the Digital Era

The changing world of Banks
Accelerate Enterprise Digital Transformation

In order to successfully position for the digital transformation organisations must address several challenges.
Customers getting used to Digital experiences provided by Retailers …

- Restructured Branches
- Advisory Tools
- Self-Service
- All Devices
- Omni-Channel: All and cross
- Real-Time and Due-Time
- Anytime, Anywhere
- Market-driven Sourcing and Pricing
- Product Innovation
  - Simplification
  - Comparability (Aggregators)
- Relevance
  - Congruent Customer View
  - Reward
  - Personalisation
  - Real-Time BI

Accelerate Enterprise Digital Transformation

Competition
Customer Expectation
Tech Modernization

CGI Digital Transformation Concept
Same recipe, higher dose

CGI Digital Transformation Concept

Customer Focus
Relevance
The secret of meeting customer expectations while increasing customer value lies in relevance. Relevance of communication and interaction is the result of active listening: gathering customer insights and thinking outside in.
Technology enables further Digitalization fast...

Accelerate Enterprise Digital Transformation

Tech Focus

Decoupling
- SOA
- Master Data Management
- Templating
- Buy vs Build
- Simplification
- Modernization
- Openness
- Standards
- API Management

Security
- IAM, SSO
- Cyber Resilience
- Compliance

Big Data
- DWH, Analytics
- Unstructured Data, Augmentation

Competition
Customer Expectation
Tech Modernization

CGI Digital Transformation Concept
EVERY YEAR MORE DATA IS CREATED THAN IN ALL HISTORY TO ACQUIRE, ANALYSE AND ACT UPON

VOLUME
From terabytes to petabytes, exabytes, zettabytes, etc...

VARIETY
From structured to semi-structured and unstructured

VELOCITY
From batch to real-time streaming

DIGITAL INTERACTIONS
WEB 2.0
SOCIAL MEDIA
MACHINE TO MACHINE

BIG DATA

INCREASING BUSINESS DYNAMICS
IN-MEMORY ANALYSIS
AGILE DECISION MAKING

Big Data Analytics is about improving business processes using insights from all relevant data

Frontrunners in valuing and leveraging data are outperforming their peers
State-of-the-art Big Data Architecture
Scenario 1: Based on Appliance-Hadoop Combination

This AaaS architecture has been successfully validated and implemented at big European and Canadian Telco providers and a global leading car producer.
State-of-the-art Big Data Architecture
Scenario 2: Purely based on Hadoop

Source Systems
Data Sources
- External Data
  - Markets
  - Consumers
- Internal Data
  - CRM
  - Order Mgmt.
- Unstructured Data
  - Social Media
  - E-Mail
- Complex Event Data
  - Streaming
  - Voice
  - Sensor (M2M)
  - Video

Logical Data Warehouse
Data Management
- In-Memory Database
- Decision Engine
- Enterprise Data Warehouse

Hortonworks Data Platform (HDP)

Methods / Insight Generation
- Segmentation
- Clustering / Profiling
- Risk & Fraud Management
- Predictive Modeling
- What-if-Analysis
- Text Mining
- Pattern Recognition
- Root Cause Analysis
- Quality of Service Improvement
- Trending, Alerting, Prediction
- Revenue Assurance Optimization
- Semantic Analysis

Information Access
- Batch / Scripting (Map Reduce, Pig)
- SQL / NoSQL (Hive, HCatalog, HBase)
- Reporting (Dashboards, Scorecards)
- Stream / Search (Storm, Solr)
- Alerts

Consumption
- Mobile Devices (Tablet, Cellular)

Information Access Portal

Enterprise Meta Data Repository
- Controls (Archive, Data Quality, SLA Reporting, Continuous Learning)
- Security (Data Security, Network Security, Physical Security)
- Operations (Monitoring, Tuning, Back Up & Recovery, Capacity Management)
- Governance (Managed Requirements, Managed Use)
Banking related Use Cases
Fraud Detection

Problem
• Fraud detection only considering monetary – not non-monetary events
• Fraud model largely rules and incident based
• Frequent change in fraud patterns requires exploratory capabilities
• Platform limitations

Solution
• Proper holistic view on customer to allow Closed Loop Analytics for continually improving detection
• Analytic models tested against historical active archive
• Models applied online
• Integration in existing transactional systems
• Exploratory search capabilities with Splunk or Solr
Banking related Use Cases
360° Customer View

Problem
- Data silos prevent single view across multiple lines of business, contracts, channels
- Traditional relational data only
- Online channel information unused
- No unstructured data (call center, complaints, etc.)
- Last-day data only
- 12 month data in EDWH only
- Platform limitations & cost

Solution
- Bring data from various sources and formats into one data lake without need to modify it
- Create single view of the customer with schema on-read for data exploration and analytics
- Improve and create new analytics models
- Streaming ingest for real-time analytics and exploration
Banking related Use Cases
Digital Banking

Offload Transactional systems
Synch data with Hadoop using change data capture technologies. No change of transaction itself.

Reduce cost of read-only transactions
Online and mobile create dramatic increase in read access.

Super fast mass data access
Consumers expect ultra fast performance
Agenda

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Know Your Customer

- Access rich customer data and insight become a customer-intelligent organization
- Break-down customer data silos
- Develop a “360 view” of each customer
- Transcend traditional banking models and services

Scotia International engaged CGI to build a 3 year roadmap for their digital strategy.

Supporting the Digital Transformation
Product & Service Innovation

- Protect and grow your customer base
- Build innovation labs and sandboxes for Constant Betas
- Establish Omni-channel portals to deploy pre-built apps quickly

Value Add Services

CGI Services
- ICE & SPARC Program Support
- Digital Commerce
- CRM
- Customer Insight & Predictive Analytics
- Business consulting & digital transformation strategy
- Online & UX Development
- Cybersecurity

CGI Accelerators
- Mobility
- Geo-location
- Cloud & Infrastructure Services
- E-Signatures

CGI designed and built mobile applications for TD Financial Group, including models to quickly and easily calculate mortgage scenarios.

Supporting the Digital Transformation
Anytime, Anywhere

- Identify your customer to provide personalized attention, support and services
- Offer real-time personalized seamless service regardless of channel

Customer 360

CGI Services
- Digital Commerce
- CRM
- Customer Insight & Predictive Analytics
- Business consulting & digital transformation strategy
- Online & UX Development
- Cybersecurity

CGI Accelerators
- Mobility
- Geo-location
- Cloud & Infrastructure Services
- Big Data Analytics
- Master Data Management
- Call Centre Management

CGI helped Credit Agricole develop a real time omni channel marketing campaign solution, and unified modelling and design practices at group level.

Supporting the Digital Transformation
Data 2 Diamonds

- Identify and activate your data assets
- Remove Legacy Silos by rearchitecting Data, Application and Platforms using Big Data
- Enable Data Analytics

Big Data

CGI Services
- Data 2 Diamonds
- Big Data Analytics
- CRM
- BI and SI Services around Big Data, DWH and Reporting/Analytics
- Data Architecture & Modernisation

CGI Accelerators
- Various BI & Platform Partnerships
- Risk Cost Driven Architecture (RCDA)
- Global Delivery Centers
- IP Solutions e.g. D2D, Customer 360, Strata, ...

CGI supports a Large Insurance Company to introduce Dashboards based on Big Data to provide performance reporting

Supporting the Digital Transformation
Open Enterprise

- Identify complementary or replacement options from a customer, market and enterprise Point Of View
- Ease Integration of External and Internal Partners
- Establish suitable Governance for Agile delivery and Operations

Partner Eco-System

**CGI Services**
- ICE & SPARC
- VIP Sessions with BC & SI&T
- Enterprise & Technical Architecture Consulting
- System Integration & Outsourcing Services

**CGI Accelerators**
- Management Framework
- CGI Vendor Partnerships e.g. Azure/Cloud Provisioning Dashboard
- Risk Cost Driven Architecture (RCDA)
- Global Delivery Centers

CGI maintains the platforms for various Banking Customers where 3rd parties are involved as 3rd party providers or partners in an End2End delivery.
Thank you

Let's build the vision together!

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