Beyond the hype - Big Data in practice

Big Data Analytics
Reference Architecture and Business Value Roadmap

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Introduction to the Big Data Analytics Guidebook

Dr. Mick Kerrigan
Big Data Analytics Project Team

- Team Leads and Sponsors
  - Big Data Works
  - Amdocs
  - Orange
  - China Mobile

- Contributors
  - TEOCO
  - NetCracker
  - China Telecom
  - Telecommunications
  - Intracom Telecom
  - Gradiant
  - Huawei
  - VentraQ
The Many V’s of Big Data

- Velocity
- Variety
- Volatility
- Volume
- Validity

Value
Big Data Analytics Business Value Roadmap

A step-by-step process to enable a CSP to implement a BDA use case that delivers real business value

1. Use Cases
2. Building Blocks
3. Reference Model

Validate
Big Data Analytics Use Cases

11 BDA use cases covering targeting offer, targeting and optimization

1 BDA use case covering CSP Data Monetization

3 BDA use cases covering Network related planning and capacity management

1 BDA use case covering market watch

1 BDA use case covering fraud management

1 BDA use case covering revenue assurance

11 BDA use case covering customer case, proactive care and customer retention

3 BDA use case covering real-time network optimization and management

1 BDA use case covering partner value optimization

1 BDA use case covering business process optimization

34 BDA use cases
Big Data Analytics Building Blocks

- Voice & Text
  - Voice Transcription
  - Text Classification
- Customer Influence
  - Customer Influence Scoring
- Customer Value
  - Customer Value Scoring
- Customer Location
  - Geocoding
  - Customer Location Detection
- Offer Recommendation
  - Popularity Based Offer Recommendation
  - Hot offer Recommendation
- Customer Care
  - Care Issue Anomaly Detection
  - Care Issue Root Cause Analysis
  - Policy Based Care Solution Recommendation
- Text Clustering
  - Customer Social Influence Scoring
- Concept Mining
  - Customer Lifetime Value Scoring & Prediction
  - Customer Location Prediction
  - Customer Key Location Profiling
  - Profile Based Offer Recommendation
  - Community Based Offer Recommendation
  - Care Call Motivation
  - Success Based Care Solution Recommendation
Big Data Meets Analytics

Value

Volume

Variety

Validity

Volatility

+ 

Descriptive Analytics

Predictive Analytics

Prescriptive Analytics

= Big Data Analytics
GB979: Big Data Analytics Reference Model

Data Source
Network, OSS, BSS, Social Network, ...

Privacy, Security, and Compliance
Data Exchange Services

Data Repository
Structured Data, Unstructured Data, Semi-structured Data

Data Ingestion
Integration, Import, Format

Data Management
Transformation, Correlation, Enrichment, Retention

Data Analysis
Data Modeling, Metrics, Reports

Complex Event Processing
Alerts & Triggers

Batch

Streaming
GB979: Big Data Analytics Reference Model

Scalable Mediation Platform

Data Management
- Transformation, Correlation, Enrichment, Retention

Validity

Data Ingestion
- Integration, Import, Format

Velocity

 Variety

Volatility
GB979: Big Data Analytics Reference Model

- Traditional RDMS
- NoSQL Data Store
- Hybrid Data Store

Data Source
Network, OSS, BSS, Social Network...

Data Repository
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Privacy, Security, and Compliance

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Value

Streamlining

Complex Event Processing
Alerts & Triggers
Stream Processing
Nikos Tsantanis
Streaming Execution Model

- Analyze Data as it arrives
- Constantly deliver outcomes

Enables powerful use cases with time-sensitive requirements
Real-Time
Use Case Examples

Reaction Time

milliseconds  seconds  minutes

Google Ads display  Credit Card fraud  Location-based marketing
The Big Data Use Case ‘triplet’: Insight + Action = Value

Example: Real Time Churn Prevention

<table>
<thead>
<tr>
<th>Insight</th>
<th>Action</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscriber Dissatisfaction</td>
<td>Retention</td>
<td>Satisfied Customer</td>
</tr>
<tr>
<td>Campaign</td>
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CEP: Enabler of Real-Time Insights & Actions
How CEP Works

**Identify Events (Insights)**

- Correlate events/data
- Detect event patterns
- Execute online algorithms
- Calculate KPIs

**Respond to Events (Actions)**

- Alerts (M2H)
- Triggers (M2M)

All in real-time
CEP Example: Churn Prevention

Insight: Two of Joe's friends abandoned Joe's operator recently

Action: Poor QoE makes Joe determine to switch operator

Value: Data & events from multiple sources are captured & interpreted in real time

Complex Event Processor

Prediction: CEP detects a subscriber with high probability to churn

Next Best Action

Prevention: CEP applies rules that determine 'Next Best Action'

BONUS

Joe receives a bonus offer and becomes a happy advocate of his operator
Real-time Personalized Offers Based on Location

Paul Grepps
Big Data Analytics
Business Value Roadmap

A step-by-step process to enable a CSP to implement a BDA use case that delivers real business value
Where are my customers?

Morning
- Long Lines
- Regular Customers
- Morning Coffee & Breakfast

Afternoon
- Empty Stores
- Infrequent Customers
- Afternoon Tea & Coffee Beans

Existing Ad Campaigns not Working

Real-Time Targeted Location-Based Advertising
Customer Location Building Blocks

- Geocoding
- Key Location Profiling
- Location Prediction
- Location Detection

| Capture Customer Locations | Learn Key Locations (Home & Work) | Time of Day, Day of Week | Real-Time Location Detection |
Business Value

- **Service Provider**: New revenue source leads to increased revenue
- **Customer**: Relevant ads improve the customer experience
- **Advertising Partner**: Time-of-day targetings increases offer acceptance rate and profitability
Privacy, Security, & Compliance

Paul Grepps
BDA Reference Model
Privacy, Security & Compliance Layer

Privacy
- Management
- Protection
- Preservation

Security
- Encryption
- Authentication
- Access Control

Compliance
- Legal
- Regulatory
BDA Reference Model
Privacy, Security & Compliance Layer

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bigdatainfocus
BDA Reference Model
Privacy, Security & Compliance Layer

- Privacy
  - Management
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- Compliance
  - Legal
  - Regulatory
Big Data Analytics
Project Milestones

- Identify key analytics Use Cases
- Define a BDA Reference Model
- Decompose UCs to reusable Building Blocks
- Document Business Models

Call for Contributions
CSP’s and Vendors join us at TAW in Madrid and our weekly calls to shape the future of Big Data Analytics

- Frameworx 13 (April 2013)
  - TR202: Big Data Analytics Reference Model
- Frameworx 13.5 (Sept 2013)
  - GB979: Big Data Analytics Guidebook
- Frameworx 14 (May 2013)
  - GB979: Big Data Analytics Guidebook
Beyond the hype - Big Data in practice

Big Data Analytics Platform and application Showcases

Dr. Mick Kerrigan, Amdocs Management Ltd
Nikos Tsantanis, Intracom Telecom
Paul Grepps, TEOCO Corporation
Dr. Gadi Solotorevsky, cVidya Networks Ltd.
Guillaume Le Mener, Tektronix

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<td>cviida</td>
<td>Dr. Gadi Solotorevsky</td>
<td>S-MOM-T5: Personalized Offers Based on Usage</td>
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<td>Intracom Telecom</td>
<td>Nikos Tsantanis</td>
<td>Monetizing Mobile Subscribers’ Insights</td>
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<td>O-RMO3: Real Time Customer Offload Management</td>
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BDA Use Cases on Show
BDA Catalyst @ TM Forum Live!

Business Growth through Big Data Analytics Catalyst

- Demonstrate real life big data analytics use cases in commercial software
- Validate GB979 use cases and reference model to further improve it for the benefit of the industry
- Enable CSPs to implement, deploy, and obtain ROI faster from their BDA initiatives
- Use Cases are tested and validated by a large team of 6 CSPs and 8 Suppliers

Join us at TM Forum Live! in Nice from June 2nd to 5th 2014