Delivering the Intelligent Enterprise at SAP through Intelligent Data & Analytics

Rouven Morato
May 14, 2019
Surviving digital disruption

Linear Thinking:
30 linear steps
= 30 meters

Exponential Reality:
30 exponential steps
= 26x around the earth
Top 15 Best Global Brands Ranking

- Coca-Cola: $6,587,400
- Microsoft: $5,883,200
- IBM: $5,788,300
- GE: $5,218,800
- Nokia: $4,613,300
- Toyota: $3,287,900
- Intel: $3,108,100
- McDonald's: $3,007,400
- Disney: $2,922,500
- Mercedes-Benz: $2,438,900
- HP: $2,273,400
- BMW: $2,230,200
- Citi: $2,210,400
- Gillette: $2,134,400

Brand Value $m
“We experience the same pressure as other organizations: we need to spearhead this era of Digital Transformation.”

Christian Klein, SAP Global Chief Controlling Officer and Chief Operations Officer
Market trends fuel the digital transformation impacting SAP’s core business

Digital trends driving the transformation of SAP’s business model

- Internet of Things
- Machine Learning
- Augmented Reality
- Block Chain
- Cloud Computing
- Social
- Mobile
- Big Data & Analytics

From human high-touch to automated intelligent operations

From manual reporting to processing Big Data real-time

From on-premise to Cloud platform & SaaS offerings
The Intelligent Enterprise Strategy @ SAP
Fueled by Trusted Data

SAP is facing the Digital Transformation as an Intelligent Enterprise:

- **Maximum intelligent Automation**
- **End-user centric, efficient business processes**
- **Smart and intelligent Insights beyond the ordinary**

All this requires the availability of clean, trusted and well managed data with purpose
Steering excellence starts with a semantical sync between strategy and data

What Is Needed …

...vs. Usual Reality
A holistic approach to steering
Getting there – forming a Chief Data & Analytics Owner organization
Organizational transformation – enlarging the impact of Data & Analytics

From...

<table>
<thead>
<tr>
<th>Board Area</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Operations</td>
</tr>
<tr>
<td></td>
<td>Data</td>
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<td></td>
<td>Analytics</td>
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</table>

<table>
<thead>
<tr>
<th>Board Area</th>
<th>Development</th>
</tr>
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<tbody>
<tr>
<td>Analytics</td>
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</table>

<table>
<thead>
<tr>
<th>Board Area</th>
<th>...</th>
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<tbody>
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<td></td>
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To...

<table>
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<tbody>
<tr>
<td>Sales</td>
<td>Operations</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>Operations</td>
<td></td>
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<tr>
<td>Develop</td>
<td>Operations</td>
<td></td>
</tr>
<tr>
<td>...</td>
<td>Operations</td>
<td></td>
</tr>
</tbody>
</table>

Intelligent Data & Analytics

| Data |
| Analytics |
Getting there – Forming a powerful environment
Organizational transformation – bringing ownership together

Transformation Office
- Transformational Programs

CIO
- Systems
- Intelligent Data & Analytics

CDAO

Business Process Owners
- Core E2E Processes
Building blocks for delivering the Intelligent Enterprise at SAP

**Internal and External Customers**

- Smart Insights & Analytics
- Data-Fueled Business Processes
- Information as a Service

**Business Processes**

- Central Business Definition Catalog
- Unified Semantical Layer
- Consolidated Data Sources

**Experience**

- X & O Data
- Scalable
- Single Source of Truth

**Semantics**

- Central Governance
- Data Operations
- Data Quality

**One Data Platform**

- How to make data consumption as easy as breathing?
- How to give data purpose?
- How to bring data together?
- How to ensure worry-free data?

**Trusted Data**

- How to ensure worry-free data?
Building blocks for delivering the Intelligent Enterprise at SAP

How to ensure worry-free data?

Semantics

One Data Platform

Experience

Internal and External Customers

Business Processes

How to make data consumption as easy as breathing?

How to give data purpose?

How to bring data together?

How to ensure worry-free data?

Trusted Data

Smart Insights & Analytics
Data-Fueled Business Processes
Information as a Service

Central Business Definition Catalog
Unified Semantical Layer
Consolidated Data Sources

X & O Data
Scalable
Single Source of Truth

Central Governance
Data Operations
Data Quality
Trusted Data
How to ensure worry-free data?

Disciplinary and Collaboration perspective
Trusted Data
Centralized Governance

Organization & Governance → Data Operations → Process & Metrics

Data Domains

Core Value Chain

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Building blocks for delivering the Intelligent Enterprise at SAP

Internal and External Customers

Business Processes

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Central Governance
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Data Quality

Smart Insights & Analytics
Data-Fueled Business Processes
Information as a Service
One Data Platform
How to bring data together?

WHAT is Happening?

- Operational data
- Experience data

WHY is it Happening?

1. Digitized Steering Model based on Enterprise Business Entities
   - Steering Dimensions
   - KPIs (Plan/Actual)
   - Enterprise Data Model
   - Raw Data Storage

2. (Local) Data Entities
3. (Integrated) Data Entities

4. Any Application & Distribution Target

5. Catalogue
   - Analytical Applications
   - Machine Learning and Prediction
   - Integrated Business Planning

6. Data Science

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Building blocks for delivering the Intelligent Enterprise at SAP

How to ensure worry-free data?

How to bring data together?

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How to make data consumption as easy as breathing?

Internal and External Customers

Business Processes

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Semantics
How to give data purpose?

Visualization Tools

Business Definition Catalog
- Semantics
- Data Entity (Values)
- Data Entity (Master Data)
- KPIs
- ...

Defined via
- Description
- Information Owner
- Business Owner
- # of Attributes
- ...

One Data Platform

Semantics

Responsibility Scenarios

Restrictions

Data Sources

One Data Platform
Building blocks for delivering the Intelligent Enterprise at SAP

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Experience
How to make data consumption as easy as breathing?

Classical Analytics: Dashboarding
Conversational Analytics
Predictive Analytics: Digital Boardroom
Experience
End-2-End steering, reporting and monitoring

Digital Boardroom based on SAP Analytics Cloud

Dashboarding cascaded from the Boardroom & data monitoring

Operational Reporting

Board and Senior Management

Middle Management

Operational Level
Experience

The evolution of the data access experience

< 2015
Question → a lot of work by others → Answer

2015-2018
Question → DIY → Answer

2019
Question → Smart DIY → Smart Answer

>= 2020
No Question → Smart Answer / Alert
Experience
Where Predictive and Machine Learning impact core processes
Experience
Predictive Use Cases in Finance

- Employee Attrition Rate
- Predictive Pipeline for Sales
- Payment to Invoice Matching
- Predictive Cash Collection
- Contract Renewal Rate
- Financial (PnL) Forecast
- Depreciation Forecast
- Sales Compensation Accruals
## Predictive Analytics coverage on P&L forecasting

<table>
<thead>
<tr>
<th>Total Revenue</th>
<th>Maturity</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud Subscription &amp; Support. <em>(Bookings &amp; Renewals)</em></td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>~85%</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Software Licenses</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
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<tr>
<td>Software Support</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Services</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Total Cost</th>
<th>Maturity</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingent Workforce</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Other 3rd party</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>License / Message / Sales Com.</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Personnel I</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Travel &amp; Entertainment</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Marketing</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Infrastructure</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Provision / other tax</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Other inc. / exp net</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Logial expense</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
<tr>
<td>Contribution I</td>
<td><img src="image" alt="Maturity" /></td>
<td><img src="image" alt="Methodology" /></td>
</tr>
</tbody>
</table>
Experience
Predictive Use Cases in Finance

Employee Attrition Rate | Classification
Influencing factors:
- Tenure (in years)
- Location (by region)
- Job type (sales, development, …)
- Employee survey data
- Salary and more

Predictive Pipeline for Software | Regression
Influencing factors:
- Pipeline coverage
- Pipeline maturity
- Conversion rate
- External macro-economic data
- Quantified news data

Predicted Termination Rates

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Definition</th>
<th>Q1 2017</th>
<th>Q2 2017</th>
<th>Q3 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Germany / High tenure</td>
<td>0.15%</td>
<td>0.12%</td>
<td>0.16%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>All countries excl. Germany / High tenure</td>
<td>0.43%</td>
<td>0.61%</td>
<td>0.69%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Germany / Low tenure / Services &amp; Development</td>
<td>0.58%</td>
<td>0.66%</td>
<td>0.66%</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Germany / Low tenure / Sales</td>
<td>0.74%</td>
<td>1.15%</td>
<td>1.22%</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>All countries excl. Germany / Low tenure / Sales</td>
<td>3.28%</td>
<td>3.47%</td>
<td>3.16%</td>
</tr>
</tbody>
</table>

Predicted Revenue from Pipeline

<table>
<thead>
<tr>
<th>Date</th>
<th>Week of Quarter</th>
<th>Region</th>
<th>Pipeline Value (m€)</th>
<th>Committed Value (m€)</th>
<th>Predictive Pipeline Forecast (m€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. Jun 17</td>
<td>13</td>
<td>APJ excl. GC</td>
<td>217.0</td>
<td>172.0</td>
<td>185.0</td>
</tr>
<tr>
<td>26. Jun 17</td>
<td>13</td>
<td>EMEA</td>
<td>299.0</td>
<td>272.7</td>
<td>274.6</td>
</tr>
<tr>
<td>26. Jun 17</td>
<td>13</td>
<td>GC</td>
<td>56.0</td>
<td>48.5</td>
<td>45.6</td>
</tr>
<tr>
<td>26. Jun 17</td>
<td>13</td>
<td>LA</td>
<td>71.4</td>
<td>65.0</td>
<td>64.1</td>
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<tr>
<td>26. Jun 17</td>
<td>13</td>
<td>MEE</td>
<td>215.4</td>
<td>182.3</td>
<td>213.3</td>
</tr>
<tr>
<td>26. Jun 17</td>
<td>13</td>
<td>NA</td>
<td>279.0</td>
<td>291.9</td>
<td>291.3</td>
</tr>
</tbody>
</table>
What does this mean for the CFO, Organization and Controlling?
Where do we stand today?
Source: WHU Delphi Study – Future Controller Roles & Competencies

“Controllers are often trapped in a box of traditional tasks that anchors them to a less valued brand and prevents them from stepping out to deliver greater value.” (Deloitte/IMA)

“Ein großer Einflussfaktor auf die Rolle und das Aufgabengebiet des Controllers ist die Digitalisierung. … Um die Chancen zu nutzen, braucht es den Willen und eine Kompetenzentwicklung in Richtung Datenanalysen und -modellierung.” (Heimo Losbichler, ICV)

“[Management accountants’] current skillset and knowledge will not last their careers, so it is crucial they develop their skills around empathy, emotional intelligence, and creativity. These skills are difficult to replicate in machine-learning technologies and are increasingly becoming finance professionals’ core skills.” (Steve Swientozielskyj, CIMA)
Implications for the CFO / Controlling Organization of the Future
Evolving Financial Forecast Process

From a decentral approach with inaccuracies at group level leading to wrong steering measures…

…to a central group forecast through a Center of Excellence at the core of things, over…

…to a central forecast based on a predictive analytics driven forecast, eventually resulting in

… automated predictive models integrated in the planning environment for faster decision-making.
Implications for the CFO (organization)

- Embrace & become “Digital” and “Data driven”
- Accept & embrace the broader role, including process, system, data and analytics ownership
- Be the driver for change and proactively manage the change within Finance as a role model
- Build up newly required skill sets

Re-earn your seat at the table by becoming not only the navigator but also the enabler of the digital transformation
Implications for Controlling

Yesterday Controllers delivered “value” by giving data/reporting to management. Tomorrow data/reporting is available at a fingertip

Yesterday Controllers were modelling business logic and semantics into the data over and over again. Tomorrow the business logic is digitized and the semantics modularized for reuse

These changes allow for new ways of doing analytics and open doors for Controllers to become the link between business, management and IT

With that the business partner paradigm is no longer only a next step in the evolution, it is a necessity to survive → business know how and applying it into the new world is essential

With digitizing our steering we are taking away the (data) playground from Controllers but offer them to become a (business) scientist

Wikipedia says: A scientist is a person engaging in a systematic activity to acquire knowledge that describes and predicts the natural [business] world. The person may be an expert in one or more areas of science. Scientists perform research toward a more comprehensive understanding of ....[the business] nature.
Thank you.