PART II: Big Data Business Framework and benchmarking tooling support
Session 3.
The DataBench framework: a compelling offering to measure the impact of Big Data Technologies
Panelists

Gabriella Cattaneo
Associate VP, IDC EMEA – EU Government Consulting

Chiara Francalanci
Professor, Politecnico di Milano

Erica Spinoni
Research Analyst, IDC EMEA – Digital Transformation and Software

Pierluigi Petrali
Operation Excellence Manager – Manufacturing R&D, Whirlpool EMEA

Harald Sehrsön
Teamleader R&D, Fill
Agenda

• Benchmarking Big Data: the DataBench Approach, Gabriella Cattaneo, IDC
• Overview of main benchmarks, Erica Spinoni, IDC
• In-depth analysis: the case studies, Chiara Francalanci, Polimi
• Pilot Industry experiences:
  o Whirlpool – Pierluigi Petrali
  o Fill – Harald Sehrschön
Benchmarking the Business Impact of Big Data Technologies (BDT): the DataBench approach

Source: DataBench D.1.1 Industry Requirements with Benchmark Metrics and KPIs, December 2018
## From KPIs to Benchmarks

<table>
<thead>
<tr>
<th>KPI</th>
<th>Definition</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue increase</td>
<td>Increase in company revenues thanks to the adoption of BDA</td>
<td><strong>Benchmark:</strong> % increase measured as median of the sample</td>
</tr>
<tr>
<td>Profit increase</td>
<td>Increase in company profit thanks to the adoption of BDA</td>
<td></td>
</tr>
<tr>
<td>Cost reduction</td>
<td>Reduction in process costs thanks to the introduction of BDA</td>
<td></td>
</tr>
<tr>
<td>Time efficiency</td>
<td>Efficient use of time in business processes</td>
<td><strong>Benchmark:</strong> average rating on a scale of 1–5 based on the following ratings:</td>
</tr>
<tr>
<td>Product/Service quality</td>
<td>Product/Service features corresponding to users’ implied or stated needs and impacting their satisfaction</td>
<td>• Less than 5% improvement = 1</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>A measure of customers' positive or negative feeling about a product or service compared with their expectations</td>
<td>• 5–9% = 2</td>
</tr>
<tr>
<td>New Products/ Services launched</td>
<td>A measure of the number of new products and/or services enabled by data-driven innovation and launched by the company after engaging in the Big Data investment</td>
<td>• 10–24% = 3</td>
</tr>
<tr>
<td>Business model innovation</td>
<td>Novel ways of mediating between companies' product and economic value creation (for example, moving from traditional sales to service subscription models)</td>
<td>• 25–49% = 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 50% or more = 5</td>
</tr>
</tbody>
</table>
Why DataBench KPIs can be used as Industry Benchmarks of BDT performance

INDUSTRIAL SIGNIFICANCE

Because they apply to the actual and emerging needs of specific industries and specific company-size segments

EUROPEAN ECONOMIC SIGNIFICANCE

Because they are measured for all the relevant European industries and company-size segments in which Big Data can have the highest impacts

Useful for linking TECHNICAL and BUSINESS PERFORMANCE

Because they are measured for the main use cases
A sound base of evidence about industrial users’ needs

Data collection:
• A survey with European organizations from 9 industries and 5 company size classes (700 interviews)
• A survey of Big Data business pilots in H2020 ICT projects (30 interviews)
• 22 case studies
• Mapping 35 BDA use cases by industry and company size

Benchmarking the business impacts of Big Data technologies is relevant for 90% of European enterprises

Source: DataBench D2.4 – Benchmarks of European and Industrial Significance (December 2019)
BDT Benchmarks for Profit/Revenue increase and Cost reduction by Industry…

<table>
<thead>
<tr>
<th>Industry</th>
<th>Profit Increase</th>
<th>Revenue Increase</th>
<th>Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Services</td>
<td>6.0%</td>
<td>5.0%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Business/IT Services</td>
<td>6.0%</td>
<td>5.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Telecom &amp; Media</td>
<td>6.0%</td>
<td>5.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Utilities, Oil &amp; Gas</td>
<td>6.0%</td>
<td>5.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>5.0%</td>
<td>4.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>5.0%</td>
<td>4.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>5.0%</td>
<td>5.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Retail &amp; Wholesale</td>
<td>5.0%</td>
<td>5.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Transport &amp; Logistics</td>
<td>5.0%</td>
<td>5.0%</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Source: DataBench D2.4 – Benchmarks of European and Industrial Significance (December 2019)
## Innovation Benchmarks for leading industries

<table>
<thead>
<tr>
<th>Median Rating</th>
<th>Benchmark Category</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Product/Service Quality, Customer Satisfaction</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>3</td>
<td># of New Product/Service Launched, Customer Satisfaction</td>
<td>Business/IT Services</td>
</tr>
<tr>
<td>2</td>
<td>Time Efficiency, Biz Model Innovation</td>
<td>Utilities, Oil &amp; Gas</td>
</tr>
<tr>
<td>1</td>
<td># of New Product/Service Launched, Biz Model Innovation</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** DataBench D2.4 – Benchmarks of European and Industrial Significance (December 2019)
...and by Company Size

**SMEs**
- Profit Increase: 5.0%
- Revenue Increase: 4.0%
- Cost Reduction: 3.5%

**Mid-Size Enterprises**
- Profit Increase: 5.0%
- Revenue Increase: 4.0%
- Cost Reduction: 3.0%

**Large Enterprises**
- Profit Increase: 5.0%
- Revenue Increase: 5.0%
- Cost Reduction: 3.0%

**Very Large Enterprises**
- Profit Increase: 6.0%
- Revenue Increase: 5.0%
- Cost Reduction: 4.0%

Source: DataBench D2.4 – Benchmarks of European and Industrial Significance (December 2019)
DataBench in-depth analysis of BDT business impacts: the case studies

22 Case studies from 8 Industries

- Agriculture
- Business / IT Services
- Financial Services
- Healthcare
- Manufacturing
- Retail & Wholesale
- Telecom/Media
- Transport and Logistics

Source: D.4.3 Data Collection Results, October 2020
Insights from case studies

• Evidence from case studies is aligned with KPIs and positions business impact in the 4-8% range for profit and revenue improvements
• A new approach to business intelligence: prescriptive and real-time analytics enable the delegation of decision-making to computers
• High awareness of opportunities
• Data are the starting point, data quality and governance are the main concerns
• Only a few projects reach deployment stage
• Most companies believe that it is important to make technical choices that can support long-term change
• IT benchmarking is critically important, but complex
Fireside Chat: the Case Studies

Pierluigi Petrali
Operation Excellence Manager – Manufacturing R&D
Whirlpool EMEA

Harald Sehrschön
Teamleader R&D
Fill
Whirlpool use case
KPIs definition and results

**OPERATIONAL**
- Demand Forecast Error
- Human Effort for Planning
- Quality of user experience

**TACTICAL**
- Spare Part Stock Value
- Plant Service Level

**STRATEGICAL**
- Lead Time to Consumer
- Inventory Turnover
BOOST 4.0

UPDATE Video
https://www.youtube.com/watch?v=bDrVpgtBJtE&t=35s
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