<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Executive Summary</td>
</tr>
<tr>
<td>2 Deep Dive</td>
</tr>
<tr>
<td>3 Appendix (DTI per industry)</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015
Executive Summary – Study Overview

Arthur D. Little conducted the Digital Transformation Study globally and cross-industry. The key findings are summarized in this document.

120 hrs
Expert interviews with management representatives

100+
Global players have participated

1+7
Sections have been assessed

7
Major industry clusters have been covered

Source: Arthur D. Little Digital Transformation Study 2015
1) EPC = Engineering, Procurement & Construction
The Arthur D. Little Digital Transformation study covers leading companies across all industry segments.

<table>
<thead>
<tr>
<th></th>
<th>P&amp;G</th>
<th>T</th>
<th>Allianz</th>
<th>yoigo</th>
</tr>
</thead>
<tbody>
<tr>
<td>TeliaSonera</td>
<td>AIRBUS</td>
<td>SANOFI</td>
<td>ERSTE Bank</td>
<td>RWE</td>
</tr>
<tr>
<td>L’OREAL</td>
<td>Implenia</td>
<td>transdev</td>
<td>swisscom</td>
<td></td>
</tr>
<tr>
<td>SIEMENS</td>
<td>ZURICH</td>
<td>DB Mobility Networks Logistics</td>
<td>BMW</td>
<td></td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015
Turning Digital has become a well understood imperative. Whilst Digital has commonly found its way into corporate strategies, the path to transform adequately remains unspecified.

- **80%** of surveyed companies are digital adaptive only.
- **17%** of companies have comprehensive digital transformation strategies in place.
- **3.92 DTI**
- **15%** have dedicated central units for Digital strategy development and implementation.
- **50%** perceive lack of digital knowledge across the value chain as their major challenge to overcome.

Progress in Digital Transformation is measured via the Digital Transformation Index (DTI).

Source: Arthur D. Little Digital Transformation Study 2015

1 Logic: The higher, the better. Measured on a scale from 0 to 10.
Digital Transformation is everywhere and impacts everything and everyone

Our biggest challenge is to understand the customer and his new behaviors.

Clients are pushing us towards digital transformation: If we don’t transform they will move to our competitors.

Products and services need to undergo a digital transformation: we cannot just take physical products and put them online.

The market is changing: partners are becoming competitors.

Our world has been changed by the expectations of our customers, while our basic service continues to be the same: We need to transform in order to maintain customer satisfaction.

New entrants and fast-moving competitors increasingly capture digital opportunities, indicating the potential of “digital” in the market.

Productivity related to new technologies such as cobots, predictive analytics and additive manufacturing will increase by a factor of 100 over the next 5–8 years, while costs will be reduced by a factor of 100.

Source: Arthur D. Little Digital Transformation Study 2015
Some of the below key findings we anticipated beforehand, whereas others have been surprising and astonishing

1. Digitization will change the competitive environment of all industries significantly
2. Most industries are already affected by digital disruption or realize that they will be soon
3. Few companies yet follow a consistent digitization approach for their whole business model
4. Companies underestimate opportunities in Operations and in Business Model Redesign
5. There is a huge demand and backlog for the majority to deal with “Digital” properly
6. No industry can claim to be a digital front-runner; however, each industry has its outperformers
7. Most companies are either not aware of or ignore potential threats from digital disruptors
8. Companies are too slow in transformation, though facing rapidly evolving digital competition
9. Third-party integration is often underrated as companies still try to solve problems on their own
10. The usage of “smart data”, and thus also personalized offerings, lag behind

Source: Arthur D. Little Digital Transformation Study 2015
1 Also too little imagination for a renewal resp. overhaul of their business model in a future digital world
Some major digital trends change yesterday’s realities – these “game changers” facilitate great opportunities and will inevitably generate some highly digitized champions.

<table>
<thead>
<tr>
<th>Yesterday’s Realities</th>
<th>Digital Disruption</th>
<th>Digital Trends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical product</td>
<td>Product-as-a-service</td>
<td></td>
</tr>
<tr>
<td>Consumption</td>
<td>Active creation</td>
<td></td>
</tr>
<tr>
<td>Points of usage</td>
<td>Service everywhere</td>
<td></td>
</tr>
<tr>
<td>Mass production</td>
<td>Personalization</td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td>Shared across community</td>
<td>EPC¹ &amp; Manufacturing</td>
</tr>
<tr>
<td>Disconnected</td>
<td>Embedded into ecosystem</td>
<td>Travel &amp; Transport</td>
</tr>
<tr>
<td>No updates</td>
<td>Continuous improvement</td>
<td>Financial Institutions</td>
</tr>
<tr>
<td>Vertical integration</td>
<td>Value chain disintegration</td>
<td>100+ Study Participants</td>
</tr>
</tbody>
</table>

1 EPC = Engineering, Procurement & Construction

Source: Arthur D. Little Digital Transformation Study 2015
Prominent examples of digitalization can be found in every industry. By nature, each trend’s impact varies and so does the industry-specific progress on digital transformation.

### Executive Summary – Trends Impact on Industries

#### Industries

<table>
<thead>
<tr>
<th>Industry</th>
<th>Automotive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecom &amp; Media</td>
<td></td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td></td>
</tr>
<tr>
<td>Consumer &amp; Life Science</td>
<td></td>
</tr>
<tr>
<td>Financial Institutions</td>
<td></td>
</tr>
<tr>
<td>EPC¹ &amp; Manufacturing</td>
<td></td>
</tr>
</tbody>
</table>

#### 8 Digital Trends

- **Product-as-a-service**
- **Active creation**
- **Service everywhere**
- **Personalization**
- **Shared across community**
- **Embedded into ecosystem**
- **Continuous improvement**
- **Value chain disintegration**

#### Examples

- **Cloud Services**
- **Google Car**
- **Wifi SW-Upgrade for Car**
- **Smart Home Appl.**
- **Running Shoes Individ.**
- **Hybrid Advisory Model**
- **3D-Printer**
- **Car Sharing**
- **P2P Money Transfer**
- **Sourcing via Alibaba**

**Source:** Arthur D. Little Digital Transformation Study 2015

¹ EPC = Engineering, Procurement & Construction
The survey followed a holistic approach to analyze the relevant sections for digitalization; the questions raised have been mapped to these sections.

- Opportunities and challenges
- Changes in the firm
- Changes in competitive environment
- Maturity of digital strategy
- KPIs on Digital approach
- Roles and responsibilities for concept and implementation
- Product and service portfolio adaptation
- Share of digital sales
- Changes in development process
- Maturity of digital operations
- Target picture and transformation roadmap
- Degree of dynamic adaption
- Digital client share
- Share of digital sales and interaction
- Digital marketing share, customer data analytics
- Flexibility of IT landscape to provide digital capabilities
- Role of IT function in digitalization
- Budget dedicated to digital
- Impact of digital on transparency
- Maturity of digital support processes
- ...
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”.

Digital Transformation Index (DTI)

- **Digital aware**: [score below 2.5]
- **Digital adaptive**: [score between 2.5 and 5.0]
- **Digital oriented**: [score between 5 and 7.5]
- **Digital centric**: [score above 7.5]

Each # represents a specific company.

**X-Axis** = Indexed at Cross-Industry Ø 3.92

**Y-Axis** = Company-Specific Deviation to Ø

Source: Arthur D. Little Digital Transformation Study 2015

1 DTI calculated as average of scores for each section
Average DTI is most advanced in the section “Strategy & Governance” as well as “Information Technology”, with a score of 5 – however, it still lags behind the virtual star performance.

Source: Arthur D. Little Digital Transformation Study 2015
We collected many best practices for each section to share with you

Source: Arthur D. Little Digital Transformation Study 2015
The different progresses of industries in Digital Transformation can be investigated when looking at the radar charts, reflecting the 7 sections of the model.

Source: Arthur D. Little Digital Transformation Study 2015
1) EPC = Engineering, Procurement & Construction
On average, all industries are “digital adaptive” only; however, each industry contains “digital-oriented” companies, whereas two industries contain one “digital-centric” company.

### Average Industry-Specific DTI

<table>
<thead>
<tr>
<th>Industry</th>
<th>Min</th>
<th>Max</th>
<th>Average</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>4.06</td>
<td>6.52</td>
<td>5.02</td>
<td>0.92</td>
</tr>
<tr>
<td>Telecom &amp; Media</td>
<td>1.54</td>
<td>6.62</td>
<td>4.20</td>
<td>1.18</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>2.13</td>
<td>7.73</td>
<td>4.11</td>
<td>1.30</td>
</tr>
<tr>
<td>Overall average</td>
<td>1.07</td>
<td>7.73</td>
<td>3.92</td>
<td>1.38</td>
</tr>
<tr>
<td>Financial institutions</td>
<td>1.52</td>
<td>7.55</td>
<td>3.86</td>
<td>1.54</td>
</tr>
<tr>
<td>Consumer &amp; Life science</td>
<td>1.84</td>
<td>6.16</td>
<td>3.71</td>
<td>1.24</td>
</tr>
<tr>
<td>EPC &amp; Manufacturing</td>
<td>1.07</td>
<td>5.30</td>
<td>3.53</td>
<td>1.09</td>
</tr>
<tr>
<td>Travel &amp; Transport</td>
<td>2.24</td>
<td>6.62</td>
<td>3.51</td>
<td>1.51</td>
</tr>
</tbody>
</table>

**Insight**

- On average **most companies (~60%) are in the Digital-adaptive area**
- **All industries are impacted** by Digital Transformation and show ability to play in the higher leagues of the DTI
- **Most industries show an extreme spread**: Participants score among the weakest and best at the same time

Source: Arthur D. Little Digital Transformation Study 2015

σ = Standard Deviation; Ø = Average
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>Deep Dive</td>
</tr>
<tr>
<td>3</td>
<td>Appendix (DTI per industry)</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015
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Drivers & Challenges

A. Strategy & Governance
B. Products & Services
C. Customer Management
D. Operations & Supply Chain
E. Corporate Services & Control
F. Information Technology
G. Workplace & Culture

3 Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Drivers & Challenges Overview

Key Learnings

- **Most critical challenges** for Digital Transformation are 1. lack of knowledge, 2. lacking sense of urgency and 3. excessive complexity
- Consideration of the **continuous increase of digital customer needs** and expectations will be key to succeeding in the future competitive landscape
- The primary impact of the Digital Transformation is reflected in **changes in distribution channels** and adaptations to existing products and services
- A prevailing number of the surveyed companies see the **acquisition of new customers** as a major opportunity brought by digitalization

Source: Arthur D. Little Digital Transformation Study 2015
**Major Challenges for Digital Transformation**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Share of Participants</th>
<th>Automotive</th>
<th>Telecom &amp; Media</th>
<th>Energy &amp; Utilities</th>
<th>Consumer &amp; Life Science</th>
<th>Financial Institutions</th>
<th>EPC &amp; Manufacturing</th>
<th>Travel &amp; Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge</td>
<td>50%</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Sense of urgency</td>
<td>45%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Excessive complexity</td>
<td>40%</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Goal definition</td>
<td>39%</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Lacking control system</td>
<td>32%</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Legal requirements</td>
<td>27%</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Lacking financial resources</td>
<td>23%</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Lacking mgmt. Support</td>
<td>23%</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015

Numbers indicate frequency of answers among companies in given industries

- **Highest**
Consideration of the continuous increase of digital customer needs and expectations will be key to succeeding in the future competitive landscape.

Changes in the Competitive Landscape due to Digitalization

- All Industries
  - Existing customers with new needs resp. behaviors
  - New competitors
  - New ecosystems
  - Existing competitors with new products/business models
  - New partners within value chain
  - New customer groups and markets

- Automotive: 15 quotes
- Telecom & Media: 58 quotes
- Energy & Utilities: 33 quotes
- Consumer & Life Science: 20 quotes
- Financial Institutions: 64 quotes
- EPC & Manufacturing: 28 quotes
- Travel & Transport: 39 quotes

X = # of quotes

Source: Arthur D. Little Digital Transformation Study 2015
The primary impact of the Digital Transformation is reflected in changes in distribution channels and adaptations to existing products and services.

### Changes of Your Company’s Business Model due to Digitalization

<table>
<thead>
<tr>
<th>Category</th>
<th>All Industries</th>
<th>Automotive</th>
<th>Telecom &amp; Media</th>
<th>Energy &amp; Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution channels and CI</td>
<td></td>
<td>11</td>
<td>57</td>
<td>42</td>
</tr>
<tr>
<td>Existing products &amp; services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business model overhaul</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New business segments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production and logistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer &amp; Life Science</td>
<td></td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Institutions</td>
<td></td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPC &amp; Manufacturing</td>
<td></td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel &amp; Transport</td>
<td></td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Arthur D. Little perspective: Companies are underestimating potential in new business segments and operations / processes.

Source: Arthur D. Little Digital Transformation Study 2015
CI = Customer Interaction
A prevailing number of the surveyed companies see the acquisition of new customers as a major opportunity brought by digitalization.

### Major Opportunities in the Digital Transformation Journey

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Automotive</th>
<th>Telecom &amp; Media</th>
<th>Energy &amp; Utilities</th>
<th>Consumer &amp; Life Science</th>
<th>Financial Institutions</th>
<th>EPC &amp; Manufacturing</th>
<th>Travel &amp; Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition of new customers</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Differentiation from competition</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>New sources of revenue</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Increase of customer loyalty</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Increase of agility and flexibility</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Cost savings</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

**Average ranking**

*Arthur D. Little perspective:* Companies are underestimating potential for cost improvements, agility and flexibility increase.

Source: Arthur D. Little Digital Transformation Study 2015

Numbers indicate frequency of answers among companies in given industries
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   G. Workplace & Culture

3 Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Deep Dive – A. Strategy & Governance

Strategy & Governance Overview

Key Learnings

- In most cases, CxOs govern both strategy development and implementation for the Digital Transformation – the topic has definitely arrived at the top of their agenda.

- A cross-functional digital governance unit on corporate level can ensure cross-functional digitalization of the End-to-End value chain.

- Across all industries, the levers “hiring digital talent” and “training and further education” dominate when it comes to capability building effort in all industries.

- Going beyond “corporate borders” allows for matching experienced entrepreneurs with corporate resources, e.g. on dedicated venturing platforms.

Source: Arthur D. Little Digital Transformation Study 2015
In most cases, CxOs govern both strategy development and implementation for the Digital Transformation – the topic has definitely arrived at the top of their agenda.

Digital Strategy Development & Implementation

- **Top management**
  - Top management 59%
  - Dedicated central unit 9%
  - Several departments 17%
  - No specific unit 14%

- **Dedicated central unit**
  - Central Unit

- **Several departments**
  - Dep #1
  - Dep #2
  - Dep #3
  - Dep ...

- **No specific unit**
  - No dedicated responsibilities

... is/are responsible for developing the Digital Strategy

... steer(s) the implementation of the Digital Strategy

Source: Arthur D. Little Digital Transformation Study 2015
Across all industries, the levers “training and further education” and “hiring digital talents” dominate when it comes to capability building effort in all industries.

### Measures Applied to Catalyze the Digital Transformation

<table>
<thead>
<tr>
<th>Measure</th>
<th>Automotive</th>
<th>Telecom &amp; Media</th>
<th>Energy &amp; Utilities</th>
<th>Consumer &amp; Life Science</th>
<th>Financial Institutions</th>
<th>EPC &amp; Manufacturing</th>
<th>Travel &amp; Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and further education</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Hiring Digital talents</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Strategic alliances w/ digital co.</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Own corp. incubator/accelerator</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Acquisition of digital co.</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>VC arm/ capital provision for incub.</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Share of participants:
- Training and further education: 53%
- Hiring Digital talents: 51%
- Strategic alliances w/ digital co.: 44%
- Own corp. incubator/accelerator: 31%
- Acquisition of digital co.: 11%
- VC arm/ capital provision for incub.: 5%

Source: Arthur D. Little Digital Transformation Study 2015

Numbers indicate frequency of answers among companies in given industries.
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      C. Customer Management
      D. Operations & Supply Chain
      E. Corporate Services & Control
      F. Information Technology
      G. Workplace & Culture

3 Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Key Learnings

- Most companies have neither agilized nor digitized their product and service portfolios
- The majority of companies only involve their customers in the product development process occasionally – industry leaders typically involve their customers
- It is worthwhile to experiment with the smartization of classic “Brick & Mortar” business – in order to protect core business and increase attraction
- For digitized products, the user experience can be enhanced through remote SW-upgrades and data collection to automatically inform on repair and service requirements
- Introduction of products and services with peer-to-peer components can increase competitiveness and growth of customer base

Source: Arthur D. Little Digital Transformation Study 2015
Most companies have neither agilized nor digitized their product and service portfolios.

Agilization in P&S Development vs. P&S Digitization

- Full adaptation
  - Need for changes in product development process
  - Selective process acceleration
  - Agilization of development
  - Full agilization of development
- Major
- Simple
- No adaptation

Source: Arthur D. Little Digital Transformation Study 2015
The majority of companies only involve their customers in the product development process occasionally – industry leaders typically involve their customers.

**Customer Involvement in Product Development**

<table>
<thead>
<tr>
<th>Involvement Level</th>
<th>Automotive &amp; Media</th>
<th>Telecom &amp; Media</th>
<th>Energy &amp; Utilities</th>
<th>Consumer &amp; Life Science</th>
<th>Financial Institutions</th>
<th>EPC &amp; Manufacturing</th>
<th>Travel &amp; Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasional involvement</td>
<td>40%</td>
<td>77%</td>
<td>60%</td>
<td>27%</td>
<td>60%</td>
<td>72%</td>
<td>46%</td>
</tr>
<tr>
<td>No involvement of customers</td>
<td>20%</td>
<td>9%</td>
<td>20%</td>
<td>56%</td>
<td>16%</td>
<td>10%</td>
<td>46%</td>
</tr>
<tr>
<td>Frequent involvement</td>
<td>40%</td>
<td>5%</td>
<td>13%</td>
<td>17%</td>
<td>24%</td>
<td>18%</td>
<td>8%</td>
</tr>
<tr>
<td>Strong involvement</td>
<td>0%</td>
<td>9%</td>
<td>7%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015

Numbers indicate frequency of answers among companies in given industries.
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1 Executive Summary

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   B. Products & Services

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   D. Operations & Supply Chain

   E. Corporate Services & Control

   F. Information Technology

   G. Workplace & Culture

3 Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Overview Customer Management

Key Learnings

- Despite a diverse understanding of the nature of the “digital customer”, companies expect a **significant increase in the share of digital customers** within the next 3 years.

- The share of customer interactions through digital customer service is **constantly growing** – great opportunities lie ahead.

- **Digital technology can be leveraged to transform** from wholesale to a retail-led growth strategy based on an integrated customer experience across all channels.

- Current low share of digital marketing expenditure correlates with a low share of digital channel sales – both are mostly still below 25%, but predicted to grow.

- There is still huge potential for many companies to **capture client information from digital interactions** and increase the benefit for better business decisions.

- **Real-time dynamic pricing** can be used to optimize revenues by driving in an average profit boost of ca. 25%.

- **Integrated solutions with sophisticated analytics** are meanwhile available across the customer journey and history.

Source: Arthur D. Little Digital Transformation Study 2015
Despite a diverse understanding of the nature of the “digital customer”, companies expect a significant increase in the share of digital customers within the next 3 years.

**Companies Consider Customers ‘Digital’ if …**

- … they use self-service and paperless communication
- … they are attracted and treated online
- … they are steered and served through digital channels
- … they use the internet to consume content
- … they use digital hardware and media
- … they manage key processes digitally
- … the customer’s lifecycle happens in a digital environment

**Share of ‘Digital’ Customers**

<table>
<thead>
<tr>
<th>Share of ‘Digital’ Customers</th>
<th>Today</th>
<th>In 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 10%</td>
<td></td>
<td>10 to 20%</td>
</tr>
<tr>
<td>10 to 20%</td>
<td></td>
<td>20 to 30%</td>
</tr>
<tr>
<td>20 to 30%</td>
<td></td>
<td>30 to 50%</td>
</tr>
<tr>
<td>30 to 50%</td>
<td></td>
<td>Above 50%</td>
</tr>
<tr>
<td>Above 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015

1 Related to a company’s total customer base; sums may not add up as some participants have voted for n/a
The share of customer interactions through digital customer service is constantly growing – great opportunities lie ahead

Source: Arthur D. Little Digital Transformation Study 2015

% Percentage share of companies by given answer in respective industries
Current low share of digital marketing expenditure correlates with a low share of digital channel sales – both are mostly still below 25%, but predicted to grow.
There is still huge potential for many companies to capture client information from digital interactions and increase the benefit for better business decisions.

Source: Arthur D. Little Digital Transformation Study 2015
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     - F. Information Technology
     - G. Workplace & Culture

3. Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Overview Operations & Supply Chain

Key Learnings

- 70% of the participants have no clear view and perspectives on trends and the **impact** of new digital technologies on their Operations & Supply Chain.

- Most companies **underestimate radical innovation capabilities** and **full digitalization** of technological components in Operations & Supply Chain.

- Leading Companies have a **clear understanding** of how digital and new technologies will impact Operations & Supply Chain and have set up a process for rapid deployment.

- Prototypes already allow for de-central **in-store and just-in-time productions**, i.e. customized products with individual colors, sizes, etc. with a few minutes’ delivery time.

- Tests of Augmented Reality in warehousing resulted in significant efficiency increases and reductions in errors.

- Cloud-based **Machine-to-Machine (M2M) solution** and **RFID-based asset tracking** solution can help ensure product quality.

Source: Arthur D. Little Digital Transformation Study 2015
70% of the participants have no clear view and perspectives on trends and the impact of new digital technologies on their Operations & Supply Chains

**Target Picture & Transformation Roadmap**

- **Continuous and incremental optimization**: 25%
- **Current work on Digital agenda and roadmap**: 44%
- **Clear view on trends and industry impacts (5-10 yrs)**: 26%
- **Target picture and roadmap for E2E operations (5-10 yrs)**: 5%

**Leverage of Technologies & Digital Methods**

- **Focus on well established technologies and processes**: 12%
- **Increase of digitalization is planned**: 52%
- **Performance already high and on peer-level**: 24%
- **Competitive advantage through state-of-the-art**: 12%

Source: Arthur D. Little Digital Transformation Study 2015
Leading Companies have a clear understanding of how digital and new technologies will impact Operations & Supply Chain and have set up a process for rapid deployment.

Strategic plan for Innovating Operations

- A manufacturing company has developed a 10-year vision about technology usage in operations & supply chain
- A self-financing project pipeline for deployment is set up and will be frequently updated to extend coverage and to leverage new technology opportunities
- Partner-Networks have been set up for mission-critical technologies and applications to create competitive advantages

Implications & Benefits
- Cost improvement potential above 20% in relation to value add
- Higher customer and staff satisfaction

Source: Arthur D. Little Digital Transformation Study 2015, Company Information
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      G. Workplace & Culture

3 Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Overview Corporate Services & Control

Key Learnings

- Participants expect their companies to heavily invest in advanced digital solutions to **create transparency and comprehensive controlling**
- Companies plan to **utilize complex digital solutions** to support and automate their processes
- **Brand dashboards** can integrate Web Analytics, CRM and share of voice at a single glance
- **Highly standardized and thus professionalized** “launch factory” approach can be seen as starting point for mastering execution
- A cloud-based HR model can **foster high employee performance** and efficient global staffing

Source: Arthur D. Little Digital Transformation Study 2015
Participants expect their companies to heavily invest in advanced digital solutions to create transparency and comprehensive controlling.

**Use of Digital Solutions to Achieve Transparency and Control**

- **Marginal use**
- **Simple use**
- **Advanced use**
- **Complex use**

**Current Situation in Respective Industries**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Today</th>
<th>In 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Telecom &amp; Media</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>13%</td>
<td>47%</td>
</tr>
<tr>
<td>Consumer &amp; Life Science</td>
<td>9%</td>
<td>50%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>28%</td>
<td>32%</td>
</tr>
<tr>
<td>EPC &amp; Manufacturing</td>
<td>45%</td>
<td>36%</td>
</tr>
<tr>
<td>Travel &amp; Transport</td>
<td>46%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015

% Percentage share of companies by given answer in respective industries
Companies plan to utilize complex digital solutions to support and automate their processes

**Current Situation in Respective Industries**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Today</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td>Telecom &amp; Media</td>
<td>27%</td>
<td>50%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>8%</td>
<td>35%</td>
</tr>
<tr>
<td>Consumer &amp; Life Science</td>
<td>17%</td>
<td>50%</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>28%</td>
<td>44%</td>
</tr>
<tr>
<td>EPC &amp; Manufacturing</td>
<td>36%</td>
<td>19%</td>
</tr>
<tr>
<td>Travel &amp; Transport</td>
<td>38%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015
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3. Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
The role of IT departments is still passive – The majority “enables” Digital Transformation only. The leaders also have a budget share of 50% dedicated for Digital.

IT departments need to balance their technical capabilities and redefine their operating models in order to become co-leaders in the digitalization process.

Layered IT architectures enable even large companies to realize an omnichannel solution in less than 6 months, with a massive impact on footfall and revenues.

IT infrastructure-enabled Industry 4.0 solutions can help to increase productivity and profits for contractors.
The role of IT departments is still passive – The majority “enables” Digital Transformation only. The leaders also have a budget share of 50% dedicated for Digital Transformation. 

**The Role of IT in the Context of Digitalization**

<table>
<thead>
<tr>
<th>Role</th>
<th>Share of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader</td>
<td>7%</td>
</tr>
<tr>
<td>Driver</td>
<td>21%</td>
</tr>
<tr>
<td>Enabler</td>
<td>55%</td>
</tr>
<tr>
<td>Reactive</td>
<td>15%</td>
</tr>
<tr>
<td>N/a</td>
<td>2%</td>
</tr>
</tbody>
</table>

**IT Budget Dedicated to Digital**

<table>
<thead>
<tr>
<th>Share of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than half</td>
</tr>
<tr>
<td>Up to half</td>
</tr>
<tr>
<td>Up to 25%</td>
</tr>
<tr>
<td>Up to 10%</td>
</tr>
<tr>
<td>None</td>
</tr>
</tbody>
</table>

Source: Arthur D. Little Digital Transformation Study 2015
IT departments need to balance their technical capabilities and redefine their operating models in order to become co-leaders in the digitalization process.

**Flexibility of the IT Landscape**

- Flexible: 6%
- Balanced: 22%
- Complex: 58%
- Rigid: 13%

**Maturity of the IT Operating Model**

- Very high: 8%
- High: 28%
- Medium: 50%
- Low: 13%

Source: Arthur D. Little Digital Transformation Study 2015
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3 Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
Today simple concepts for communication and collaboration, as well as for agile methods, seem to prevail. This is unfortunately not yet the adequate playground for catalyzing the digitalization of business. Internal innovation capability generally lags behind due to little usage of agile methods. A gamification-based workplace culture can attract talent from all over the world.

Source: Arthur D. Little Digital Transformation Study 2015
Today simple concepts for communication and collaboration, as well as for agile methods, seem to prevail.

**Concepts for Communication and Collaboration**

- **Simple**: 42%
- **Classic**: 19%
- **Innovative**: 5%
- **Advanced**: 34%

**Agile Methods Integration**

- **Simple**: 49%
- **No**: 21%
- **Comprehensive**: 6%
- **Advanced**: 23%

Source: Arthur D. Little Digital Transformation Study 2015
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1. Executive Summary
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3. Appendix (DTI per industry)

Source: Arthur D. Little Digital Transformation Study 2015
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”.

DTI for Automotive Industry: 5.02

Digital aware [score below 2.5]

Digital adaptive [score between 2.5 and 5.0]

Digital oriented [score between 5 and 7.5]

Digital centric [score above 7.5]

Each # represents a specific company

X-Axis = Indexed at Cross-Industry Ø 3.92
Y-Axis = Company-Specific Deviation to Ø

Source: Arthur D. Little Digital Transformation Study 2015
Note: DTI calculated as average of scores for each section
Automotive belongs to the most developed industries in terms of digitalization. The field of Operations & Supply Chain is perceived as the weakest point.

DTI for Automotive Industry per Section

Source: Arthur D. Little Digital Transformation Study 2015
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”.

- Digital aware [score below 2.5]
- Digital adaptive [score between 2.5 and 5.0]
- Digital oriented [score between 5 and 7.5]
- Digital centric [score above 7.5]

X-Axis = Indexed at Cross-Industry Ø 3.92
Y-Axis = Company-Specific Deviation to Ø

Source: Arthur D. Little Digital Transformation Study 2015
Note: DTI calculated as average of scores for each section
Although the Telecom & Media Industry is strong in digital strategy there is no clear industry pattern, but significant room for improvement in some sections for each company.
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”
There are rather strong differences between respective enterprises in Energy & Utilities, but the industry generally lags behind in terms of products and operations.

Source: Arthur D. Little Digital Transformation Study 2015
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”.

Source: Arthur D. Little Digital Transformation Study 2015
Note: DTI calculated as average of scores for each section
Financial Institutions focus on digital strategy, governance and IT while only few actually have adapted products and operations

DTI for Financial Institutions Industry per Section:

- Strategy & Governance
- Products & Services
- Information Technologies
- Workplace & Culture
- Corp. Services & Control
- Operations & Supply Chain
- Customer Management

Source: Arthur D. Little Digital Transformation Study 2015
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”.
The Consumer & Life Science industry has large potential to digitize customer management, operations and corporate services.

DTI for Consumer & Life Science Industry per Section

Source: Arthur D. Little Digital Transformation Study 2015
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”.

Source: Arthur D. Little Digital Transformation Study 2015
Note: DTI calculated as average of scores for each section  
1) EPC = Engineering, Procurement & Construction
Few EPC¹ & Manufacturing companies have set a digital strategy, while no company in our sample has significantly transformed its products or operating model.

Source: Arthur D. Little Digital Transformation Study 2015

1) EPC = Engineering, Procurement & Construction
The Arthur D. Little Digital Transformation Index (DTI) shows that today few firms can be considered “digital oriented” or “digital centric”

Source: Arthur D. Little Digital Transformation Study 2015
Note: DTI calculated as average of scores for each section
Travel & Transport is lagging behind in Digital Transformation – products and services as well as operations have especially not seen relevant changes

Source: Arthur D. Little Digital Transformation Study 2015
Arthur D. Little has been at the forefront of innovation since 1886. We are an acknowledged thought leader in linking strategy, innovation and transformation in technology-intensive and converging industries. We navigate our clients through changing business ecosystems to uncover new growth opportunities. We enable our clients to build innovation capabilities and transform their organization.

Our consultants have strong practical industry experience combined with excellent knowledge of key trends and dynamics. Arthur D. Little is present in the most important business centers around the world. We are proud to serve most of the Fortune 1000 companies, in addition to other leading firms and public sector organizations.

For further information please visit www.adlittle.com

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