The Digital Transformation of Industry

Lunch debate

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7th European Innovation Summit, December 8, 2015, Brussels
Three waves of digital transformation – Significant influence on gross value added as an opportunity and a threat for industry

The digital transformation will emerge in 3 waves …

Wide span of gains/losses calculated for the period through 2025

EU-17 opportunity scenario: +1.25 trillion euros

Gains in productivity and gross value added of 20% to 30% per industry

EU-17 threat scenario: -605 billion euros

Losses of IT-based value added and the customer interface

1) Threat scenario in line with the already digitized media and telecommunications industries; derived from the historic increase in ICT’s share in value added.
Opportunity scenario calculated on the basis of capital intensity, relevance of the customer interface and the existing digital maturity of the industry

Source: Roland Berger
Digital opportunities: Four levers are the center of digitization enabling evolution as well as revolution of business models

Levers of digitization

Revolution

Market makers
Build new digital competitive advantages on strategic control points and disrupt – Becoming a digital leader for a specific industry

(In-industry) Evolution

Followers
Utilize digital technology for evolutionary improvements of core business model – Continuously adapting to new market situations

Interconnectivity of machines leads to …

… new data sources enabling transparency on production …

… as well as more automation of processes …

… resulting in a likely scenario for new digital intermediaries

Industry 4.0

Digital data

Automation

Inter-connectivity

Digital customer interface

Source: Roland Berger
Traditional industry players have strong competitors: Internet firms are discovering manufacturing as a growth sector

Google/Alphabet: Selected industrial projects and investments

- Purchase of eight robotics firms and testing of automated production lines
- Lens that automatically monitors blood sugar levels
- Investments in 23andme and Calico
- Development and testing of autonomous vehicles for mass use
- Real-time navigation with Google Maps
- Development of drones (Titan Aerospace) and balloons for the transmission of radio signals
- Equity investment in satellite manufacturer Skybox
- Equity investment in Uber, including pilot project for urban logistics
- Various drone projects piloted (Project Wing, Titan Logistics)
- Acquisition of Nest, a manufacturer of smart thermostats

Source: Roland Berger
Digitization is a critical challenge: It potentially disrupts competitive positions and leads to radical shifts of profit pools

Impact of digitization

Digital transformation

**Scenario 1**
Companies as digitally transformed players with new strategic options

**Scenario 2**
Companies negatively impacted by loss of customer interface, value share, limited strategic flexibility

Today
Slow ramp up of digital business models and tools

Tomorrow
Upside: New business models in the TMT space account for 75% of the valuation of this sector today – telcos, however, did not benefit

Valuation of top eight telcos and digital firms, 2015 [USD bn]

TMT

75% REVOLUTION
> New business models (incl. OTT business)
> New digital intermediaries and digital substitution of existing analog services

25% EVOLUTION
> Optimization of current business
> Transformation towards "all-in" offers

!! > TelCos saw this scenario early on and tried to explore into these new fields in early 2000s – but failed

!! > To avoid this, other industries have to act now

? > But: How to benefit from the drive created through digitization?

Source: Roland Berger
**Downside:** Underestimating digital disruption is the key reason for corporate restructuring already today

Results from an RB Study among German restructuring experts, 2015

What are the key reasons for required restructuring measures? (multiple answers possible)

- Digital trend "too small to create impact" (34%)
- Market consolidation (24%)
- Regulation (11%)
- Workforce/skills (10%)
- Business climate (7%)
- Other (14%)

1) Results from the survey of 1100 German restructuring experts in 2015

Source: Roland Berger
This thinking has led us to analyze the impact of digitization on the industrial heart of Europe.

300 decision makers were surveyed, 30 CEOs interviewed, expert workshops held on:

The **four levers** of the digital transformation …

... and their impact on the **industrial heart** of Europe [bn GVA]1)

1) GVA = Gross value added, 2013, EU-15 states plus Norway, Turkey  
2) Including energy systems

Source: Roland Berger
We found that many industry leaders in Germany have not addressed these issues and are "sitting on the fence"…

Results from the BDI / RB study on the digital transformation of industry, 2015¹)

**Lack of engagement**
45 percent have not examined the implications of digitization in sufficient detail. The level of engagement in large companies is much higher than in SMEs

**Low level of digital maturity**
Two thirds of firms consider their digital maturity to be low to moderate. Large companies fare much better

**Primary focus on efficiency**
Cost impact is main goal when implementing digital technologies in companies. Only large companies are seeking revenue potential from new business models to a similar degree

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¹) Results from the survey of 300 German industry decision-makers in November 2014

Source: Roland Berger
Action required on three levels – Industry must lead the way, policymakers create the basis, associations as "transmission belt"

Players and their roles in the digital transformation

1. **Policymakers**
   
   Act as **supporters**, laying the required foundations for a successful digital transformation

2. **Industry associations**
   
   Act as **transmitter** driving actions into the industrial base and serve as **ambassadors** of the industry

3. **Industry**
   
   Act on two levels as an **initiator** and **implementer**:
   
   a. On the individual company level
   
   b. Through selective cooperation in the ecosystem, also working with rival firms

Source: Roland Berger
1. Policymakers

Policymakers now need to lay the necessary foundations

### Tasks for policymakers

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<th>Regulatory framework</th>
<th>Digital sovereignty</th>
<th>Innovation capacity</th>
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<td>Modernize the regulatory framework</td>
<td>Protect Europe's digital sovereignty</td>
<td>Reinforce industry's innovation capacity</td>
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<td>&gt; Create a shared single market for digital products/data in Europe (a &quot;Digital Single Market&quot;)</td>
<td>&gt; Support Europe's interests when it comes to standardization – smart cooperation with the IIC, not confrontation</td>
<td>&gt; Upgrade broadband infrastructure</td>
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<td>&gt; Define uniform guidelines for data protection and data security</td>
<td>&gt; Promote the establishment of clusters for the digitization of industry</td>
<td>&gt; Reinforce digital training and enablement at all levels</td>
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<td>&gt; Adapt legislation to the technological progress that has been made (&quot;a legal code for the Internet&quot;)</td>
<td>&gt; Strengthen Europe's ICT industry</td>
<td>&gt; Make it easier for skilled workers to immigrate</td>
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<td>&gt; Refine competition &amp; antitrust law; focus on Europe as relevant market</td>
<td>&gt; Achieve a balance of partnerships with the US and China/Asia</td>
<td>&gt; Examine tax breaks for digitization investments and venture capital</td>
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<td>&gt; Bring in more ex-post regulation of digital business models</td>
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Source: Roland Berger
Associations pool the interests of industry, coordinate initiatives and support member companies in the digital transformation process

What industry associations need to do

**Transmitter**

Coordinate initiatives between policymakers and industry

> Main interface for political deciders based on memberships across industrial sectors
> Translation of corporate requirements into requirements for political support and framework conditions on a national and EU level
> Cooperate among industry associations across EU member states, e.g. DI, BDI, MEDEF,…

**Ambassador**

Represent and pool the interests of the industrial base

> Position and amplify EU industrial positions in international IoT platforms and ecosystems in US/Asia, based on subsidiarity principle with individual corporate engagements
> Connect industry, professional and academic associations, also with non industrial sectors, e.g. Banking, Insurances, Services, ICT, where needed

**Supporter**

Support companies in the digital transformation

> International marketing communication on "Digital Europe" capabilities
> Initiate and manage public debate on further development of data usage, avoiding "machine privacy"
> Potentially support initiatives on digital education for member associations/companies

Source: Roland Berger
Industry to build a future proof base for the digital age – three approaches to be tested in parallel

**What industry needs to do**

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<th>Leader</th>
<th>Partner</th>
<th>Disrupter</th>
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<td>Reinvent business models</td>
<td>Cooperate for added strength</td>
<td>Digital start-ups need to move ahead boldly</td>
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- Digital transformation will impact **operating model** and **value creation model** of European market leaders
- Ability to **leverage domain know how** and market position to jump ahead of the curve with new, innovative business models
- Willingness to accept potential negative impact on own production volume – total economic value more important than physical units sold

- Digital transformation will create **new platforms** to leverage for new business models in classical European industries
- Ability to create new competitive positions by leveraging **joint** assets, market reach and funding through cooperation/coopetition
- Willingness to accept that for many digital platforms, **classical competitors are partners** in defensive move against platform players

- Digital transformation will lead to the emergence of completely new business models for start-ups and pure digital players
- Ability to create a **virtuous circle** of innovation and investments for start-ups to thrive and build market position in newly emergent segments
- Willingness to **invest into start-up ecosystems** and speed up the innovation cycle of European industries

Source: Roland Berger
Our shared ambition –
To be the market leaders in the digitized industry

Call to action

I. **Lead the way, don't react**
   > Review the digital strategy in each company
   > Act fast in pragmatic structures
   > Further the public debate

II. **Act together**
   > Policymakers provide support and flanking measures, industry acts
   > For European companies, smart cooperation with the IIC rather than confrontation
   > Set standards based on market success rather than by decree

III. **Build an ecosystem**
   > Create digital testing grounds shared between companies
   > Achieve a balance of partnerships with the US/Asia

**Roland Berger commitment & contribution**
> Combination of Digital and industrial expertise
> "Can Do" spirit

**Our own approach**
> Building a digital ecosystem for Europe: "Terra Numerata"
> Cooperations with VISA, NUMA, e.ventures, …
> "Spielfeld" digital hub in Berlin

Source: Roland Berger