Why Digitalization? - Main benefits & customer expectations

Florence, 27.th November 2015
1. Industrial Revolution

Mechanization: Switch to automated production

2. Industrial Revolution

Electrification: Power Supply Infrastructure

3. Industrial Revolution

Automatization: Industrial automation & industrial data processing systems

4. Industrial Revolution

Digitalisierung: reflecting the world in machine-processable ways, inter-connecting different realities.
Why Digitalization? Seven Key-Success-Factors

1. **Client Focus** – Deep understanding of customer to resolve pain-points via innovation

2. **Partnerships, Mergers, Acquisitions** – Develop new skills, through collaborations and design new assets

3. **Speed, speed, speed** – Agile evolution and quick pilots are essential

4. **Innovation-culture** – Winners experiment and learn from failures; others die procrastinating

5. **Disrupt or be disrupted** – Re-Think your business model

6. **Performance** – Process innovation through KPIs

7. **Simplified IT** – Optimized data management
<table>
<thead>
<tr>
<th>Internet of Things</th>
<th>Augmented Reality</th>
<th>Cloud-Computing</th>
<th>Big Data</th>
<th>Social, local, mobile</th>
<th>Automatization</th>
</tr>
</thead>
<tbody>
<tr>
<td>linking of machines, products, processes and systems in real time</td>
<td>Computer based enhancement of status quo, used for a huge number of complex activities</td>
<td>Execution of programs, which are not installed on on-premise PCs or servers (Software as a Service)</td>
<td>Holistic analysis of multiple available data sources</td>
<td>Mobile linking and information exchange with others</td>
<td>Automated workflows with integration of data and involvement of broadband services</td>
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<tr>
<td>Multidirectional communication between linked objects</td>
<td>Especially for the visual depiction of information</td>
<td>Usage of Cloud storage for a large quantity of data in remote data centre</td>
<td>Decisionfinding and optimisation in real time</td>
<td>Mobile access to information due to powerful devices and fast broadband internet</td>
<td>Intelligent, autonomous systems, such as autonomous engine</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td><strong>Example</strong></td>
<td><strong>Example</strong></td>
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<tr>
<td>Railcar signals maintenance-mode</td>
<td>Deployment of Augmented Reality-Glasses for Maintenance</td>
<td>On Board Services/ (Entertainment</td>
<td>Creation of motion profiles for commuters</td>
<td>Mobility Platforms</td>
<td>Simplified Shunting</td>
</tr>
</tbody>
</table>
ÖBB Digitalisation Targets are Based on Customer Expectations and User-Experience

Customer Expectations

- Simple & Easy
- Fast & Smooth
- Intelligent &Individual
- Efficient &Productive
- Crosslinked &Social

Derived ÖBB Targets

- Simple & Relevant Information for our customers
- Fast & Smooth Mobility for passengers and freight
- Intelligent & Individual Partner
- Efficient & Productive Travel Time
- Interactive & Communicative Environment

Examples

- Provide just relevant information
- Minimize changeover and waiting-time
- Intelligent personal assistant 24/7
- Provide necessary infrastructure at train stations, in train and with ending of journey
- Situation-based interaction with the customer
Digital Services: Satisfying the need of customers

- **DC on Smartphone**: Retrieve Discount Card from handset, no physical card required anymore

- **Concept-project**: Equipment for Stewarts
  - New Device with sales/validation function

- **Implementation-project**: Equipment for Stewarts
  - Tablets to speed up processes (schedules, etc)
Digital Services- Ticketshop to WiFi

- On-Board Wifi
  - Improved Wifi-System and new technological framework conditions enable Focus on better connectivity and entertainment functions

- Mobile Communications
  - Trackside Measures
  - On-board Signal Amplifier)allow for high-speed services

- Client portal
  - Travel information, Content & Entertainment
**Digital Services: Evolution of ÖBB-Ticketshop increases online-sales**

**Quick.**
- New innovative ticketing system
- Forward-looking and easy-to-expand, flexible system-architecture
- Active client use

**Simple.**
- Real-time info on disruption & info
- Digitale Travel Companion
- On-screen departure monitor
- Increased Usability
- Expanded product Portfolio incl. Sale of products of alliance partners

**Relevant.**

**2012**

![2012 Image]

**2016**

![2016 Image]

**Share Online/Mobile overall revenue**

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<tbody>
<tr>
<td>2012</td>
<td>7,892</td>
<td>8,199</td>
<td>8,567</td>
<td>8,919</td>
<td>9,278</td>
<td>9,645</td>
<td>10,016</td>
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<table>
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<tr>
<th>Year</th>
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<th>2012</th>
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<tr>
<td>Value</td>
<td>3.3</td>
<td>4.2</td>
<td>4.9</td>
<td>6</td>
<td>7.9</td>
<td>8.9</td>
<td>11</td>
<td>12.6</td>
</tr>
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*Jan-Aug 2015
Digitalizing the Cargo Business- Focus Areas

**Customer**
- Short-to-medium term (2016):
  - Customer relationship management
  - Rail-solution configurator

**Medium-to-long term (2018)**
- Cargo tracking and analysis
  - (location/ conditions)

**Efficiency**
- Introduction of capacity planning
- Transport Management System
- Trip Preparation System
- Wagon proof

**Medium-to-long term**
- Preventive risk management
- Anticipative logistics
- Forecasts of load factors
- Preventive Maintenance

**Responsibility**
- Fraud management system
- „Know-your-business-partner“ - System

- Transactional monitoring
# Digital Infrastructure - Focus Areas

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<tbody>
<tr>
<td><strong>Customer</strong></td>
<td>Information and deviation management</td>
<td>Expansion of mobile network</td>
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<tr>
<td></td>
<td>Quality check at the railway station</td>
<td></td>
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<td></td>
<td>Google Indoor for railway stations</td>
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<tr>
<td><strong>Efficiency</strong></td>
<td>Implementation of asset management system</td>
<td>Autonomous shunting</td>
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<tr>
<td></td>
<td>Digitalization/ harmonization of asset servicing processes</td>
<td>Preventive Maintenance</td>
</tr>
<tr>
<td></td>
<td>Acquisition of operational status data</td>
<td>Validation of operation of drones to monitor tracks</td>
</tr>
<tr>
<td><strong>Responsibility</strong></td>
<td>Rail ML for standardized interoperability</td>
<td>Digital System Integrator (interconnection of public transportation, Park&amp; Ride,…)</td>
</tr>
</tbody>
</table>
If we don’t do it - somebody else will!
Our conclusion & recommendations towards the Commission

- Digitalisation can help railway companies to become more attractive for their customers and more efficient in their operations
- But: Thin line between making life easier and overburdening the sector
- Thus, avoid a „one size fits all approach“ – particularly in those fields where interoperability is not of major relevance. Beware of the Digital Bubble!
- Regulation that could stifle innovation should be avoided.
- No rule without exception: regulations at interfaces are helpful (or where interoperability is relevant)
- Give preference to market- or company-driven initiatives: Healthy competition leads to innovation
- Additional funding of digitalization projects would be beneficial, including the support of low-cost, agile, start-up-like „trial & error“ approaches
### Digitalization and ÖBB

#### Day-to-Day
- Progress of the www and the mobile access thereof changes work&leisure for customers as well as employees

| Increasing use of touchpoints to book journey and get travel information
| Car industry more advanced and a serious contender für future customers
| Predictive Analytics to lower cost structures

#### Transport
- Trucks, Trains, Cars and Airplanes as interlinked, „smart“ and efficient mobility companions

| Integration of real time cargo tracking and analysis (locations/conditions)
| Ancipatory logistics optimizes supply chain management

#### Solutions
- Customers demanding multimodal transport solutions along a networked logistics chain and order possibilities

| Digitalization creates new customer needs and market opportunities
| Multinationals and Start-ups set new rules of the game and substitute traditional products with new services

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**ÖBB-Holding**

Digitalisation

01.12.2015