Things happening in, around, and to freight transportation

Some observations

Per Olof Arnäs, PhD

Chalmers University of Technology
Service Management and Logistics
per-olof.arnas@chalmers.se
about.me/perolofarnas
Slides: slideshare.net/poar
@Dr_PO
Things are happening outside the freight industry (and have been for some time)
Demographic and social change

Shift in economic power

Rapid urbanisation

5 GLOBAL TRENDS

Climate change and resource scarcity

Technological breakthroughs
Things are happening outside the freight industry (and have been for some time)
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Image: Richard Hancock, twitter.com/CanaryWorf
Gartner's Hype Cycle for Emerging Technologies

- **Augmenting humans with technology**
  - Smart Advisors
  - Micro Data Centers
  - Digital Dexterity
  - Software-Defined Security
  - Neurobots
  - 3D Bioprinting Systems for Organ Transplant
  - Volumetric Displays
  - Human Augmentation
  - Brain-Computer Interface
  - Quantum Computing

- **Machines replacing humans**
  - Autonomous Vehicles
  - Internet of Things
  - Speech-to-Speech Translation
  - Machine Learning
  - Wearables
  - Natural Language Question Answering
  - Augmented Reality
  - Virtual Reality
  - Autonomous Land Vehicles
  - Inventions
  - Inflated Expectations

- **Humans and machines working alongside each other**
  - Enterprise 3D Printing
  - Gesture Control
  - Virtual Reality
  - Autonomous Land Vehicles
  - Inventions
  - Inflated Expectations

- **Machines and humans becoming smarter**
  - Quantifiable Smartness
  - Machine Learning
  - Wearables
  - Natural Language Question Answering
  - Augmented Reality
  - Virtual Reality
  - Autonomous Land Vehicles
  - Inventions
  - Inflated Expectations

- **Humans better understanding machines and the environment**
  - Biocoustic Sensing
  - People-Like Digital
  - Digital Security
  - Virtual Persons

- **Machines better understanding humans and the environment**
  - Advanced Analytics With Self-Service Delivery
  - Autonomous Vehicles
  - Internet of Things
  - Speech-to-Speech Translation
  - Machine Learning
  - Wearables
  - Natural Language Question Answering
  - Augmented Reality
  - Virtual Reality
  - Autonomous Land Vehicles
  - Inventions
  - Inflated Expectations

- **Time to peak:**
  - 0 less than 2 years
  - 2 to 5 years
  - 5 to 10 years
  - More than 10 years
  - Obsolete
Gartners Hype Cycle for Emerging Technologies

Could affect transportation and logistics

Connected Home
Virtual Personal Assistant
Augmented Reality
Virtual Reality
Virtual Reality

General-Purpose Machine Intelligence
4D Printing
Smart Dust

Innovation Trigger
Peak of Inflated Expectations
Trough of Disillusionment
Slope of Enlightenment
Plateau of Productivity

Years to mainstream adoption:
- less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years
- obsolete

Source: Gartner (July 2016)
Things are also happening to the freight industry (and have been for some time as well)
The world's largest taxi company, owns no vehicles.

The world's most popular media owner, creates no content.

The world's largest retailer, has no inventory.

The world's largest accommodation provider, owns no real estate.

Something interesting is happening.

TOM GOODWIN
Digitization:

Make analogue information digital
Digitalization:

Increased use of digital technology
Digitization: Make analogue information digital

Digitalization: Increased use of digital technology

Both are important! (and interesting)
Digit(al)ization is not a trend
It is a force of nature
It’s not business as usual.

Digit(al)isation is happening to freight transport.

There is no ’usual’ anymore.

Get used to it.
So...

Is nothing happening in freight transport then?!
Integration of digital and physical worlds

http://www.sygic.com/gps-navigation/addon/head-up-display
Say hi to the new sensors

http://mobsentech.com
"New" modes of transport

https://www.youtube.com/watch?v=50sv4M4rgBM

https://www.youtube.com/watch?v=HG76DcXySuw
## Bring on the personal trainers

Probability that computerisation will lead to job losses within the next two decades, 2013 (1-certain)

<table>
<thead>
<tr>
<th>Job</th>
<th>Probability</th>
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</thead>
<tbody>
<tr>
<td>Recreational therapists</td>
<td>0.003</td>
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<tr>
<td>Dentists</td>
<td>0.004</td>
</tr>
<tr>
<td>Athletic trainers</td>
<td>0.007</td>
</tr>
<tr>
<td>Clergy</td>
<td>0.008</td>
</tr>
<tr>
<td>Chemical engineers</td>
<td>0.02</td>
</tr>
<tr>
<td>Editors</td>
<td>0.06</td>
</tr>
<tr>
<td>Firefighters</td>
<td>0.17</td>
</tr>
<tr>
<td>Actors</td>
<td>0.37</td>
</tr>
<tr>
<td>Health technologists</td>
<td>0.40</td>
</tr>
<tr>
<td>Economists</td>
<td>0.43</td>
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<tr>
<td>Commercial pilots</td>
<td>0.55</td>
</tr>
<tr>
<td>Machinists</td>
<td>0.65</td>
</tr>
<tr>
<td>Word processors and typists</td>
<td>0.81</td>
</tr>
<tr>
<td>Real estate sales agents</td>
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<tr>
<td>Technical writers</td>
<td>0.89</td>
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<tr>
<td>Retail salespersons</td>
<td>0.92</td>
</tr>
<tr>
<td>Accountants and auditors</td>
<td>0.94</td>
</tr>
<tr>
<td>Telemarketers</td>
<td>0.99</td>
</tr>
</tbody>
</table>

The sharing economy hits freight transport
(again and again…)
Servitization

Move up in the value chain

Upgrade drop points

Expose data

Consumer services

Online retailer offers a courier that waits at your door – fashion advice not included

Friday, 02 May 2014 1:46

BROEDE CARMODY

Real-time (data driven) decision making

Data collection

Data processing

Data exploitation

http://mindconnect.se/

http://waze.com

https://mydrive.tomtom.com/
Curated services made possible with data

Mindconnect

Sendify
Another thing to keep tabs on
Block chain technology

Records transactions and data among actors that **do not trust** each other

Fully decentralized
Block chain technology

Records transactions and data among actors that do not trust each other

Fully decentralized

How Bitcoin’s Technology Could Make Supply Chains More Transparent

How Nimber Disrupts the Logistics System and why the Blockchain Matters

Future Use Cases For Blockchain Technology – Parcel Tracking Regardless of Courier
Wave (wavebl.com) Electronic Bill of Lading

THE KEY TO PAPERLESS TRADE

Stored in a blockchain

See How it Works
Things are happening...

Around...

...to...

...and in...

...freight transportation!
5 GLOBAL TRENDS

Demographic and social change
Rapid urbanisation
Technological breakthroughs
Climate change and

Digitization:
Make analogue information digital
Digitalization:
Increased use of information digital technology

Both are important (and interesting)

LEARNING

REACTION

(Pro)Action
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