Grab ‘n Go: Session 1
Velkommen til den digitale revolution
This is not a car
The 4th Industrial Revolution

- **Industry 1.0 and 2.0** (19th century)
  - Machines replace dangerous and heavy work

- **Industry 3.0** (20th century)
  - Machines replace repetitive and tedious work

- **Industry 4.0** (21st century)
  - Machines replace knowledge work

- **Digital Revolution**
  - Machines replace knowledge work
The Digital Revolution

Exponential technological advances drive changes in business models. Products, services and processes are innovated in order to create competitive advantage. Entire industries may be disrupted.

Product or service enhancements
- Improved customer relations
- Cost reductions

Incremental innovation

Disruptive business models
- Strong differentiation

Radical innovation
Exponential technology advances

- Data storage
- Robots
- Drones
- Network capacity
- Digital communications
- Machine translation
- Cognitive computing
- New materials
- Speech recognition
- Processing power
- Web 2.0
- Virtual reality
- Energy storage
- Network capacity
- Bio tech
- Mobile devices
- 3D printers
- Cloud computing
“Datafication” of all activity doubles the amount of data every 1.2 years.

**Transactions**
Transactions in business applications
e.g. ERP and e-commerce

**Interactions**
Interactions on social media
• Facebook users like over 4 million posts every minute
• Instagram users like over 1.7 million photos per minute
• Tinder users swipe over 300k potential lovers per minute
• Twitter users send over 350k tweets every minute
• Snapchat users share over 280k snaps per minute

**Observations**
By 2020, 50 billion devices and even more sensors will be connected
• Mobile devices
• Wearables
• Vehicles
• City and road infrastructure
• Home infrastructure
• Industrial equipment and machinery
• Consumer products
Different types of digital innovation

**Front office**
- Differentiation / disruption
- Revenue growth
- Customer service improvements

**Middle and back office**
- Operational efficiency
- Cost reductions
- Quality improvements
- Compliance

- Digital business models and services
- Intelligent process automation
- Data-driven insight
- Digital innovation
- Digital customer experience
Different types of digital innovation

- Digital business models and services
- Digital innovation
- Digital customer experience
- Data-driven insight
- Intelligent process automation
Examples of digital business models

- eCommerce
- Smart city
- Digital advertising
- Crowd sourcing
- Data-driven government
- Digital payments
- Platform economy
- Additive manufacturing
- Servicification

Companies: Amazon, eBay, Google, Facebook, Linux, PayPal, MobilePay, Vestas, Deloitte
Examples of digital business models
The platform economy

TRADITIONAL VALUE CHAIN DISRUPTED
Different types of platform economy
Servicification

Business model innovations enabled by the industrial IoT

Commoditization

Differentiation

- Remote diagnostics as a service
- Predictive maintenance as a service
- Quality management as a service
- Remote calibration as a service
- Insight as a service
- Products as a service
- Value chain as a service

- Pay per product - Data monetization - Service subscription – Pay per use - Pay per outcome

Analog products

Smart products

Connected services

Outcome economy

Data-driven servicification
Servicification at Vestas.
Connected services at Volvo.
Different types of digital innovation
Data-driven insight

Insight for operational processes

Insight for management

Insight as a service

Data sources

Internal
- ERP
- CRM
- BI
- R&D

External
- Structured
- Unstructured

Data sources

BI
From data to insight

Internet of Everything

Data

Qualify data and build cognitive model

What happened?

Why did it happen?

What will happen?

What do we want to happen?

Descriptive

Predictive

Prescriptive

Business outcome

Model outcome

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From data to insight

Internet of Everything

Data

Qualify data and build cognitive models

Data

Model outcome

What happened?

Why did it happen?

What will happen?

What do we want to happen?

Descriptive

Predictive

Prescriptive

Business outcome

The data scientist

Math

Statistics

Data Management

Visualization

Artificial intelligence

Programming

Business

Modeling

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Qualify data and build cognitive models
An example of data-driven insight.
Different types of digital innovation

- Digital business models and services
- Digital innovation
- Digital customer experience
- Intelligent process automation
- Data-driven insight
Intelligent Process Automation

**User emulation (simple robotics)**
Emulate simple, repetitive manual tasks in and between existing IT-systems

**Process automation**
Model workflows and business rules in order to automate complex processes

**Decision automation**
Add data-driven insight into the process for judgement, predictions and recommendations
The automation of knowledge work.

High-Value Recruitment Process Demo

with

*IBM Business Process Manager*

and

*IBM Watson*
# Automation choices

<table>
<thead>
<tr>
<th>Automation choice</th>
<th>Cost strategy</th>
<th>Value strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replace</td>
<td>Eliminate worker</td>
<td>Reassign worker</td>
</tr>
<tr>
<td>Atomize/automate</td>
<td>Accelerate work, reduce staff, possibly alienate creative workers and artisans</td>
<td>Create new low-cost offers, employ lower-skilled, less-experienced workers</td>
</tr>
<tr>
<td>Relieve</td>
<td>Eliminate routine tasks, increase productivity, reduce staff</td>
<td>Redeploy people to higher-value tasks; create more value for customers</td>
</tr>
<tr>
<td>Empower</td>
<td>Increase performance of workers</td>
<td>Increase workers’ performance and use to enhance their skills</td>
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In the not so distant future.

Introducing Connie: A Collaboration Between Hilton and IBM Watson
Sixty percent of CEOs believe that the emergence of smart machines capable of absorbing millions of middle-class jobs within 15 years is a "futurist fantasy". However, Gartner predicts that smart machines will have widespread and deep business impact within only seven years through 2020.

Garner, 2013

"47 percent of total employment is "at risk" from computerization over the next decade or two"

Study from Oxford University

"By 2029 robots will have reached human levels of intelligence"

Ray Kurzweil, Director of engineering at Google

"By 2030, 90 percent of jobs as we know them today will be replaced by smart machines"

Gartner

### Bring on the personal trainers

Probability that computerisation will lead to job losses within the next two decades, 2013 (2 certain)

<table>
<thead>
<tr>
<th>Job</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreational therapists</td>
<td>0.003</td>
</tr>
<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></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>
</tr>
<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>
<td>0.86</td>
</tr>
<tr>
<td>Technical writers</td>
<td>0.89</td>
</tr>
<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>
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Different types of digital innovation

- Digital business models and services
- Intelligent process automation
- Digital innovation
- Data-driven insight
- Digital customer experience
The rise of the demanding Generation Y customer

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<th>Increasing importance of the online channel</th>
<th>Increasing customer expectations</th>
<th>Decreasing customer loyalty</th>
</tr>
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<tr>
<td>72% of all Internet users are now active on social media¹</td>
<td>1% of customers feel their expectations for a good customer experience are always met²</td>
<td>46% of the customers of financial institutions will be Gen Y by 2020³</td>
</tr>
<tr>
<td>The largest social network, Facebook, currently has more than 1.28 bn. monthly active users</td>
<td></td>
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| | 90% of Denmark’s families have Internet access | One vocal customer now reaches 1375 people | 89% began doing business with a competitor following a poor experience⁴ |
| | 85% of the Danish Internet users browse the Internet for product information and service comparison | | |
Understanding the behavior and needs is the key

The customers’ data DNA

360 view of customer behavior

EXPOSURE  INQUIRY  EXPLORATION  STABALIZATION  MATURITY  ATTRITION
Omni-channel is a prerequisite for a great customer experience

**Omni-channel Engagement**
- Web
- Mobile
- Social
- Contact Center
- In-store
- Media & Advertising
- Direct Marketing

**Business Strategy and Brand Promise**
- Evolve
- Discover
- Choose
- Buy
- Use
- Service

**Capabilities**
- Strategy and Transformation
- Customer Insights
- Product and Service Development
- Sales
- Marketing & Customer Engagement
- Customer Service
- Organization

**Customer and shareholder value**
- Increased Market Share
- Increased Share of Customer Wallet
- Higher Margin Product Portfolio
- Lower Acquisition Costs and Cost to Serve
- Accelerated Time to Market
- Improved Customer Engagement
- Improved Lifetime Value of Customer
Traditional and digital retail are the future.
New ways of engaging customers.
What does it take?

Digital innovation

Digital business models and services

Digital customer experience

Data-driven insight

Intelligent process automation
Who is responsible?

- CEO
- Chief Operating Officer
- Chief Marketing Officer
- Chief Financial Officer
- Chief Customer Officer
- CIO
- Chief Digital Officer
- Chief Data Officer
- Chief Analytics Officer
- Chief Innovation Officer
Focus short term as well as long term

**Identify and implement digital use cases**

1. Understand the business and where to focus
2. Conceptualise and identify digital use cases
3. Implement pilot digital solution

Drive a multi-year innovation program (that never ends) to harness the power of new digital opportunities

1. Make “innovation” part of the strategy mix
2. Define the “digital innovation radar”
3. Design and implement an “innovation factory”
"The digital radar"
A portfolio of digital use cases

Digital business models and services
Data-driven insight
Digital customer experience
Intelligent process automation

Value propositions and differentiation
Ecosystems and collaboration models
Customer experiences and engagement
Operating models and organizational impacts

Explore +18 months
Investigate 6-18 months
Act 0-6 months
Investigate 6-18 months
Explore +18 months
Digital innovation requires something completely new

"Right speed IT"

Traditional IT
- IT industrialization
- Core systems of record
- IT operations
- Inside-out
- Outsourcing
- Atomization
- Service level culture
- Waterfall
- Risk averse

Fast IT
- Digital transformation
- Systems of differentiation
- Systems of innovation
- Outside-in
- Business centricity
- Co-creation
- Entrepreneurial culture
- Agile
- Fail fast

"Purple skills"
- Data scientists
- Graphic designers
- User experience designers
- Science fiction writers
- Artists
- Behavioral psychologists
In summary

The digital revolution is here

It involves different types of innovation

We need a new approach

And we need to act

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