Kunstig intelligens og lederens nye jobb

Partnerforums vårkonferanse 2018
Handelshøyskolen BI, 29. mai 2018

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Assistant Professor, Handelshøyskolen BI & Senior Research Fellow, Accenture
Entering the age of intelligent machines

• Prediction: Artificial Intelligence (AI) and robotics will drive the biggest technology disruption in the workplace since the Industrial Revolution
  • 33-50+ % of jobs to be computerized

• Past: New technology in the workplace have mainly impacted workers, rather than managers

• Near future: Artificial intelligence will radically change knowledge work incl. core management tasks

Source: Brynolfsson and McAfee (2014), Frey and Osborne (2013), Kirby and Davenport (2016)
Artificial intelligence combines multiple technologies into applications that can sense, comprehend, act, and learn.

**Artificial Intelligence defined**

<table>
<thead>
<tr>
<th>Sense</th>
<th>Comprehend</th>
<th>Act</th>
<th>Learn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observe</td>
<td>Register</td>
<td>Discern</td>
<td>Detect</td>
</tr>
</tbody>
</table>

Are you ready for a machine on your leadership team?

- In 2014 the Hong Kong VC firm appointed the intelligent algorithm VITAL* to its board and gave it voting rights in investment decisions
- Has voted on a number of investments

- How will artificial intelligence impact managers' work?
- What are the actions managers and employers must take to fully integrate the power of artificial intelligence into their organizations?

Source: fastcompany.com
Managers spend most of their time on tasks that intelligent machines will do in the future

Time spent on categories of management tasks

- Coordinate & control: 53%
- Solve problems & collaborate: 30%
- People & community: 7%
- Strategy & innovation: 10%

What's special about this financial news article?

It is written by an intelligent reporting engine.

Strong ad sales boost Google parent Alphabet's 1Q earnings

MOUNTAIN VIEW, Calif. (AP) — Google parent Alphabet on Monday reported a jump in first-quarter net income on the back of strong digital ad sales and an accounting adjustment.

The Mountain View, California-based company's net income surged 73 percent to $9.4 billion, or $13.33 per share. Earnings, adjusted for non-recurring gains including those from the accounting change, were $9.93 per share.

The results beat Wall Street expectations. The average estimate of 13 analysts surveyed by Zacks Investment Research was for earnings of $9.21 per share.

The internet search leader posted revenue of $31.15 billion in the period. After subtracting Alphabet's advertising commissions, revenue was $24.86 billion, also beating Street forecasts. Eleven analysts surveyed by Zacks expected $24.2 billion.

Still, Google's sunny quarter comes amid the backdrop of looming privacy regulations in the U.S. and Europe.

Elements of this story were generated by Automated Insights (http://automatedinsights.com/ap) using data from Zacks Investment Research. Access a Zacks stock report on GOOGL at https://www.zacks.com/ap/GOOGL.

…would you like it to draft your next management report?
AI helping you write your management report is closer than you think...

Example: Tableau and Narrative Science partnering to provide narratives for data charts
The greater the presence of machines, the greater the need for human judgement

**People power**

- Some decisions and practices require insight beyond what information can tell
- This is the sweet spot for human judgment

Managers recognize need for digital, creative, and analytical skills – ignoring people skills?

New skills needed to succeed*

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Global</th>
<th>Nordics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital/technology</td>
<td>42%</td>
<td>#4 30%</td>
</tr>
<tr>
<td>Creative thinking and experimentation</td>
<td>33%</td>
<td>#1 32%</td>
</tr>
<tr>
<td>Data analysis and interpretation</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>Strategy development</td>
<td>30%</td>
<td>#5 28%</td>
</tr>
<tr>
<td>Planning and administration</td>
<td>23%</td>
<td>18%</td>
</tr>
<tr>
<td>Social networking</td>
<td>21%</td>
<td>#2 31%</td>
</tr>
<tr>
<td>People development and coaching</td>
<td>21%</td>
<td>#2 31%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>20%</td>
<td>#7 25%</td>
</tr>
<tr>
<td>Quality management and standards</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Sharpen skills within my current domain of expertise</td>
<td>20%</td>
<td>17%</td>
</tr>
<tr>
<td>Performance management and reporting</td>
<td>17%</td>
<td>#6 26%</td>
</tr>
</tbody>
</table>

Source: Kolbjørnsrud, Amico, Thomas (2017) "Partnering with AI: how organizations can win over skeptical managers," Strategy & Leadership, 45(1)

* Which new skills will someone need to learn in order to succeed in your role in five years' time? Please select up to 3 skill areas.
AI stirs both excitement and fear

Opportunity
"Will make my work more effective and interesting"**

- Strongly agree 39%
- Somewhat agree 45%
- 84%

Threat
"I fear that intelligent systems will threaten my job."

- Somewhat agree 23%
- Strongly agree 13%
- 36%

Source: Kolbjørnsrud, Amico, Thomas (2017) "Partnering with AI: how organizations can win over skeptical managers." Strategy & Leadership, 45(1)

* Intelligent systems will help me to become more effective in my work and focus more on interesting and impactful tasks.
** I fear that intelligent systems will threaten my job.
Lower level managers are much more skeptical about taking advice from machines than their bosses

Trust in and comfort with…

<table>
<thead>
<tr>
<th></th>
<th>Top managers</th>
<th>Middle managers</th>
<th>First-line managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Trust system advice in business decisions&quot;**</td>
<td>Strongly agree</td>
<td>46%</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>14%</td>
</tr>
<tr>
<td>&quot;Comfortable with intelligent system monitoring and evaluating my work&quot;**</td>
<td>Strongly agree</td>
<td>42%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: Kolbjørnsrud, Amico, Thomas (2017) "Partnering with AI: how organizations can win over skeptical managers," Strategy & Leadership, 45(1)

* I would trust the advice of intelligent systems in making business decisions in the future (e.g. an investment decision or deciding whom to hire or promote).

** I am comfortable with an intelligent system monitoring and evaluating my work.
Are we so skeptical in the Nordics that we will be leapfrogged by emerging economies?

Source: Kolbjørnsrud, Amico, Thomas (2017) "Partnering with AI: how organizations can win over skeptical managers," Strategy & Leadership, 45(1)

* I would trust the advice of intelligent systems in making business decisions in the future (e.g. an investment decision or deciding whom to hire or promote).

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Trust in Advice from AI*

- **Strongly agree**
  - Nordics: 8%
  - Americas: 30%
  - Europe: 18%
  - APAC: 42%

Max/Min Observations
- Finland: 6%
- India: 56%

Comfortable with System Monitoring and Evaluating My Work**

- **Strongly agree**
  - Nordics: 14%
  - Americas: 28%
  - Europe: 19%
  - APAC: 42%

Max/Min Observations
- Sweden: 8%
- China: 61%
Managers want machines to explain their logic before they will accept it

What it takes to trust artificial intelligence

What would allow you to trust system advice?*

- I understand how the system works and generates advice: 61%
- The system has a proven track-record: 57%
- The system provides convincing explanations: 51%
- People I trust use such systems: 33%
- Advice is limited to simple rule-based decisions: 33%
- Nothing would allow me to trust advice generated by an intelligent system: 6%

Source: Kolbjørnsrud, Amico, Thomas (2017) *Partnering with AI: how organizations can win over skeptical managers,* Strategy & Leadership, 45(1)

* What would allow you to trust advice generated by an intelligent system? (Choose up to three)
The public sector have to prepare for AI now

Automation of routine work—manual and cognitive
- Regular case handling, application of rules
- Reporting, compliance, and quality assurance
- First-line citizen services

Human-machine collaboration
Machine-augmenting decision-making, problem solving, and judgment work
- Medical diagnosis and treatment
- Complex case handling
- Innovation, improvement, and experimentation

Mass customization of public services
Deep insight into user/citizen needs and preferences.

The new manager: From administrator to collaborative value creator
Steps to success

Leaders must be prepared for technology to take on more routine tasks

1. Explore early, **experiment and engage** with new technology and pilots – together

2. **Automate administration** and focus on **judgment work**

3. Develop **training and recruitment strategies** for creativity, collaboration, empathy and judgment skills

4. Start building **the intelligent enterprise**—combine AI and collective human intelligence for optimal outcomes

Source: Kolbjørnsrud, Thomas and Amico (2016) "The promise of artificial intelligence: Redefining management in the workforce of the future," Accenture Institute for High Performance
Reports and media coverage on the AI in management study

Reading more….

Harvard Business Review
Link to video

News media (Norway)
«Når robotene rekrutterer»
https://radio.nrk.no/serie/studio-2-p2?lipi=urn%3Ali%3Apage%3Ad_flagship3_detail_base%3BmqdPKj1TRZeFdhJUAdeyLw%3D%3D#t=1h13m56s

«Skeptisk til kunstig intelligens»
https://www.bi.no/bizreview/artikler/skeptisk-til-kunstig-intelligens/

«Er vi klare for en robot i ledergruppen?»
http://www.aftenposten.no/okonomi/Er-vi-klare-for-en-robot-i-ledergruppen-424570b.html

Social media
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Vegard Kolbjørnsrud

Partnering with AI: how organizations can win over skeptical managers
Vegard Kolbjørnsrud, Richard Armon and Robert J. Thomas

KUNSTIG INTELLIGENS OG LEDERENS NYE JOBB
Vegard Kolbjørnsrud er postdoctor i utvikling ved Handelshøyskolen BI og seniorforsker i Accenture. Han fokuserer, undersøker og gir råd innen strategi, nye organisasjonsformål, utvikling av sammensetting, digitalisering og kunstig intelligens. Vegard er PhD, MSc og utdanningsleder fra Handelshøyskolen BI og har 15 år erfaring som strategiskleder i Accenture.

http://magma.no/kunstig-intelligens-og-lederens-nye-jobb