A boardroom perspective on digital transformation and emerging technologies

#FutureOfTax
Speaker

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Head of Digital Disruption
A shifting landscape

Shrinking profit pools, increased competition, savvy consumers and rapidly evolving technologies

- Shrinking profit pools
- Increased competition
- Savvy consumers
- Rapidly evolving technologies

Paradigm Shift

- Decline in trust/increased competition
- Non-traditional alternatives
- Tech giants disrupting traditional markets
- Non-traditional players entering the market

New channels/changing customer behaviours

- Growing advice from peers
- Willingness to adopt new technology
- Less loyalty, more cherry-picking
- The internet of me

Technology driven innovation/improvements

- Unprecedented speed 5G Networks
- Traditional players leveraging technology
- Start-up collaboration
- Platform-based business models

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## Margin compression and a frictionless world

### Sector-wise summary – Margin compression

<table>
<thead>
<tr>
<th>Sector</th>
<th>2008</th>
<th>2017</th>
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<tbody>
<tr>
<td><strong>Food Retail (%)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Profit Margin (Adjusted)</td>
<td>5.8%</td>
<td>1.9%</td>
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| **Pharma (%)** |       |       |
| Profit Margin (Adjusted) | 24.8% | 15.4% |

| **Banking (%)** |       |       |
| Profit Margin (Adjusted) | 38.1% | 24.2% |

| **Telecom (%)** |       |       |
| Profit Margin (Adjusted) | -11.6% | 4.6% |

| **Big 4 UK (%)** |       |       |
| Profit Margin (adjusted) | 34% | 22% |

2/3’s of legacy firms are suffering long term margin compression

Focus is on friction removal and platforms

Move to utility models differentiated by brand
What do the public think?

KPMG surveyed 2,000 members of the general public to assess their attitudes towards AI. We asked 19 questions covering general attitudes to AI and its application in the NHS.

We have split survey respondents into five distinct groups, based on awareness and use of AI in their everyday lives:

- **Enthusiasts**: 12% (I know what AI is and use it regularly)
- **Users**: 24% (I know what AI is and use it sometimes)
- **Aware**: 47% (I know what AI is but do not use it)
- **Uninformed**: 13% (I know what AI is but do not use it)
- **Disconnected**: 4% (I have heard of AI but don’t know what it is)

**Percentage of UK population:**

- Enthusiasts: 12%
- Users: 24%
- Aware: 47%
- Uninformed: 13%
- Disconnected: 4%

**Percentage university educated:**

- Enthusiasts: 45%
- Users: 39%
- Aware: 32%
- Uninformed: 20%
- Disconnected: 8%

**Percentage under 35 years old:**

- Enthusiasts: 53%
- Users: 40%
- Aware: 17%
- Uninformed: 23%
- Disconnected: 23%

Respondents who feel they don’t understand AI or who don’t use it much, are more likely to associate it with robots, rather than services they use in everyday life.

Are you worried or relaxed about your data privacy as the use of AI increases?

- Enthusiasts: 26%
- Users: 33%
- Aware: 38%
- Uninformed: 45%
- Disconnected: 25%

Respondents who have heard of AI but don’t understand it are the most concerned about its potential impact on their data privacy.

Respondents with low awareness and usage of AI are also the most pessimistic about the impact on their job.

Are you worried or relaxed about AI technology taking your job?

- Enthusiasts: 3%
- Users: -10%
- Aware: -26%
- Uninformed: -25%
- Disconnected: -3%

Respondents with low awareness and usage of AI are also the most pessimistic about the impact on their job.
Trust is gone...

Respondents are more likely to share their personal data with their hospitals than any other organisation, followed by banks and the police.

Which, if any, of these organisations would you be willing to share your personal data with if it meant an improved service or capabilities?

- Hospitals: 56%
- Banks: 47%
- The police: 33%
- None of the above: 24%
- Government: 22%
- Pharmaceutical companies: 15%
- Charities: 11%
- Internet companies: 8%
- Media companies: 8%
- Political organisations: 7%
(There are) Myths around what is causing people to be left out, for example many more jobs are lost to automation than they are by the redistributional impact of trade but knowing this is not good enough unless there is action, unless there are policies to address inequalities of income but more importantly inequality of opportunities then it will be difficult to rebuild that trust

Word Bank Chief, Kristalina Georgieva
18 April 2018 on CNBC
The conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it

John McCarthy 1956

If someone describes to you the world of the mid twenty-first century and it sounds like science fiction, it is probably false. But then if somebody describes to you a world of the mid twenty-first century and it doesn’t sound like science fiction – it is certainly false

Yuval Noah Harari 2018
From muscle to brains to AI Services under pressure

Artificial Intelligence unlocks the automation of services at a faster potential speed than manufacturing.
Key CEO survey takeaways

Opportunity for growth

- 90% confidence in the global economy over next 3 years
- 78% confidence in CEO’s own industry growth over next 3 years
- BUT only 36% of CEOs are planning increasing staff by more than 6% over 3 years

Owning the change

- 71% personally ready to lead a radical organisation transformation
- 95% of CEOs see technological disruption an opportunity not a threat to their business.
- 54% of CEOs are actively disrupting in the sector they operate in, rather than waiting to be disrupted by competitors.
The global race has begun

<table>
<thead>
<tr>
<th>Top AI</th>
<th>Countries</th>
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<tr>
<td>By Research papers 2011-2015</td>
<td>By activity and talent pool</td>
</tr>
<tr>
<td>China</td>
<td>China</td>
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<tr>
<td>US</td>
<td>US</td>
</tr>
<tr>
<td>Japan</td>
<td>Russia (Due to military spending)</td>
</tr>
<tr>
<td>UK</td>
<td>Canada (Prof Hinton)</td>
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Forget utopia versus dystopia

The next 10 years will be hard

- Job ‘rotation’ will accelerate
- Old dogs need to learn new tricks
- More Kodak moments – Retail first but all industries will follow
- The economic benefits of AI are currently narrowly focused geographically and socially (Gini)
- KPMG CEO Outlook Survey 2017: more than 50% of CEO’s see more disruption in the next 3 years than they have in the prior 50 years
Ecosystems and academia

- Academia, Industry Capability and Data as one
- Data Innovation Zones outside of Cambridge/London
- New Adult re-training – change in culture to make it the norm
- Provide above school infrastructure
- Ecosystem of players large and small but focus on trust
Digital simplification in a complex world

- The back office is not immune - large scale automation and simplification
- Over half of CEOs are proactively disrupting their business - is the CFO keeping up
- Governments have not worked out how to regulate or tax this new world
- CFOs need to digitise but deal with greater complexities of regulations
- Known unknown = unpredictable new regulations
…technology alone is not enough.
It is technology married to liberal arts, married to humanities that makes our hearts sing.

Steve Jobs
2011
Diseconomies of scale... rise of the startup

Large legacy organisations have large legacy IT

Regulations requires them to keep old systems going for 7 to 10 years

Culture and ways of working .... Active Inertia

53% of CEOs think that digital disruption can be achieved by third-party partnerships

Acquisitions and consolidation
Government proactive policies to win

**Short term**

1. Building on the Government’s proposed Digital Innovation Hubs by creating ‘Data Innovation Zones’ where developers are given access to anonymised, aggregated data e.g. Health data. Unlocking some of the opportunities in NHS data now will help demonstrate to the public how health AI can be a positive to society

2. Convening the public sector, third sector, private companies and academia to work together and persuade the public of the benefits of AI. Generating open access to health data through a value exchange mechanism will ensure the public are on board

**Medium term**

3. Formalising the UK’s data regulation systems for AI through public debate with individuals and businesses. Such an approach is vital to building public trust in AI technology

4. Establishing a new ‘British Standard of Trust’ – a kitemark in global regulatory quality – to demonstrate the UK’s leadership and commitment to founding trust in new technologies

**Long term**

5. Addressing the skills gap AI will create via a three pronged approach; digital upskilling in schools, installing a culture of life-long learning and recognising the importance of subjects beyond STEM
Thank you