IS AI THE GPT OF THE 21ST CENTURY? IMPLICATIONS FOR BUSINESSES

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50+ YEARS OF DIGITALISATION

IBM 360: 1964

IBM PC: 1981

Internet, WWW, Browser, 2G 1992-95

NSF

Www

N

2G

Wikipedia

The Free Encyclopedia

2005

Streaming
Facebook

4G

2007-9

iPhone 2007

cloud 2010

assistants 2011-14

2010

2G

2007

4G

Facebook

4G

2007-

9

2017

TikTok

ChatGPT

2022
Moore’s Law: The number of transistors on microchips doubles every two years.

Moore’s law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important for other aspects of technological progress in computing – such as processing speed or the price of computers.
...LARGE INCREASES IN DATA...

Annual Size of the Global Datosphere

Source: Data Age 2025, sponsored by Seagate with data from IDC Global DataSphere, Nov 2018
...THAT HAVE COMBINED TO FUEL SOPHISTICAED ALGORITHMS: AI

- Language
- Image generation
- Vision
- Other

Number of parameters (log scale)

- Transformer
- Generative LLMs
- Deep Neural Networks
- Reinforcement Learning
- Rules-based
- AI “winter”

*“Sparse” models, which have more than one trillion parameters but use only a fraction of them in each computation, are not shown.*
ChatGPT gained **one million users in five days** after its launch on 30 November 2022.

*Source: Statista*
...AND STRONG ADOPTION.

Source: Chartr, "A ChatGPT Check-in," 13 August 2023
IMPLICATIONS FOR BUSINESSES

Prepare for a period of:

- technology-induced structural change led by big businesses;
- technological and regulatory uncertainty;
- asymmetrical risks;
- shifting alliances and dependencies;
- new sources of value generation favouring the nimble and agile.
REGULATORY UNCERTAINTY ABOUNDS

• Defining AI…
• What is high-risk vs. low?
• Applicability of existing regulations vs. new
• At what level of government?: local vs. state vs. national vs. regional vs. international?
• What role for litigation and the courts? [copyright cases]
“Volkswagen brings additional partners to Industrial Cloud”
## DOES AI DISRUPTION FAVOUR SMALL OR LARGE?

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td><strong>Small Firms</strong></td>
<td><strong>Implementation costs</strong></td>
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<tr>
<td>• Streamline administrative procedures,</td>
<td>• Dependency on vendors / black box</td>
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<tr>
<td>• Ability to make data-driven decisions and predictions</td>
<td>• Acquiring, in demand, skilled staff</td>
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<tr>
<td>• Address skill shortages and retain agility</td>
<td>• Lack of Complementary digital assets</td>
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<tr>
<td>• Advantage of intimate knowledge of customers and clients</td>
<td>• Navigating a regulatory thicket</td>
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<td>• Advantage of scale and global reach;</td>
<td>• Winner take most dynamics</td>
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<td>• Can invest in cutting edge R&amp;D;</td>
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<td>• Have the ability to tailor solutions and not off-the-shelf products;</td>
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<td>• Greater data collection opportunities</td>
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CANADA: **Scale AI** is one of Canada's innovation superclusters, aiming to accelerate the adoption of AI in Canadian industries, including SMEs.;

UK: **AI for Services**, helps the accountancy, insurance, and legal sectors adopt AI; **Made Smarter** supports manufacturers adopt tech including AI.

Germany: **Mittelstand 4.0 centres of excellence**

Singapore: **Go Digital Program** seeks to help SMEs use digital technologies and embrace digitalization.

South Korea: **AI Voucher Program** provides SMEs and startups with vouchers to get assistance from larger AI firms and research institutes.
Advent of open source AI Tools and new open source AI repositories like Hugging Face

- **Llama 2** From Meta
- **TensorFlow** From Google
- **PyTorch** From FaceBook
- **Keras** From ONEIROS
...as well as integration into existing commonly used software: MS’s Copilot.

1. AI is a powerful technology that **will affect all sectors**, affecting many processes and necessitating a re-think of business models;

2. This **period of disruption** is both a challenge and an opportunity that will confront all businesses: large and small;

3. **Some urgency is warranted.** Use shifting from the experimental stage to applied applications, as AI innovation jumps forward and it gets integrated into existing software tools.

4. All SMEs need to reflect and assess how best to integrate, but it is **dangerous to be complacent**.
THANK YOU

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