

General principles for the use of AI in the financial sector

Joost van der Burgt, 28 November 2019

DeNederlandscheBank

EUROSYSTEEM

nice to make your acquaintance

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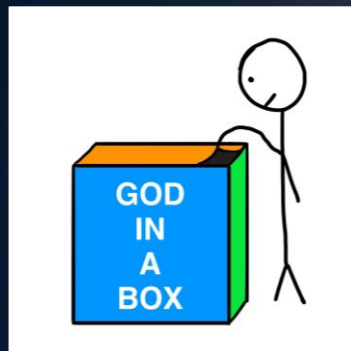
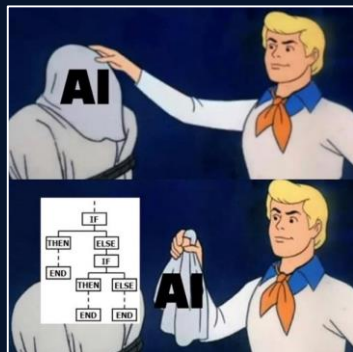
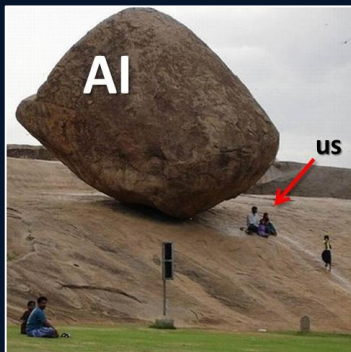
Joost van der Burgt
Senior Policy Advisor AI
Supervision Policy Division



2015 – present : DNB
2011 – 2015 : AFM

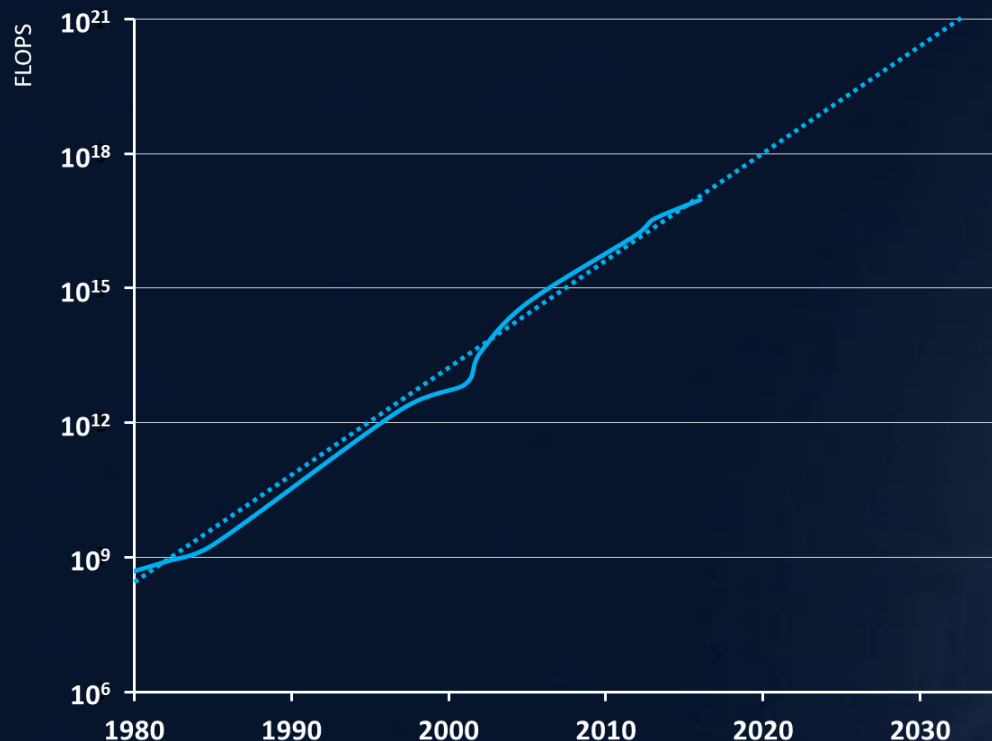
what is AI?

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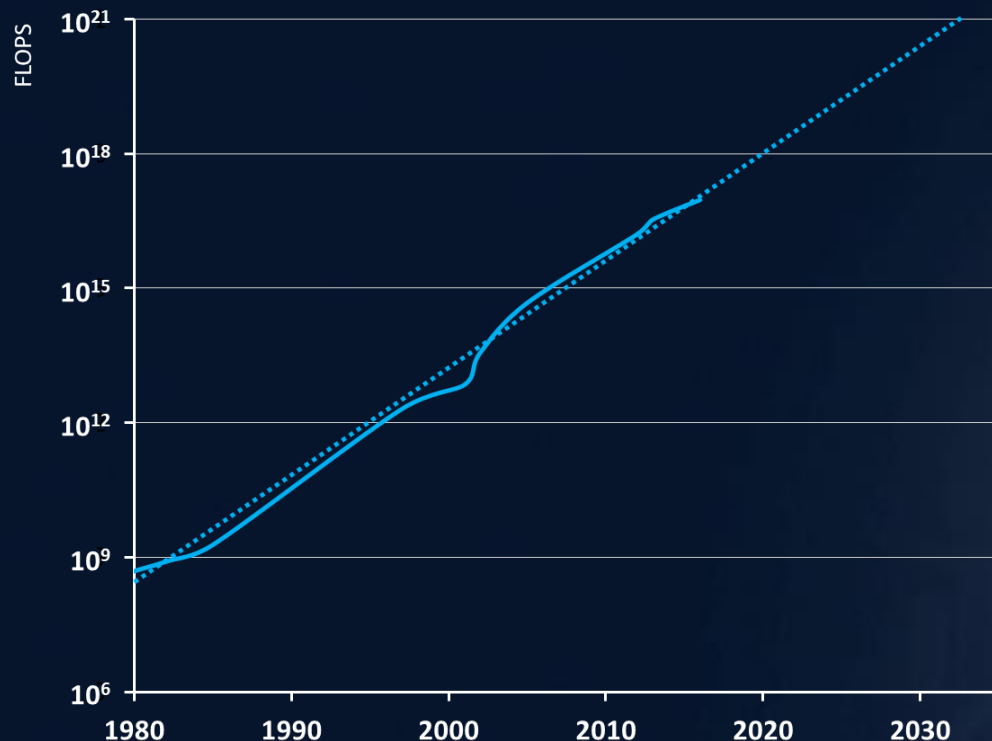
exponential performance increase

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exponential performance increase

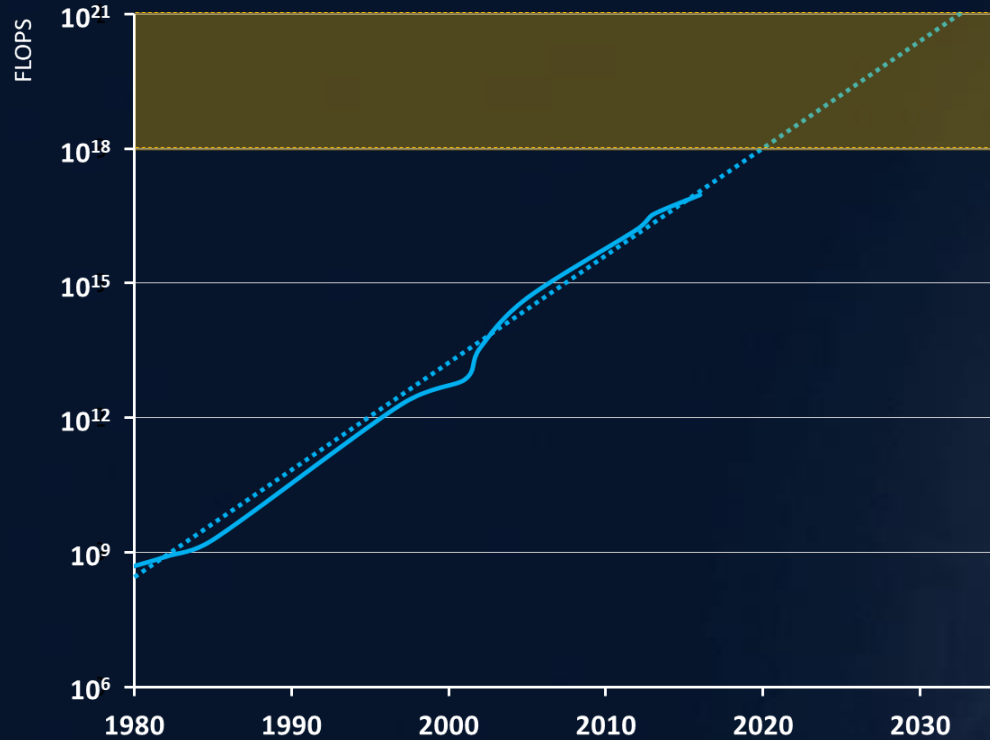
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- ▶ peak-human ability at "StarCraft" and poker
- ▶ *superhuman* ability at "Go", chess and shogi
- ▶ peak-human ability at "Go" and "Jeopardy"
- ▶ peak-human driving ability
- ▶ peak-human ability at chess

exponential performance increase

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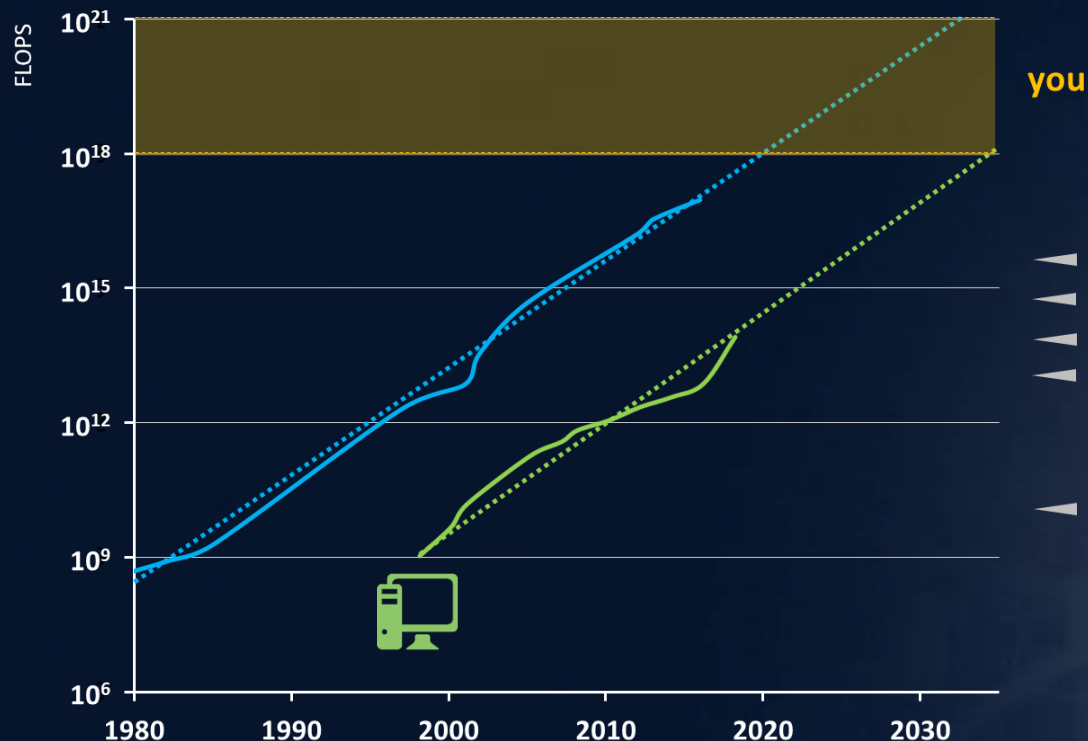


you

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exponential performance increase

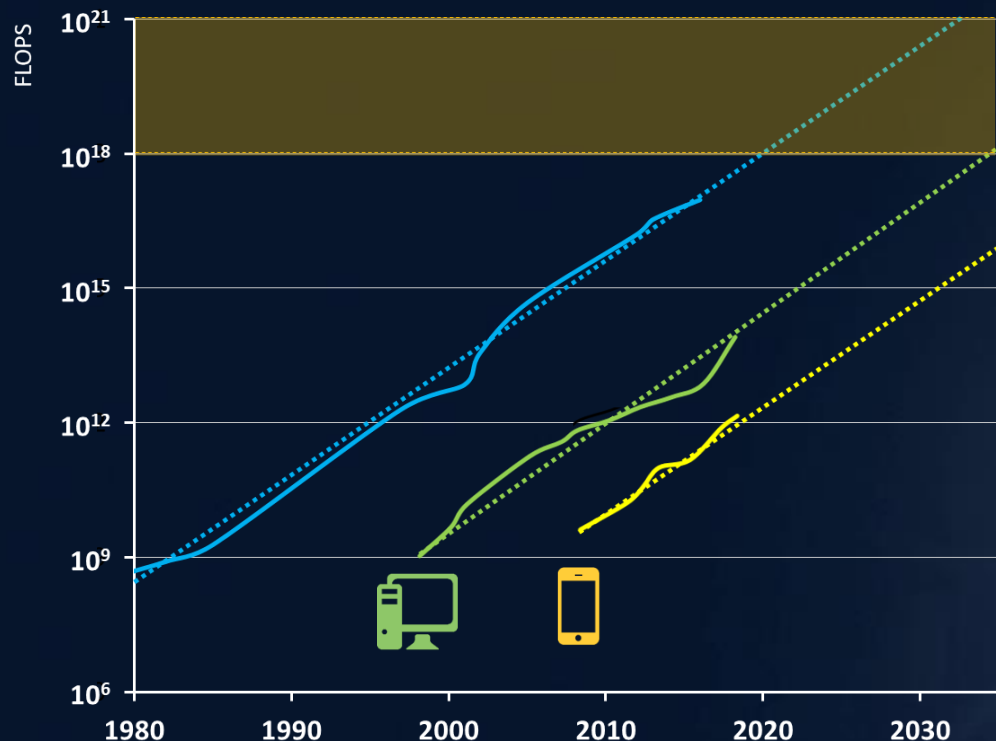
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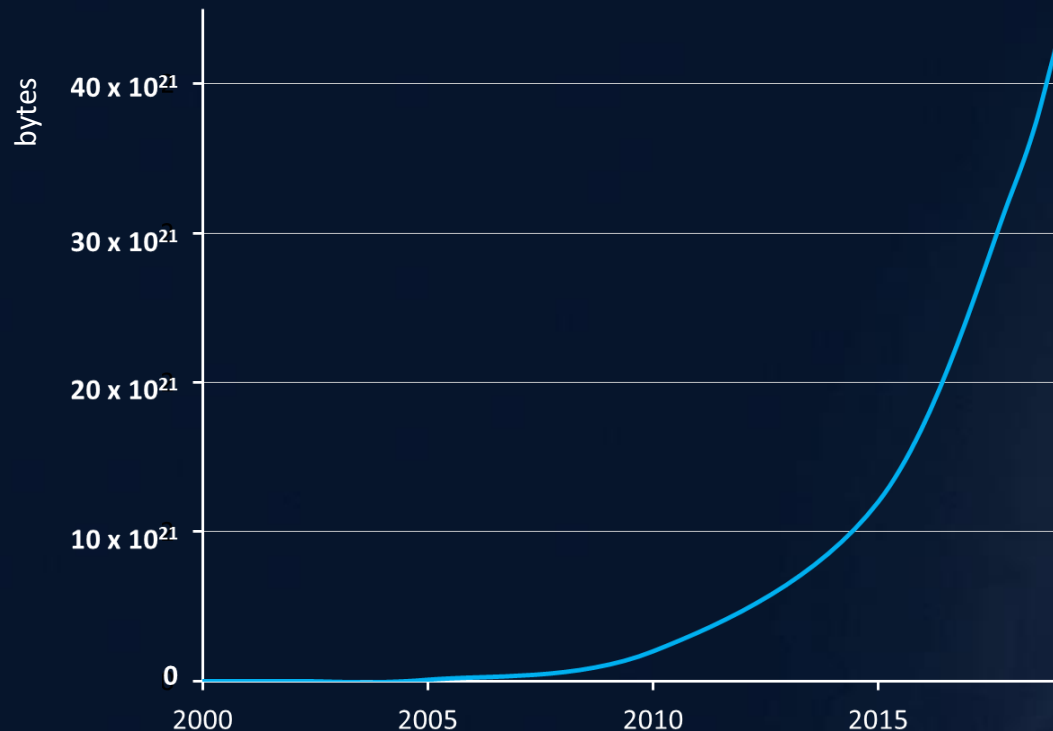


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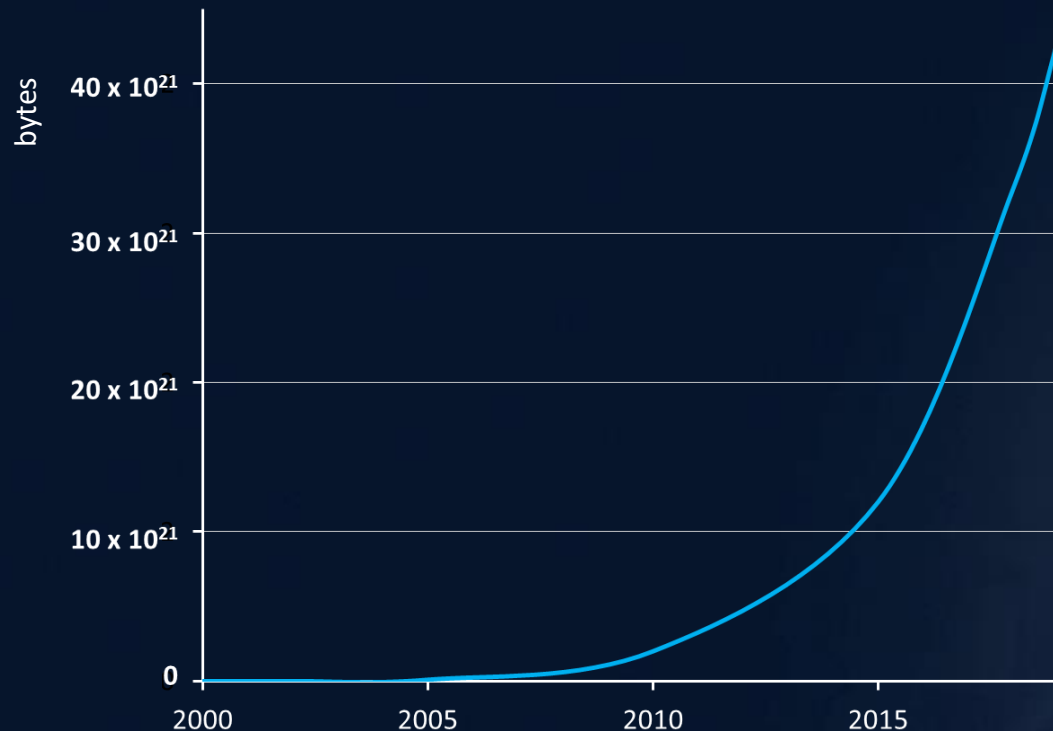
exponential increase of data

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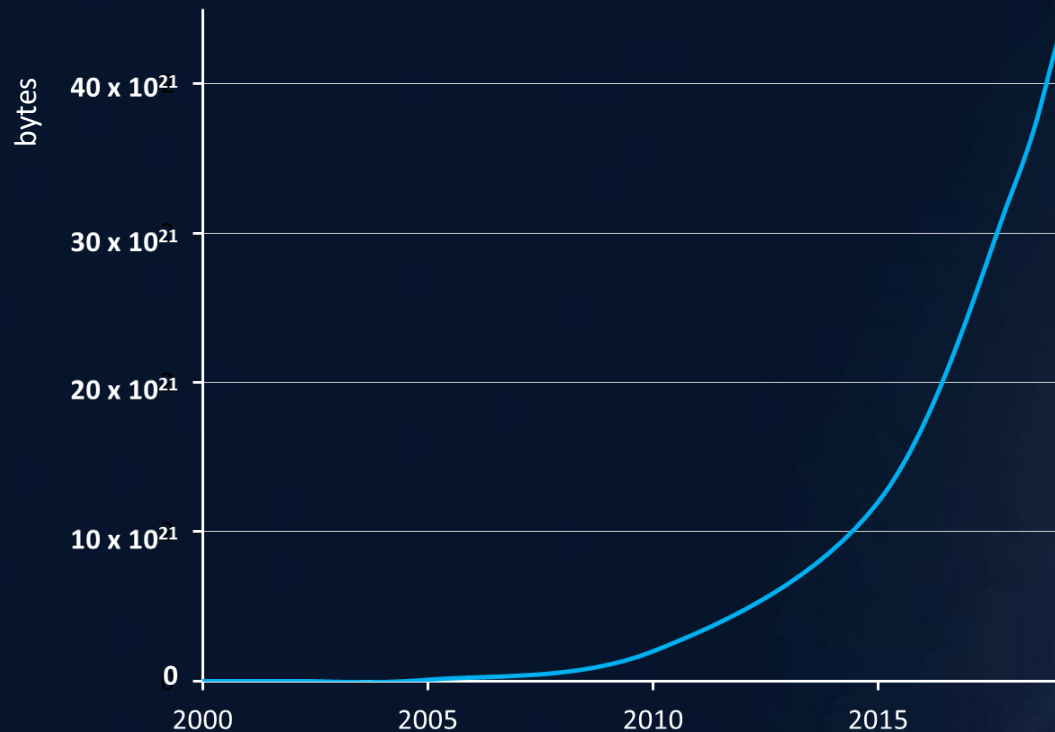
exponential increase of data

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**1 day now =
2005 whole year**

exponential increase of data



**1 day now =
2005 whole year**

AI will have a profound impact

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"Data is the new gold"

- Neelie Kroes (2011)

*"If data is the new gold,
Artificial Intelligence is the new electricity"*

- Andrew Ng (2016)

1st

1765

2nd

1870

3rd

1969

4th

2019



top publicly traded companies (by market cap)

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top publicly traded companies (by market cap)

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AI in finance: current applications

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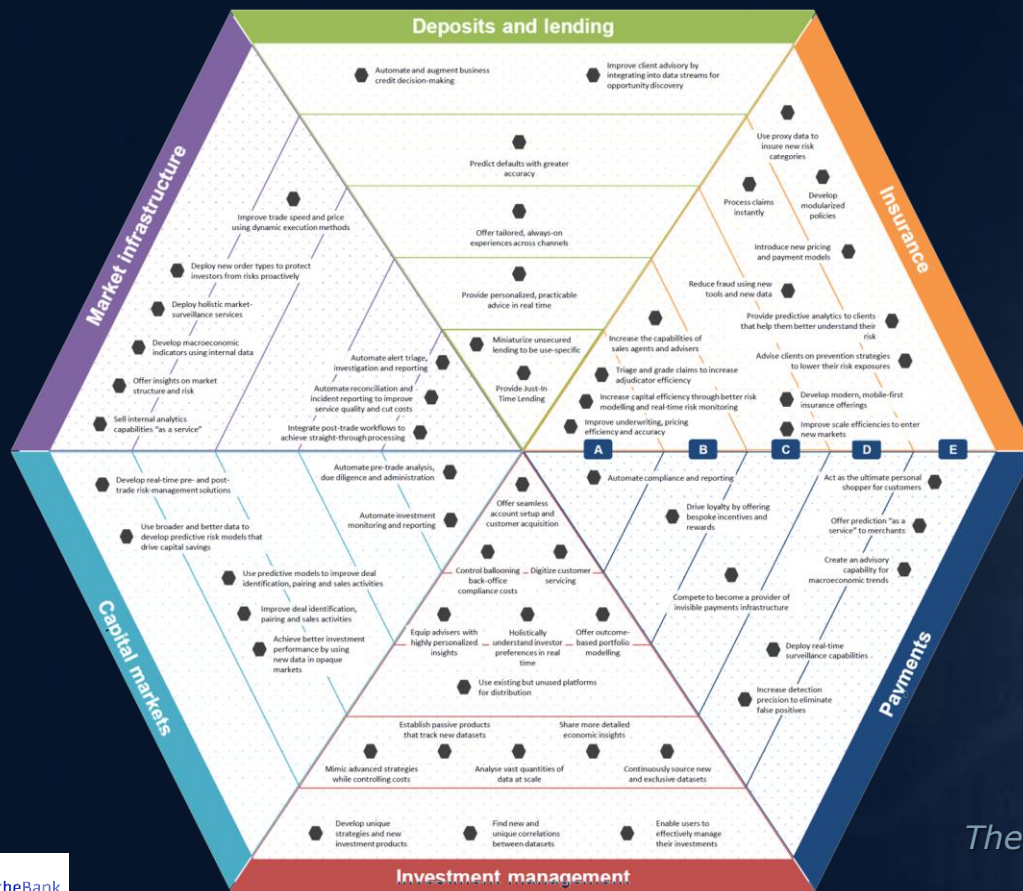
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AI in finance: potential applications in the near future

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The New Physics of Financial Services
(WEF)

AI in finance: what makes finance special

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higher societal standard



data as by-product of societal function



potential impact on financial stability



interconnectivity of the financial system



specific data environment



game-like features



paradigm shift in supervision

background

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1 Responding to technological innovation



increasing use of AI
in the financial sector

regulatory uncertainty



General principles for the
use of Artificial Intelligence
in the financial sector

DeNederlandscheBank
EUROSYSTEM

the 'SAFEST' principles

Soundness

Accountability

Fairness

Ethics

Skills

Transparency

the 'SAFEST' principles

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Soundness

Accountability

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Skills

Transparency

- 1) *Ensure general compliance with regulatory obligations regarding AI applications.*
- 2) *Mitigate financial (and other relevant prudential) risks in the development and use of AI applications.*
- 3) *Pay special attention to the mitigation of model risk for material AI applications.*
- 4) *Safeguard and improve the quality of data used by AI applications.*
- 5) *Be in control of (the correct functioning of) procured and/or outsourced AI applications.*

the 'SAFEST' principles

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- 6) *Assign final accountability for AI applications and the management of associated risks clearly at the board of directors level.*
- 7) *Integrate accountability in the organisation's risk management framework.*
- 8) *Operationalise accountability with regard to external stakeholders.*

the 'SAFEST' principles

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S

Soundness

A

Accountability

F

Fairness

E

Ethics

S

Skills

T

Transparency

9) *Define and operationalise the concept of fairness in relation to your AI applications.*

10) *Review (the outcomes of) AI applications for unintentional bias.*

the 'SAFEST' principles

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S

Soundness

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11) Specify objectives, standards, and requirements in an ethical code, to guide the adoption and application of AI.

12) Align the (outcome of) AI applications with your organisation's legal obligations, values and principles.

the 'SAFEST' principles

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13) *Ensure that senior management has a suitable understanding of AI (in relation to their roles and responsibilities).*

14) *Train risk management and compliance personnel in AI.*

15) *Develop awareness and understanding of AI within your organisation.*

the 'SAFEST' principles

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Fairness

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S

Skills

T

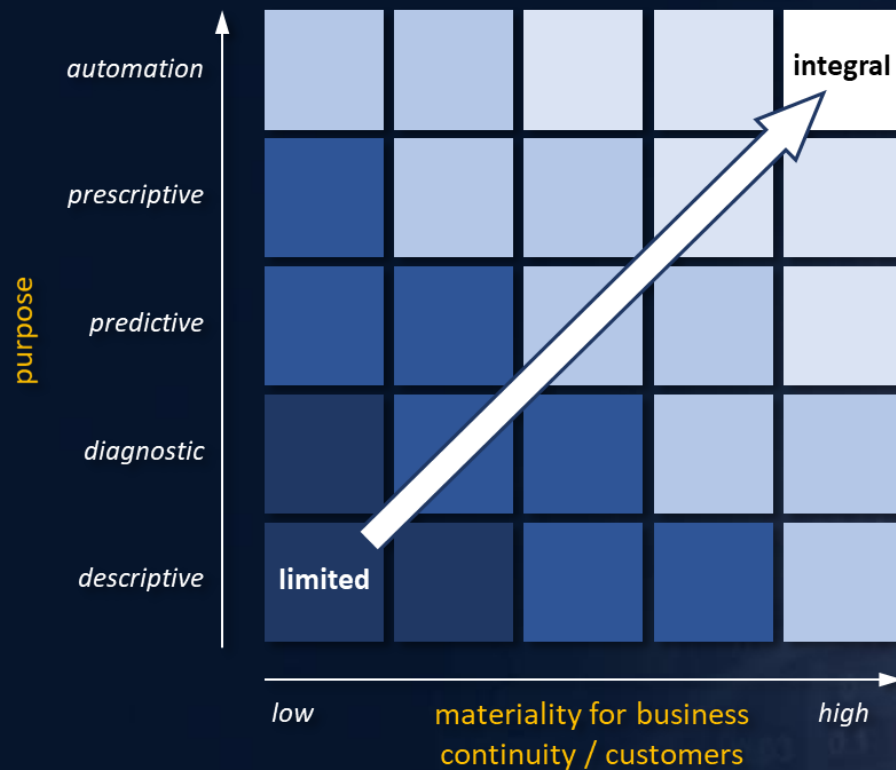
Transparency

16) *Be transparent about your policy and decisions regarding the adoption and use of AI internally.*

17) *Advance traceability and explainability of AI driven decisions and model outcomes.*

proportionality applies

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next steps

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1. Explainable AI
2. Model risk management
3. AI ethics



