Site visit
Robotics & AI and (Circular) Semiconductors

Chantal van Spaendonck

Director
Breda Robotics

European Cluster Collaboration Platform

European Commission

AgriFood Capital

Brainport Eindhoven

Provincie Noord-Brabant

Next Gen EU

Meet Breda Robotics

Your connector, inspirer, and informant in the field of robotics and new technology
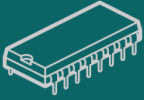
Made possible by:

XXX GEMEENTE BREDA

Provincie Noord-Brabant

TOGETHER, WE DESIGN THE FUTURE

BREDA ROBOTICS

Four stories to predict a Possible Future

2024

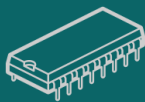2003

2045

1965

2022

Moore law

Gordon Moore, states that the number of transistors in an integrated circuit doubles approximately every two years. This exponential growth has led to significant increases in computing power and has been a driving force behind technological advancements.

Kiva systems

Kiva Systems, now known as Amazon Robotics, has revolutionized warehouse operations with its innovative mobile robotic fulfillment systems. These robots, navigate shelves of products directly to human workers, significantly improving the efficiency and speed of order fulfillment

ChatGPT4

OpenAI, founded in 2015. Known for advanced AI models like GPT and DALL-E, OpenAI focuses on AI development, collaborating with organizations to enhance productivity and innovation across various industries.

Amazon

As of now, Amazon uses over 750,000 robots in its operations worldwide. These robots work collaboratively with human staff, primarily handling repetitive tasks to improve efficiency and safety in Amazon's fulfillment centers.

BREDA ROBOTICS

Four stories | Moore's law

1965

If the first step is 1 meter and apply Moore's law to all subsequent steps.

How many steps does it take to walk around the earth?

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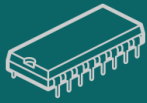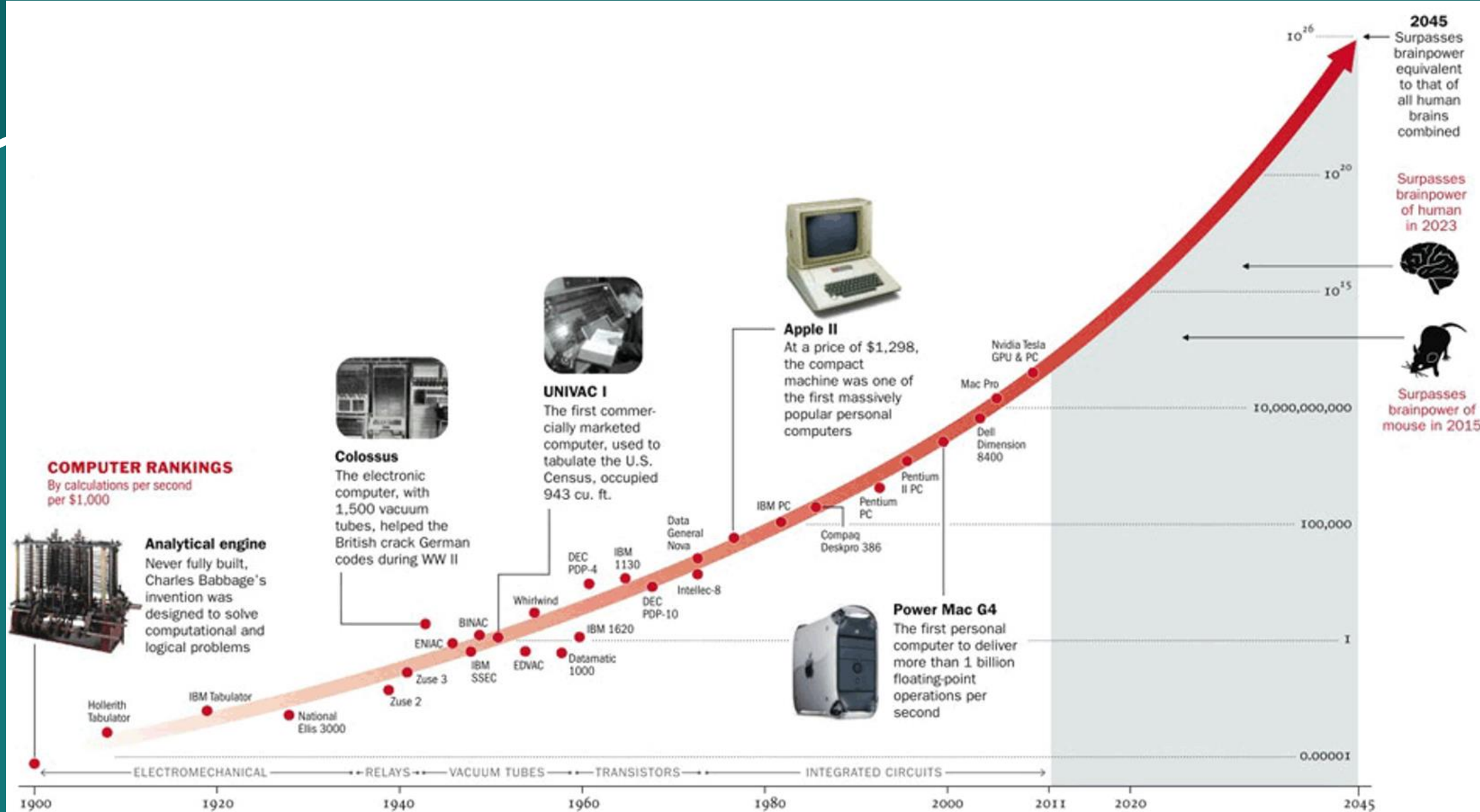
Four stories | Moore's law

1965

Prediction / outlook made in 2011

In 2024
208.000.000.000

BLACKWELL — NVIDIA

1974 – 2024 -> 50 jaar
-> 25 stappen
2^25 * 4500 = 150.994.944.000

in 1974 #4500

COMPUTER RANKINGS
By calculations per second per $1,000

Analytical engine
Never fully built, Charles Babbage's invention was designed to solve computational and logical problems

Colossus
The electronic computer, with 1,500 vacuum tubes, helped the British crack German codes during WW II

UNIVAC I
The first commercially marketed computer, used to tabulate the U.S. Census, occupied 943 cu. ft.

Power Mac G4
The first personal computer to do more than 1 billion floating-point operations per second

Hollerith Tabulator · National Ellis 3000 · IBM Tabulator · Zuse 2 · Zuse 3 · ENIAC · BINAC · IBM SSEC · EDVAC · Whirlwind · Datamatic 1000 · IBM 1620 · DEC PDP-4 · IBM 1130 · DEC PDP-10 · Univac-8 · Data General Nova · IBM PC · Compaq Deskpro 386 · Pentium PC · Pentium II PC · Dell Dimension 8400

10^{20} · 100,000 · 0.00001

ELECTROMECHANICAL — RELAYS — VACUUM TUBES — TRANSISTORS — INTEGRATED CIRCUITS

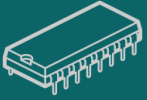1900 · 1920 · 1940 · 1960 · 1980 · 2000 · 2011 · 2020 · 2045

Four stories | Moore's law

1965

Four stories | First step of new robots

1965

2003

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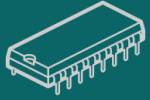
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BREDA ROBOTICS

Four stories | Machines gain intelligence

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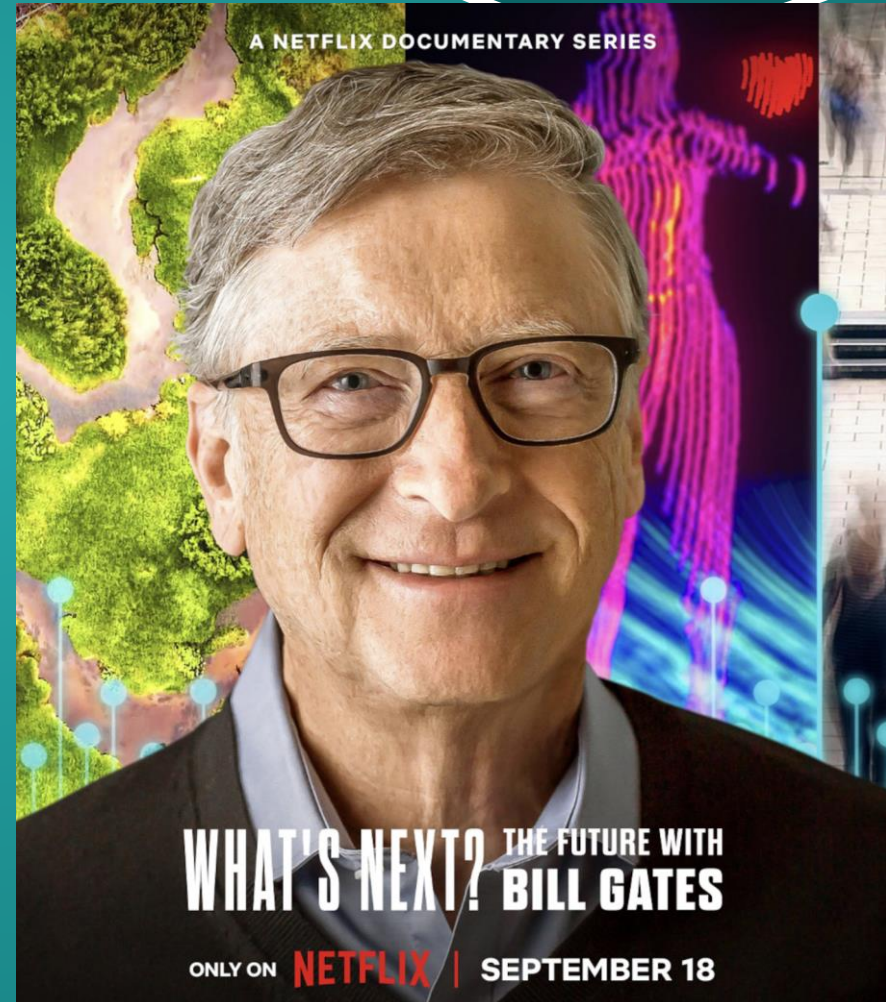
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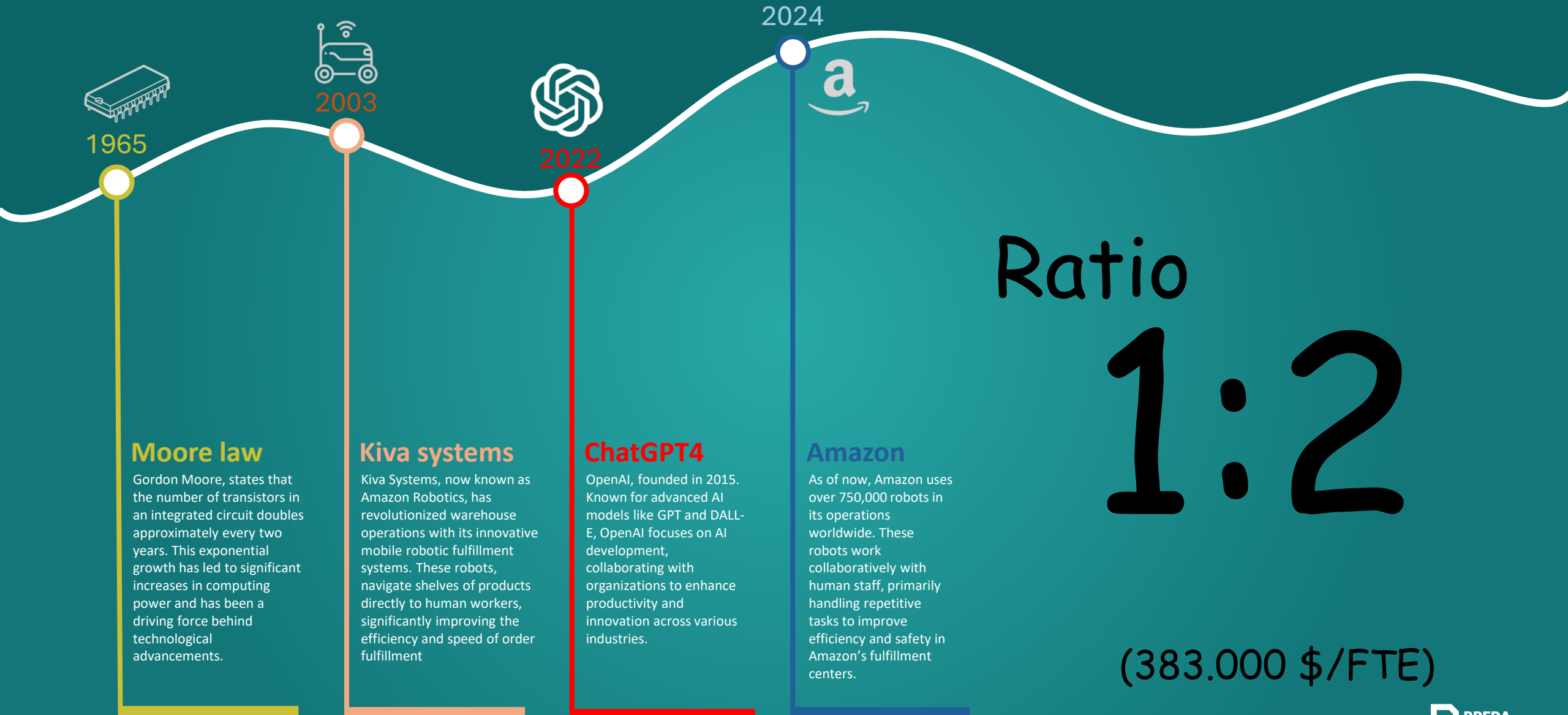
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WHAT'S NEXT? THE FUTURE WITH BILL GATES

ONLY ON NETFLIX | SEPTEMBER 18

BREDA ROBOTICS

Four stories | Human-machine cooperation

1965

2003

2022

2024

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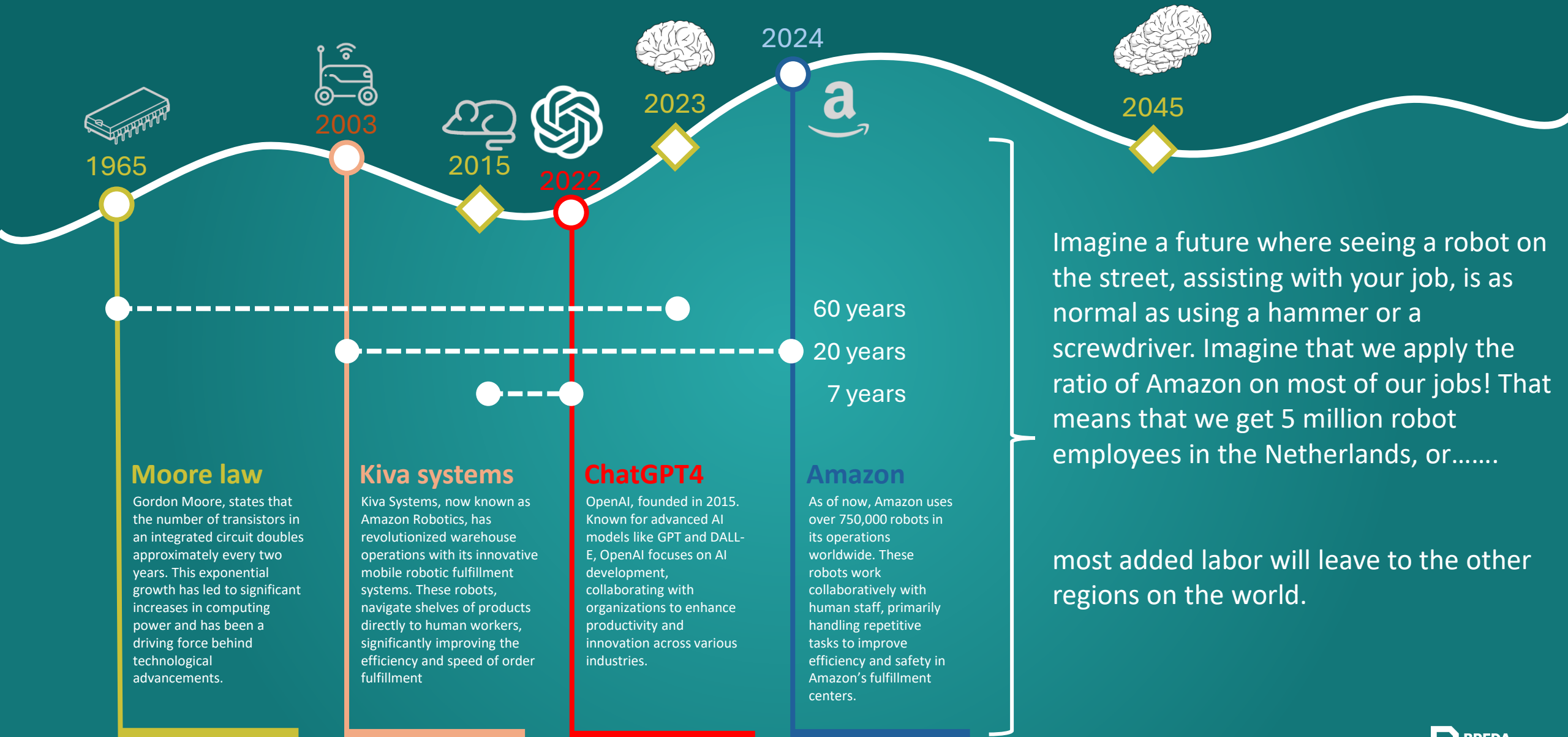
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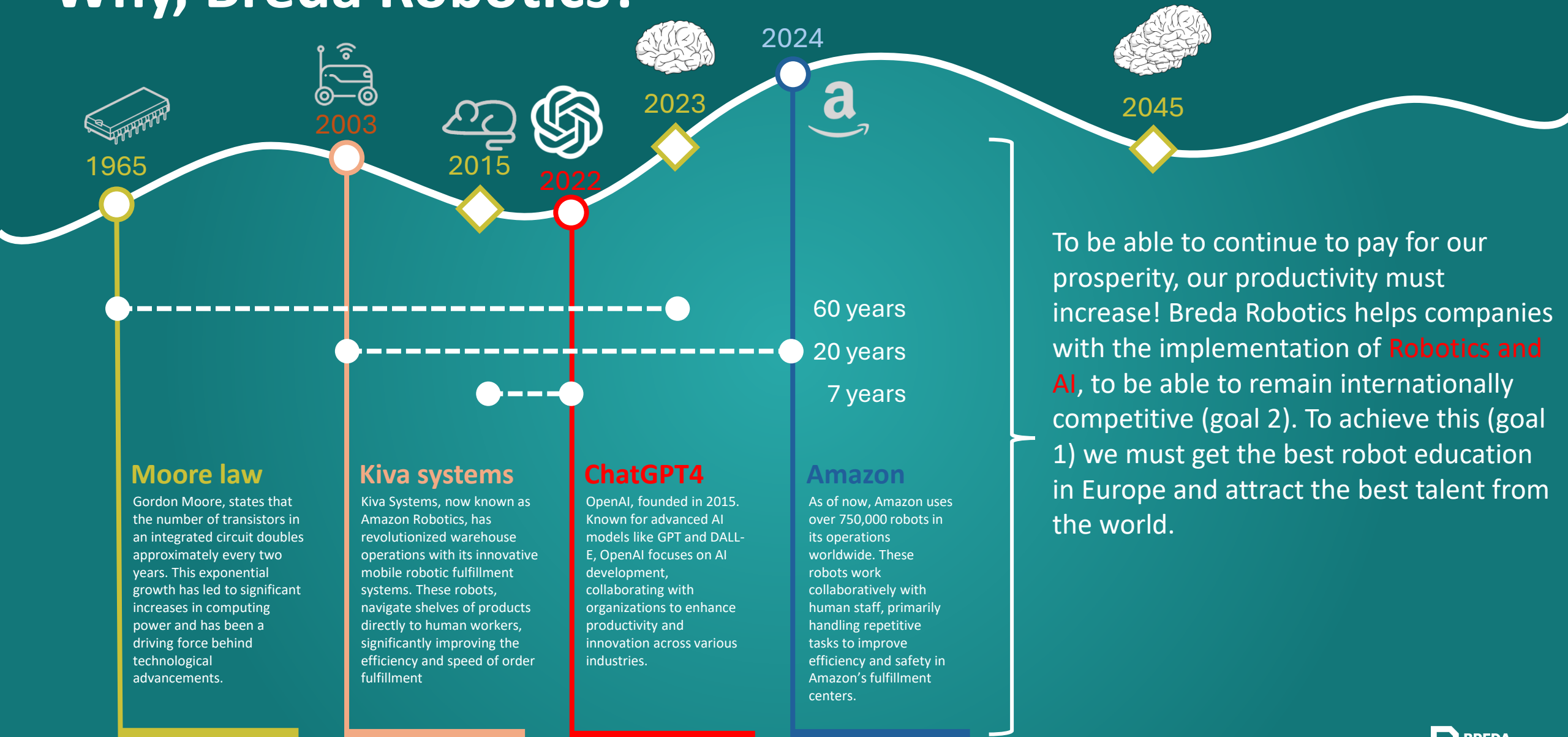
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Ratio
1:2

(383.000 $/FTE)

BREDA ROBOTICS

Four stories to predict a Possible Future

1965

2003

2015

2022

2023

2024

2045

60 years

20 years

7 years

Imagine a future where seeing a robot on the street, assisting with your job, is as normal as using a hammer or a screwdriver. Imagine that we apply the ratio of Amazon on most of our jobs! That means that we get 5 million robot employees in the Netherlands, or…….

most added labor will leave to the other regions on the world.

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Why, Breda Robotics?

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To be able to continue to pay for our prosperity, our productivity must increase! Breda Robotics helps companies with the implementation of Robotics and AI, to be able to remain internationally competitive (goal 2). To achieve this (goal 1) we must get the best robot education in Europe and attract the best talent from the world.

BREDA ROBOTICS

The Origin

- Breda Robotics started as a collaborative initiative between robotics companies in West Brabant, aiming to create a hub for innovation and technology. The idea arose during a roundtable discussion in the REWIN program Hightech Maintenance in 2018. The foundation was established in 2019 by six 'founding fathers', including ExRobotics, WWA, Synchron, Avans, the Municipality of Breda, and REWIN

- The goal was to create an incubator where education, companies, and organizations collaborate on the development of robotics and technologies for industry and society..

What we do

1

Connecting
We connect taletn to the region

2

Informing
We strengthen the robotics cluster in the Netherlands

3

Inspiring
We encourage the use of robotics, automation, vision, and AI

BREDA
ROBOTICS

Our Pillars

Collaborating with a clear vision

Hybrid Learning Environment
Combine education, research & entrepreneurship

Expertise & Experience Center
Exploring Robotics & Learning from Experts

Ecosystem
Interconnection Between Partners, Education, and Talent

New Technology
Committed to Societal Issues

Robot Campus Brabant
The Hub for Robotics, Automation, Vision, and AI

Sectors

Agrifood

Healthcare
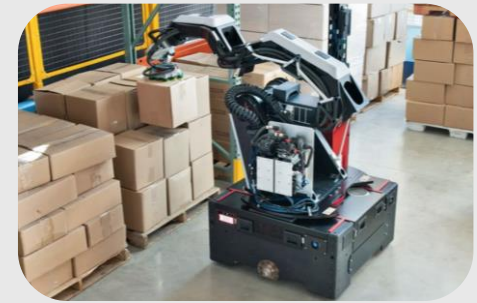
Logistics

Maintenance

Construction

Industry
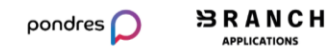
Partners

How are we funded?

Companies (Partners)

Educational Institutions

Municipality of Breda

Province of Noord-Brabant

Subsidy Providers (Interreg Vlaned, Stimulus)

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Development Breda Robotics

Laying the Groundwork

- Development of ecosysteem & Robot campus Brabant
- Infrastructure: Team, funding, location, etc
- Connection with Avans, BUAS, Curio & AD
- 40 Commercial members
- Government (Breda, Province NB, Rewin)

Development Breda Robotics

Four steps:

- Laying the Groundwork (Last 5 years).

- Getting Attractive (Years 2024-2028): Focus on enhancing our branding, create one cririculum Robotics for student, support local companies with automation and extent our partner network.

- Scaling Up (after 2028): Expand your operations, attracting top talent, attract international cooperate companies.

- Global Reach (later): Establish a global footprint, form international partnerships, and adapt to global market demands.

Our Projects

To realize the ambition of Breda Robotics, collaboration and starting projects are crucial.

1. Innovation cluster subsidy Municipality of Breda (Municipality of Breda)

2. Ecosystem development and Robot campus Brabant (Province)

3. Project Smart Farming & Food Processing (Interreg-Province-Ministry of EK)

4. Project Art-IE (Interreg-Province-Ministry of EK)

5. COBOTASSIST (Interreg-Province-Ministry of EK)

6. ZorgBOTS (Stimulus/OPZuid)

7. Regional deal – inclusive labor market

Interreg SFF&FP

Take on the challenge in the agricultural and food processing industry! Seven innovation trajectories:

1. Optimizing Packaging Line

2. Weeding Without Hands

3. Solar-Powered Work Assistant

4. Flexible Inlay and Packaging

5. Broccoli Processing Line

6. Scarecrow

7. Robotics for Weed Control

Interreg Vlaanderen-Nederland
Gefinancierd door de Europese Unie

Smart Farming & Food Processing

BREDA ROBOTICS

Interreg Art-IE

Problem

Statement With Art-IE, Artificial Intelligence Inspiration, we want to focus on digitization and collaboration of knowledge institutions with SMEs.

Reason

SMEs generally lag behind in the use of digitization and robotics. Collaboration with other companies and knowledge institutions is crucial for innovation – SMEs rarely engage in such collaboration.

Interreg
Vlaanderen-Nederland

Gefinancierd door
de Europese Unie

Art-IE

BREDA
ROBOTICS

Interreg COBOTASSIST

Objective Providing

SMEs with knowledge and prototypes for automating/robotizing (post)processing processes.

Development of training modules for education and business.

Development of guidelines for safe working with cobots. Development of demonstration cobot/robot cell.

Interreg Vlaanderen-Nederland
Gefinancierd door de Europese Unie

COBOTASSIST
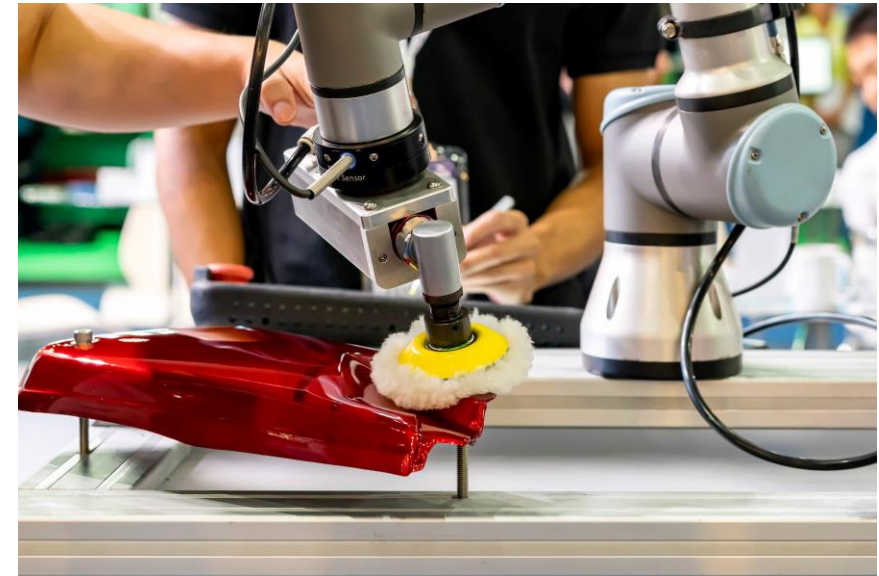
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ZorgBOTS OPZuid

Developing and (virtually) demonstrating a robotic solution for washing patients/clients.

Development and demonstration in practice of a robotic solution for logistical tasks.

Demo

Chantal van Spaendonck– Director

Get in touch with me?
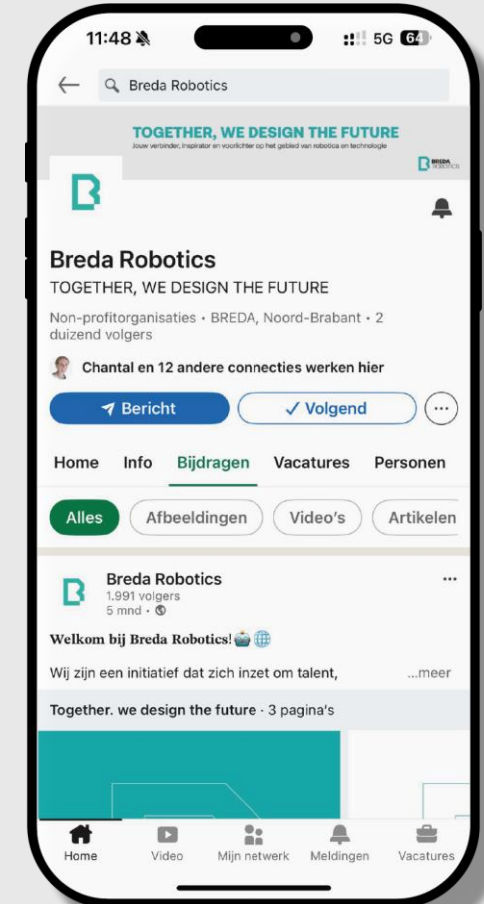
✉ Chantal@breda-robotics.nl

📞 +31647096101

BREDA ROBOTICS

Get in touch!

✉ info@breda-robotics.nl

in https://www.linkedin.com/company/breda-robotics

🌐 www.breda-robotics.nl or scan de QR-Code

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