

V O L V O

METaverse; ARTIFICIAL INTELLIGENCE; AND WEB3.0 TECHNOLOGY

Volvo Group

Group Strategy - Joakim Jardenberg

2023-09-07

A man with a brown backpack is leaning over a child who is sitting on a bicycle. They are outdoors at sunset, with the sun low on the horizon, creating a warm, golden glow. The man is wearing a grey sweater and dark pants. The child is wearing a dark jacket and dark pants. The background is a blurred street scene with trees and buildings.

V O L V O

Driving prosperity

Every day, across the globe, our trucks, buses, engines, construction equipment, and financial services and solutions make modern life possible. We are driving the transition to sustainable and safe transport, mobility, and infrastructure solutions. That way, we will meet the growing demand for transportation, while making the journey to become a net-zero society. Together.

V O L V O



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What we do

Volvo Group offers trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity.

We develop and offer electrified and autonomous solutions for the benefit of customers, society and for the environment.



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Our brands

Volvo Group's brand portfolio consists of several distinct brands, targeting a variety of customers and segments.

V O L V O

V O L V O
P E N T A

ROKBAK



PREVOST

NOVABUS



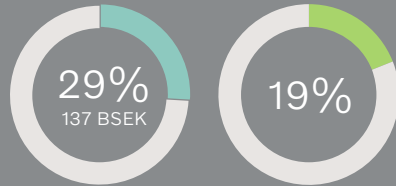
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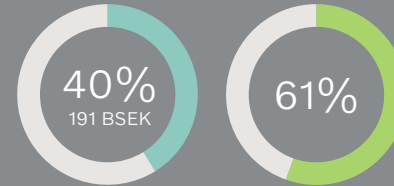


cellcentric

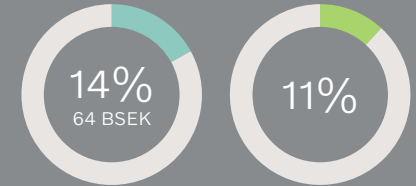
NORTH AMERICA



EUROPE

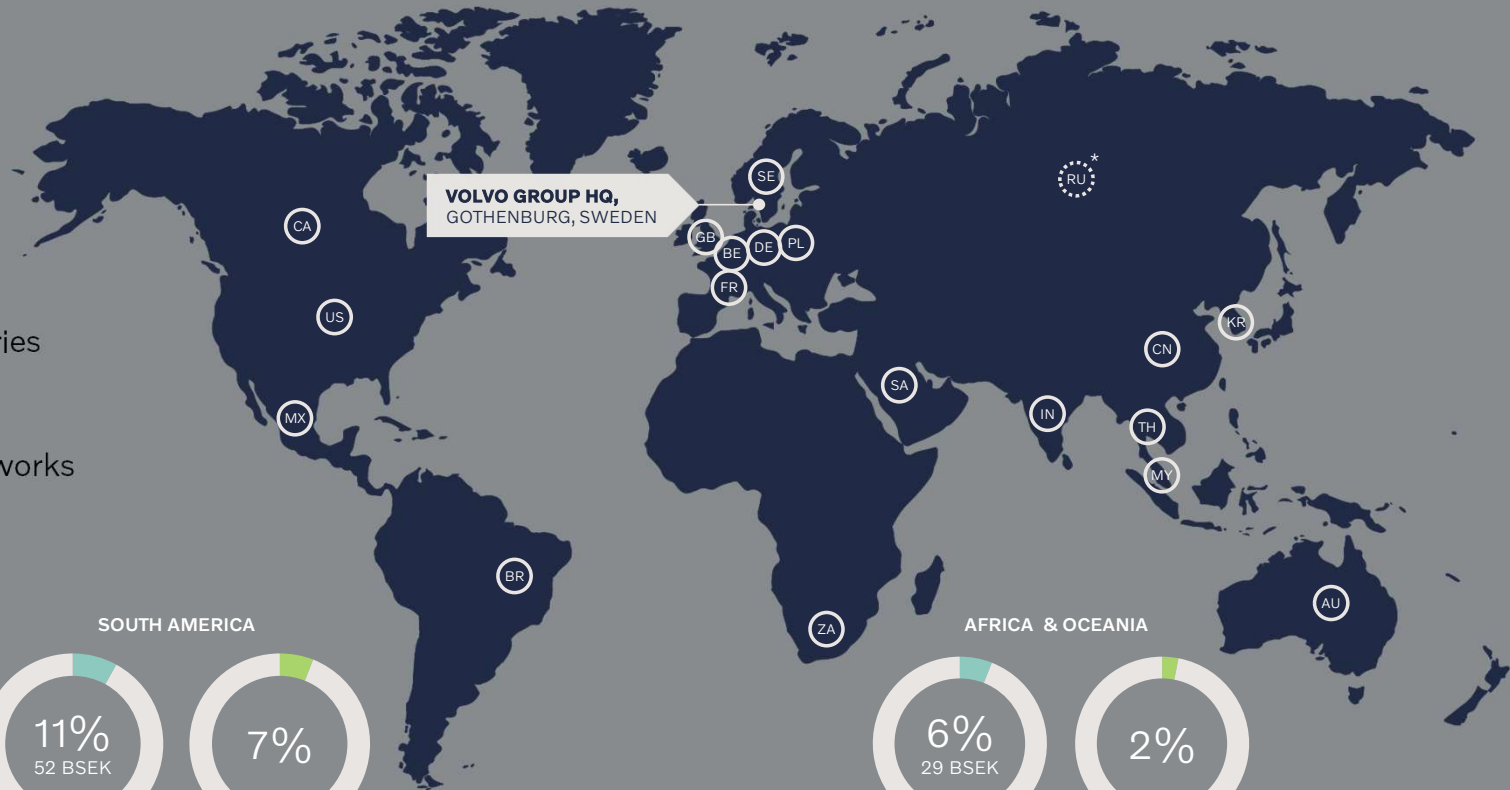


ASIA

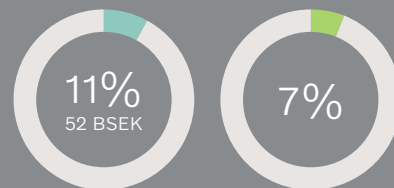


Global presence

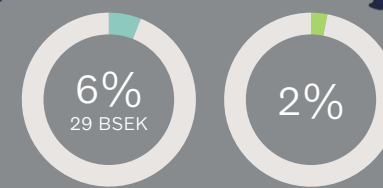
- 102,000 employees
- Production in 18 countries
- 190 markets
- Worldwide service networks and dealerships



SOUTH AMERICA



AFRICA & OCEANIA



Volvo Group

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Share of net sales by market (2022)

Share of total employees (2021)

Countries with Volvo Group production

2023-09-07

* Production activities in Russia have been suspended since February 2022.

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The screenshot shows the Google Bard chat interface. The browser address bar shows 'bard.google.com'. The chat header includes 'Bard Experiment' and various utility icons. On the left sidebar, there are sections for 'Pinned' and 'Recent' chats. The main chat area contains a response to a prompt about the largest companies in Sweden. The response includes a star icon, a paragraph about Volvo AB, a paragraph about Atlas Copco AB, a list of the top 5 largest companies in Sweden by market capitalization as of March 8, 2023, and a closing statement 'I hope this helps!'. At the bottom, there is a text input field with a plus icon on the left and a microphone icon on the right. A disclaimer at the very bottom states: 'Bard may display inaccurate or offensive information that doesn't represent Google's views. [Bard Privacy Notice](#)'.

View other drafts ▾ 🔊

✦ The largest company in Sweden based on its annual turnover is Volvo AB. It is a multinational manufacturing corporation headquartered in Gothenburg, Sweden. Volvo AB is best known for its trucks, buses, and construction equipment. However, it also manufactures marine and industrial engines, aerospace components, and financial services. In 2022, Volvo AB's global revenue was 473 billion Swedish kronor.

The most valuable company in Sweden is Atlas Copco AB. It is a multinational engineering group headquartered in Stockholm, Sweden. Atlas Copco is a leading manufacturer of compressed air equipment, construction and mining equipment, and industrial tools and systems. In 2022, Atlas Copco AB's market capitalization was \$62.86 billion.

Here are the top 5 largest companies in Sweden based on their market capitalization as of March 8, 2023:

1. Atlas Copco AB (ATCO-B.ST) - \$62.86 billion
2. Investor AB (INVE-B.ST) - \$58.86 billion
3. Volvo Group (VOLVF) - \$42.07 billion
4. Spotify Technology SA (SPOT) - \$29.97 billion
5. Assa Abloy AB (ASAZF) - \$24.28 billion

I hope this helps!

Gothenburg, Sweden
Based on your places (Work) • Update location

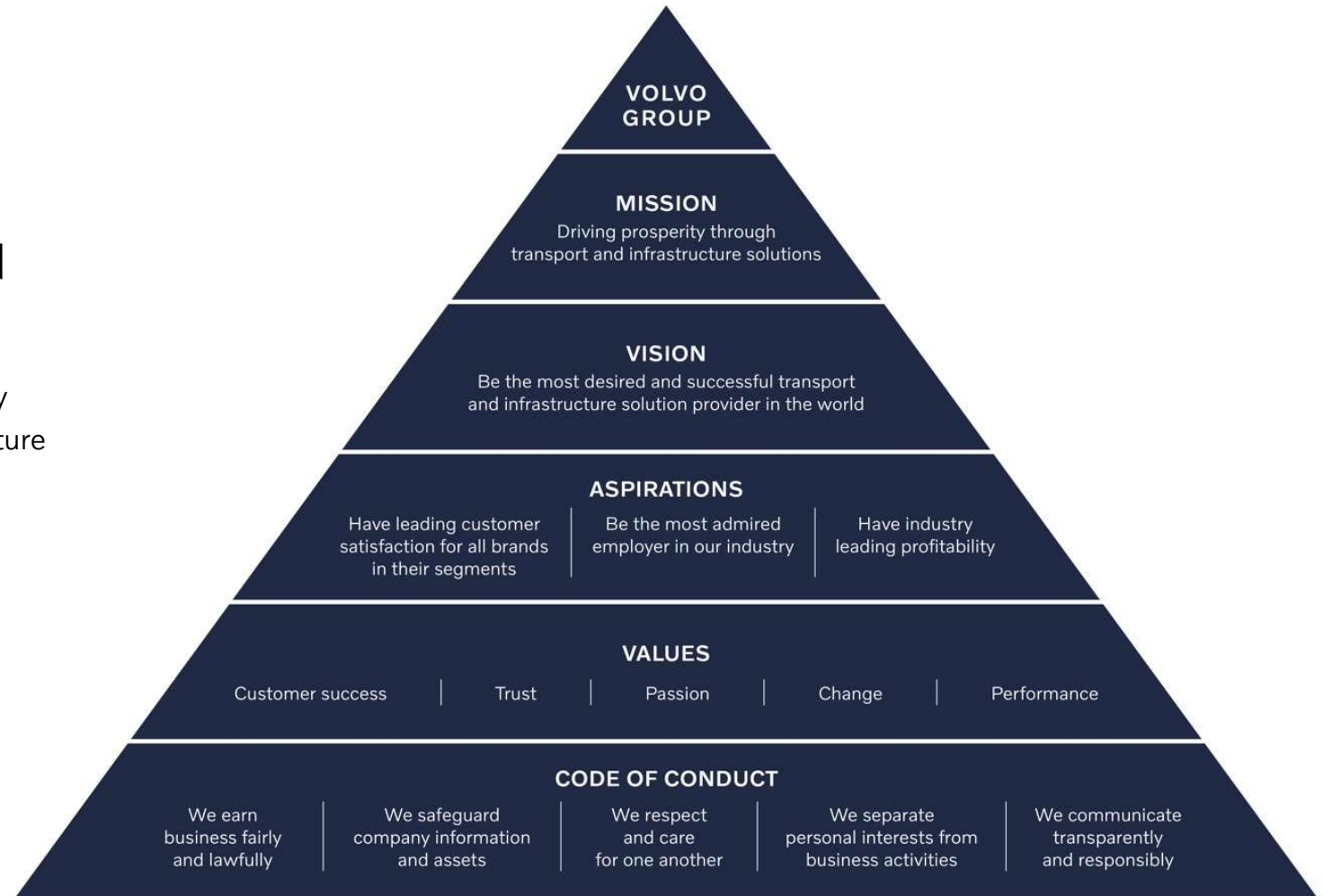
Enter a prompt here

Bard may display inaccurate or offensive information that doesn't represent Google's views. [Bard Privacy Notice](#)

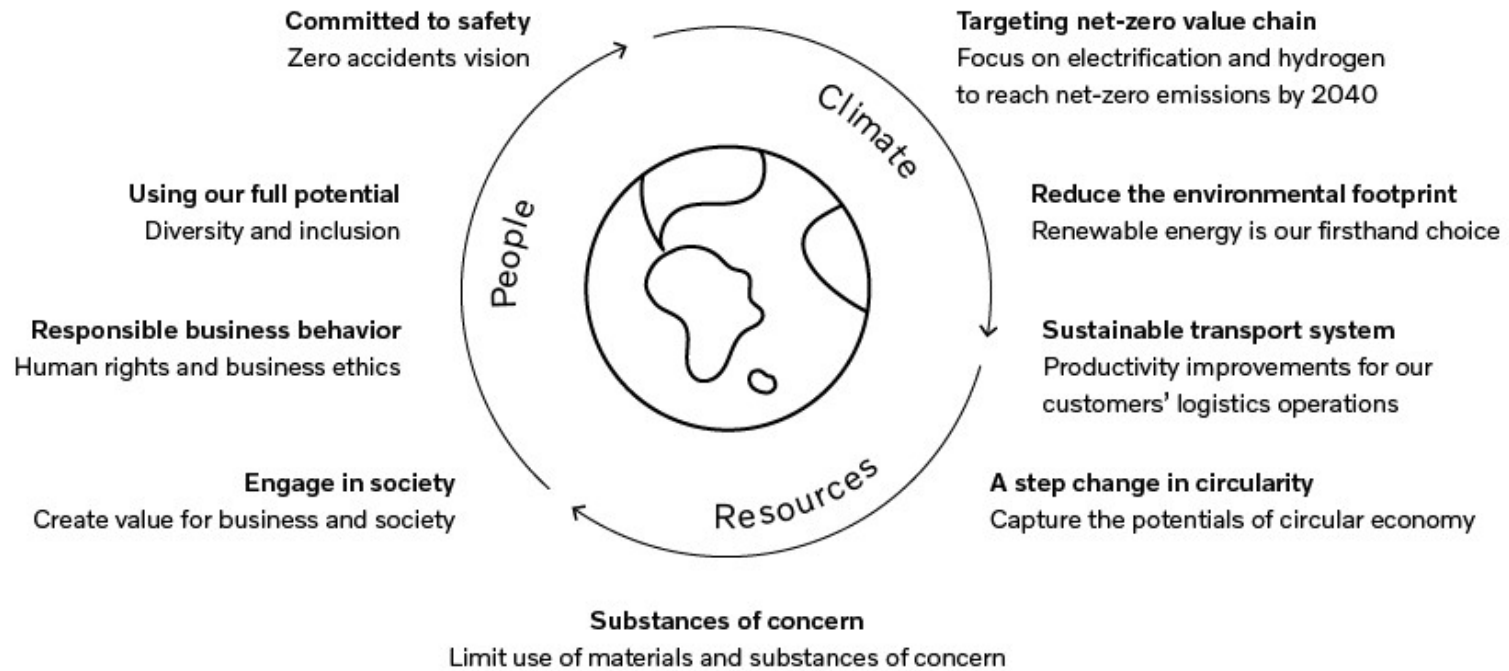
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Shaping the world we want to live in

Our mission is to drive prosperity through transport and infrastructure solutions.



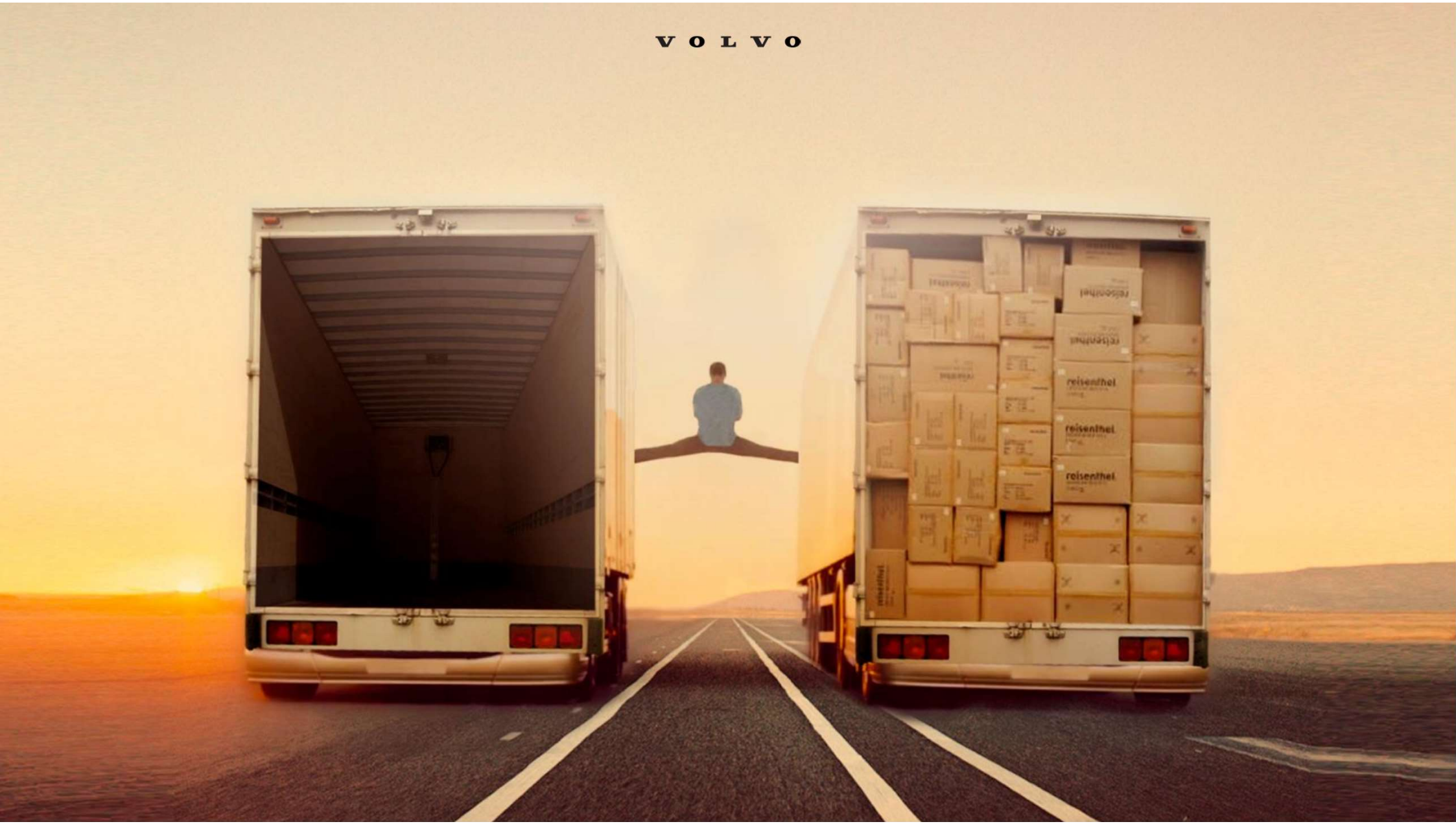
Our sustainability priorities



VOLVO



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Innovative since 1927

Snapshots of a history of innovation and sustainability focus.

Safety is put in focus in the very first year of Volvo's history.

1927

The world's first articulated hauler sees the light of day.

1966



The Lambda Sond is presented.

1976



1995

Volvo Trucks introduces driver airbags in heavy-duty trucks as a world first.



1959

The three-point safety belt is invented.



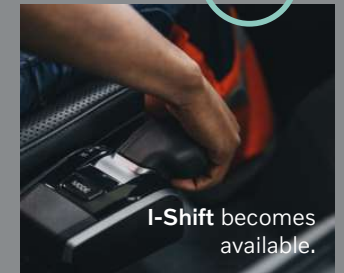
1990

The Volvo Environment Prize is inception.

1972

Environmental care becomes a core value for Volvo.

2001



I-Shift becomes available.



Volvo Penta's revolutionary **IPS system** is revealed.

2004

2007

The world's first **carbon neutral vehicle manufacturing plant** opens in Ghent.



2013

Launch of **Volvo Dynamic Steering**.



2018

The groundbreaking **Vera system** puts automation in focus.

2002



Infomax from Renault Trucks premieres.

V-Eagle – Volvo Group's LGBTQ+ network is established.

2005



2010

Volvo Group joins **WWF's Climate Savers** program.



2015

The ElectriCity project takes place in Gothenburg

Results from the **Electric Site** research project shows a 98% reduction in CO₂ emissions.

2018

2020

Volvo Group commits to the goals of the **Paris Agreement**.

2022



Volvo Group starts series production of **electric heavy-duty trucks** – completing the range.

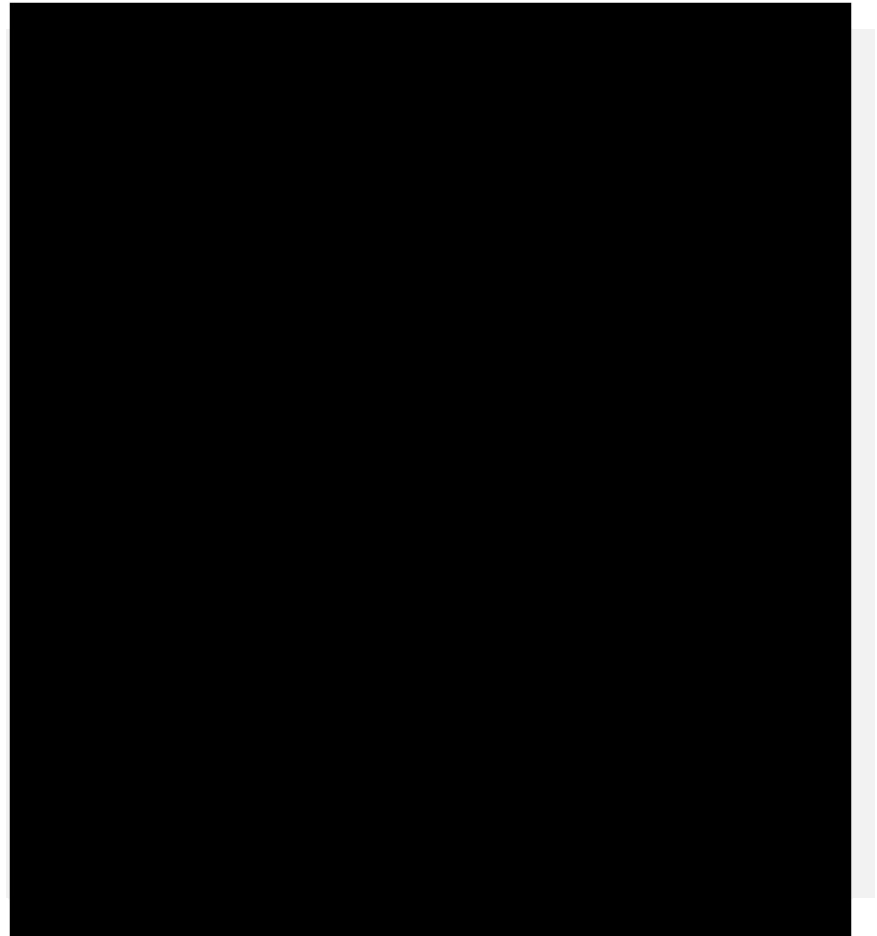
VOLVO

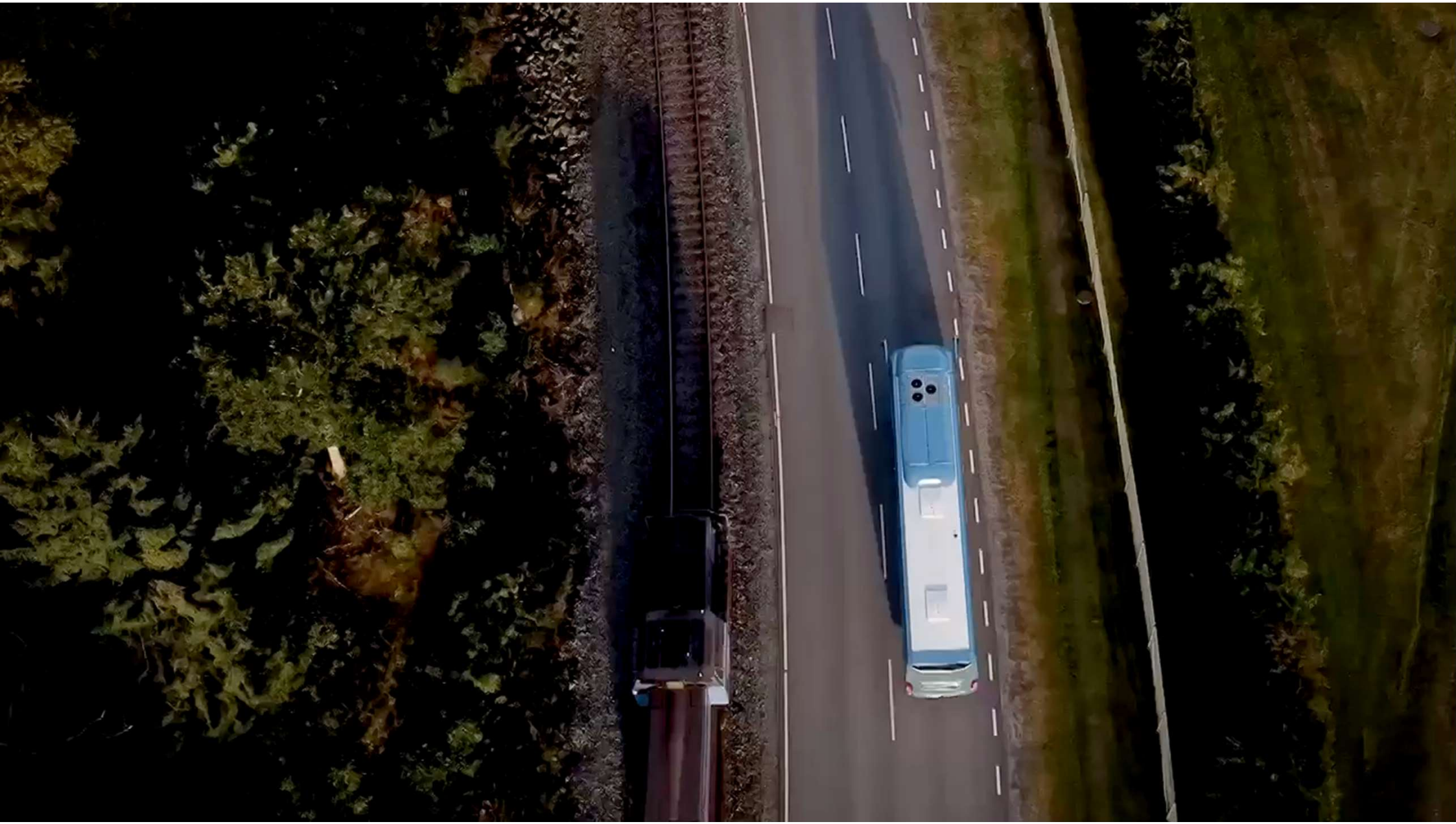




Different tracks, different scale

- This is a time for exploration, learning and large scale deployment. All at once.
- Vision Pro is an opportunity, but...
- Metaverse is also an opportunity, but...





Industry innovation on Oracle Cloud



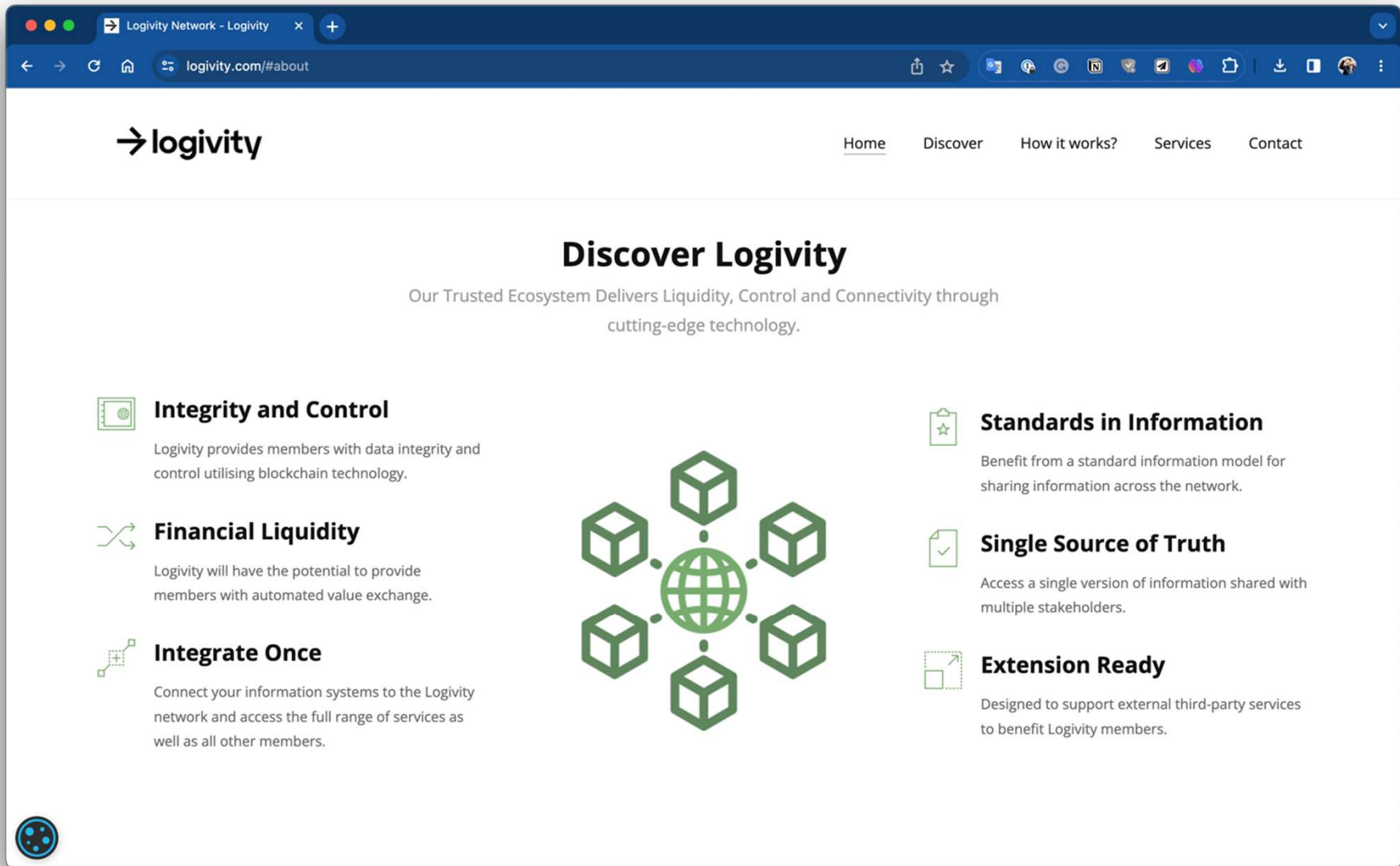
Uber

Uber and Oracle have created a seven-year strategic cloud partnership that will migrate some of Uber's most critical workloads to Oracle Cloud Infrastructure. "Uber is revolutionizing the way people, products, and services move across continents and through cities," says Uber CEO Dara Khosrowshahi. "To deliver on that promise for customers while building value for shareholders, we needed a cloud provider that will help us maximize innovation while reducing our overall infrastructure costs. Oracle provides an ideal combination of price, performance, flexibility, and security to help us deliver incredible customer service, build new products, and increase profitability."

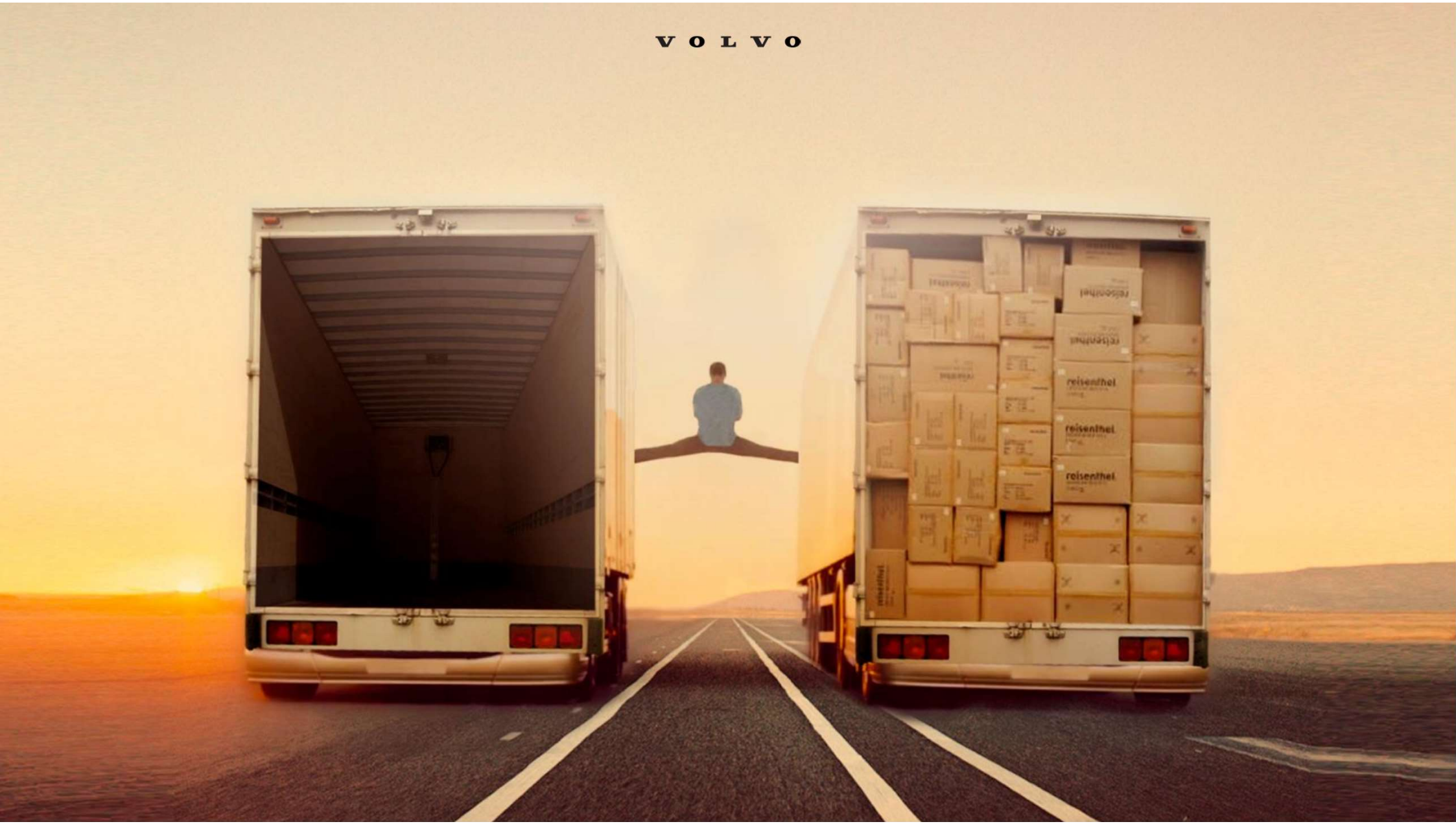


Volvo Group

Sweden's Volvo Group is a world-leading provider of transport and infrastructure solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing, and services. The company operates in 190 markets with production facilities in 18 countries. Volvo Group created Logivity, a new company that uses a custom-built blockchain platform built on Oracle Cloud Infrastructure to handle millions of transport and logistics transactions daily, boosting efficiency and bolstering Volvo's sustainability efforts.



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Long-term ambitions

100%

Safe

Fossil-free

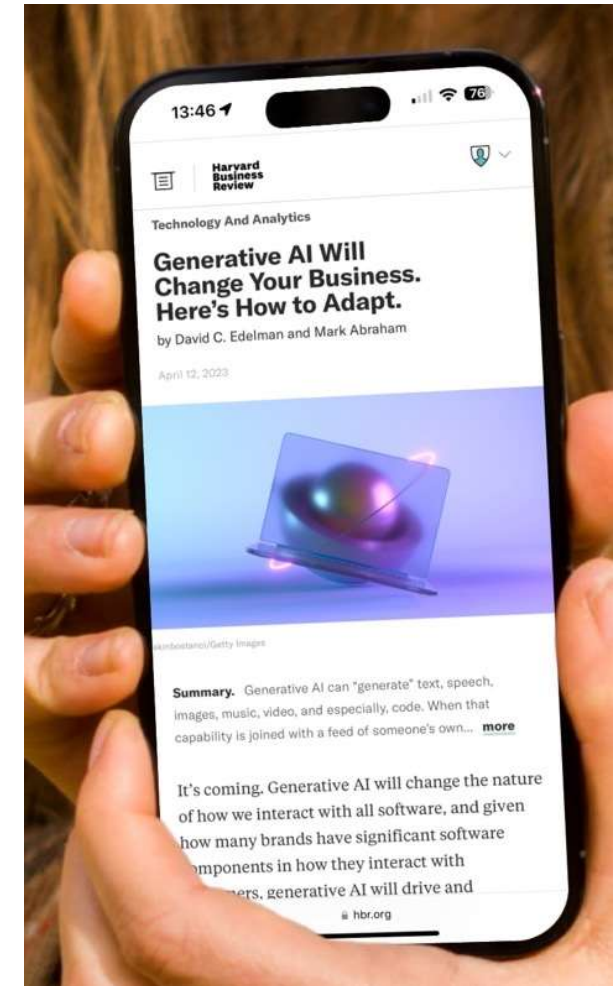
More productive

Do legendary shit



The massive and sudden impact of AI

- 1997, May 11: Deep Blue defeats Garry Kasparov
 - ... a long AI winter keeps the topic cold for 25 years
- 2022, Nov 30: ChatGPT is released to the public
 - Three weeks, later Google calls a "code red".
 - ChatGPT becomes the fastest-growing consumer service ever, reaching 100M users in January 2023.
- Spring 2023 –analysts agree (on the trend)
 - Goldman Sachs: "Generative AI could raise global GDP by 7%"
 - PwC: "\$15.7 trillion game changer"
 - McKinsey: "\$2.6 trillion to \$4.4 trillion" – from 63 use cases
 - Microsoft invested \$10B in OpenAI and has seen its market cap surge 45% in less than a year.



We are already excellent at AI.

Volvo Group has world-leading AI competence, and our solutions are best in class.

The screenshot shows a Jupyter Notebook interface with the following content:

1.17% of datapoints were cleaned

```
In [16]: stops.head()
```

```
Out[16]:
```

	time	latitude	longitude	delta_time_m	delta_fuel_l	delta_distance_km
0	2021-04-14 13:40:58	57.725704	11.978215	31.1	0.00	0.0
1	2021-04-14 15:25:54	57.873034	11.971776	33.2	0.01	0.0
2	2021-04-14 22:12:45	57.873727	11.974545	602.0	0.00	0.0
3	2021-04-15 08:35:39	57.872481	11.973715	48.2	0.02	0.0
4	2021-04-15 13:46:26	57.871234	11.974684	117.1	0.12	0.0

```
In [17]: night_stops = stops.loc[stops.delta_time_m > 7*60]
```

```
In [18]: night_stops.head()
```

```
Out[18]:
```

	time	latitude	longitude	delta_time_m	delta_fuel_l	delta_distance_km
2	2021-04-14 22:12:45	57.873727	11.974545	602.0	0.00	0.0
80	2021-04-15 21:22:21	57.726258	11.976207	483.9	0.00	0.0
81	2021-04-16 20:01:39	57.727089	11.975238	506.7	0.00	0.0
82	2021-04-17 20:33:22	57.727919	11.972884	501.2	0.00	0.0
83	2021-04-18 19:33:59	57.727227	11.969145	476.4	0.00	0.0

The video player below the notebook shows a progress bar at 26:59 / 1:00:22 and a title: "Live Demo: can customer Freight-X electrify 10 trucks?".

Video title: **How can AI shape future transport solutions? Webinar with Volvo Group's Data Scientists**

Channel: **Volvo Group Videos** (10.3K subscribers)

Engagement: 36 likes, 1 comment, Share button.

Related video: **First Movers Coalition in Davos 2023: Accelerating**

But when new tech hits...

A way to make sure the right people in Volvo Group do the right stuff for Volvo Group



Integrated AI

AWS/Azure/Github etc

– programmatic access to AI

Powerful, but complex, access to the underlying models.

Owned by: TDBA:s, also as small scale PoC /MVP



Desktop AI

M365 copilot /business chat

Totally integrated in M365, it will be our everyday use of AI.

Owned by: Group D&IT and legal /governance /compliance communities



Your Copilot for work

| A whole new way to work

0/500



What issu

Copilot 12:20 PM

The bio packaging mat
untested. ¹

- Explanation: It reflect and lack of data.
- Suggestion: Beth co suppliers to get mor

The renewable energy
longest lead times.

- Explanation: It was a suggested a next ste specific solution. ²
- Suggestion: Serena c different options for supply chain efficien

Copy

2 references

The screenshot shows a web browser displaying a Microsoft 365 blog post. The browser's address bar shows the URL: microsoft.com/en-us/microsoft-365/blog/2023/05/09/introducing-the-microsoft-365-copilot-early.... The Microsoft logo and navigation menu are visible at the top. The blog post features a large image of a Microsoft Outlook interface with a 'Coaching by Copilot' window. This window displays analysis of an email, including an overall sentiment of 'Overall Room for improvement', a tone of 'Tone', and a clarity suggestion: 'To show more appreciation: replace "I'm reaching out to update you on the Fabrikam project" with "I hope this email finds you well and that you are proud of the amazing work you have done on the Fabrikam project."'. The article title is 'Introducing the Microsoft 365 Copilot Early Access Program and new capabilities in Copilot', with a byline for Colette Stallbaumer, General Manager, Microsoft 365 and Future of Work. The date is May 9, 2023. Social media sharing icons for Facebook, Twitter, and LinkedIn are present. A category bar includes 'Loop', 'Microsoft Viva', 'OneNote', 'Outlook', 'PowerPoint', 'Whiteboard', 'AI', and 'Work Trend Index'. The introductory text reads: 'In March, we [introduced](#) Microsoft 365 Copilot—your copilot for work. Today, we're bringing Microsoft 365 Copilot to more customers with our Microsoft 365 Copilot Early Access Program, and we're introducing new Copilot capabilities to unleash creativity, unlock productivity, and unlevel skills.'

Yes, AI can improve productivity.

... as shown by hard numbers from Github studies.

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We recruited **95** developers, and split them randomly into two groups.

We gave them the task of writing a web server in JavaScript

45 Used
GitHub Copilot

78%
finished

1 hour, 11 minutes
average to complete the task



50 Did not use
GitHub Copilot

70%
finished

2 hours, 41 minutes
average to complete the task



Results are statistically significant ($P=0.0017$) and the 95% confidence interval is [21%, 89%]

V O L V O

We have some 45.000 office workers.

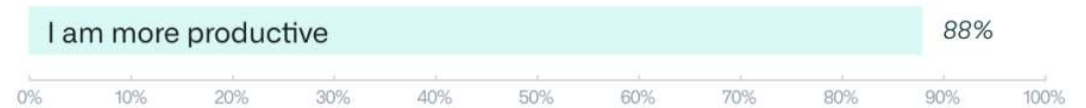
What if all of them become 10X more capable, efficient or effective – what happens then? What if the increase is 50X? Or even only 2X?

And that's just the ONE of many challenges.

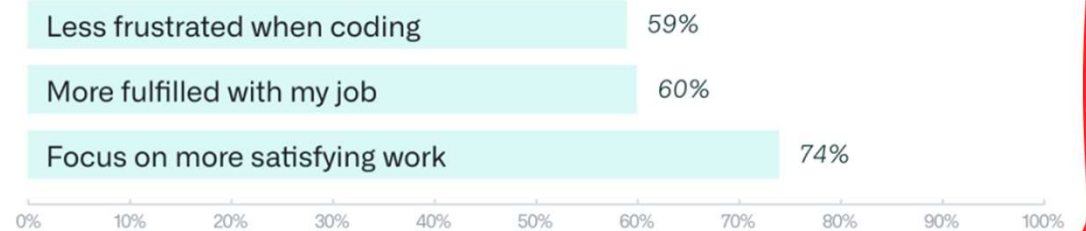


When using GitHub Copilot...

Perceived Productivity



Satisfaction and Well-being*



Efficiency and Flow*



Anyway. Is "productivity" what matters?

I would argue there is so much more to this.

But when new tech hits...

A way to make sure the right people in Volvo Group do the right stuff for Volvo Group



Integrated AI

AWS/Azure/Github etc
– programmatic access to AI

Powerful, but complex, access to the underlying models.

Owned by: TDBA:s, also as small scale PoC /MVP



Desktop AI

M365 copilot /business chat

Totally integrated in M365, it will be our everyday use of AI.

Owned by: Group D&IT and legal /governance /compliance communities



Non-tech initiatives

Business value perspective

Partner enabled AI with potential to change or even disrupt business and/or operations.
(pref cross-functional)

Owned by: all TDBA:s



Public tools

ChatGPT, Midjourney, x, y...

Individual and ad hoc-group discovery, sharing and learning.

Owned by: all employees, on a voluntary basis – but encouraged and enabled by Volvo

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OK. Time for some myths.



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3. Bias is a huge problem.

Yes. And no.

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Midjourney v.5 –an example.

photograph full body tough modern forest worker serious, stoic, yellow electric forest harvester, cinematic 4k, detailed, shot on kodak, bokeh, hbo dark moody epic















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a stoic teacher from
Volvo Group
University in the
middle of a blurred
crowd, NYC, bustling
city street, in a style
of a movie still, by
Wes Anderson, fog



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Concern

Influence

Control

Concern

What you can actually do

Control

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We, everyone of us, need to talk about this.

- How do we understand AI, in a mindful and responsible way? And without being too slow.
- How do we mitigate the risks without paying the cost of doing nothing (or just too little)
- How can we build on the strengths we have, without being weighed down by too much tradition?
- How can we balance perform with transform in an ongoing and exponential ~~technology~~ societal shift?
- Big change happens when we do many small things. Yes? No?

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Together

WE SHAPE THE WORLD

we want to live in

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V O L V O