

UK Conference

AXA Framlington Global Technology

AXA World Funds Metaverse

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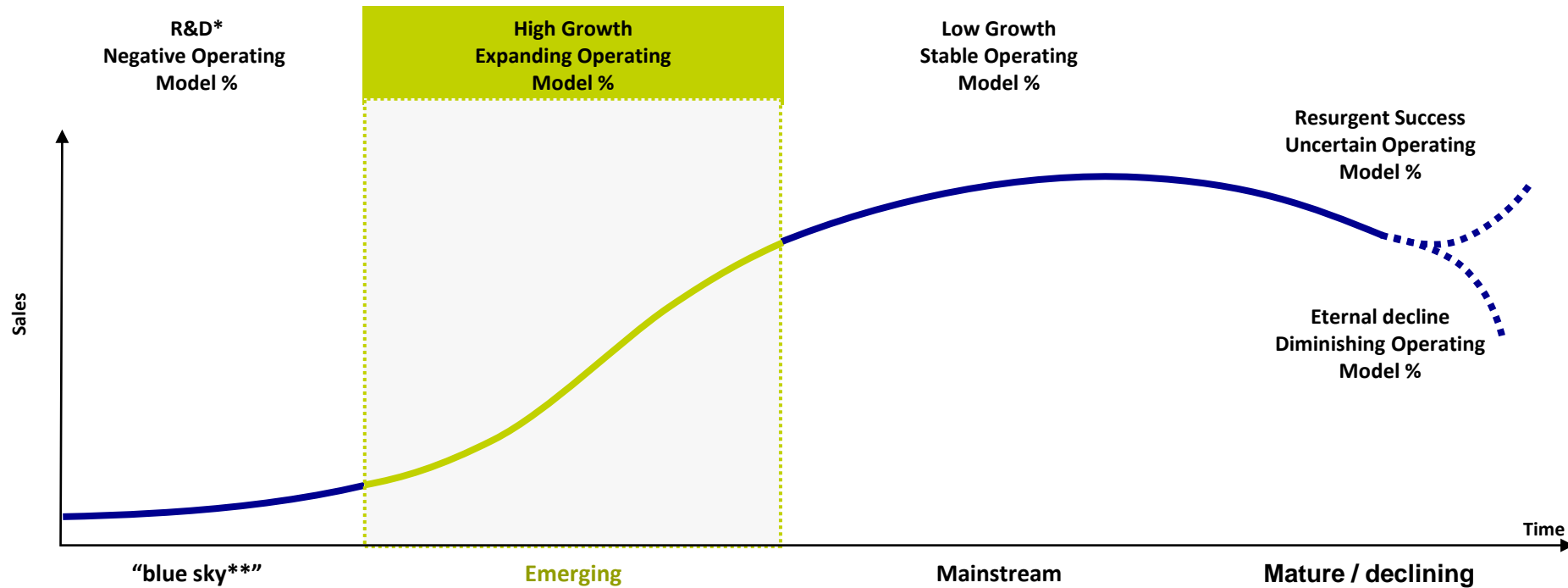
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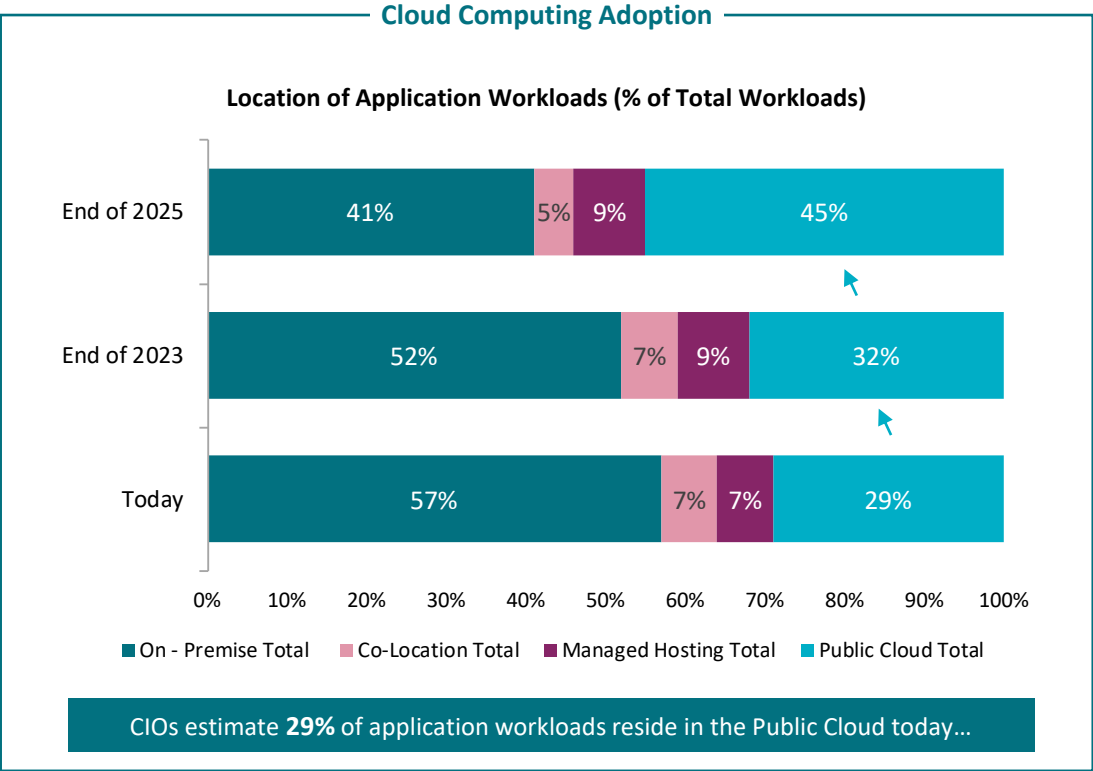
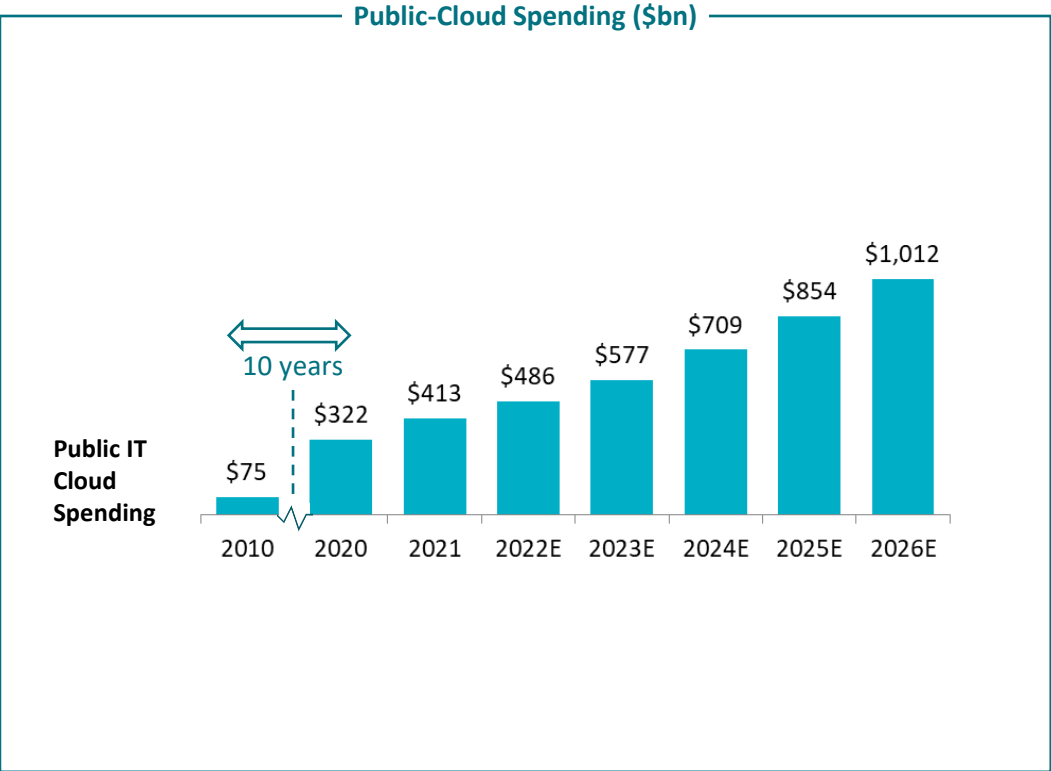
Investment philosophy

It takes new technological developments, in concept stage, far longer to be ready for mass distribution than initially expected. This is one of the reasons why new technology seems to disappoint in the early stages



When technology is ready to be commercially deployed, it tends to address a far larger market than initially anticipated

Example of a commercially successful technology – Cloud Computing



Source: AXA IM. LH chart: Source: Gartner, Forecast: Public Cloud Services, Worldwide, 2020-2026, 4Q22 Update - published 20/12/2022. Forecast: Public Cloud Services, Worldwide, 2010-2016, 2Q12 Update – 27/06/12. RH chart: AlphaWise, Morgan Stanley Research, n=100 (US and EU data). Q2 2023 CIO Survey.

Themes Covered

Artificial Intelligence



Cybersecurity



Metaverse



Electrification and Digitalisation of the Auto Industry



Source: AXA IM for illustrative purposes only. Top LH: Guillaume/Getty Images. Bottom LH: XH4D / Getty Images/iStockphotoBottom. Top RH: Getty Images. Bottom RH: FIA International Automobile Federation - Belgium

What is artificial intelligence?

Artificial Intelligence



Use data sets to find underlying relationships



Mimic the decision making and problem-solving capabilities of the human mind.

Generative Artificial Intelligence



Uses deep-learning models



Create new text, images and other media/data types

Artificial Intelligence is being democratised....

We see two key drivers of the pace of change enabling the democratisation of AI

Natural Language Processing

The **technology** that enables machines to understand **human language** and produce **human-like dialogue and text**.

Cloud Computing

Public cloud operators offering services to **build, manage, deploy and access AI** applications in the cloud

Source: AXA IM for illustrative purposes only

Artificial Intelligence is being democratised....

Total Addressable Market

McKinsey & Company estimate **Generative AI** could add the equivalent of **\$2.6tn** to **\$4.4tn** annually to **productivity**.

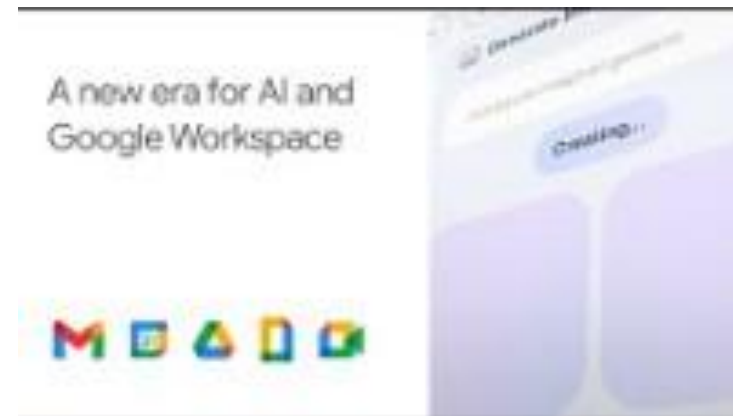
Google expects AI to **'touch every sector, every industry and every business function'**

Use Cases

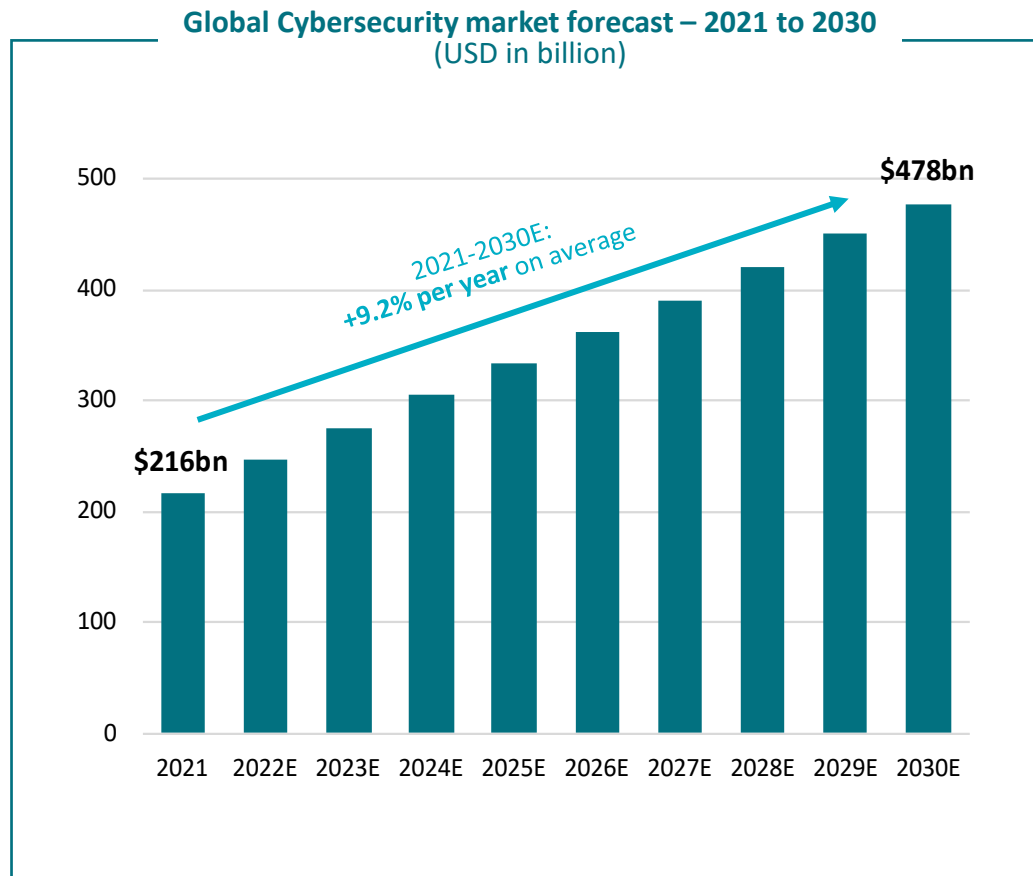
Adobe Firefly



Google Duet AI



Cybersecurity



cyber **Security**

The **cost of cybercrime** will reach **\$10.5 trillion** a year in 2025 (1)

There were on average **270 attacks per company** in 2021, an **increase of 31%** compared with 2020 (2)

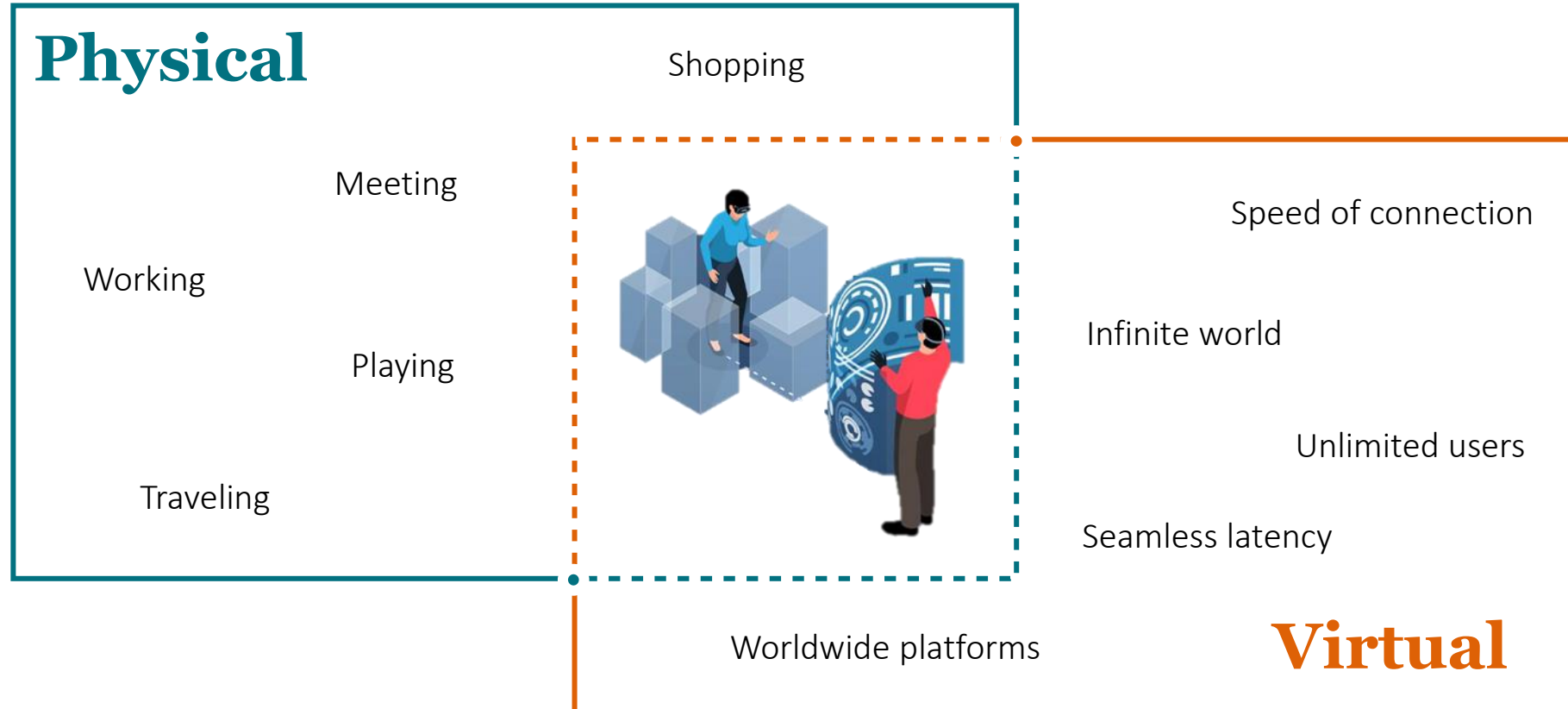
The average total cost of a data breach **increased by nearly 10%** year over year from **\$3.86 million** in 2020 to **\$4.24 million** in 2021 (3)

Source: LH Chart: Statista, Size of cyber security market worldwide from 2021 to 2030, November 2022. CYBER SECURITY: 1) McKinsey - Cybersecurity trends: Looking over the horizon, March 2022 ; (2) State of Cybersecurity Report 2021 | 4th Annual Report | Accenture ; (3) Cost of a Data Breach Report 2021 (dataendure.com).

The Metaverse

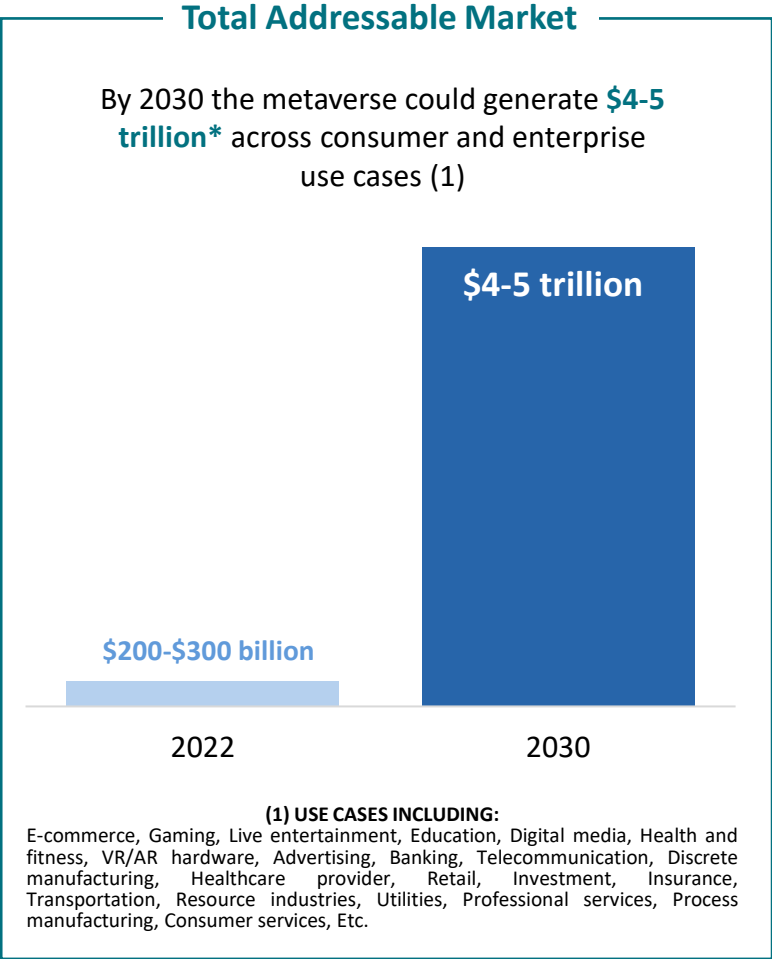
The gradual convergence of the digital and physical world

META [beyond] – **VERSE** [universe]



Source: AXA IM. For illustrative purposes only.

Metaverse – the convergence of the physical and digital worlds



Use Cases

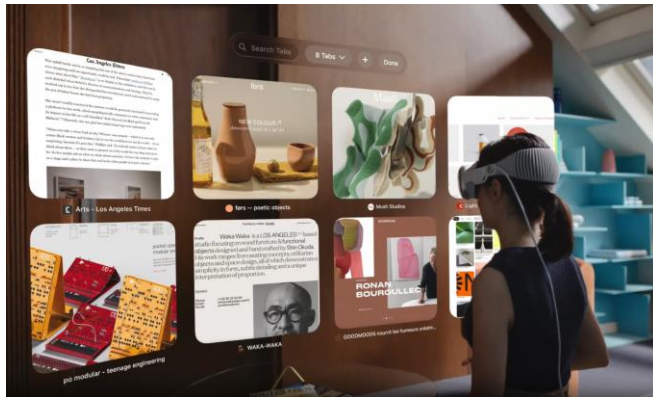


Source: AXA IM for illustrative purposes only. The potential growth of the sector does not guarantee future results.*Source: McKinsey & Company, “Value creation in the metaverse”, June 2022. LH chart: McKinsey analysis, June 2022.

The Metaverse journey has just started

We see 2 key drivers accelerating the Metaverse adoption

Apple Vision Pro



Generative AI

Find the bug with this code:

```
...  
for (var i = 0; i < 5; i++) {  
  setTimeout(() => console.log(i), 1000)  
}  
...
```

The code contains a bug that will cause it to always print the number 5 to the console, rather than the expected sequence of numbers from 0 to 4. This is because the `setTimeout` function creates a closure that captures the value of the `i` variable, but the `i` variable is changed before the callback function is executed.

To fix this bug, the code can be modified to create a new variable in the loop that is passed to the `setTimeout` callback function, rather than using the loop variable directly. This will ensure that each callback function captures the correct value of the loop variable, and the expected output will be produced. Here is an example of how the code could be fixed:

```
Copy code  
for (var i = 0; i < 5; i++) {  
  // Create a new variable and pass its value to setTimeout  
  const value = i;  
  setTimeout(() => console.log(value), 1000)  
}
```

This code will print the numbers 0 to 4 to the console, as expected. Alternatively, the `let` keyword can be used in place of `var` to declare the loop variable, which will automatically create a new variable for each iteration of the loop and avoid the need to create a new variable manually. This is a common pattern for avoiding closure-related bugs in JavaScript.

Source: AXA IM for illustrative purpose only.

4 key sub themes exposed to the long term Metaverse opportunity

Whilst the overall concept may seem **futuristic**, the **investment opportunity set is tangible** with **real companies driving the path** toward the Metaverse journey

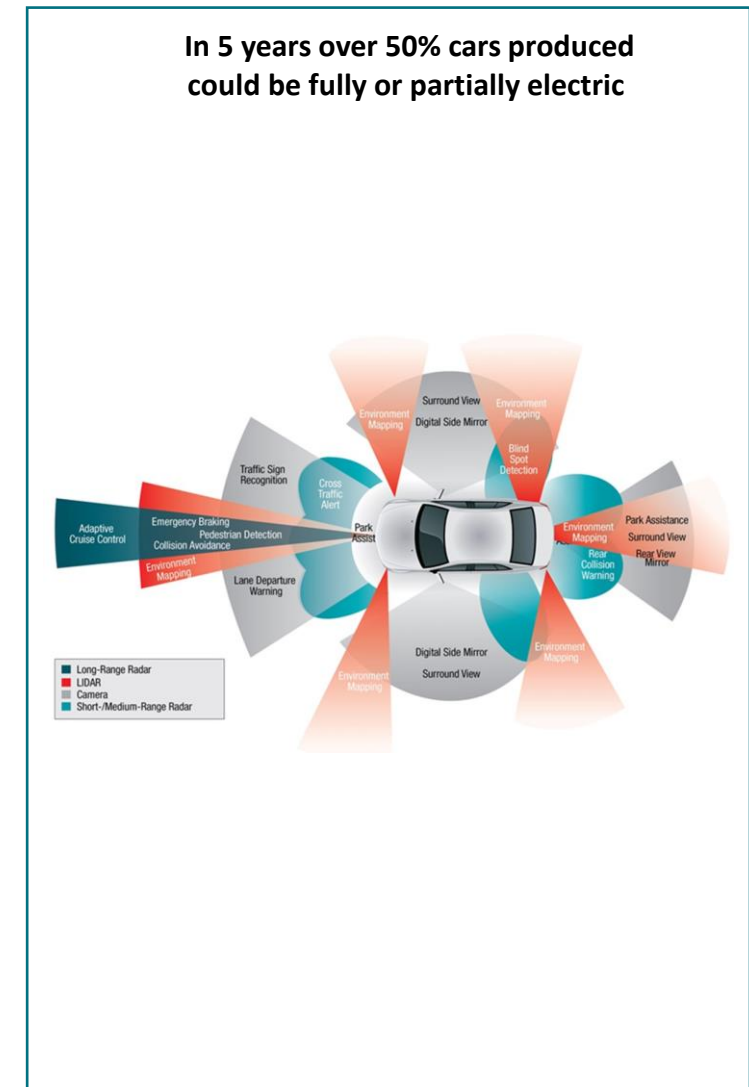
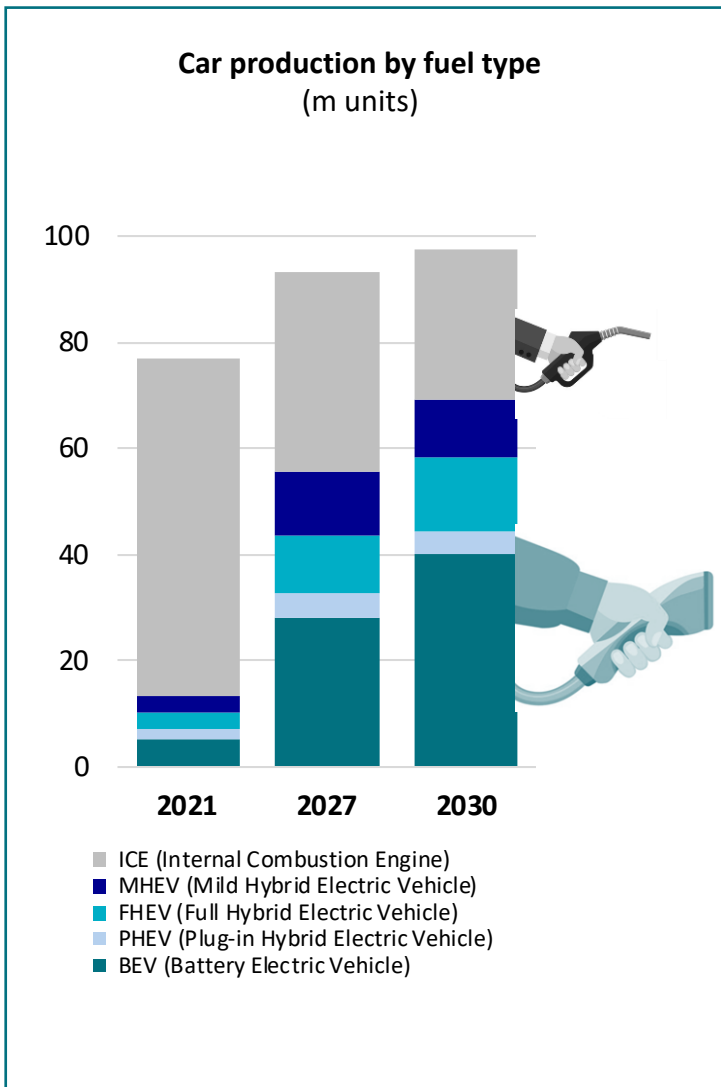


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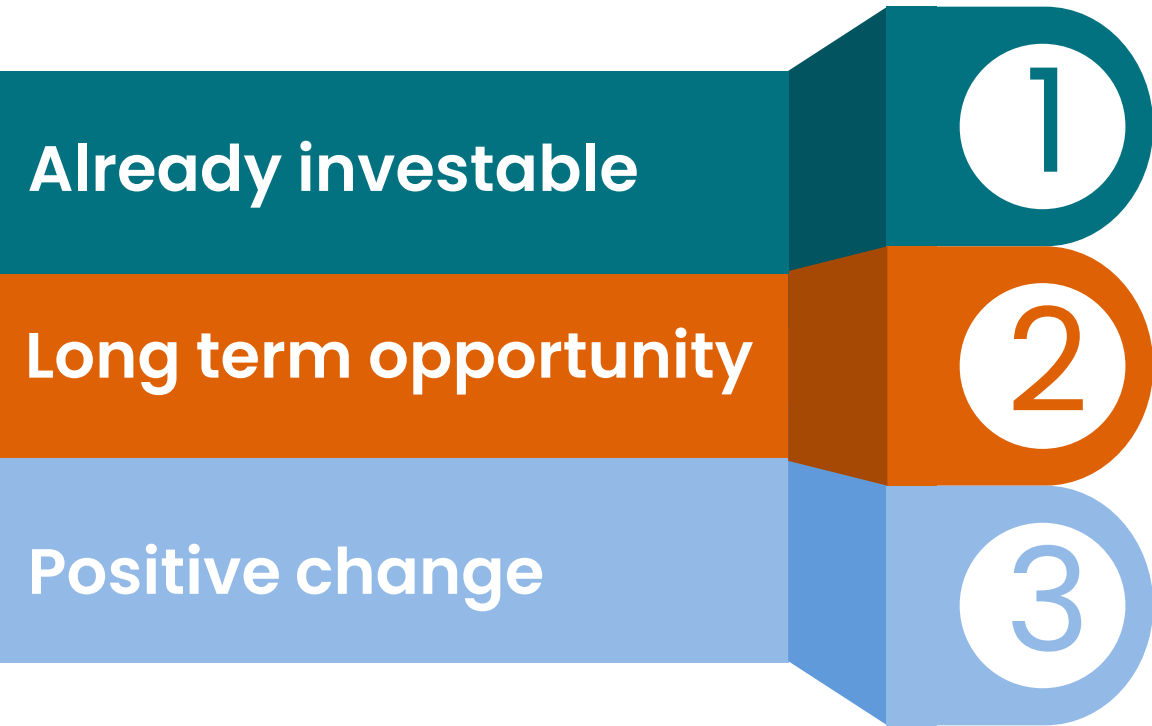
Electrification and Digitalisation of the Auto industry

“There’s going to be **more change in the next 5 to 10 years** than there’s been in the last 50*”

Mary Barra
Chairman & CEO, General Motors



Summary



Artificial Intelligence



Cybersecurity



Metaverse



Electrification and Digitalisation of the Auto



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