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TMT Highlights
2024

The Czech Republic Cut

Deloitte.

Dear All,

Welcome to TMT Highlights for 2024! Here, we explore the future, giving you detailed insights and forecasts in Technology, Media, and Telecommunication (TMT) sectors – TMT predictions for 2024, brand new Deloitte Technology trends and outcomes from our Digital Consumer Trends performed in the Czech Republic.

Digital consumer trends is the survey made in the Czech Republic in Q4/2023, TMT predictions and Technology Trends are global research done by Deloitte TMT and technology experts.

We present you key topics relevant for devices, connectivity, Audio & Video, AI and cyber & trust.

Let's embark on this exciting journey to uncover emerging trends and innovative ideas that will shape tomorrow and how customers see the future of TMT business.

Stay ahead with us at TMT Highlights report for 2024!

Yours sincerely,

Jan Kudlák

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Chapters

Devices

Usage rates of digital devices vary considerably

Claimed usage of devices in the last day varies from 98% for smartphones to almost 0% for VR headsets. Smartphones are multi-functional and portable and are often used for several hours per day. Other devices, such as games consoles and VR headsets, are used predominantly for a single function and in a single location. Usage may guide to the likelihood to upgrade.

Daily usage of digital devices
When was the last time you used this device? [In the last day]
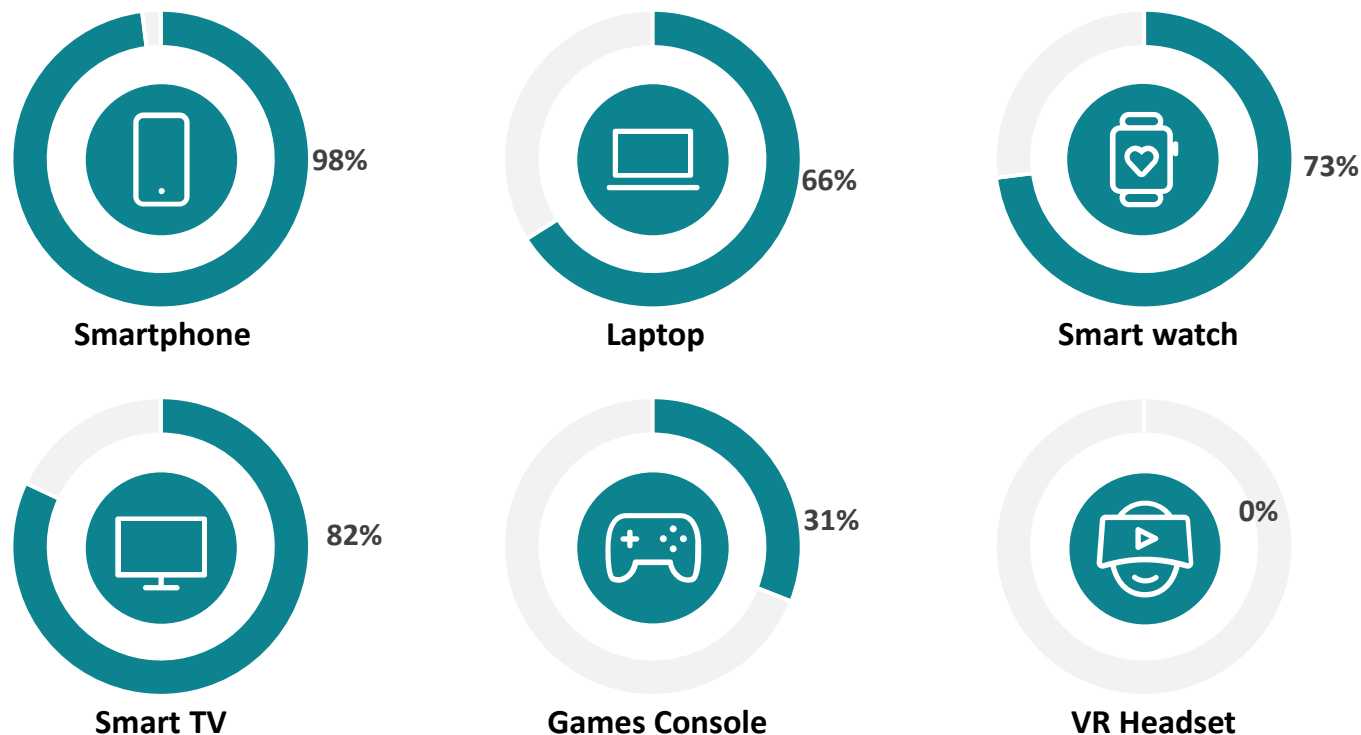
98%
Smartphone

66%
Laptop

73%
Smart watch

82%
Smart TV

31%
Games Console

0%
VR Headset

Consumers (continue to) demand great battery life and storage from their future smartphone. Sustainability credentials such as carbon footprint or use of recycled materials are the least important

Consumers still demand the best screen, camera and battery, ahead of most other specifications.

When ranked, eco-friendly specifications, such as carbon footprint and use of recycled materials, always tend to benchmark low. As consumers buy a smartphone infrequently (they tend to keep one for longer than three years), and use it hundreds of times per day, it is a crucial decision to get right.

Feature preferences for next smartphone
Aside from price, which are most important when deciding your next smartphone?

Feature	%
Battery	35%
Ease of use	16%
Camera	24%
Storage	33%
Screen size	19%
Brand	17%
Fast charging	15%
Lifespan (expected)	19%
Screen quality	14%
Durability	9%
Processor speed	18%
Privacy and security	10%
5G Capable	9%
Software updates (security, OS, etc.)	8%
Support for devices you already own	5%
Water resistance	7%
Ease of repair	2%
Carbon footprint	2%
Recycled materials (e.g. aluminium)	1%

Circular economy and digital devices: it's complex

While consumers have good intentions when it comes to devices, environmental concern rarely determines their purchase choice. For some devices, it is hard to find information on environmental differentiators such as carbon footprint.

Attitudes to sustainability of digital devices
Do you agree or disagree with the following statements?

One the one hand…

However, just…

79%

do not tend to throw out broken laptops, phones or tablets with household waste

64%

try to **repair devices** if they break, before replacing

8%

have regular conversations with family and friends about carbon footprint

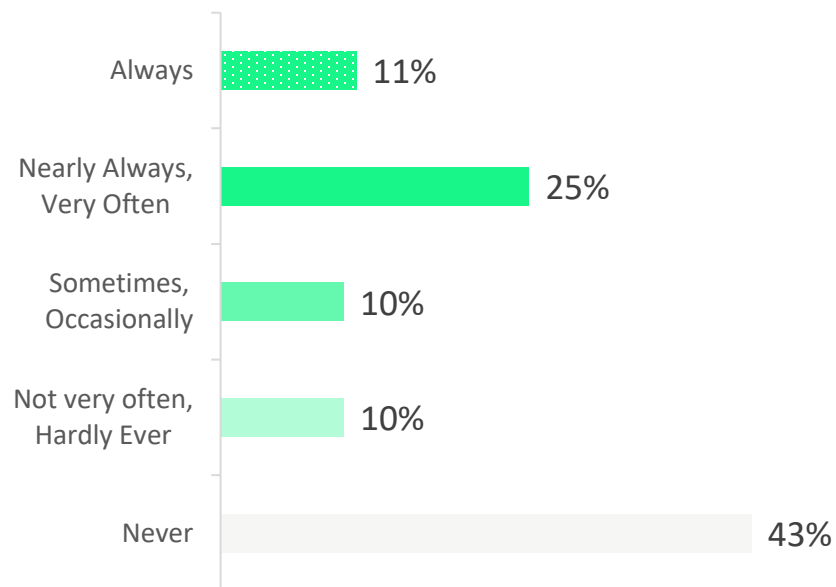# 9%

claim to know the scale of their carbon footprint

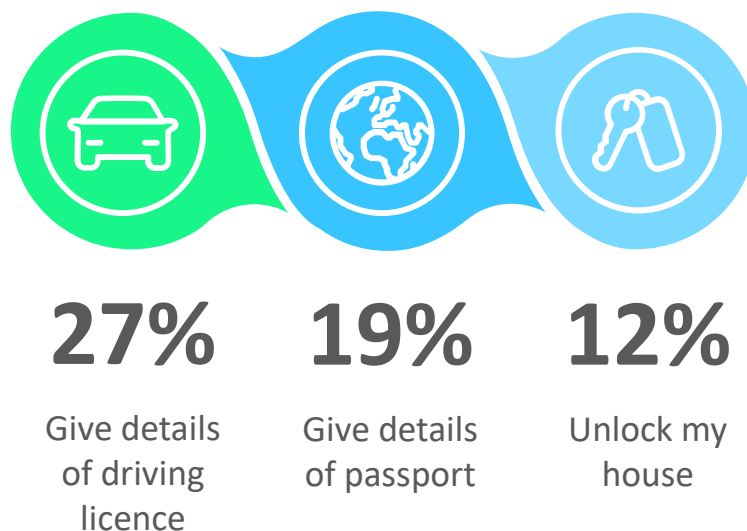# Further utility yet to be yielded from smartphones

There is still ample scope for additional utility from smartphones. More than one in four, for example, would like a digital driving licence on their smartphone. Younger groups (between 18-24) who are comfortable with technology are most open to this; almost half (48%) of them would like to use their smartphone as a driving licence, and 29% as a passport. These numbers contrast with 27% and 19% respectively across all age groups.

Additional utility from smartphones

When available, how often do you use a smartphone or smartwatch to pay for things in person*?

Always	11%
Nearly Always, Very Often	25%
Sometimes, Occasionally	10%
Not very often, Hardly Ever	10%
Never	43%

Which would you like to be able to use a smartphone for?

27%
Give details of driving licence

19%
Give details of passport

12%
Unlock my house

Smartphone authentication: The killer app that augments the smartphone's utility

The year 2024 marks a successful period for smartphones despite an anticipated sales forecast shortfall. The device's significance is reinforced by its growing five-billion user ecosystem, particularly with the escalating importance of authentication becoming an integral part of its value.

Smartphones are predicted to play a crucial role in authenticating various actions, spanning website access, payments, vehicle unlocking, building entry, and identity verification, with number of uses expected to skyrocket into the trillions. This authentication extends to managing fraudulent access to online accounts, primarily through two-factor authentication (TFA) and passkeys, which are envisaged as a replacement for passwords in the medium term. Full article available [here](#).

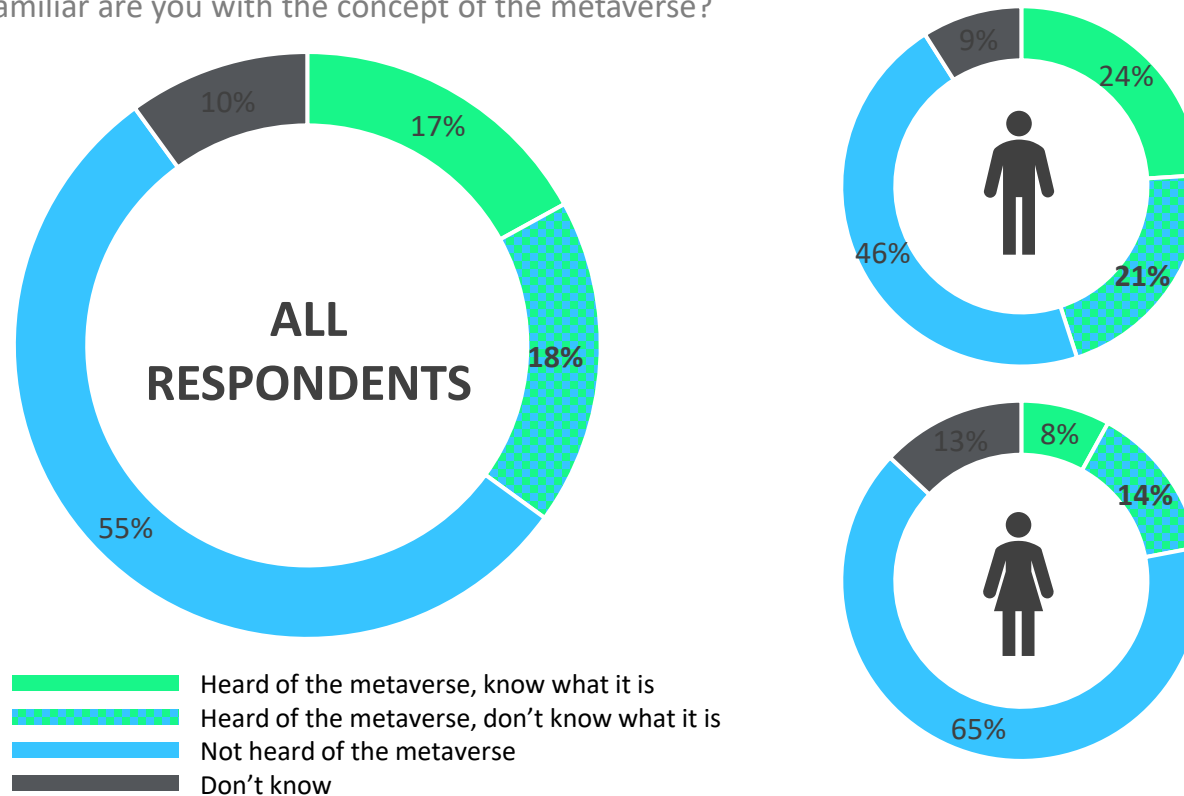| Application	Current smartphone usage for authentication	Total addressable global market
Access to online accounts (email, social media, e-commerce work applications)	1.3 trillion passcodes sent to smartphones in 2023	4.3 billion email users, 2.6 billion e-commerce customers in 2023
Access and use of cars	The majority of the 60 million cars sold annually in 2024 offer smartphone authentication as an alternative to physical keys	1.5 billion cars in use
Access to planes	Primarily based on mobile boarding passes; default for one major airline	There were 4.5 billion airline passengers in 2019 (pre-Covid)
Access to houses	Primarily based on physical keys	There were about 198 million households in the EU in 2022 and 127 million households in the US in 2020
Airline travel	Primarily based on physical documentation	4.5 billion airline passengers in 2019
Office entry	Primarily based on physical passes	> 1 billion office workers
Access to public transport	14 countries globally supporting phone or watch-based entry	239 billion journeys per year in 39 countries alone
In-store payments	84% of adults use mobile phone wallets in China; in the United States, around 6% of in-store spend was via mobile wallet in Q2 2022	US$1.5 trillion retail spend excluding e-commerce, Q2 2023, in the United States
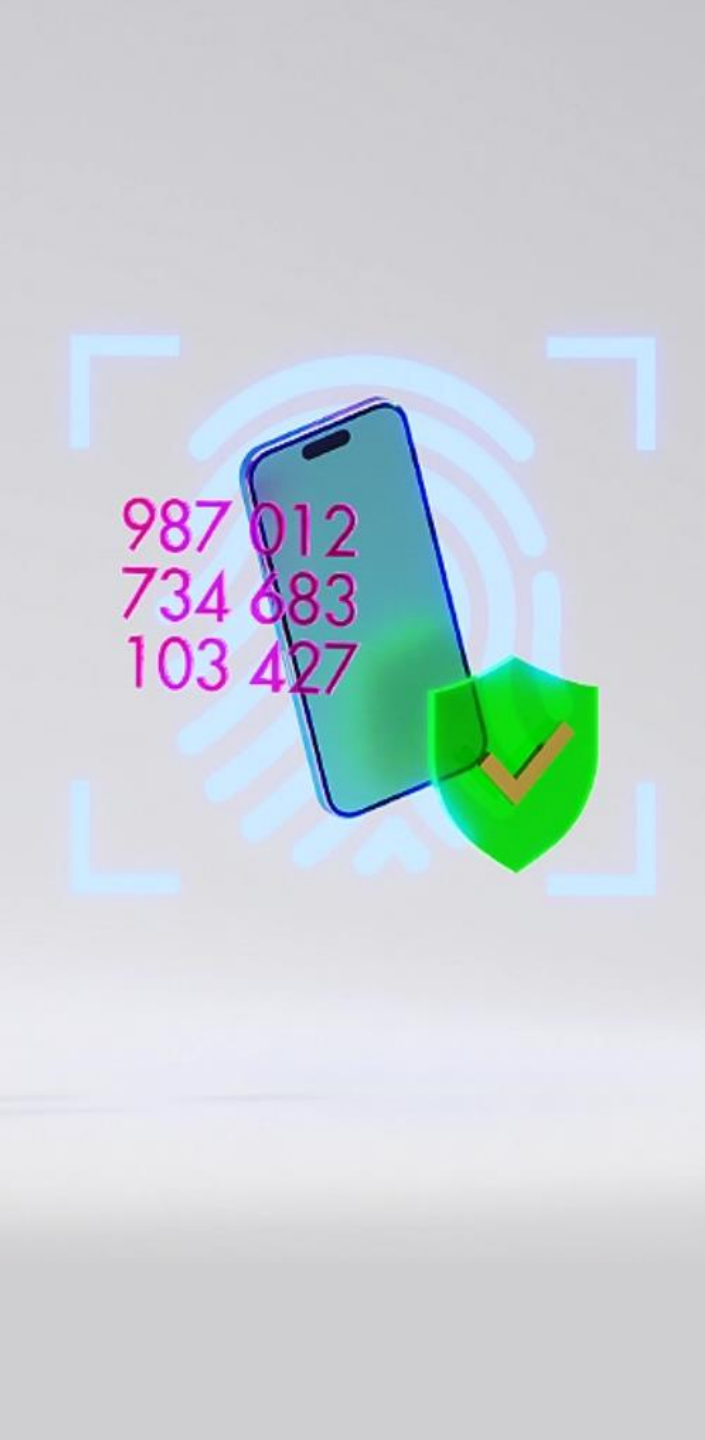
Familiarity with the metaverse remains low

Knowledge of the metaverse remains low, with the proportion of respondents who say they know what it is at 17% in 2023 and 16% in 2022. Gender and age differences remain.

Respondents' familiarity with the metaverse
How familiar are you with the concept of the metaverse?

ALL RESPONDENTS: 17%, 18%, 55%, 10%

Men: 24%, 21%, 46%, 9%

Women: 8%, 14%, 65%, 13%

Legend:
- Heard of the metaverse, know what it is
- Heard of the metaverse, don't know what it is
- Not heard of the metaverse
- Don't know

Weighted base: All respondents aged 18-65 years, 2022 (500), 2023 (500), men (259), women (241)
Source: Deloitte Digital Consumer Trends, CZ, 2022-2023

Interfaces in news places: Spatial computing and the industrial metaverse

As the industrial metaverse transforms to enterprise tool, spatial technologies are taking hold in industrial applications, using data and AI to replicate real-life processes.

Companies are investing in spatial technologies like digital twins and augmented work instructions, revolutionizing industrial applications. Predicted to generate nearly $100 billion by 2030, the industrial metaverse surpasses both consumer and enterprise segments in revenue potential.

Through AR/VR tools, factory workers and engineers benefit from 3D immersive interactions. These technologies facilitate process simulations and digital twins, aiding in prototyping new equipment and fostering safer, more efficient workplaces.

As technology progresses, a future of simplified operations integrating autonomous systems and human input emerges. Yet, challenges in adapting to these changes persist, highlighting the need for user support during this transition.

Spatial computing, with its promising potential, is set to redefine how industries function and interact in the near future. Full article available here.

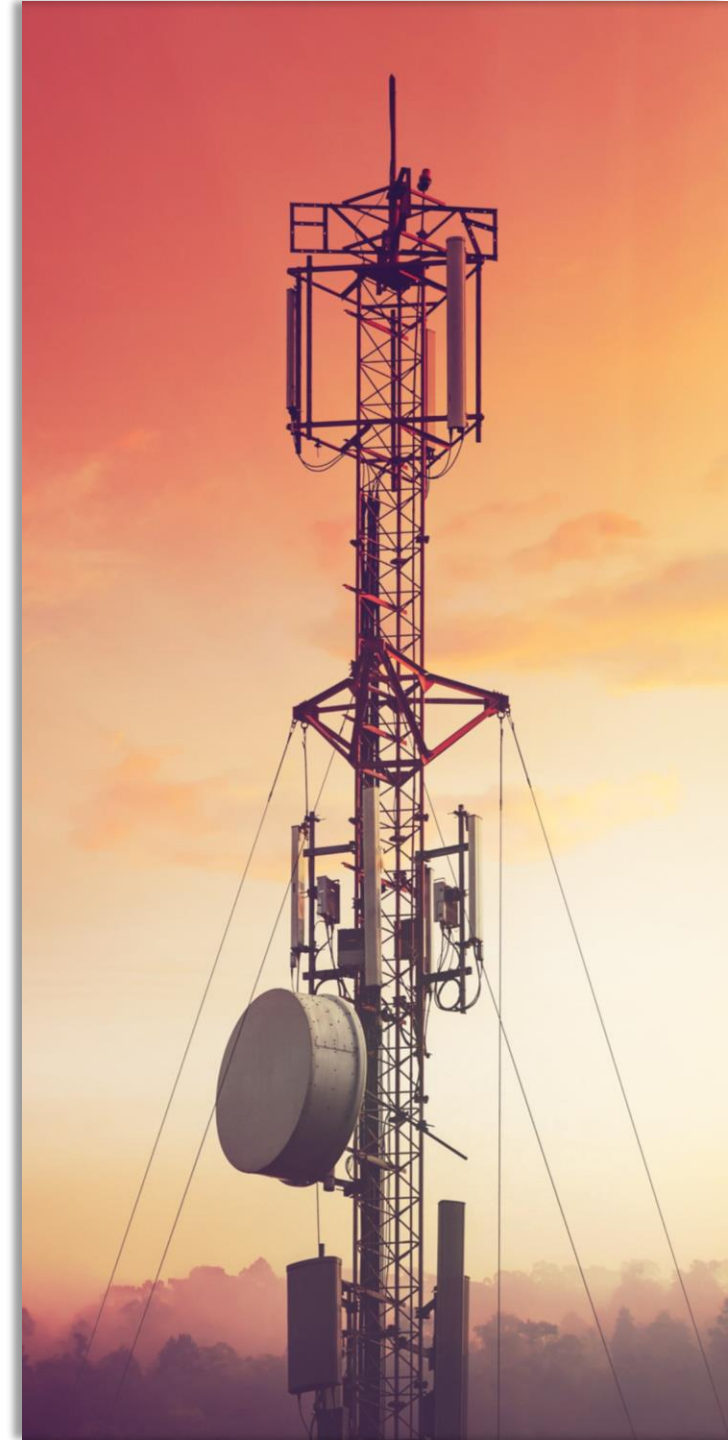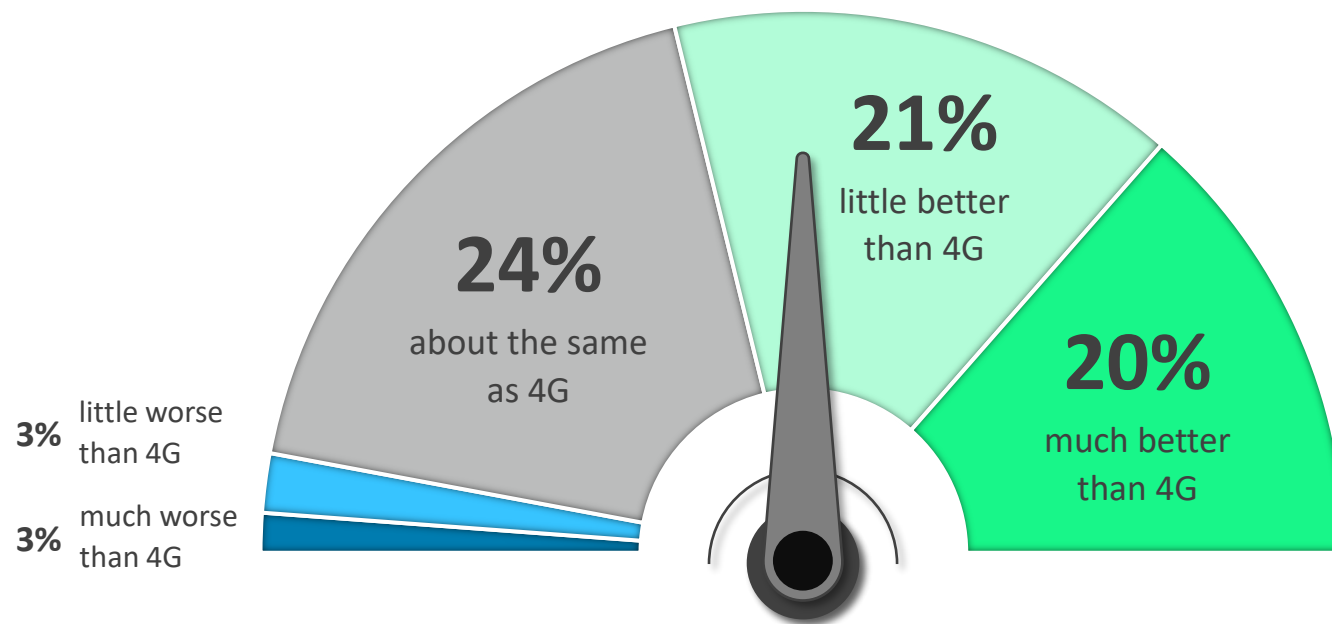**Industrial metaverse is predicted to generate nearly $100 billion by 2030.**
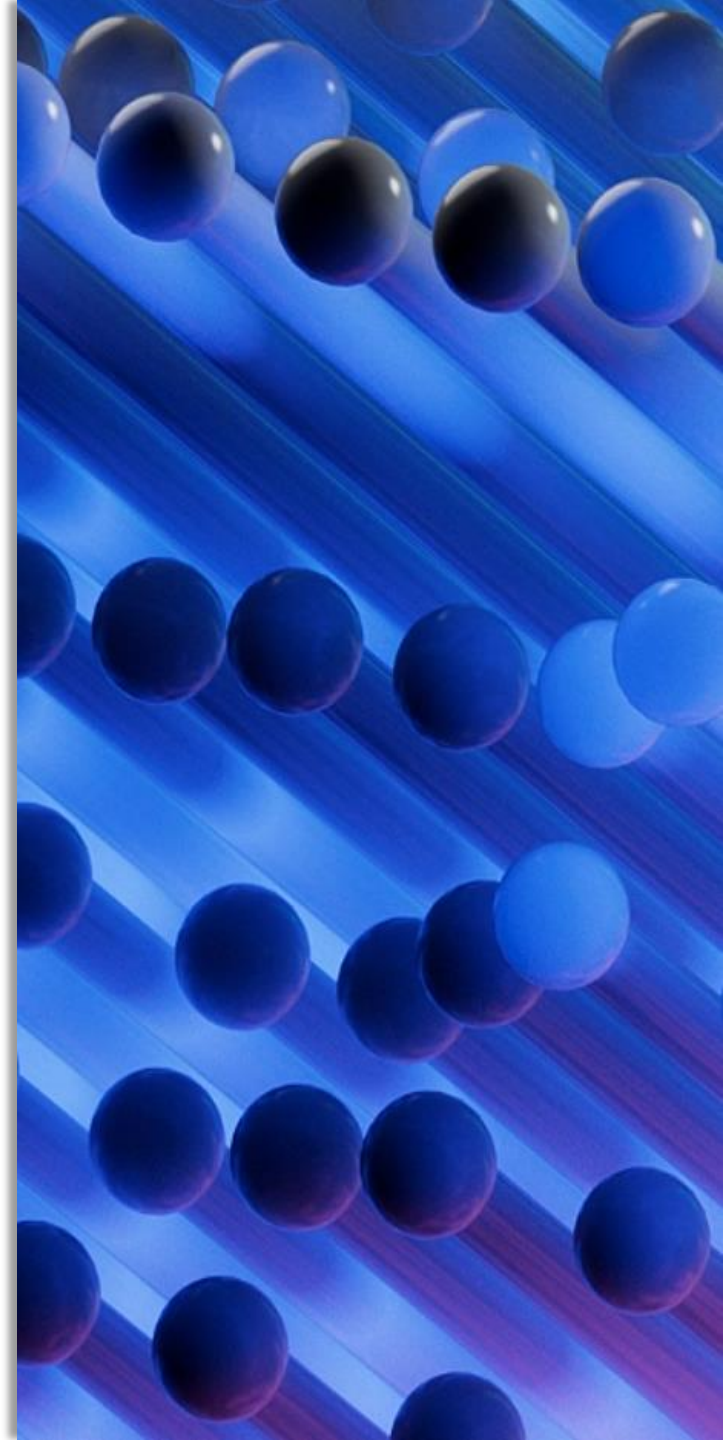
Connectivity

Mobile – 5G is making a difference

Two in five (41%) with 5G perceive a positive difference versus 4G. One fifth consider it "much better than 4G". In contrast, 24% consider the quality about the same. This is fair, given that 5G's improved performance can be perceived mostly in terms of availability.

Comparison of 5G and 4G
Since using a 5G network on your phone, how has your overall experience of mobile internet been?
[Rebased to exclude those who have only ever used 5G, and those who Don't Know]

21%
little better
than 4G

24%
about the same
as 4G

20%
much better
than 4G

3% little worse than 4G

3% much worse than 4G

Dialing down the carbon: Telco sustainability surges on the back of four new trends

Telecommunications companies can reduce their carbon footprint by shutting down copper wire networks, changing their field service fleets to EVs, and switching to 5G radio gear that has a 'snooze button.'

While telcos contribute only 1.6% of global emissions, adopting sustainability can help comply with regulations, attracts subscribers, and helps the bottom line. Familiar approaches such as renewable energy procurement, efficient data center operations, and promoting phone longevity continue to make an impact. The sector is innovating with four emerging trends: Switching off copper wirelines in favor of fiber optics, phasing out 3G wireless networks, transitioning field service fleets to EVs and the evolution of 5G gear, which includes integrating sleep mode technology, resulting in lower energy consumption during idle periods. Full article available [here](#).

01 Telcos connect 95% of the world's population and are responsible for only 1.6% of global GHG emissions, or 600 million tons CO2e.

02 The four approaches above could help the industry reduce emissions by as much as 2%, or 12 million tons CO2e in 2024, and same again in 2025.

03 Copper switch off is planned for 10 markets in Europe in 2024.

04 Telcos already are buying more renewable energy (up to 100%), making network gear and data centers more efficient, and promoting the circular economy.
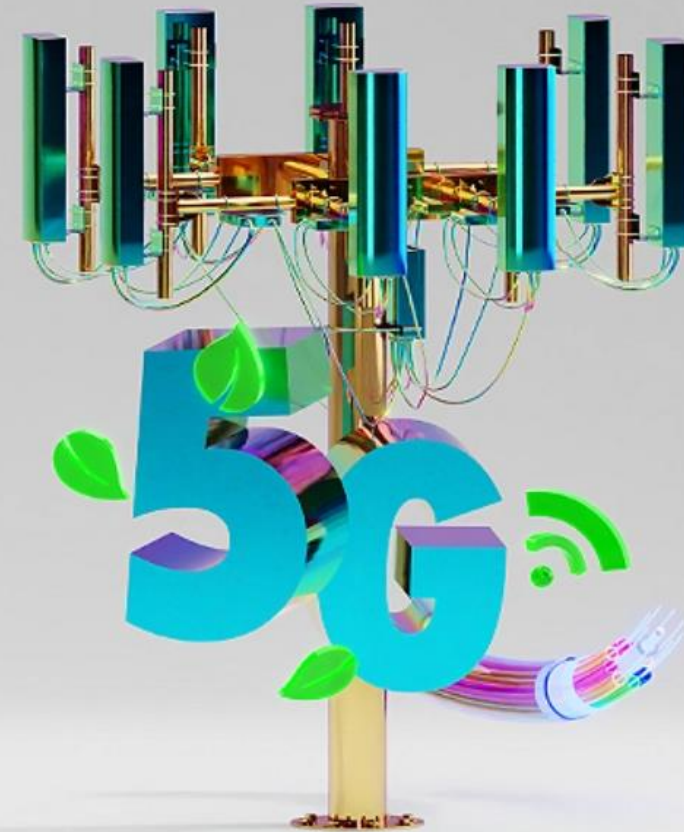
No bump to bitrates for digital apps in the near term: Is a period of enough fixed broadband connectivity approaching?

Fixed broadband connectivity is undergoing a shift suggesting a slowdown in the demand for higher internet speeds in 2024. We predict that in 2024, over 90% of the most used online applications on fixed broadband networks in developed markets will have the same vendor-recommended bitrate as in 2023. Consumer focus is shifting from speed to reliability, content bundles, and overall value.

Despite this shift, broadband providers are compelled by government initiatives, market competition, and technological advancements to upgrade infrastructure. Full article available [here](#).

Growth in average data usage per broadband home appears to be declining

Year-on-year change in average fixed broadband usage in the UK, measured in Gigabytes (%)
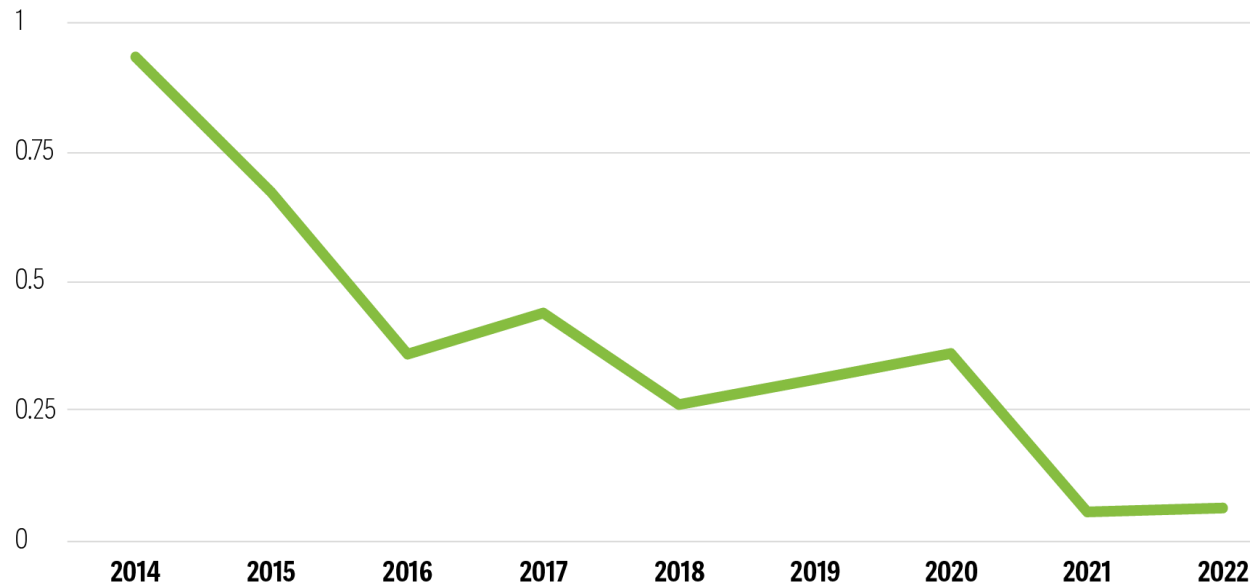
Source: Ofcom, 2023.
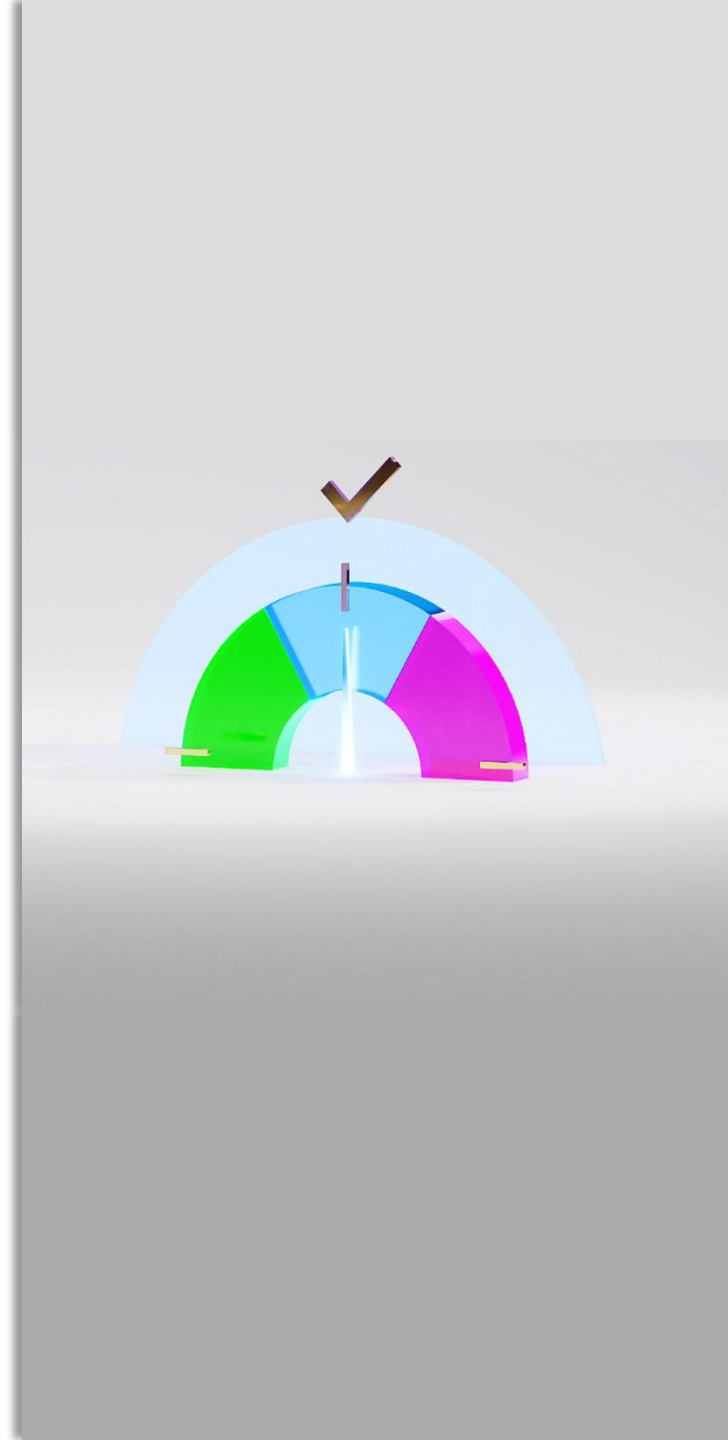
Core workout: From technical debt to technical wellness

There is a shift in approach from merely managing technical debt to adopting a holistic strategy of technical wellness for businesses. Aging systems, once pioneering, are now impeding progress, with up to 70% of tech leaders seeing technical debt as a major obstacle to innovation. Perhaps the population that suffers from this most directly is software developers, who spend an estimated 33% of their time dealing with technical debt maintenance.

Companies are struggling to balance the imperative to adapt to emerging technologies with investments in infrastructure, data management, and workforce capabilities. In 2022, the estimated cost of technical debt in just the United States had grown to US$1.5 trillion, despite chief information officers spending 10% to 20% of their budgets on resolving issues related to outdated systems. Full article available [here](#).

THE COSTS AND RISKS OF TECHNICAL DEBT

The investment drivers of a more holistic core modernization strategy span a variety of barriers, costs, and potential risks that companies may face by keeping legacy technology in place:

- **Direct costs:** The capital and operating expenses directly associated with maintaining legacy hardware and software, such as expiring support licenses or contract terms, as well as the workforce (both full-time employees and third parties) that are directly tied to legacy system upkeep

- **Indirect costs:** Operating expenses incurred due to inefficiencies in the legacy technology environment, such as (usually untracked) time and effort spent manipulating data and analytics between legacy systems and modern applications

- **Time-to-market impact:** Delays to or dilution of business initiatives caused by complexity or inefficiency in the legacy technology stack

- **Barriers to innovation:** Constraints to growth initiatives due to deficiencies of legacy technology, such as the inability to process business-to-consumer orders, or language or currency restrictions

- **Operational risk:** Potential future impediments to business scalability, reliability, and performance due to technical limitations

- **Security risk:** Susceptibility to cyber threats, since legacy systems may not have the same security capabilities as modern technologies

- **Talent risk:** Festering technical debt and antiquated tools that make it difficult to attract and retain top technology and business talent
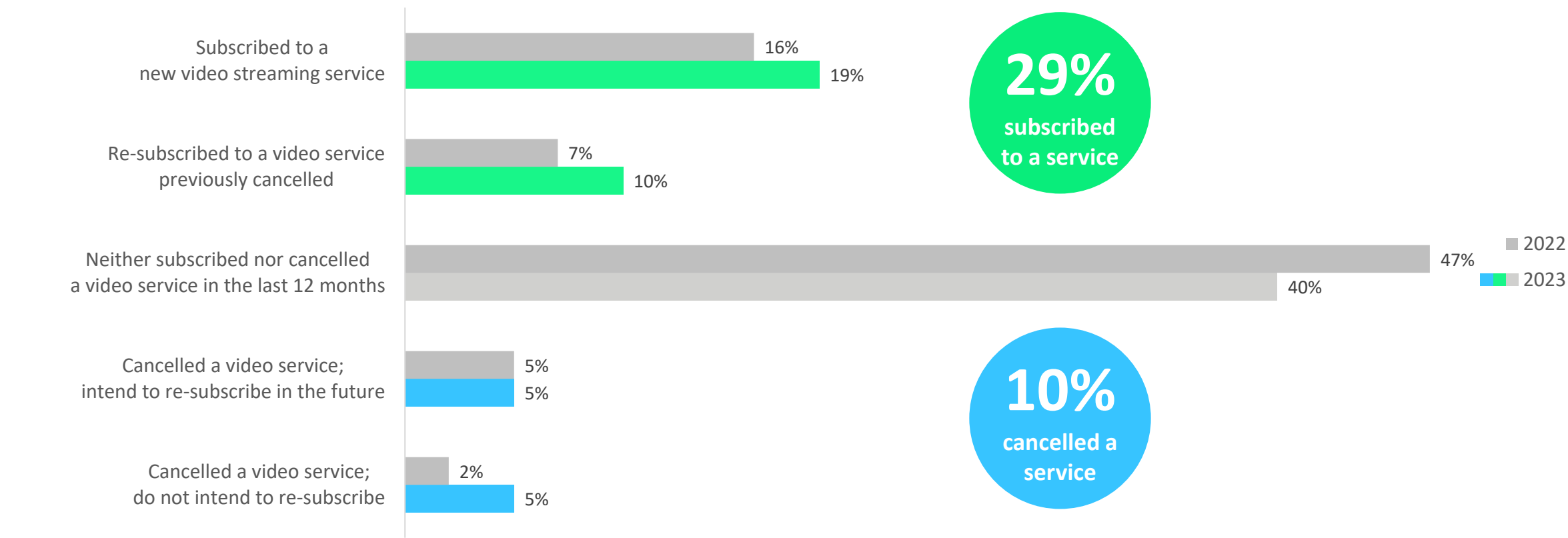
Video and
Audio

Video-on-demand subscriptions have been stable, with only a tenth of users cancelling the service in the past year, half of them only temporarily

Subscribing to or cancelling SVOD
In the last 12 months, have you or your household subscribed to any paid subscriptions for a video streaming service, or cancelled any existing ones?
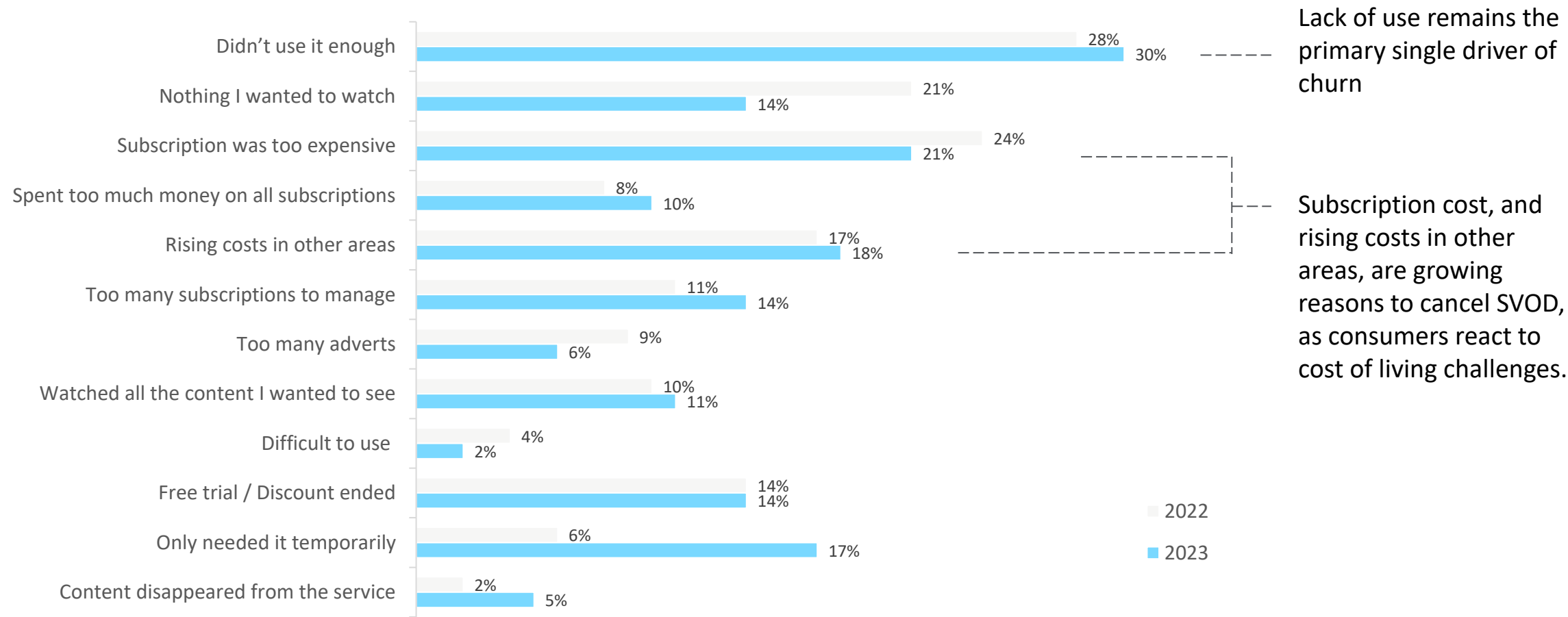
Subscribed to a
new video streaming service — 16%, 19%

Re-subscribed to a video service
previously cancelled — 7%, 10%

Neither subscribed nor cancelled
a video service in the last 12 months — 47%, 40%

Cancelled a video service;
intend to re-subscribe in the future — 5%, 5%

Cancelled a video service;
do not intend to re-subscribe — 2%, 5%

2022
2023

29%
subscribed
to a service

10%
cancelled a
service

Cost challenges are driving cancellations of video streaming services

Reasons for cancelling paid video subscription
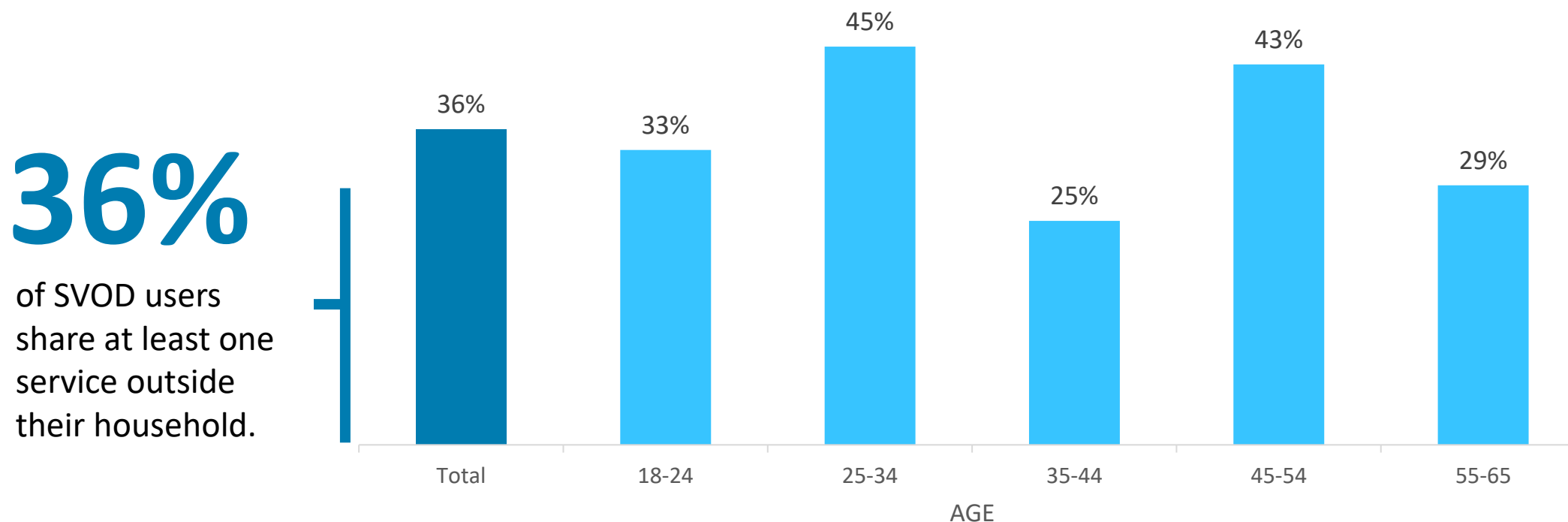You have cancelled a paid subscription for a video streaming service in the last 12 months, why?

Reason	2022	2023
Didn't use it enough	28%	30%
Nothing I wanted to watch	21%	14%
Subscription was too expensive	24%	21%
Spent too much money on all subscriptions	8%	10%
Rising costs in other areas	17%	18%
Too many subscriptions to manage	11%	14%
Too many adverts	9%	6%
Watched all the content I wanted to see	10%	11%
Difficult to use	4%	2%
Free trial / Discount ended	14%	14%
Only needed it temporarily	6%	17%
Content disappeared from the service	2%	5%

Lack of use remains the primary single driver of churn

Subscription cost, and rising costs in other areas, are growing reasons to cancel SVOD, as consumers react to cost of living challenges.

Weighted base: All respondents aged 18-65 years, who cancelled a paid video service in last 12 months, 2022 (131), 2023 (174)
Source: Deloitte Digital Consumer Trends, CZ, 2022-2023
* not shown are respondents who answered Don't Know (1%), Other (5%), Content inappropriate for children (2%)

SVOD account sharing is mainstream

Consumers may share a video subscriptions outside of their household, but this can violate the terms of use. Consumers were asked about multi-household sharing of three major video services; 36% share at least one with other people outside of their home. Incredibly, for each of the three platforms, an average of 6% of respondents claimed it was shared with three or more households. As SVOD prices have risen over the years, consumers have organised themselves to achieve the best economic outcomes. For many, account sharing may be seen as a victimless crime.

SVOD users sharing at least one service outside of their household, by age
How many households share the following accounts?*

36%

of SVOD users share at least one service outside their household.

Total	18-24	25-34	35-44	45-54	55-65
36%	33%	45%	25%	43%	29%

AGE

Consumers may be open to AVOD if sharing is no longer available

Behaviour if account sharing was banned
If sharing video subscription service accounts with people outside your household was banned, would you consider any of the following?

Pay the same amount, but have adverts

10%	17%	17%	18%	38%

Pay extra to share, but less than full price

10%	28%	19%	20%	23%
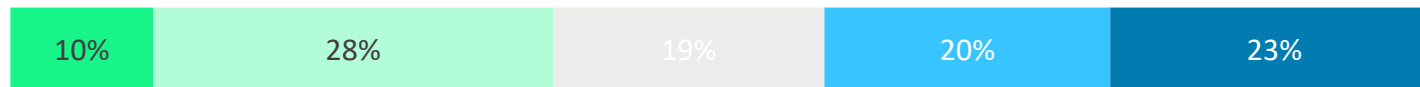
Take out a new account at full price

6%	12%	19%	21%	42%

■ Definitely would   ■ Probably would   ■ Don't know   ■ Probably would not   ■ Definitely would not

Driven to tiers: Streaming video services look to up their profitability game with viewers

Streaming services in 2024 are set to undergo significant changes aimed at enhancing profitability and reducing churn rates. With declining pay TV subscriptions impacting revenue streams, streaming video services previously launched by media and entertainment (M&E) companies have struggled to turn profits. However, this scenario is expected to shift, with streamers exploring varied pricing tiers and content options to cater to diverse consumer preferences. Full article available [here](#).

Number of SVOD tiers offered by the top US providers will more than double from the 2023 average of 4 possible to an average of 8 tiers

Around 50% of 18-24 year-olds have a paid music subscription

The youngest respondents this year were born after Spotify was founded in 2006: they have never lived in a world without music streaming. The youngest age group also has the highest incidence (53%) of having a paid music subscription. In contrast just a tenth (10%) of 55-65 year olds have a music subscription.

Access to paid music streaming service
Which paid digital subscription services do you have access to*? (Music)
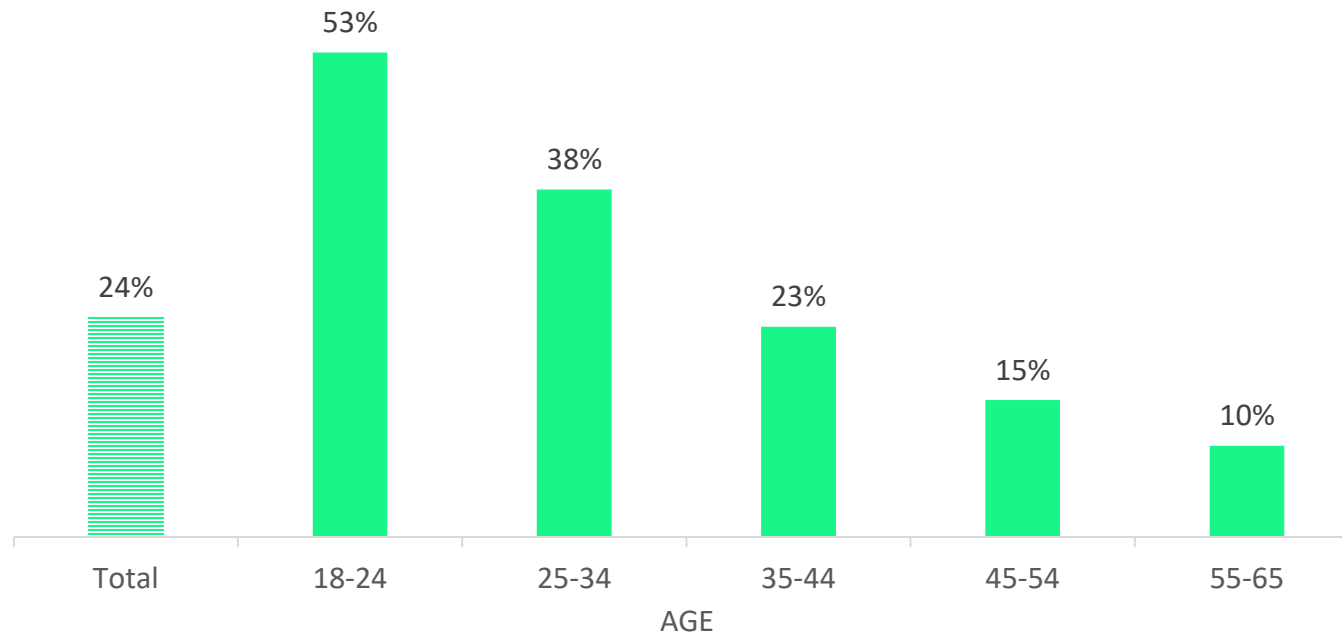
Total	18-24	25-34	35-44	45-54	55-65
24%	53%	38%	23%	15%	10%

AGE

Shuffle, subscribe, stream: Consumer audio market is expected to amass listeners in 2024, but revenues could remain modest

The audio entertainment market anticipates a surge in global listenership across various formats like podcasts, streaming services, audiobooks, and radio in 2024. Deloitte predicts that more consumers worldwide will engage with audio entertainment overall in 2024—bringing the number of monthly average podcast listeners to over 1.7 billion, monthly average audiobook listeners to 270 million, monthly average streaming music subscribers to 750 million, and monthly average radio listeners to close to 4 billion—or roughly half of the world's population . Yet, cumulative annual revenues across these formats might only rise by about 7% to exceed $75 billion in 2024. Full article available here.

Estimated number of monthly listeners (billions)

● Audio medium (estimated annual revenues/listener)

● Radio ($10.50/listener)

● Podcasts ($2/listener)

● Streaming audio service ($31/listener)

● Audiobooks ($26/listener)

Note: All figures are projections.

Source: Deloitte analysis.

Predicted annual revenues (US$ billion)
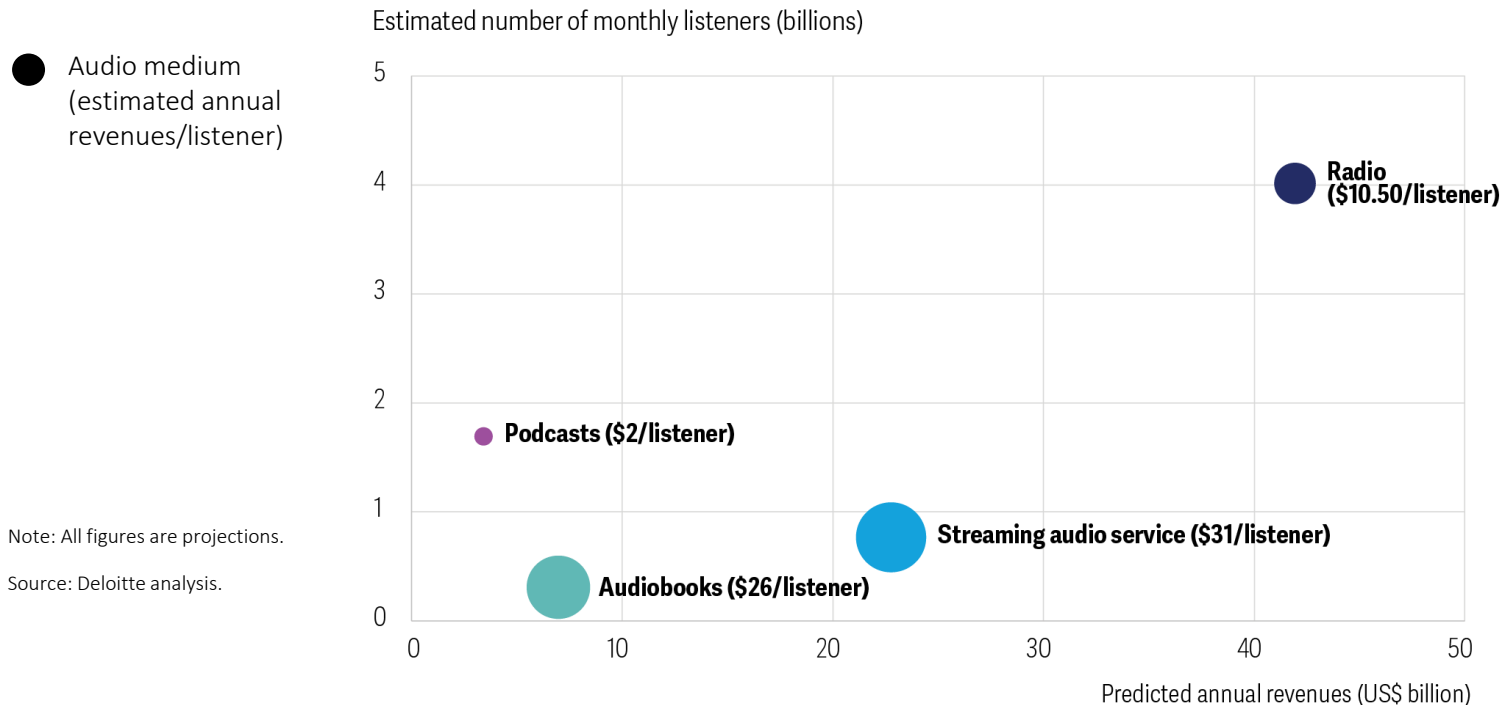
Generative AI
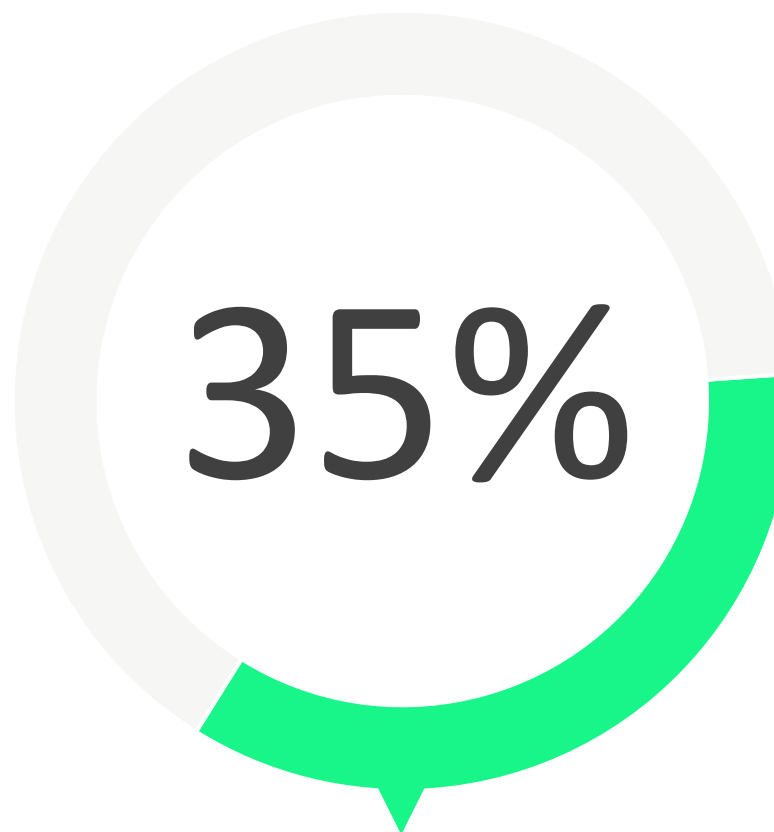
A third of consumers have heard of Generative AI

Generative AI knowledge
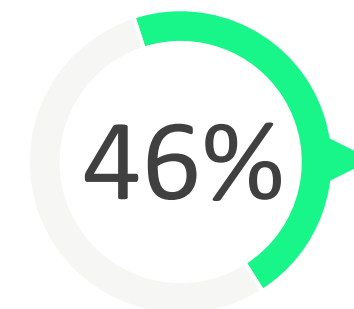Which Generative AI tools have you heard of*?

A small majority of CZ consumers have heard of a Generative AI tool , such as ChatGPT, Snapchat My AI, Google Bard, or Midjourney.

Given the recent launch of such tools, the top four being launched since November 2022, recognition by 35% is an achievement.
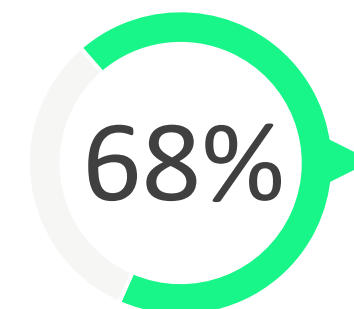
However, knowledge skews towards males and younger people – and so is aligned with the biases already present in the technology industry.

35%

of people are **aware of** Generative AI

46% of men have heard of it
[vs 22% of women]

68% of under 25s have heard of it
[vs 12% of 55-65s]

Six in ten citizens are yet to use a Generative AI tool

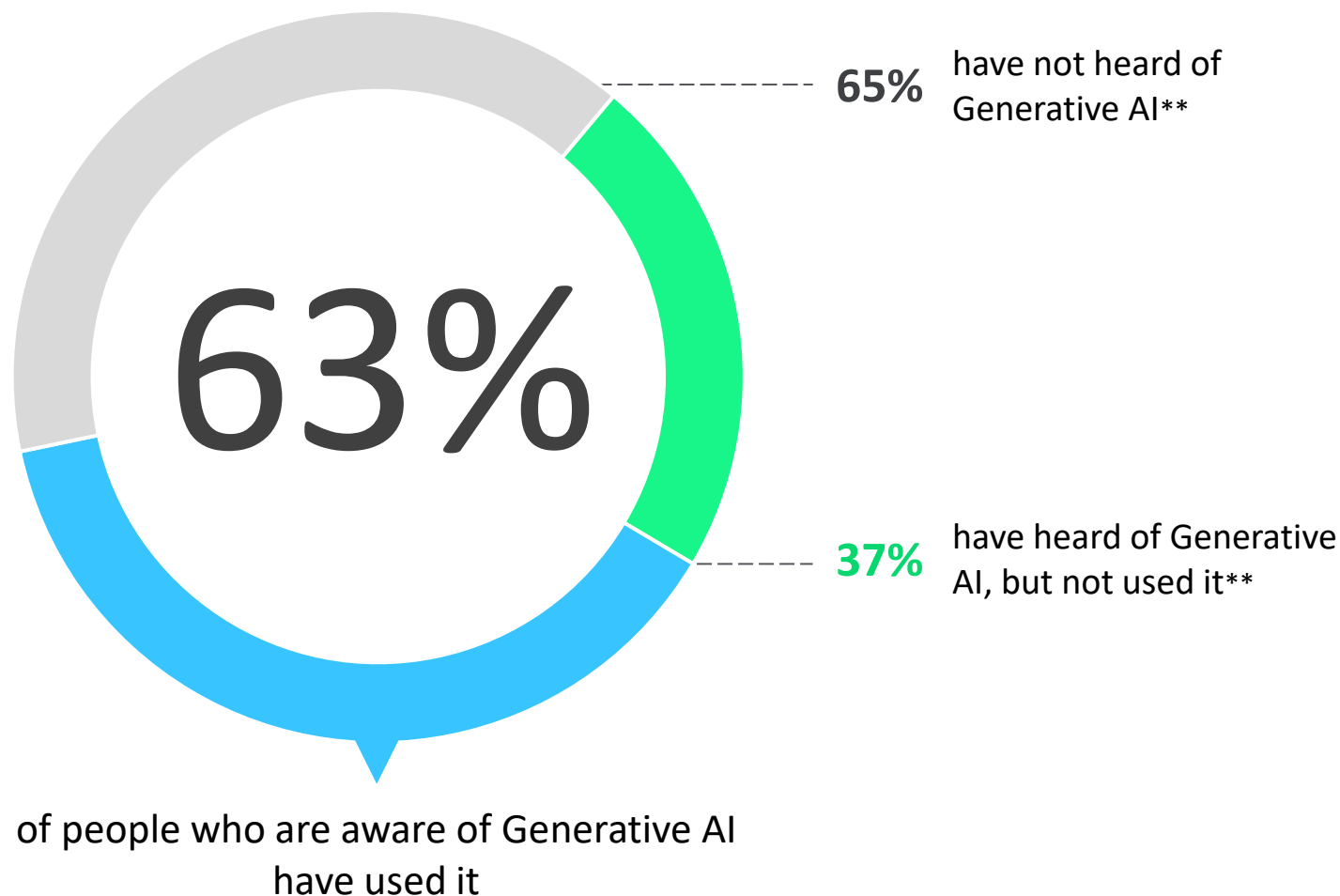Almost a two thirds of people have used a Generative AI tool (such as ChatGPT, Google Bard, Midjourney, etc.)

Importantly, most current Generative AI tools are free, or have free versions, and are accessible on any smartphone or computer, meaning the barrier to access is zero.

Over a third of people who have heard of these tools have not felt inspired or confident enough to try them.

Had this question been asked a year ago, however, knowledge and usage would likely have been non-existent.

Generative AI usage
Which Generative AI tools have you used*?

63%

65% have not heard of Generative AI**

37% have heard of Generative AI, but not used it**
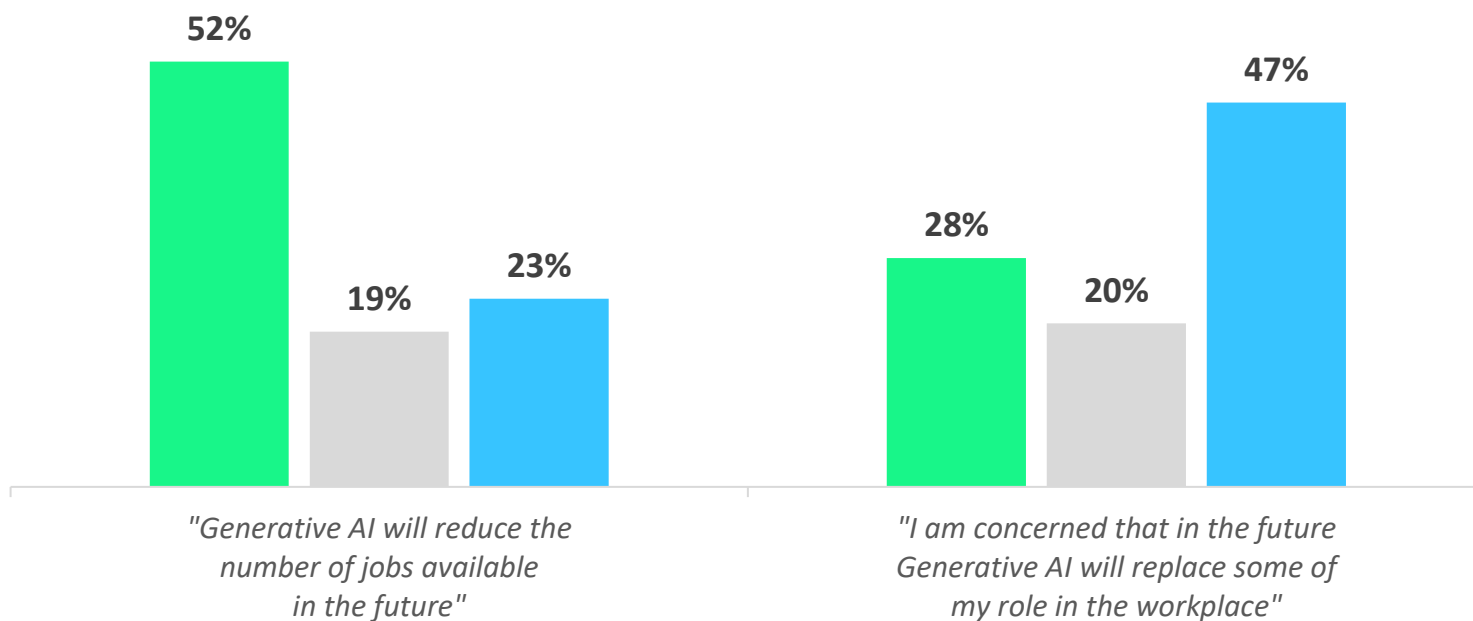
of people who are aware of Generative AI have used it

Workers concerned that AI may replace them or change their roles

Consumers assume that Generative AI tools will be able to replicate functions of their work, and may lead to a decrease in the stock of jobs. Economists would argue this is unclear, and perhaps unlikely, but as consumer interest grows the issue may become politically charged.

Agreement statements – Jobs
Do you agree or disagree with the following statements?
[*for those who are aware of Generative AI*]

Legend:
- Agree (green)
- Neither, or Don't Know (grey)
- Disagree (blue)

Chart 1 — "*Generative AI will reduce the number of jobs available in the future*":
- Agree: 52%
- Neither, or Don't Know: 19%
- Disagree: 23%

Chart 2 — "*I am concerned that in the future Generative AI will replace some of my role in the workplace*":
- Agree: 28%
- Neither, or Don't Know: 20%
- Disagree: 47%

Weighted base: All respondents aged 18-65 years who are aware of any Generative AI tool (347)
Source: Deloitte Digital Consumer Trends, CZ, 2023

Walking the tightrope: As generative AI meets EU regulation, pragmatism is likely

In 2024, the EU is poised to implement regulations governing generative AI, in particular the GDPR and the EU AI Act. These regulations aim to address critical aspects like consent, bias, and copyright, setting a precedent for global AI governance.

Compliance with GDPR presents challenges, especially concerning the vast amounts of data utilized in AI training. Finding a balance between GDPR requirements and the core functioning of generative AI models remains a critical concern. Proposed solutions include leveraging the concept of "legitimate interest" and employing mass communication strategies to inform users about their data usage within AI systems. Full article available here.

Scope of EU regulation

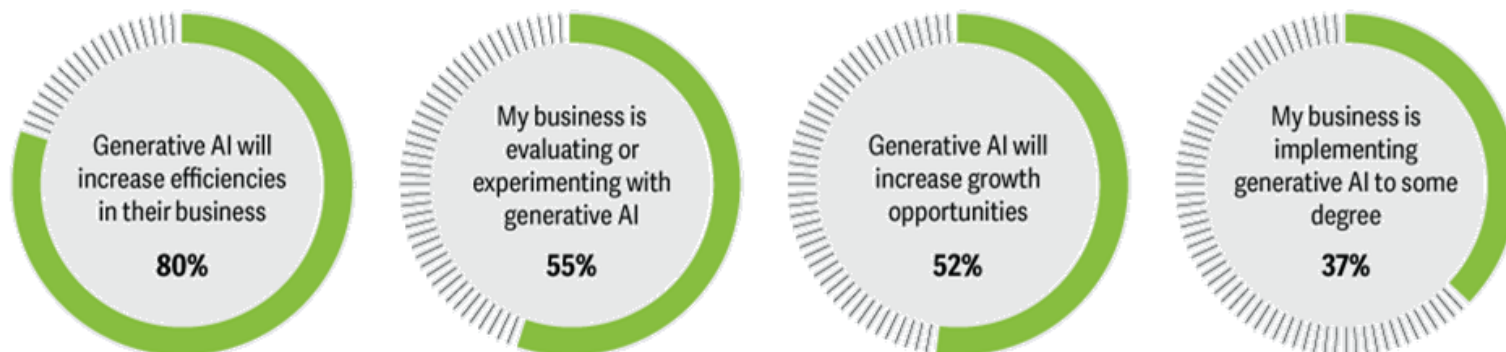| Directly applicable to vendors operating from any market that are selling into, or targeting users in EU countries | Other markets may use EU regulation as a template | Multinationals, as well as those complying within the European Union, may apply their AI governance (including that specific to generative AI) globally |
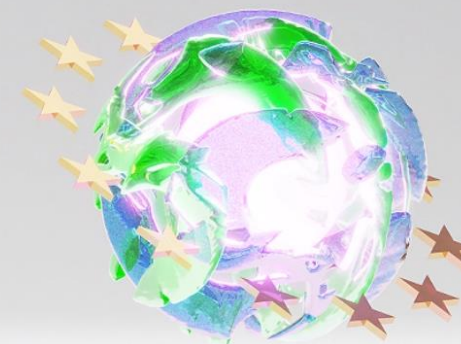
Genie out of the bottle: Generative AI as growth catalyst

Generative AI technology has significantly impacted businesses since its emergence, offering massive potential for growth and innovation. By replicating human cognition, generative AI has opened doors to productivity gains and novel product development in enterprise settings.

As of 2024, the debate about whether machines can possess intelligence has shifted. The focus now revolves around leveraging cognitive tools effectively for real business impact. Generative AI, exemplified by tools like ChatGPT, Dall-E 2, and Anthropic's Claude 2 chatbot, outperforms humans in various cognitive tasks, from comprehension to problem-solving. Full article available [here](#).

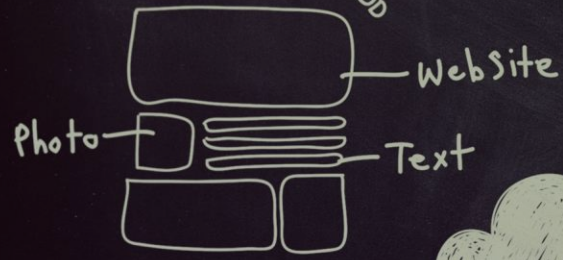**Business leaders are increasingly using generative AI in enterprise**

Percentage of business leaders who agreed with the following statements.

Generative AI will increase efficiencies in their business
80%

My business is evaluating or experimenting with generative AI
55%

Generative AI will increase growth opportunities
52%

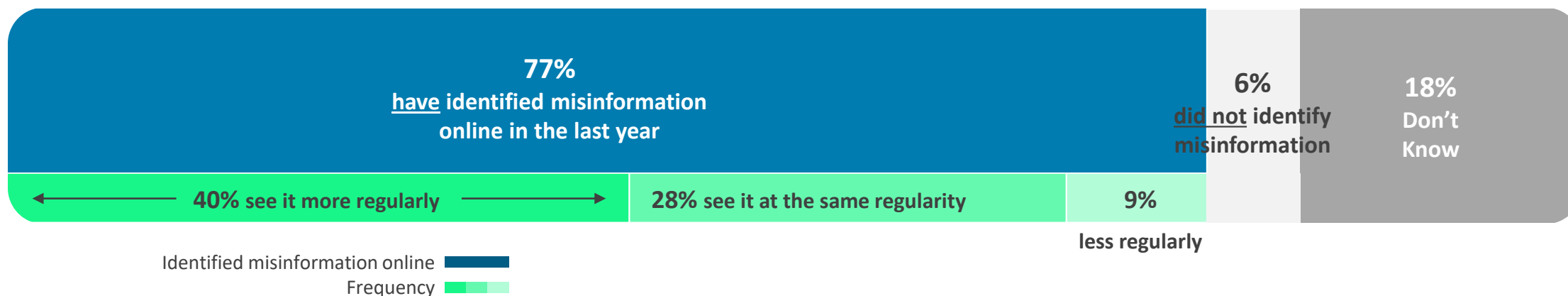My business is implementing generative AI to some degree
37%

Cyber and Trust

Digital users are highly exposed to misinformation online

Misinforming is a human behaviour that stretches back thousands of years: the creation of fake news is not the fault of the internet, but the speed at which misinformation can be created and spread is arguably a function of digital capabilities.

Overall three-quarters of people (77%) claim to have seen deliberate misinformation online in the past year. Crucially, this only accounts for people who feel they have identified misinformation. Some may have been misinformed, but be unaware of it. More than a half of those with an opinion on the quantity of misinformation thought they were seeing it more regularly.

Fake news on social media
Are you seeing misinformation more, or less regularly than 12 months ago?*

77%
have identified misinformation online in the last year

6%
did not identify misinformation

18%
Don't Know

40% see it more regularly

28% see it at the same regularity

9%

less regularly

Identified misinformation online
Frequency

Defending reality: Truth in an age of synthetic media

In a world of proliferating AI tools, the emergence of synthetic media has made it increasingly easy to deceive and impersonate individuals, posing significant threats. This content, driven by rapid advancements in generative AI, blurs the lines between reality and fabrication.

The current landscape witnesses a surge in social engineering hacks, utilizing synthetic content to impersonate trusted sources and exploit vulnerabilities. The challenge lies in people's inability to differentiate between AI-generated and human-created content. This discrepancy becomes a gateway for various malicious activities including improved phishing, deepfakes, prompt injection, and the spread of misinformation.

However, leading enterprises are actively responding to this threat by implementing a mix of policies and technologies. Their strategies encompass heightened awareness, ecosystem partnerships, and the deployment of tools capable of detecting and predicting harmful content. Technologies like Reality Defender analyze text, images, and audio to identify the subtle tells of AI-generated content. Full article available [here](#).

Phishing

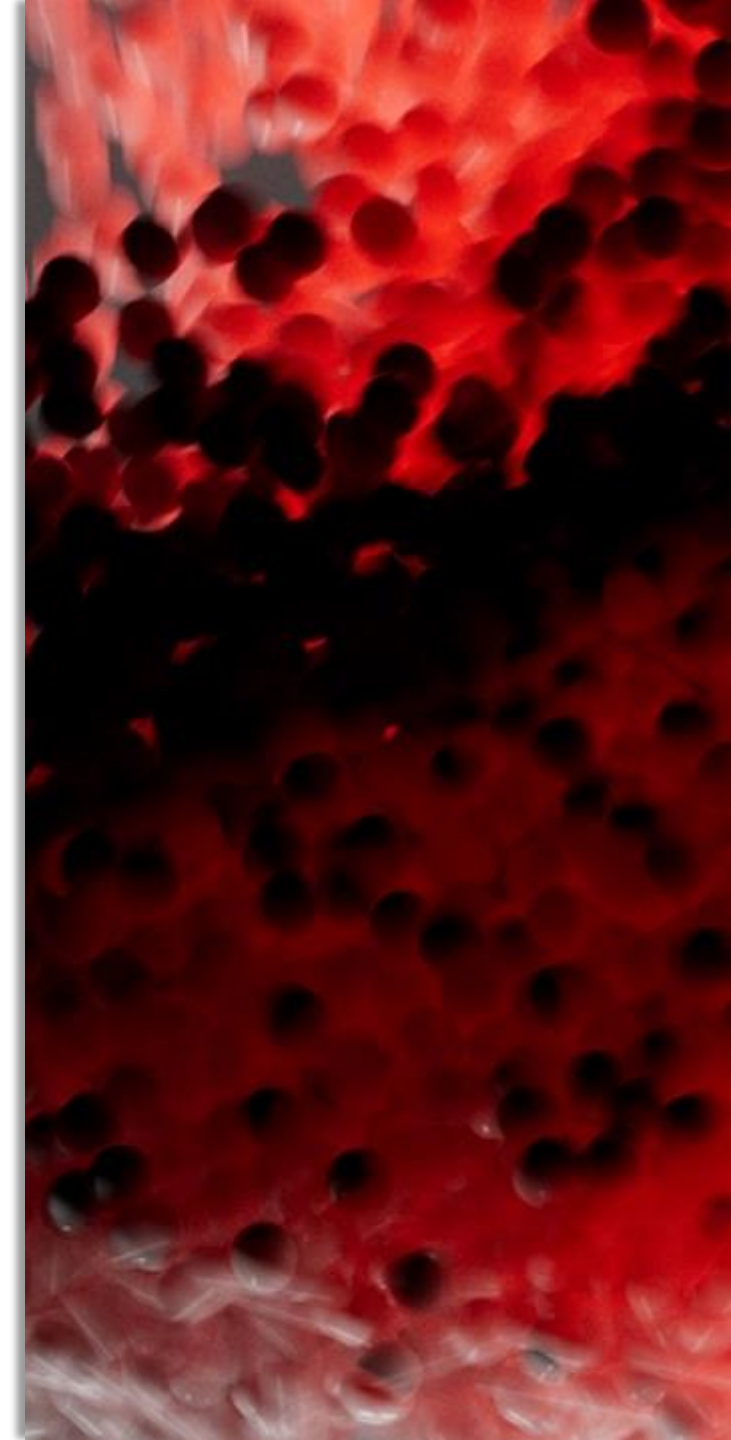Obtaining information by falsely communicating as a trusted source

Prompt injection

Feeding false data to a target's AI algorithms

Deepfakes

Manipulation of a subject through AI-generated video

Misinformation

Generation of deliberately misleading information about a target

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TMT Predictions 2024

Knowing what new trends in technology, media and telecommunications (TMT) will affect us today is a critical competitive factor that can help your company gain a market advantage. That's why we prepare an annual forecast of key TMT trends that will affect how companies operate globally.