

Brussels, 10 September 2025  
(OR. en)

12608/25  
ADD 1

AUDIO 75  
DIGIT 167  
CONSOM 166  
TELECOM 288  
CULT 94  
DISINFO 72  
PI 157

**COVER NOTE**

|                  |                                                                                     |
|------------------|-------------------------------------------------------------------------------------|
| From:            | Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director |
| date of receipt: | 5 September 2025                                                                    |
| To:              | Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union         |
| No. Cion doc.:   | SWD(2025) 261 annex                                                                 |
| Subject:         | PART 2/3 COMMISSION STAFF WORKING DOCUMENT European Media Industry Outlook          |

Delegations will find attached document SWD(2025) 261 annex.

Encl.: SWD(2025) 261 annex



EUROPEAN  
COMMISSION

Brussels, 5.9.2025  
SWD(2025) 261 final

PART 2/3

**COMMISSION STAFF WORKING DOCUMENT**

**European Media Industry Outlook**

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## 3. The video game and extended reality sectors

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### 3.1. The video game sector

#### 3.1.1. Introduction

Strategically situated at the **intersection of art and technology**, the video game industry is at the forefront of technological developments that impact the industry's production processes, consumer gameplay and distribution models. As such, game development drives innovation in areas such as AI and real-time graphics. These technologies have applications far beyond gaming and can foster cross-sector collaboration between creative industries, technology companies, education or vertical markets.

The video game industry can be more strictly understood as a **leading and inherently global cultural and creative industry**. It has gained a strong foothold in contemporary digital culture and in the attention economy, including in the EU where **more than half of the population regularly plays video games**, a portion that is increasing over time and reaching new demographics of people.<sup>1</sup> The sector is also making inroads in the creator economy, with growing monetisation of UGC and various forms of consumer participation (e.g. modding).

The 2010s saw the growth of the sector intensify at a faster pace than the previous decade, leading to **unprecedented investments in the early 2020s**, in particular around the COVID-19 period, before coming to a sudden halt in 2022. Although the sector has grown to employ close to 100,000 people in the EU, the industry continues to be fragmented, with a few dominant companies coexisting alongside a **vast array of developers**. In the early 2020s, the consumer market was dominated by non-European video game companies and tech giants, in particular at the distribution level where the EU has been structurally weak. Consequently, the **EU industry captured a limited share of the revenue** generated by the sector. As it was home to few of the major studios or publishers, a limited number of large-scale projects (AAA games) could be attributed to the EU industry, despite some critical and commercial hits.

Like elsewhere in the world, the European industry diversified business models at the beginning of the decade, emphasising the **development of live-service and free-to-play games** and related revenue models such as microtransactions and subscription options.

**The following chapter reviews the state of the European video games market and industry over the past years, with a focus on 2023 and 2024.** In general, the sector is known to suffer from various data challenges, which also limit the depth of the following analysis. Among them are the lack of a sector-specific NACE code and independent data-gathering organisations, leading to difficulties in accurately capturing industry revenue data, skills and employment dynamics and data, non-EU countries' consumer data, segment-specific data (e.g. from the mobile sector) and a number of country-specific gaps. In this context, proxy indicators and data sources have been selected. Finally, this chapter often refers to global trends and developments, which is relevant to the European industry as companies are often established in several countries and seek to reach consumers across the world.

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<sup>1</sup> Data varies – see the Consumption section further down.

### 3.1.2. Market overview<sup>2</sup>

#### Global and EU market value

**The global video games market is slowly recovering from an unprecedented fall in revenues in 2022.** After activities and investments<sup>3</sup> surged during the COVID-19 period, the video game industry was severely hit by increased interest rates, cost inflation and a reduced demand from players. The trajectory of the market since 2022 has been well below all estimates made until then, and well under that of other media industries such as the book and music sectors.<sup>4</sup> On the back of weak growth, the consumer spending market reached EUR 169.3 billion revenue in 2023 (+0.5% year on year). The market is expected to stand at EUR 169.6 billion revenue in 2024 (+0.2%),<sup>5</sup> with a return to more solid growth expected in 2025 and an increase to EUR 190.3 billion by 2027.<sup>6</sup> Over the 2019-2024 period, the evolution of the market has been mostly driven by mobile-based revenues (+6.6% in compound annual growth rate – CAGR), as mobiles made gaming more accessible to diverse demographics – although social video (e.g. TikTok) is taking up more media time recently. Before recent tariffs brought uncertainty, the console market was expected to be a greater growth driver in the coming years<sup>7</sup> with average annual growth expected to reach 7% between 2024 and 2027.<sup>8</sup> Beyond console, and although the market is becoming more saturated with the competition for players tightening, the video game industry's revenue could grow between 5 and 8% CAGR until 2040,<sup>9</sup> below the pace of the 2010s. An increase of the price of video games – in an industry that has limited pricing power – could boost revenues.<sup>10</sup>

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<sup>2</sup> Most data referred to in this section comes from PwC or Newzoo. It covers different countries (EU for Newzoo, EU17 for PwC), and does not always fully capture the market: for example, Newzoo data does not systematically include advertising, while PwC does not cover consumer spending on hardware and game devices.

<sup>3</sup> In that period, investments have surged in the video game industry more than in other cultural and creative sectors. Yet, some executives report that in some countries (such as Belgium) cautious investments in 2020 and 2021 led to a more cushioned impact of the employment crisis.

<sup>4</sup> Matthew Ball (Updated: 17 April 2025), [The State of Video Gaming in 2025](#), Epyllion.

<sup>5</sup> Newzoo data. Revenues cover physical and digital full-game copies, in-game spending, and subscription services like PlayStation Plus and Xbox Game Pass. Mobile revenues include paid downloads and in-game spending on all stores, including third-party stores, and from direct downloads. 2024 exchange rate: USD 1 = EUR 0,921.

<sup>6</sup> Other sources, e.g. Bain & Company's [Gaming Report 2024 - Meet the Moment: How Gamers Are Changing the Game](#) (2024), posited a stronger growth in 2024 – a 6% CAGR between 2023 and 2028.

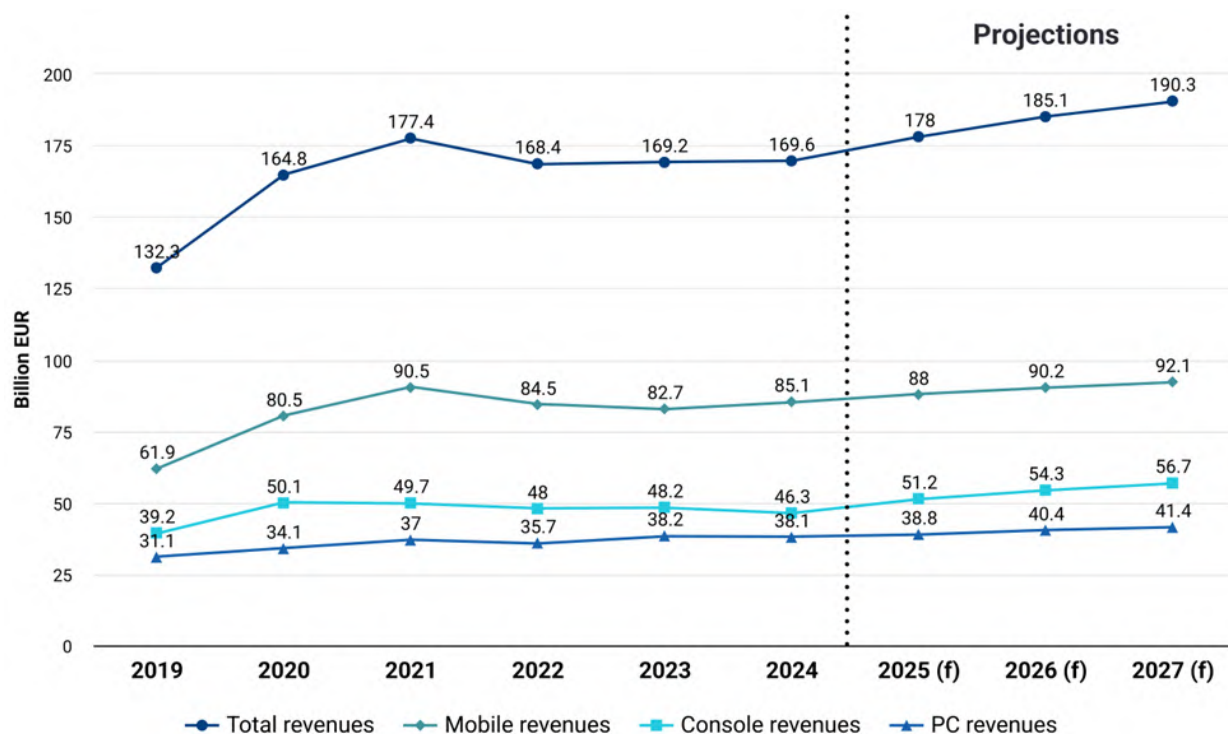
<sup>7</sup> Boosted by, among other factors, new console and game releases. This trend also applies to the EU, where microtransactions and game subscriptions in the console segment are expected to contribute to the growth of the market.

<sup>8</sup> Newzoo, [The PC and Console Gaming Report 2025](#), 2025.

<sup>9</sup> McKinsey Global Institute, [The Next Big Arenas of Competition](#), 2024.

<sup>10</sup> In an inflationary context, with development costs of AAA times increased tenfold more or less over 15 years, the standard storefront price of video games has risen only 17% since 2007, consumers showing so far resistance to price increase (see [The video games industry still has a quality-to-price problem](#), Financial Times).

Figure 1. Global games market per segment (excluding advertising revenues), in billions of EUR



Source: Technopolis Group based on Newzoo Games Market Report & Forecast | December 2024 Update.

**In the EU, existing estimates show signs of a weaker recovery.** In 2022, the games market began to decline for the first time in decades. It recovered somewhat in 2023 with a lot of volatility, layoffs and companies being restructured. As a result, the EU market grew by a modest 1.8% to EUR 22.3 billion in 2023, faster than the global market. For 2024 the revenues from consumer spending are expected to fall to EUR 21.7 billion (-2.7%),<sup>11</sup> in contrast to a global market that is growing slightly. The EU's overall share of the world market remained stable over the past years, at around 13% – representing half of the US or the Chinese market. Latin America is also often reported as a growing regional market for the industry. Within the EU, Germany and France continue to be the largest national video game consumer market.

Table 1. Comparison of current revenues and future growth rates in leading game markets

|       | 2024 revenues (billion EUR) | 2024-2027 CAGR (%) |
|-------|-----------------------------|--------------------|
| EU    | <u>21.7</u>                 | <u>5.3%</u>        |
| US    | 42.7                        | 5.2%               |
| China | 41.9                        | 0.6%               |

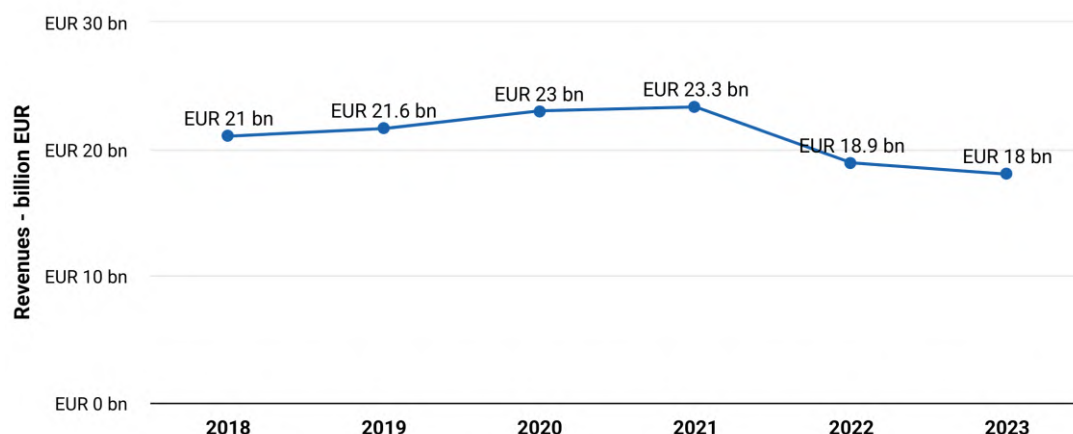
Source: Newzoo.

<sup>11</sup> Based on Newzoo data.

## EU industry revenues

The turnover of the EU video game industry,<sup>12</sup> essentially combining game developer studios and publishers' revenues, is stabilising. The industry had registered fast growth prior to 2023.<sup>13</sup> It has since experienced a drop from EUR 23.3 billion in 2021 to EUR 18.9 billion in 2022 and EUR 18 billion in 2023.<sup>14</sup> As part of this estimate, operating revenues of EU game publishing companies was estimated to reach EUR 6.8 billion in 2022.<sup>15</sup>

Figure 2. Combined turnover of game developer studios and publishers in the EU



Source: Moody's Orbis including all types of revenues.

## Revenue per segment

With a 51% share of the consumer market, console-based revenues represent the largest video game segment in the EU.<sup>16</sup> Prior to the 2025 tariff announcements, this segment was set to remain the main market driver for the consumer market, representing 53.5% of the game revenues generated in 2027. Mobile gaming comes second with one quarter of revenue, despite being the most consumed format (7 in 10 Europeans play mobile games, against 1 in 2 for console), with experts pointing to further growth ahead.<sup>17</sup>

Table 2. EU video games market per segment, in billions of EUR

|                  | 2023 | 2024 | 2027 (f) |
|------------------|------|------|----------|
| Total revenues   | 22.3 | 21.7 | 25.3     |
| PC revenues      | 5.4  | 5.1  | 5.8      |
| Mobile revenues  | 5.3  | 5.6  | 6.0      |
| Console revenues | 11.7 | 11.1 | 13.5     |

<sup>12</sup> Industry turnover means the net revenue generated by all game developer studios and publishers established in EU Member States, including subsidiaries of global games companies.

<sup>13</sup> The Polish industry, for example, boasted a 26% CAGR between 2018 and 2022.

<sup>14</sup> According to the estimates based on data from the European Games Developer Federation survey ([2022 European Video Games Industry Insight Report](#), 2022) survey and from [Orbis Moody](#) published in June 2024.

<sup>15</sup> Based on Moody's Orbis data, registered as 'Publishing of computer games' (J5821 NACE code) and additional search for video games in the business descriptions. These are estimates only: the calculation is limited by the segmentation of companies in the game business: there are multiple NACE code categories in which video game developers and publishers can register, resulting in a fragmented and inaccurate basis for data collection.

<sup>16</sup> Mobile gaming tends to outperform in other regions of the world where it is more accessible and affordable than console or PC gaming. This explains the gap with the global data presented above.

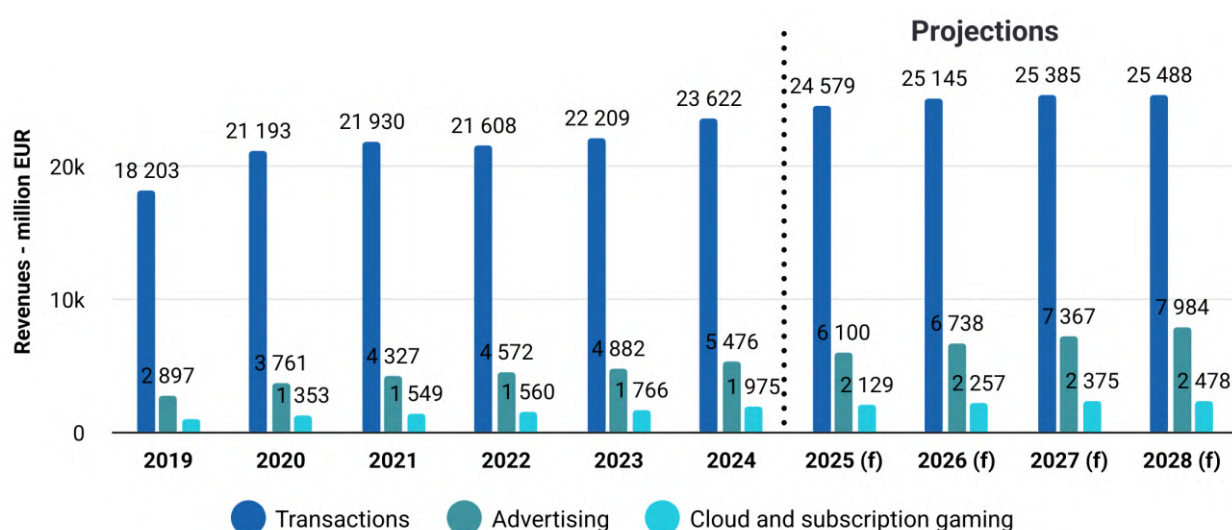
<sup>17</sup> McKinsey Global Institute, [The Next Big Arenas of Competition](#), 2024.

Source: Newzoo Games Market Report & Forecast, December 2024. Data excludes advertising revenue, which is highest in the mobile segment.

### Main sources of revenues within segments

As far as revenue sources are concerned, consumer spending, particularly transactional, is and will remain dominant at least in the short-term. In the EU<sup>18</sup>, the consumer market (including physical and digital games, consumer spending on and in app-based games as well as microtransactions) makes up the overwhelming majority of revenues, taking a greater share than it does at a global level, where advertising is slightly stronger. Advertising is the second source of revenue, and is mostly strong in the mobile market. Subscription and cloud today are growing but are still a minority share of the market (8% of the game consumer spending in 2024).

Figure 3. Revenue of the video game industry, break-down by transactional, advertising, cloud and subscription gaming in the EU, in millions of EUR



Source: PwC Global Entertainment & Media Outlook 2024–2028 and OMDIA, [www.pwc.com/outlook](http://www.pwc.com/outlook).

Note: Revenues in the video game industry, break-down by transactional, advertising and cloud and subscription gaming. Based on original data for 17 EU Member States, with other countries' data being extrapolations. Cloud and subscription gaming is based on four countries: Spain, Italy, Germany and France.

In the PC segment, the transition to digital acquisition is practically achieved, with online/microtransactions representing the largest share of revenue. Physical PC games sell-through are being progressively replaced by digital acquisitions, except for some new releases of AA and AAA video games.<sup>19</sup> In the meantime, online/microtransaction revenue has been largely fuelled by the success of online free-to-play games. They now account for approximately two-thirds of PC transaction revenue (see below),<sup>20</sup> which remains below figures in other markets (85% in the US).

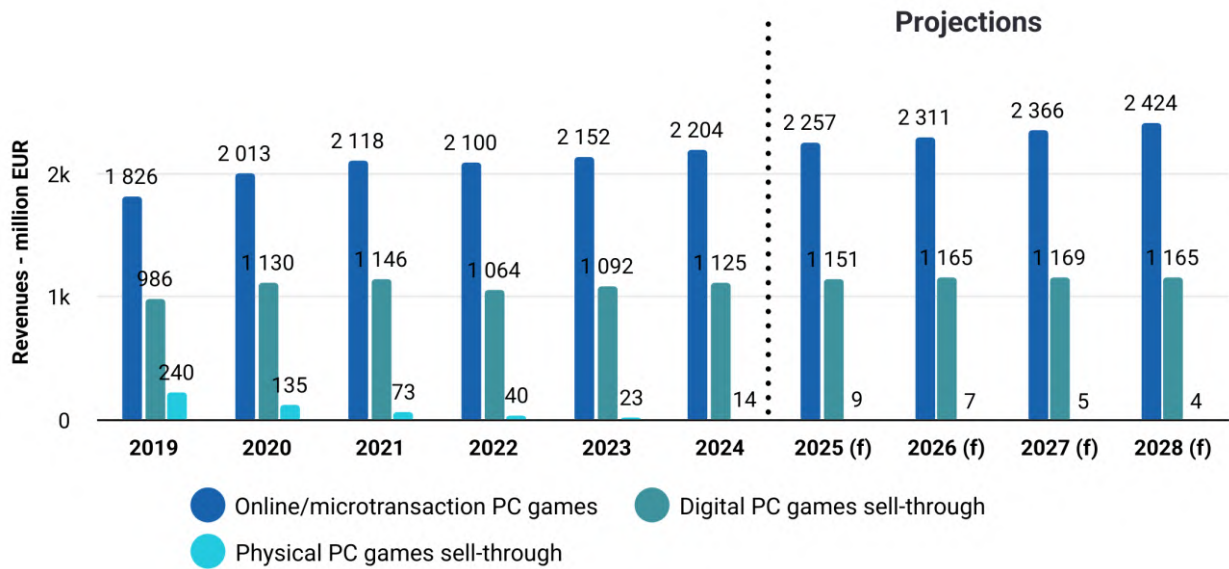
<sup>18</sup> Due to methodological reasons, revenue data covers 17 EU Member States while other countries' data are extrapolations (see the notes under the successive graphs).

<sup>19</sup> Although new releases are themselves increasingly digital, physical releases can still remain an opportunity, depending on the device of release and the audience.

<sup>20</sup> Newzoo data reports 56% for 2024.



Figure 4. PC transactions revenue in the EU, in millions of EUR

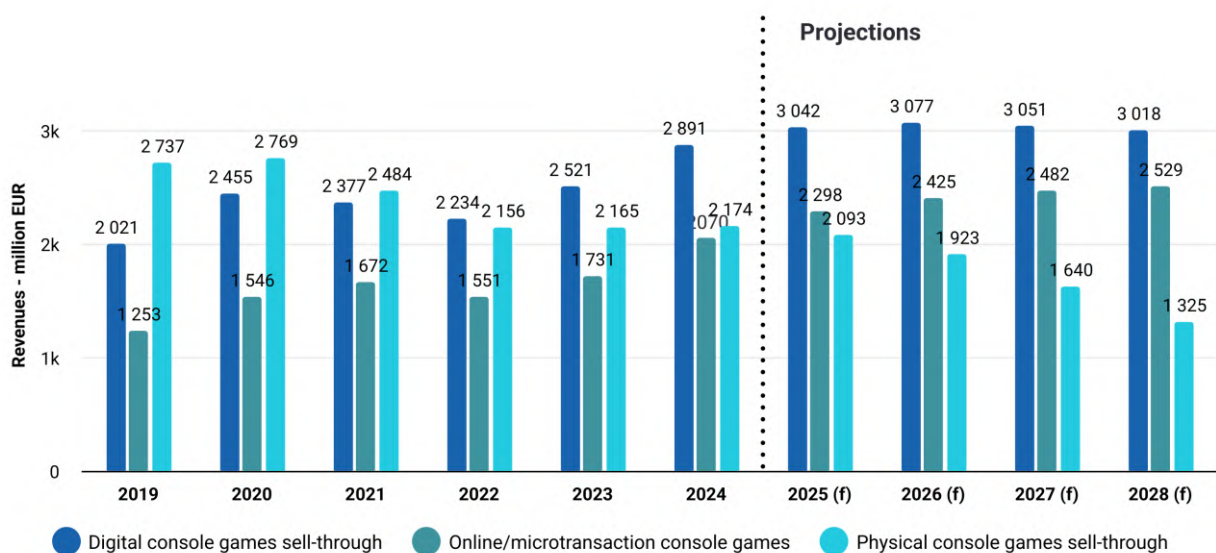


Source: PwC Global Entertainment & Media Outlook 2024–2028, [www.pwc.com/outlook](http://www.pwc.com/outlook).

Note: Revenues in the PC video game industry, break-down by physical, microtransactions and digital revenues. Based on original data for 17 EU Member States, with other countries' data being extrapolations.

**In the game console segment, the market for physical game sales is shrinking but remains present, while digital sell-through is slightly increasing.** There is no consensus over the future trends, with some analysts pointing to a rebound in the coming years,<sup>21</sup> while others are anticipating a slight decline.<sup>22</sup> Much will depend on the success of new games and new consoles set to be released from 2025 (e.g. *Grand Theft Auto VI* in 2026).

Figure 5. Console transactions revenues in the EU, in millions of EUR



Source: PwC Global Entertainment & Media Outlook 2024–2028, [www.pwc.com/outlook](http://www.pwc.com/outlook).

<sup>21</sup> E.g. Newzoo.

<sup>22</sup> E.g. PwC, *PwC Global Entertainment and Media Outlook: 2024-2028*, 2024.

Note: Revenue in the console video game industry, break-down by physical, microtransactions and digital revenues. Based on original data for 17 EU Member States, with other countries' data being extrapolations.

**In the mobile game segment, consumer spending is experiencing a dip, while in-app game advertising shows upward prospects.** Despite leading in terms of consumption (see the Consumption section), the mobile segment is not a core revenue driver in the EU. Consumer spending in mobile – which can for the most part be broken down between premium digital revenues<sup>23</sup> and the sales of in-game items<sup>24</sup> – represented 26% (EUR 5.6 billion - down from 5.3 billion in 2023) of total consumer spending in the EU total video game market in 2024. No breakthrough is anticipated for the coming years for mobile consumer spending, with a 2.4% average growth rate per year between 2024 and 2027, reaching EUR 6 billion.<sup>25</sup> In-app game advertising however shows more promising prospects: revenues in the EU are estimated at EUR 4.7 billion for 2024, a 13.7% increase compared to 2023. An 8.6% average annual segment growth is forecast between 2024 and 2028<sup>26</sup> so in-app game advertising may surpass consumer spending.

**The esports market is growing but remains a niche segment of video games.** Esports have gained further institutional recognition over the past years<sup>27</sup> and people's awareness as well as audiences grew: around 41% of the EU population engaged with esports in 2024, against 30% in 2020.<sup>28</sup> However, regular viewership has declined in Europe since the COVID-19 pandemic and although some hubs exist (e.g. Katowice or Dublin), the EU market remains immature<sup>29</sup> and far behind the Chinese, US or South Korean markets (in the Asia-Pacific region, for example, 74% of people engage in esports). At global level, revenues from esports represented 0.8% of the revenue of the video games and esports markets in 2024, and it is expected to increase to just 0.9% by 2028.<sup>30</sup> As well as generating its own revenues, esports remains a valuable and exploitable model to drive up the consumption of games, but remains limited to a handful of IPs so far.

## Employment and working conditions

**It is estimated that more than 100,000 people in the EU work in the broader video game sector.**<sup>31</sup> Employment in the sector is on a long-term upward trend, reaching double-digit growth figures in countries like Sweden or Poland prior to 2023. France accounts for some 15%<sup>32</sup> of the workforce, on a par with Poland and ahead of Germany, Sweden, Spain and Romania. The sector is becoming increasingly diverse: in 2023, women made up around one quarter of the gaming workforce, rising year on year.<sup>33</sup>

**Working conditions are overall favourable and improving.** Salaries in video games can be considered higher than those of other cultural and creative industries. They increased in the EU

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<sup>23</sup> Revenue generated by the sales of games or game-related content purchased directly from an online store and delivered through a digital download.

<sup>24</sup> Revenue generated through the sales of in-game items, including expansion or content packs, cosmetics/skins, power-ups, time savers, loot boxes, playable characters, content passes for a one-off fee (battle/season pass), in-game currencies, content passes for a recurring fee, and reward passes.

<sup>25</sup> According to Newzoo data.

<sup>26</sup> PwC, [Global Entertainment & Media Outlook 2024–2028](#), 2024.

<sup>27</sup> E.g. Esports will be part of the Asian Games in 2026, and the International Olympics Committee has endorsed the organisation of the Esports Olympics in Saudi Arabia in 2027.

<sup>28</sup> Deloitte, [Let's Play! 2024 The esports market](#), 2024. Data from 7 EU markets.

<sup>29</sup> With Germany leading in this market.

<sup>30</sup> PwC, [Global Entertainment & Media Outlook 2024–2028](#), 2024.

<sup>31</sup> There is no consolidated nor authorities data on employment. By tracking job descriptions in LinkedIn, it can be estimated that 145,000 professionals worked in the sector in the EU in September 2024. Available data from industry reports point to close to 90,000 jobs in 2022 across nine EU Member States: Italy, Spain, France, Germany, Poland, Romania, Finland, Sweden and the Netherlands.

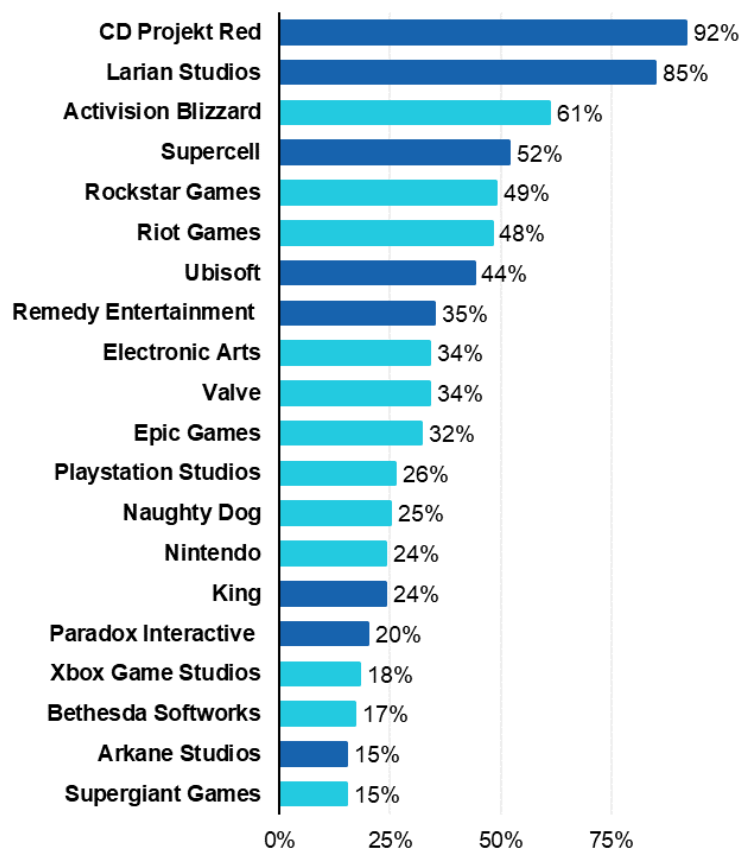
<sup>32</sup> VideoGamesEurope, [Key Facts Report 2023](#), 2023.

<sup>33</sup> According to both LinkedIn data and industry reports.

between 2023 and 2024,<sup>34</sup> with a more positive dynamic than in other European countries.<sup>35</sup> The median annual gross salary of a middle-level programmer in the EU stood at EUR 47,000, up from EUR 35,000 in 2023 (for a game designer, salaries increased from EUR 30,283 to EUR 34,500). There are some marked differences in salaries depending on the monetisation model of companies, with developers of subscription and free-to-play games enjoying better conditions than developers of premium games. Remote work, driven by both workers' demand and opportunities to cut office costs, is becoming generalised and concerns 57% of the EU workforce (up from 48% in 2023),<sup>36</sup> with an overrepresentation among indie game developers (as opposed to employees at publishers'). Compared with 2023, more professionals had to work overtime, but less frequently. On the downside, gender pay gaps endure (especially at C-level and for user acquisition roles) and gender discrimination continues to be widespread: in 2024, every other European worker had witnessed a case of gender discrimination in their career.<sup>37</sup>

**EU companies<sup>38</sup> are attractive for European professionals.** When asked about the global companies they would like to work for, respondents place five EU-born companies among their top eight.

*Figure 6. Which global companies do Europeans want to work for?*



Source: *Big Games Industry Employment Survey 2024* (38 European countries including all EU Member States), Nr of respondents = 1,387. In dark blue those companies that are EU-born.

**However, the sector continued to suffer substantial layoffs throughout 2023 and 2024.** The recent investment crisis and shortage of investment capital pushed publishers to opt for more prudent

<sup>34</sup> With the exception of HR, quality assurance and some design (artistic design at middle level, and game design at junior level) positions. For more information, see InGame Job & Values Value's [Big Games Industry Employment Survey 2024](#), 2024.

<sup>35</sup> In particular for programme and project management. The available data compares the EU with Armenia, Belarus, Georgia, Moldova, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Ukraine.

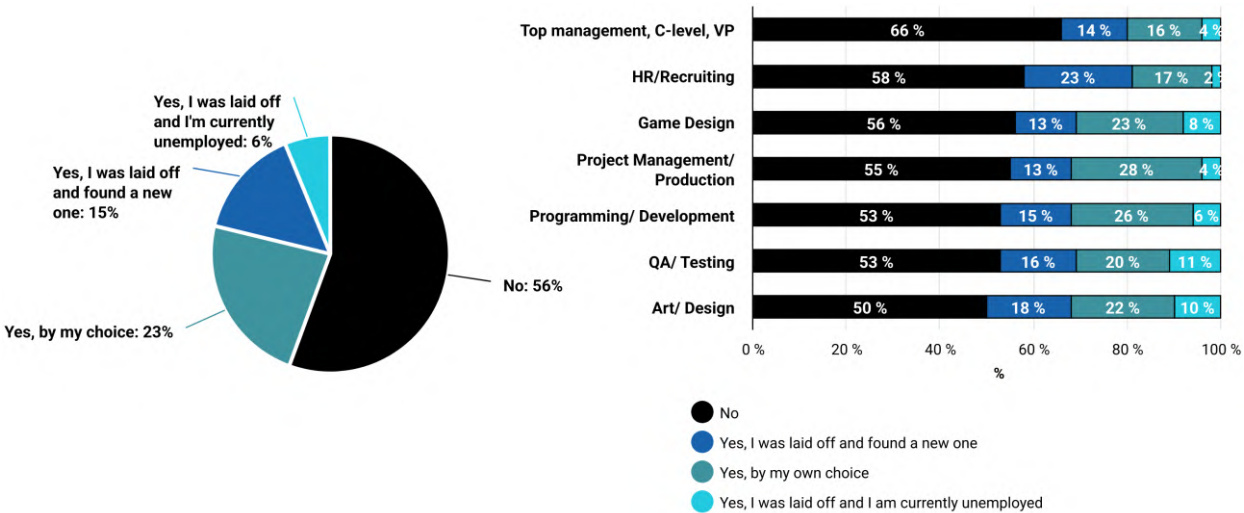
<sup>36</sup> Data for EU, UK and Switzerland. This remains lower than in the rest of Europe (75%, up from 69% in 2023).

<sup>37</sup> In this case, the sample is European professionals, covering 38 countries including all EU Member States.

<sup>38</sup> Understood as companies with their original headquarters in the EU.

strategies (including through consolidations) and focus on fewer projects. Globally, an estimated 14,600 video gaming employees lost their jobs in 2024, after 10,500 in 2023 and 8,500 in 2022,<sup>39</sup> these years being three consecutive record highs in terms of layoffs. Surveys point to 11% of developers globally being laid off in 2024, against 7% in 2023<sup>40</sup>, while data on Europe points to 21% of professionals being laid off in 2023 and 2024 (mostly in HR, art/design and quality assurance). In Europe, leading companies such as Embracer, Ubisoft and Vivendi shed many jobs in 2024, and the wider developer ecosystem – very dense in Europe – was affected.

Figure 7. Job transitions by profession in Europe



Source: Big Games Industry Employment Survey 2024 (38 European countries including all EU Member States), N= 1,387.

**Despite the wave of layoffs, the EU video game labour market remains dynamic, with three in four professionals finding a new job within six months of leaving a position.**<sup>41</sup> More job transitions in the sector are due to deliberate career decisions than to layoffs. When considering all job changes in the sector in 2023-2024, 44% saw an increase in salary upon taking a new job, only 24% lost out and 10% had to change industry. When layoffs do happen, programmer profiles remain very much in demand elsewhere in the industry, while HR skills allow the involved workers to find other positions. Yet, workers in occupations such as quality assurance/testing and art/design have found it harder to find another job. As a whole, the data on layoffs and current unemployment trends appears to align with existing research on job roles most susceptible to AI-driven automation, particularly in design and quality assurance. This underscores the growing influence of AI in reshaping job markets.

**As a global industry, the video games sector exploits the possibilities from a global labour market.** As an industry that remains volatile and project-based, with development time increasing, the sector relies quite significantly on freelancers,<sup>42</sup> contractors, part-time workers and remote work (including external and distributed development, in particular for niche artistic tasks).

### Structure of the market

<sup>39</sup> For the year 2025, the estimated total stands at 4,000 as of July 2025. Data retrieved from the Obsidian Platform through <https://publish.obsidian.md/vg-layoffs/Archive/2024>.  
<sup>40</sup> Data from the State of the Game Industry report of the yearly Game Developers Conference, based on a survey of more than 3,000 developers.  
<sup>41</sup> See InGame Job and Values Value's [Big Games Industry Employment Survey 2024](#), 2024.  
<sup>42</sup> Using LinkedIn data, it can be estimated that 12.115 people worked as freelancers in the EU in 2024. InGame Job & Values Value's [Big Games Industry Employment Survey 2024](#) points out that senior positions are more affected, and in artistic design more than in any other occupation.

**The structure of the video games ecosystem and roles in the value chain have slightly evolved over the past years, although they remain essentially structured around developers, publishers, distributors and hardware manufacturers.** Increasingly assisted by AI, developers are responsible for the design and development of the video games, while publishers focus on financing and production<sup>43</sup> and distributors cover the consumer interface or retail/e-stores. However, new business models are blurring the lines between the mobile/PC/console segments as well as hardware/software, with technologies (e.g. cloud, game engines, porting) lowering entry barriers (mobile developers are increasingly moving to PC and console; leading PC and consoles publishers are targeting mobile distribution; and live service games are ported to different platforms to address the largest possible community of players).

**In the EU, the number of developing and publishing companies has broadly increased over the past years.** There were around 5300 developing studios and more than 200 publishers in the EU in 2022. The largest national industries are home to many indie video game developer studios, in a range of 400 to more than 700 in countries such as Spain, Poland, France or Germany. Scandinavian countries are also prominent, with Sweden leading this ranking with more than 900 studios in 2022 (a 20% increase from 2021). In comparison with the EU, the US has registered stronger growth in the number of video game companies over the past years.

*Table 3. Number of game development studios and game publishers in the EU and US*

|    |                                                | 2019  | 2020  | 2021  | 2022  | 2023  |
|----|------------------------------------------------|-------|-------|-------|-------|-------|
| EU | Game developer studios                         | 4,900 | 4,600 | 5,500 | 5,300 | n.a.  |
|    | Game publishers                                | 203   | 170   | >250  | n.a.  | 216   |
| US | Game developers                                | 1,518 | n.a.  | n.a.  | n.a.  | 2,042 |
|    | Game publishers and self-publishing developers | 147   | n.a.  | n.a.  | n.a.  | 603   |

Source: Based on EGDF and Video Games Europe, Entertainment Software Association (US) and Moody's Orbis.

Note: There was a change in the consolidation method for the game developer studios in the EU in 2020. For the US, game publishers and self-publishing developers are counted together, in line with the national industry's monitoring practice.

**At the level of distribution, the EU market, just like the global market, remains dependent on a restricted number of non-EU companies and services.** On mobile, boosted by the surge of mobile gaming after 2020, Apple (with the App Store) and Google (with Google Play) have consolidated their position at the top of the world ranking in video games revenue through their e-stores and related commission fees. It is estimated that these two companies generated more than EUR 23 billion in revenue only from video game commissions from developers in 2024.<sup>44</sup> They can also have a better access to data than publishers or developers. On PC, brick-and-mortar shops have continued to close and remaining companies have diversified their business to survive.<sup>45</sup> Steam (Valve) remains a market leader in the digital distribution market – boosted in recent years by the Chinese market, with Epic Store the leading challenger – and some European companies retaining a small share of the market (e.g. CD PROJEKT RED'S 'GoG' e-store) together with e-commerce giants. In the console segment, many experts refer to a shrinking market for hardware in the future (in 2022, sales of consoles such as Nintendo's Switch and Microsoft's Xbox generated just 7% of the video game industry's revenue).<sup>46</sup>

**However, Europe can boast a rich ecosystem of promising companies.** While the US industry as a whole had three times as many startup companies valued at more than USD 1 billion than Europe

<sup>43</sup> There are of course other models depending on the segment of the market. Many developers - in particular in the mobile gaming segment - self-publish their games, while the largest publishers also integrate the distribution of their own game.

<sup>44</sup> Matthew Ball (Updated: 17 April 2025), [The State of Video Gaming in 2025](#), Epyllion.

<sup>45</sup> E.g. Micromania in Europe.

<sup>46</sup> McKinsey Global Institute, [The Next Big Arenas of Competition](#), 2024.

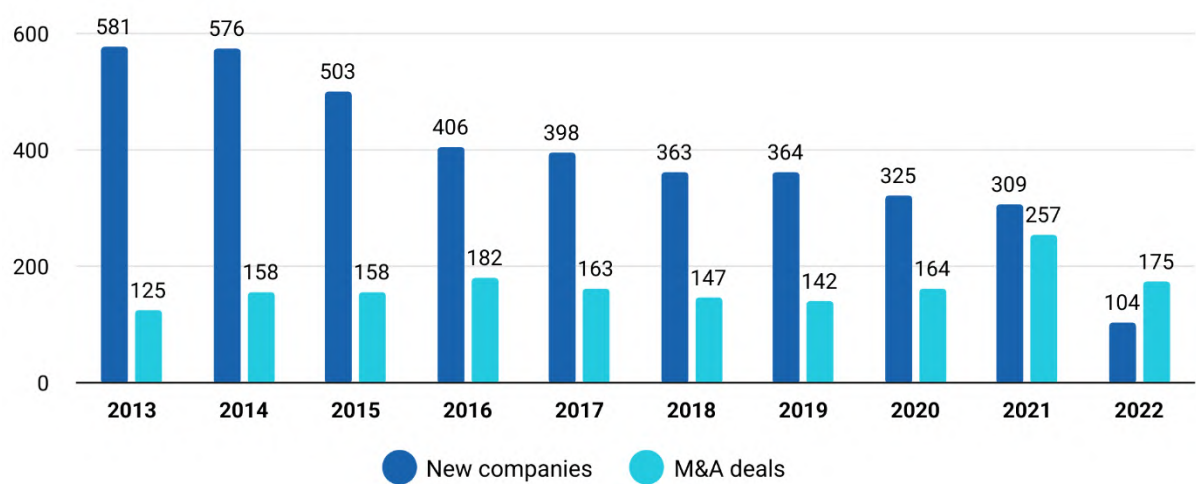


in 2024, in the media sector this number is much more balanced (34 US companies against 31 European ones).<sup>47</sup>

Consolidation and vertical integration

At global level, the market was marked by constant consolidation prior to COVID-19. The number of M&A deals surpassed the number of new companies in 2022, when the demand for home entertainment soared. Microsoft’s intention to acquire Activision Blizzard for EUR 67 billion in 2022 best exemplified this trend.

Figure 8. Number of new companies and M&A deals in the video game industry at global level



Source: McKinsey Global Institute analysis incorporating data from PitchBook Inc. Analysis.

A similar trend was observed in the EU. The size of M&A in the EU, however, remained much smaller – with Sweden’s Embracer being the most active European player, totalling USD 14.1 billion over 78 deals between 2019 and 2024. In the meantime, many European companies have been acquired by global players or have seen non-EU companies taking larger participations,<sup>48</sup> which allows these larger corporations to benefit from the agility of small and medium-sized companies in niche markets. The lesser consolidation of the European ecosystem could hinder its competitiveness, as creating profitable games often requires substantial marketing and development budgets.

Table 4. Selected European acquirers (from 2020 to 2024)

| Company         | Headquarter | n of deals | Value     | Notable Studio Acquisitions                                                       |
|-----------------|-------------|------------|-----------|-----------------------------------------------------------------------------------|
| Embracer        | Sweden      | 78         | \$14.1 bn | Asmodee, Gearbox, Easybrain, Crazylabs, Saber, Flying Wild Hog, Aspyr             |
| Stillfront      | Sweden      | 12         | \$1.8 bn  | Storm8, 6Waves, Jawaker, Sandbox, SuperFreeGames, Candywriter, Nanobit            |
| MTG             | Sweden      | 7          | \$1.7 bn  | Plarium, Playsimple, Hutch, Ninjakiwi, Snowprint, Gamaga, Autoattack              |
| Keyword Studios | Ireland*    | 23         | \$0.7 bn  | CertainAffinity, Helpshift, DigitalMediaManagement, Climax, Highvoltage, Tantalus |

<sup>47</sup> Dean Takahashi, [Global game investment rose 38% to \\$4.3B in 2024 | Hiro Capital](#), Venture Beat, 3 February 2025. The enterprise value is however higher in the US.

<sup>48</sup> Cases abound, including NetEase’s acquisition of France’s Quantic Dream, Tencent’s acquisition of Poland’s Techland in 2023, several acquisitions in Finland (Next Games by Netflix, Reworks by Playtika - later closed, and later Rovio, acquired by Sega in 2023) and more recent discussions around Tencent’s shares of Ubisoft which have sparked discussion over France’s and Europe’s cultural sovereignty.

|               |        |   |          |                                                                          |
|---------------|--------|---|----------|--------------------------------------------------------------------------|
| Enad Global 7 | Sweden | 5 | \$0.5 bn | Daybreak, Piranha, Bigbluebubble, Innova, Singularity                    |
| Team17        | UK     | 7 | \$0.2 bn | Astragon, HellLetLoose, Storytoys, The Label, GolfFriends, Yippee, IArts |
| Pullup        | France | 8 | \$0.1 bn | Dovetail, Deck13, Streumon, Douze Dixiemes, Blackmillgames, DDTemu       |

Source: *investgame/GDEV*.

Note: \*Keyword Studios is headquartered in Dublin (Ireland) but its country of incorporation is England & Wales according to the company's official website.

### Further to the crisis experienced in 2023-2024, key players moved to divestment strategies.

Deteriorating market conditions (e.g. lack of organic growth) left some companies financially strained, with many assets worth less than their purchase price. To recover, companies began restructuring, announcing layoffs, leadership changes, and asset sales<sup>49</sup> – a trend that started in 2023 and has persisted until 2025.

**Meanwhile, vertical integration and tentative diversifications continue in the sector, in particular on the part of the tech industry.** Over the past two decades, major publishers have increasingly embraced vertical integration, with many expanding into development roles to gain greater control over production, distribution, and marketing.<sup>50</sup> The same trend was observed among console manufacturers that acquired game developers and publishers to expand their margins. Tech giants have also adjusted their investments across the value chain in past years. Some have expanded their presence (e.g. Amazon's cloud gaming service 'Luna' launched in 2023 in the EU; Microsoft intends to launch an Xbox mobile store in 2025) while others closed some services (e.g. Google Stadia shut down in 2023; Netflix closed its AAA games development studio in 2024 without a single release to devote resources to mobile gaming) or still expect their acquisitions to pay off (e.g. Amazon with Twitch). Among these tech firms, Tencent's division 'Tencent Games' has retained the place it holds for several years as the world's largest gaming company by revenue, owning leading developing studios beyond its borders and with a range of minority shares in Epic Games and Ubisoft, among other important players.

Table 5. Vertical integration of key companies

| Company    | Publisher | Distributor |         |                                    | Game console (Device) | Game engine | Cloud gaming enabler |
|------------|-----------|-------------|---------|------------------------------------|-----------------------|-------------|----------------------|
|            |           | App Store   | e-store | Subscription service <sup>51</sup> |                       |             |                      |
| Amazon     | •         | •           | •       | •                                  |                       |             |                      |
| Apple      |           | •           |         | •                                  |                       |             |                      |
| Embracer   | •         |             |         |                                    |                       |             |                      |
| Epic Games | •         | •           | •       |                                    |                       | •           |                      |
| Google     |           | •           |         |                                    |                       |             |                      |
| Microsoft  | •         | •           | •       | •                                  | •                     | •           | •                    |
| Nintendo   | •         |             | •       |                                    | •                     |             |                      |
| Nvidia     |           |             |         | •                                  |                       |             | •                    |
| Sony       | •         |             |         | •                                  | •                     |             |                      |
| Ubisoft    | •         |             | •       | •                                  |                       | •           |                      |

<sup>49</sup> Embracer, for example, divested key assets such as developing studios Easybrain, Gearbox and Saber.

<sup>50</sup> In addition to Embracer, mentioned further up, major publishers like Activision and Electronic Arts have acquired numerous smaller studios to strengthen their portfolios.

<sup>51</sup> Services that give access to multiple games services. As the Nintendo Switch Online provides only access to legacy games (classic games from previous consoles, like NES, Super NES and Game Boy), it has been excluded from the analysis.

|         |   |   |
|---------|---|---|
| Tencent | . | . |
| Valve   | . | . |

Source: Technopolis Group's elaboration.

## Top players

**The global video games market is dominated by non-European companies.** Tech giants dominate the ranking with Tencent, Microsoft, Apple and Google among the companies generating most revenues. The market is concentrated with the five largest firms generating around half of all revenue for the worldwide video game sector in 2023.<sup>52</sup> Between 2021 and 2024, Sony lost its first position to the benefit of Tencent which increased its investments and acquisitions while Microsoft's revenues increased dramatically (around 60%), driven by the acquisition of Activision. The EU is home to few tech companies or major studios/publishers: only two Europe-based corporate groups (Ubisoft and Embracer) are among the 25 biggest game industry firms by revenue. Europe can, however, boast world-class developers and innovators and has dynamic video gaming hubs (e.g. in Sweden and Finland).

Table 6. Top public games companies by revenues, in millions of EUR

| Rank | Company <sup>53</sup>      | Headquarters  | Revenues (2023) |
|------|----------------------------|---------------|-----------------|
| 1    | Tencent                    | China         | 27 680          |
| 2    | Sony                       | Japan         | 16 851          |
| 3    | Microsoft                  | United States | 13 835          |
| 4    | Apple                      | United States | 13 420          |
| 5    | NetEase                    | China         | 9 810           |
| 6    | Google                     | United States | 7 678           |
| 7    | Electronic Arts            | United States | 7 049           |
| 8    | Nintendo                   | Japan         | 5 938           |
| 9    | Take-Two Interactive       | United States | 4 326           |
| 10   | Nexon                      | Japan         | 2 755           |
| 11   | Roblox                     | United States | 2 577           |
| 12   | Bandai Namco Entertainment | Japan         | 2 341           |
| 13   | Playtika                   | Israel        | 2 267           |
| 14   | Warner Bros. Entertainment | United States | 2 197           |
| 15   | 37 Interactive             | China         | 2 137           |
| 16   | Sea Group                  | Singapore     | 1 999           |
| 17   | Ubisoft                    | France        | 1 751           |
| 18   | Netmarble                  | South Korea   | 1 750           |
| 19   | Embracer Group             | Sweden        | 1 649           |
| 20   | Square Enix                | Japan         | 1 565           |
| 21   | Konami                     | Tokyo         | 1 500           |
| 22   | Century Huatong Group      | China         | 1 444           |
| 23   | Krafton Game Union         | South Korea   | 1 319           |
| 24   | Sega                       | Japan         | 1 260           |
| 25   | CyberAgent                 | Japan         | 1 200           |

Source: Newzoo Games Market Report & Forecast, December 2024 Update.

<sup>52</sup> Based on Newzoo video games global revenues data.

<sup>53</sup> For conglomerates, the reported figures correspond to the gaming division.



Note: Data originally in dollars. 1 USD = 0.9206 EUR.

**Valve's Steam has consolidated as a powerful market actor.** Although absent from the above table due to its market positioning as mainly a digital distribution platform, Valve greatly influences the PC market. Valve presented its distribution platform Steam in 2002. It was designed to give access to its games, before offering third-party titles access to its storefront. The company scaled down on development of PC video games and grew thanks to Steam – which has become mainstream among consumers, evolving into a digital storefront with social features that offer gamers a space to connect and interact.<sup>54</sup> In 2024, Valve reported that Steam's number of peak concurrent users was nearly twice what it was in March 2020. Hours spent on its hardware (Steam Deck) were 64% higher than in 2023, and new releases' revenue in 2024 was 10 times higher than in 2014. With time, Steam has become the only provider for most games released on PC. In exchange for their presence in Steam's catalogue and related services, the company takes a commission on games' sales, which has contributed to making of Valve one of the most profitable companies in the sector. The company does face some competition (e.g. from Epic Games or Microsoft) while some publishers use their proprietary digital storefront (e.g. EA, Ubisoft, Activision Blizzard).

**Chinese firms are realising their ambitions.** Chinese organisations have been the first to benefit from the global growth of the video games market since the 2010s: it is estimated that 42% of the growth in consumer spending between 2011 and 2024 went to Chinese developers. This success has been boosted lately by the hit game *Black Myth: Wukong*, developed by Chinese studio Game Science (a startup backed by Tencent) which built its success primarily on the domestic market.<sup>55</sup> The growth of the Chinese industry also owes to investments in and acquisitions of top gaming companies: in 2023, NetEase Games opened new studios in Barcelona (Spain) and Seattle (US) after acquiring French independent video game developer Quantic Dream in 2022. In early 2025, it was also set to invest EUR 1.16 billion in Ubisoft's newly established subsidiary, acquiring a 25% stake. The company also acquired shares in Riot Games, Epic Games, and Supercell.

**The Kingdom of Saudi Arabia is also emerging as a global leader.** Saudi Arabia is a leading force in the market. Boosted by high domestic consumer demand and as part of a plan to diversify its economy, Saudi Arabia has started an active investment campaign in video games and esports, acquiring shares of Nintendo<sup>56</sup> and now indirectly owning 40% of the global esports market. Saudi Arabia also agreed with the International Olympic Committee to organise the first Olympic Esports Games, set to be held in 2027.

**In the EU, French and Swedish<sup>57</sup> companies are leading the market.** The top-ranking EU companies in terms of revenues include Ubisoft (France), Embracer Group (Sweden), Keyword Studios (Ireland), Gameloft (Vivendi, France), CD PROJEKT RED (Poland), and Enad Global 7 (Sweden). Finland also boasts a dense gaming industrial ecosystem, particularly in the mobile segment. As a whole, the EU stands out for the quality and critical success of its games: in 2024, *Baldur's Gate III* (developed by Larian Studios, born in Belgium) and *Helldivers II* (developed by Swedish Arrowhead Game Studios) featured among the best-selling PC and console games on Steam in 2024,<sup>58</sup> scooping many awards. CD PROJEKT RED also achieved critical and commercial success with *Cyberpunk 2077*, as did Paradox Development Studios with *Hearts*, *Iron IV* and *Stellaris*. More recently, in 2025, *Clair Obscur: Expedition 33* by French studio Sandfall Interactive sold more than three million copies in just over a month, receiving global critical acclaim.

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<sup>54</sup> The company is reported to reach 130 million monthly average users worldwide.

<sup>55</sup> Meanwhile, Chinese authorities maintain an interventionist approach to gaming: in addition to strict rules on playing time and age limits for its domestic consumers adopted since 2019 – and, since, slightly softened – China continues to grant individual licences for the commercialisation of video games (whether Chinese or foreign); in 2024 it approved 1,416 games, which compares with 18,825 games released on Steam only that year.

<sup>56</sup> Its participation amounts to 6.3% of the company as of spring 2025 via its Public Investment Fund.

<sup>57</sup> The Swedish industrial ecosystem is particularly dynamic, with 108 new game companies registered in Sweden in 2023 alone.

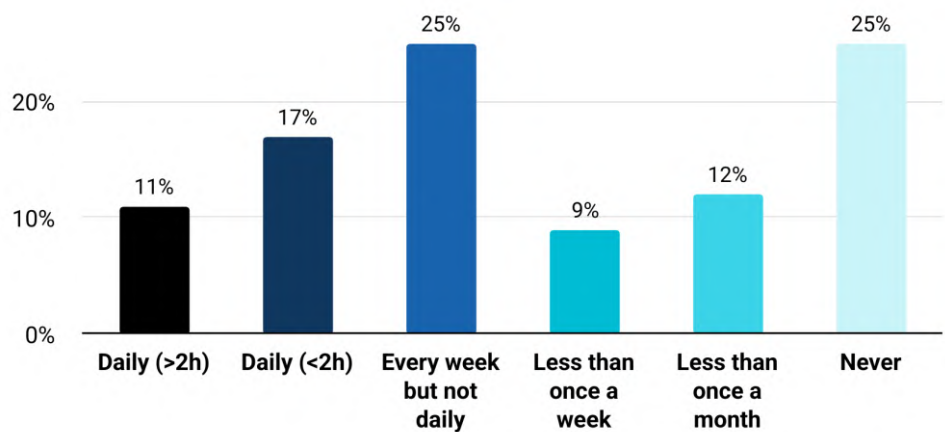
<sup>58</sup> Aritra Bhowmick, [Steam Reveals Best-Selling and Most-Played Games for 2024, Including Elden Ring, CS2, and More; All You Need To Know](#), IGN India, 27 December 2024. Note that *Baldur's Gate III* was already part of this ranking in 2023, posting a EUR 249 million pre-tax profit.

### 3.1.3. Consumer trends

#### Player base

**Gaming has become one of the most popular activities for leisure and entertainment.** There were 3 billion players (roughly 40% of the total world population) at the end of 2024 and there could be 3.8 billion players by 2027.<sup>59</sup> In the EU, the player base has grown to reach around 75% of the online adult population.<sup>60</sup> 28% of people play daily, 25% weekly but not daily, and 25% never play, with playing frequency decreasing with age.

Figure 9. How often do you play video games? (n=55,746)



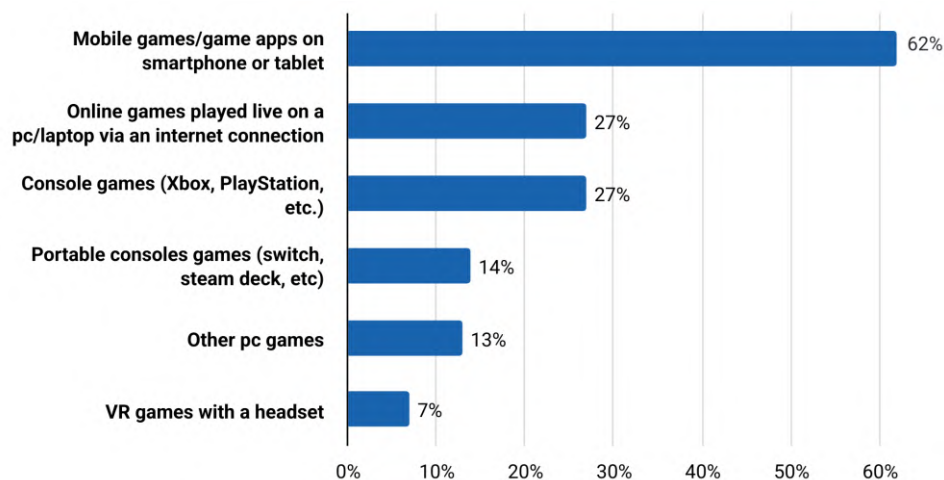
Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

**Mobile gaming leads consumption.** In terms of device, mobile gaming is leading, driven by the rise of casual games and increased smartphone penetration. There are proportionally more women than men playing mobile games, while men lead on PC and console. People aged 18 to 30 represent the majority of players in all types of games except mobile games and PC games.

Figure 10. Which games do you regularly play? Please select all that apply. (n=44,119, 1.42 average clicks)

<sup>59</sup> Based on Newzoo data.

<sup>60</sup> Industry reports (e.g. from trade associations) covering also offline populations point to 60% of people playing in the EU. Newzoo's [Global Gamer Study 2024](#), based on 36 markets globally, points to 80% of the online population playing games. As regards minors, Bain & Company's [Gaming Report 2024 - Meet the Moment: How Gamers Are Changing the Game](#) indicates that almost 80% of 2 to 18 year-olds are gamers, spending 30% of their entertainment time gaming.



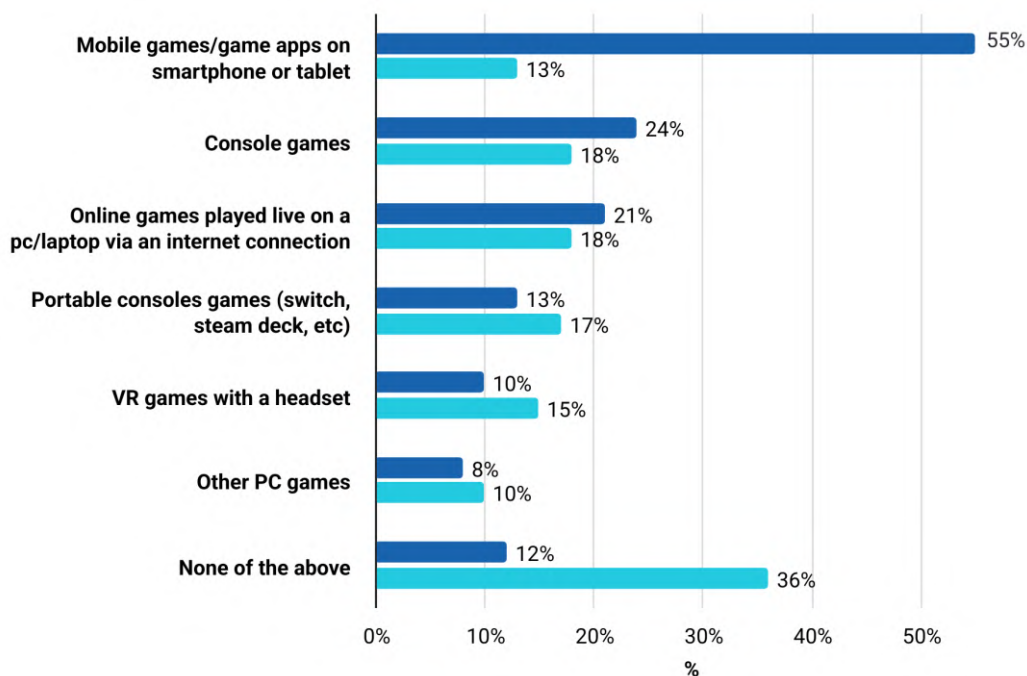
Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

Note: Data is broadly aligned with Newzoo data with, among other adjustments, mobile gaming slightly underestimated in our consumer survey.

**In 2023-24, mobile gaming has been on the rise.** Mobile games or apps on smartphones or tablets have seen the most significant increase in player engagement over the past 12 months, with 55% of Europeans reporting increased play and only 13% reducing it. Console games, such as those on Xbox or PlayStation, also saw an uptick, with 24% of participants engaging more frequently, and 18% engaging less. Figures for PC gaming are more balanced, while fewer people played VR games than last year.<sup>61</sup> An analysis of substitution effects suggests that mobile gaming significantly draws users away from other formats.

Figure 11. What kind of game formats have you started playing more and less in the last 12 months? Please select all that apply. (n=44,119, 1.27 average clicks)

<sup>61</sup> This is consistent with global data from Newzoo ([The PC and Console Gaming Report 2025](#), 2025) which reports a year-on-year increase of 6% on PC and console, with PC also being more stable.



Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

Note: dark blue (bar above) signals respondents who identify an increase in consumption and light blue (bar below) those who identify a decrease.

**Looking ahead, the player base is expected to marginally increase over the coming years.** Mobile will retain a better dynamic, driven by the upcoming release of portable devices, while PC playing is expected to grow at a slower pace (1.5% CAGR between 2024 and 2027).

*Table 7. Number of players in the EU, in millions*

|                        | 2023  | 2024  | 2027 (f) | 2024-2027 CAGR |
|------------------------|-------|-------|----------|----------------|
| <b>Total players</b>   | 273.7 | 279.6 | 291.7    | 1.4%           |
| <b>PC players</b>      | 124.7 | 126.8 | 132.7    | 1.5%           |
| <b>Mobile players</b>  | 181.9 | 192.2 | 205.7    | 2.3%           |
| <b>Console players</b> | 130.5 | 132.1 | 139.7    | 1.9%           |

Source: Newzoo.

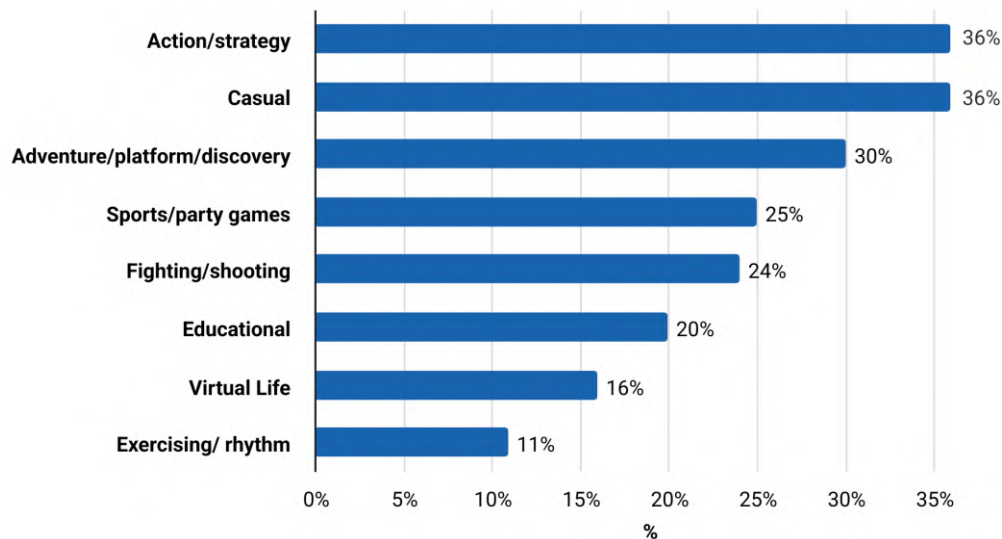
**Only a fraction of people say they do not play because they do not enjoy video games.** The most common reason for not playing, cited by 30% of non-players, is that it simply does not occur to them to play video games – an answer more often cited by older generations. Another significant factor is time constraints, with 27% of participants stating they do not have time for gaming, especially young adults. For 25% of people, video gaming is viewed as a leisure activity for a specific group of people, to which they do not belong, a figure that increases with age. 11% of non-players tried playing video games but did not enjoy the experience (a figure quite stable across age ranges), while 6% expressed interest in gaming but were deterred by the cost of necessary devices, such as consoles or PCs.

## Gaming preferences

**Action/strategy games, together with casual games, are most popular.** Genre continues to play a key role in the identification of games – it is the top factor considered by players when they decide to play one game over another. The most popular genres among players' households include action/strategy games and casual games such as puzzles, cards, or word games, reported by 36%.

Adventure/platform/discovery games are favoured by 30%, while sports/party games engage 25% of households. Fighting/shooting games are preferred by 24%. Educational games are played by 20% of European households, while virtual life games are played by 16% and exercising/rhythm games by 11%.

Figure 12. What are the most played genres in your household? Please select all that apply. (n=44,119, 1.85 average clicks)



Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

**Multiplayer games appear to be losing some interest.**<sup>62</sup> Altogether 10% of players report playing massively multiplayer online games (such as *Minecraft*, *Eve Online*, *Fortnite*) very often, while 33% never do. It is a game type that consumers report playing less than before, across all age groups. The fact that a game includes more social interactions is also the least important factor for consumers when deciding to buy or play one game over another (13%, far behind genre – 42% – or recommendations by friends or communities – 24%).

**Video games are confirming their status as gateways to other activities.** Among people playing games such as *Fortnite*, *Roblox* or *Minecraft*, 40% consume further media content within the game platform (such as concerts) and 33% follow classes and use games as learning support, particularly young adults).

**Video games' country of origin is irrelevant to most players.** When considering whether to play a game, 70% of Europeans do not consider the nationality of a game or do not consider it an important factor in playing, as they focus on aspects such as quality, narrative, and aesthetics, or they do not know the nationality of the games they play. However, 14% claim they want to support their national or European gaming industry.

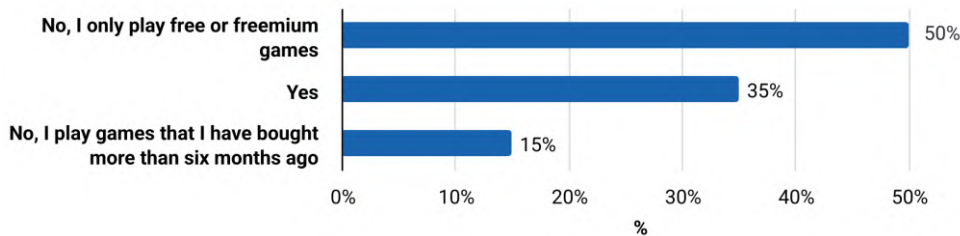
## Habits on expenditures

**Most players do not regularly spend money on video games.** 50% of players indicate that they played free or freemium games and did not spend any money on video games for the household in six months. 35% did spend money on video games, and 15% continued to play games they had bought more than six months ago without making additional purchases. When asking regular gamers about the main reasons for not spending money on video games in the past six months, 45% indicated that they were not avid gamers and preferred to spend money on other activities. Another 22%

<sup>62</sup> Other reports point to this trend, such as a global survey from MIDiA showing that 53% of players preferred single-playing over other playing modes (e.g. Player versus Environment or Player versus Player).

expressed satisfaction with free games, although they could afford to pay. For 17% of participants, the cost of investing in games was too high, even though they enjoy gaming. Additionally, 13% said they were still playing games they had previously bought, and therefore did not feel the need to spend more money.

Figure 13. In the last six months, did you spend money on video games for your household? (n=44,119)



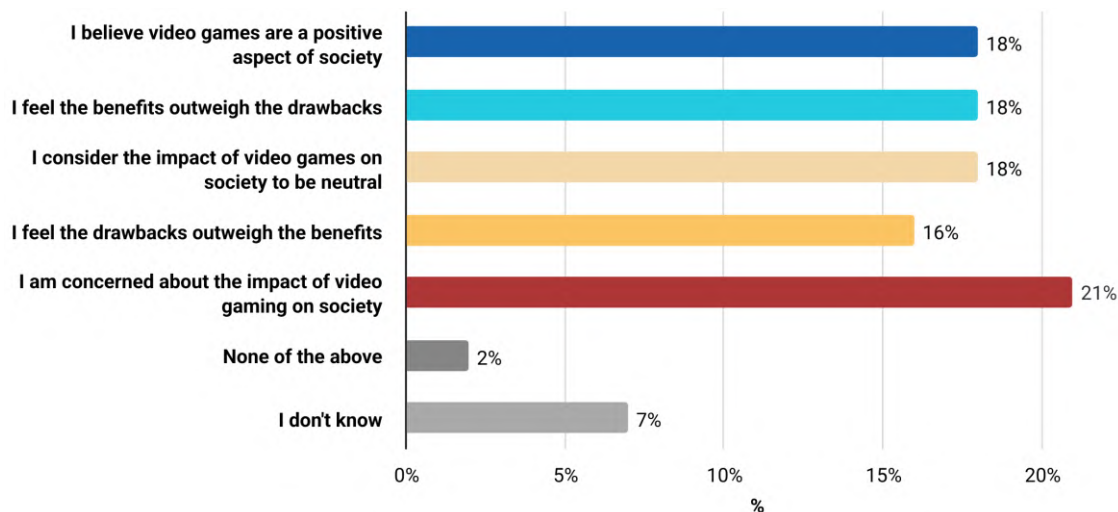
Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

Perception of gaming

**About equal number of players view video games positively and negatively.** A significant proportion of people (37%) express concern about the potential negative impacts of video gaming on society. Nonetheless, a similar percentage (36%) viewed video games positively, recognising their benefits, such as learning opportunities. The outlook on video games becomes less positive as age increases. When comparing players with non-players, the latter show more scepticism: 44% expressed concerns, against 12% having positive views.

Figure 14. How do you view the role of video games in society? (n=44,119)



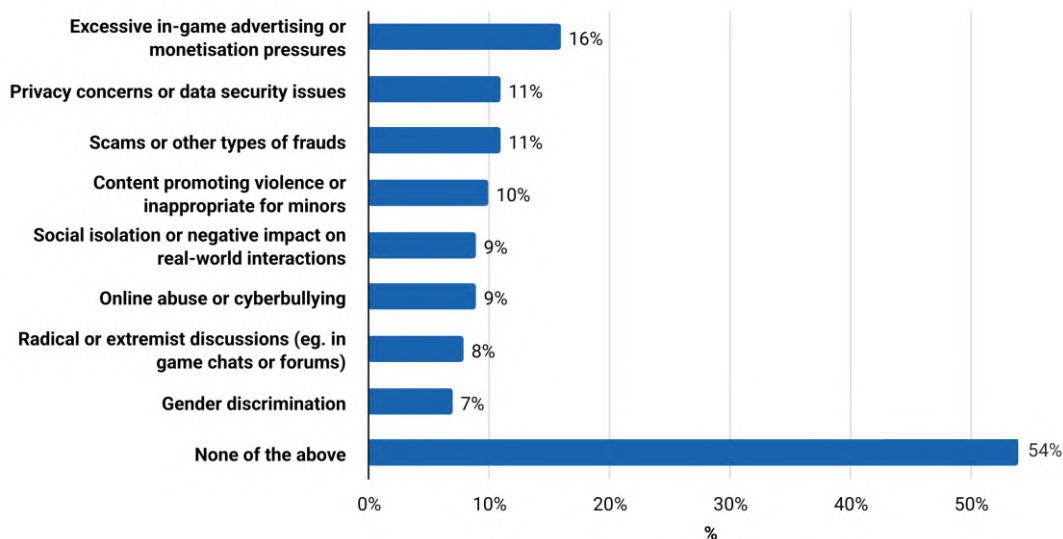


Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

## Experiences in games

**Almost half of all players encountered issues when playing games.**<sup>63</sup> Specifically, 16% of people reported excessive in-game advertising or monetisation pressures. Privacy concerns, data security issues, scams, and other types of fraud were each mentioned by 11% of participants. Social isolation or negative impact on real-world interactions and online abuse or cyberbullying were each reported by 9% of players. The data reveals that gaming-related issues are prevalent across various gaming categories, with no single platform or device being entirely immune to these concerns (but with PC players reporting most issues). Interestingly, it appears that concerns about gaming do not strongly deter individuals from playing games.

Figure 15. In the last two years, while playing video games, has anyone in your household encountered any of the following issues? Please select all that apply. (n=44,119, 1.27 average clicks)



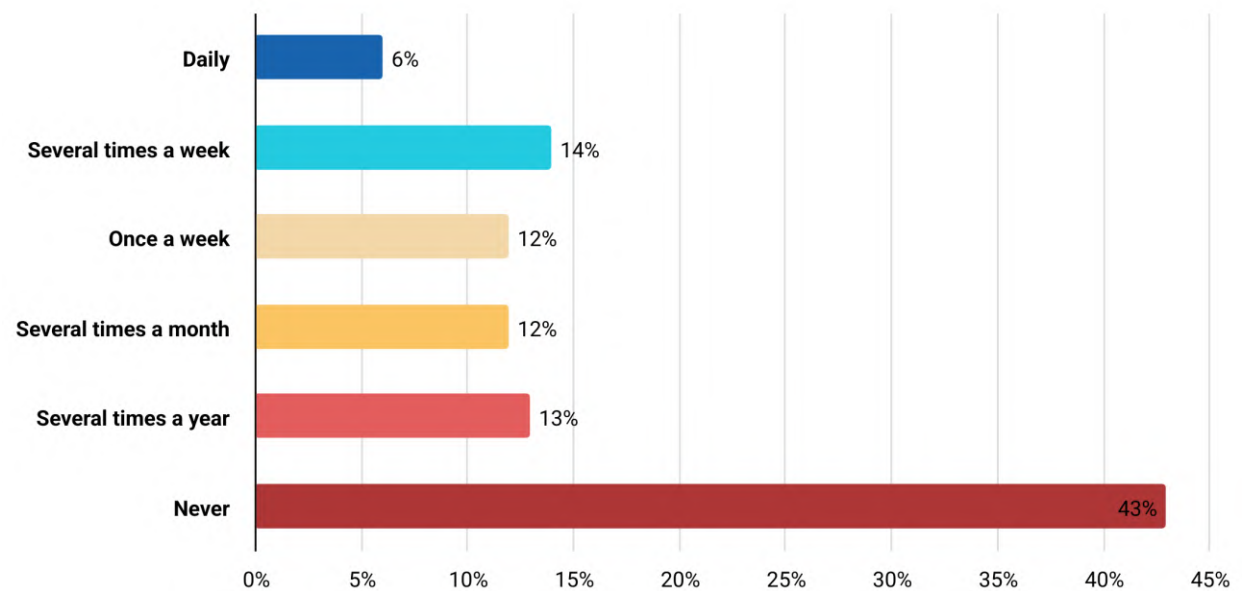
Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

## Esports and streaming habits

<sup>63</sup> While consumer and minor protection are not the focus of this report, there is evidence that the monetisation strategy developed in some games as well as addictive design functionalities can be harmful to vulnerable players.

**Watching gaming streams is becoming a standalone activity.** Around one-third of consumers watch esports or video gaming streams at least once a week, with a minority (43%) never watching. The tendency to watch esports or video gaming streams decreases with age and is more prominent among regular players: about 38% of weekly gamers watch esports or video gaming streams every week, compared to 15% of monthly gamers.

Figure 16. How often do you watch esports or video gaming streams? (n=44,119)



Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

3.1.4. Industrial trends and business models

Development, publishing and user acquisition

The number of video games developed and released over time varies from one segment to another, with the PC segment rising in the medium-term. Using Steam as a proxy<sup>64</sup> for PC, the number of releases steadily progressed over time, with a 33% increase between 2023 and 2024 (up to 19,000 titles, 99% estimated to be indie games). Mobile games have experienced a slump in the number of releases, down from 300,000 in 2016 to 70,000 in 2018, followed by a flatter decrease to around 45,000 in 2023.<sup>65</sup> In the console segment, releases have been steadily increasing since the end of the 2010s.<sup>66 67</sup> In France – the EU’s largest industry in terms of employment – studios released 1,257 games in 2022 (38% being self-published and 62% published by external publishers).<sup>68</sup>

Figure 17. Steam game releases by year

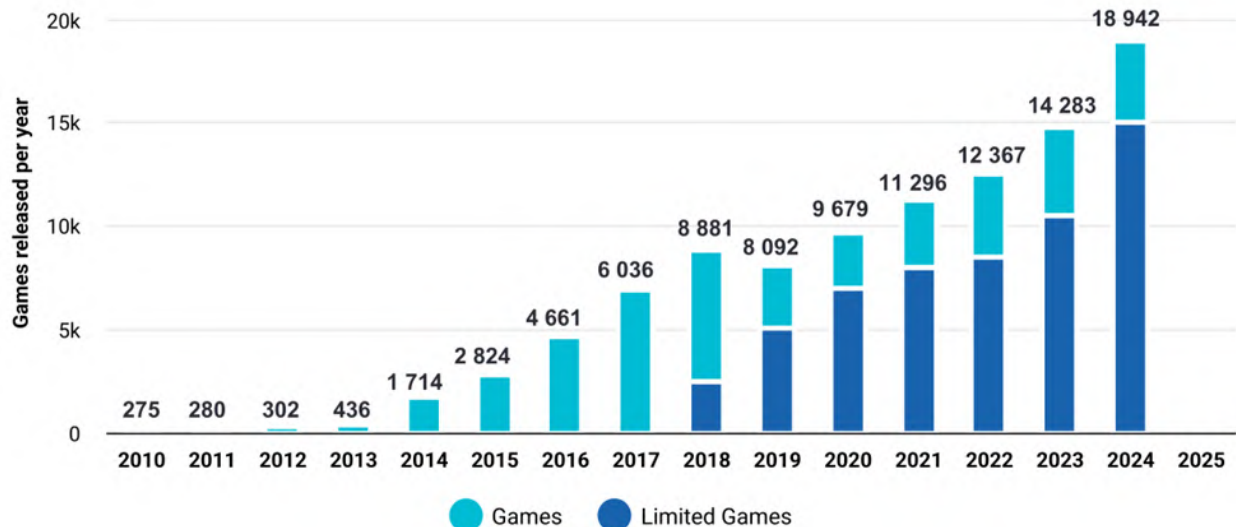
<sup>64</sup> As Steam is estimated to capture more than 90% of the PC market, it is used as a proxy for PC releases.

<sup>65</sup> Data gathered by data.ai, based on the iOS App Store catalogue. As of early 2025, the iOS App Store had 209,000 game apps, against 245,000 for Google Play: as the figures are of comparable magnitude, we are using the iOS App Store data as a proxy.

<sup>66</sup> There is no authoritative source, but estimates point to an increase from 1763 to 2608 on Nintendo Switch, from 801 to 1335 on PlayStation 4/5, and from 745 to 945 on Xbox One/Series between 2020 and 2023.

<sup>67</sup> The above figures overlap, as games are increasingly released on several consoles and platforms to maximise revenues.

<sup>68</sup> VGI, [Global Indie Games Market Report 2024](#), 2024.



Source: Steam.

Note: Limited games correspond to those games that do not reach a reasonable number of players – many being hobbyist projects. Over time, the number of these projects that did not find an audience has increased in both number and share.<sup>69</sup>

**Overall, the number of games available to play is decreasing.** Trends in the number of video games available to play are largely defined by the mobile market, which accounts for most titles. The number of games peaked in Q1 2018 with close to 1,040,000 gaming apps available across Google Play and the App Store, before a drop to around 450,000 in Q2 2024.<sup>70</sup> In the meantime, the number of games available to play has slightly but steadily increased on the main consoles, ranging in the thousands (Nintendo Switch leads ahead of PlayStation 4/5 and the Xbox One/Series), while the number of games available on Steam rose dramatically and nearly tripled between 2020 and 2024, reaching around 100,000.

**All in all, competition has increased for games entering the market over the past few years.** New releases are faced with several challenges. In addition to the need to compete with long-enduring live-service games, the market has become increasingly saturated: between 2019 and 2024, the number of games published per year has increased (by an average of 16% for the PC market, based on Steam data) while the average annual growth rate in global gaming revenues has been around 5%<sup>71</sup>, mostly captured by free-to-play titles.

**This has made user acquisition expenditure more crucial than ever.** User acquisition budgets (mostly marketing and advertising) in video games are traditionally higher than in other industries (around 25% of total revenues, against 15% for the software sector),<sup>72</sup> as the sector competes in an increasingly busy attention economy. In addition, the increased competition following COVID-19 has led these budgets to rise: in 2023, half of the PC/console games that spent most money on advertising were launches, compared to one-fifth in 2022.<sup>73</sup> As far as the mobile segment is concerned, marketing costs traditionally represent a higher share of total budgets than in the PC or console segment.<sup>74</sup>

<sup>69</sup> The surge in 2024 can also be attributed to the market context: with less investments and resources developers have turned to smaller projects which often struggled to reach audiences.

<sup>70</sup> Statista Data, Google Play representing 2/3 of the market.

<sup>71</sup> Based on Newzoo data.

<sup>72</sup> See Bain & Company, [Gaming Report 2024 - Meet the Moment: How Gamers Are Changing the Game](#), 2024.

<sup>73</sup> See Sensor Tower's [The State of AAA Game Advertising](#), 2024.

<sup>74</sup> Both because development costs are lower and because mobile games is a higher-risk industry, being three to five times more likely to fail than a retail company. See Bain & Company, [Gaming Report 2024 - Meet the Moment: How Gamers Are Changing the Game](#), 2024.

**In this market context, marked by increased competition and fewer investments, the development of AAA games is perceived as riskier than before.** The cost of publishing AAA games has surged in the past years, in particular as publishers sought to better meet players' expectations and to support their launches with substantial promotion budgets.<sup>75</sup> The recent crisis has led to the cancellation of many projects and is leading the video game industry to focus on a smaller number of AAA games, as well as known IPs which already have an audience. It is not expected, however, that those few EU publishers specialising in AAA games will shift automatically to the development of AA games, which are less costly to produce. Such a shift would imply repositioning the company in a new market and scaling down operations, which can be challenging to execute.

**Faced with increasing costs and competition, developers are looking for efficiencies.** Maximising existing releases is at the core of the strategies of developers (more below). The most common approach to cutting costs is to prioritise efficiency tools to increase productivity<sup>76</sup> – underlining the relevance of tools such as tech stacks in the sector.

## Release trends

**Publishers and developers are reporting a wish to multiply cross-platform releases and presence.** Mobile games have long enjoyed releases on multiple operating systems (i.e. on both iOS and Android).<sup>77</sup> For PC and console gaming, a move to cross-platform releases was noticeable from 2024: while exclusive deals between publishers and individual consoles were common (although not the dominant practice), the recent investment contraction has led publishers to consider releasing AAA titles on more than one console or device in order to multiply revenue streams.<sup>78</sup> This move was also driven by the success of live-service games across platforms, new business models (e.g. subscriptions and game passes),<sup>79</sup> increased technical possibilities of cross-play (e.g. cloud development and games engines)<sup>80</sup> and consumers' expectations to be able to switch device, or play together using different systems (PC, consoles, mobile).<sup>81</sup> In Europe, recent hits have owed much of their success to cross-platform releases: CD PROJEKT RED's *Cyberpunk 2077* was released on almost all platforms between 2020 and 2022, and Arrowhead Game Studios' *Helldivers II* simultaneously launched on PlayStation and Steam – an exception for Sony.<sup>82</sup>

## Revenue models

**The video game market is currently vibrant in terms of innovations in business models and revenue streams.** The market has evolved from paid retail to a range of options, including digital sales, microtransactions or subscription offers. The sector is characterised by a high diversity of

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<sup>75</sup> The budget of Ubisoft's *Star Wars Outlaws* published in 2024 was reported to range between USD 200 million and USD 300 million. Sony's *Concord*, which was closed in October 2024 days after its release, reportedly cost between USD 200 million and USD 400 million. It is estimated that the cost of developing an AAA game has risen approximately tenfold between 2009 and 2024.

<sup>76</sup> 2025 Unity Gaming Report. Based on 300 respondents globally.

<sup>77</sup> While technical difficulties remain, lower overall development costs and the use of the Unity game engine to release games on both iOS and Android have supported this trend. As of 2025, it is estimated that 26% of mobile games are available on both iOS and Android.

<sup>78</sup> In May 2024, Square Enix said it would shift away from its long-standing strategy of developing for PlayStation and instead 'aggressively pursue a multiplatform strategy'. Activision and Take Two have also spoken of their intention to put an end to exclusivity.

<sup>79</sup> From this perspective, Xbox's announcement of a shift away from exclusives in 2024 to release its games on PlayStation and Nintendo is fully in tune with its strategy to support the development of its Game Pass. It led to multiple waves of layoffs, including in 2025.

<sup>80</sup> The use of game engines like Unity and Unreal Engine, which natively support multiplatform development (compared to more specialised/per game engines of EU publishers), makes it easier and cheaper for developers to create games that run on a wide array of devices.

<sup>81</sup> A global survey from Bain & Company found that 70% of gamers are playing on several devices. For more, see Bain & Company, [Gaming Report 2024 - Meet the Moment: How Gamers Are Changing the Game](#), 2024.

<sup>82</sup> It is reported that, in the launch month, *Helldivers II* generated nearly 60% of its sales from Steam.

business models, boosted by the development of mobile gaming (e.g. with ad-based games, play-to-earn models or hybrid mixes).

**The focus in the PC and console video game sector has shifted towards alternative revenue models.** Free-to-play games, increasingly available as multi-platform titles, are driving growth with microtransactions, which have demonstrated the highest growth rate in the past years. Fortnite is a prime example of a successful free-to-play game, attracting millions of players worldwide with diverse playing formats and frequent content updates. By offering in-game purchases for cosmetic items (e.g. skins), such companies can ensure steady revenue while keeping the core gameplay accessible to everyone. In this context, EU publishers of AAA titles still retain a preference for premium games (with upfront payment).

**Subscription-based services, driven by game passes, have largely developed over the past years but are expected to reach a plateau.** At the end of the 2010s, the continued growth in the number of games produced fuelled the idea of developing subscription services providing access to catalogues of games. This model has attracted significant interest from hardware manufacturers, looking to generate regular and foreseeable income. Microsoft, for example, has invested substantially in its Xbox Game Pass, making it a cornerstone of its development strategy. Subscription models also attracted publishers as an opportunity to generate additional revenues through platforms, alongside premium purchases: in the EU, Ubisoft, for example, reported on the success of its 'Ubisoft+' subscription service. However, according to Newzoo, the average growth rate of subscription gaming (including cloud gaming) could be halved for the years 2024-2027 compared to 2019-2024: while the US and Chinese consumer markets appear mature, EU players are keener on individual purchases. There is also scarce evidence that game passes can help boost the revenues of the EU's AA and indie companies.

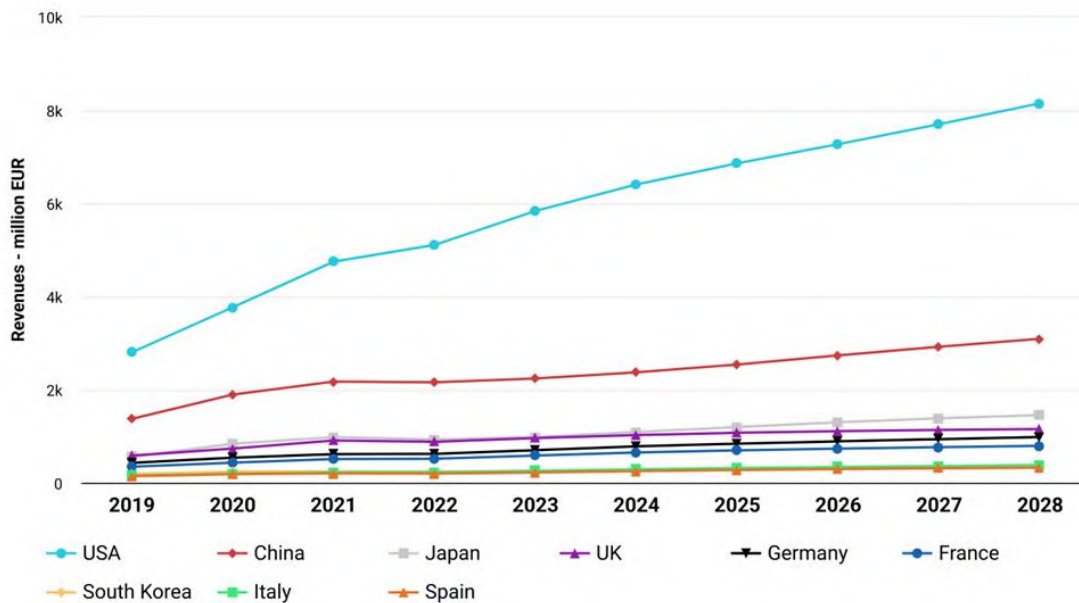
**Cloud gaming is no longer a niche distribution model.** While several attempts were made in the past (e.g. PlayStation Now in the 2010s), this model, that relies on cloud infrastructures without powerful hardware, has gained more traction lately, allowing the development of cross-platform play and related game pass models. Cloud gaming provides publishers with an opportunity to create new income streams (which remain minor for now) by adding their games to catalogues. The recent offer has met consumers' demand, with Xbox Cloud Gaming breaking new records in 2024 and Nvidia's GeForce Now offer selling out quickly early in 2025. In this market, US players are dominant (e.g. Microsoft, Sony, Nvidia and Amazon) and besides white-label solutions, EU players are much fewer (e.g. France's 'Shadow', acquired by OVHcloud, for cloud computing). In addition, it is reported that the mainstreaming of subscription and cloud gaming risks decreasing the income of European developers, as some players may wait for a game to become available with a pass rather than paying the premium price.<sup>83</sup>

*Figure 18. Cloud and subscription gaming total revenues, in millions of EUR*

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<sup>83</sup> EIT, [The state of the European game industry and how to unleash its full potential](#), 2024.





Source: PwC Global Entertainment & Media Outlook 2024–2028, [www.pwc.com/outlook](https://www.pwc.com/outlook).

Note: Revenues for cloud and subscription gaming, all components. Data is not aggregated and is limited to the above countries only.

**Advertising is set to remain at the core of the mobile gaming monetisation, and it is slowly entering the console market.** In general, advertising accounts for a smaller share of revenues in the EU than in other regions such as Asia or the US. Looking ahead, and with the exception of China where advertising revenue will significantly boost revenue, this monetisation model is set to experience a moderate growth. For the PC and console segments specifically, in-game advertising is less frequent. Nevertheless, many major companies (Electronic Arts, Microsoft, Sony) have announced their intention to develop this model, and advertisers have a keen interest in games offering the possibility for personalisable experiences:<sup>84</sup> in April 2024, 40% of marketers were planning to increase their budgets for in-game advertising.<sup>85</sup> In-game advertising has proven to be an effective investment for brands, with 50% of players and/or viewers saying they discovered new brands while playing.<sup>86</sup> However, consumers' low acceptance of elements that disrupt gameplay limits the growth of this market for now, as does Steam's ban on in-game advertising.

### Games as a service and games as a platform

**'Games as a service' (GaaS) (or 'Live service games') and free-to-play have emerged as attractive and successful models.** GaaS involves ongoing revenue generation over time through multiple means, including subscriptions and microtransactions. GaaS models offer ongoing content updates, seasonal events, and new gameplay modes, keeping a game fresh and engaging over time. This model has achieved a growing share of total playtime (over the past years, the most played games in any one month have been largely live service titles) and subsequent spending over the

<sup>84</sup> Games such as Fortnite, Minecraft and Roblox also allow to generate substantial user data, allowing advertisers to pinpoint specific characteristics, preferences, and behaviours and generate for highly relevant and personalised ads that increase the likelihood of conversion.

<sup>85</sup> IAB, [New IAB Study Reveals Games Advertising Among Top Three Investment Growth Areas Alongside Digital Video](#), IAB, 26 March 2024.

<sup>86</sup> Sports, beverage, technology, automotive and fast-food brands benefit on average from a 15 percentage points more positive attitude from players than from non-players.



years. The model has attracted many leading companies and studios,<sup>87</sup> to the extent that in 2024 up to 95% of studios across the world were developing or maintaining a live-service game.<sup>88</sup> European companies have not escaped this trend: while the bulk of the industry cannot afford to develop or maintain live-service games – which can take more than 5 years to develop, against 2 to 3 for premium games – some companies have embraced the model, such as Arrowhead Games Studios (with Sony) for *Helldivers II*, and Ubisoft, which in 2025 reiterated its intention to focus on live-service games. However, in 2024-2025, numerous live service games projects have been abandoned, and more industry leaders and developers<sup>89</sup> have raised doubts about the future of live-service games. They fear that the market has no place for further live-service games, and report that consumers long for premium games and finite experiences. To some, a return to more premium titles can be expected.

**The ‘games as a platform’ model is an enduring success for creators – and the market is mostly captured by the US industry.** Low-code/no-code tools enable a larger pool of creators, whether professional or amateur, to produce and share their own content on UGC game platforms such as *Minecraft* and *Roblox*.<sup>90</sup> In 2024, it was reported that 79% of gamers had played games with UGC, and 16% had made content for games.<sup>91</sup> As a result, in early 2025 a platform like *Roblox* had close to 90 million daily active users – more than PlayStation and Xbox combined. Beyond *Roblox*, UGC game platforms as a whole reported a significant revenue advantage over other games, with 7% more revenue on average a year after release, reaching 23% after five years.<sup>92</sup> They also perform better in terms of user retention: after two years, they display 64% better retention, reaching a 90% retention advantage after five years. The EU industry, however, is not present on this market.

## IP exploitation

**As in the rest of the cultural and creative sector, IP exploitation is a key strategy for gaming companies, and it has become more relevant in the current market environment.** The success of video games depends on the mobilisation, management and monetisation of a community of players, and companies that develop an existing and known IP can count on an existing audience base.<sup>93</sup> This is why game companies prioritise risk reduction by focusing on existing IPs (e.g. via sequels, ports or remasters) rather than investing in new ones.<sup>94</sup> Another successful strategy to harness IP worth mentioning is modding: by allowing players and fans to alter one or more aspects of a video game, as done in European games such as *The Witcher 3: Wild Hunt*, *Cities: Skylines* and *Baldur’s Gate 3*, companies grow, engage and monetise their communities.

**Yet, the bulk of the consumer market is concentrated around a limited number of US titles/IPs that have a long commercial life.** The long-term monetisation of live-service games, among other factors, has led to a situation where leading games stay longer in the list of most-played or highest-grossing games. In the PC and console markets, titles six years old and over even increased their share of playtime from 39% to 57% between 2021 and 2024, when titles between one and five years old were less played. In 2023, in the PC and console markets, new releases shared only 11% of playtime, and the figure goes down to 8% if we consider only new IPs and exclude new releases of long-existing franchises. On the mobile games market, taking the US as a proxy, there are fewer new

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<sup>87</sup> Sony, for example, announced in February 2022 its intention to launch 20 live service games in the subsequent years. It remains committed to this model as of early 2025.

<sup>88</sup> Survey based on 537 studios. For more see Jeffrey Rousseau, [Report: 95% of studios are working on or aim to release a live service game](#), Games Industry.biz, 2 February 2024.

<sup>89</sup> According to a [Game Developer Collective Survey](#) from Omdia, April 2024, 7 in 10 developers were worried about the financial viability of live service games.

<sup>90</sup> There are, for example, more than 5.5 million games available to play on Roblox as of 2025.

<sup>91</sup> Bain & Company, [Gaming Report 2024 - Meet the Moment: How Gamers Are Changing the Game](#), 2024. Based on a survey carried out in Brazil, Indonesia, Japan, United Arab Emirates, United Kingdom, and United States.

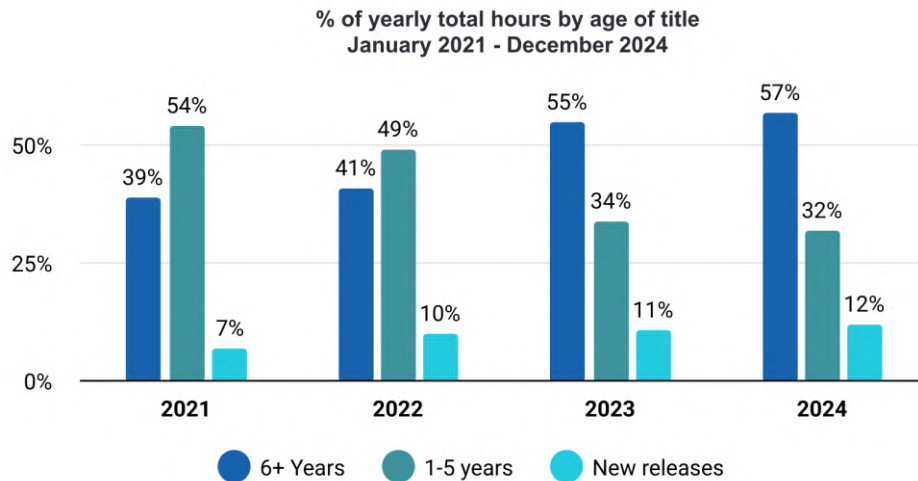
<sup>92</sup> Loïc Fontaine, [Commercial Impact of UGC](#), Medium, 29 October 2024.

<sup>93</sup> Often, even the development of the game depends on the mobilisation of communities: the successful integration of games in wish lists can help secure financing, while at a later stage communities can test the game in early access and contribute to improving it.

<sup>94</sup> For illustration purposes, Hogwarts Legacy was the 18<sup>th</sup> video games released based on the Harry Potter IP.

releases entering the top 1,000 most successful games, whether in terms of downloads (from around 260 in 2020 to around 210 in 2024) or revenues (from around 110 in 2020 to around 60 in 2024).<sup>95</sup> As a result, in early 2024 only 9% of developers and professionals from leading games markets believed that new IPs would dominate the market in the course of the year.

Figure 19. Percentage of playing time by age of title (January 2021 – December 2024)



Source: Newzoo's 2025 PC & Console Gaming Report.

**In the coming years, the effective management of IP will become increasingly crucial.** First, the multiplication of AI-generated content will pose its own challenges in terms of adequate copyright sourcing and remuneration. Second, a variety of digital business models will involve multiple IP rights holders: collaborations between video games and brands (e.g. anime/manga/comics/other games' characters) have flourished, and are bearing fruits for console and PC games, with a boost in daily active users of up to 19% for premium games upon release.<sup>96</sup> Third, the convergence of creative platforms, digital assets, UGC and community engagement will likely create a continuous IP landscape in terms of both player experiences and business models. Merchandising has developed and grown through this evolution, offering gamers items such as toys, apparel, board games and accessories (for instance, in the EU, CD PROJEKT RED launched a brand strategy with a merchandising channel around its IPs 'The Witcher' and 'Cyberpunk 2077'). Collectibles, in particular, are valuable assets that are deemed underutilised in gaming.<sup>97</sup> The largest players here are non-EU publishers with strong IP and in-app purchase models such as Riot Games (*League of Legends*), Epic Games (*Fortnite*) and Activision Blizzard (*Call of Duty*).

### Impact on other industries

**While video games are an industry and an economic activity of its own, its underlying technologies also contribute to other economic sectors.** Video game technologies (e.g. game engines) are drivers of innovation and contribute to new engagement models in new markets and organisations. They are now commonly used in sectors as diverse as film, marketing, training, automotive, architecture or manufacturing. However, their adaptation to specific industry needs (e.g. training modules in hospitals) remains complex, in particular when it comes to introducing games to corporate cultures. Gaming also drives improvements in the EU's digital ecosystem and favours the

<sup>95</sup> Knowing these figures include new titles of existing franchises, such as *Monopoly Go!* or *Pokemon TCG Pocket*, which topped the chart in 2023 and 2024 respectively. See Sensor Tower, *State of Mobile 2025*, 2025. No EU-level data is available.

<sup>96</sup> Newzoo, *How IP and brand collaborations level up games*, 2023

<sup>97</sup> Konvoy, *Video game collectibles market overview*, Konvoy, 6 December 2024.

development of a robust digital infrastructure to support gaming, such as high-speed internet, cloud services, low latency networks, 5G and edge cloud penetration.

**Educational institutions are becoming increasingly interested in the potential role of video games to support young people's learning experiences.** Video games, used appropriately, can complement the programme taught by teachers and are now even integrated in curricula as historical or current events content. They can make learning more appealing and engaging, improve skills such as collaboration, imagination, problem-solving and critical thinking, increase digital skills and encourage children to consider training and careers in technology. Video games are also widely acknowledged as a tool to celebrate national and regional cultural and historical heritage.<sup>98</sup>

**The health sector has also found many applications for video game technologies, including for training and care.** In medical training, games simulate surgical procedures and clinical scenarios, enhancing skill acquisition, decision-making, and hand-eye coordination. Motion-based and VR games have also proven to encourage physical activity in patients recovering from stroke, injury, or chronic illness. Video can also be used to address the symptoms of diseases such as Parkinson's.

**Video games are also used in various areas of defence and space.** Haptic input from games controllers provides sensory feedback and is used by the European Space Agency to drive robot rovers and robotic arms. Armed forces around the world are also increasingly turning to the reuse and customisation of games based on video games, game engines or gaming environments to produce professional military serious games (e.g. NATO).

## Private investment

**Private investment is traditionally at the core of video game development financing.** The video game industry's global distribution model presents challenges for its financing: commercial success is uncertain, and competition is high. Publishers typically cover substantial portions of development, in addition to covering marketing and distribution costs, while developers increasingly self-publish. The industry also turns to community funding. It can also look into traditional sources like banks and investment funds for specific projects or their own operating budget. VC and equity funds, in particular, play an important role in the development of the video game industry. In the EU, Scandinavian countries have long stood out as the region best served in private financing.<sup>99</sup>

**The pre-COVID years saw an investment boom benefiting all regions of the world.** 2020 and 2021 saw a boom in investments in gaming. In 2021, VC, encouraged by very low interest rates at the time, invested EUR 1.7 billion in the EU alone (EUR 4.7 billion in the US and EUR 13 billion globally, including private equity) into video games, related platforms and technologies.<sup>100</sup>

**The EU market saw an increase in early phase – seed and early-stage – investments.** If, over a long period of time, capital investors in the EU are favouring investments in the growth of existing businesses, seed and early-stage VC were, up until COVID-19, growing steadily.

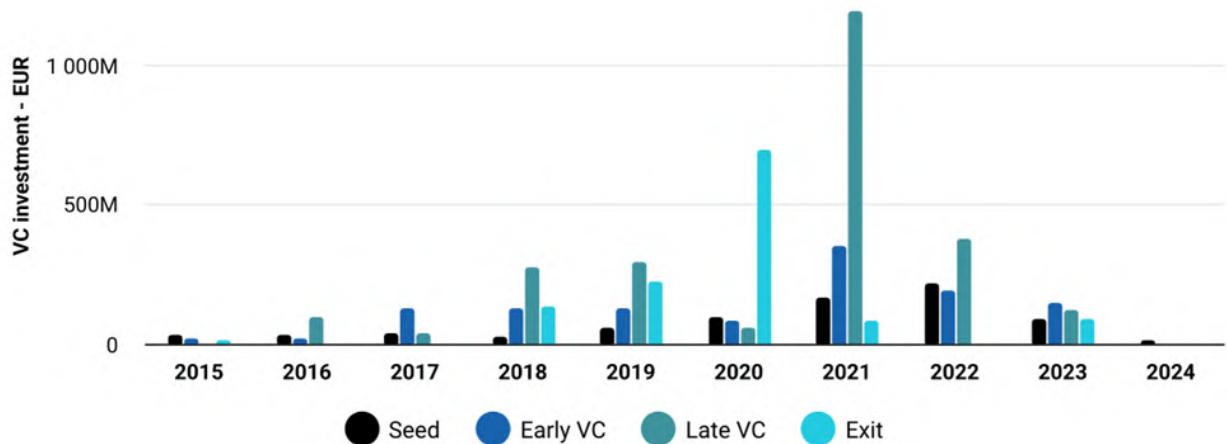
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<sup>98</sup> Poland and Flanders, for example, have added video games to official school reading lists. Ubisoft's *Assassins' Creed* series is also often mentioned as an example of how video games can showcase Europe's cultural heritage (Gamehearts project).

<sup>99</sup> As illustrated in the European Audiovisual Observatory report ([Legal challenges and market dynamics in the video games sector](#), 2024) 'in Sweden, the Stockholm Stock Exchange (Nasdaq Stockholm) has become a hub for Initial Public Offerings (IPOs) of video game companies'.

<sup>100</sup> Based on Crunchbase, industry categories included in the analysis are video games, online games, PC games, MMO games and additional search and data cleaning based on the business descriptions.

Figure 20. Venture capital investment in video games in the EU over time per deal type

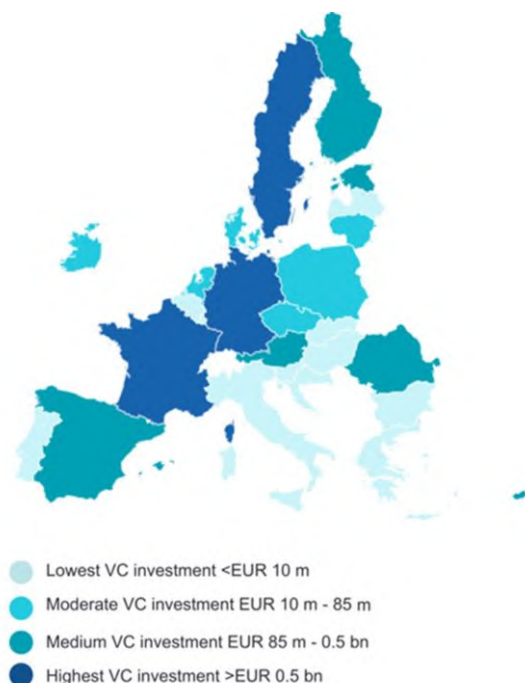


Source: Technopolis Group, funding data available for 1 837 EU headquartered video games companies.

Note: Exit rounds go beyond venture capital and can include Initial Public Offerings.

**Within the EU, France was the most dynamic country in terms of VC and private equity investment between 2015 and 2023.** France attracted almost EUR 2 billion, followed by Germany with EUR 509 million, Sweden with EUR 490 million, Finland with EUR 439 million and Romania with EUR 310 million.

Figure 21. Venture capital and private equity investment in video games across EU Member States in 2015-2023

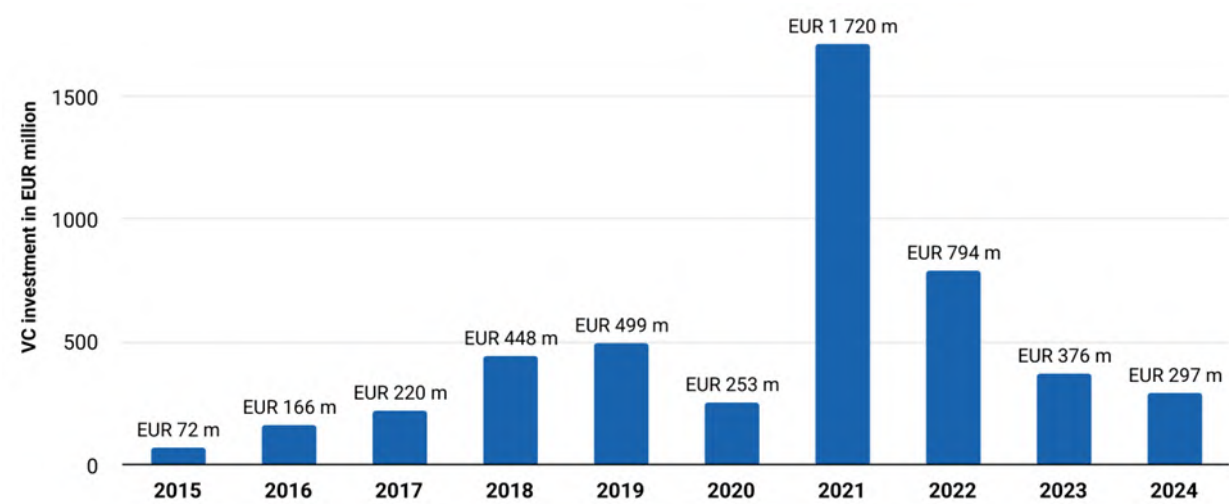


Source: Technopolis Group based on Crunchbase; funding data available for 1,837 EU-headquartered video game companies.

**Notwithstanding this, the market for finding private capital to invest has become much tighter after COVID, with slowing consumption, geopolitical instability, inflation and soaring interest rates.** The investment dip was most acute in 2023, when major video games companies that also

took part in the financing rounds scaled back their strategic investments with more divestments. In the EU like elsewhere, early investors returned to growth-stage as a safer strategy. This led many independent developers to close since 2022 as they did not have sufficient funds to develop their games.

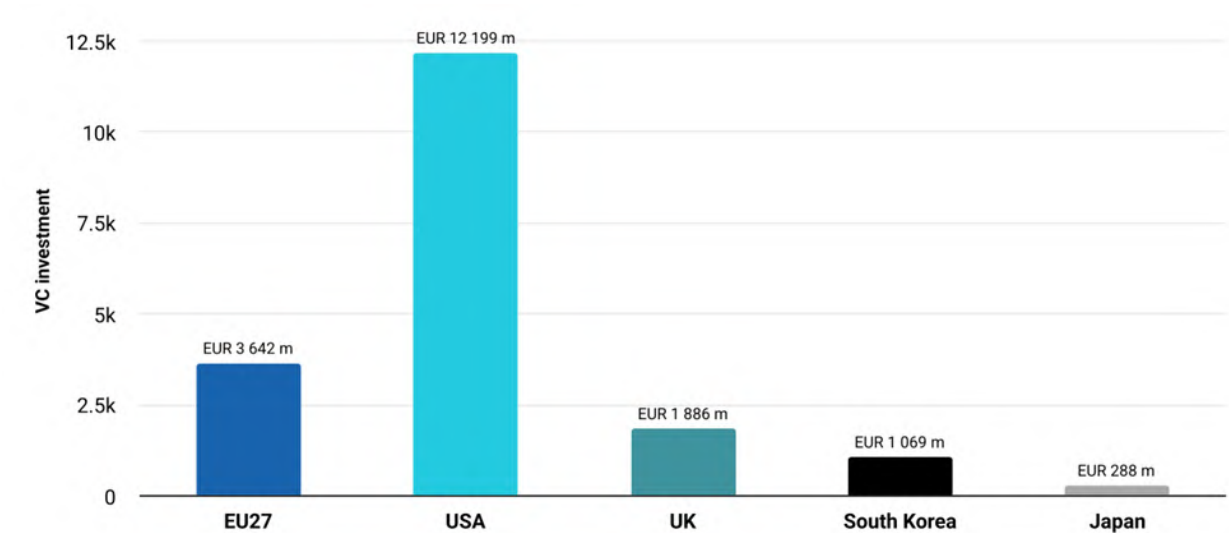
Figure 22. Venture capital investment in the video game sector in the EU over time



Source: Technopolis Group based on Crunchbase; funding data available for 1 837 EU headquartered video games companies.

**As evidenced by data on recent years, the investment dynamic is not identical across the world, with a more mature North American market.** In comparison with the EU, the more deeply rooted culture of venture capital in North America may explain the region’s companies’ superior ability to access financing. Over the 2020-2024 period, VC funding has been more than three times higher in the US, while the UK alone amounted to 50% of the EU total and South Korea 30%. This can explain the relocation of some development studios to the US to raise more capital.

Figure 23. Venture capital investment in video games 2020-2024



Source: Technopolis Group based on Crunchbase, funding data available for 1 837 EU headquartered video games companies, 2 684 US, 478 UK, 263 South Korea.

**Data points to a recovery in 2024, albeit with lower figures than in 2022.** Private market funding (including private or growth equity, on top of VC funding) tends to globally recover beginning of 2024,



although not yet reaching the levels of the pre-COVID years:<sup>101</sup> it was estimated that global games investment rose 38% from 2023 to 2024.<sup>102</sup> Recovery remains slower for investments in content as opposed to technology and platforms, which is congruent with regular financing trends in times of investment shortage (content development being seen as riskier, with uncertain return on investment).

## Public support

**As well as private financing models, public investors have increased their support to video game companies over the past five years.** Loans and investments remain difficult to secure due to the perceived inherent risk in game development, and an overall scarcity of data to inform investors. Recognising these challenges, many public authorities across the EU have implemented public funding policies<sup>103</sup> to support the sector. These programmes often act as initial investors, particularly focusing on the development of prototypes for young studios. This early-stage support aims to reduce barriers to entry for new developers.

**Member States have developed and structured their support to video games with diverse tools, including grants, reimbursable loans and tax incentives, focusing on development.**<sup>104</sup> Although great disparities remain, with France, Germany and Belgium providing the most diversified offer, public support measures in games have become more widely available in EU Member States over the past few years. Countries with strong public support culture in favour of the audiovisual sector have pioneered video game funding (France, for instance, has had a tax credit system and grants since 2008 and has since supported about 350 games and 200 studios; support in Germany dates back to the early 2000s). In other countries, tax incentive schemes have been developed more recently (e.g. in Italy in 2021, Ireland in 2022, and Belgium in 2023).<sup>105</sup> Other means, like a levy on distribution platforms, are also being considered as of 2025. With a few exceptions, national-level instruments are allocated modest amounts with low co-financing rates, and many schemes focus on the cultural – not commercial – value of games.<sup>106</sup> Furthermore, many schemes have been inspired by film funding, insufficiently adapted to the specific needs of the video game industry, and schemes have yet to adapt to more recent business models (e.g. live-service games) which require post-release support. Finally, next to national schemes, public support initiatives have flourished locally (e.g. Malmö, Breda and Hamburg).

**EU institutions have continued to develop grant opportunities and investment mechanisms.** As well as calls for proposals dedicated to development,<sup>107</sup> EU funding schemes have lately dedicated resources to some research and innovation projects. Building on the success of a guarantee facility for debt financing launched in 2016,<sup>108</sup> the European Commission and the European Investment Fund launched in 2022 an equity investment instrument with a focus on audiovisual and video games, which is expected to generate a total investment of EUR 1 billion. The first investment in a video game-focused fund was announced in February 2025.<sup>109</sup>

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<sup>101</sup> Based on data from Konvoy, [Q3 2024 Gaming Industry Report](#), 2024.

<sup>102</sup> Dealroom data from Dean Takahashi, [Global game investment rose 38% to \\$4.3B in 2024 | Hiro Capital](#), Venture Beat, 3 February 2025.

<sup>103</sup> Some fully fledged and multiannual, e.g. Flanders.

<sup>104</sup> More details in European Audiovisual Observatory's [Legal challenges and market dynamics in the video games sector](#) (2024). For a thorough account of the industry's recommendation for public financing and policies, see the report from the [Games Policy Summit](#) (Joint initiative from the European Games Developer Federation, Nordic Games Conference and Nordic Game Ventures).

<sup>105</sup> A tax shelter for companies investing in audiovisual production was extended to video game as of 2023.

<sup>107</sup> Existing since 2016 and amounting to around 7 million in 2025.

<sup>108</sup> Between 2016 and 2020, the Cultural and Creative Sectors Guarantee Facility facilitated nearly EUR 600 million in financing for audiovisual and multimedia companies, with EUR 140 million directed toward gaming. Contrary to initial fears of high default rates gaming companies demonstrated financial reliability, with defaults at only 2–3%, comparable to other industries.

<sup>109</sup> European Investment Fund, [Nordic game developers to get financing support as EIF pledges €20 million to new Swedish fund](#), 27 February 2025.



Table 8. Countries offering support and types of support at different stages as of early 2025

|             | Project development phase |                |            |                 | Other stages                                       |                |                                                                                                |
|-------------|---------------------------|----------------|------------|-----------------|----------------------------------------------------|----------------|------------------------------------------------------------------------------------------------|
| Countries   | Concept                   | Pre-production | Production | Post-production | Studio investment (e.g. equity, growth, financing) | Tax incentives | Comments                                                                                       |
| Austria     |                           | Regional       | Regional   | Regional        | National                                           |                | Regional supports mainly in Vienna. The Studio Investment section is in a generalist incubator |
| Belgium     | Regional                  | Regional       | Regional   | Regional        | Regional                                           | Both           | Regional support split in two major regions: Wallonia & Flanders                               |
| Croatia     |                           | National       | National   |                 |                                                    |                | Recent                                                                                         |
| Denmark     | National                  | National       | National   | National        |                                                    |                |                                                                                                |
| Finland     | National                  | National       | National   |                 |                                                    |                | Proposes large amounts for projects through Business Finland                                   |
| France      | Both                      | Both           | Both       | Both            | Both                                               | Both           |                                                                                                |
| Germany     | Regional                  | Regional       | Both       | Regional        |                                                    |                | Composed of a network of strong regional funds                                                 |
| Greece      |                           |                |            |                 |                                                    | Both           |                                                                                                |
| Ireland     | Both                      | Both           |            |                 |                                                    | Both           | Ardán is the only regional fund; only western regions have access to public funding            |
| Italy       |                           |                |            |                 |                                                    | Both           | Previously funding projects through 'First Playable Fund'                                      |
| Luxembourg  |                           | National       |            |                 |                                                    |                |                                                                                                |
| Netherlands | National                  |                | National   |                 |                                                    |                |                                                                                                |
| Slovakia    | National                  | National       | National   | National        |                                                    |                |                                                                                                |
| Spain       | Both                      | Both           | Both       |                 |                                                    |                |                                                                                                |

Source: Adapted from *Legal challenges and market dynamics in the video game sector*, European Audiovisual Observatory, 2024.

Note: The original data has been complemented with information from Indie Plaza's [Funding Dashboard](#).

### 3.1.5. Technological trends

#### Artificial intelligence

**While not new to video game developers, AI and generative AI<sup>110</sup> offer the sector new possibilities.** The uptake of AI in the video game industry has arguably a longer history than in other media sectors, being a tech-driven industry. AI uptake is progressing year on year: in 2024, 54% of European professionals reported using AI in their work while finding it useful (+17 percentage points from 2023)<sup>111</sup>. Among the new key possibilities offered by AI and generative AI are the multiplication of non-player characters, the creation of new objects, new worlds/levels, image enhancement, the generation of scenarios and stories, player assistance in gameplay, the monitoring of communities (e.g. toxicity of some players) and the automation of quality assurance. In this light, generative AI in the gaming market is poised for rapid expansion and could be worth more than USD 11 billion by 2033, growing at a CAGR of 25.6% from 2023, with non-player characters' application taking the larger share.<sup>112</sup> All in all, AI could constitute an opportunity to control development costs, knowing industry-wide content development spend surged 90% between 2017 and 2024, compared with a much more modest growth in consumer spend.<sup>113</sup>

Table 9. Adoption of AI tools by game developers

| Gains with AI                              | Survey result                                                                                                                                                                            |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Save time                                  | 62% of the studios surveyed used AI in their workflows, mainly to prototype quickly and for conceiving, asset creation, and worldbuilding                                                |
| Delivery                                   | 71% of studios using AI say that it has improved their delivery and operations                                                                                                           |
| Content creation and animation improvement | 37% of surveyed developers say they are using AI to accelerate writing code, while 36% are generating artwork and game levels, testing gameplay loops, and automating narrative elements |
| Worldbuilding and creation of NPCs         | 56% of AI adopters use it for worldbuilding, 64% of those creators favour it for developing NPCs to populate these worlds                                                                |
| AR/VR and online multiplayer games         | 29% of surveyed AI users are making AR/VR games, with online multiplayer games coming in at a close second with 28%.                                                                     |

Source: Based on [2024 Unity Gaming Report](#), Unity Sentis beta user survey 2023. N=7,062, globally.

**However, the video game industry still displays some level of cautiousness when adopting the most recent wave of generative AI tools.** While the take on AI is overall positive, developers have a more negative take on generative AI: at global level, the number of developers who think it has a negative impact on the industry increased from 18% to 30% between 2024 and 2025<sup>114</sup>. In the creative or programming field, generative AI is mostly utilised in low level tasks (creating assets, mock-ups, doing tedious tasks, etc.) as developers – working in an IP-intensive industry – are cautious about possible IP infringements when using market tools, and AI-generated content still does not match the quality of traditional development. AI is also used to accelerate prototyping, as well as for concept development, asset creation, and world-building<sup>115</sup>. There are no major differences in the use of generative AI tools by developers when comparing Europe and the US.

<sup>110</sup> Including machine learning, more widely.

<sup>111</sup> InGame Job and Values Value, [Big Games Industry Employment Survey 2024](#), 2024.

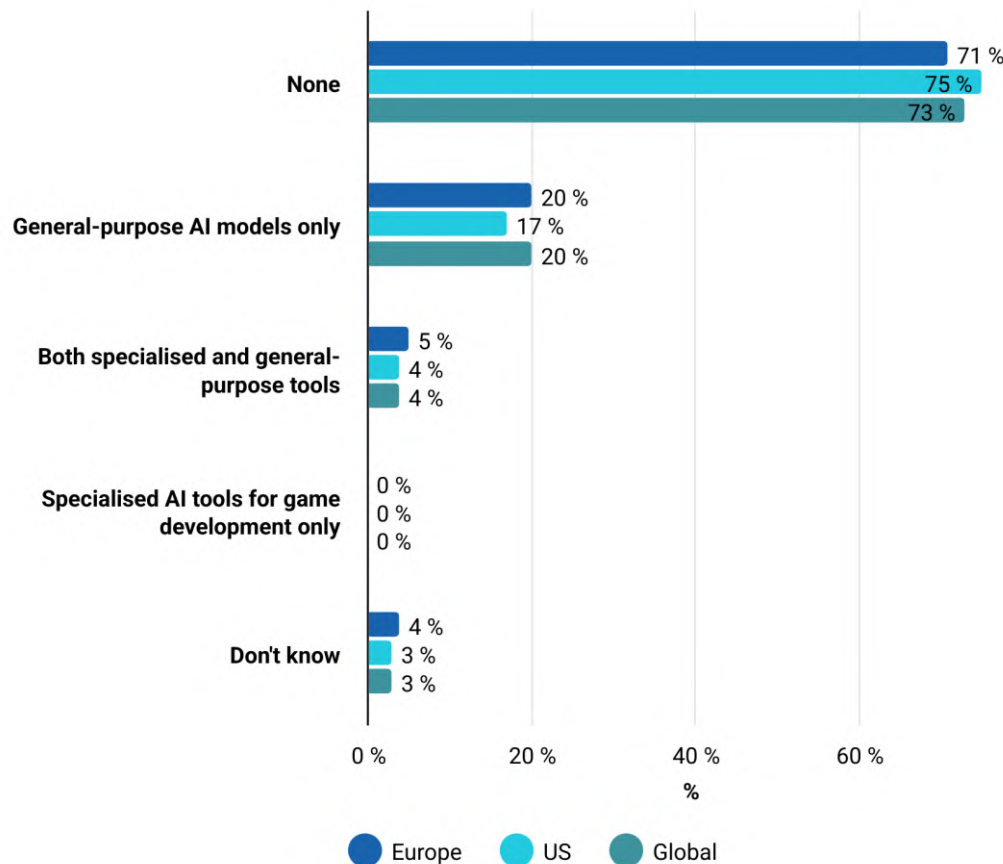
<sup>112</sup> Based on Market.us data.

<sup>113</sup> Matthew Ball (Updated: 17 April 2025), [The State of Video Gaming in 2025](#), Epyllion.

<sup>114</sup> GDC, [GDC 2025 State of the Game Industry](#), 2025.

<sup>115</sup> Unity, [2024 Unity Gaming Report](#), 2024.

Figure 24. Do you currently make use of generative AI in your work?



Source: Omdia, Game Developer Collective Survey, July 2024.

Note: N=143. 'Europe' includes the EU Member States as well as the UK, Switzerland and Türkiye. The sample is not statistically significant but gives an order of magnitude.

**When they do use AI, EU video game companies mostly focus on the use of *generalist* AI and generative AI solutions.** OpenAI is a commonly used solution: its language models enable non-player characters to engage in more natural and context-aware conversations and are widely used in the EU game industry. This lead could be contested in the future by European solutions such as the French start-up Mistral AI.<sup>116</sup> This could also be a market for technology vendors, many of which are European: there are 115 EU game technology vendors and, at global level, one in five tech vendors offering AI solutions is based in the EU.<sup>117</sup> It should also be noted that some leading publishers are developing their own in-house generative AI: Ubisoft, which has voiced its intention to increase the use of generative AI, has used its 'Ghostwriter' AI scriptwriting tool for non-player characters since 2023.

**Beyond professional use, generative AI might revolutionise UGC game creation workflows.** The growth of AI-powered content (e.g. gameplay) causes debates among gaming communities. Yet, it may fuel the growth of platform games (such as Roblox or Minecraft) where deep technical knowledge or artistic mastery will no longer be essential skills needed to develop games, thanks to the use of 'prompts'. With the expansion of the creator economy, those creators may also establish their own game studios, bringing more competition to the industry. Even professional game developers have UGC integration in their roadmap (globally, 39% of developers have UGC in mind).<sup>118</sup>

<sup>116</sup> It raised EUR 600 million in a mix of equity and debt in 2024.

<sup>117</sup> Omdia, *AI in the Games Industry: State of the Market*, 2024.

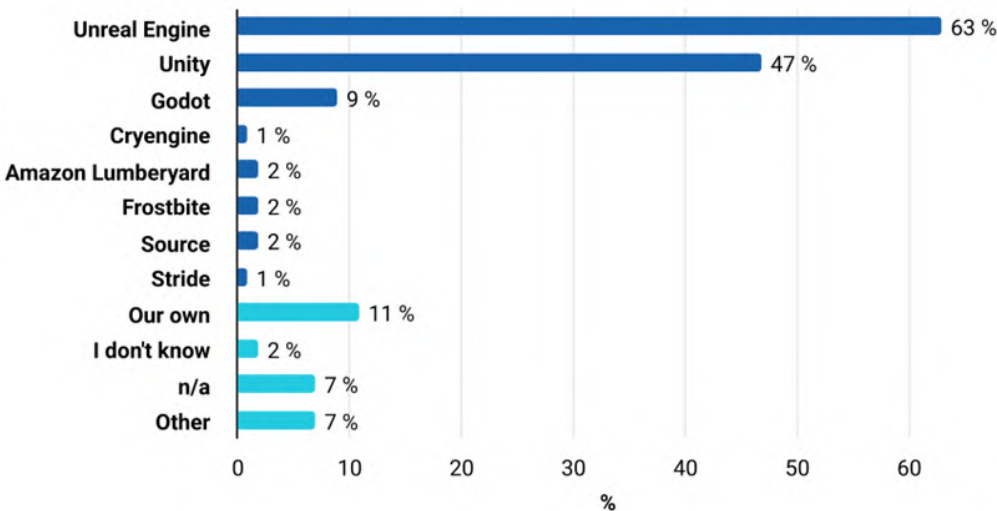
<sup>118</sup> Unity, *2024 Unity Gaming Report*, 2024.

**At the moment, companies are struggling to find staff with the right AI skills, while generative AI may partially replace some tasks of the creative workforce.** Companies report difficulties in finding both pure AI technicians and hybrid profiles capable of integrating these technological advances into a creative process, merging technical and artistic uses. The impact on employment is expected to be controlled, as AI will mostly help developers to save time on repetitive tasks, enabling them to focus on content creation and animation improvement. Nevertheless, risks are perceived to be greater for art designers and occupations such as quality testing, especially in times of financial restraint<sup>119</sup>. Generative AI can already produce satisfactory 2D images and, while programming or 3D animation tasks were until recently considered to be harder to fully automate, major studios started to use AI for such purposes and for high-end video games in 2023-2024.<sup>120</sup>

Game engines

**The market of game engines, the technologies behind the creation of games’ digital environment, is dominated by US players.** Unity (Unity Technologies) and Unreal Engine (Epic Games) are used by an overwhelming majority of developers – with developers often using several engines. While using such services is much cheaper for them than developing proprietary solutions, developers are dependent on pricing and licensing rules changes.<sup>121</sup> Additionally, a sizeable share of the industry resorts to more affordable open-source game engines developed by communities such as Godot or Defold: a survey showed that 11% of developers in North America are using Godot, against 5% in Europe, Middle East, and Africa.<sup>122</sup> These game engines are particularly suited to the needs of European indie and medium-sized companies.

Figure 25. Which game engine/real-time 3D engine(s) do you or your team use?



Source: Perforce, 2024 State of Game Technology Report, 2024. N= 576, composed by leaders and creators in the world across a wide variety of technical industries<sup>123</sup>.

**Big publishers and studios (and some mid-size companies), including EU companies, still tend to use and develop their own in-house game engines.** Some leading publishers have developed

<sup>119</sup> A survey carried out in early 2024 by CVL Economics showed that approximately 13.4% (52,400 jobs) of US Gaming jobs would be consolidated, replaced or eliminated by 2026 – a share which remains lower than in other US creative industries. [Future Unscripted: The Impact of Generative Artificial Intelligence on Entertainment Industry Jobs](#)

<sup>120</sup> Activision Blizzard, for example, reported in February 2025 that it used generative AI to create in-game assets for *Call of Duty*.

<sup>121</sup> E.g. Unity prices soared in January 2025.

<sup>122</sup> Perforce, [2024 State of Game Technology](#), 2024.

<sup>123</sup> One third work in industries outside of gaming – including automotive, manufacturing, healthcare, military & defence, finance and transportation.

their own game engine(s) (e.g. EA, Capcom, Supercell) and can use alternative engines depending on their development needs. This extends to European players, such as Ubisoft, which uses several game engines. Yet, it appears that major studios are now turning to the two US leaders. In October 2023, EA Motive (Canada) revealed that it would employ Unreal Engine 5 for its upcoming *Iron Man* game, moving away from EA's in-house engine. In the EU, CD PROJEKT RED (Poland) decided to abandon its proprietary RED engine in favour of Unreal Engine for future *Cyberpunk 2077* and *The Witcher series*.<sup>124</sup>

*Table 10. Proprietary game engines of large companies*

| Company             | Engine(s)                                   | Notable Games                                                                            |
|---------------------|---------------------------------------------|------------------------------------------------------------------------------------------|
| Activision/Blizzard | Custom engine(s)                            | <i>Warcraft series, Diablo series, Starcraft series, Call of Duty series, Overwatch</i>  |
| Electronic Arts     | Frostbite                                   | <i>Star Wars Battlefront II, Anthem, Battlefield 1/V, FIFA 20, Need for Speed series</i> |
| Ubisoft             | AnvilNext 2.0                               | <i>Assassin's Creed series</i>                                                           |
|                     | Disrupt engine                              | <i>Watch Dogs series</i>                                                                 |
|                     | UbiArt Framework                            | <i>Rayman Legends, Child of Light, Valiant Hearts</i>                                    |
|                     | Snowdrop                                    | <i>Tom Clancy's The Division 2, The Settlers</i>                                         |
|                     | Dunia (CryEngine-based)                     | <i>FarCry series</i>                                                                     |
|                     | Silex (Anvil-based)                         | <i>Ghost Recon Wildlands</i>                                                             |
|                     | LEAD engine                                 | <i>Tom Clancy's Splinter Cell series</i>                                                 |
| Capcom              | Dunia-based                                 | <i>The Crew</i>                                                                          |
|                     | MT Framework                                | <i>Monster Hunter: World</i>                                                             |
|                     | RE Engine                                   | <i>Resident Evil 7, Devil May Cry 5, RE2:Remake, RE3:Remake</i>                          |
| Konami              | Fox Engine                                  | <i>Pro Evolution Soccer series, Metal Gear Solid V</i>                                   |
| Square Enix         | Luminous Studio                             | <i>Final Fantasy XV</i>                                                                  |
| Nintendo            | NintendoWare Bezel Engine, custom engine(s) | <i>Zelda: BOTW, Mario Odyssey</i>                                                        |
| Riot Games          | Custom engine                               | <i>League of Legends</i>                                                                 |
| Rockstar            | RAGE engine                                 | <i>GTA V, Red Dead Redemption 2</i>                                                      |
| CD PROJEKT RED      | REDEngine 3                                 | <i>The Witcher 3</i>                                                                     |
| Epic                | Unreal Engine                               | <i>Fortnite</i>                                                                          |

Source: *GitHub*<sup>125</sup>, own research.

## Other technologies

**Cloud capacities, which have allowed new business models and consumption habits to flourish, rely on US-based solutions.** Hyperscalers<sup>126</sup> are the core technical building block for cloud gaming development (storage capacity and computing power) and this segment is the hands of a few dominant US players (Amazon Web Services, Microsoft Azure and Google Cloud Platform). Subscription-based platforms also restrict access to player data and can contribute to weakening the position of the European industry.

**The use of blockchain is still low in the European industry.** Among other things, blockchain allows the transfer of in-game assets, which have become increasingly prominent in games in the past years. Yet the uptake of the technology in the EU industry remains scarce. As a matter of illustration, in

<sup>124</sup> Lewis Packwood, *The future of Game Engines*, L'Atelier, 4 April 2024.

<sup>125</sup> Raysan5, (Original: 22 April 2020; Updated: 13 September 2023). *Custom Game Engines: A Small Study*. GitHub Gist.

<sup>126</sup> Large-scale data centres that specialise in delivering massive amounts of computing power and storage capacity to organisations and individuals across the globe.

France, in 2022, 7% of companies were developing video games integrating blockchain technology.<sup>127</sup> Among the challenges associated with blockchain are scalability, heavy electricity consumption and speed. Blockchain-based games have primarily been developed in North America and Asia, with some exceptions in Europe such as Dacoco GmbH (Alien Worlds) in Switzerland or French company Sorare's football collectible game. As far as the technology is concerned, investment in blockchain seems to have passed its peak, with only a few game-specialised start-ups recently emerging in the EU.<sup>128</sup>

**Extended reality (XR) as a technology plays a key role in the monetisation of video games, offering new revenue streams, but only a few (non-EU) games have had success.**<sup>129</sup> The market is driven by mobile AR gaming, leveraging the widespread availability of AR-capable smartphones and tablets. *Pokémon Go* (from Niantic), has been the main driver for consumption and revenues (in 2024, *Pokémon Go* hit EUR 7 billion in lifetime player spending)<sup>130</sup>. Virtual Reality promises to build more immersive worlds, moving from current 3D virtual worlds to VR worlds. Although major US and Asian players have invested in VR headsets, the lack of high-profile games and the cost of headsets have limited the market expansion of VR gaming, with investments being scaled back in 2023-2024.

**When it comes to electronics, European video game industry players are heavily dependent on US technology.** Nvidia graphics processing units (GPUs) dominate the market (88% global market share in graphics add-in board market)<sup>131</sup> for the specific gaming sector.

### VC investment into tech-based gaming solutions

**AI and blockchain have captured much of the investments in tech gaming solutions in the past years.** In view of the difficulties of the industry, the investments in 2024 directed towards companies associated with either AI or blockchain in gaming suggest a more tempered enthusiasm than in previous years. In 2021, 15% of deals in the global video game sector involved blockchain-related video games companies, but this share decreased significantly to 4% in 2024. In terms of the geographical focus of investments, the EU industry lags behind, with US and Asia-based entities being more involved.<sup>132</sup>

*Figure 26. Largest gaming tech VC deals in the EU in 2024*

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<sup>127</sup> SNJV, *Annual survey of video games in France 2023 Edition*, 2023.

<sup>128</sup> DeGaming offers a decentralised casino platform, fusing traditional gaming with blockchain, while GFAL intends to integrate blockchain and AI.

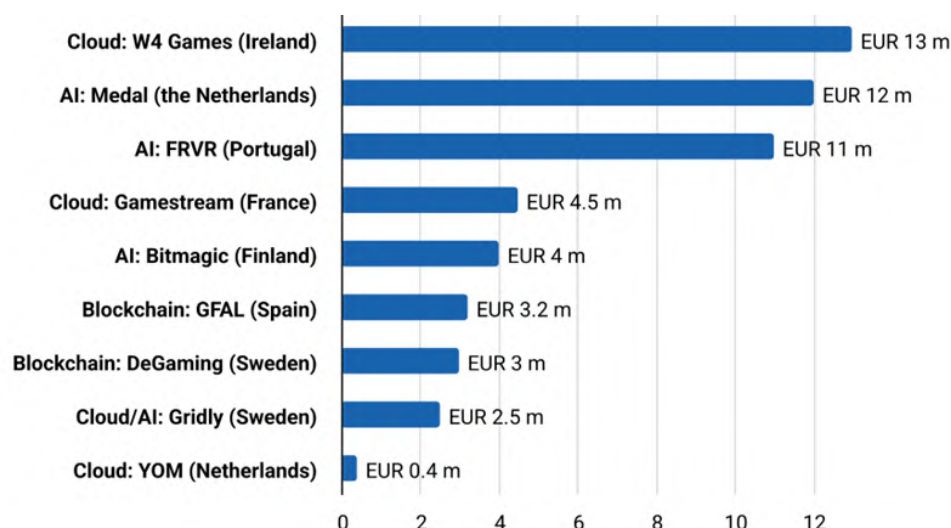
<sup>129</sup> More in the chapter dedicated to XR.

<sup>130</sup> Evgeny Obedkov, *Pokémon GO hits \$8 billion in player spending: how it compares to other mobile AR games*, Game World Observer, 26 April 2024.

<sup>131</sup> Robert Dow, *Shipments of graphics AIBs see significant surge in Q2 2024*, Jon Peddie Research, 24 September 2024.

<sup>132</sup> Source: based on Konvoy, *Q3 2024 Gaming Industry Report*, 2024.

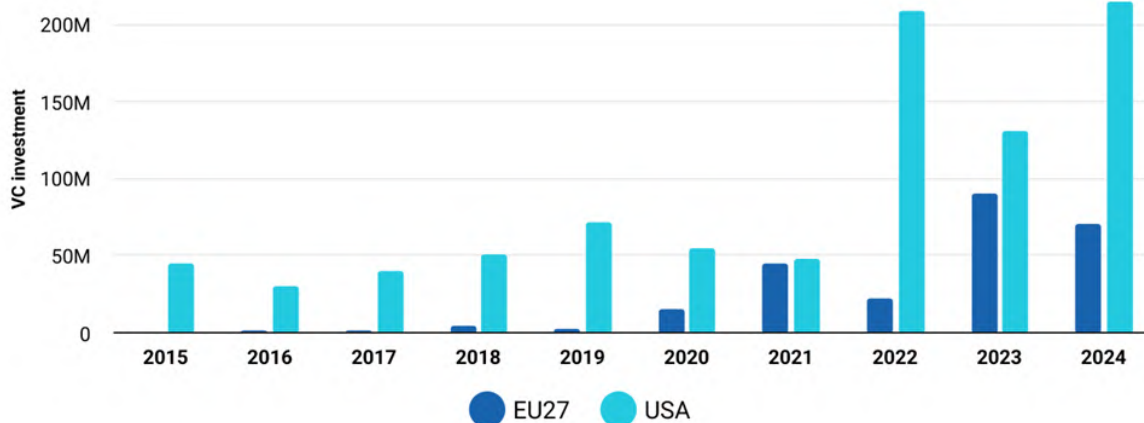




Source: Based on Crunchbase.

**Globally, after a peak in 2022 in the US, investments in video games referencing AI rose again in Q3 2024.**<sup>133</sup> More than just a cost-cutting solution (for instance, using machine-learning), AI is seen by investors as a vector for creating new, more interactive gaming experiences. In the US, investment declined after the 2022 peak, with invested amounts in 2024 remaining below the levels seen during the blockchain investment boom in 2021.<sup>134</sup> Globally, 22% of gaming VC funding in the third quarter of 2024 went to companies related to or referencing AI.<sup>135</sup> AI seems to be less prominent in the EU, with 4% of VC funding in the field of video games in the EU going to companies related to or referencing AI in 2024.<sup>136</sup>

Figure 27. Venture capital investment in video games driven by AI in the EU and US



Technopolis Group based on Crunchbase

**Behind AI, cloud gaming has also attracted some investments.** In 2021, 4% of total VC funding on video games went into companies related to or referencing cloud (down to 2% in 2024) reflecting a more pessimistic outlook for the technology after the difficulties and collapse of Google Stadia at the end of 2022.

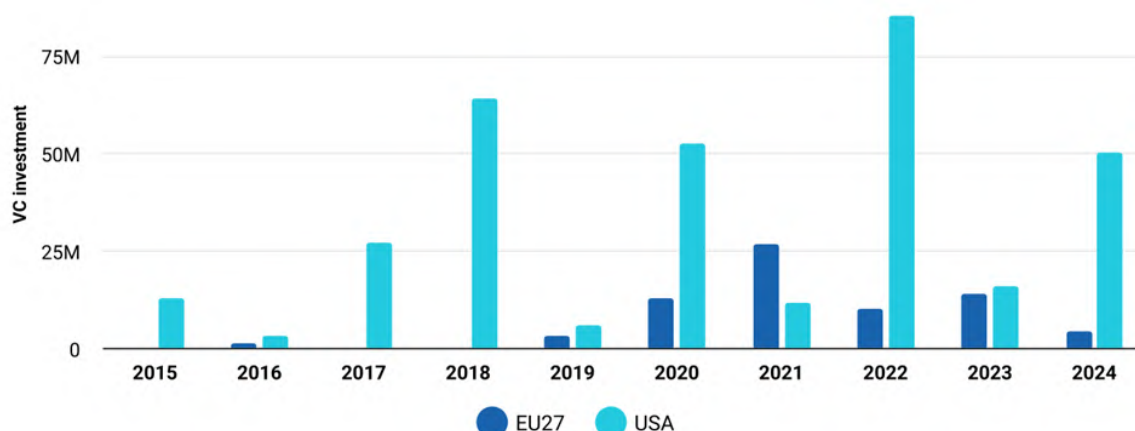
<sup>133</sup> Period not included in the illustration below.

<sup>134</sup> Based on Konvoy, [Q3 2024 Gaming Industry Report](#), 2024.

<sup>135</sup> Ibid.

<sup>136</sup> Based on Crunchbase data.

Figure 28. Venture capital investment in cloud gaming in the EU and US



Source: Technopolis Group based on Crunchbase.

### Skills supply and occupations

**The video game industry continues to employ people in a wide array of roles.** Specific profiles include technology (programming/engineering); design (including writers and UX/UI design); art, animation and modelling; management (including producers, project managers and leads); publishing and marketing; administrative roles (including HR, PR, marketing and customer support); quality assurance; localisation and community management. With technological advancements, player communities' expectations have increased, and some dimensions of gaming have further professionalised.<sup>137</sup>

**Programming emerges as the most common occupation.** When comparing recent sources on the EU gaming workforce, programming represents some 30% of the workforce, ahead of artistic positions (2D/3D/animation artists and audio) at 25%, design (20%), management, HR and quality testing (15%), and publishing (including user acquisition, marketing and finance) under 10%. The share of programmers has progressed recently.

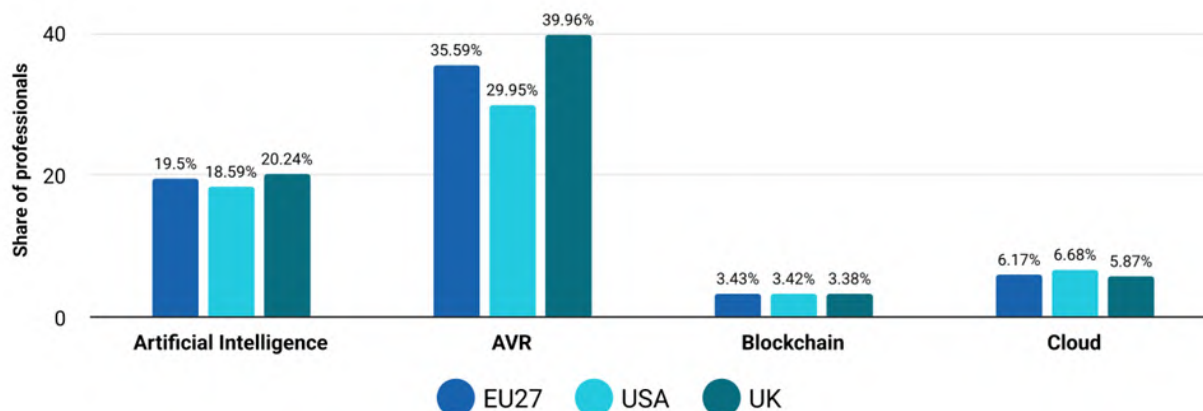
**Professionals working in video games in the EU have a diverse tech skillset.**<sup>138</sup> 19.5% of the workforce indicated at least one type of AI skill such as natural language processing, computer vision, deep learning or related AI development tools.<sup>139</sup> Augmented and virtual reality skills were cited by 35.6%, blockchain 3.4% and cloud 6.2%. Figures do not vary much geographically, with US/UK and EU figures being quite similar.

Figure 29. Share of tech skills declared by video game professionals active on LinkedIn

<sup>137</sup> One example is soundtrack. A Grammy Award for Best Score Soundtrack for Video Games and Other Interactive Media was created in 2023, and PlayStation is celebrating its 30 years with a music tour based on some of the console's IPs.

<sup>138</sup> Insights based on LinkedIn's Talent Insights extension. Note that people are located based on the information that they provide on their country of residence. While LinkedIn represents the single most comprehensive source currently available for the construction of technology-specific skills related indicators, it has its limitations: self-reported profiles can lead to biases, such as over- or under-reporting of skills and inconsistent data due to variable profile detail. Its geographic and demographic skew, particularly in regions with lower LinkedIn penetration, may under or overrepresent certain professional groups.

<sup>139</sup> Such as TensorFlow, Keras, Scikit-learn, OpenCV, PyTorch and Apache Spark.



Source: Technopolis Group analysis based on LinkedIn, 2024.  $n = 148,754$  professionals in the EU, 144,742 in the US, 46,313 professionals in the UK working in the video game sector.

### Skills demand, gaps and challenges

**The demand for video gaming professionals is not bound to stop.** The wave of layoffs is interpreted by many experts as an economic adjustment rather than a sign of a declining demand for skills. The multiplication of games and extension of production time require more resources than in the past.

**Video game companies' difficulties in finding the right talents are a continuing trend, with AI being the new battlefield with the tech sector.** Large companies continue to face a shortage of experienced profiles, in particular for animation, programming and, more recently, AI. The competition from the tech sector, with attractive working conditions, continues to hamper the recruitment of core teams for AAA games. Companies and trade bodies in the EU also report ongoing administrative difficulties in hiring non-EU employees.<sup>140</sup>

**Between 2019 and 2023, programming, design and artistic skills were most in demand in absolute figures.** Among the 354,000 job advertisements identified in the EU industry, game development tools such as Autodesk, Unreal Engine and Unity were widely mentioned, highlighting the need for technology/developer profiles. Programming languages and software (respectively C#, C++ and JavaScript) were also mentioned.

Figure 30. Top skills or segments mentioned in video games job advertisements in the EU in 2024.



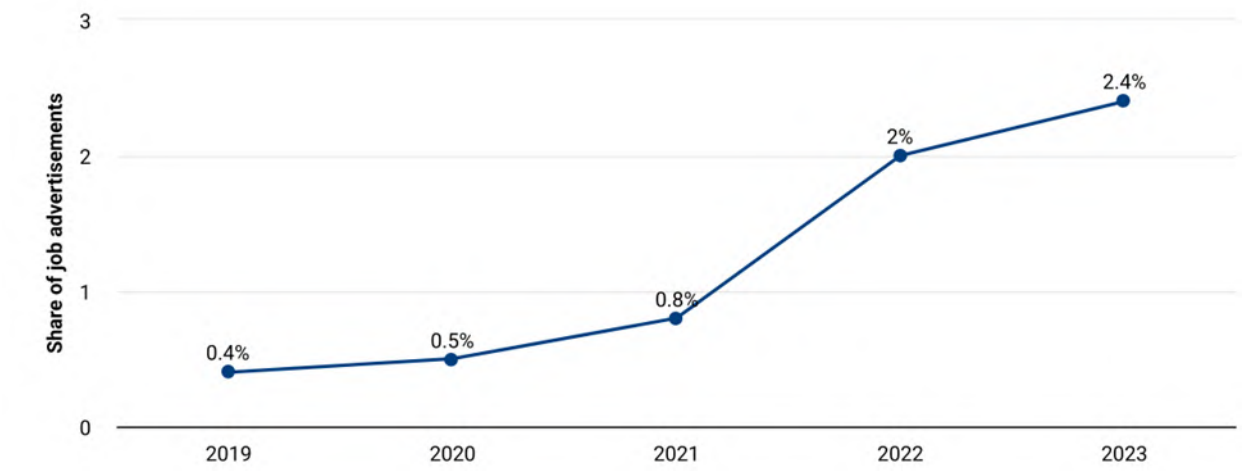
Source: Technopolis Group based on LinkedIn data.

**Looking ahead, tech and business skills, including marketing and user acquisition, are likely to be most crucial.** Based on data on 2023-2024 layoffs and ongoing AI developments, it can be expected that the share of HR and recruitment, quality testing, and artistic and design positions will at least temporarily shrink in the next surveys. By contrast, the demand for programming skills is set to remain or increase, together with management and business development skills. AI skills (including machine learning, AI tools and natural-language processing) will also be increasingly in demand,

<sup>140</sup> EIT, [The state of the European game industry and how to unleash its full potential](#), 2024.

although they are now capped at 1% or 2% of all video game job advertisements in the EU. Finally, soft and transversal skills, such as adaptability, will increasingly be required, in view of the fast pace of innovation in business models and technological solutions.

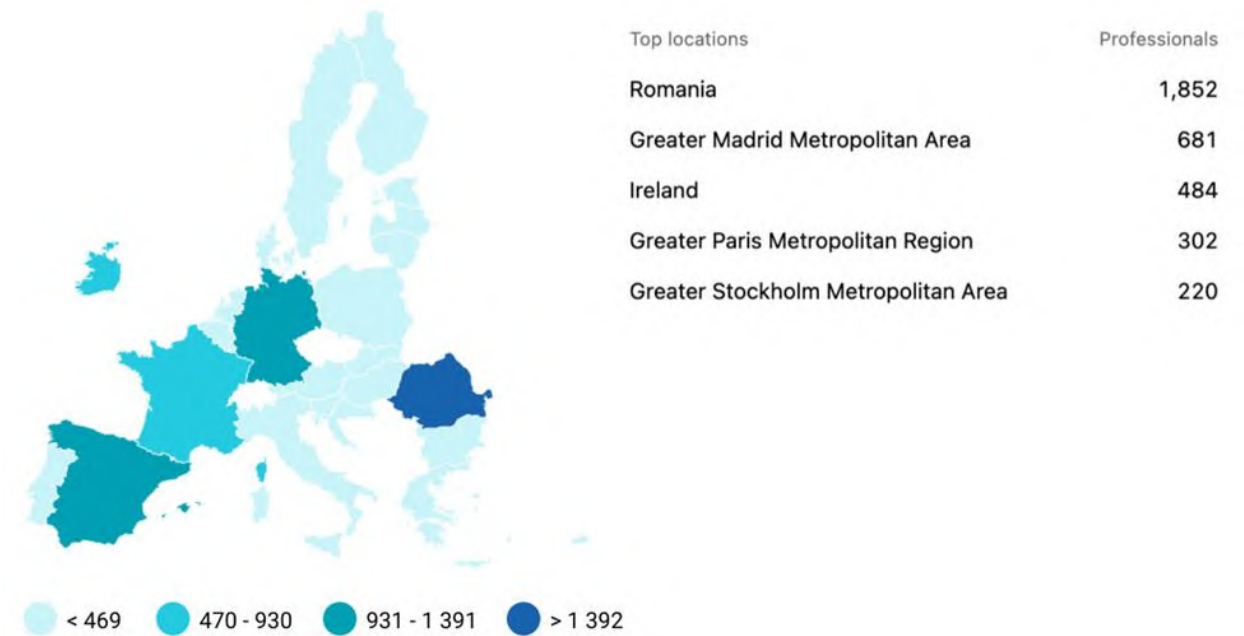
Figure 31. Share of online job advertisements with a requirement for AI skills in NACE 58 in the EU



Source: Technopolis Group based on Cedefop Skillsovate data.

**As well as the competition from the tech industry, the EU industry faces competition from US video game companies for the same talents.** As previously underlined, remote work applies to the majority of workers, and the industry operates not along national borders but globally. Close to 8,000 people are employed by US video game companies (excluding those who work in the EU headquarters of US companies)<sup>141</sup> from the EU territory. Most are concentrated in Romania, followed by Spain and Ireland. The US is still perceived to offer attractive working conditions, with the opportunity to work on more AAA games.

Figure 32. Location of video game developers located in the EU but working for US companies



<sup>141</sup> E.g. excludes the Amsterdam office of Roblox.

Source: Technopolis Group based on LinkedIn.

## Education and training

**Regular and up-to-date training is crucial in an industry like video games.** Video games is a content but also tech-driven economic activity, which creates a challenge for training: tomorrow's technologies are being developed by today's leading companies, while today's training programmes are based on yesterday's technologies.

**In this context, the EU industry faces persistent difficulties in ensuring that the new graduates are adequately trained.** Despite successful school-to-job transitions from video game graduates,<sup>142</sup> the industry still needs to provide them with extensive on-the-job training when they take up their positions. Setting up or improving vocational programmes is one of the key answers to this persistent issue: partnerships with schools include a close collaboration with the games industry that guarantees the content of the teaching will correspond to the needs of the employment market (for example, 'The Game Assembly' in Sweden).<sup>143</sup> Across Europe, professionals from gaming companies are increasingly involved in gaming educational curricula while some companies sponsor training programmes for specific skills needs or specialisations (such as Sweden's FutureGames network of schools which opened an antenna in Warsaw in 2023 with the support of CD PROJEKT RED). Such exchanges between schools and the private sector are also encouraged by public policies (e.g. in Poland and Ireland). Yet for now, there is little mapping of the education offer are being carried out in the EU.

**A lack of continuing education adds to the training gaps.** Europe still suffers from a lack of continuing training organisations in video games to help workers upskill. Self-training is therefore a major trend in the industry.<sup>144</sup> Existing initial education institutions are often responsible for addressing the industry's needs (e.g. in France, half of gaming schools offered continuing education for professionals), and new organisations providing short courses for professionals are only starting to emerge.

### 3.1.6. Summary

The **global video games market is recovering** from a fall in revenues in 2022, with consumer spending reaching EUR 169.3 billion in 2023 (+0.5%). Revenues are expected to increase in 2024 (EUR 169.6 billion, 0.2%) and return to more solid growth in 2025 (EUR 178 billion). Although the market is ever more saturated, estimates are that the industry's revenues could grow between 5% and 8% CAGR until 2040. Meanwhile, the **EU market** (representing a stable 13% of the global market, which is half the share of the US or Chinese markets) **is seeing a weaker recovery**. Despite moderate growth in 2023 (+1.8%, EUR 22.3 billion), revenues from **consumer spending were expected to fall in 2024** (-2.7%, EUR 21.7 billion).

Regarding market segments, **the global market is dominated by mobile games** (50% in 2024), which reaches a more diverse population than console and PC. The console market is expected to grow most in the coming years (average growth of 7% expected in 2024-27). In comparison, the **EU market is dominated by console-based revenues** (51% vs 26% on mobile gaming). **Transactions are still the main source** of revenues (76%), with a strong trend towards digital transactions. Subscription and cloud gaming are growing, but they are still a minority share of the market. While online/microtransactions have long been common in the mobile market, there is also an ever-growing dependence on **online/microtransactions** in PC gaming, although this is less dominant in the EU market (66% vs 85% in the US).

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<sup>142</sup> E.g. In Sweden, more than four in five degree holders find a job upon completing their studies.

<sup>143</sup> For more information, see <https://thegameassembly.com/se/>.

<sup>144</sup> Massive open online courses (MOOC) are sometimes used, but few cover art and design.

On consumption, **75% of the online adult population in the EU plays video games**. The **most commonly played games are mobile** (62%) and **online games via PC** (27%), tied with **console games** (27%) and portable games (14%). **Most players do not regularly spend money on video games**, with only 35% of players spending money on video games in the last six months and 50% exclusively playing free/freemium games. Views are split on the impact of gaming on society, although they are more positive among gamers than among non-gamers, and just above half of players have never encountered any issue (e.g. fraud, excessive monetisation pressure, cyberbullying, etc.) when playing.

As regards **business models**, and in a context where EU indie developers are struggling, video game companies seek to increase user acquisition efforts, to better monetise their IPs and to further engage gaming communities. European actors also strive to benefit from the growth of live-service gaming but face a crowded market.

As well as heightened competition for consumers, the EU industry also faces competition to retain and recruit talents, often facing the competition of the tech sector. The **labour market remains very volatile**, with 44% of European workers changing jobs in 2024 (21% affected by layoffs).



## 3.2. The extended reality sector

### 3.2.1. Introduction

Positioned at the cutting edge of innovation, the XR industry blurs boundaries between media formats, with great potential for adoption by other economic sectors (from advertising to education and aerospace).

**XR refers to experiences that allow users to engage with content in a multi-dimensional environment by integrating reality with advanced technologies.** It engages multiple senses through haptic feedback, typically sight, sound, and occasionally touch. Immersive media can deeply engage users in filmed, photographed, synthetic, or blended environments, creating a sense of realism. Immersive media encompasses a range of experiences that integrate XR to transform entertainment, including virtual concerts, interactive gaming, sports media, and XR-enhanced film experiences – often mediated by devices such as headsets.

**The sector has been in the limelight for the past decade.** From video games (Nintendo 3DS; *Pokémon GO*) to social media (filters on social media platforms), immersive content has made a breakthrough in users' daily lives. XR technologies were estimated to reach 189 million users in 2022. It has also been underpinning more industrial developments, such as virtual worlds/multiverses, which have been a focus in the tech industry since 2021.

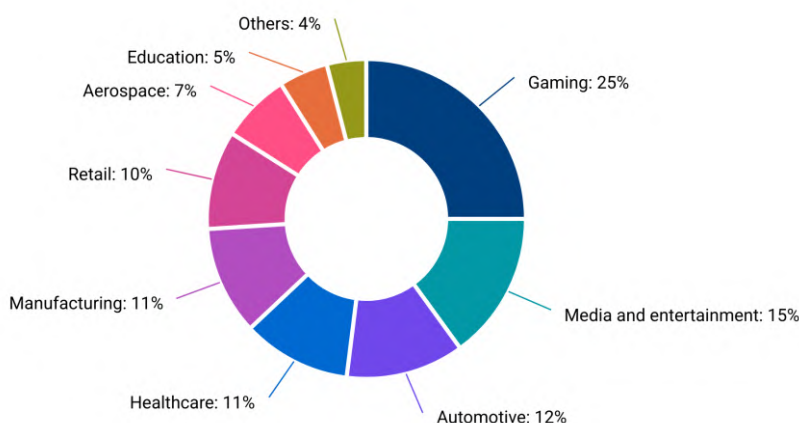
**Consequently, the sector showed promising forecasts at the beginning of the decade.** The global XR industry was set to grow between 37% and 43% (CAGR) between 2021 and 2026, with a slower trajectory for the EU ecosystem. Video gaming was identified as the biggest market for expansion, and the growth prospects for augmented reality were deemed higher than for virtual reality. Against this backdrop, this chapter analyses the latest trends for the XR sector, in particular for XR applications in media technologies and content.

### 3.2.2. Market overview

#### Global, regional and EU market value

**Within the broader realm of extended and virtual reality, immersive media made up 40% of the overall XR market in 2023, with gaming leading as the largest segment.** Media and entertainment together with gaming are followed by the automotive industry, healthcare, manufacturing, and retail. As adoption continues to grow, industries beyond entertainment are increasingly utilising these technologies for training, simulations, and customer engagement. This growing integration is blurring the lines between entertainment and other sectors, as businesses incorporate immersive experiences to enhance learning, improve operational efficiency, and create more interactive consumer experiences.

*Figure 33. Extended reality market size, by industry vertical, 2023*



Source: Technopolis Group, calculations derived from Grand View Research, Scoop Market US, Mordor Intelligence data.

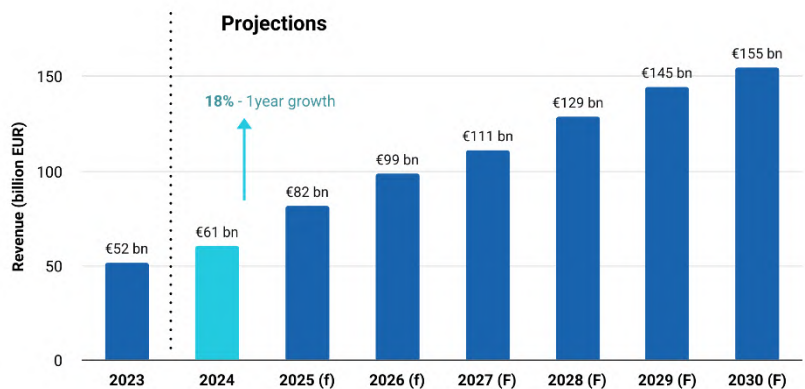
**Against this backdrop, the global immersive media market<sup>145</sup> is estimated to have generated EUR 61 billion in 2024 and is projected to rise to EUR 155 billion by 2030.<sup>146</sup>** This growth trajectory is driven by an increasing number of use cases across the media and entertainment industries, steady technological advancements, and growing consumer familiarity with immersive experiences. Media and entertainment have been driving the growth of the overall XR market by transforming content consumption (e.g. VR for immersive gaming, AR for interactive live events, and mixed reality for the blending of physical and digital experiences).<sup>147</sup>

<sup>145</sup> Immersive media market in this definition includes the following applications: VR and XR gaming, live events, museum and cultural experiences, music and concerts, sports, arcade studios, immersive theatre, immersive cinema and movies. This definition is different than the category of the XR market (with application areas across other sectors such as education, automotive, healthcare, aerospace etc). The global XR market size was estimated at EUR 135 billion in 2023 according to Grand View Research. Media, entertainment and gaming accounts for 40% of the XR market, followed by automotive and healthcare.

<sup>146</sup> Technopolis Group, calculations derived from Grand View Research, Scoop Market US, and Mordor Intelligence data focused on immersive entertainment specifically.

<sup>147</sup> Imarc, [Extended Reality \(XR\) Market Report by Component, Type, Organization Size, Application, End User Industry, and Region 2025-2033](#), 2024.

Figure 34. Global immersive media market forecasted Size, 2023-2030 (EUR billion).



Source: Technopolis Group, calculations derived from Grand View Research, Scoop Market US, Mordor Intelligence data.

In 2024, it is estimated that the EU immersive media market was valued at EUR 12 billion, capturing 20% of the global market.<sup>148</sup> The EU’s XR market remains concentrated in key capitals and around vibrant tech hubs. EU leaders include Germany (EUR 5 billion), France (EUR 4 billion) and Italy (EUR 1 billion), which saw their market size increase by 10% compared with 2023.<sup>149</sup> Spain and the Netherlands are also important markets. This rapid expansion reflects the EU’s dynamic XR landscape, characterised by innovative hubs in cities such as Paris, Berlin, Amsterdam, Helsinki, Munich, Hamburg, Warsaw and Milan.

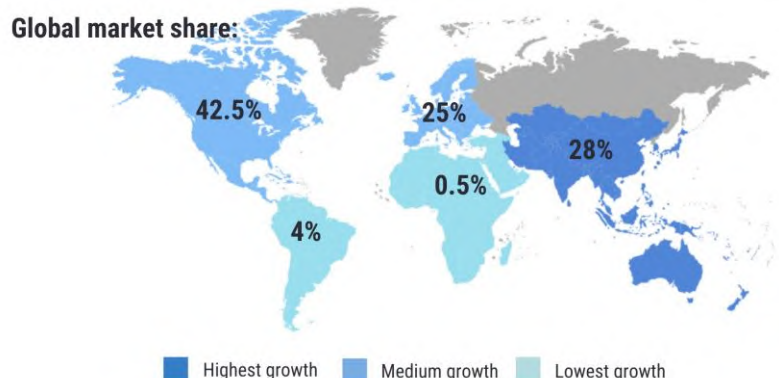
Outside the EU, the Asia-Pacific region is set to become the fastest-growing market after North America. Growth is set to be particularly sustained in South Korea, and the Asia-Pacific immersive entertainment market is projected to expand significantly, with the themed entertainment sector, particularly theme parks, leading the way. In these markets, theme parks are early adopters of XR, AR, VR, and interactive storytelling driven by audience demand.<sup>150</sup>

Figure 35. Immersive media market shares (numbers refer to market share, colouring refers to growth rate)

<sup>148</sup> Estimates of XR revenues in media vary between sources such as Grand View Research, Scoop Market US, and Mordor Intelligence, compared with the PwC Media Outlook. The main reasons are differences in how the sector is defined, the range of XR activities included, and the forecasting approaches used. While PwC focuses more narrowly, the other sources take a broader view, incorporating the full XR ecosystem, hardware, software, services, and related media applications such as gaming. In this case, estimates are based on Grand View Research, Scoop Market US, and Mordor Intelligence data.

<sup>149</sup> Calculations derived from Grand View Research, Scoop Market US, and Mordor Intelligence data.

<sup>150</sup> Mordor Intelligence, [Asia-Pacific Immersive Entertainment Market Size & Share Analysis - Growth Trends & Forecasts \(2025 - 2030\)](#), 2024.



Source: Technopolis Group, calculations derived from Grand View Research, Scoop Market US, Mordor Intelligence data.

**Overall, the growth of the XR market is led by gaming, with uptake remaining lower in other sectors.** While gaming can drive early adoption, the industry faces key challenges such as high hardware costs for consumers, limited interoperability, and practical obstacles to integrating XR technology into film production workflows. A deeper analysis of the immersive media entertainment market structure was conducted by examining key factors that influence the adoption and development of XR technologies. The insights were grounded in the availability of relevant data, which helped identify important trends shaping the industry. Special attention was given to mobile devices, as they play a pivotal role in driving the adoption of augmented reality, making the mobile AR market a critical area to follow. Additionally, the analysis highlighted that gaming is still one of the most significant and rapidly growing applications of immersive technologies within the media sector, underscoring its impact and relevance in the broader XR landscape.

### The mobile AR segment

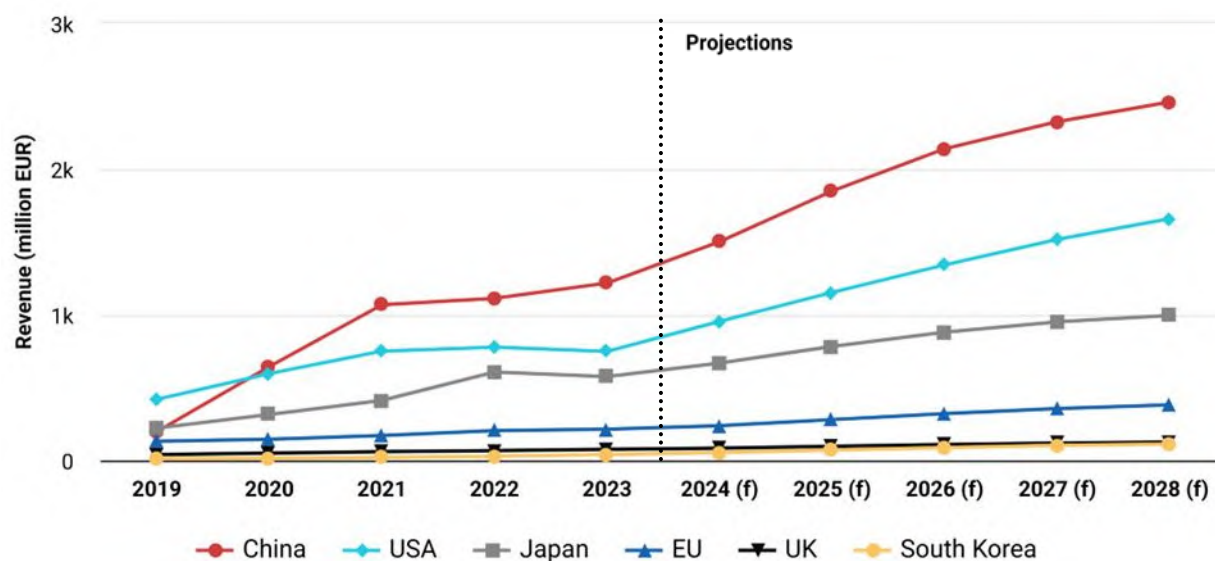
**China and more broadly the Asia-Pacific region (including Japan) dominate the mobile AR<sup>151</sup> consumer market, extending beyond immersive media to foster a broader, positive ecosystem for technology adoption.** This dominance is fuelled by the expansion of mobile networks and smartphone penetration equipped with advanced smart sensors. China, in particular, is one of the global leaders in leveraging AR for media-driven applications. Starting at EUR 200 million in 2019, the country's mobile AR consumer revenues are forecast to rise to EUR 2.5 billion by 2028.<sup>152</sup> In the coming years, China's AR market is expected to enter a new phase of growth, with companies such as Alibaba, Tencent, ByteDance and Sina trying to capitalise on the recent progress made in AR glasses development, by commercialising native apps like Douyin VR Live.<sup>153</sup> Tencent Video and iQiyi, two of China's most extensive streaming services, also use AR to enhance content consumption through gamified experiences and virtual overlays that extend user engagement.

Figure 36. Mobile AR consumer (revenues, EUR million)

<sup>151</sup> Mobile AR is defined as revenues generated directly from end users from paid downloads and in-app purchases relating to mobile AR apps, and from the publishing of advertisements within mobile AR apps. This revenue is digital, and from both consumer and advertising spending.

<sup>152</sup> Based on PwC data.

<sup>153</sup> Ma Si, [AR glasses give enhanced sector clarity](#), China Daily, 3 July 2024.



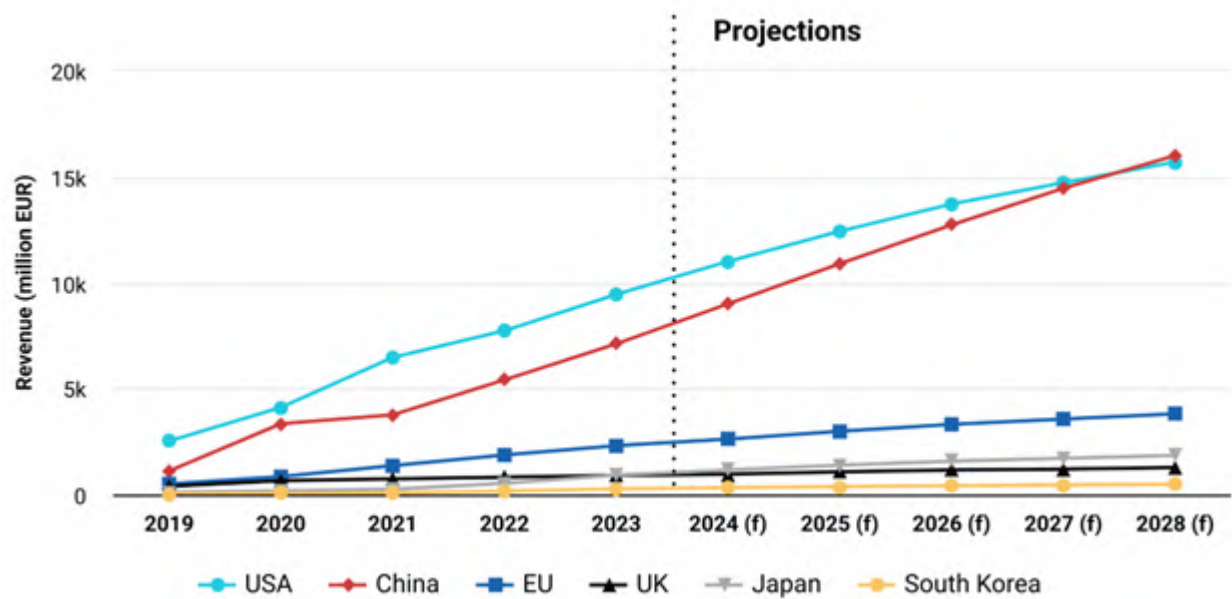
Source: PwC Global Entertainment & Media Outlook 2024–2028., EU includes data for Germany, France, Italy and Spain with estimates for the Netherlands, Finland and Poland.<sup>154</sup>

**In comparison, the US market is projected to grow to EUR 1.7 billion by 2028 and has carved out a distinct niche in AR media through platforms like Snapchat, Meta’s Facebook and Instagram, and Niantic.** Snapchat pioneered AR in media with its filters. Similarly, Meta has integrated AR into Instagram and Facebook, enabling creators and brands to enhance their posts and advertisements with interactive, immersive elements. The US media industry has yet to capitalise on AR beyond social media and gaming, with possible use in streaming platforms, live events, or advertising. This seems to reflect a more fragmented US XR media ecosystem, where adoption remains strong but lacks the close collaboration among industries seen in China.

**In advertising, nevertheless, the US takes the top spot.** The US leads the global mobile AR advertising market, with EUR 2.5 billion of revenues in 2019 and EUR 15.5 billion expected by 2028. China follows, with revenues increasing from EUR 1.1 billion in 2019 to an estimated EUR 16 billion by 2028 – one of the highest growth rates globally. China's dominance in mobile-first internet usage and its emphasis on leveraging AR for targeted and interactive advertising make it a global leader in innovation. Meanwhile, the EU exhibits a steady growth in the mobile AR advertising segment, increasing from EUR 511 million in 2019 to a projected EUR 3.8 billion by 2028.

Figure 37. Mobile AR advertising (Revenues, EUR million).

<sup>154</sup> Based on PwC data. The EU market values presented are aggregated from member state-level data covering the four largest economies (France, Germany, Italy, and Spain). While these countries represent a significant share of the EU’s mobile AR consumer market, they do not capture the full EU market size. Data excludes other member states, including Nordic and Eastern European markets, suggesting that EU-wide market size and growth potential likely exceed reported figures. Values should be interpreted as conservative estimates primarily reflecting patterns and dynamics of major Western European markets.



Source: PwC Global Entertainment & Media Outlook 2024–2028. EU includes data for Germany, France, Italy and Spain with estimates for the Netherlands, Finland and Poland.

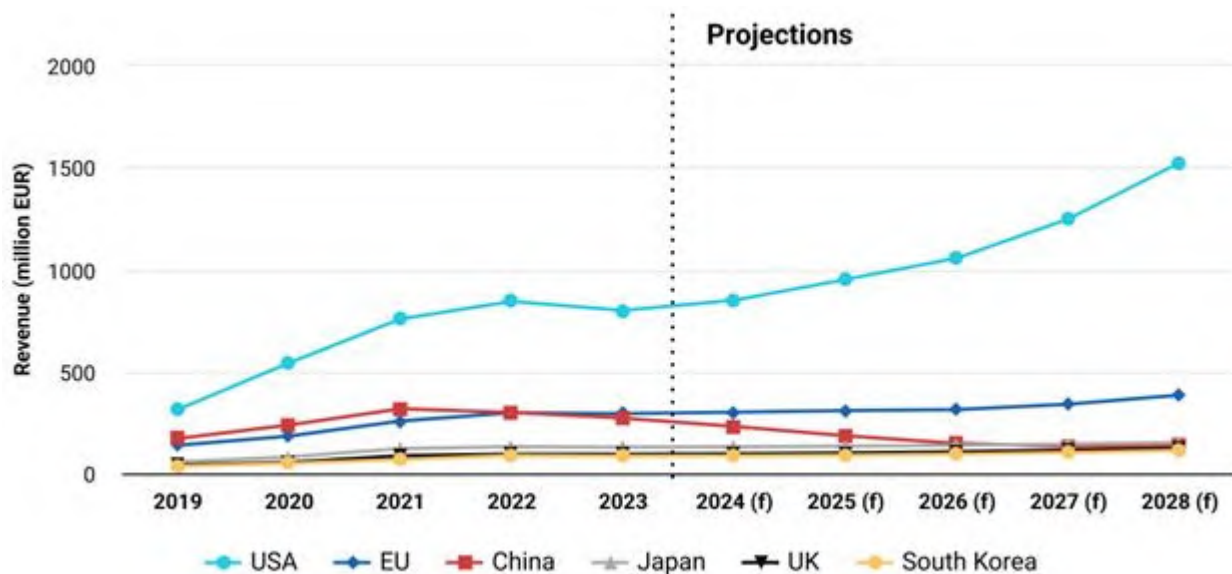
### The VR gaming segment

The VR gaming market data reveals different growth trajectories across major global markets from 2019 to 2028, with the US emerging as the clear leader in revenue ahead of China. Starting from approximately EUR 313 million in 2019, the US VR gaming market is projected to reach EUR 1.5 billion by 2028, demonstrating a CAGR of 17.5%.<sup>155</sup> In contrast, the Chinese market is estimated to have reached its peak, with revenues reaching EUR 317 million in 2021-2022, before declining.

Figure 38. VR gaming (revenues, EUR million)

<sup>155</sup> According to data by PwC.





Source: PwC Global Entertainment & Media Outlook 2024–2028. EU includes data/estimates for Germany, France, Italy, Spain, Netherlands, Finland and Poland.

**The EU VR gaming market presents a steady growth.** Market revenues increased from EUR 138 million in 2019 to a projected EUR 384 million by 2028. Europe’s gaming industry benefits from its strong creative reputation, producing innovative content and culturally rich experiences.

**Japan, the UK, and South Korea play supporting roles in the VR gaming landscape, with revenues steadily growing yet remaining smaller in scale compared to the US, EU, and China.** By 2028, Japan and the UK are projected to achieve revenues of EUR 151 million and EUR 122 million respectively, driven by strong gaming cultures and high consumer demand for immersive experiences.

### Structure of the market

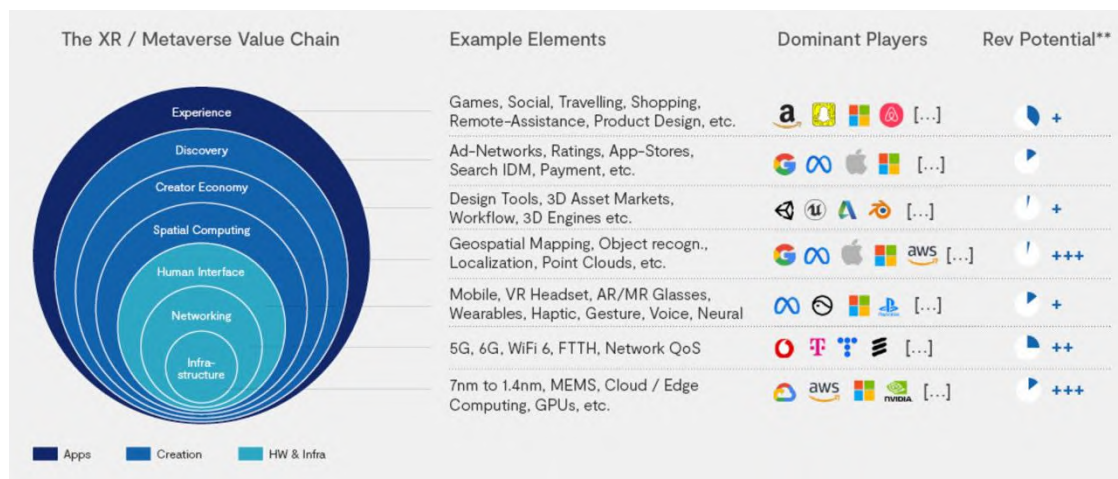
**The XR value chain remains largely unchanged over time and is characterised by a diverse network of stakeholders.** Key players include hardware manufacturers, hyperscalers, software developers and content creators, as well as user-facing applications and spatial computing engines. This intricate ecosystem requires expertise across diverse domains, such as graphics processing, sensor integration, 3D modelling, and user interface design. Given the breadth of specialisations needed, no single company, regardless of resources, can cover all these areas. Consequently, success in XR development and commercialisation hinges on strategic collaborations among stakeholders to deliver integrated and innovative XR solutions.

**In the EU, the XR market remains heavily concentrated among a handful of non-EU companies.** In 2023, the majority of EU XR revenue was generated by non-EU companies, with Meta alone (formerly Oculus VR LLC) accounting for 50% of the total market.<sup>156</sup> This is consistent with previous findings according to which 10 non-EU companies captured 84% of XR revenue within the EU.<sup>157</sup> Companies such as Meta, Google, Amazon, and Apple continue to dominate large portions of the XR value chain due to their vertical integration (see figure below). These firms have aligned their investments across hardware, networking, and software to position themselves as key enablers of the XR ecosystem. Over the past decade, they have strategically integrated AI, cloud computing, and data analytics, enabling them to optimise and scale their XR platforms efficiently. This synergy reduces dependency on external partners.

Figure 39. The XR/Metaverse value chain

<sup>156</sup> Marqual IT Solutions, [Europe Extended Reality Market Size, Share & Industry Trends Analysis Report By Component, By Technology, By End User, By Country and Growth Forecast, 2022 – 2028](#), 2023.

<sup>157</sup> European Commission: Directorate-General for Communications Networks, Content and Technology. [The European Media Industry Outlook](#), 2023.



Source: Jon Radoff - *Building the Metaverse*; 2021, adapted by Detecon; \*\* revenue share and additional growth (+) deducted from Detecon expert estimations.

Europe is home to numerous innovative tech startups and other SMEs operating across various sectors, not just media,<sup>158</sup> although it does not have a dominant industry leader in XR. Most XR companies in the EU are small-scale, with fewer than 15 dedicated employees.<sup>159</sup> These smaller actors face significant challenges in entering the XR value chain, particularly in layers dominated by hyperscalers.<sup>160</sup> For example, human interface components, such as AR/VR headsets, and spatial computing technologies often require integration with existing ecosystems controlled by larger firms. To navigate this, smaller firms must innovate within highly specialised areas or partner with hyperscalers to gain traction. Specialisation may focus on developing unique spatial computing algorithms, calibration tools, or enabling technologies for the creator economy.

## Employment

The number of professionals with XR skills in the EU has been growing dynamically, both within the broader tech sector and in the immersive media segment. It is estimated<sup>161</sup> that in 2025 approximately 13,200 professionals were employed across 700 tech companies specialised in XR in the EU, with 5,570 professionals employed in 216 tech companies working specifically at the intersection of XR and the media sectors in the EU in 2024.<sup>162</sup> This narrower category of XR companies include Hologate Entertainment, Esport Virtual Arenas, Antilatency Virtual Productions and Cyborn. More broadly, data shows that there were 214,810 professionals with XR skills employed in the media sectors in the EU in 2024.<sup>163</sup> There were 1,200,470 professionals with

<sup>158</sup> Milon Gupta and Uwe Herzog, [Extended Reality – An overview](#), EURESCOM, 1 June 2022.

<sup>159</sup> XR4Europe, [European XR Industry Report 2025](#), 2025.

<sup>160</sup> Ibid.

<sup>161</sup> Based on Moody's Orbis: Search strategy was to filter for companies with reference to XR, AR, VR, MR, haptics. The analysis of employment trends in the XR sector presents significant methodological challenges due to the sector's emergent nature, the absence of standardised taxonomies for roles and competencies, and its interdisciplinary overlap with fields such as software development and digital media. These complexities are further compounded by the rapid pace of technological evolution. To address these limitations, insights were gathered from LinkedIn, datasets derived from jobs listing platform scraping, and detailed firm-level information from Orbis.

<sup>162</sup> Based on Orbis data and Crunchbase, with media sectors being defined as video games, audiovisual and news media. Crunchbase includes 1 859 XR companies headquartered in the EU with a total employment of 33 000 people.

<sup>163</sup> Based on LinkedIn. XR skills have been captured as: augmented reality (AR), virtual reality (VR), mixed reality, and tools like Unity, Unreal Engine, Blender, and Autodesk Maya. Skills include 3D modelling, CGI, software development (C++, C#, Java), and human-computer interaction. Industries covered include audiovisual, news media, video games, visual and performing arts, writing and editing.

general XR skills<sup>164</sup> (irrespective of the wider industrial sector), representing a 13% growth rate over the period from 2023-2025.

**The EU XR sector presents a pronounced geographic concentration.** Based on 2014-2023 data, three countries account for nearly three quarters of the sector's total employment: Germany (37.9%), France (19.3%), and Finland (15.1%). This high concentration ratio reflects the sector's tendency towards clustering in established technology hubs, a pattern typical of knowledge-intensive industries where proximity to talent, resources, and innovation networks creates self-reinforcing advantages. Leading hubs concentrating XR talent in media also include metropolitan areas such as Madrid, Barcelona, the Randstad conurbation in the Netherlands and Warsaw (linked to the video game industry), fuelled by top employers such as Orange, Capgemini, and Google. Companies such as Nokia, Motorola and IBM have created new hiring opportunities for professionals with XR skills notably in Lisbon and Kraków.<sup>165</sup>

**In 2024, around 25% of the XR-skilled professionals in the EU were women.** In comparison, women make up 29% of XR professionals in the US.<sup>166</sup> In 2022, just 10% of metaverse funding and investment was reported to be directed towards women-owned companies.<sup>167</sup>

### Top players

**US and Chinese companies dominate the consumer-facing immersive media market, leaving European firms struggling to compete.** For instance, a US competitor like Meta is estimated to have invested more than USD 80 billion since 2014 (with an estimated USD 74 billion in losses) to develop hardware devices and software solutions.<sup>168</sup> The company is now able to offer its Quest headset devices at a consumer-friendly price point, which is difficult for European manufacturers to match. This allows Meta to secure greater long-term control of the ecosystem beyond hardware. Microsoft (with the HoloLens), and HTC Vive also control much of the VR/AR hardware production and help set the technical standards for the industry.<sup>169</sup> The concentration of hardware manufacturing in the US enables these companies to scale quickly, achieve economies of scale and maintain a competitive advantage in terms of R&D and distribution. On China's side, ByteDance, through its ownership of Pico Interactive, has made significant inroads into the immersive media ecosystem by leveraging its expertise in content creation, user engagement, and integrated ecosystems.

**In addition to hardware, US companies also control most of the software platforms that drive immersive media experiences.** Companies and solutions such as Meta's Horizon, Apple's ARKit, Google's ARCore, Microsoft's Mesh, Unity and Magic Leap are making substantial strategic investments in immersive technologies, positioning XR as a critical area of technological development and future market expansion.<sup>170</sup> These platforms collectively command most of the global market share in consumer and enterprise XR solutions. This ecosystem control is further supported by advertising-driven business models (e.g. Meta), hardware/software synergy (e.g. Apple), and strategic partnerships between platforms and XR developers (e.g. Google,

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<sup>164</sup> The query about XR skills include in this analysis keywords such as augmented reality (AR), virtual reality (VR), mixed reality, computer-generated imagery (CGI), immersive environments, Microsoft HoloLens, Oculus, Vuforia Augmented Reality SDK, Unreal Engine 4, Autodesk Maya, Metaverse, Blender, Autodesk 3ds Max, Cinema 4D, Kinect, human computer interaction, multisensory instruction, Google Glass, Zbrush, Google ARCore, ARKit, CRYENGINE.

<sup>165</sup> Technopolis Group based on LinkedIn data.

<sup>166</sup> Ibid.

<sup>167</sup> Mina Alaghband and Lareina Yee, [Even in the metaverse, women remain locked out of leadership roles](#), McKinsey & Company, 21 November 2022.

<sup>168</sup> Matthew Ball (Updated: 17 April 2025), [The State of Video Gaming in 2025](#), Epyllion.

<sup>169</sup> According to IDC's [Worldwide Quarterly Augmented and Virtual Reality Headset Tracker](#) (March, 2025), Meta currently dominates the market capturing 74.6% share throughout 2024, followed by Apple at 5.2%, Sony with 4.3%, ByteDance at 4.1% and XREAL rounding out the top five with a 3.3% share. However, among the top five only Meta and XREAL recorded year-on-year growth thanks to newer products and gaming focused use cases.

<sup>170</sup> Joan O'Hara, [Reality Check: US Investment in XR Technologies Long Overdue](#), TechPolicyPress, 4 Jan 2024.

Microsoft).<sup>171</sup> They are also central to creating, distributing and monetising content, defining the user experience and governing access to content, which makes it difficult for European companies to scale and achieve global reach. In addition, the lack of cross-platform compatibility further fragments the market, creating significant barriers for European companies that rely on open-source models or wish to operate across multiple ecosystems.

**Europe's XR hardware ecosystem is renowned for its technological excellence.** Companies such as Varjo (Finland) and Lynx Mixed Reality (France) are global leaders in high-end headsets designed for specialised applications like industrial design, training, and simulation. Similarly, firms like Barco (Belgium) are at the forefront of projection and motion tracking systems, catering to fields such as virtual production, engineering, and scientific research.

**The EU's strengths are also concentrated in research and development, as well as content production, specifically in VR gaming.** Within the EU, Western Europe leads in immersive media, with countries such as Germany, France, and the Netherlands driving innovation through creative industries, advanced infrastructure, and favourable public-driven incentives.<sup>172</sup> Germany's thriving media production and entertainment sectors employ AR talent to create dynamic storytelling, while in France there is a growing use of XR in advertising and digital media campaigns. Meanwhile, Central and Eastern Europe are emerging as a growth area for immersive media driven by regional incentives.<sup>173</sup>

**However, the European immersive media ecosystem remains constrained by significant fragmentation, undermining market collaboration and scalability.** Europe's XR industry is marked by a lack of resource-sharing networks, exacerbating production inefficiencies and increasing operational costs. In addition, the recent surge in XR devices, platforms, and software tools has showcased a significant lack of industry-wide standards across many aspects of virtual and augmented realities. Consequently, technologies and their underlying platforms are predominantly proprietary, controlled by platform providers rather than being open-source. This extends to critical areas such as data tracking and collection standards, storage protocols and mechanisms for linking disparate platforms. It remains to be seen whether this fragmentation represents a transitional phase that will ultimately give way to convergence, or whether market dynamics will sustain these divisions, resulting in the coexistence of multiple isolated virtual worlds. Fragmentation also applies to application markets: these are often siloed and disconnected from broader initiatives that could drive critical mass and elevate the EU's standing in immersive media.

### 3.2.3. Consumer trends

**Market analysts point to XR being an experience that is appealing to users.** Immersive media has captivated the imagination of tech-savvy consumers globally, representing a transformative shift in how people interact with digital content. On the one hand, demand for XR is fuelled by its capacity to deliver innovative forms of engagement, interactivity and personalised experiences with media. On the other hand, consumer demand is facing challenges, as shown by the number of VR headsets in active use that fell by 8% in 2024 to 6.9 million globally.<sup>174</sup> Nevertheless, VR growth is expected by 2029, driven in part by Meta's sustained investment in the technology. Societal trends, including the rise of digital lifestyles and the increasing reliance on remote interactions, have further heightened interest in XR technologies. Under the current projections and growth trajectory, in 2024, there were an estimated 225 million users of XR technologies in the EU<sup>175</sup>. The projected

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<sup>171</sup> For more, see [IDC's AR & VR Headsets Market Insights](#).

<sup>172</sup> In Western Europe, state-driven initiatives are directly advancing immersive media. In Germany, the Digital Hub Initiative supports the integration of AR in media innovation hubs, fostering collaborations between media companies and AR tech startups. France's CNC Future Fund (Centre National du Cinéma et de l'Image Animée) invests heavily in AR projects for cinema, gaming, and cultural experiences, enhancing the use of immersive media in tourism and creative industries. Netherlands' Creative Industries Immersive Impact Coalition (CIIC) is supported by important public fundings to boost the development of the national XR ecosystem, notably in the media sector.

<sup>173</sup> Grand View Research, [Europe Immersive Technology Market Size, Share & Trends Analysis Report](#), 2024.

<sup>174</sup> Omdia, [Consumer VR Headset and Content Revenue forecast](#), 2024.

<sup>175</sup> Data from [Statista](#).

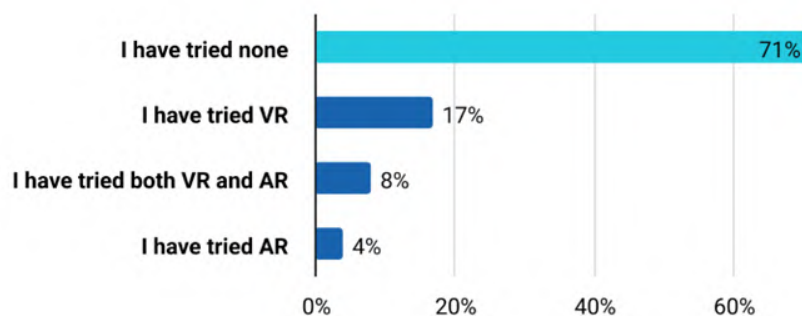


growth trajectory suggests an approximate annual expansion of 13.5 million new users from 2024 to 2029, acknowledging potential variations in adoption rates across different years and market conditions.

**The hardware market paints a more complex picture.** Global AR/VR headset sales dropped by 10% in 2024 to 6.9 million units, with further decline expected in 2025, signalling difficulties for consumer VR.<sup>176</sup> In 2025, a decline of 12% in XR hardware shipments is expected due to delayed product launches. The market is expected to rebound in 2026, with growth projected to resume in the following years.<sup>177</sup> This rebound is anticipated to be driven by the availability of more affordable devices and the integration of advanced AI features, which are expected to renew consumer interest and accelerate hardware adoption.

**Despite the increasing integration of immersive technologies in daily life, 7 in 10 Europeans report not having experienced either AR or VR.** Only 4% of Europeans identified having used AR alone, which is much less than VR (17%), the gap being possibly explained by VR being a more easily recognisable technology due to its distinctive hardware, like headsets (whereas social media filters are not systematically associated with AR). Nordic and Western European markets demonstrate particularly advanced adoption rates, with Finland emerging as a leader, with 24% of respondents reporting experience with both VR and AR technologies. Notable market maturity is evidenced in the Netherlands and Poland, recording VR trial rates of 38% and 52%, respectively. Younger people (18 to 30 years old) are also more likely to experience VR and AR than those over 60 (53% against 11%), while data shows that these technologies remain primarily confined to early adopters and those with substantial disposable income.

Figure 40. Share of Europeans who have tried VR or AR in the EU (n=23,169)



Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.

**Lack of knowledge about the sector seems to be the primary reason for the limited adoption of VR and AR.** Among the Europeans reporting not having tried VR or AR, half of them report not knowing these technologies, and one quarter expresses little interest. The limited exposure to XR therefore seems to be due to structural barriers, including cost, awareness and technological literacy. This suggests that XR's evolution from niche to mainstream will depend not just on technical advancement.

**Adoption is also hindered by the high price of hardware.** The price of XR devices for consumer use generally ranges between EUR 250 and EUR 600, with some reaching even EUR 3,000.<sup>178</sup> Other obstacles include the bulkiness of hardware, the need for costly and heavy headsets and the need for the hardware to mature further concerning factors like battery life and comfort.<sup>179</sup>

<sup>176</sup> Omdia, [Consumer VR Headset and Content Revenue forecast](#), 2024.

<sup>177</sup> IDC, [Worldwide Quarterly Augmented and Virtual Reality Headset Tracker](#), 2024 (October).

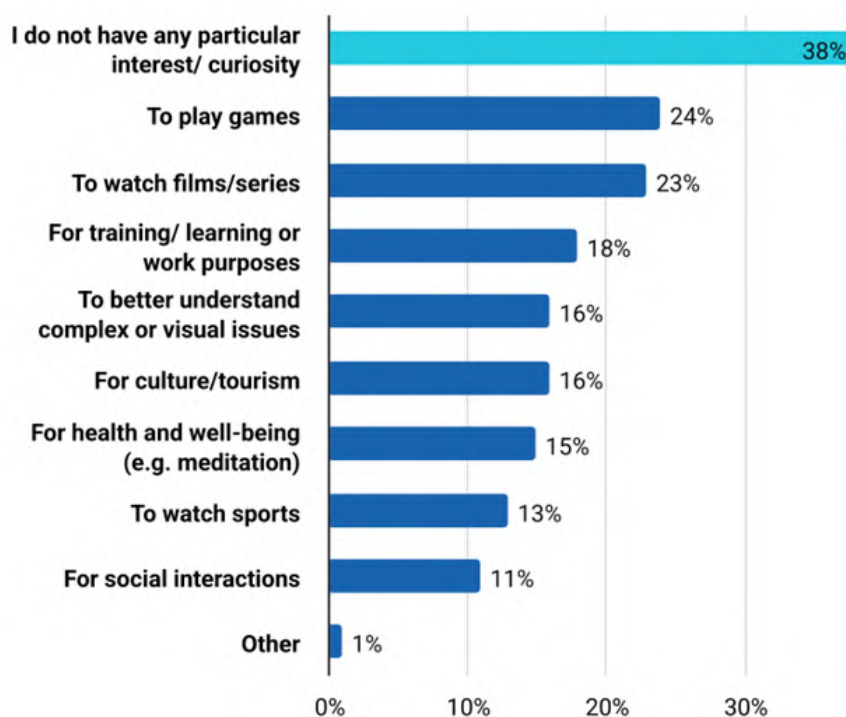
<sup>178</sup> OECD, [An immersive technologies policy primer](#), 2025.

<sup>179</sup> Based on Omdia.

**For those who have used XR, there are some limitations to their interest.** Four in ten Europeans see VR and AR positively but see their application mostly for leisure and media consumption, and only 18% of respondents wish VR and AR were adopted more widely in daily life or work.

**The appeal of media applications is confirmed when people are asked the specific environments in which they would like to use AR or VR, with games and films topping preferences.** One in four Europeans would be interested in using AR or VR to watch films or play games, with culture/tourism, watching sports and social interactions lagging behind. A substantial 40% of people have no particular interest in applying VR and AR in a given environment, although this rate drops significantly for younger users, who have more interest in further applications. The same applies to AR: games or apps (49%) come before social media filters (29%), museums (26%) and training (20%).

*Figure 41. Environments in which Europeans would be interested in using AR/VR (n=23,169, 1.82 average clicks)*



*Source: European Commission: Directorate-General for Communications Networks, Content and Technology, [Study on audiences, consumer behaviour and preferences relating to the consumption of media content](#), 2025.*

**Privacy concerns also constrain adoption as data breaches and privacy violations can undermine consumer trust in immersive technologies and lead to scepticism.**<sup>180</sup> Concerns about data privacy and security emerge due to the large amounts of user data collected by XR technologies. Moreover, high-profile incidents may result in legal consequences and reputational damage for companies.

<sup>180</sup> Great View Research, [Virtual Reality In Gaming Market Size, Share & Trends Analysis Report By Component, By Connecting Device, By User, By Region, And Segment Forecasts, 2025 – 2030](#), 2024.



### 3.2.4. Industrial trends and business model

#### Monetisation

**The main business models in the industry include subscription-based software, maintenance agreements and Content as a service offering.**<sup>181</sup> Small EU companies of fewer than 15 employees appear to predominantly adopt an agency/service business model, which focuses on providing tailored XR solutions for clients across different industries, rather than developing large-scale, proprietary products. They often collaborate with other firms, acting as service providers or offering specialised expertise in areas such as software development and technical support. Ultimately, offering ongoing support and updates for deployed XR solutions, such as virtual environments or training simulations, can transition companies from one-off engagements to longer-term partnerships. However, licensing proprietary tools or platforms that allow clients to create and manage their immersive content provides a more steady and predictable income stream while fostering client retention. Another increasingly relevant model is the sale of 'digital'<sup>182</sup> or virtual goods, which resonate with consumers' desire for personal expression in online environments.

**The direct sale of head-mounted displays (HMDs) is also one of the most common revenue models.** Direct sales come either as a one-time purchase or through a 'Technology as a Service' subscription model.<sup>183</sup> This subscription-based approach allows consumers to pay recurring fees and periodically upgrade their hardware, mirroring the trend in the smartphone industry, where lower upfront costs encourage wider adoption. Equipment rental models exist but operate at a small scale due to logistical challenges and limited client demand. While these technologies showcase Europe's capacity for innovation, their impact is largely confined to niche, high-value markets (e.g. architecture, medical imaging), leaving significant consumer-driven opportunities untapped as headsets' prices remain high.

**Many European XR companies, including those in XR gaming, adopt subscription-based, community-driven business models that align with privacy norms.** While global platforms (such as Rec Room or VRChat) rely on in-app purchases and data monetisation, European solutions emphasise subscription plans that appear to resonate with the expectations from users: platforms like Resonite exemplify this approach, blending community funding through Patreon with enterprise collaborations. This hybrid model allows companies to sustain operations while prioritising user-focused design and engagement. Another example is Somnium Space, which operates as a virtual world where users can buy virtual land, build content, and interact with other players.

**Another key trend for the EU XR industry is expanding into high-budget international markets to tap into larger and more financially robust investment opportunities.** This approach helps mitigate the challenges posed by fragmented regional markets, enabling greater scalability, broader audience reach and stronger industry partnerships. Scaling within the EU often requires extensive localisation to accommodate linguistic, cultural and regulatory diversity, which inflates costs and reduces profit margins. Consequently, many XR companies are pivoting to regions with higher budgets and lower localisation barriers, such as North America, Latin America and the Gulf region, where integration of immersive technologies is in high demand. Countries such as the United Arab Emirates and Saudi Arabia are heavily investing in XR for digital twinning, tourism promotion and high-profile cultural events such as the Red Sea Festival. These markets offer lucrative opportunities for European XR companies, with projects focused on prestige and less subject to budget constraints.

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<sup>181</sup> Ibid.

<sup>182</sup> Digital objects are digital representations of physical objects or content. They are created by converting analogue information such as images, texts, audio files or video recordings into digital formats. They include non-fungible tokens (NFTs), which are unique, blockchain-based digital assets used to authenticate ownership of virtual items such as avatars, in-game assets, or digital art.

<sup>183</sup> KBV Research, [Global Head Mounted Display \(HMD\) Market Size, Share & Trends Analysis Report By Technology, By Connectivity, By Component, By Application, By Regional Outlook and Forecast, 2023 – 2030](#), 2022.

**The European XR ecosystem demonstrates significant monetisation challenges despite its diverse revenue approaches.** VR headsets, AR glasses, haptic devices, and spatial computing systems require advanced components, powerful processors, and compatible software, making them expensive for both users and companies in the media sectors. Virtual production requires substantial investment in hardware, including into LED panels and robotic camera systems, due to the complex technology involved in creating high-quality real-time visual effects and immersive environments. Consumer expenditures often do not allow those investments to be recouped, leading many creators to experiment with XR, whether a consumer market exists or not. This approach underscores the artistic roots of the XR entertainment sector, where the creation of high-quality content often precedes the establishment of a clear revenue model. Additionally, software is underdeveloped in the EU XR media market: this model introduces recurring revenue opportunities and scalability, as software can be sold to multiple clients, yet its adoption remains limited due to the significant investment required to develop robust, user-friendly tools and the current market focus on bespoke solutions. Finally, the European immersive media sector is predominantly project-based, with limited reproducibility and scalability, which hampers broader market growth and recurring revenue opportunities: most XR projects are custom-built and resource-intensive and lack standardisation, making expanding offerings and achieving efficiency difficult. The lack of reproducible frameworks or modular tools means that each engagement starts from scratch, further constraining efficiency and profitability.

### EU dependencies

**European XR developers rely heavily on foreign game engines, limiting their ability to capture value and innovate independently.** Game engines – which are not used solely for game development – like Unreal or Unity dominate Europe’s immersive media landscape, leaving developers dependent on US-controlled tools. Related companies have offered tools and ecosystems that enable applications in XR, cross-platform media storytelling and managing user payments, identities and social connections. This non-EU ownership imposes structural limitations on European developers, who rely on these platforms for licensing and operational infrastructure. This dependency can restrict local autonomy, inhibit innovation and effectively shift value generation away from European markets. While alternatives like CryEngine (Germany) initially showed promise, they failed to extend their influence far beyond gaming or to maintain a consistent income flow.

**The European XR sector's dependence on foreign platforms creates critical content distribution and monetisation vulnerabilities.** The EU lags significantly in developing dedicated infrastructure for XR distribution, marketing, and audience analytics. XR media demands unique distribution frameworks due to its interactive nature, requiring tools and platforms that can capture and respond to real-time audience engagement data and adapt to multiple platforms, such as VR headsets, AR applications and location-based installations. Content store providers, often controlled by non-European actors, own the consumer relationship and can control monetisation opportunities for local players. This weakness is particularly acute in the non-gaming immersive sector, where creators face underdeveloped distribution channels. Consequently, the sector lacks essential data tools for business modelling. The risks of this dependency are evidenced by recent market disruptions: Microsoft's 2023 discontinuation of Windows Mixed Reality stranded enterprise investments, while platform changes by Meta and Sony's limited PlayStation VR2 backwards compatibility demonstrate how quickly content libraries and hardware can become obsolete.

**Processor<sup>184</sup> dependency is the most critical supply chain bottleneck hindering the scalability of XR in media and in other sectors.** In this field, Europe remains globally vulnerable. Semiconductor manufacturing capacities have declined from 44% of the global market in 1990 to just 9% in 2024. This decline is particularly significant given the projected growth of the

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<sup>184</sup> In XR applications, processors must handle intensive parallel computations, including real-time graphics rendering, motion tracking, scene meshing, and spatial mapping – often while maintaining low latency (below 20ms) to prevent motion sickness. The intricate manufacturing process of these chips requires advanced semiconductor fabrication facilities (fabs), which are concentrated in a few geographical locations, primarily TSMC in Taiwan, making the supply chain particularly vulnerable to disruptions.

semiconductor market to EUR 630 billion by 2025, driven primarily by memory and logic chips essential for XR applications.<sup>185</sup> Critical components, including microelectronic and photonic semiconductors, optical elements, and raw materials, are scarce or unavailable in Europe. This reliance weakens the sector's ability to support key industries such as XR, quantum computing, manufacturing, defence, healthcare, and digital infrastructure. The lack of supply chain sovereignty poses a substantial risk to value creation and technological advancement within the EU.<sup>186</sup>

### Use cases in the media sectors

**The gaming industry has been a pioneer in adopting VR and AR technologies in the EU and globally.** XR games provide immersive experiences that go beyond what traditional video games can offer. The growth of XR gaming has been fuelled by advancing technology and increasing headset adoption. VR, AR and AI-driven tools are shaping new gaming genres and experiences such as location-based VR experiences, AR mobile games, and procedurally generated environments powered by AI. Game studios have been exploring opportunities in XR with varied success: in 2024, the US-based HTC VIVE and Epic Games announced they would further invest in Wevr, a development and virtual production studio known for creating diverse VR experiences for brands and talent.

**Despite advancements, signs of stagnation in the XR game development landscape have emerged.** The high expectation around VR gaming at the end of the 2010s hardly materialised, and lots of gaming companies are scaling back on their VR resource allocation. In 2024, Mojang Studios, the developer behind Minecraft, announced that it would no longer support VR on certain platforms, citing challenges in integrating VR into an already vast and constantly evolving game. In 2024, 36% of game developers globally believed the virtual reality gaming market was declining, against 23% finding that the market was growing.<sup>187</sup>

**Immersive experiences are also created within traditional filmmaking contexts such as XR storytelling and 360-degree cinematic experiences.** Virtual reality films allow creators to place viewers closer to the narrative. Cinematic virtual reality is a type of immersive VR experience where users can look around synthetic worlds in 360°, often with stereoscopic views, and hear spatialised audio designed to reinforce the virtual environment's veracity. VR films require volumetric video, allowing users to move freely within a captured scene. This technology demands specialised studios and new filmmaking approaches, with growing interest from filmmakers.

**Beyond film, arts and culture more broadly remain a strong focus for European XR companies.** The EU benefits from public funding and a thriving ecosystem of XR-compatible art and film festivals such as Cannes and Venice. As evidenced by the proliferation of digital galleries in cities such as Bordeaux, Barcelona, and Milan, the EU has become a leader in architectural adaptation for immersive media, positioning itself as a primary destination for innovative XR installations. XR enhances storytelling by enabling users to interact with objects, navigate 3D environments, and immerse themselves in the digital reconstruction of historical sites, for example.<sup>188</sup>

### Investments into XR and immersive media

**Private investments have historically been the backbone of the XR sector's growth, especially in its early stages.** Between 2013 and 2015, the sector depended heavily on VC and angel investments to fund R&D, proof-of-concept development, and prototype testing. By 2016,

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<sup>185</sup> World Semiconductor Trade Statistics. *Global Semiconductor Market Forecast 2023-2025*. WSTS Market Report, 2024.

<sup>186</sup> Photonics21, [European Photonics Industry Warns Policymakers of Growing Dependence on Overseas Markets](#), Science Business, 9 May 2023.

<sup>187</sup> Justin Carter, [Survey says half of developers consider VR market on decline or in stagnation](#), Game Developer, 22 October 2024.

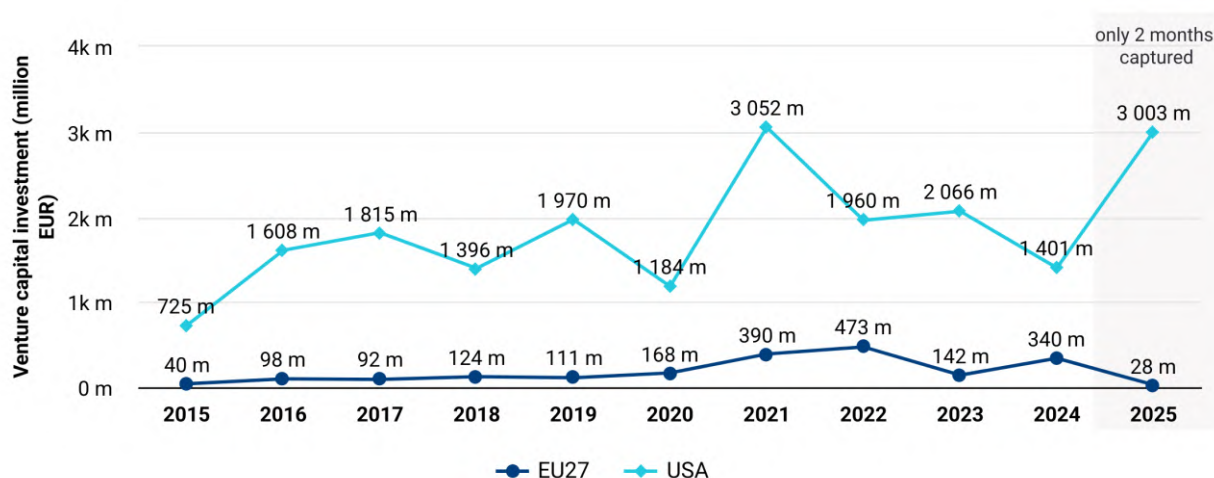
<sup>188</sup> European Commission: Directorate-General for Communications Networks, Content and Technology & Visionary Analytics, [Zero-distance XR applications and services – Final report](#), 2024.

private investments shifted towards growth-stage capital, enabling companies that had successfully completed initial market testing to scale their operations and expand into new markets. Series A to D rounds became dominant as XR companies sought to develop enterprise solutions and increase their geographic reach. The ability to attract substantial private capital reflected increasing investor confidence in the commercial viability of XR technologies. In 2017, private investments surged to EUR 2.52 billion globally,<sup>189</sup> with Series B (EUR 851.78 million) and Series D (EUR 764.39 million) raising the bulk of this capital. The mean annual private investment from 2016 to 2021 was EUR 1.9 billion, indicating a period of sustained investor confidence.

**An analysis of recent VC investments, however, underlines that the sector is marked by high volatility.** After a negative growth rate in 2019, which seemed to reflect early signs of market uncertainty and a growing risk aversion among investors, a peak was reached in 2021 and 2022, when funding attained respectively EUR 4.59 billion and EUR 5.05 billion. A new contracting of EUR 2.66 billion took place in 2023, investments continued to decline also in 2024 (EUR 1.8 billion), but a rebound is observable in early 2025, demonstrating renewed momentum for XR. For the next years, as companies emerge from a period of consolidation, venture capitalists are expected to shift their focus towards commercial-ready technologies that can deliver sustained returns.

**In this context, US companies emerged as the most attractive destination for private investors.** The US has consistently dominated the global XR investment landscape, with venture capital and private equity investments in the industry reaching EUR 20.2 billion from 2015 to 2025.

Figure 42. VC investments in XR companies headquartered in the EU and in the US over time



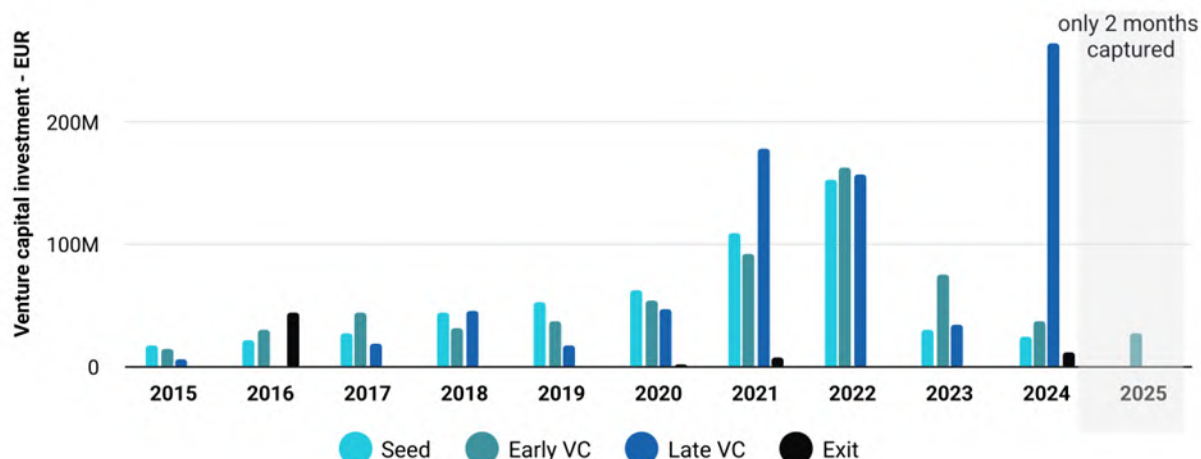
Source: Technopolis Group based on Crunchbase 2025 data. EU N= 1 232, US N= 3 239.

Note: Data for 2025 was not complete at the time of writing the report and it reflects the period January-February.

**Meanwhile, investments in EU companies lag.** From 2015 to 2025, investments into EU companies amounted to EUR 2 billion. The EU's investment landscape used to be heavily skewed towards early-stage funding, emphasising seed rounds. However, there was a surge in late-stage VC funding in 2024, largely driven by investments in EU companies such as Varjo and Holoride, as well as growth in the XR gaming sector. Non-EU investors accounted for 32% of investment deals in EU XR startups as lead investors between 2015 and 2024; US venture capitalists accounted for 50% of non-EU investments into the European XR over the same period.

Figure 43. VC investments into XR companies headquartered in the EU (2015-2025)

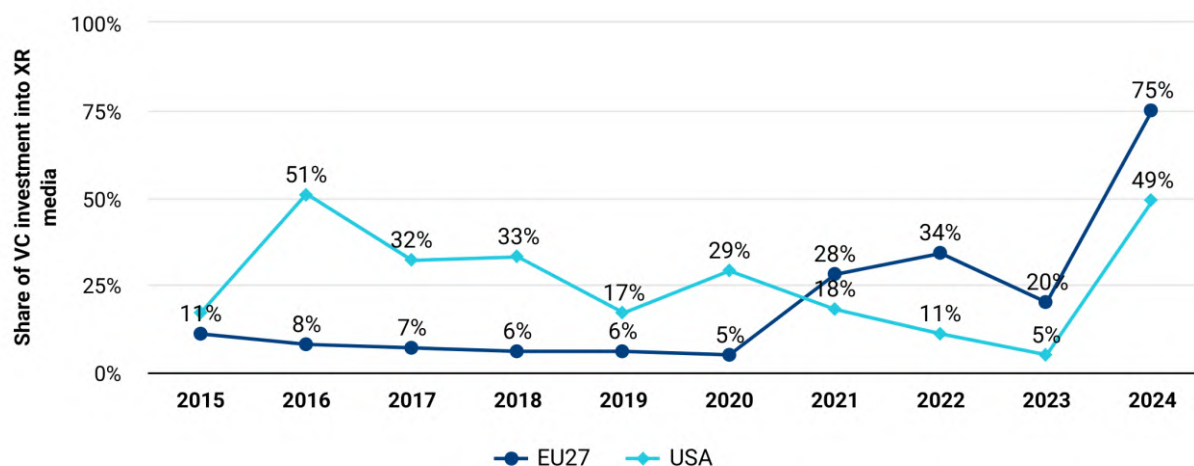
<sup>189</sup> Countries/regions included in this analysis are the EU, US, Canada, Japan, South Korea and China.



Source: Technopolis Group based on Crunchbase. N= 1 232.

**XR applied specifically to video games, audiovisual, and news media represents a higher share of VC investments in the US than in the EU.** In the US, 26% of VC investments between 2015 and 2024 went into XR companies directly serving these three sectors, against 20% in the EU. Among these 20%, half went to companies serving the video games sector. It is worth noting that, although the US were receiving a bigger share of its VC capital for these media applications, this trend seems to have been reversed by 2021.

Figure 44. VC investments in XR companies linked to video games, audiovisual and news media, as % of total investments in XR companies, EU and US (2015-2025)



Source: Technopolis Group based on Crunchbase 2025 data. EU N= 1 232, US N= 3 239.

**On the whole, investors display cautiousness when it comes to the XR sector in the media domain.** Investors are wary of backing small and mid-sized companies competing in a relatively limited market: even in VR gaming, one of the more developed segments of immersive media, audience growth has plateaued, companies struggle to achieve sustainable profitability and revenue models (from in-app purchases to subscription services) have yet to demonstrate their long-term profitability potential.



### 3.2.5. Technological trends

**XR is a composite technology that integrates multiple advanced fields.** It is both a technology and a platform for other technologies. Unlike assessing a standalone technology, evaluating XR involves considering many interdependent components such as hardware innovations, software development, connectivity and other technology infrastructures, and user interface paradigms.

**Technology infrastructure and XR-ready networks are prerequisites to the development of XR experiences.** High-speed, low-latency connectivity, particularly through 5G and future 6G networks, is essential for seamless content distribution and real-time interactions. Current networks operating at 50-60ms latency prove inadequate for immersive applications. The transformation of network infrastructure to support immersive media represents a fundamental paradigm shift driven by the convergence of three critical technical imperatives: symmetric bandwidth for interactive experiences, ultra-low latency for real-time rendering and unprecedented quality of service requirements.

**XR technologies that power immersive experiences continue to advance rapidly.** Improved connectivity and the continued rollout of 5G and research into 6G, aiming for lower latency and higher device density, support the development of more sophisticated XR applications. Other advancements are in photogrammetry and sensor technologies that better capture the real world for digital tools, and increased computing power driven by new specialised semiconductor chips.<sup>190</sup>

**AI has multiple applications in XR.** The integration of AI within VR, MR and XR frameworks represents a fundamental shift in immersive technology capabilities, mainly through implementing advanced machine learning systems for real-time environmental adaptation and user interaction. In immersive gaming, for example, AI can track eye movement to optimise processing power, delivering high-resolution visuals where users focus while reducing quality in peripheral vision. This smart resource allocation allows standalone VR headsets to achieve PC-quality graphics without tethering or battery drain. Additionally, AI algorithms analyse user interactions and preferences in real time, adapting content difficulty, visual preferences and interface layouts to individual users. This dual application of AI – for both technical optimisation and experience personalisation – creates more immersive and accessible VR experiences that adapt to each user's unique needs and preferences while maintaining optimal performance.<sup>191</sup>

**Browser capacities also influence users' experience.** WebXR APIs and cloud-based rendering services enable complex volumetric video processing, dynamic asset generation, and real-time scene composition directly within web browsers.

**Finally, blockchain is increasingly integrated into XR to support decentralised virtual environments, secure transactions, and identity management.** It enables users to buy, sell and trade virtual assets transparently using blockchain-based tokens while ensuring secure authentication, for example, within XR gaming platforms. In the metaverse, blockchain enhances financial and privacy mechanisms, supports AI-driven automation, and improves immersive applications. Additionally, it strengthens security through decentralised data storage, cryptographic verification, and smart contracts, reducing the risk of fraud and unauthorised access.

**The widespread deployment of XR technologies in Europe, as well as their exploitation, therefore, depends on advancements in hardware, software, IT infrastructure and individual technologies.** The EU is particularly lagging in technological infrastructure (e.g. cloud) to support large-scale, high-tech productions compared to the US and remains dependent on foreign technology (e.g. AI solutions).

#### Skills supply and occupations

**The production of XR content requires an interdisciplinary approach that integrates technical and programming expertise, creative design and a deep understanding of user**

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<sup>190</sup> OECD (2025), An immersive technologies policy primer.

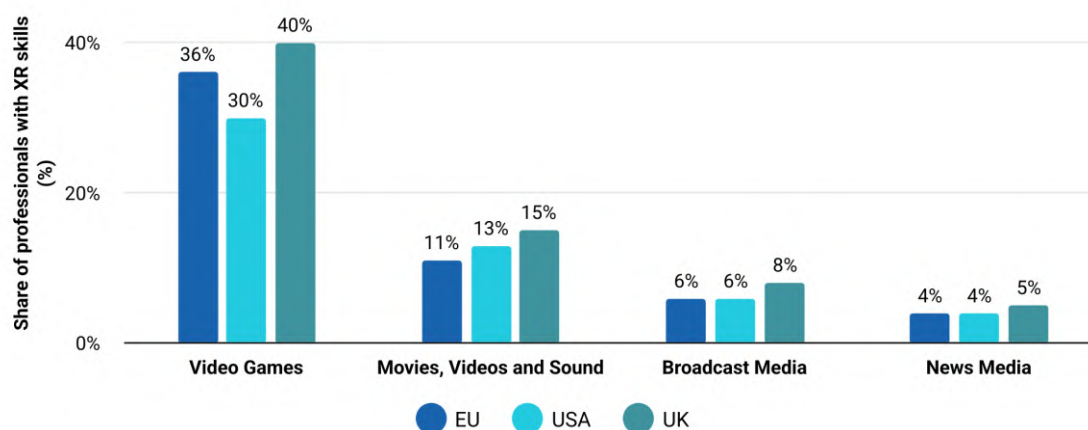
<sup>191</sup> Matthew DeHamer, [Three Ways Our AI is Powering Awe-Inspiring XR Experiences](#), Qualcomm, 17 May 2023.



**experience.** The XR production workflows generally reflect stages similar to those in traditional media, such as concept design, production, post-production, and release, which require a mix of skills. Moreover, the involvement of specialised roles touching on sensory experiences, such as audio engineers for spatial soundscapes and haptic designers for tactile feedback, is crucial for achieving genuine multisensory immersion. These requirements can prove challenging for companies which have to contend with limited teams, as well as technological constraints in acquisition, reconstruction, and interaction capacity.

**Professionals with XR skills are mostly found in the video game industry.** Video game professionals had the highest share of XR skills, followed by films, videos and sound, broadcast media and news media with the least, as suggested by the review of data on LinkedIn.<sup>192</sup> Figures in the UK and the US broadly align, with UK professionals more often referencing XR skills than those in the EU or the US.

Figure 45. Share of professionals with XR skills within the media sectors and with a profile on LinkedIn in September 2024



Source: Technopolis Group analysis based on LinkedIn, 2024.

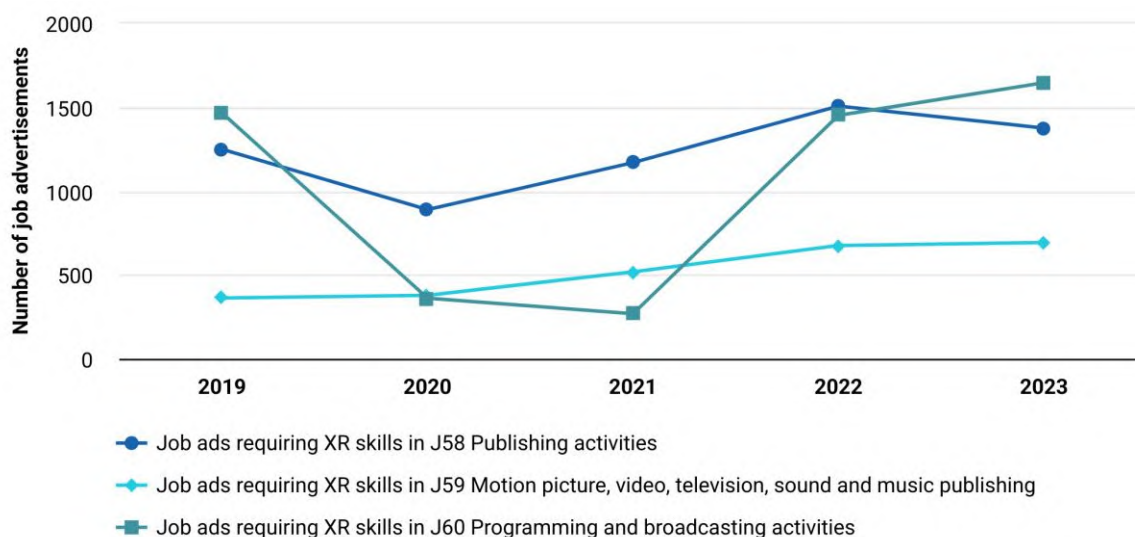
### Skills demand and opportunities

**The XR global job market is experiencing an overall growth, with demand increasing over the years.** The European XR market is evolving rapidly, driven by technological advancements and significant skill shortages, particularly in the developer space. The number of online job advertisements in 'Motion picture, video, television, sound and music publishing' and in Programming and broadcasting' that required an XR skill has been increasing over time; however, in the case of 'Publishing activity', it decreased from 2022 to 2023. The share of job advertisements

<sup>192</sup> Technopolis Group based on LinkedIn data.

that required XR skills within the total number of online job advertisements has been low overall (between 0.4 and 1%).

Figure 46. Number of online job advertisements with a requirement for XR skills in NACE 58 and NACE 59 in the EU over the period from 2019-2023<sup>193</sup>



Source: Technopolis Group based on Cedefop Skillsovate data.

**There is a high demand for specialised expertise within the XR sector, particularly for roles requiring advanced technical proficiency.** Unity and Unreal Engine expertise are the most sought-after skills, alongside proficiency in 3D development (animation, modelling, graphics, shading, texturing, and rendering). The demand extends to hardware-specific knowledge of platforms like HoloLens, HTC Vive, Magic Leap, Oculus, and Windows Mixed Reality, while proficiency in computer-aided design and building information modelling remains essential for creating detailed immersive environments, particularly for senior technical positions such as VR game designers and AR/VR software engineers.

**Engineering/development positions, as well as mid-level positions, dominate the XR job market.** Engineering and development represent more than a third of listings. These roles, primarily XR developers and software engineers, reflect the technical complexity of AR/VR development across 3D rendering, hardware integration and interface design.

**Europe's XR industry is richly endowed with storytelling skills and a capacity to integrate XR in fields such as cultural heritage.** Many XR stakeholders are active in the creation of immersive experiences for museums, galleries and cultural heritage sites. In those venues, European XR content can draw on established literary and cinematic traditions, enabling European creators to excel at crafting nuanced narratives across multiple languages, particularly in cultural institutions' VR/AR applications and historical reconstructions. As a result, global studios frequently collaborate with European XR professionals for their ability to create multilingual, culturally rich content that seamlessly integrates with unique architectural environments. As a whole, the EU's strengths in cultural production translate into the XR sector.

## Skills gaps

<sup>193</sup> Based on Cedefop, covering the EU and the UK, and based on collecting and analysing more than 530 online job advertisement sources (424 distinct websites), which are open-access sites. The database allows the analysis of online job advertisements linked to NACE 2-digit categories (but not at more granular levels). This is why only the broad categories of 'Publishing activities' and 'Motion picture, video and television programmes' are presented.

**As well as opportunities, the EU industry suffers from a lack of skills specific to XR.** The region faces a marked deficiency in advanced technical specialisation within the XR media sector, particularly in AI integration, real-time rendering, and interactive systems design. This lack of technical depth is partly due to limited private sector investment in R&D for XR technologies and the relatively conservative public funding structure, which often favours established methodologies over experimental, high-risk technological ventures. It is also due to many professionals transitioning from more traditional industries, such as TV and film, where those skills are not as needed.

**Among technical skills, limited proficiency with industry-standard development engines, especially Unity and Unreal, hampers the growth of the EU industry.** These engines form the core of many immersive media experiences. Unity often dominates mobile and VR applications due to its adaptability and lighter framework, and Unreal excels in applications requiring high-end visual fidelity. Unity serves as the primary tool for many developers, supporting a wide range of projects, including VR experiences, mobile apps, AR for Android and iOS, standalone touchscreen interactive applications and WebGL games.

**Beyond technical skills, strategic knowledge of distribution channels emerges as an essential skill.** Effective XR media projects require early and thorough planning around distribution strategies to ensure audience reach and engagement. Understanding how and where audiences are likely to engage, whether through specific platforms, devices or distribution methods, can significantly impact a project's direction and inform project development from the ideation stage to maximise alignment with audience expectations.

**Finally, in the context of XR media, user experience (UX) design is an essential yet sometimes underexplored component of content development.** While some traditional media sectors may continue to operate within a broadcast-oriented framework – where audiences are conceptualised primarily as passive recipients – this model does not align well with the expectations associated with XR environments. Nevertheless, certain XR projects continue to prioritise technological novelty or visual sophistication over user-centred design principles. As demand for interactive and participatory media grows, the ability to effectively incorporate UX considerations is becoming a critical competency within the XR field. However, this shift is complicated by a shortage of UX-specific skills.

## Education and training

**Adequate training could help the EU industry bridge the skills gap, but the offer is scarce.** There is no clear entry pathway in the immersive industry. Consequently, a large proportion of the XR workforce, including freelance designers, senior developers (8–10 years of experience) and artists, are self-taught, engage in continuous learning to stay relevant or balance XR gigs alongside full-time jobs, often in the gaming or technology sectors. Many of these professionals first develop foundational skills within the gaming industry, which has historically offered both the technological infrastructure and creative freedom conducive to XR development. This trend is particularly prominent for developers and designers who leverage their experience in interactive content creation, 3D modelling and immersive storytelling from gaming. Their skills are transitioned into other media applications in XR, such as virtual production, immersive advertising and interactive media installations.

**Initiatives at the national level are beginning to see the light, with vocational training at its core.** Germany and Ireland, for example, have started to address this educational shortfall by developing apprenticeship programmes for XR in media. This reflects an awareness that the sector demands highly specialised, hands-on skills best acquired through immersive, real-world learning environments. This structured training pathway provides designers with the hands-on experience and technical foundation needed to thrive in the rapidly evolving immersive media industry. It particularly appeals to the industry, as it broadens access to the job market for non-academic employees.

### 3.2.6. Summary

The **global XR market** for immersive media generated an estimated **EUR 61 billion** in 2024, and these revenues are expected to **triple by 2030**. **The EU immersive media market was estimated at EUR 12 billion** (20% of the global market), behind North America (42.5%) and Asia-Pacific (28%). The XR market value chain remains rather unchanged, with a diverse network of stakeholders – with 10 non-European companies accounting for more than half of the global market. In the EU, **this is even more concentrated** – with Meta (formerly Oculus VR LLC) alone accounting for 50% of the total market in 2023. In the absence of **European industry leaders**, most XR companies in the EU are small-scale (-15 employees).

In **VR gaming**, a key application for XR, the EU market is expected to reach EUR 384 million by 2028, representing 25% of the projected global market (EUR 1.5 billion). The **main business models** of European companies are subscription-based software, maintenance agreements and Content as a Service offering.

Regarding consumption, **7 in 10 Europeans report never having experienced AR or VR**, with **younger people** (18 to 30 years old) **more likely to experience these technologies** than those over 60 (53% vs 11%). **One in four Europeans** would be interested in using AR/VR, with watching films (23%) and playing games (24%) being the preferred environments. A considerable proportion of EU citizens say they **have no interest** in its application (38%).

On employment, the number of **professionals with XR skills in the EU has been growing**. There were 1,200,470 professionals with general XR skills in 2025, which represents 13% growth over the period 2023-2025. Employment remains geographically concentrated in Germany (37.9%), France (19.3%) and Finland (15.1%).