Global Market Insights

Insights to *Innovation*

Game Engines Market

Report Snapshot

Report Title	
Game Engines Market Size By Type (3D Engine, 2D Engine, 2.5D Engine), By Platform (Computer, Mobile, Consoles), Industry Analysis Report, Regional Outlook, Growth Potential, Competitive Market Share & Forecast, 2023-2032	
Report Details	
Base year	2022
Actual data	2018 to 2022
Forecast period	2023 to 2032
Companies covered	17
Regions covered	• North America (U.S., Canada) • Europe (UK, Germany, France, Italy, Spain, Rest of Europe) • Asia Pacific (China, India, Japan, South Korea, Australia, and Rest of Asia Pacific) • Latin America (Brazil, Mexico, Rest of Latin America) • MEA (GCC, South Africa, Rest of MEA)

About GMI

Global Market Insights Inc. (GMI) is a global market research and management consulting company catering to corporations, non-profits, universities, and government agencies. Our goal is to partner with organizations to make sustained strategic improvements and meet growth goals.

Our industry research reports are designed to provide quantifiable information combined with key industry insights. We aim to provide the necessary data to our clients to ensure sustainable organizational development. Whether exploring new markets, developing new products, or taking advantage of niche growth opportunities, we have reports to accelerate and enhance our clients' strategies.

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Report Content

Note: The companies listed above are priliminary in nature. The final report will include all the major players involved in game engines market.

Chapter 1 Methodology and Scope

The following chart enlists the essentials of all GMI research studies.

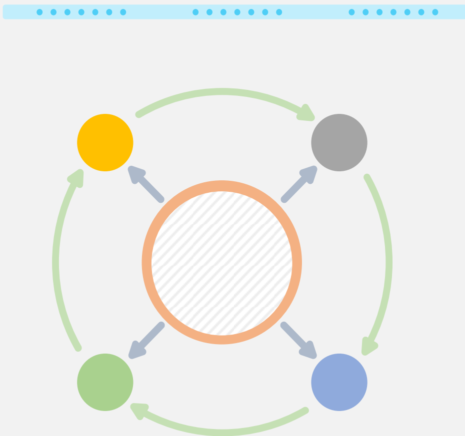
FIG. 1 GMI report coverage: critical research elements

SUPPLY

- Platform Sources
- Upstream Dynamics
- Trade Flow
- Storage Capacity Expansions
- Operating Cycles & Automation
- Bug Challenges

MARKET FORCES

- Drivers & Pitfalls
- Challenges
- Regulatory Landscape
- PESTEL
- Mega & Macro Economic Trends
- ESG
- Sustainability
- Circular Economy
- NOISE



DEMAND

- Consumption
- Regional Trends
- Type Trends
- Platform Trends
- Free Subscription Demand
- Open Source Platforms
- Patents & Licensing

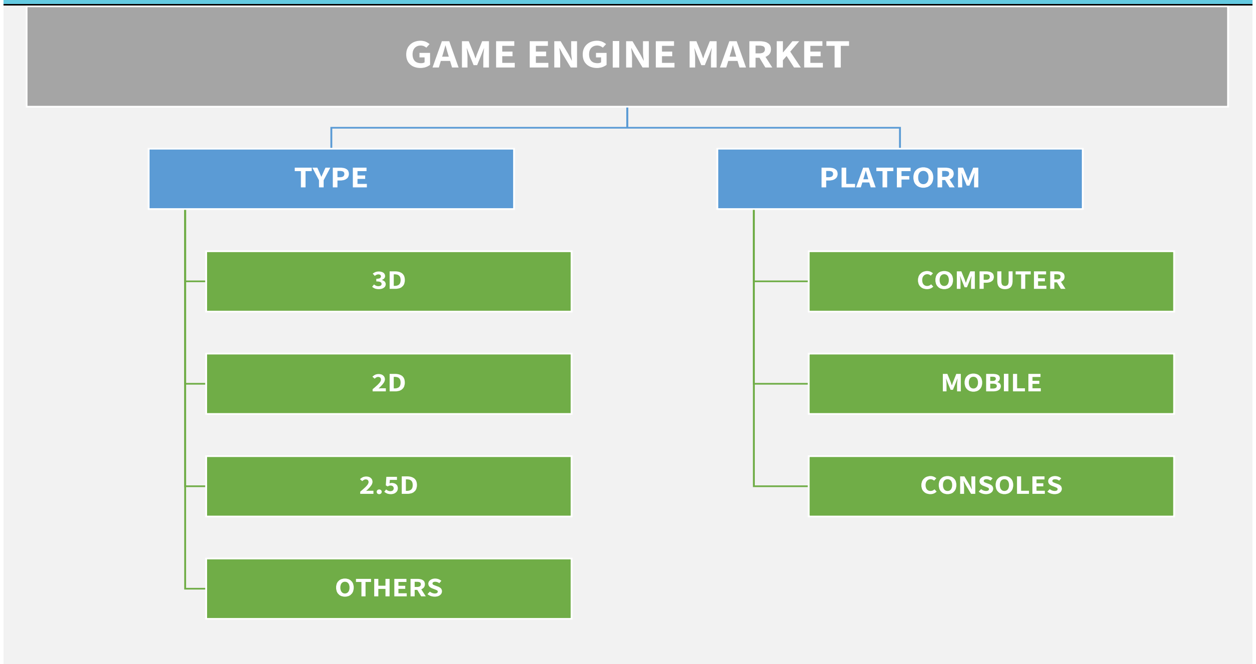
COMPETITION

- Strategic Landscape
- PORTER's Analysis
- SOAR/SWOT
- Innovation
- Pricing and Technology Diffusion
- Vendor Matrix
- Industry Competitiveness

Source: Global Market Insights

1.1 Market scope and definitions

FIG. 1 Game engines market segmentation



A **game engine** is a software development environment, also referred to as a "game architecture" or "game framework," with settings and configurations that optimize and simplify the development of video games across a variety of programming languages. Game engines offer developers a wide variety of tools and components to develop gaming applications.

This report consists of following segmentation of game engines for revenue generation-

- By **type**, the games engine market is segmented into 3D, 2D, 2.5D and others.
  - A **three-dimensional (3D)** engine, often called a game engine, is a system used for virtual computer simulations. These Game engines are commonly used in video games, though other non-entertainment applications also exist.
  - **2D** game engines are those engines that support the development of two-dimensional games such as side-scrolling platformers. They are optimized to work best with 2D assets and level designs.
  - **2.5D** refers to *gameplay that appears to be 3 dimensional but is restricted to 2-dimensional planes with little to no access to the 3rd* dimension *in a space.*
  - Others include **4D** and **5D**:

- A **4D** game engine attempts to represent 4D space. It's basically 3D but with extra dimensions. The fourth dimension can also refer to time.
- **5D** game engine allows to build 5D games that allows pieces to travel through time and between timelines

- By **platform** the market is segmented into three segments including Computer, Mobile phones and Console
  - **Computer**- A computer is a machine or device that performs processes, calculations and operations based on instructions provided by a software or hardware program. Computers can be used for a variety of purposes ranging from browsing the web, editing videos, creating applications, playing video games, etc.
  - **Mobile**- Mobile phones are portable devices for connecting to a telecommunications network to transmit and receive voice, video, or other data. Various games can be played on mobile phones.
  - **Console**- A console is a combination of a display monitor and an input device, usually a keyboard and mouse pair, which allows a user to input commands and receive visual output from a computer or computer system. It can also refer to specialized computers only meant to play video games
- The regional markets have been defined as:
  - North America includes the U.S. and Canada
  - Europe includes Western Europe, Central & Eastern Europe, and the Commonwealth of Independent States (CIS)
  - Asia Pacific includes Japan, China, India, South Korea, Australia, and Rest of Asia Pacific
  - Latin America includes Brazil, Mexico, and Rest of Latin America
  - MEA includes the GCC, South Africa and Rest of Middle East & Africa
- GDP and inflation have not been accounted for while forecasting the market

1.2 Methodology & forecast parameters

- 2022 is the base year for this study. Market size from 2018 to 2022 are actuals, with forecast from 2023 to 2032.
- Market estimates and forecasts have been provided in revenue terms (USD Million)

- Competitive landscape: Major companies have been identified and analyzed across all the regions. Revenues generated from the market players, the demand and sales by country & region, the data reported in the press releases by the companies operating in the Game Engines Market have been analyzed and assessed. For an extensive analysis of market trends, company profiling across each segment has been done. These companies have reported their performance in the global & regional markets, and current trends, which was an important base to arrive at the market estimate.
- We have considered the following parameters to estimate the game engines market demand and revenue:
  - Parent market size and growth potential
  - Application industry analysis and demand for game engines in each sector
  - Historical business performance reported by key industry participant.
- The below table indicates the product portfolio for the major industry participants.

TABLE 1 Product mapping, by company

Company	3D	2D	2.5D	Others
Buildbox (AppOnboard, Inc.)	✓	✓	x	x
Cocos Engine (YAJI Software)	✓	✓	x	x
Crytek GmbH	✓	x	x	x
GameSalad	x	✓	x	x
GDevelop Ltd.	✓	✓	✓	x
Gideros	x	✓	x	x
Godot	✓	✓	x	x
Marmalade SDK	x	✓	x	x
MonoGame	✓	✓	x	x
Open 3D Engine	✓	x	x	x
Solar2D LLC	x	✓	x	x
Stencyl, LLC	x	✓	x	x
The Game Creators Ltd. (AppGameKit)	x	✓	x	x
Unity Software, Inc.	✓	✓	✓	✓

Unreal Engine (Epic Games)	✓	✓	x	x

An example approach for calculating the global game engines market size is as follows (all figures are for 2022):

- The below table represents the list of major companies, which were extensively mapped considering the product portfolio, sales figures and overall business performance while estimating the market.
- Over 70% of the market share is accounted for by the top 8 players, which was extrapolated to assess the global industry scenario. The revenue generated by these companies in 2022 has been summarized in the below table:

Company	Global Revenue	Game engines Revenue	Market Share
Unreal Engine (Epic Games)	869.7	869.7	38.4%
Unity Software, Inc.	1391.00	716.0	31.6%
Crytek GmbH	116.0	116.0	5.1%
Cocos Engine (YAJI Software)	48.3	48.3	2.1%
Buildbox (AppOnboard, Inc.)	10.5	10.5	0.5%
YoYo Games Ltd. (GameMaker Studio 2)	9.3	9.3	0.4%
GameSalad	6.9	6.9	0.3%
Construct (Scirra Ltd)	5.1	5.1	0.2%
Others		483.1	21.3%
Total		**2,264.9**	**100.00%**

Note: All figures in USD Million

Total revenue calculation for global game engines market:

Total Market Size = Unreal market revenue/ Unreal market share in total market size

= USD 869.7 Million / 38.4%

= Approx. USD 2,264.9 Million

Game engines market size for U.S. have been calculated as follows:

TABLE 2 Game engines market share, by region, 2022 (%)

Region	2022
North America	28.0%
Europe	18.9%
Asia Pacific	42.7%
Latin America	6.2%
MEA	4.3%
Total	**100.0%**

TABLE 3 North America market share, by region, 2022

Region	2022
U.S.	86.0%
Canada	14.0%
Total	**100.0%**

TABLE 4 U.S. market revenue, by type, 2022 (USD Million)

Type	Market Share (%)	Revenue (USD million), 2022
3D	58.8%	320.6
2D	32.9%	179.8
2.5D	5.8%	31.8
Others	2.5%	13.4
Total	**100%**	**545.6**

Note: Component revenue has been derived based on the information represented in Table 3 and Table 4

North America market revenue = U.S. Game engines market revenue (USD Million)/ U.S. Game engines market share (%)

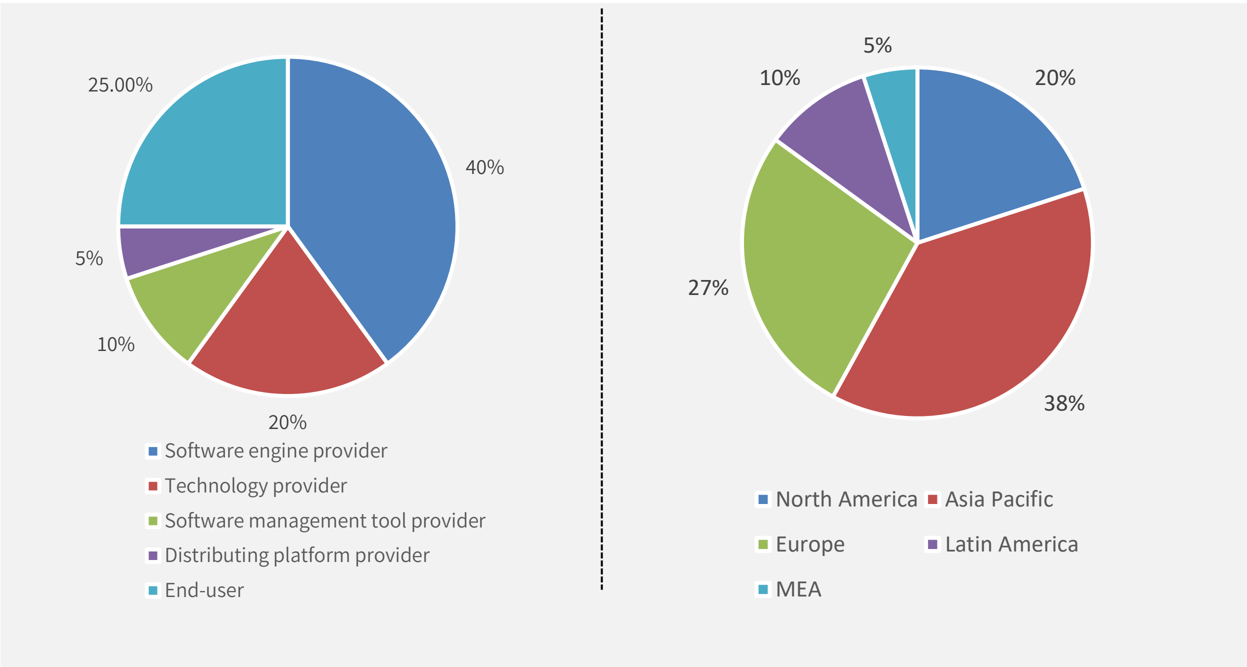
= USD 545.6 million/ 86.0%

= USD 634.7 million

- Extensive secondary research was conducted for collection of data required for estimations as well as forecasting. All analyst inputs, data obtained by authorized secondary sources and final results were validated and verified through detailed primary interviews with key opinion leaders. (Industry experts with relevant experience, company executives, end-users for the industry etc.)
- The following factors have been considered to validate the market size:
    - Regional growth trends across application markets
    - Regulatory scenario
    - Company market share analysis
    - Covid impact on the game engines industry
    - Feedback received from key industry players

We conducted extensive discussion-based interviews with key opinion leaders in the industry to validate our findings and gain more insight into the business landscape.

FIG. 2 Profile break-up of primary respondents



Source: Global Market Insights.

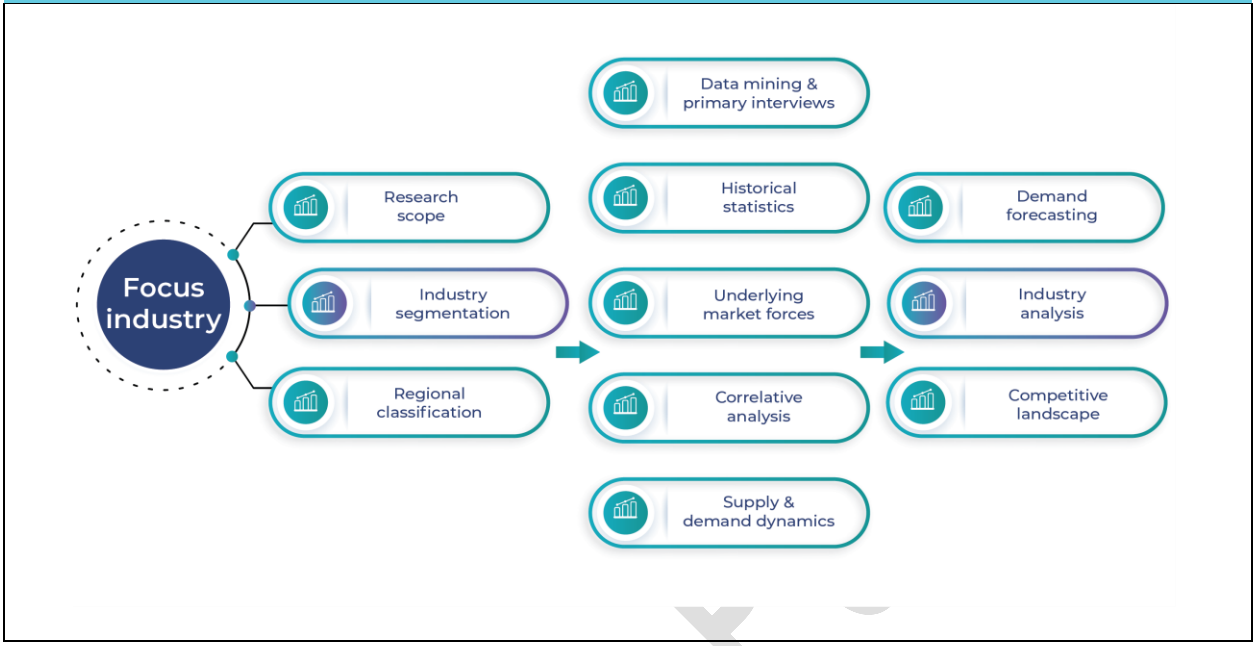
Industry insights and validation

The following market trends were considered after the secondary and primary research-

- The gaming industry is evolving because of cloud gaming, advancements in gaming hardware, and mobile gaming. The creation of games is growing more sophisticated as a result of this transition. Furthermore, as the complexity of mobile games and console games has increased, so has the expense of manufacturing. As a result, demand for gaming engines has increased because they are less expensive than traditional development methods and simple to use for producing high-quality visuals quickly.
- A prominent application of game engines may be found in a variety of industries, where they are employed for gamification as well as the increasing acceptance of AR and VR. The banking industry is incorporating an innovative approach to client experience. It is also used in architecture to create virtual environments, allowing developers to focus on the import of relevant content.
- In the automotive industry, game engines like as Unity or Unreal engine are used to generate UI and UX design. Despite the fact that game engines are broad prototype tools, they allow design teams to swiftly evaluate their work in a real-time 3D ecosystem.
- The rising gaming industry is likely to propel the global game engines market forward. The growing number of smartphone gaming apps and app store expenditures will help drive industry growth. The significant cost limits for smaller gaming organisations, on the other hand, will offer a challenge to the games engine business.
- Mobile devices are easily accessible around the world and have made inroads into rural areas, increasing user access to the platform. The popularity of free-to-play games on mobile platforms increases the demand for game engines because developers can add advertisement support to the video game to generate cash. Additionally, the advent of affordable internet data packs has boosted the ease and comfort of downloading video games on the mobile platform.
- The growing popularity of playing and making video games with the high prevalence of mobile platforms in the APAC region, created potential growth possibilities to the industry. The growth is primarily due to the gaming disruption seen in China, India, Australia, and Japan. It is projected that game engine service providers will see greater consumer demand and low-barrier entry for low-cost alternatives and improvements.

1.3 Forecast calculations

FIG. 3 Market forecasting methodology



We use Quality Function Deployment (QFD) methods to transform qualitative demand to concrete and concise quantitative outputs, thus enabling strong forecast methodologies and accurate market insights

Market forecasts were driven by:

- Demand trends
- Analysis of major industry impact forces
  - Growth drivers
  - Pitfalls & challenges
- Existing technology and patents
- Regulatory landscape
  - The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) specifies requirements to establish, deploy, maintain, and improve an Information Security Management System (ISMS).

Forecasting involved the use of statistical modeling via regression analysis. For each regional level markets, key industry impact forces were analyzed and assigned weights in order of their importance. These weights were distributed across the forecast period and a regional growth rate was derived. Some of the major parameters included:

- Historical market performance
- Net sales of all companies and regional sales
- Market dynamics
- Regulatory framework
- Technological advancements
- Raw material trends
- COVID-19 impact

1.4 Data sources

1.4.1 Secondary

- Sources, by region

Region	Source
International	• International Game Developers Association • Digital Games Research Association • E-Gaming Federation • Esports and Online Gaming Association, Inc. • Esports Integrity Commission • Fantasy Sports & Gaming Association • Hoover's • International Association of Gaming Regulators • International Association of Gaming Regulators • International Esports Federation • International Gaming Standards Association (iGSA) • World Gaming Industry Associations
North America	• American Gaming Association • Canadian Gaming Association • Canadian Gaming Business • Entertainment Software Association • Entertainment Software Association of Canada • Fantasy Sports & Gaming Association • Great Canadian Entertainment • North American Simulation and Gaming Association

Europe	• British Esports Association • European Gaming and Betting Association • German Games Industry Association • German Sports Betting Association • Germany Gaming Industry Associations • Swiss Austrian German Simulation And Gaming Association (SAGSAGA) • TIGA
Asia Pacific	• All India Gaming Federation • China Independent Game Alliance (CIGA) • Hong Kong Fighting Games Association • India Gaming Federation (AIGF) • Indian Digital Gaming Society • Indian Gaming Association • Japan Online Game Association • National Indian Gaming Association • Singapore Cybersports & Online Gaming Association • Taiwan Excellence Gaming Cup
Latin America	• LATAM Video Games Federation • Argentina's Video Game Developers Association • The federal government of the LATAM nations
Middle East	• African ESports Association • National Chamber of the Electronics Telecommunications and Informatics Industries (CANIETI) • Saudi Esports Federation • Abu Dhabi Gaming • Entertainment Software Association
Others	• Company websites • Company annual reports • Industry Journals • Investor Presentations • Owler Pro • IoT Global Council • ISA Publications

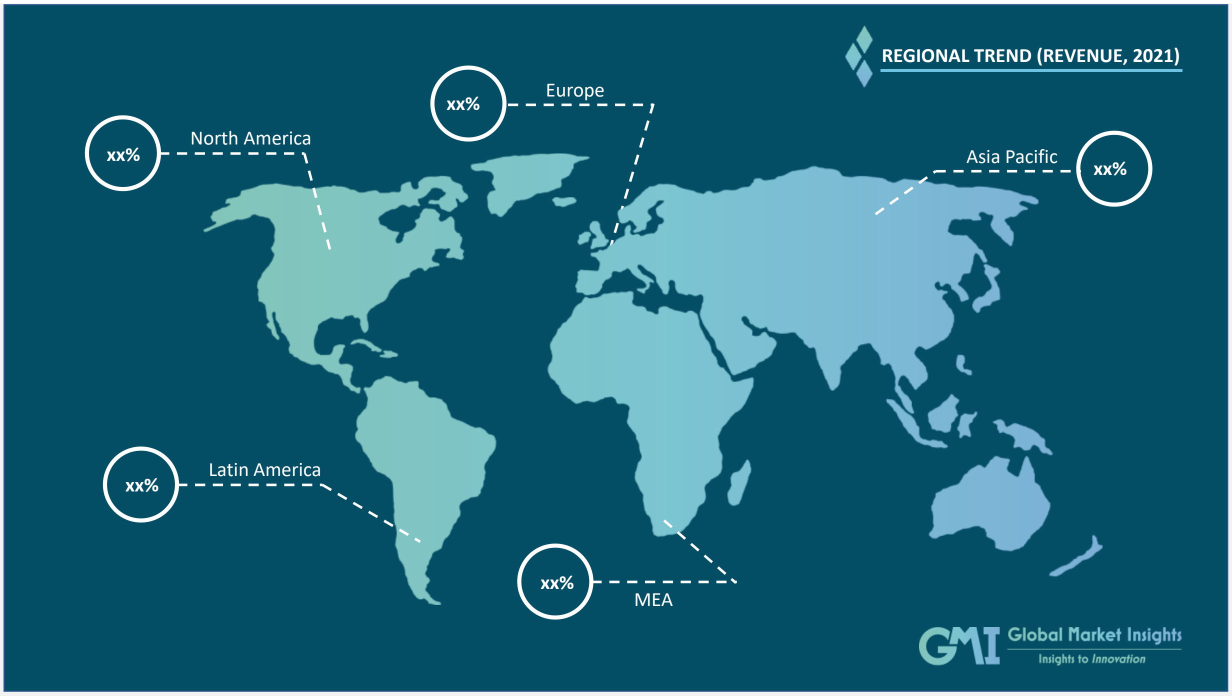
1.4.2 Primary

- xxxxxxxxxx
- xxxxxxxxxx
- xxxxxxxxxx
- xxxxxxxxxx

Chapter 2 Executive Summary

2.1 Game engines industry 360⁰ synopsis, 2018 – 2032

FIG. 4 Game engines industry 360⁰ synopsis, 2018 – 2032



Note: This chart is representative in nature

2.2 Business trends

- The game engine market is growing significantly due to innovations in hardware & software, leading to high-quality video games and powerful tools for training, e-learning, and gaming consoles. This trend is driving the market forward, creating new opportunities for businesses operating in the industry.

TABLE 1. Game engines market, 2018 - 2022 (USD Million)

	2018	2019	2020	2021	2022
USD Million	1,879.52	1,955.80	2,022.54	2,128.99	xx

TABLE 2. Game engines market, 2023 – 2032(USD Million)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2023–32)
USD Million	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**

2.3 Regional trends

- The North America game engine market is poised for significant growth in the coming years owing to the rising demand for immersive gaming experiences. Game engines that offer advanced features, such as real-time physics engines, dynamic lighting, and advanced AI, are expected to witness increased market demand. The increasing popularity of e-sports and the proliferation of mobile gaming are boosting gaming industry growth. According to the recent data from the Entertainment Software Association (ESA), in 2020, over 214 million Americans play video games, indicating a substantial & expanding consumer base.

TABLE 3. Game engines market, by region, 2018 - 2022 (USD Million)

Region	2018	2019	2020	2021	2022
North America	530.97	551.41	569.09	597.84	xx
Europe	354.48	368.94	381.60	401.77	xx
Asia Pacific	798.80	832.05	861.30	907.54	xx
Latin America	117.47	121.87	125.65	131.87	xx
MEA	77.81	81.54	84.90	89.98	xx
Total	**1,879.52**	**1,955.80**	**2,022.54**	**2,128.99**	**xx**

TABLE 4. Game engines market, by region, 2023 – 2032(USD Million)

Region	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2023–32)
North America	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Europe	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Asia Pacific	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Latin America	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
MEA	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Total	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx%**

2.4 Type trends

- The simplicity and accessibility of 2D games are driving the game engine market growth. With easy-to-understand controls and linear gameplay, 2D games are attractive for a wider audience including novice gamers. This trend has led to an increased demand for game engines that can provide the necessary tools & features to create engaging 2D games.

TABLE 5. Game engines market, by type, 2018 - 2022(USD Million)

Segment	2018	2019	2020	2021	2022
3D	1,176.55	1,228.10	1,273.96	1,345.18	xx
2.5D	544.27	565.43	583.76	613.47	xx
2D	100.23	103.76	106.75	111.79	xx
Others	58.47	58.51	58.07	58.56	xx
Total	**1,879.52**	**1,955.80**	**2,022.54**	**2,128.99**	**xx**

TABLE 6. Game engines market, by type, 2023 – 2032(USD Million)

Segment	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2022 – 2032)
3D	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
2.5D	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
2D	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Total	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx%**

2.5 Platform trends

- The game engine market is booming owing to the increasing demand for mobile gaming and the extensive availability of mobile devices. Game engine providers that can offer user-friendly features and robust debugging for mobile platforms are expected to be in high demand in the market.

TABLE 7. Game engines market, by platform, 2018 - 2022(USD Million)

Segment	2018	2019	2020	2021	2022
Computer	370.66	383.77	394.88	413.58	xx
Mobile	1,057.05	1,103.31	1,144.44	1,208.36	xx
Consoles	451.81	468.72	483.22	507.06	xx
Total	**1,879.52**	**1,955.80**	**2,022.54**	**2,128.99**	**xx**

TABLE 8. Game engines market, by platform, 2022 – 2032(USD Million)

Segment	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2022 – 2032)
Computer	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Mobile	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Consoles	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Total	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx%**

Chapter 3 Game Engines Industry Insights

3.1 COVID-19 impact

3.1.1 North America

TABLE 9. COVID-19 impact on game engines market

Country	No-COVID YoY (FY2022) (%)	With-COVID YoY (FY2022) (%)
U.S.	xx%	xx%
Canada	xx%	xx%

Note: The section consists of detailed analysis of COVID-19 impact on game engines market.

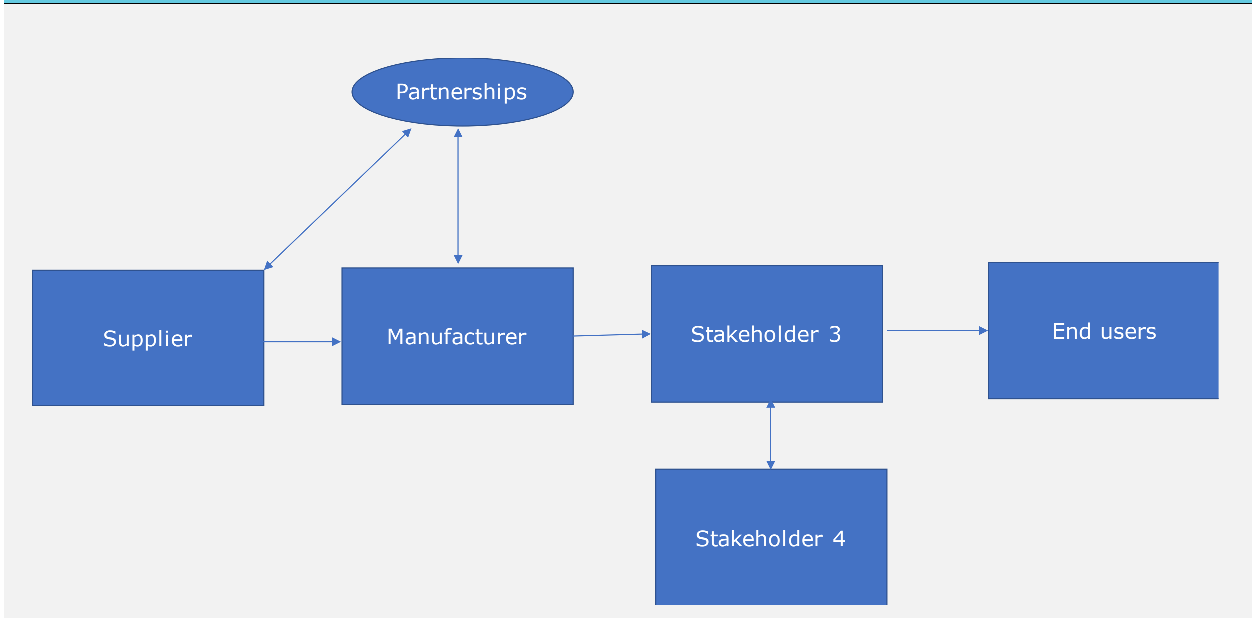
3.2 Impact of Ukraine Russia War

- The ongoing war between Russia and Ukraine is negatively impacting the game engine market. The global supply chain, already affected by the COVID-19 pandemic, is once again facing turmoil. Russia and Ukraine are important suppliers of raw materials such as metals, chemicals, and machinery. In anticipation of the barriers to access & produce these materials, prices are already rising. As a result, manufacturers are focusing on acquiring raw materials from other countries and alternative supply chains.

Note: The section consists of detailed analysis of Russia-Ukraine war impact on game engines market.

3.3 Industry ecosystem analysis

FIG. 5 Industry ecosystem analysis



Note: This chart is representative in nature

The value chain of the game engine market includes software engine providers, technology providers, software management tool providers, distributing platform providers, and end users. The industry is moderately fragmented due to the presence of several well-established players in the market.

Note: The section will provide the detail overview of the entire value chain focusing on the industry participants across the supply chain including component suppliers, software providers, operating in the game engines market.

3.4 Technology & innovation landscape

Augmented Reality (AR) gaming is the simultaneous integration of virtual game elements with the player's physical environment. AR-based games use sensors, such as cameras, microphones, and Global Positioning Systems (GPS), to detect the real world and then overlay game visuals & audio. This is taken a step further in Mixed Reality (MR) and Extended Reality (XR) gaming, which allows for real-time feedback between the physical environment and the game. For instance, the phenomenal success of Pokémon Go has demonstrated the public's willingness to engage in AR gaming. However, current smartphone and headset technology limitations hinder AR-based games. Mobile processors and displays are expected to improve, and high-speed 5G internet will enable the streaming of large amounts of data to support high-fidelity AR gaming.

The next generation of VR headsets, including an Apple headset or Magic Leap 2, could also have broad market appeal for introducing AR games to a new audience.

Note: The section will provide detailed description of technological trends and advancements that are impacting the game engines market.

3.5 Regulatory landscape

3.5.1 North America

3.5.1.1 The Illegal Gambling Business Act (IGBA)

The Illegal Gambling Business Act (IGBA) is more typical of federal gambling statutes. It attaches liability to anyone who conducts, finances, manages, supervises, directs, or owns all or part of an illegal gambling business. An illegal gambling business is a violation of the law of a state or political subdivision in which it is conducted. This statute also requires an assessment of where the gambling business is conducted and who is conducting, financing, managing, supervising or directing the business.

Note: The section will provide the detailed regulatory landscape information regarding the laws affecting the market.

3.6 Patent analysis

TABLE 10.Patent analysis

Company	Patent Number	Description
xxx	xxx	xxx

Note: The section will provide the detailed patent analysis related to game engines market.

3.7 Key initiatives and news

3.7.1 Product launch

Note: The section will provide the detailed key initiatives and news related to game engines market for all the regions that are mentioned in table of contents.

3.8 Industry impact forces

TABLE 11. Industry impact forces

Growth driver	Short term	Medium term	Long term
Growing demand for video games	High	High	High
Growing development of 5G and improved internet access	Moderate	High	Very High
Rising developments in Augmented Reality (AR) and Virtual Reality applications	Moderate	High	High
Technological advancements in video games	High	High	High
Increasing number of mobile gaming applications	High	High	Very High
Industry pitfall	**Short term**	**Medium term**	**Long term**
Availability of free game engines	High	High	High
High system requirements	High	High	Moderate
High cost of game engine software	High	Moderate	Low

3.8.1 Growth drivers

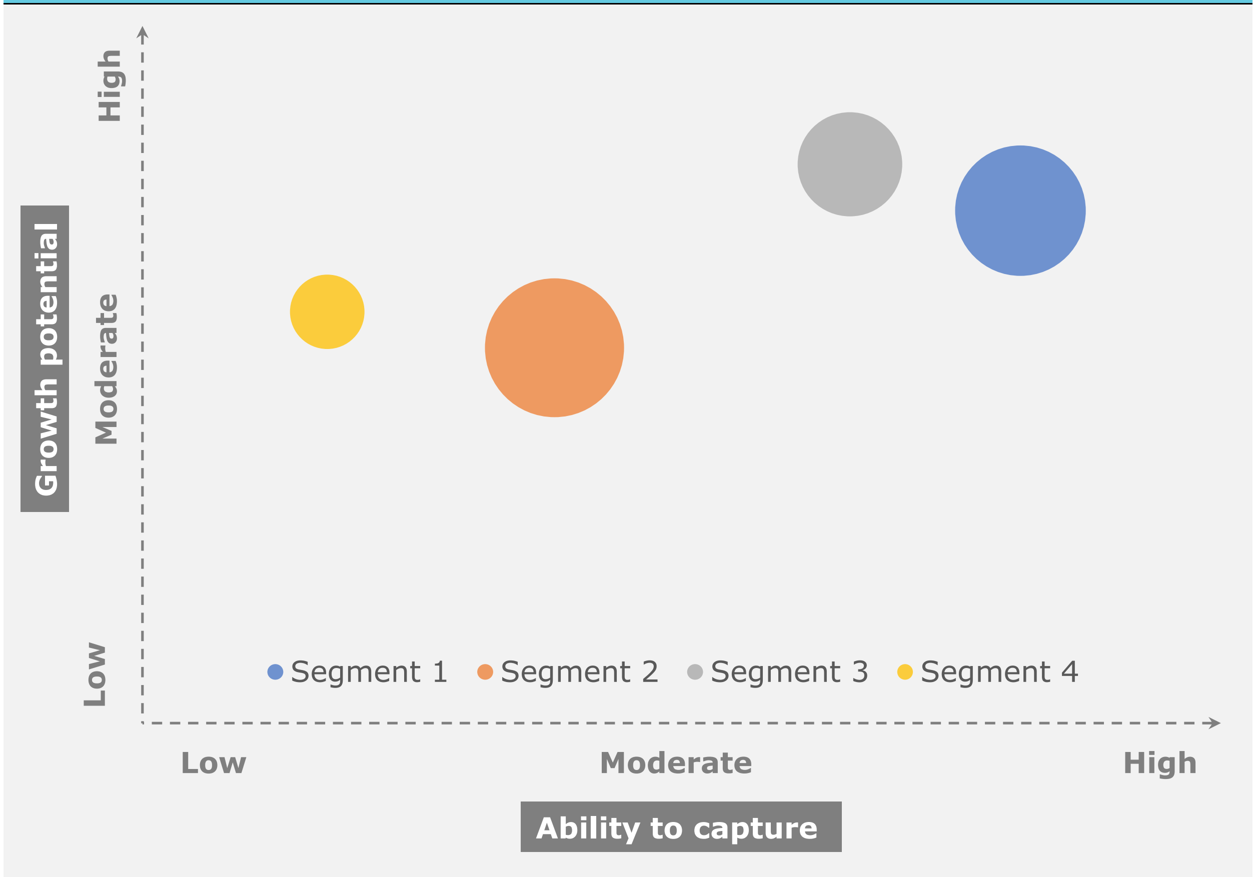
3.8.1.1 Driver 1

Video games have been around for decades, entertaining both children and adults. The growing preference for online gaming is driving the popularity of Massively Multiplayer Online (MMO), Free2Play (F2P), and multiplayer games. This trend is expected to continue throughout the forecast period. As a result, game developers are focusing on hardware compatibility & efficiency. Simultaneously, changing consumer preferences and the rising levels of disposable incomes around the world are driving the widespread adoption of advanced gaming engines with sophisticated features such as record & share and cross-platform gameplay.

Note: The section will provide a detailed description of the various growth drivers and restraints impacting the game engines market.

3.9 Growth potential analysis

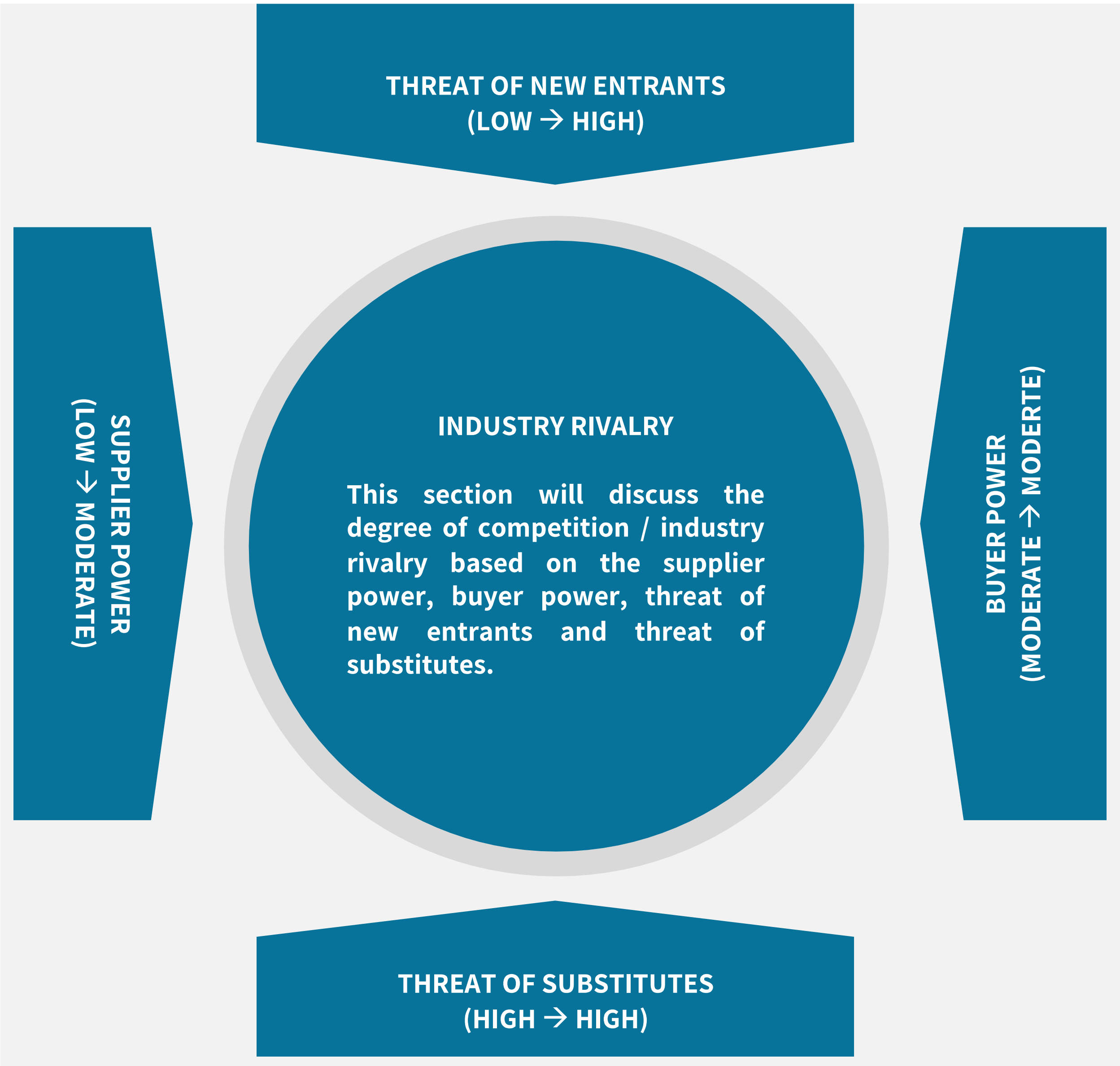
FIG. 6 Growth potential analysis



Growth potential denotes the revenue opportunity offered by the segment while the ability to capture denotes the potential of a new entrant to capture market share, taking into consideration the intensity of the competition. Bubble size represents the present revenue.

3.10 Porter's analysis

FIG. 7 Porter's analysis



Note: This chart is representative in nature

Note: The section will provide information regarding the industry rivalry, buyer and supplier power, threat of new entrants, and the presence of substitute component in game engines Market.

3.11 PESTEL analysis

FIG. 8 PESTEL analysis

This section will discuss the political factors influencing the industry.

POLITICAL

This section will discuss the economic factors influencing the industry.

ECONOMIC

This section will discuss the social factors influencing the industry.

SOCIAL

This section will discuss the political factors influencing the industry.

TECHNOLOGICAL

This section will discuss the economic factors influencing the industry.

ENVIRONMENTAL

This section will discuss the social factors influencing the industry.

LEGAL

Note: This chart is representative in nature

Note: The section contains a detailed description of the various political, social, legal, technological, environmental, and economic factors that affect the growth of the Game Engines Market.

Chapter 4 Competitive Landscape, 2022

4.1 Introduction

The major companies operating in the game engine market are Unreal Engine, Unity Software, Inc., Crytech GmbH, Cocos Engine, Buildbox, Yoyo Games Ltd., GameSalad, and Construct. The companies operating in the game engine market are focusing on partnerships, acquisitions and releasing new game engine platforms in game engine market to gain a competitive edge. For instance, In November 2022, Unreal Engine relaunched its game development platform, Unreal Engine 5.1 with new features for animation, broadcasts, filmmaking, and live events. The previous version of the platform was adopted by various successful projects including the YouTube show Xanadu, the new virtual production studio by Fox Sports, and the Caledon soccer commercial by Pixomondo. With the launch of these new features, the product aims to empower the industry with a more extensive, robust & accessible toolset.

4.2 Company market share, 2022

TABLE 12.Company market share, 2022

Company	Market share
Unreal Engine (Epic Games)	38.4%
Company 2	xx%
Company 3	xx%
Company 4	xx%
Company 5	xx%
Others	xx%
Total	**100.00%**

4.3 Gaming industry statistics

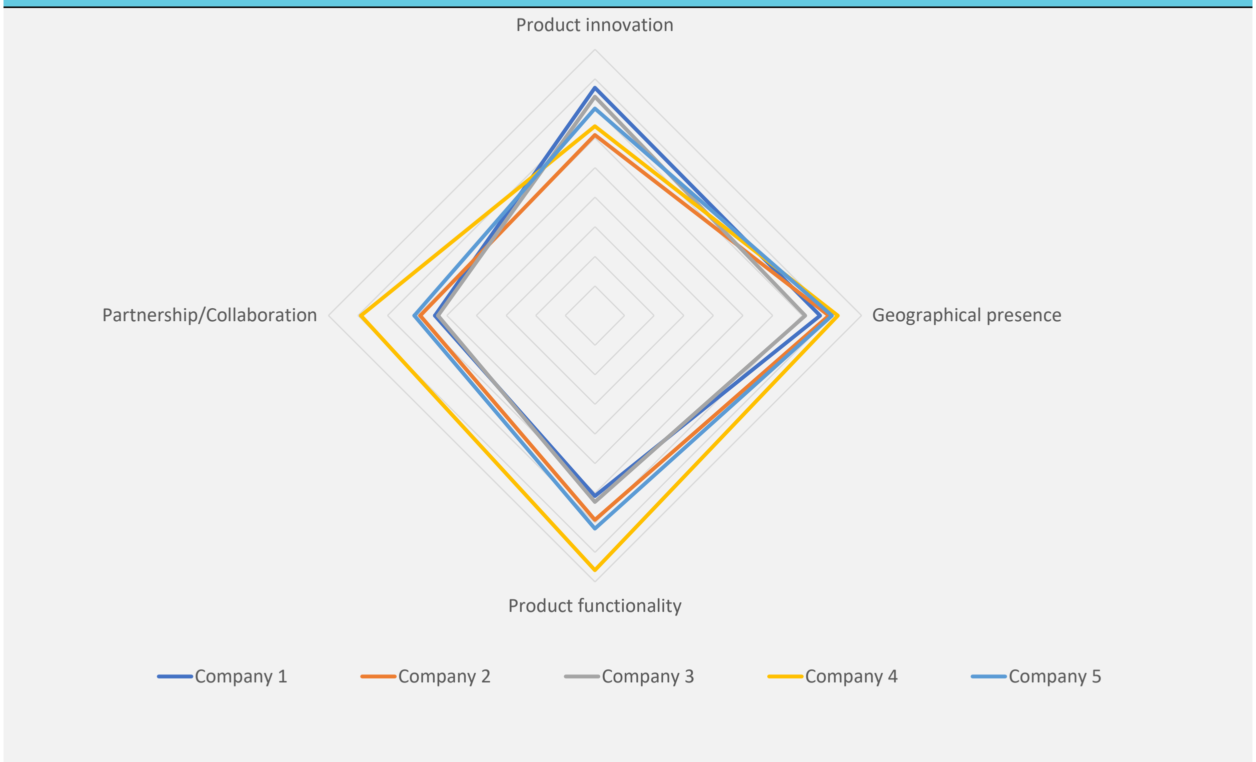
4.3.1 Top popular games

Game	Game Engine	Platform (Mobile, Console, Desktop, VR)	Game Genre	MAU of Genre	Publisher	Developer	Region of Developer	Range of units sold
Counter-Strike: Global Offensive	Source (Valve)	OS X, Playstation, Windows, Xbox, Linux	Action, Free to Play	37,600,106	Valve	Valve, Hidden Path Entertainment	U.S.	Over 80 m
xx	xx	xx	xx	xx	xx	xx	xx	xx
xx	xx	xx	xx	xx	xx	xx	xx	xx

Note: This final report will include the above data for top 100 games.

4.4 Competitive analysis of major market players

FIG. 9 Competitive analysis of major market players, 2022



Note: The chart is only for representational purpose. Actual data will be provided in the report.

- **Product innovation:** Indicates the ability of a vendor to consistently launch new & innovative products/services that are regularly updated and offer customers with novel & cutting-edge technologies. A higher score indicates better performance.

- **Product functionality:** Measures the ability of a vendor to offer highly customized & unique products/services, creating a standout economic addition and are a high-value proposition for clients. A higher score indicates better performance.
- **Geographical reach:** Benchmarks each vendor on the basis of the geographical presence across major & emerging markets. The vendors with high revenue expansion opportunities present in the regional markets are rewarded with a higher ranking. A higher score indicates better performance.
- **Partnerships/collaborations** Provide a gauge for vendor strategic alliances based on partnerships with leading industry giants, distributor networks, and technology partners. A higher score indicates better performance.

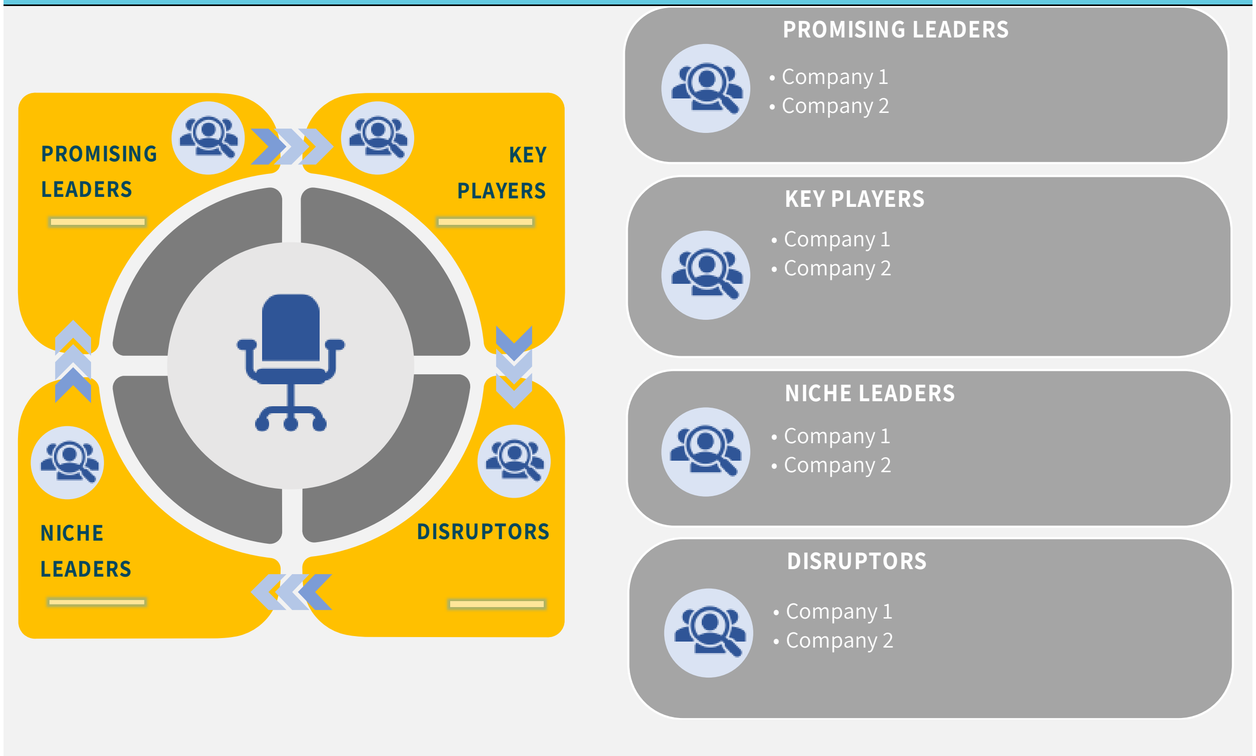
TABLE 13.Competitive benchmarking of major market players

Factor	Unreal Engine	Unity Software	Crytek GmbH	Cocos Engine	AppOnboard, Inc.	YoYo Games Ltd.
Product innovation	xx	xx	xx	xx	xx	xx
Geographical presence	xx	xx	xx	xx	xx	xx
Product functionality	xx	xx	xx	xx	xx	xx
Partnership/ collaboration	xx	xx	xx	xx	xx	xx

Note: The table is only for representational purpose. Actual data will be provided in the report.

4.5 Competitive positioning matrix

FIG. 10 Competitive positioning matrix



Note: The chart is only for representational purpose. Actual data will be provided in the report.

The vendor adoption quadrant model includes vendors offering diverse products or solutions or services existing in the market. The companies or vendors are segregated based on services and applications, or their Unique Selling Points (USPs); thus, the quadrant model has four categories: promising leaders, key players, niche leaders, and disruptors.

Given below are the classification criteria for categorizing the companies identified into the four quadrants.

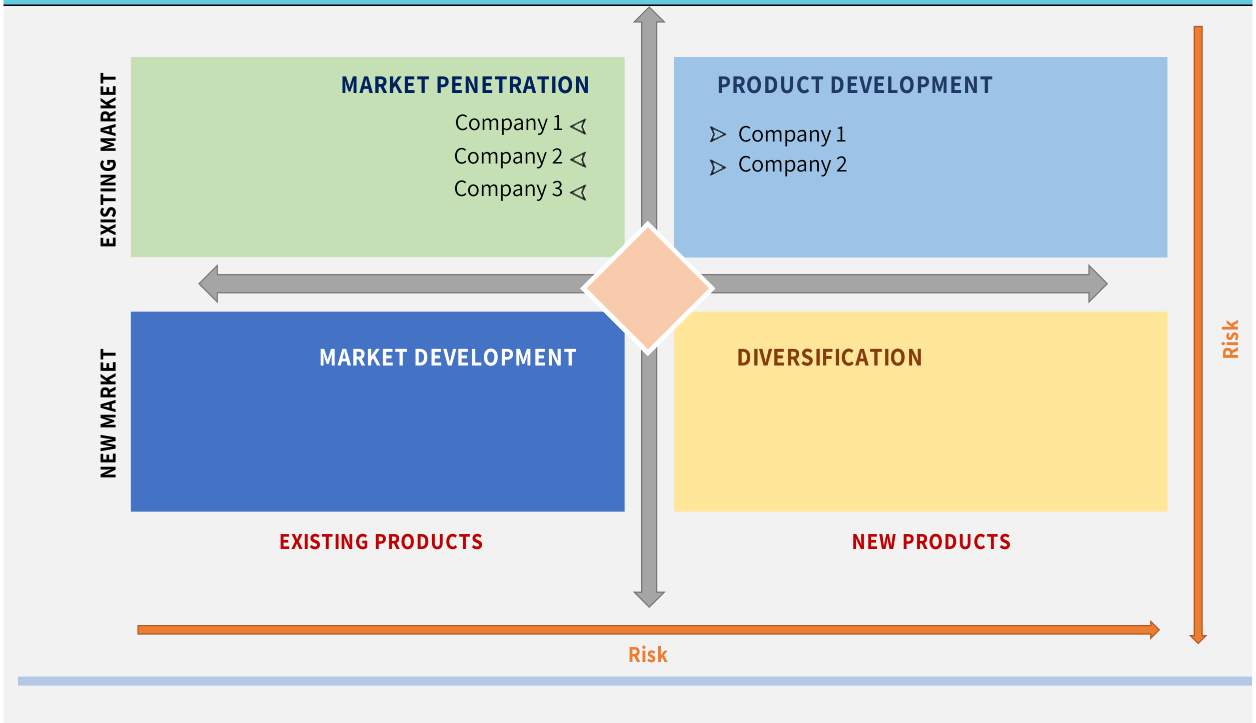
TABLE 14.Competitive positioning matrix: Classification criteria

Key Players	These are companies that rank at the top in the market. They offer their products or services to a broad customer base and are actively involved in the market. Together, these companies account for a majority of the overall market share. Key attributes: • Large market revenue • Strong brand presence • Broad customer base

Promising Leaders	These are similar to key players but may need more technological advancements to offer their products/solutions to a broader customer base. They typically offer differentiated products to expand their market share. Key attributes: • Differentiated offerings • Notable market share • Investment in R&D
Niche Leaders	These are companies that actively focus on one product or brand and aim to create their space/positioning within a segment. Key attributes: • Specialized in offering one particular service/product • Continued product/market development initiatives within their focus areas
Disruptors	These are companies that strive to create market value. They generate new growth opportunities by launching innovative products for market disruption. Key attributes: • Strong focus on innovation • Concentrated effort to secure investments

4.6 Strategic outlook matrix

FIG. 11 Strategic outlook matrix



Note: The chart is only for representational purpose. Actual data will be provided in the report.

The strategic outlook matrix is a planning tool that enables the venture capitalists and stakeholders present in the ecosystem to identify the business growth opportunities for expansion or penetration.

Given below are the classification criteria for categorizing the companies into the four quadrants.

TABLE 15.Strategic outlook matrix: Classification criteria

Market Penetration	Sales of existing products in an existing market
Product Development	Sales of new products in an existing market
Market Development	Sales of existing products in a new market
Diversification	Sales of new products in a totally new market

Chapter 5 Game Engines Market, By Type

5.1 Key trends, by type

- The 3D game engine market growth can be attributed to the increasing partnership activities among major game developers and technology providers. In April 2023, Unity and Google collaborated to support creators in accelerating game development. Such initiatives from major players are driving market growth.

5.2 3D game engine

5.2.1 Market estimates and forecast, 2018 – 2032

TABLE 16.Global 3D game engine market, 2018 - 2022 (USD Million)

	2018	2019	2020	2021	2022
USD Million	1,176.55	1,228.10	xx	xx	xx

TABLE 17.Global 3D game engine market, 2023 – 2032(USD Million)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2022 – 2032))
USD Million	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**

Note: The final report will include information similar to the above data table(s) for all the segments listed in the table of contents.

Chapter 6 Game Engines Market, By Platform

6.1 Key trends, by platform

- The growing number of smartphone users is driving the mobile segment in the game engine market. With the rise of smartphones, mobile gaming has become more accessible & popular than ever before. According to the Spring 2022 global attitude survey, South Korea accounted for over 98% of smartphone users. This has led to a surging demand for game engines that are optimized for mobile devices.

6.2 Mobile

6.2.1 Market estimates and forecast, 2018 – 2032

TABLE 18.Game engine market for mobile, 2018 - 2022 (USD Million)

	2018	2019	2020	2021	2022
USD Million	1,057.05	1,103.31	xx	xx	xx

TABLE 19.Game engine market for mobile, 2023 – 2032(USD Million)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2022 – 2032))
USD Million	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**

Note: The final report will include information similar to the above data table(s) for all the segments listed in the table of contents.

Chapter 7 Game Engines Market, By Region

7.1 Key trends, by region

- The growing number of smartphone users in North America is expected to expand the gaming market, which in turn, will propel the demand for game engines in the region. According to GSMA, the number of smartphone users will reach 317 million in the U.S. and 37 million in Canada by 2025. Moreover, the region is expected to witness a rise of 80% in internet usage and an 86% increase in mobile user penetration by 2025.

7.2 North America

7.2.1 Market estimates and forecast, 2018 – 2032

TABLE 20. North America game engines market, 2018 – 2022 (USD Million)

	2018	2019	2020	2021	2022
USD Million	530.97	xx	xx	xx	xx

TABLE 21.North America game engines market, 2023 – 2032(USD Million)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2023 – 2032))
USD Million	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**

7.2.2 Market estimates and forecast, by type, 2018 – 2032

TABLE 22. North America game engines market, by type, 2018 - 2022(USD Million)

Segment	2018	2019	2020	2021	2022
3D	307.49	xx	xx	xx	xx
2.5D	176.30	xx	xx	xx	xx
2D	30.91	xx	xx	xx	xx
Others	16.27	xx	xx	xx	xx

Total	**530.97**	**xx**	**xx**	**xx**	**xx**

TABLE 23. North America game engines market, by type, 2023 – 2032(USD Million)

Segment	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2022 – 2032)
3D	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
2.5D	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
2D	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Total	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx%**

7.2.3 Market estimates and forecast, by platform, 2018 – 2032

TABLE 24. North America game engines market, by platform, 2018 - 2022(USD Million)

Segment	2018	2019	2020	2021	2022
Computer	110.15	xx	xx	xx	xx
Mobile	272.70	xx	xx	xx	xx
Consoles	148.12	xx	xx	xx	xx
Total	**530.97**	**xx**	**xx**	**xx**	**xx**

TABLE 25. North America game engines market, 2022 – 2032(USD Million)

Segment	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	CAGR (2022 – 2032)
Computer	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Mobile	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Consoles	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**xx%**
Total	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx**	**xx%**

Note: The final report will include information similar to the above data table(s) for all the segments listed in the table of contents.

Chapter 8 Company Profiles

8.1 Unity Software Inc.

8.1.1 Business Overview

Snapshot	
Headquarters	U.S.
Year of Establishment	2004
Employees	7,703 (As of December 2022)
Type	Public Company
Traded	U (NYSE)
Regional Presence	North America, EAME , APAC
Market Value	11.06 Billion (As of April 2023)
Role in the Supply Chain	Game Engine Provider
Business Segments	• Create solutions • Operate solutions
Subsidiaries	ironSource, Vivox, SyncSketch LLC, Unity Technologies ApS, Unity Software Shanghai Co., Ltd., Interactive Data Visualization, Inc., Metaverse Technologies France SASU, Mercer Road Corporation

8.1.2 Financial Data

(All numbers are in USD million)

Year	31-December-2022	31-December-2021	31-December-2020	31-December-2019
Filed Currency	USD	USD	USD	USD
Exchange Rate	1	1	1	1
Revenue	1,391.0	1,110.5	772.4	541.7
Gross Profit	948.5	856.8	600.0	423.1
Research and development	959.4	695.7	403.5	255.9
Net Sales, by Region				
United States	348.2	266.8	197.3	151.3
Greater China	185.7	169.3	111.0	64.7
EAME	488.7	414.9	279.3	184.0
APAC	327.4	222.3	149.5	113.9
Other Americas	40.8	37.1	35.1	27.6
Net Sales, by Segment				
Create solutions	716.0	326.6	231.3	168.6
Operate solutions	674.9	709.1	471.1	293.3
Strategic partnerships and others	-	74.7	69.9	79.8

8.1.3 Product Landscape

Product/Service	Application/Feature
Unity Pro	• Support and learning ○ Priority queue for Customer Service ○ Partner Advisors ○ Access expert services (add-on) • Create ○ Unity real-time development platform ○ Deploy to game consoles ○ Unity Visual Scripting ○ Splash screen customization

	○ Unity Mars authoring tools for AR/MR • Crash and error reporting ○ Cloud Diagnostics ○ Integration with collaboration tools • Monetize ○ Unity Ads ○ In-App Purchase plug-in
xxxxxxxxxxxxxxxxxxxx	• xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

8.1.4 Strategic Outlook

Market Strategy	Initiatives
Merger & Acquisition	• In January 2022, Unity Software acquired Ziva Dynamics, the company that develops digital character creation. Ziva's technology helps users to create people, cloth, animals, and all similar objects in a practical way. Through this acquisition Unity will provide Ziva's tools to game developers and artists.
xxxxxxxxxxxxxxx	• xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

8.1.5 SWOT Analysis

FIG. 12 SWOT Analysis, Unity Software Inc.

S

- The company provides an extensive range of royalty and licensing options
- Strong product portfolio

W

- Significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting

O

- Rising gaming industry
- Development and rise in e-sports activities

T

- Rapidly changing technological landscape
- Fluctuations in foreign currency rates

Source: Industry Associations and Journals, Company Annual Reports, Owler pro, Primary Interviews, Global Market Insights