

Initiation of coverage

MINDARK PE AB

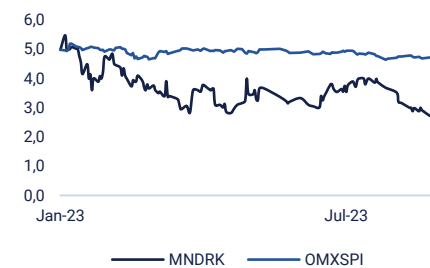
Since 2003, MindArk PE has developed and operated the virtual universe Entropia Universe which was the world's first Massively Multiplayer Online Role-playing Game with its own virtual economy based on real money at launch.

CEO: Henrik Nel Jerkrot
 COB: Björn Dierks
www.mindark.com

List: Spotlight Stock Market
 Share price, latest: 2,97 SEK
 Market Cap: 94 SEKm

Bloomberg: MNDRK:SS
 CapitalIQ: NGM:MNDRK

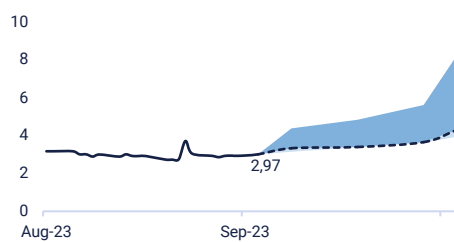
SHARE PRICE DEVELOPMENT



	12M	YTD	6M	1M
Development (%)	NA	NA	-21	-3

Source: S&P Capital IQ

VALUATION RANGE



	BEAR	BASE	BULL
Share price (SEK)	3.9	4.3	8.1
Up-/downside (%)	29	45	171

Source: S&P Capital IQ and Carlsquare estimates

CARLSQUARE EQUITY RESEARCH

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Renewal and improvements followed by growth

Since 2003, MindArk PE, ("MindArk" or "the Company") has been developing and operating the PC game Entropia Universe. Recently, the company implemented changes to streamline game development processes and boost profitability. An ongoing process of migrating Entropia Universe to the modern game engine Unreal Engine 5 is underway, which is expected to significantly enhance the overall gaming experience and expand the game's reach to a broader audience. Carlsquare Equity Research initiates coverage of MindArk PE with a fair value of SEK 4.3 per share.

New game engine for growth and reorganization for improved profitability

Entropia Universe ("Entropia", "the game", or "the platform") is an MMORPG renowned in gaming for its unique integration of virtual- and actual currency. This unique feature has fostered deep player engagement, making Entropia a popular choice despite fierce competition in the gaming industry. Currently, the company is actively working on migrating the game to a more modern game engine, Unreal Engine 5. This transition will significantly enhance game quality, poised to increase the interest of its existing player base. Also, this change is anticipated to broaden the game's distribution, reaching out to potential new gamers through distribution on Epic Games Store (EGS). In addition to the transition to Unreal Engine 5, the Company has initiated a comprehensive staff rationalisation in 2023. That is aimed at optimising business operations by strategically harnessing AI-driven game development. This approach is expected to yield substantial benefits, including increased efficiency in game development and improved game quality. As a direct outcome of the staff restructuring efforts, the Company anticipates saving approximately 1.5 million in personnel costs per month, starting from Q2 2024.

Large market with high growth rates

The gaming market is huge. Despite its size, it is still expected to grow at 10-13 per cent annually. The global aggregated gaming market (PC, video, mobile) was valued at approximately USD 190-200 billion in 2022. Today, it is only possible to play Entropia on PC, limiting the Company's addressable market, as PC represents just over 22 per cent of the total gaming market.

Low valuation given profitability potential

We expect a limited growth rate in 2023 and 2024. After the game engine change, we expect growth to accelerate and net sales for 2025 and 2026 to increase by 29 and 22 per cent, respectively. We expect the EBITDA margin to rise from around 10 per cent in 2023 to around 24 per cent in 2032. Suppose the company also succeeds in getting Entropia Universe as a selected and highlighted game on the front page of EGS. In that case, there is a significant upside in our forecasts and valuation.

Combining a DCF model with a multiple valuation, we calculate a fair value of SEK 4.3 per share for the coming 6-12 months. Our valuation corresponds to a EV/Sales multiple NTM of 1.9x and 1.4x 2025. The reference group of comparable gaming companies is currently trading at an EV/Sales NTM of 1.8x.

Key financial metrics (SEKm)

	2022	2023E	2024E	2025E	2026E	2027E
Net revenues	92.8	103.1	104.6	134.5	164.7	197.7
Total revenues	124.6	132.1	118.9	146.0	176.1	209.1
Adj. EBITDA*	5.5	-7.4	16.9	30.1	41.4	52.5
Adj. EBIT*	-5.1	-19.9	5.4	18.3	29.5	40.4
Adj. EBT*	-14.4	-21.4	5.8	18.9	30.4	41.5
Adj. VPA (SEK)*	-1.1	-0.7	0.1	0.4	0.6	0.8
Growth, net.rev.	0%	11%	1%	29%	22%	20%
EBITDA-margin	33%	10%	17.4%	21.2%	24.0%	25.5%
EBIT-margin	17%	1.0%	7.7%	13.1%	17.2%	19.7%
EV/Sales (nuv.)	NM	1.4x	1.3x	1.0x	0.9x	0.7x
EV/EBITDA (nuv.)	NM	NM	8.3x	4.7x	3.4x	2.7x
EV/EBIT (nuv.)	NM	NM	26.0x	7.7x	4.8x	3.5x
P/E (nuv.)	NM	NM	15.4x	7.5x	4.7x	3.5x

Source: Company information and Carlsquare estimates *Adj. for cap. Development costs.

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Investment Case

Entropia Universe has enjoyed a dedicated player base for many years. The game's captivating and dynamic nature has consistently driven revenue growth for MindArk since its establishment in 2003. However, in recent years, capitalised development costs have bolstered the Company's earnings. Following a significant restructuring, a reduction in the total cost base is expected as early as Q3 2023. Furthermore, the ongoing migration of Entropia to the advanced Unreal Engine 5 game engine is poised to deliver a substantial enhancement in the game's graphics and overall performance when completed in Q2 2025. Post the game engine migration, Entropia will be available in Epic Games Store, opening doors to a significantly larger pool of potential new gamers. We estimate a fair value of SEK 4.3 per share in a base-case scenario.

New game engine and distribution for growth

MindArk was founded in 1999 as part of the Entropia virtual reality project. The goal was to create a virtual world of different continents with their own economies. 2003, Entropia Universe was launched on the market, and MindArk managed to break even in 2004. Since the launch of Entropia, the company has gradually developed and improved the platform, which has resulted in stable revenue growth.

Renewal and growth: The change of the game engine from CryEngine 2 to Unreal Engine 5 is a strategic move that is expected to accelerate the growth of the Entropia Universe. Unreal Engine 5's advanced graphics capability provides a significant visual enhancement to Entropia, which is expected to increase existing gamers' interest while attracting new gamers. The switch to Unreal Engine 5 also means exposure to a broader audience through distribution via Epic Games store, which is estimated to increase the number of gamers.

Restructuring and AI transition: With a focus on AI-driven game development and a 40 per cent reduction in staff, MindArk is poised for a positive transformation. Currently, game development is still primarily driven by humans, but AI is expected to play a central role in streamlining game development processes in the future. This strategic change also allows MindArk to adapt to market dynamics, which should increase competitiveness in the highly competitive gaming market and thus promote growth.

Unique internal economy and proven ability to engage gamers: The Company has long proven its ability to create engaging game material. The constant introduction of new planets, regions, creatures, and missions keeps gamers engaged and eager to explore. Gamers' engagement is mainly based on the game's own economy, which encourages activity and creates opportunities to earn actual money from playing.

Valuation: We calculate a fair value per share of SEK 4.3 for the next 6-12 months. The valuation is based on strong growth from 2025 onwards due to the change of game engine and distribution via Epic Games Store as well as the focus on more AI-based game development. Our valuation corresponds to a EV/Sales multiple NTM of 1.9x and 1.4x 2025, and the reference group, consisting of comparable gaming companies only, is currently trading at an EV/Sales multiple NTM of 1.8x.

Our fair value of SEK 4.3 per share represents an upside of approximately 45%.

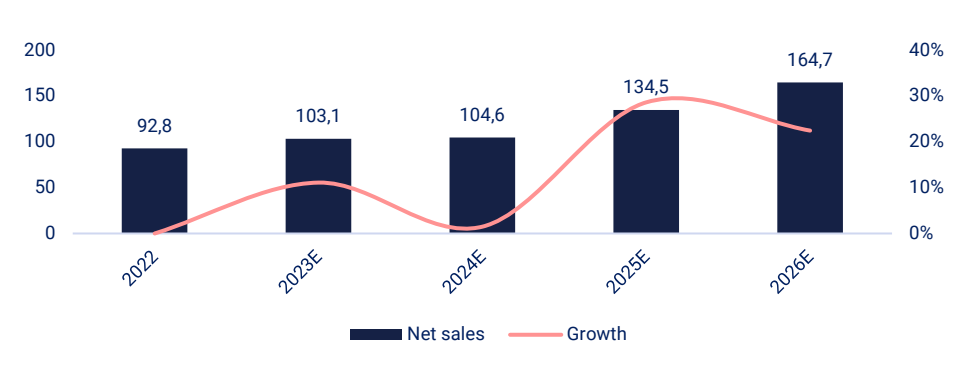
Assumptions and estimates

Strong market position creates good growth prospects

For 2022-2025, we expect a compounded annual growth rate (CAGR) of 13.2 per cent, with most of the growth attributable to 2025. Over the entire forecast period, 2022-2032, we expect a CAGR of 10.6 per cent. That is in line with the market, which is expected to grow by an average of 11.1% over the coming years. The strong expected growth from 2025 onwards is based on the change of the game engine to Unreal Engine 5, which is expected to increase the activity of existing gamers due to greatly improved graphics and game performance. It is also expected to attract more new gamers because of increased exposure through Epic Games Store, reaching a significantly larger number of gamers than the current marketing channels.

We expect growth to pick up from 2025 and onwards following the transition to Unreal Engine 5

Net revenues (SEKm) and growth (%)

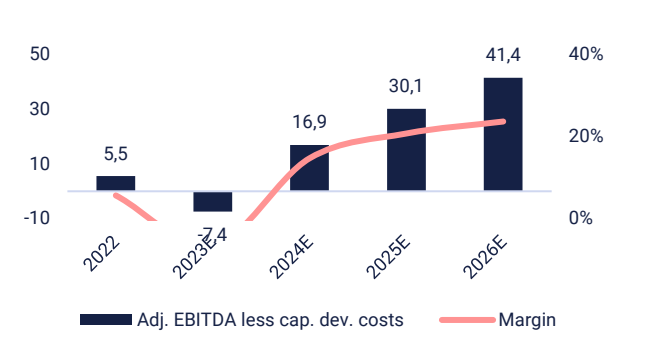


Source: Company information and Carlsquare estimates

Profitability and cash flow

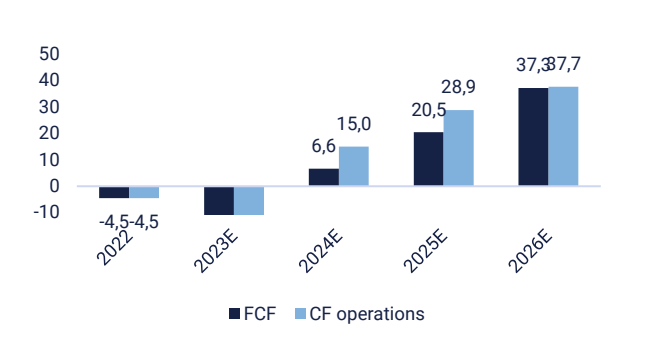
All income statement items are adjusted to exclude capitalised development costs. We believe this gives a more accurate picture of the Company's finances. As a result of the rationalisation, a significant personnel-related one-off cost of approximately SEK 14 million was taken in Q2 2023. The rationalisation is expected to have full effect from Q2 2024 and result in savings in personnel costs of about SEK 1.5 million per month. We expect an adjusted EBITDA result in 2023 of minus SEK 7.4 million. However, we expect efficiency improvements to yield a positive EBITDA result already in 2024. By 2032, we expect the EBITDA margin to rise to 24-25 per cent. This can be compared with the companies in the reference group, which, on average, showed an EBITDA margin of 20-27 per cent from 2017 to 2022.

Adj. EBITDA (SEKm) and margin (%)



Source: Company information and Carlsquare estimates

Cashflow (SEKm)



Source: Company information and Carlsquare estimates

Valuation

Upside due to restructuring and new game engine

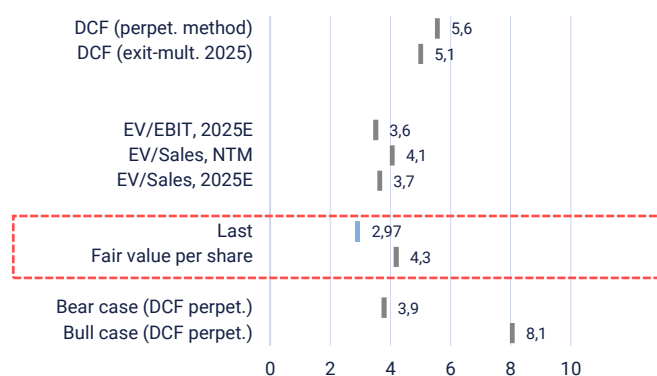
Combining a DCF valuation with a multiple valuation, a fair value per share of SEK 4.3 is calculated for the coming 6-12 months in a base case scenario. That corresponds to a potential upside of approximately 45%. The valuation is based on solid growth from 2025 because of the game engine change and distribution via Epic Games Store and the investment in more AI-based game development.

Fair value (SEK/share), Base case

Currency, SEK/SEK		1.0
EV/Sales, NTM	SEK	4.1
EV/Sales, 2025E	SEK	3.7
EV/EBIT, 2025E	SEK	3.6
DCF valuation	SEK	5.6
Fair value per share	SEK	4.3
Potential up-/downside		45%
Shares outstanding, fully financed, and diluted	M	32
Equity value	SEKm	135
Cash (last rep. Q)	SEKm	33.3
Debt (last rep. Q)	SEKm	91.5
PV cash from equity financing	SEKm	0
EV	SEKm	193

Source: Carlsquare estimates

Fair value within a range (SEK/share)



Source: Carlsquare estimates

Implicit valuation multiples, Base case

	NTM	2022	2023P	2024P	2025P	2026P
EV/Sales	1.9x	2.1x	1.9x	1.8x	1.4x	1.2x
EV/adj. EBITDA	11.6x	34.8x	NM	11.4x	6.4x	4.7x
EV/adj. EBIT	0.0x	NM	NM	35.6x	10.5x	6.5x
P/E	41.9x	NM	NM	29.3x	9.1x	5.6x

Source: Carlsquare estimates

Our valuation in the base scenario corresponds to an EV/Sales of 1.9x for 2023 and 1.4x in 2025. This can be compared to the reference group of comparable gaming companies that are traded at an EV/Sales of 1.8x.

In a more optimistic Bull scenario, we model a CAGR, 2022-2032, of 11.1 per cent (base 10.6 per cent) and an EBITDA margin in 2032 of 28.5 per cent (base 24.3 per cent). In the Bull scenario, a value per share of SEK 8.1 is calculated using our DCF model.

In a more defensive Bear scenario, we model a CAGR, 2022-2032, of 9.7 per cent and a 2032 EBITDA margin of 18.9 per cent. In the Bear scenario, our DCF model calculates a value per share of SEK 3.9.

Risks and challenges

MindArk, like any other company, is exposed to risks and challenges. The company operates in a gigantic market. However, there is also a large number of games for gamers to choose from. Hence, the battle for attention is fierce. We believe that the most significant risk is the competitive situation, leading to uncertainty in our forecasts and assumptions in the longer term. Furthermore, the entire business is linked to one game, adding another layer of risk.

Stiff competition is the biggest challenge

Competitive landscape

The gaming sector contains a massive number of gaming companies vying for market share. Despite the large market size, the competitive situation is fierce. With a plethora of games available to gamers, attracting large numbers of loyal gamers is no easy task. Although MindArk's game Entropia Universe differs in many ways from most games, the competitive situation in the gaming market is still considered a major challenge for the Company and a risk that may affect future growth.

Dependence on one game

Relying solely on one game in its portfolio represents a risk for MindArk. The vulnerability lies in the fact that any challenges or declines in the popularity of Entropia could have a significant and negative impact on the company's overall financial stability. In an industry as dynamic as the gaming industry, where gamers' preferences can change rapidly, a single major title exposes MindArk to significant uncertainty and potential financial setbacks should Entropia's popularity decline. Carlsquare Equity Research also sees it as a challenge that the Company chooses not to report the number of active gamers. Reportedly, this parameter is not a decisive driver of revenue, but we still consider the number of users as an important factor in getting an idea of development and potential for future development.

Currency risk

MindArk is exposed to currency risk, mainly in relation to USD, as one unit of Entropia's virtual currency PED corresponds to 10 USD. Consequently, the Company generates most of its revenues in USD while most of the Company's expenses are paid in SEK. Of course, the currency exposure is also an opportunity for MindArk when the USD strengthens against the SEK, which has been the case in recent years. When the exchange rate moves in an unfavourable direction, revenues, converted to SEK, decrease. That is while most of the costs are constant in SEK, which has a negative impact on growth and profitability. However, the company somewhat reduces this risk by hedging 50% of the currency inflow in USD to be exchanged for SEK 6 months ahead. That corresponds to what is left when the company's payments in USD are made. Despite hedging, the risk of adverse currency effects is still present. However, we do not believe the potential adverse currency effects are significant enough to put the company in a financially precarious situation.

Unspent user funds

To take full advantage of Entropia, users deposit money into their player accounts, which are then converted into PEDs. Users are also able to withdraw money from

player accounts whenever they want. The PEDs in player accounts are classified as unspent user funds. By law, the company is not obliged to fulfil potential withdrawal requests, but failing to do so would significantly affect user loyalty and consequently MindArk's brand. If a large number of users decide to request withdrawal of their remaining PEDs, there is a risk that the Company will not have sufficient liquidity to meet these withdrawal requests. In 2011, the Company found itself in a situation of limited liquidity and some delays in processing withdrawal requests. However, during that period, there was no noticeable negative effect on user loyalty, nor did it result in an increase in the number of withdrawal requests.

Historical data shows that approximately 27-35 per cent of deposited funds have been withdrawn by users. At the same time, the remainder has been used or remains in users' accounts as digital inventory or cash in the form of PEDs. It is critical to the survival of Entropia Universe that MindArk continues to honour withdrawal requests. Ultimately, failure to do so could adversely impact the Company's business, financial condition and overall results of operations. As of June 30, 2023, unused user funds amounted to SEK 50.1 million in the Company's balance sheet. At the same time, the Bo team's cash amounted to 23.9 SEKm. The probability is low, but in case every user requests full withdrawal, there is currently no possibility to meet this.

Global macroeconomic conditions

Challenging economic conditions, characterised by factors like elevated inflation and increasing interest rates, impact consumer behaviour. In such situations, individuals may reduce their expenditures on non-essential items like computer games and entertainment due to decreased disposable income and shifting entertainment preferences.

Lack of expertise

According to the company, more game developers are hired than those graduating in the field. Despite this, the industry faces a significant skills shortage. The shortage is mainly due to the need to recruit talent from other countries. Recruiting foreign workers presents challenges such as securing accommodation and work permits, which have proven to be difficult. When faced with these difficulties, potential employees often choose employers in countries where work permits and housing are easier to obtain.

To promote growth, it is also important that the Company invests in skills development for its existing staff. If MindArk fails to attract qualified personnel, develop the skills of its current workforce, or disrupt development projects or ongoing operations, the Company may suffer delays and setbacks. That may lead to loss of valuable knowledge, inability to achieve set goals and negative impact on the execution of MindArk's business strategy. Carlsquare Equity Research considers the risk of skills shortage to be less than before, mainly in game development, due to the ongoing restructuring towards more AI-driven game development.

Introduction to the Company

MindArk PE has since 2003 developed and operated the virtual universe Entropia Universe ("Entropia" or "the Game"), which was the world's first Massively Multiplayer Online Role-playing Game ("MMORPG") with its own virtual economy based on real money at launch.

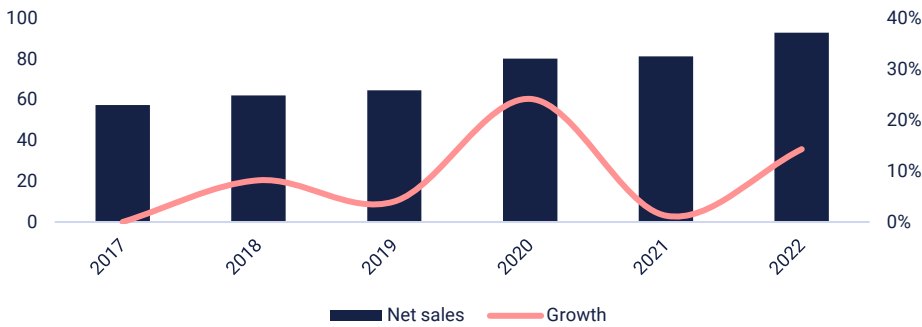
MindArk PE

MindArk was founded in 1999 as part of the Entropia virtual reality project. The goal was to create a solid virtual world with its own economy consisting of different continents. Entropia Universe was launched in 2003, and MindArk broke even the following year. Since the launch of Entropia, the company has gradually developed and improved the platform, which has resulted in stable revenue growth. Parts of the development have also been made by so-called Planet Partners, licensed business partners who themselves develop and operate planets in Entropia Universe.

A game engine is a complex piece of software that acts as a central framework for computer games and provides graphics, physics, artificial intelligence, and game mechanics tools to game developers.

During 2017-2022, the Company's revenues have grown on average by 10.4 per cent per year.

Net revenues (SEKm) and growth (%), 2017 - 2022



Source: Company information and Carlsquare

Entropia is currently built on a customised and partly self-developed game engine known as CryEngine2. This necessitates MindArk allocating substantial resources to maintenance and develop the game engine. As a strategic move, the company has initiated the process of transitioning the game to the Unreal Engine 5 game engine. This transition will entail a shift in priorities from engine maintenance to content development and is slated for completion in Q2 2025.

The Company has recently executed a significant organisational restructuring in conjunction with the shift to Unreal Engine 5. This restructuring is expected to reduce personnel costs starting in Q2 2024 substantially. The rationale behind this restructuring is the Company's intent to optimise its operations by embracing AI as a foundational element of future content production and game development.

Entropia Universe - The world's first MMORPG with its own economy

Entropia Universe is a digital universe consisting of several planets with unique themes, appearances, environments and activities. The game is diverse and expansive, giving gamers a wide range of activities to engage in, such as exploration, creature hunting, crafting, trading, or even owning and operating virtual property.

MMORPG - Massively Multiplayer Online Role-playing Game – A combination of role-play-based computer games and multi-player online games.

In-game screenshot from Entropia Universe*



*post-game engine change. Source: Company information

Entropia Universe – Dynamic and engaging

Since its launch, Entropia has managed to engage gamers despite stiff competition from other games of different natures. Users build their avatar, which is controlled from a third-person perspective throughout the game.

A digital Science-Fiction community

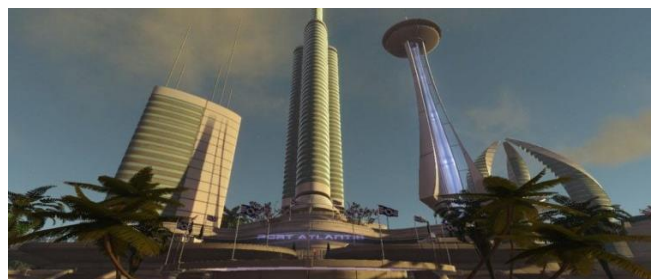
The real money economy is the most prominent aspect that makes Entropia unique and engaging for gamers. The economic incentive offered to users attracts gamers interested in earning real money and being entertained by the game on an ongoing basis. The player-driven economy creates a dynamic with opportunities for entrepreneurship influenced by real market fluctuations. The game's structure also creates a digital diversity of social interactions and a community that encourages participation, cooperation, and competition.

In-Game screenshot Entropia Universe



Source: EntropiaWiki

In-Game screenshot Entropia Universe



Source: EntropiaWiki

Varying environments and activities over large geographical areas

Entropia spans a huge geographical area of several planets with unique environments, creatures and resources. The game's size and diversity allow gamers to constantly explore and discover new places where they can always find and encounter something new, such as rare creatures, monsters, or valuable resources.

Two essential aspects of the game are hunting and combat. Gamers travel around different planets to track down and capture creatures as well as fight battles. The combat system in the game involves strategic planning, skilful execution, and effective use of weapons. Successful hunts can reward gamers with valuable loot that can be sold or used to improve the characters' abilities and contribute to the game's success.

In-Game screenshot Entropia Universe*



*post-game engine change. Source: Company information

In-Game screenshot Entropia Universe*



*post-game engine change. Source: Company information

PED - Own currency as a basis for MindArk's revenues

Revenue model based on in-game microtransactions

The gaming industry has two prevalent revenue models: the premium game model and the widely adopted free-to-play model. Premium games require users to pay upfront during the download process, covering future updates. On the other hand, the free-to-play model, which is the more prevalent of the two, does not impose a fee at the time of downloading. Instead, it generates revenue through various means, including advertising and in-game purchases, such as the in-game microtransactions featured in games like Entropia.

Consumption revenues and deeds revenues in Entropia form the basis of MindArk's revenues.

Entropia Universe is based on a variant of the free-to-play model. It is free to download and doesn't involve any monthly subscription fees. In Entropia, the digital world is designed so that most activities require the utilisation of resources, mirroring the real world. However, utilising these resources comes at a cost in Entropia, represented by the in-game currency known as Project Entropia Dollar (PED). Gamers acquire PEDs by exchanging real-world currencies for them, with a rate of 10 PEDs equal to 1 USD. The exchange rate is subject to fluctuations and is determined based on daily rates provided by the European Central Bank, reflecting the USD's value against various currencies.

Wear and tear, and direct sales generate MindArk's revenues

Traded PEDs can purchase various in-game items, such as weapons, vehicles, and even real estate. MindArk's revenue is generated from users' accounts when items are used and consumed (Consumption Revenue). MindArk also generates revenue through direct sales of special limited-edition items and direct sales of "starter packs," making the game easier for beginners.

The company also sells land rights that give the owner a share of the turnover on the land, so-called Deeds, which are sold through special auctions organised in Entropia. (Deeds can be sold between users.) In addition, the Company also charges a withdrawal fee of very competitive 1 per cent (minimum USD 10) of all withdrawals made from player accounts.

Given the revenue model, MindArk's revenue is thus primarily dependent on key figures such as the number of active users and average playing time. The more activity in Entropia, the more revenue for MindArk.

On average, each player of Entropia generates revenue to MindArk of approximately USD 1.3 per hour played. The total average deposit for paying users, which corresponds to about 10 per cent of the total number of active users, amounts to just over USD 8,000 over the user's lifetime.

Consumption revenues

To illustrate how MindArk generates revenue through consumption in Entropia, imagine a new player opening an account in Entropia and exchanging 100 USD for 1,000 PED. The user then has 1,000 PED in their PED account and buys a Gungnir Mk1 helicopter for 150 PED. The total PED value is still 1,000 PED but divided between the PED account (850 PED) and the helicopter account (150 PED).

Consumption revenues is based on activity in Entropia Universe

The user uses the helicopter, which, as in the real world, causes wear and tear that reduces the value of the helicopter. The decrease in value appears in a smaller PED value on the helicopter account, which is logged as revenue for MindArk in a microtransaction log. The value reduction is thus a consumption for the user but a revenue for MindArk.

Since the helicopter needs fuel to fly, the user must also buy fuel. When the user flies in his helicopter, fuel is consumed. The value of the consumed fuel is then logged as a revenue for MindArk and a consumption cost for the user. When the helicopter has deteriorated so much that there is no longer much value left, the user can repair the helicopter with PEDs that are deducted from the PED account to the helicopter account.

Example of gear in Entropia



Source: Company information

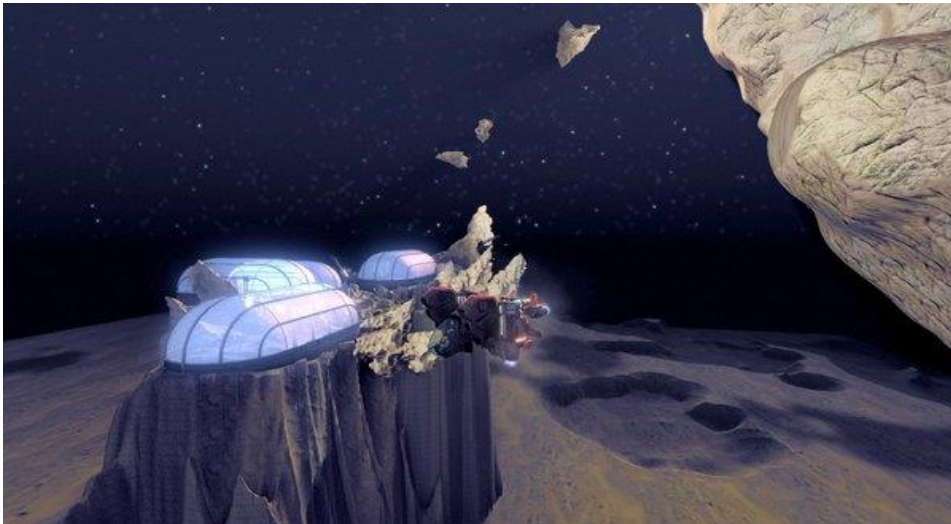
Revenues from deeds

In addition to consumption revenues, the Company also generates revenue through selling Deeds. Deeds are rights to land in the Entropia Universe, such as part of a planet. Deeds are sold via auction. For gamers, deeds are attractive to buy and own because they generate revenue for the user. This revenue is paid out in PED and is based on the activity level of the property in question, which can be seen as a form of revenue sharing with PED. The allocated revenue in PED can be used in the Game or exchanged for USD and withdrawn from the Game in local currency.

Deeds revenues are based on selling virtual land rights in Entropia Universe.

The last deed sale conducted was in December 2021, when the Company issued 800,000 deeds at 10 PED each. It took approximately 22 minutes from the time the deeds were posted until they were sold out. In 2021, revenue from the sale of deeds represented roughly nine per cent of the Company's total revenue. Going forward, the Company intends to conduct deed sales at least once a year.

An example of real estate in Entropia, Crystal Palace Space Station



Source: Company information

Entropia Platform –MindArk's partnership model

Entropia Platform is MindArk's offering for content partners who wish to contribute content to Entropia. Content partners choose the level of content production they wish to participate in and can vary from individual gamers to larger gamers who create and operate entire planets (so-called Planet Partners).

The Entropia Platform partnership model is an important part of MindArk's development work.

There are currently five Planet Partners in the US, Australia, Jordan and Thailand, as well as hundreds of smaller content partners. All content created by MindArk's content partners becomes part of the Game and follows given rules and guidelines regarding quality, performance and market economy balance. Content partners can also acquire new users, with revenues generated by these users being shared with MindArk. The partnership model also serves as an effective marketing channel for MindArk, as content partners have financial incentives to acquire users for Entropia. Having a content partner market, Entropia gives MindArk a self-sustaining marketing channel that complements existing internal marketing capabilities. The marketing capacity then grows in parallel with adopting new content partners.

Beyond marketing, content partners are important to MindArk in two main ways:

- Content production
- Revenues

Regarding content production, content partners contribute with a large production capacity, resulting in Entropia Universe content. The content produced by content partners does not require significant resources from MindArk. Still, it provides an increasingly broad and vibrant range in Entropia Universe, depending on the level that each content partner chooses to participate in. As mentioned, the partnership model is an essential and growing part of content development in Entropia.

Regarding revenues, profits between MindArk and the content partners vary dynamically and depend on several factors at any given time. These factors include the content partner responsible for acquiring the user, the user's location in the universe, and the specific content the user accesses when the user generates activity.

Advantageous revenue sharing with content partners

Regarding revenue-sharing between MindArk and content partners, MindArk consistently receives at least 50 per cent of the revenue generated on all planets in the Entropia Universe, but on, for example, Planet Calypso, which is MindArk's own planet, 100 per cent of the revenue goes to MindArk. The remaining 50 per cent of the revenue is divided equally between the party responsible for the customer relationship and the party that created the planet. MindArk thus generates revenue from its content partners in three different ways:

- **A user owned by MindArk spends money on a planet created by a content partner:** MindArk receives 50 per cent of the revenue from the planet plus 25 per cent of the revenue due to MindArk's own users. In total, 75 per cent of the revenue goes to MindArk.
- **A user owned by a content partner spends money on the content partner's planet:** MindArk gets 50 per cent, and the content partner gets 50 per cent of the revenue.
- **A content partner's users spend money on a MindArk-created planet:** MindArk gets 50 per cent of the revenue, plus another 25 per cent because of being the creator of the planet. In total, 75 per cent of the revenue goes to MindArk.

Distribution and marketing

Epic Games Store

In 2021, MindArk entered into an agreement with Epic Games Store, the second largest gaming platform in the world after Steam, to distribute Entropia. Epic Games Store was launched in 2018 following the success of game developer Epic Games' own distribution of the game Fortnite. The agreement means that MindArk can offer and market Entropia through Epic Games Store, giving access to a massive number of potential users. Entropia will be distributed via EGS once the game engine change to Unreal Engine 5 is completed.

At the end of 2022, Epic Games Store had over 230 million registered accounts and approximately 34.4 million daily active users. In total, roughly USD 820 million was spent on the platform in 2022, of which USD 355 million was attributable to games

developed by third parties (i.e., games not developed by Epic Games). In addition to marketing and distribution, the agreement also involves moving Entropia to Epic Games' game engine, Unreal Engine 5, which is also expected to impact the Game significantly (see separate section, p.15).

Marketing primarily online and via streamers

MindArk focuses primarily on partnerships with streamers, online marketing, exposure via social media and partnerships with affiliates.

For a long time, the company has had continuous collaborations with streamers who broadcast live when they play via various platforms such as YouTube or Twitch. The company typically pays streamers a fixed fee per live session that is recorded and redistributed.

Live streaming of games has grown in recent years as the popularity of Esport has increased. It is currently a very effective way to market games as it reaches out widely and internationally. On the streaming platform Twitch, the most popular user has close to 20 million followers, proving the potential to reach a large number of potential users through partnerships with streamers.

Targeted text and banner campaigns on ad platforms complement the marketing carried out via streaming. The company is also working to develop its social media channels, mainly in terms of content, while there are plans to expand existing affiliate programs.

Unreal Engine 5

A catalyst for growth

In 2021, MindArk agreed with Epic Games to move Entropia Universe from the existing game engine, CryEngine 2, to Epic Games' game engine, Unreal Engine 5. Carlsquare Equity Research believes that there are two significant benefits resulting from the game engine change:

- Higher game quality for increased activity
- Increased exposure for user growth

Improved graphics, performance, and development possibilities

Entropia has been running on the same game engine for over 14 years when the Company switched to a customised version of CryEngine 2 in 2009. Compared to modern graphics, the graphics now presented in Entropia is somewhat outdated and outmoded. The switch to Unreal Engine 5 provides a gameplay improvement in graphics, resulting in a more realistic and visually appealing appearance. Graphics' quality can play a major role in the highly competitive gaming market.

Performance will also increase, resulting in a smoother game and shorter loading times. Unreal Engine 5 also offers useful development tools that make it easier and faster to create new content for the game. Unreal Engine 5 also improves opportunities for planet- and content partners to create content. Game development on Unreal Engine 5 is platform-independent, allowing Entropia Universe to reach a broader market on platforms beyond PC.

Exposure to a significantly larger number of gamers

So far, the marketing efforts for Entropia have been somewhat restrained. However, the shift to a new game engine signifies that Entropia will now be available through Epic Games Store, which opens access to a considerably larger user base than the previous marketing channels. It's worth noting that Epic Games Store hosts a substantial catalogue of games. Nevertheless, if Epic Games decides to feature Entropia prominently on the front page of their store, the potential for significantly heightened exposure becomes quite promising.

Entropia in Cry Engine 2



Source: Company information

Entropia in Unreal Engine 5



Source: Company information

Management, owners and share price development

Experienced board and management group

As of June 30, 2023, MindArk PE's team consists of 62 full-time employees. Of these, all are employed by MindArk PE. The head office is located in Gothenburg.

MindArk PE is led by CEO Henrik Nel Jerkrot since 2017.

Management group



Henrik Nel Jerkrot, VD: Henrik has been employed at MindArk since 2016 and CEO since 2017. Henrik was a finalist in the Young CEO of the Year in 2021 and holds an MSc in Industrial Engineering and Management from Chalmers University of Technology.



Gunilla Krogh, CFO: Gunilla has been employed at MindArk since 2007 and has been CFO since 2009. She has over 25 years of experience in economics and finance and holds an MSc in economics from the University of Gothenburg.

Source: Company information

Board of directors



Björn Dierks, Chairman of the Board: Björn has a background in the construction and real estate industries. For ten years, Björn is active in real estate development and development and sales of agricultural products.



Leif Evander Andersson, Board member: Leif has a background as a real estate agent and owner within Mäklarhuset, which was closed down in 2021, and then founder of Gbgfast AB. Leif is also strongly interested in the digital arena, where Wakblom AB is the latest start-up project.



Klas Moreau, Board member: Klas has, during the years 2012-2018, held the roles as CTO and then CEO (2014 - 2017) of the MindArk Group. Prior to that, he held various management positions within Ericsson AB. Today, Klas is CEO of ZeroPoint Technologies, a tech company active in innovative semiconductor technology. Klas is also Chairman of Acconomy AB (formerly Spotlight-listed PromikBook AB), which offers digital accounting services.



Karl Linus Norén, Board member: Karl is an entrepreneur and active as a safety consultant in smart and safe solutions for the traffic environment through Lireno AB.

Source: Company information

Shares and warrants

Today, there are approximately 31.5 million outstanding shares in MindArk PE. The company has an outstanding incentive program consisting of warrants:

Series 2021/2025: Subscription price SEK 15.00 per share with a subscription period during May/June 2025. At full subscription, the Company receives approximately SEK 23.6 million. 1,576,231 shares are added, corresponding to a dilution of approximately 4.8 per cent.

Top ten shareholders

Tetiana Karunna (closely related to the Company's founder Jan Welter Timkrans) and the Bothén family are the two largest individual shareholders, with holdings of approximately 35 per cent and 17.5 per cent of the capital and votes, respectively.

Top ten shareholders

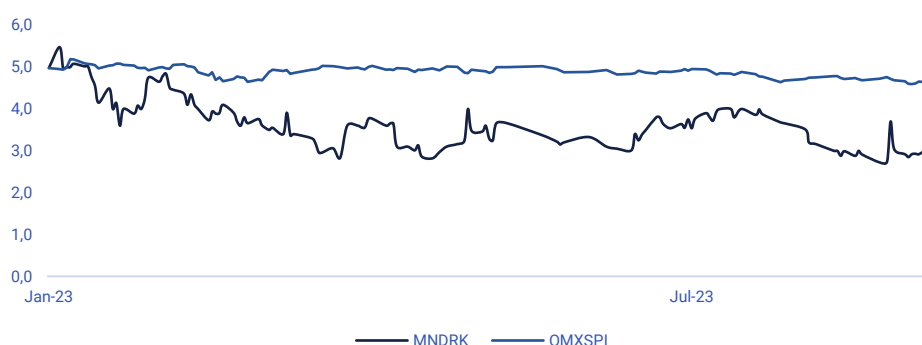
Owner	Capital	Votes	Verified
Tetiana Karunna	34.9%	34.9%	2023-06-30
Familjen Bothén	17.2%	17.2%	2023-06-30
Futur Pension	6.3%	6.3%	2023-06-30
Six Sis	4.9%	4.9%	2023-06-30
Nordic Tender Holdings	3.5%	3.5%	2023-06-30
Familjen Tullet	2.0%	2.0%	2023-06-30
Megetgod Invest Aps	2.0%	2.0%	2023-06-30
MindArkkoncernens vinstandsstiftelse	1.9%	1.9%	2023-06-30
Kronboken Aktiebolag	1.4%	1.4%	2023-06-30
Lars Hammarström	1.3%	1.3%	2023-06-30

Source: Company information

Share price development

The graph below shows the share's development compared to the OMXSPI since the first day of trading in January 2023. Since the listing, the share price has fallen and is trading close to its lowest levels.

MNDRK, Share price development (Index 2023-01-23 = 5,00 SEK)



Source: S&P Capital IQ and Carlsquare

Market outlook, competition and peers

The aggregated value of the gaming market amounted to approximately USD 190-200 billion in 2022 and is estimated to grow on average by 11-13 per cent over the coming years. Today, the mobile category is the largest and the fastest growing sub-market. A large and growing gaming audience, new technologies, and a growing population with internet access drive the market.

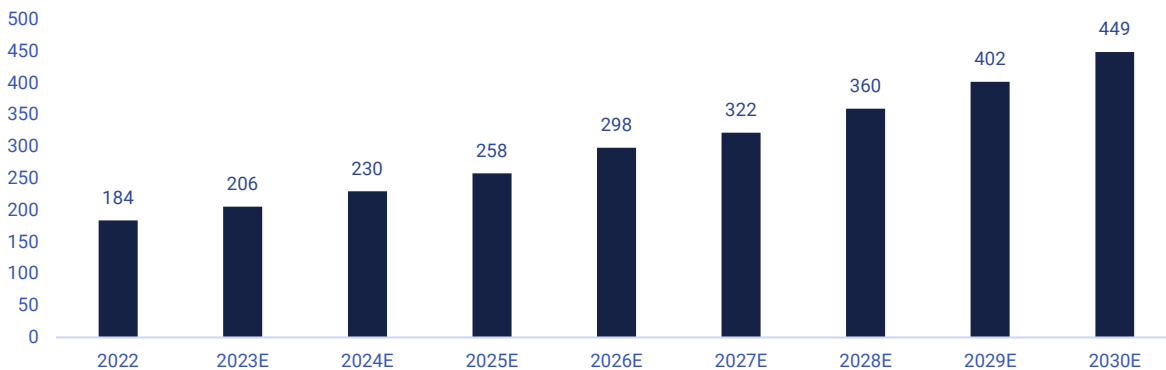
Huge market with great expectations

Expected yearly growth of 11-13 per cent

According to research firms Newzoo and Statista, the global aggregated market for all types of video games was valued at around USD 190-200 billion in 2022. Compared to 2021, the market decreased slightly (around -4.3 per cent). The decrease can be explained by the explosive growth following COVID-19, when many people were at home playing video games. Until 2030, the market is expected to grow by around 11-13 per cent per year to over USD 450 billion. The market is divided into three sub-markets: *mobile games*, *computer games*, and *consoles*. The largest sub-market is mobile games, which accounted for around 50 per cent of the total market in 2022.

The gaming market experienced a boost during the COVID-19 pandemic

Gaming market, 2022–2030, billion USD

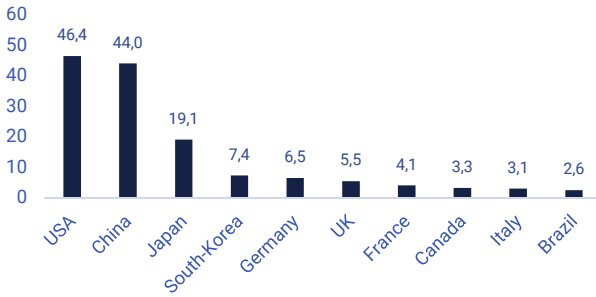


Source: Newzoo and Carlsquare

North America and Asia are the largest geographical markets

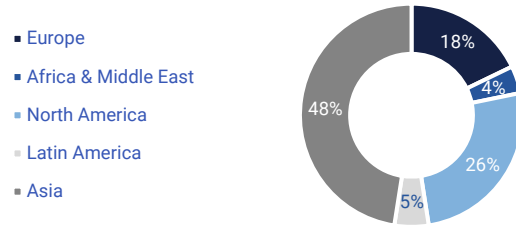
North America and Asia are the largest markets geographically and, according to Statista, accounted for around 75 per cent of the global market in 2022. North America and Asia are expected to remain the largest geographical markets, but growth is expected to be higher in Asia as more people gain access to the internet.

Top 10 countries 2022, billion USD



Source: Statista and Newzoo

Geographical market distribution, %

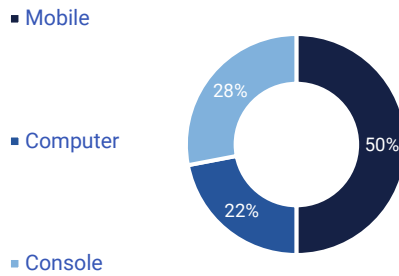


Source: Statista and Newzoo

Mobile is the largest sub-market

Entropia Universe is currently only available as a computer game, meaning it does not cater to the entire gaming market. In 2022, the most substantial gaming market segment was mobile games, accounting for slightly over 50 per cent of the total market share. In contrast, computer games constituted approximately 22 per cent of the overall market, equating to approximately USD 38.2 billion in revenue.

Gaming platform distribution, 2022



Source: Research Dive and Carlsquare

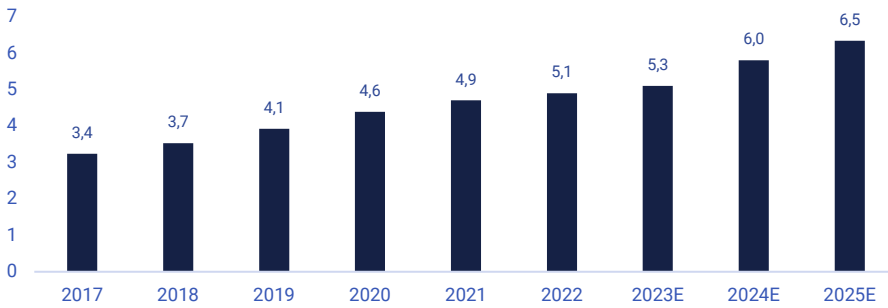
Stable market growth

Access to the internet is an important growth driver

Several factors are expected to drive market growth. For example, access to hardware and access to internet connectivity are expected to be two of the most important drivers. Emerging countries and regions play an important role here, with Asia expected to be the part of the world where the number of internet users will grow fastest. According to Statista, just over 64% of the world's population had access to the internet, corresponding to around 5.2 billion people, as of April 2023. According to the same Source, the Asian figure was around 55-58%. Africa and the Middle East are also expected to be areas where the number of internet users will grow significantly in the coming years.

In 2025, approximately 6,5 billion people are expected to have internet access

Number of internet users globally, billions



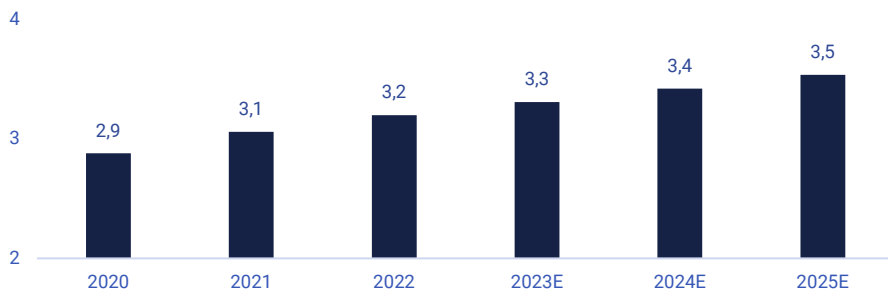
Source: Statista

Growing number of games

Another key growth driver is a growing audience of active gamers. Newzoo estimates that the number of active gamers (all game categories) amounted to around 3.2 billion in 2022. This figure is expected to grow to 3.6 billion by 2025. Looking at the distribution between the categories, the number of gamers on mobile amounted to just over 2.7 billion active gamers in 2022. That can be compared to PC games, with about 1.0 billion gamers and console games, with about 0.6 billion gamers. (Note that a player can be active on one or more platforms).

The number of active gamers globally is estimated to be over 3 billion. In PC gaming, the number of gamers is estimated to be around 600 million on a global basis.

Number of active gamers globally, billions



Source: Statista

Sector colleagues and peers

Listed peers

The gaming market is characterised by fierce competition and many gamers. There are dozens of listed gaming companies in Sweden alone, while the number of listed gaming companies globally is considerably higher.

Starbreeze AB

Starbreeze is a Swedish gaming company founded in 1998. Starbreeze is primarily known for developing and publishing games in the Payday series, which includes the cooperative first-person shooters "Payday: The Heist" and "Payday 2". Starbreeze is also known for titles such as "The Chronicles of Riddick: Escape from Butcher Bay" and "The Darkness". In 2022, Starbreeze had a turnover of just over SEK 127.6 million, with an EBITDA of SEK 0.

G5 Entertainment AB

G5 Entertainment is a Swedish gaming company specialising in developing and publishing mobile games. The company was founded in 2001 and has established itself as a prominent player in the casual gaming market. G5 Entertainment focuses primarily on hidden object and puzzle games, with a portfolio that includes both original and licensed titles. In 2022, G5 Entertainment had sales of approximately SEK 1.4 billion, with an EBITDA of SEK 159 million, corresponding to an EBITDA margin of 11.4 per cent.

Star Vault AB

Star Vault AB is a Swedish gaming company founded in 2005. Like MindArk, the company is known for developing and publishing games in the MMORPG category.

Star Vault's most notable title is "Mortal Online", released in 2010. "Mortal Online" is set in a medieval fantasy world where gamers have the freedom to explore, engage in player-to-player combat, craft items and build their own settlements. Unlike MindArk, Star Vault bases its revenue on monthly subscription fees from users. Another difference between Star Vault and MindArk is that Star Vault's games do not have their own economy that can be converted into real money. In 2022, Star Vault had a turnover of approximately SEK 16 million, with an EBITDA of SEK 2 million.

Maximum Entertainment AB

Maximum Entertainment AB, formerly Zordix AB, is a Swedish gaming company specialising in developing and publishing games on most platforms (PC, mobile, console). The company was founded in 2009 and is known for its expertise in, among other things, racing games. One of the most notable franchises is "Aqua Moto", a series of racing games using jet skis as a means of transportation. Maximum Entertainment had a turnover of over SEK 1.2 billion in 2022, with an EBITDA of approximately SEK 24 million.

Frontier Developments

Frontier Developments is a game developer based in the UK. The company was founded in 1994 and has made a name for itself, mainly in the simulation and strategy genres.

Frontier Developments is best known for the 'Elite' series, which offers space exploration and trading experiences. They have also had success with titles such as "Planet Coaster", a theme park simulation game that allows gamers to create and manage their own theme parks with a high level of customisation. Another notable launch is "Jurassic World Evolution", where gamers can build and monitor their own dinosaur-themed park. In 2022, Frontier Developments had a turnover of approximately SEK 1.4 billion with an EBITDA of approximately SEK 153 million.

Pearl Abyss Corp

Pearl Abyss is a South Korean gaming company founded in 2010 and, like MindArk, is known for developing games in the MMORPG category.

Pearl Abyss' flagship game, "Black Desert Online", is a popular MMORPG that offers extensive character customisation, an expansive world and combat mechanics. Pearl Abyss develops games for various platforms, including PC, console and mobile. In 2022, Pearl Abyss had more than SEK 3 billion in sales and an EBITDA margin of approximately 10 per cent.

Valuation, peer group

	HQ	Mcap (EURm)	EV (EURm)	Avg. EBITDA-Margin		EV/Sales		EV/EBITDA		EV/EBIT	
				2022-2025	2023-2025	NTM	2023E	NTM	2023E	NTM	2023E
Starbreeze AB (publ)	SE	113	103	27.6%	75.3%	2.3x	1.8x	3.1x	2.2x	4.8x	2.9x
G5 Entertainment AB (publ)	SE	108	92	-1.7%	24.2%	0.8x	0.8x	3.4x	3.5x	6.8x	7.0x
Star Vault AB (publ)	SE	6	6	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Entertainment AB	SE	19	44	2.6%	11.5%	0.5x	0.5x	4.4x	5.4x	NA	NA
Frontier Developments plc	GB	121	110	3.2%	20.0%	0.8x	0.8x	3.7x	3.0x	NA	NA
Pearl Abyss Corp.	KR	2 142	2 006	17.1%	24.2%	4.8x	7.7x	21.8x	130.2x	27.6x	NA
Median		103	90	3%	24%	0.8x	0.8x	3.7x	3.5x	6.8x	4.9x
Average		412	387	10%	31%	1.8x	2.3x	7.3x	28.9x	13.1x	4.9x
MNDRK (curr.)*	SE	7	12	-	-	1.4x	1.3x	8.7x	8.3x	11.0x	8.3x
MNDRK (CSQ)*	SE	13	16	13%	16%	1.9x	1.9x	11.6x	NM	0.0x	NM

* Carlsquare estimates. Source: S&P Capital IQ and Carlsquare estimates

Financial history and Carlsquare estimates

Given the change of the game engine to Unreal Engine 5, including increased exposure to the market via Epic Games Store, we expect a jump in growth during 2025-2026. We expect a CAGR 2022-2032 of 10.6 per cent. In our scenario, the adjusted EBITDA margin rises to 24.3 per cent while the net profit margin increases to around 20 per cent over time.

Financial history and estimates

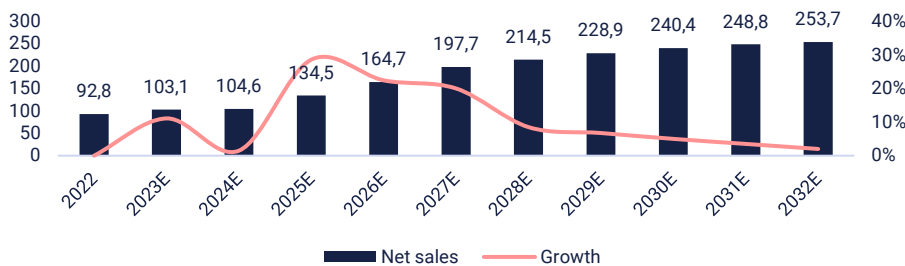
Growth in the cards as Entropia moves to Unreal Engine 5

For 2023, we expect net sales of SEK 103 million. That corresponds to a growth of about 11 per cent compared to 2022. We expect growth to be relatively low in 2024 because Entropia is not expected to deliver large leaps in growth with the existing game engine. However, the company did not conduct any sales of deeds in 2022 but intends to conduct annual deeds sales according to the company's listing memorandum. Therefore, the total revenue (excl. capitalised development costs) for 2023 and 2024 is expected to amount to approximately SEK 111.3 million and 115.1 million, respectively. From 2025 onwards, however, we expect growth to accelerate, with a peak in 2026 due to Entropia being moved to Unreal Engine 5.

Reported net revenue is the sum of consumption revenues.

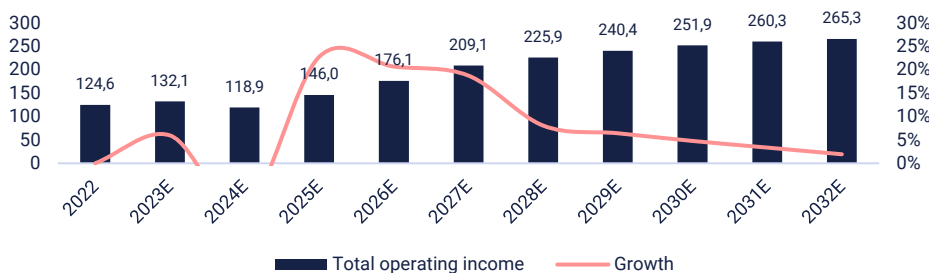
Net revenue consists of consumption revenue. Other operating income consists of deeds income. In 2025 and 2026, we expect a total turnover (net sales plus other operating income) of SEK 145.1 and 176.1 million, respectively. That corresponds to a growth of 28.6 and 22.4 per cent. From 2027 onwards, we assume a stable CAGR of 5.1 per cent until the last forecast year, 2032. Over the entire forecast period, 2022-2032, we have assumed a CAGR of 10.6 per cent.

Net revenues (SEKm) and growth (%), 2022–2032



Source: Company information and Carlsquare estimates

Total revenues (SEKm) and growth (%), 2022–2032



Total revenues = Net revenues + other op.income and capitalised dev.costs. Source: Company information and Carlsquare estimates

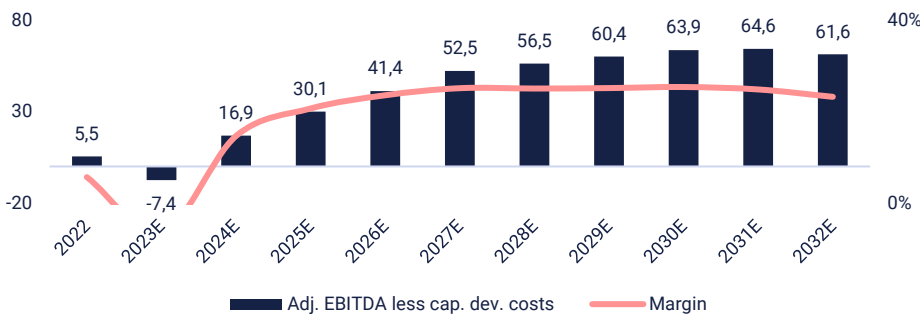
Decreasing capitalised development costs

Historically, the company has consistently incurred substantial capitalised development costs in terms of total expenditures and as a percentage of net sales. Over the period from 2017 to 2022, these costs, on average, constituted approximately 16 % of net revenues. This expenditure structure has played a pivotal role in maintaining the company's profitability, except for 2020. Our forecast anticipates a reduction in capitalised development costs starting in Q3 2023 due to the rationalisation efforts, with stabilisation expected at a notably lower level by 2024.

Positive EBITDA in 2024

As a result of the restructuring, the Company took a major personnel-related non-recurring cost of approximately SEK 14 million in Q2 2023. Overall, salary costs in 2023 are expected to be higher than in 2022. Still, the savings from the rationalisation will take full effect from Q2 2024, when the Company expects to save approximately SEK 1.5 million in personnel costs per month. We expect an EBITDA result (adjusted for capitalised development costs) in 2023 of minus SEK 7.4 million. However, we expect a positive EBITDA result in 2024 due to the savings in personnel costs. Until 2032, we expect the EBITDA margin to increase to 25 per cent. That can be compared with the companies in the reference group, which, on average, showed an EBITDA margin of 20-27 per cent during 2017-2022.

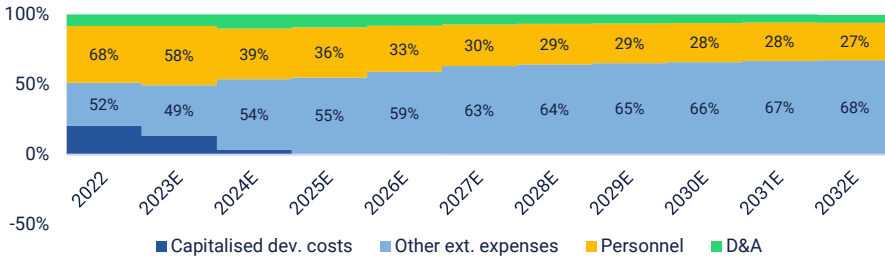
Adj. EBITDA (SEKm) and margin (%), 2022–2032



Source: Company information and Carlsquare estimates

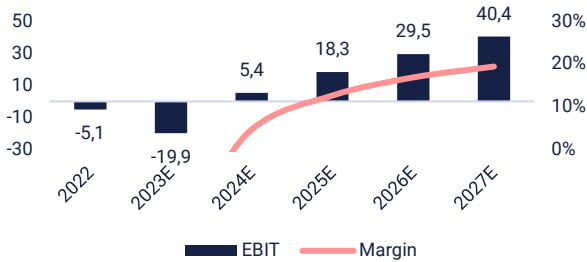
Personnel costs are the company's largest cost item today but, as mentioned, are expected to be reduced from Q2 2024. Thus, other external costs are expected to take over as the largest cost item before personnel costs, which are expected to be the second largest cost item.

Cost distribution



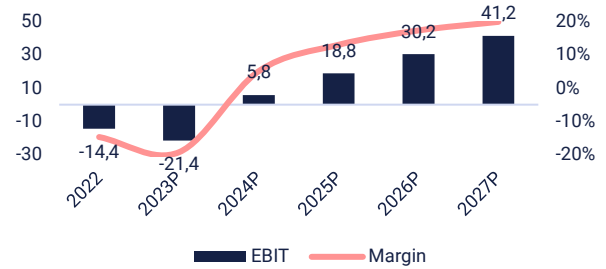
Source: Carlsquare estimates

EBIT (SEKm) and EBIT-margin (%)



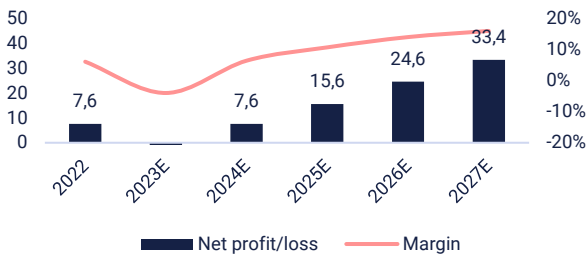
Source: Carlsquare estimates

EBT (SEKm) and margin (%)



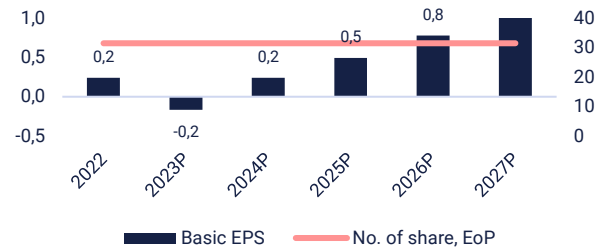
Source: Carlsquare estimates

Net result (SEKm) and margin (%)*



*Inkl. Cap.development costs Source: Carlsquare estimates

EPS (SEK) and n.o outstanding shares (millions)

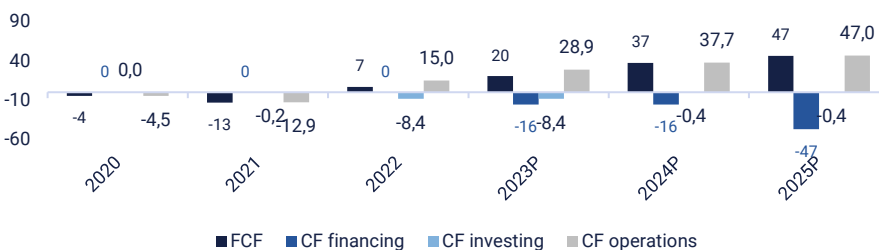


EoP = End of Period. Source: Carlsquare estimates

Cashflow and dividends

The company has a low debt ratio, which gives potential for dividends to shareholders from 2025 onwards. We expect a dividend of SEK 0.5 per share in Q2 2025. In our scenario, the company invests approximately SEK 15-20 million in AI during the period 2024-2025.

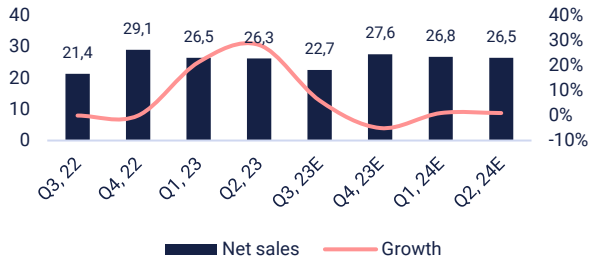
Cashflow (SEKm)



Source: Carlsquare estimates

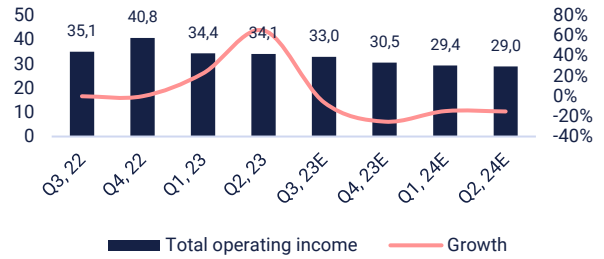
Quarterly

Net revenues (SEKm) and growth (%), quarter



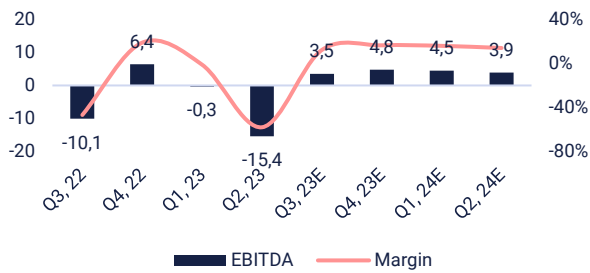
Source: Carlsquare estimates

Total operating income (SEKm) and growth (%)



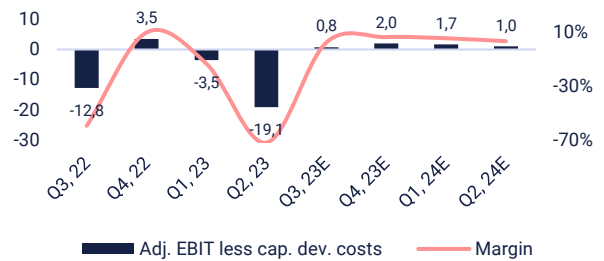
Source: Carlsquare estimates

Adj. EBITDA (SEKm) and EBITDA-margin (%), quarter



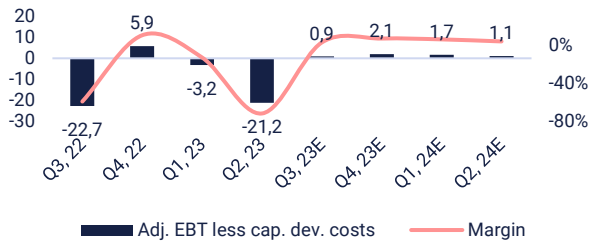
Source: Carlsquare estimates

Adj. EBIT (SEKm) and EBIT-margin (%)



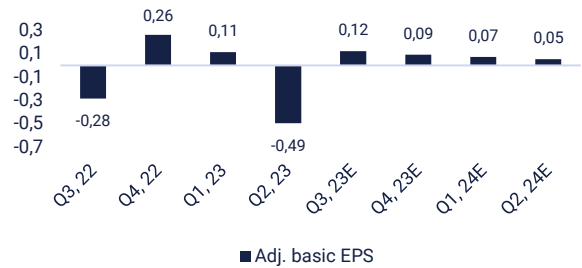
Source: Carlsquare estimates

EBT (SEKm) and EBT-margin (%), quarter



Source: Carlsquare estimates

Adj. EPS (SEK), quarter



Source: Carlsquare estimates

Valuation

By combining a DCF valuation with a multiple valuation, we calculate a fair per share of SEK 4.3 is calculated for the coming 6-12 months. Our valuation corresponds to an EV/Sales NTM of 1.9x and 1.4x 2025 and an EV/EBIT 2025 of 10.5x. The peer group trades at EV/Sales of 1.8x and an EV/EBIT of 13.1x.

Fair value within a range

Upside following restructuring and game engine change

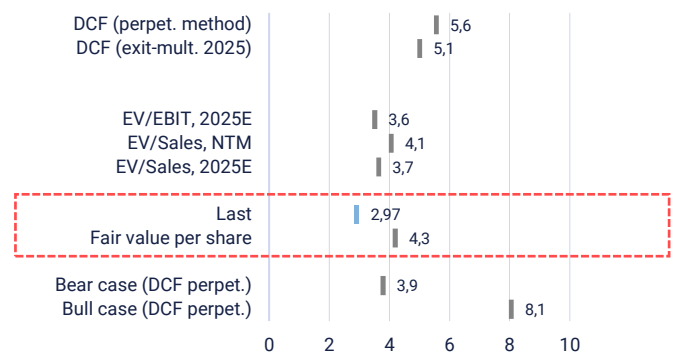
Combining a DCF valuation with a multiple valuation, a fair value per share of SEK 4.3 is calculated for the coming 6-12 months in a base case scenario. That corresponds to a potential upside of approximately 43 per cent. The valuation is based on strong growth from 2025 due to the change of game engine and distribution via Epic Games Store as well as the investment in more AI-based game development.

Fair value (SEK/share), Base case

Currency, SEK/SEK		1.0
EV/Sales, NTM	SEK	4.1
EV/Sales, 2025E	SEK	3.7
EV/EBIT, 2025E	SEK	3.6
DCF valuation	SEK	5.6
Fair value per share	SEK	4.3
Potential up-/downside		45%
Shares outstanding, fully financed, and diluted	M	32
Equity value	SEKm	135
Cash (last rep. Q)	SEKm	33.3
Debt (last rep. Q)	SEKm	91.5
PV cash from equity financing	SEKm	0
EV	SEKm	193

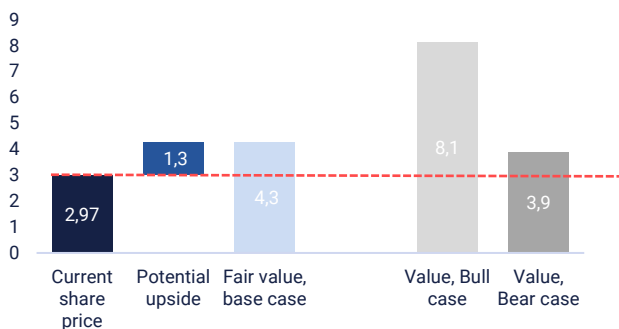
Source: Carlsquare estimates

Fair value within a range (SEK/share)



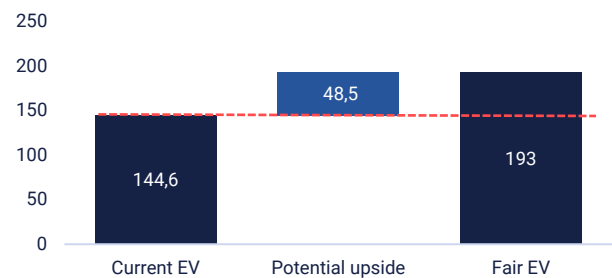
Source: Carlsquare estimates

Fair value per share (SEK), three scenarios



Source: Carlsquare estimates

Visualisation EV, Base case (SEKm)



Source: Carlsquare estimates

Implicit valuation multiples, Base case

	NTM	2022	2023E	2024E	2025E	2026E
EV/Sales	1.9x	2.1x	1.9x	1.8x	1.4x	1.2x
EV/EBITDA	11.6x	34.8x	NM	11.4x	6.4x	4.7x
EV/EBIT	0.0x	NM	NM	35.6x	10.5x	6.5x
P/E	41.9x	NM	NM	29.3x	9.1x	5.6x

Source: Carlsquare estimates

Our valuation in the base scenario corresponds to an EV/Sales of 1.9x for 2023 and 1.4x in 2025. This can be compared to the reference group of comparable gaming companies that are traded at an EV/Sales of 1.8x.

DCF valuation

DCF-valuation, Base case

DCF-valuation						
PV(UFCF)	SEKm	157	Disc.rate			
PV(TV)	SEKm	80	Risk free rate	2.4%	Tax adjust. interest on debt	8.8%
Enterprise value	SEKm	236	Market risk premium	6.7%	Leverage	53.0%
Net debt (+), last Q	SEKm	58.2	Size premium	3.4%	WACC	11.5%
Value, associated comps.	SEKm	0.0	Beta	1.2x	Comp. spec. premium	4.3%
Value, minority interest	SEKm	0.0	Req. return on equity	14.5%	Discount rate	15.8%
Shareholder value	SEKm	178	Assumptions			
PV(equity financing proceeds)	SEKm	0	CAGR, 2022-32E	10.6%		
Shareholder value, after financing	SEKm	178	EBITDA-margin, 2032E	23.5%		
Current shares outstanding	M	32	EBIT-margin, 2032E	19.0%		
New shares	M	0.0	Tax rate	20.6%		
Shares outstanding after financing and dilution	M	32	Implied multiples			
Value per share (before financing and dilution)	SEK	5.6	EV/Sales, NTM	2.3x	EV/EBITDA, NTM	14.2x
Value per share (after financing and dilution)	SEK	5.6	EV/Sales, 24E	2.3x	EV/EBITDA, 24P	14.0x
Currency	SEK/SEK	1.0	P/S, NTM	1.7x	EV/EBIT, NTM	43.5x
Value per share (before financing and dilution)	SEK	5.6	P/S, 24E	1.7x	EV/EBIT, 24P	43.5x
Value per share (after financing and dilution)	SEK	5.6	EV/Gross prof., NTM	2.3x	P/E, NTM	10.7x
Potential up-/downside		88%	EV/Gross prof., 24E	2.3x	P/E, 24P	38.7x

Source: Carlsquare estimates

Multiple valuation

Multiple valuation average value EV/Sales NTM, Base case

	HQ	Mcap (SEKm)	CAGR, 2022-2025E	μEBITDA-marg., 2022-25E	EV/Sales, NTM
Starbreeze AB (publ)	SE	117	27.4%	75.3%	2.8x
G5 Entertainment AB (publ)	SE	108	-1.8%	24.2%	0.8x
Star Vault AB (publ)	SE	6	NA	NA	NA
Maximum Entertainment AB	SE	20	2.5%	11.5%	0.5x
Frontier Developments plc	GB	114	2.6%	22.6%	0.8x
Pearl Abyss Corp.	KR	2 136	17.1%	24.2%	5.0x
Median		111	2.6%	24.2%	0.8x
Average		417	10%	32%	1.8x
Discount					0.0%
Applied multiple					1.8x
Net sales, NTM	SEKm				103.6
Enterprise value	SEKm				189
Net debt (+), last Q	SEKm				58.2
Value, associated comps.	SEKm				0.0
Value, minority interest	SEKm				0.0
PV(equity financing proceeds)	SEKm				0.0
Shareholder value, after financing	SEKm				131
Current shares outstanding	M				32
New shares	M				0.0
Shares outstanding after financing and dilution	M				32
Exchange rate	SEK/SEK				1.0
Fair value per share after financing and dilution	SEK				4.1

Source: S&P Capital IQ and Carlsquare estimates

Multiple valuation average value EV/Sales 2025, Base case

	HQ	Mcap (SEKm)	CAGR, 2022-2025E	μEBITDA-marg., 2022-25E	EV/Sales, NTM
Starbreeze AB (publ)	SE	117	27.4%	75.3%	2.8x
G5 Entertainment AB (publ)	SE	108	-1.8%	24.2%	0.8x
Star Vault AB (publ)	SE	6	NA	NA	NA
Maximum Entertainment AB	SE	20	2.5%	11.5%	0.5x
Frontier Developments plc	GB	114	2.6%	22.6%	0.8x
Pearl Abyss Corp.	KR	2 136	17.1%	24.2%	5.0x
Median		111	2.6%	24.2%	0.8x
Average		417	10%	32%	1.8x
Discount					
Discount					0.0%
Applied multiple					1.8x
Net sales, 2025E	SEKm				134.5
Enterprise value	SEKm				245
PV(enterprise value)	SEKm				175.6
Net debt (+), last Q	SEKm				58.2
Value, associated comps.	SEKm				0.0
Value, minority interest	SEKm				0.0
PV(equity financing proceeds)	SEKm				0.0
Shareholder value, after financing	SEKm				117
Current shares outstanding	M				32
New shares	M				0.0
Shares outstanding after financing and dilution	M				32
Exchange rate	SEK/SEK				1.0
Fair value per share after financing and dilution	SEK				3.7

Source: S&P Capital IQ and Carlsquare estimates

Multiple valuation average value EV/EBIT 2025, Base case

	HQ	Mcap (SEKm)	CAGR, 2022-2025E	μEBITDA-marg., 2022-25E	EV/EBIT 2025
Starbreeze AB (publ)	SE	117	27.4%	75.3%	12.3x
G5 Entertainment AB (publ)	SE	108	-1.8%	24.2%	7.4x
Star Vault AB (publ)	SE	6	NA	NA	3.8x
Maximum Entertainment AB	SE	20	2.5%	11.5%	2.4x
Frontier Developments plc	GB	114	2.6%	22.6%	NA
Pearl Abyss Corp.	KR	2 136	17.1%	24.2%	2.5x
Median		111	2.6%	24.2%	6.8x
Genomsnitt		417	10%	32%	13.1x
Discount					
Discount					0.0%
Applied multiple					13.1x
Adj. EBIT, 2025E	SEKm				18.3
Enterprise value	SEKm				239
PV(enterprise value)	SEKm				171.5
Net debt (+), last Q	SEKm				58.2
Value, associated comps.	SEKm				0.0
Value, minority interest	SEKm				0.0
PV(equity financing proceeds)	SEKm				0.0
Shareholder value, after financing	SEKm				113
Current shares outstanding	M				32
New shares	M				0.0
Shares outstanding after financing and dilution	M				32
Exchange rate	SEK/SEK				1.0
Fair value per share after financing and dilution	SEK				3.6

Source: S&P Capital IQ and Carlsquare estimates

Valuation range

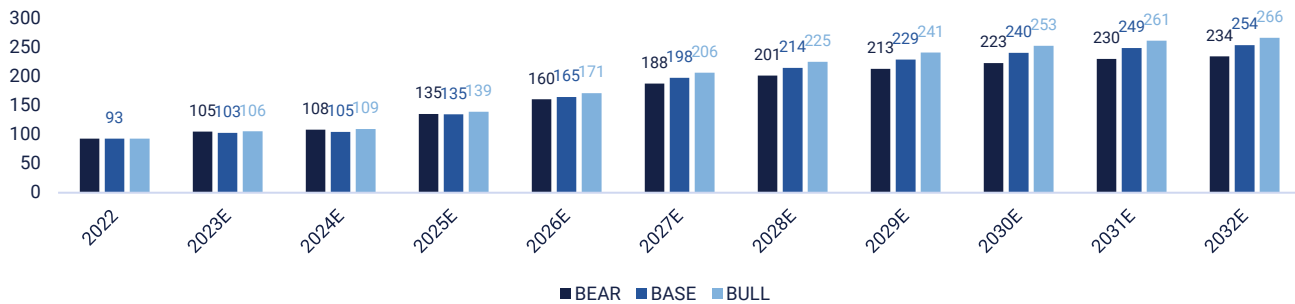
In the Bull and Bear scenario, we have used our DCF model (perpetual capitalisation) but developed alternative curves for growth and profitability.

In a more optimistic Bull scenario, we model a CAGR, 2022-2032, of 11.1 per cent (base 10.6 per cent) and an EBITDA margin in 2032 of 28.5 per cent (base 24.3 per cent). In the Bull scenario, a value per share of SEK 8.1 is calculated using our DCF model.

In a more defensive Bear scenario, we model a CAGR, 2022-2032, of 9.7 per cent and a 2032 EBITDA margin of 18.9 per cent. In the Bear scenario, our DCF model calculates a value per share of SEK 3.9.

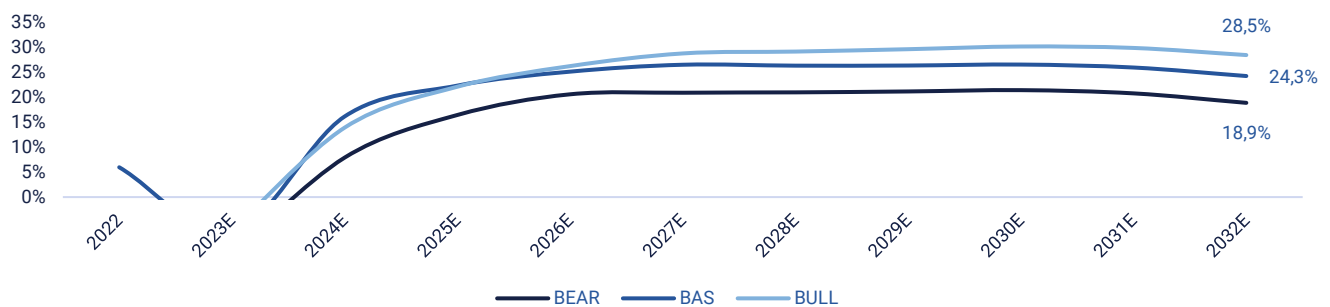
The assumed net revenues and EBITDA margin evolution in the three scenarios is shown below.

Net revenues (SEKm), three scenarios



Source: Company information and Carlsquare estimates

EBITDA-margin, three scenarios



Source: Company information and Carlsquare estimates

Key figures and accounts

Key figures (SEK)

	2022	2023E	2024E	2025E	2026E	2027E	2028E
SEK/SEK	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Share price	NAN	3.7	3.0	3.0	3.0	3.0	3.0
Market cap	NAN	86	86	86	86	86	86
EV	NAN	141	145	145	145	145	145
P/S	NAN	0.8x	0.8x	0.6x	0.5x	0.4x	0.4x
P/E	NAN	Neg.	12.4x	6.1x	3.8x	2.8x	2.6x
P/CF operations	Neg.	Neg.	5.7	3.0	2.3	1.8	1.8
EV/Sales	NAN	1.4x	1.4x	1.1x	0.9x	0.7x	0.7x
EV/Gross profit	NAN	1.1x	1.2x	1.0x	0.8x	0.7x	0.6x
EV/EBITDA	NAN	10.6x	7.0x	4.7x	3.4x	2.7x	2.5x
EV/EBIT	NAN	155.7x	15.7x	7.5x	4.8x	3.5x	3.2x
CSQ fair value per share	NAN	4.3	4.3	4.3	4.3	4.3	4.3
CSQ market cap	NAN	134.8	134.8	134.8	134.8	134.8	134.8
CSQ EV	NAN	189.6	182.5	183.9	167.3	173.9	163.2
P/S, CSQ implied	NAN	1.3x	1.3x	1.0x	0.8x	0.7x	0.6x
P/E, CSQ implied	NAN	Neg.	17.7x	8.7x	5.5x	4.0x	3.7x
P/CF operations, CSQ implied	Neg.	Neg.	9.0x	4.7x	3.6x	2.9x	2.8x
EV/Sales, CSQ implied	NAN	1.8x	1.7x	1.4x	1.0x	0.9x	0.8x
EV/Gross profit, CSQ implied	NAN	1.1x	1.2x	1.0x	0.8x	0.7x	0.6x
EV/EBITDA, CSQ implied	NAN	14.2x	8.8x	5.9x	4.0x	3.3x	2.8x
EV/EBIT, CSQ implied	NAN	209.1x	19.8x	9.6x	5.5x	4.2x	3.6x
Shares outstanding (EoP)	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Shares outstanding (Avg.)	NAN	NAN	31.5	31.5	31.5	31.5	31.5
Shares outstanding, fully dil. (Avg.)	15.8	15.8	31.5	31.5	31.5	31.5	31.5
EPS (SEK)	0.24	-0.17	0.24	0.49	0.78	1.06	1.15
DPS (SEK)	NAN	0.00	0.00	0.00	0.50	0.50	1.50
BV per share (SEK)	NAN	NAN	2.1	2.4	2.4	2.7	2.2
tBV per share (SEK)	NAN	NAN	0.1	0.1	0.1	0.1	0.0
EV per share (SEK)	NAN	NAN	4.6	4.6	4.6	4.6	4.6
Equity per share	NAN	NAN	2.4	2.4	2.7	2.2	NAN
Dividend yield	NAN	0.0%	0.0%	0.0%	16.7%	16.7%	50.0%
FCF yield	Neg.	Neg.	7.7%	23.7%	43.1%	53.9%	56.3%

EoP = End of Period. Source: Company information and Carlsquare estimates

Income statement (SEKm), quarterly

	Q1, 23	Q2, 23	Q3, 23E	Q4, 23E	Q1, 24E	Q2, 24E	Q3, 24E	Q4, 24E
Net sales	26.5	26.3	22.7	27.6	26.8	26.5	23.1	28.2
Total revenue	34.4	34.1	33.0	30.5	29.4	29.0	30.5	30.1
Gross profit	34.4	34.1	22.7	27.6	26.8	26.5	23.1	28.2
EBITDA	7.4	-7.8	7.5	6.3	5.7	5.0	5.9	4.1
Adj. EBITDA	-0.3	-15.4	3.5	4.8	4.5	3.9	5.0	3.5
EBIT	4.2	-11.5	4.7	3.5	2.8	2.1	3.0	1.2
Adj. EBIT	-3.5	-19.1	0.8	2.0	1.7	1.0	2.1	0.6
EBT	4.5	-13.6	4.8	3.6	2.9	2.2	3.1	1.3
Adj. EBT	-3.2	-21.2	0.9	2.1	1.7	1.1	2.2	0.8
Net profit/loss	3.6	-15.6	3.8	2.9	2.3	1.7	2.5	1.1
Adj. Net profit/loss	3.6	-15.6	3.8	2.9	2.3	1.7	2.5	1.1
Basic EPS (SEK)	0.1	-0.5	0.1	0.1	0.1	0.1	0.1	0.0
Growth	Q1, 23	Q2, 23	Q3, 23P	Q4, 23P	Q1, 24P	Q2, 24P	Q3, 24P	Q4, 24P
Net sales	21%	28%	6%	-5%	1%	1%	2%	2%
Total revenue	23%	65%	-6%	-25%	-15%	-15%	-8%	-1%
Gross profit	23%	65%	-35%	-32%	-22%	-22%	2%	2%
EBITDA	2%	-198%	114%	-53%	-23%	0%	-21%	-34%
EBIT	-11%	-311%	495%	-66%	-32%	0%	-36%	-65%
EBT	52%	-350%	0%	-72%	-35%	0%	-36%	-63%
Net profit/loss	52%	-367%	0%	-66%	-35%	0%	-36%	-63%
Margins	Q1, 23	Q2, 23	Q3, 23P	Q4, 23P	Q1, 24P	Q2, 24P	Q3, 24P	Q4, 24P
Gross margin	100%	100%	69%	90%	91%	92%	76%	94%
EBITDA margin	22%	-23%	23%	21%	19%	17%	19%	14%
Adj. EBITDA margin	-1%	-45%	11%	16%	15%	13%	16%	12%
EBIT margin	12%	-34%	14%	11%	10%	7%	10%	4%
Adj. EBIT margin	-10%	-56%	2%	6%	6%	4%	7%	2%
EBT margin	13%	-40%	15%	12%	10%	7%	10%	4%
Adj. EBT margin	-9%	-62%	3%	7%	6%	4%	7%	3%
Profit margin	10%	-46%	12%	9%	8%	6%	8%	4%
Adj. profit margin	10%	-46%	12%	9%	8%	6%	8%	4%

Source: Company information and Carlsquare estimates

Income statement (SEKm), yearly

	2022	2023E	2024E	2025E	2026E	2027E	2028E
Net sales	93	103	105	135	165	198	214
Total operating income	125	132	119	146	176	209	226
COGS	0	0	0	0	0	0	0
Gross profit	125	132	119	146	176	209	226
Tot. operating expenses less COGS and D&A	-93	-119	-98	-115	-134	-156	-169
EBITDA	32	13	21	31	42	53	57
Adj. EBITDA	32	13	21	31	42	53	57
D&A	-11	-12	-11	-12	-12	-12	-12
EBIT	21	1	9	19	30	41	45
Adj. EBIT	21	1	9	19	30	41	45
Net finances	-9	-2	0	0	1	1	1
EBT	12	-1	10	20	31	42	46
Adj. EBT	12	-1	10	20	31	42	46
Tax	-4	-5	-2	-4	-6	-9	-9
Net profit/loss	8	-5	8	16	25	33	36
Adj. net profit/loss	8	-5	8	16	25	33	36
Tot. comp. PL attributed to parent company	8	-5	8	16	25	33	36
Adj. PL attributed to parent company	8	-5	8	16	25	33	36
Basic EPS	0.24	-0.17	0.24	0.49	0.78	1.06	1.15
Adj. basic EPS	0.24	-0.17	0.24	0.49	0.78	1.06	1.15
EPS fully diluted	0.24	-0.17	0.24	0.49	0.78	1.06	1.15
No. of share, EoP	32	32	32	32	32	32	32
Avg. no. of shares	16	32	32	32	32	32	32

Growth	2022	2023E	2024E	2025E	2026E	2027E	2028E
Net sales	NaN	11%	1%	29%	22%	20%	9%
Total operating income	NaN	6%	-10%	23%	21%	19%	8%
Gross profit	NaN	6%	-10%	23%	21%	19%	8%
EBITDA	NaN	-58%	55%	50%	37%	26%	8%
EBIT	NaN	-96%	914%	109%	58%	36%	9%
EBT	NaN	-105%	NAN	105%	58%	36%	9%
Net profit/loss	NaN	-170%	NAN	105%	58%	36%	9%
Basic EPS	NaN	-170%	NAN	105%	58%	36%	9%
Adj. basic EPS	NaN	-170%	NAN	105%	58%	36%	9%

Margins	2022	2023E	2024E	2025E	2026E	2027E	2028E
Gross profit	100%	100%	100%	100%	100%	100%	100%
EBITDA	33%	10%	17%	21%	24%	25%	25%
Adj. EBITDA	26%	10%	17%	21%	24%	25%	25%
EBIT	17%	1%	8%	13%	17%	20%	20%
Adj. EBIT	17%	1%	8%	13%	17%	20%	20%
EBT	10%	0%	8%	13%	18%	20%	20%
Adj. EBT	10%	0%	8%	13%	18%	20%	20%
Net profit/loss	6%	-4%	6%	11%	14%	16%	16%
Adj. net profit/loss	6%	-4%	6%	11%	14%	16%	16%

EoP = End of Period. Source: Company information and Carlsquare estimates

Balance sheet (SEKm)

	2022	2023P	2024P	2025P	2026P	2027P	2028P
Tot. intangible assets	85	99	100	98	88	78	68
Tot. tangible assets	3	3	3	2	2	1	1
Tot. other fixed assets	6	2	2	2	2	2	2
Total LT assets	94	105	106	103	92	82	71
Inventories	0	0	0	0	0	0	0
Accounts receivables	2	2	2	3	4	4	5
Other current assets	10	4	4	5	6	8	8
Cash & cash eqv.	42	27	33	38	60	59	60
Total current assets	56	44	50	59	83	86	89
Total assets	150	149	156	162	176	168	160
Total equity	71	68	75	75	84	70	59
Provisions	0	0	0	0	0	0	0
Tot. long-term liabilities	57	62	62	62	62	62	62
Accounts payable	4	2	2	3	4	5	6
Other current liabilities	18	17	16	22	26	31	33
Tot. short-term debt	22	19	19	25	30	36	39
Tot. equity and debt	150	149	156	162	176	168	160
Liquidity	2022	2023E	2024E	2025E	2026E	2027E	2028E
Current ratio	2.6x	2.3x	2.7x	2.4x	2.8x	2.4x	2.3x
Quick ratio	2.0x	1.5x	1.9x	1.6x	2.1x	1.8x	1.7x
CF operations/current liabs.	-0.2x	-0.7x	0.8x	1.2x	1.3x	1.3x	1.3x
Leverage	2022	2023E	2024E	2025E	2026E	2027E	2028E
Net debt(+)/Net cash(-)	38	55	48	49	32	39	41
Net debt(+)/Net cash(-), excl. leasing	38	55	48	49	32	39	41
Net debt/EBITDA	1.2x	4.1x	2.3x	1.6x	0.8x	0.7x	0.7x
Tot. debt/Equity	1.1x	1.2x	1.1x	1.2x	1.1x	1.4x	1.7x
Tot. equity/tot. assets	47%	45%	48%	46%	48%	42%	37%
Efficiency	2022	2023E	2024E	2025E	2026E	2027E	2028E
ROA	NaN	-4%	5%	10%	15%	19%	22%
ROE	NaN	-8%	11%	21%	31%	43%	56%
ROIC	NaN	1%	6%	12%	20%	29%	34%

Source: Company information and Carlsquare estimates

Cash flow statement (SEKm)

	2022	2023E	2024E	2025E	2026E	2027E	2028E
CFO b4 delta WC	-8	-14	15	26	36	45	48
Delta WC	4	1	0	2	2	2	1
CF operations	-4	-13	15	29	38	47	49
CF investing	0	0	-8	-8	0	0	0
FCF	-4	-13	7	20	37	47	49
CF financing	0	0	0	-16	-16	-47	-47
Cash flow	-4	-13	7	5	21	-1	1
Cash, BoP	-5	20	25	27	45	42	42
Cash, EoP	-4	17	24	29	50	49	51

Source: Company information and Carlsquare estimates

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