



mk2 VR*: The Rising Location-Based Entertainment Virtual Reality (LBE VR) Solution

mk2 VR Pods*, running on the latest Intel® Core™ i7 or i9 processors, deliver a reliable VR experience

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Executive Summary

Consumer Virtual Reality (VR) has struggled to move beyond niche adoption, due to a variety of reasons that include consumers not having an opportunity to have ever experienced VR, a shortage of interesting content, and VR experiences not living up to expectations. But many in the industry now agree that location-based entertainment VR (LBE VR) is the potential game-changer consumer VR needs to propel it into the mainstream.

LBE VR venues are increasing in popularity across the globe, providing many consumers with their first taste of truly exceptional VR. Once consumers are introduced to VR and 'wowed' by these experiences at an LBE VR location, many expect they will be more receptive to adopting VR in the home.

With the LBE VR sector expected to take off, there's a golden opportunity for early movers to seize the lion's share of this burgeoning market segment, while positioning themselves to take full advantage of the subsequent home VR revolution.

For operators looking to move into LBE VR, this paper explains how mk2 VR Pods* running on the latest generation Intel® processors, support a reliable and profitable LBE VR business model.

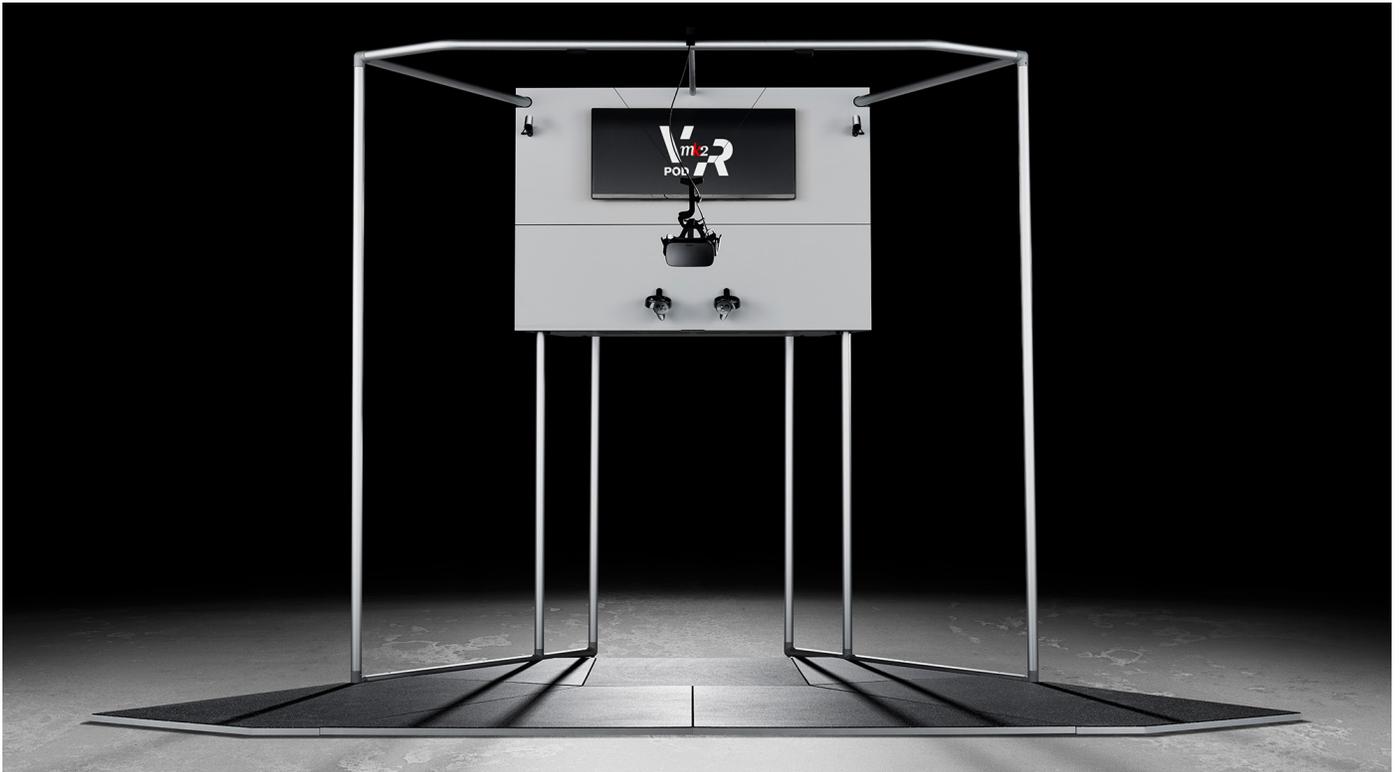
Background

Consumer VR needs a game-changer

While adoption of VR in the enterprise is gaining momentum for use cases like training, education, collaboration, and more, most consumers have never experienced VR and don't know others who have, resulting in VR remaining a relatively niche market. The vast majority of those who have tried to bring VR into their home still view the experience as poor and complex to use. Difficulty in finding compelling content is exacerbating the negative perception.

For home VR to truly take off, consumers need to be exposed to exciting and interesting experiences that convince them this is worth bringing into their living room. The ecosystem needs to demonstrate to consumers that with the right head-mounted device (HMD), the right PC, and the right software, the home VR experience can be spectacular and something they want to enjoy with the frequency and ease of availability made possible using their own system.





The Mk2 VR Pod* turnkey solution.

According to research organization Greenlight Insights, LBE or 'out-of-home' or 'interactive multiplayer' entertainment as it is sometimes known, is the game-changer that consumer VR needs.

Greenlight says: "Although VR continues to grow and generate interest, it hasn't yet moved beyond the 'early adopter' phase. This is a critical step for VR to emerge as the transformative technology many predict it will become. VR needs a game-changer. Something that can be the bridge the sector sorely needs to the mass market. LBE VR is best suited to play that role. New use cases for VR, B-to-B, reimagined 'wow' experiences, VR/Augmented Reality (AR) and Mixed Reality (MR), deeper partnerships - all of these offer exciting growth opportunities for LBE VR and, as a consequence, the entire industry."¹

Location-Based Entertainment Virtual Reality

The use of LBE VR at shopping malls, arcades, amusement parks, and other venues is on the rise globally. With industry revenues nearing USD 1 billion, total spending on hardware, software, content, and related services at LBE VR venues will grow at a 69 percent compound annual growth rate (CAGR) over the next five years, with industry revenues expected to reach about USD 8.1 billion by 2022 – see figure 1¹.

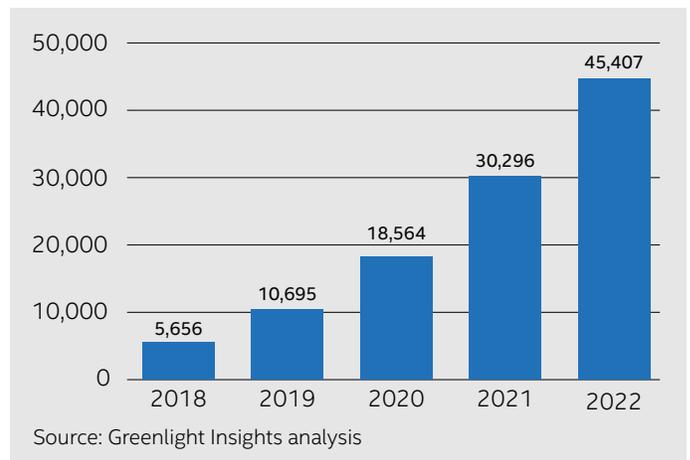


Figure 1. Projected global Location-Based Entertainment Virtual Reality (LBE VR) industry revenues 2018-2022.

Currently there are around 5,700 locations worldwide where consumers can experience VR outside of their home. Greenlight Insights expects this number to rise to 45,700 by the end of 2022 – see figure 2¹. What's more, only a small proportion of the different VR systems are presently in use at LBE venues. Once other formats like free roaming, escape games, and multiplayer titles are fully developed, and the public has had a chance to experience them, the demand for LBE venues globally is expected to rise further.

¹ <https://greenlightinsights.com/industry-analysis/virtual-reality-location-based-entertainment-2017/>

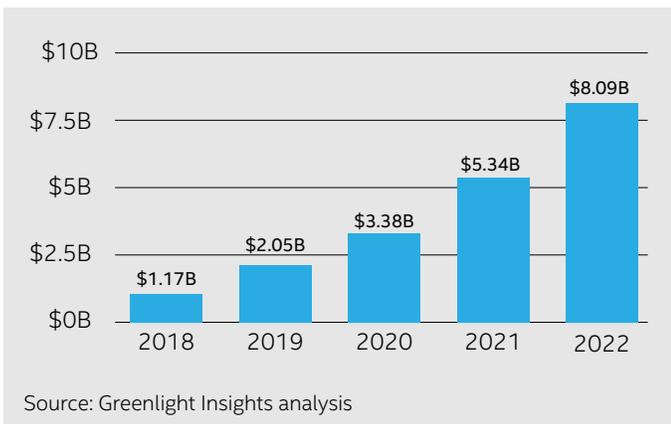


Figure 2. Projected global Location-Based Entertainment Virtual Reality (LBE VR) venues 2018-2022.

Solution Overview

mk2 VR* LBE

Founded in 1974 by French businessman Marin Karmitz and now run by his sons Nathanael and Elisha Karmitz, mk2 is a reference in world art-house cinema, a production company and movie theater chain, specializing in creating, distributing, and screening independent or 'auteurist' cinema. The company won more than 160 awards at international film festivals and has long been focused on giving customers the best possible entertainment experience.



The VR Kiosk* for narrow spaces, very light and autonomous.

In December 2016, mk2 opened mk2 VR* in Paris. It was the first permanent space devoted to VR in Europe and was designed to maximize user comfort, enhance the cinema experience and showcase VR content. Offering panoramic views over the French National Library, the Paris mk2 VR has 12 [mk2 VR Pods](#) equipped with three different VR technologies (HTC Vive*, Oculus Rift* and Sony PlayStation* VR) and two full-body immersive simulators: the Holodia* rowing machine and the Birdly* flying experience. Since opening its doors, the Paris mk2 VR has welcomed over 130,000 visitors.

mk2 VR has since installed VR Pods for Nordisk Film across its cinema theaters in Oslo and Copenhagen, for VR LBE operator Arvore Voyager in Sao Paulo, the National Library of France in Paris, cinema group MediaCom in Zagreb, the Film Fund art gallery in Luxembourg, and the Nanchang VR Theme Park, among others. There are now 76 VR Pods deployed globally.

mk2 VR installations have also been used at festivals and shows like SXSW 2018, showcasing the shared VR experience CHORUS from WITHIN studio and Annapurna Pictures and the science-themed Spheres from immersive entertainment studio Atlas V. mk2 VR solutions were also present at the 2018 Cannes Film Festival in partnership with HP, the tech show Vivatech in Paris with Alibaba and BNP Paribas, the Homo Faber exhibition in Venice for the Bettencourt Schuller Foundation with RF Studio, and currently at the Ion Orchard Art Museum for the Virtually Versailles exhibition in Singapore with Google.

Working with the world's best VR studios like Felix & Paul, WITHIN, Ubisoft, Altas V, Baobab Studio, Vertigo Games and Survios, mk2 VR has signed more than 50 award-winning titles such as Chorus, Superhot, Notes on Blindness, Beat Saber, Cirque du Soleil and The Crow to offer its partners a curated and eclectic catalog of immersive content. mk2 VR distributes this content worldwide, together with specialist provider Exertis.

mk2's VR Pods*

- The mk2 VR Pod* is an advanced solution for easily presenting Virtual Reality (VR) experiences to consumers. It is the first plug and play VR solution for museums, libraries, movie theaters, malls, VR arcades, and Location-Based Entertainment (LBE) venues.
- The VR Pod Arena* is mk2's most powerful VR pod for four-player VR e-sports (2 versus 2), survival or escape games. Born out of discussions with creative studios, the VR Pod Arena is designed with arcades and leisure centers in mind. Presented for the first time at the 2018 Paris Games Week in partnership with Intel, the VR Pod Arena showcased the new title Space Junkies from Ubisoft and After-H - the e-sport first person shooter (FPS) VR game – from smartVR. Arizona Sunshine from Vertigo Games and Archangel Hellfire are also available on the mk2 VR Pod Arena, among other titles.
- The VR Kiosk* is mk2's fastest and most convenient plug and play VR solution. Designed for confined spaces such as lobbies and airport lounges, the VR Kiosk is light, autonomous and affordable for those who need a VR solution that can support cinematic and interactive content.



VR Pod* carousel installation at the department store Le Bon Marché in Paris.

mk2 designs the VR Pod for assembly by local partners and is continuously upgrading its solutions to ensure they meet the needs of this very demanding market segment. The VR Pods also come with a maintenance service to minimize downtime, since every hour a VR station is closed equates to lost revenue for the LBE VR operator.

mk2 partners with content studio Secret Location to deliver its bespoke VR Play* customer management system. It protects the studio's creative content and gives the operator the ability to decide what content is playing where.

e-Sports

The mk2 VR League*, in collaboration with Intel and global media company Webedia, features VR e-sports title tournaments like Echo Arena from Ready at Dawn, After-H from smartVR and Space Junkies from Ubisoft, as well as lighter competitions on arcade titles like Beat Saber, Racket NX or Creed.

mk2 VR has also partnered with Webedia to broadcast the first VR gaming competition on Webedia's gaming channel ES1, to allow consumers to discover and experience VR e-sports.

Intel and mk2 VR

Intel and mk2 collaborate to deliver the best possible VR experience to the end customer. It is a global partnership focused on both technology and marketing.

On the hardware side, each of mk2's VR Pods has different compute requirements. The VR Pod and VR Pod Arena demand fast and efficient processing power to deliver excellent VR experiences. 8th or 9th generation Intel® Core™ i7 and i9 processors meet these requirements, by delivering high-end VR experiences.

The VR Pod Arena also works with the HTC Vive* wireless adapter, powered by Intel® WiGig, offering a near-zero latency, untethered VR experience.

Intel and mk2 are also working together to extend the LBE VR experience into the home.

Conclusion

Profit from mk2 VR

LBE VR is set to skyrocket in popularity starting now and to ramp fast in the coming years. Mk2 is the game-changer needed to propel consumer VR into the mainstream. For those operators looking to capitalize on the growing LBE VR market segment, mk2 VR Pods, running on the latest Intel® Core™ i7 or i9 processors, deliver a great and reliable VR experience.

What is the future of VR?

Looking further into the future, mk2 expects LBE VR venues to evolve to include more multiplayer experiences – for example, where the role of each player is to reach a common goal, or where players are pitted against friends in a competitive game. Also, free-roaming arcades, escape games and mixed reality are expected to rise in popularity.

Intel's vision of VR is:

- Wireless thanks to Intel® WiGig technology
- Six Degrees of Freedom (6DoF) to feel the depth and have the ability to look behind everything
- Super resolution up to 8K, while 16K becomes the new norm
- With 5G offering the bandwidth needed to deliver these real-time experiences with minimal latency

Working closely with mk2, Intel expects to be able to bring these benefits to consumers over the next few years, and it has already started.

To find out more about launching your own LBE VR venue,
contact mk2 directly at:

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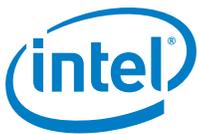
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mk2 VR Pod Arena* at Paris Games Week equipped with 8th
gen Intel® Core™ i5 or i7 processor.

Solution Provided By:



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