

It's Your Future!



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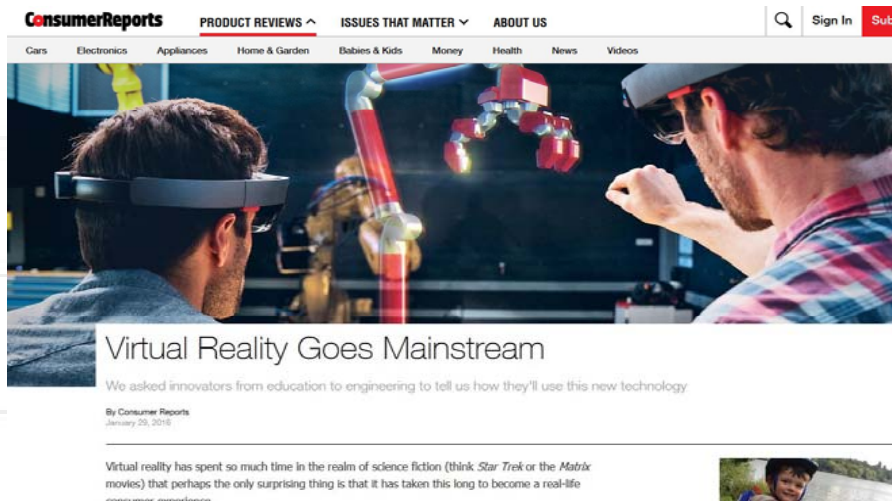
Revised version of presentation made at CDO annual conference, Saskatoon, April 2016

Getting into Virtual Reality

The argument in a nutshell

- Innovation in media industries involves co-evolution between or among layers of the digital ecosystem.
- In the case of contemporary VR, the hardware layer provides the new functionality while the software layer, with its embedded content, provides the value proposition to consumers.
- VR diffusion is currently strongly influenced by the ability of content makers to ‘create digital opportunities’ by connecting with audiences.
- My research examines ways that Canadian media makers are seeking to create value with VR.
- These media makers are playing three roles: ‘local experts’ in that they adopt and master VR production tools to create content; value network complementors, in that they seek to provide a key component of the VR value proposition; and media entrepreneurs, in that they hope to earn a living by making VR media products.
- I provide a summary of results of a survey of users of a pioneering VR implementation in Toronto’s heritage tourism sector, identifying the main dimensions of value creation.
- **PS: the title (In Your Face) refers to contemporary consumer-oriented VR’s attempts to solve the problem of maintaining the viewer’s attention in a media-saturated ‘attention economy’ by making it impossible NOT to pay attention thanks to the occlusive head-mounted display.**

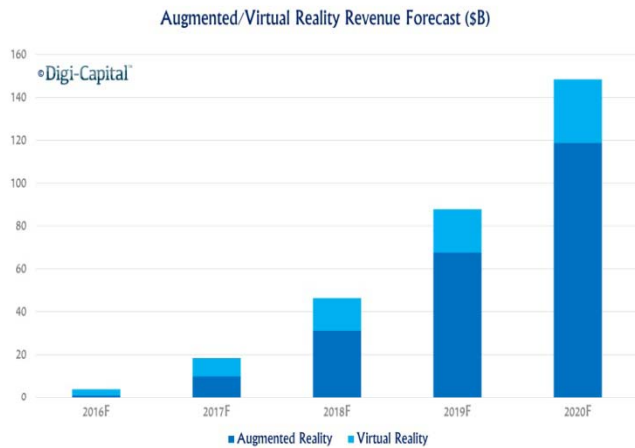
To much excitement and hype in the geekosphere and in the press, VR appeared poised to “go mainstream” in early 2016



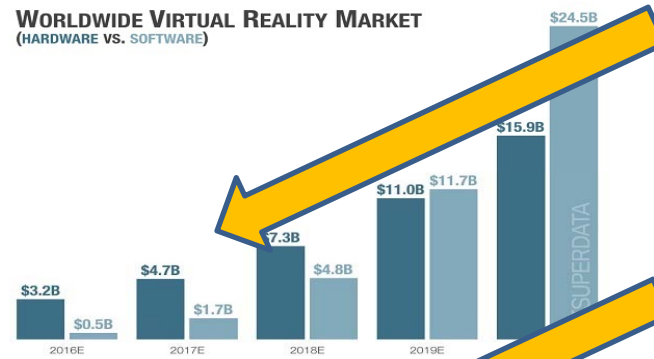
Virtual reality as search term on Google, 2004-June 2016



“promissory organizations” (Pollock & Williams, 2010) shape expectations about huge economic impact of VR

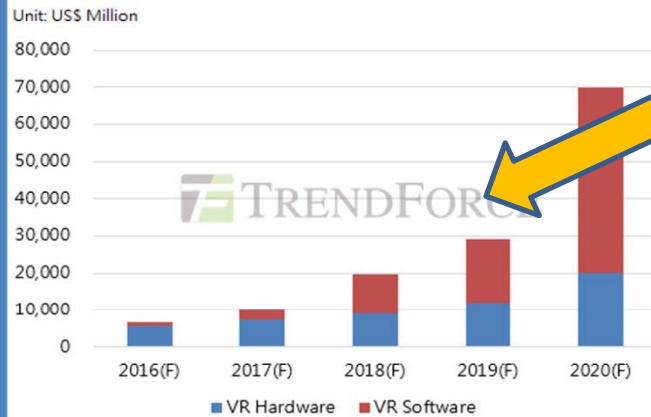


WORLDWIDE VIRTUAL REALITY MARKET (HARDWARE VS. SOFTWARE)

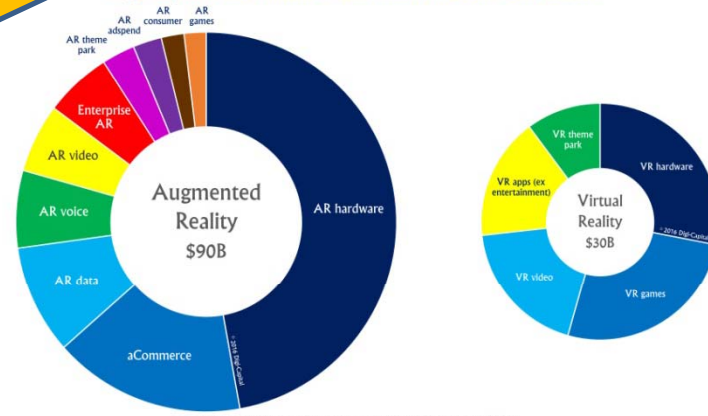


Note co-evolution of hardware and software layers - VR hardware opens the market for software, but some compelling VR content is needed to stimulate further demand for hardware – hence the search for the ‘killer app’ in VR.

Figure: Global VR Market Value, 2016–2020



Digi-Capital Augmented/Virtual Reality Revenue Share 2020F



Several major players are entering the market with VR products intended for consumers

An arms race in headsets: Oculus (Facebook), HTC Vive, PlayStation VR (Sony), HoloLens (Microsoft), Gear (Samsung), Cardboard & Daydream (Google), plus many others (Razer OSVR, Fove VR, Zeiss VR One, Avegant Glyph, Freefly VR...)

The idea is that every living room will have a headset.



An industrial 'ecosystem' has emerged in anticipation of major diffusion of VR

(note: the Canadian VR ecosystem is currently being mapped by CFC/Nordicity)

Peripherals/haptics

Display hardware

Content studios
(gaming, cinematic, sports, music, live action, news)

Production tools and services

Research institutions

App stores

Social media

Information and data services

VR content capture

Industry applications
(education, healthcare, real estate, tourism, finance)

media

Source: Greenlight

2015 Virtual Reality Ecosystem Map



VR provides a significantly powerful immersive experience

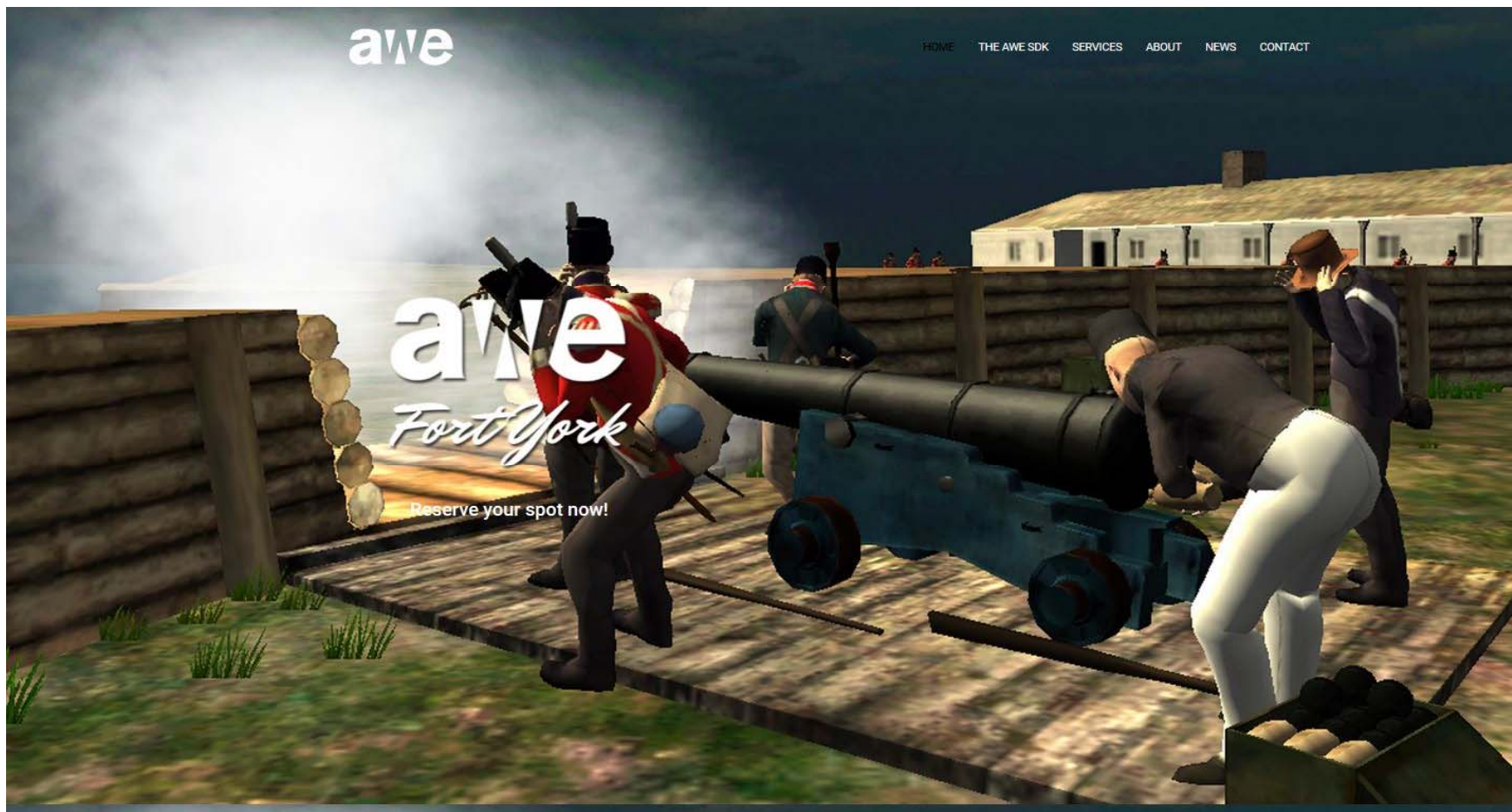
- And watching others experience VR is a minor growth industry on YouTube
 - [Oculus Rift reactions](https://www.youtube.com/watch?v=INDKNA7kXoo) <https://www.youtube.com/watch?v=INDKNA7kXoo>
 - [more Oculus Rift Reactions](https://www.youtube.com/watch?v=vYihtrqtkWM) <https://www.youtube.com/watch?v=vYihtrqtkWM>
 - [VR Horror game](https://www.youtube.com/watch?v=kBpFx-ixBiM) <https://www.youtube.com/watch?v=kBpFx-ixBiM>
 - [Dad plays Oculus Rift for first time](https://www.youtube.com/watch?v=TA3u7kdws3M) <https://www.youtube.com/watch?v=TA3u7kdws3M>
 - [Store Clerk VR simulator](https://www.youtube.com/watch?v=r89_zrAL5Sk) https://www.youtube.com/watch?v=r89_zrAL5Sk

In 2016, lots of experimentation is under way in search of a VR killer app

- [games?](https://www.youtube.com/watch?v=gXFhlxKTySw) <https://www.youtube.com/watch?v=gXFhlxKTySw>
- [social VR?](https://www.youtube.com/watch?v=vzhHCCr6hic) <https://www.youtube.com/watch?v=vzhHCCr6hic>
- Novel tools for design and creation such as [Tilt Brush?](https://www.youtube.com/watch?v=TckqNdrdbgk) <https://www.youtube.com/watch?v=TckqNdrdbgk>
- VR complementary add-ons to physical experiences, such as [theme parks?](https://www.youtube.com/watch?v=JEp1rq7VaiU) <https://www.youtube.com/watch?v=JEp1rq7VaiU>
- VR as a selling tool, for example in [real estate?](https://www.youtube.com/watch?v=S5q0xLYWkF0) <https://www.youtube.com/watch?v=S5q0xLYWkF0>
- ['empathic journalism' in VR?](http://with.in/watch/waves-of-grace/) <http://with.in/watch/waves-of-grace/>
- Transgressive applications of VR, such as [pornography?](https://www.engadget.com/2016/04/01/virtual-reality-and-pornography-an-x-rated-debate/) <https://www.engadget.com/2016/04/01/virtual-reality-and-pornography-an-x-rated-debate/>
- [VR films?](https://www.thestar.com/entertainment/movies/2016/07/01/tiff-to-spotlight-vr-films-for-fest.html) <https://www.thestar.com/entertainment/movies/2016/07/01/tiff-to-spotlight-vr-films-for-fest.html>

Case study: VR in heritage tourism

- [Virtual Fort York](https://www.youtube.com/watch?v=ny5eHMRpxMQ) <https://www.youtube.com/watch?v=ny5eHMRpxMQ>
- <http://awecompany.com/>



Fort York VR tour: visitor experience - key performance indicators

- More than 100 visitors to Fort York who tried the Virtual Fort York experience responded to a survey in late summer, 2015
- No instruments were available in the literature to comprehensively measure VR experiences
- Therefore measures were included from VX, UX, and reception studies literature

Visitors' experiences were measured along the following dimensions using 7-point Likert scales:

- Enjoyable
- Understandable
- Interesting
- Narrative comprehension
- Entertaining
- Engaging
- Comprehension of voice narrator
- Findability of narrator
- Enthusiasm
- Educational value
- Experience flow (attention)
- Recommendability
- Willingness to pay

Five basic dimensions of narrative-based VR experience

- Principal components analysis of responses identified five dimensions of narrative-based VR experience
 - Enjoyability (associated with willingness to pay)
 - Sentiment
 - Cognitive engagement (associated with recommendability, i.e. positive WoM)
 - Sense of novelty and immersion
 - Accessibility and sense of value for money

conclusions

- VR currently has high novelty value among consumers
- Many potential applications across society and the economy
- A university environment can facilitate development of production capability by talented local experts
- Finding paying customers is a long journey
- Big competition among platforms and consoles is just beginning
- The underlying technology is volatile/big changes may be in the pipeline



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