

Magic Leap

Cassiel Moroney

Introduction

Magic Leap is going to transform the way that we interact with the world itself. From industrial work to the classroom to pure entertainment, Magic Leap's superior implementation of augmented reality technology is a computer interface like you've never before experienced. Populate the new world that you see through Magic Leap – the “Digital Lightfield™” – with anything you can imagine; create and share without limitations. Sell not just the fashionable wearable device that enables consumers to access this fantastic upgraded world but also the content to enrich it.

Slip on a pair of Magic Leap glasses and see the world as you always dreamt it would be. Take a pet dragon for a walk or gauge a safe driving distance from a truck. Introduce the kids to Disneyland characters without leaving the house or decorate an empty room without spending a penny. “What we are really doing will transcend what can be contained in a physical product, the thing with atoms and such,” writes founder Rony Abovitz. “What we will bring to you, the part you will really love and find special, is *the part without atoms*” (Atoms Not Included). This cinematic reality product is going to usher in an almost incomprehensible degree of change to the ways we experience life and untold, untapped opportunities to enhance nearly every facet of work and play.

The Team

Magic Leap is not a conventional success story. We didn't find our roots in a science lab or while programming the next big thing on the Internet – we started with our love of storytelling. In 2010 we were called Magic Leap Studios and working on feature films and graphic novels with

Weta Workshop. We were also producing songs for our record label as the band “Sparkydog & Friends.” In 2011, as part of our project with Hour Blue, we produced an augmented reality iOS app and with it discovered the incredible untapped potential of this branch of technological advancement (Hollister).

Augmented reality has the power to transform the world as we know it, but it needs to get off of our smartphones and into our everyday lives. We rebranded, we regrouped, and we hired a team of professionals. We researched and discovered the best possible way to implement augmented reality technology on a grand scale – *without* resorting to the tricks and ploys of other companies on the same road. Bulky head-mounted displays and unrealistic gimmicks would never accomplish the earth-shattering difference that Magic Leap’s Lightfield™ can bring to the table. Now, with an incredible team of innovators from the top of their fields – game designer Graeme Devine of *The 7th Guest*, CMO Brian Wallace of such companies as Samsung and Google, author Neal Stephenson of *Snow Crash* – we are prepared to bring this product out of the realm of science fiction and into the tangible market.

Concept Overview: Augmented Reality

Augmented reality (“AR”) is a simple concept with a nearly unlimited number of practical and business applications. Three conditions must be met in order to label a given technology as “augmented reality”:

(1) It must combine virtual and real information. AR is the elegant synthesis of these two significant streams of data.

(2) It must be interactive in real time. AR’s characteristic functionality comes from its ability to process these two streams of data as they happen, allowing users to not just consume but also react to the specialized view.

(3) It must be operated and used in a three-dimensional environment. AR must involve actually changing or enhancing the physicality of the world. (Kipper)

Because the constraints of the medium are so few, augmented reality has explored various different forms in the past. Holograms – three-dimensional projected images – are a legitimate type of AR. They are no longer as popular a subject of study, however, and instead it is wearable technologies that are quickly becoming the most well-researched and actually viable application of AR today. Holograms are difficult because of a number of physical constraints of the natural world, whereas wearables bypass those complexities and instead focus on making personal, perceived images within the eye of the beholder. While holograms would undoubtedly be an interesting and similarly powerful market to wearable AR, they simply are not practical. Holograms have neither the scientific possibility nor the abundant business opportunities of wearable AR technology.

Augmented reality is not to be confused with its technologically similar but conceptually and functionally different cousin, virtual reality. “Virtual reality is cool, but it’s just a stepping stone to augmented reality,” said Meta CEO Mark Zuckerberg to *Leader Telegram*. “We are going to build something that is 100 times easier to use than the Macintosh and 100 times more powerful” (Liedtke). Virtual reality aims to completely immerse the user in a fabricated experience, while augmented reality works alongside and enhances real-life events. The difference may not seem that drastic but in terms of business applications it is immense. Virtual reality, by nature, will forever be confined to the entertainment industry and a few select educational simulations. Augmented reality, because it inherently deals with the tangible world, has all of the depth and genre possibilities as the real world.

Why Magic Leap?

Magic Leap has the technological advantage over other augmented reality companies in development, such as Microsoft’s HoloLens and Google’s Glass. These have tried to use unnatural ploys and tricks to make a user’s eyes believe a series of lightwaves is a representation of reality. The most common way they do this is with stereoscopic 3-D, which creates an artificial

sense of depth by projecting identical images from different angles. This duplication forces users to focus on both the illusion directly in front of their eyes and the real world in the distance, which can make them feel dizzy, nauseous, and develop headaches (Hollister). These are unacceptable side effects that will no doubt cause our competitors to fail in the market. No one will want to regularly use a technology with such unpleasant tradeoffs, and one of augmented reality's most interesting if not most important characteristics is its wide set of applications. Consumers can and will want to use AR regularly and for hours on end.

Magic Leap is unlike these other products. Instead of relying on old stereoscopy – which has been a popular gimmick since the 1850s! (Timby) – it vibrates a tiny optical fiber in a spiral pattern to project images in a hyper-realistic manner (Hollister). The product itself is divided into two pieces: the headset and the Lightfield™. The wearable technology, in its final form, will be as light, compact, and unobtrusive as a pair of ordinary reading glasses. It will use small fiber optic projectors within the headset to cast images directly into the user's eyes (Hollister) and sensors to blend the fictional images with physical reality (Morra). There will also be tiny eyeball and finger tracking technology so that users can interact with the projections that they see around them (Metz).

The Mixed Reality Lightfield™ is our name for what will populate this new “dimension” of creation. It's “a living river of light sculpture, which can transmit to you the feelings of magic and experience and presence” (Atoms Not Included). Once users have bought their headset from us, they will need and demand content to engage with. Advertisements, educational modules, how-to simulations, time-saving hacks, and countless forms of entertainment will need to be created and sold to eager consumers. It is a brand-new medium with extreme freedom of expression that will need to be shaped by a few enterprising entrepreneurs. Best of all, the Lightfield™ is pure code. Make buildings and craft landscapes without touching the expenses or complications of physical materials.

The Magic Leap headset and Mixed Reality Lightfield™ are going to take the market by a

storm. Consumers will be eager to explore all facets of the new technology and there are ample opportunities to make it big by preparing for those interests.

Value Proposition

The value of investing in Magic Leap and associated technologies is not to be underestimated. It is truly the “third dimension of computer interfacing” (Kipper). If we consider command-line computing – code – to be the first dimension and the graphical user interface – drag-and-drop, point-and-click – to be the second, then augmented reality is easily the third and most advanced way of interacting with a computer. It is more natural, inherent, and comfortable. “Computing should match human experience, it should respect human physiology” writes Abovitz (Welcome to Magic Leap). By synthesizing the world of data and the world of the physical, we cut out the middleman and make all computer interactions more graceful, accessible, and efficient.

Beyond that, there is also the truly invaluable significance of being able to *create objects out of thin air*. The ordinary constraints of time and space are almost eradicated when we consider the full ramifications of such a development. Consider a commuter student rushing to make up a lab or a child’s frustration when their parents don’t have time to teach them knitting . With a single purchase, the Magic Leap headset opens up doors that are normally closed simply because of the physical limitations of the tangible world.

Market Success

Augmented reality has a rich history in both scientific exploration and the entertainment industry. Our fascination with three-dimensional objects has been around for so long that the first 3D film, *The Power of Love*, was made nearly a hundred years ago, in 1922. The first head-mounted display was finalized in 1961 (Metz), while the first successful AR system was made in 1968. By 1975, people could interact with the superimposed objects made by those systems. It

was finally defined as a medium in 1996 and since it has made its way out of bulky, laboratory-restricted headsets and into our smartphones (Kippler).

Science fiction has long been enamored by the idea of high-tech HUDs, beautiful holograms, and effortless data streams as being part of everyday life. While many people may not know the definition of augmented reality or even recognize the term, they could easily identify it in modern action movies, military video games, and science fiction novels. In this particular respect we believe that augmented reality's chances of success will benefit enormously. Many a new medium has tried and failed to be accepted by the public simply because the concept is too foreign to invest money or time in. Good ideas have sunk because a consumer who would otherwise adore the product was unable to conceptualize the experience of the product being sold (Carey). Augmented reality has a step up on these failed media by nature of it being so well-represented in media. To describe Magic Leap in layman's terms, one can reference one of hundreds of popular movies – “It's like Iron Man's computer,” you might say, or , “Remember the map in Avatar?” The public is already well-acclimated to the idea of AR and has been eager to try it for decades. Now, Magic Leap is a reality, and consumers are excited to finally get their hands on it.

Conclusion

Magic Leap will touch every aspect of life and transform it for the better. Arts, education, safety, industry, gaming, socializing, and everyday tasks will all be enhanced for efficiency, enjoyment, and ease. Anyone and everyone can find a niche market within this third dimension of computer interfacing. Thanks to widespread understanding of the medium and support for its production, we are confident that it will be a profitable success. Now is the time to invest in Magic Leap.

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