# YULIO
# VR FOR BUSINESS

Industry and Implementation Overview

## THE PROMISE

The promise of virtual reality has always been enormous. Put on these goggles, go nowhere, and be transported anywhere. Born of technology, virtual reality at its core is an organic experience.

Yes, it’s man meets machine, but what happens is strictly within the mind.

# THE HIGHLIGHTS

## WHAT'S AT THE CORE?

VR's real power is in its ability to tell visual stories without ambiguity.

Businesses which use images to tell stories or make sales can do so better with VR – with greater immersion and less ambiguity than 2D.

## BUSINESS V. CONSUMER

Somewhat slower consumer headset adoption isn't reflective of VR business uses.

Business can amortize the costs of hard-ware and content over many clients, and let customers use VR to achieve a specific goal, vs. adopting it into their leisure time.

## INDUSTRY PLAYERS

The major tech companies and venture capitalist firms are betting on big things from VR in 2017.

Apple, Google and Facebook are all making significant investments.

Smaller firms are receiving VC funding at a significant pace.

## ACHIEVING ROI

The winning systems for integrating VR into business will be those that reduce friction and work with existing business process.

And help consumers and clients with greater understanding, visualizing or experiencing to speed time to sale for business.

# DEFINING THE LANDSCAPE

## VIRTUAL REALITY

VR is simply an immersive experience in an alternate space – not necessarily one that doesn't exist, just not one where the viewer is located.

## AUGMENTED REALITY

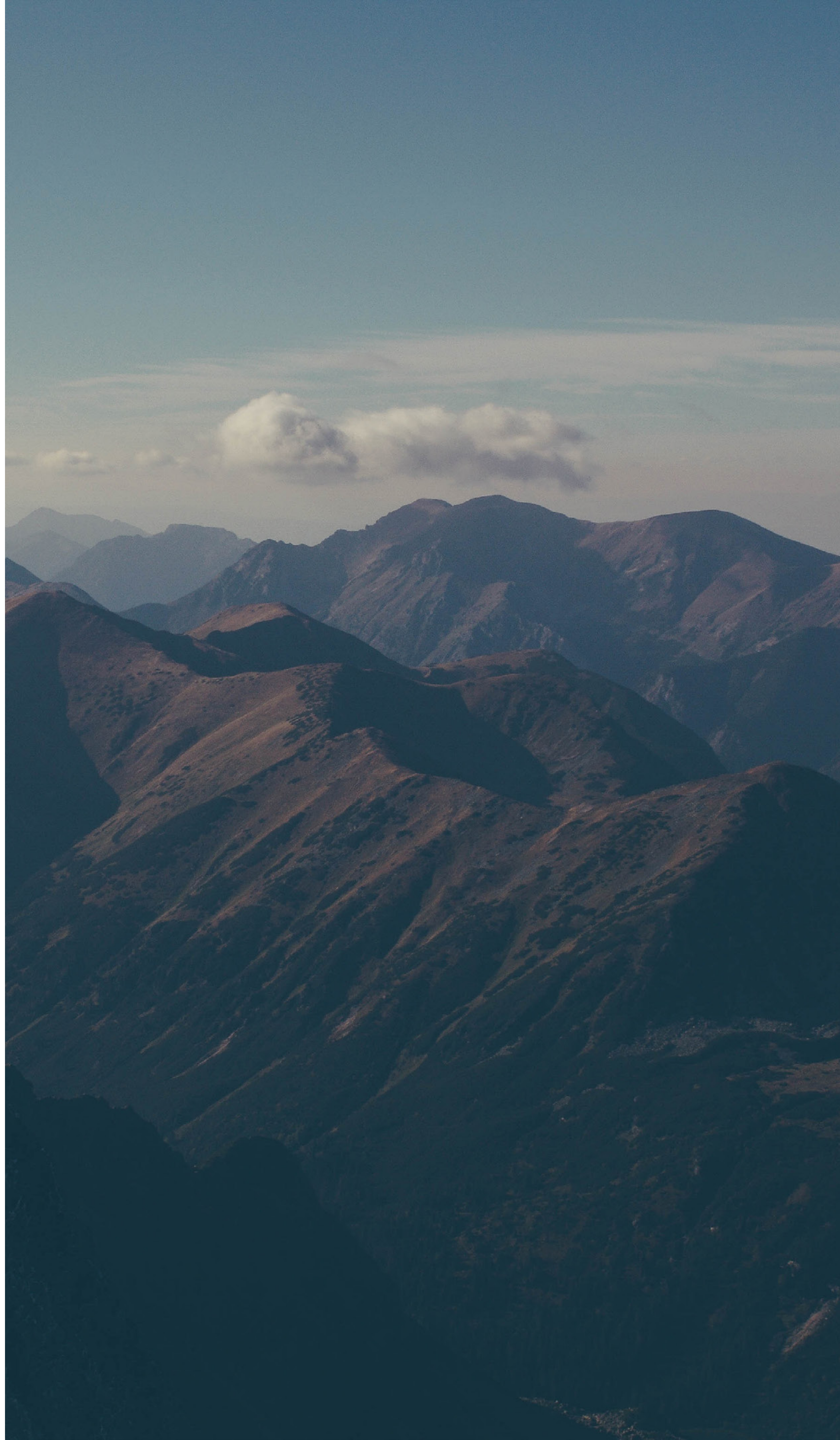
AR is when computer generated images are superimposed on the real world. The views are combined, but don't really interact.

The most widely known example is the Pokemon Go craze from summer 2016.

## MIXED REALITY

is a blend of these ideas, where the user can see the real world, then add elements of the virtual world and they behave together as if they are in real space.

This is the least well known of the the three, mostly because the technology to do so seamlessly isn't widely available.



# WHY NOW IS THE TIME FOR VR

VR in various formats has come and gone before, so why are we now at the tipping point where it is part of business practice? There are some key moments that have made it possible:

## TECHNOLOGY

Access has been democratized. Google Cardboard headsets are ~$15 The tech giants are moving. Google is rapidly developing for the Daydream, Facebook invested $2B in Oculus Rift and will be keen to show everyone why they did so, and Apple is hiring VR experts.

## INDUSTRY

Venture Capitalist investment in VR grew significantly in 2016 and is expected to continue through 2018. Content is king, and the hardware players know it. Jobs for VR developers grew rapidly through 2016.

## B2B BUYS IN

Going beyond gaming; VR is moving into business, in design, marketing and sales. Ford is experimenting with using it to evaluate vehicle design before building begins, estimating saving $8M per year. Lowe's has experimented with the Holoroom, an experience where customers can try out design and finishes before buying.

Carnival cruises worked with Sony to let in-store customers explore its ships. And there are significant implications in military and medical training – anywhere real life practice would be dangerous or expensive.

# CONSUMER DISAPPOINTMENT

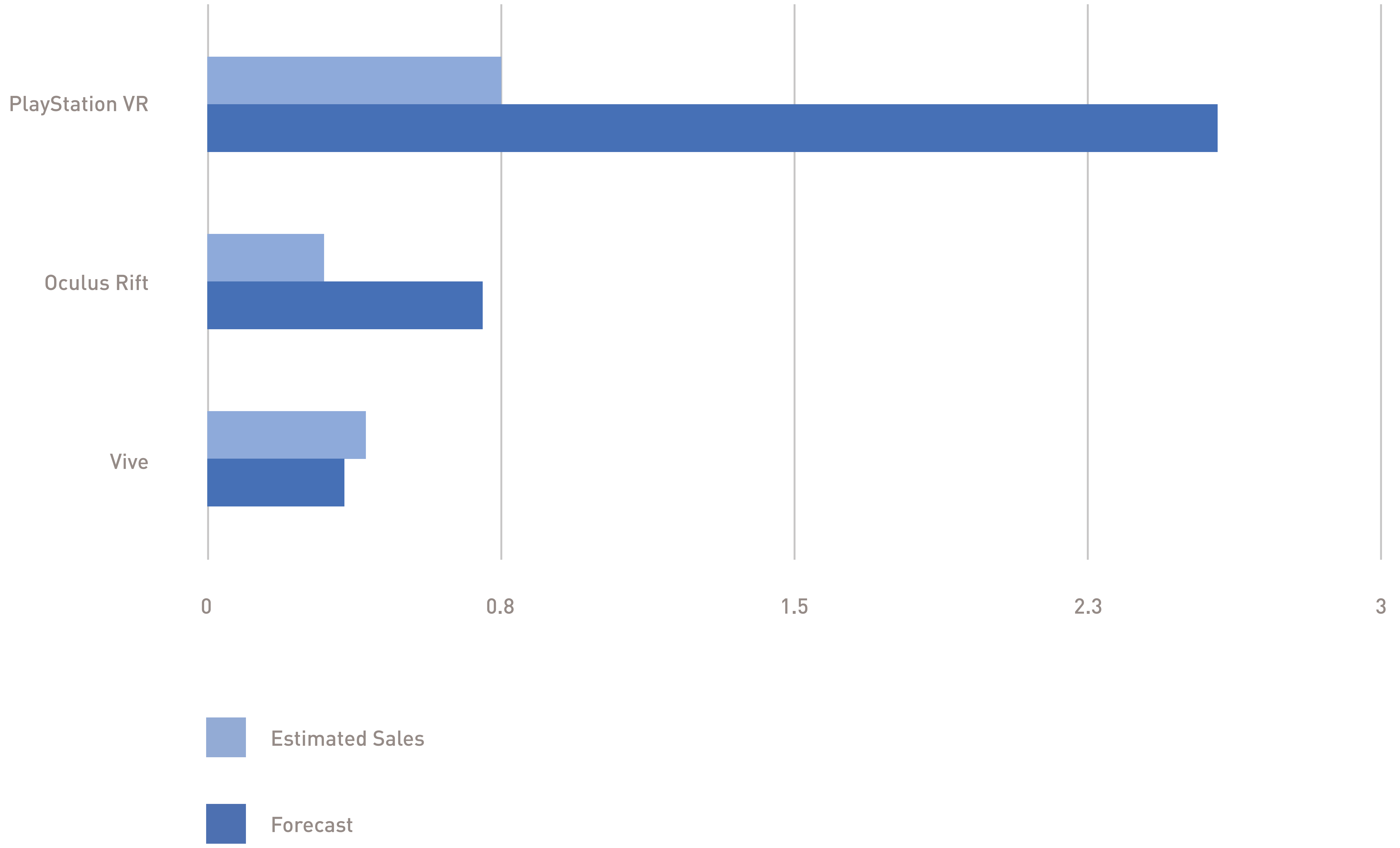
Let's address why reports of VR in the consumer space may say it is lagging or overhyped

VR headset sales and expectations of ubiquitous headset ownership have lagged, but were so strong that anything less than heavy adoption feels like failure.

Reasons include price and lack of content.

But Business VR, used briefly to achieve a customer goal like visualizing a purchase, is likely the best use of the medium.

HEADSET SALES IN MILLIONS






Source: SuperData as quoted in The Wall Street Journal

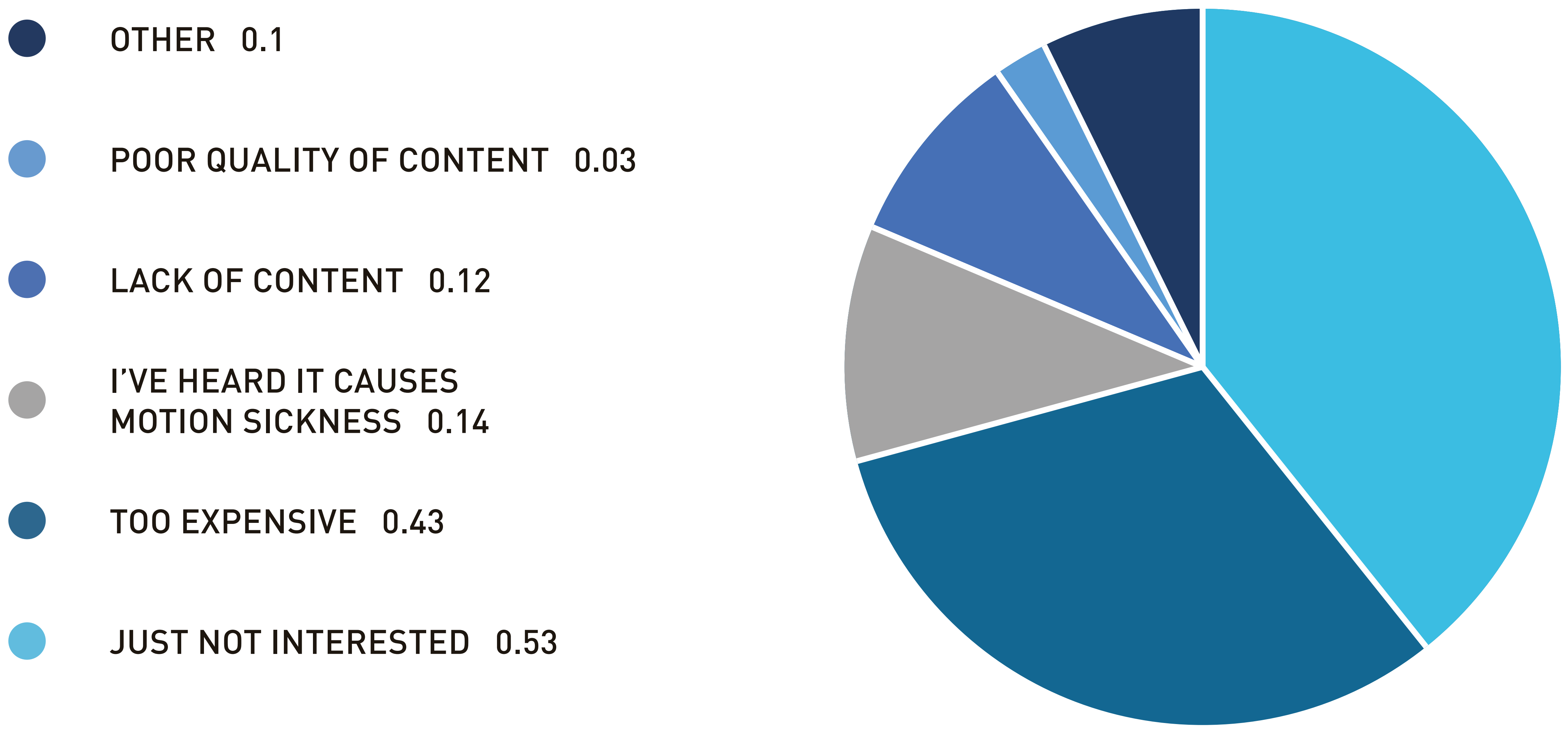
YULIO VR

# CONSUMER DISAPPOINTMENT

What does it mean for business?

Many of the reasons people have been uninterested in buying a headset for personal use aren't applicable to business.

B2B VR users create their own content, amortize the costs over hundreds of users and allow for brief experiences that achieve an objective, like previewing designs or investigating a purchase.



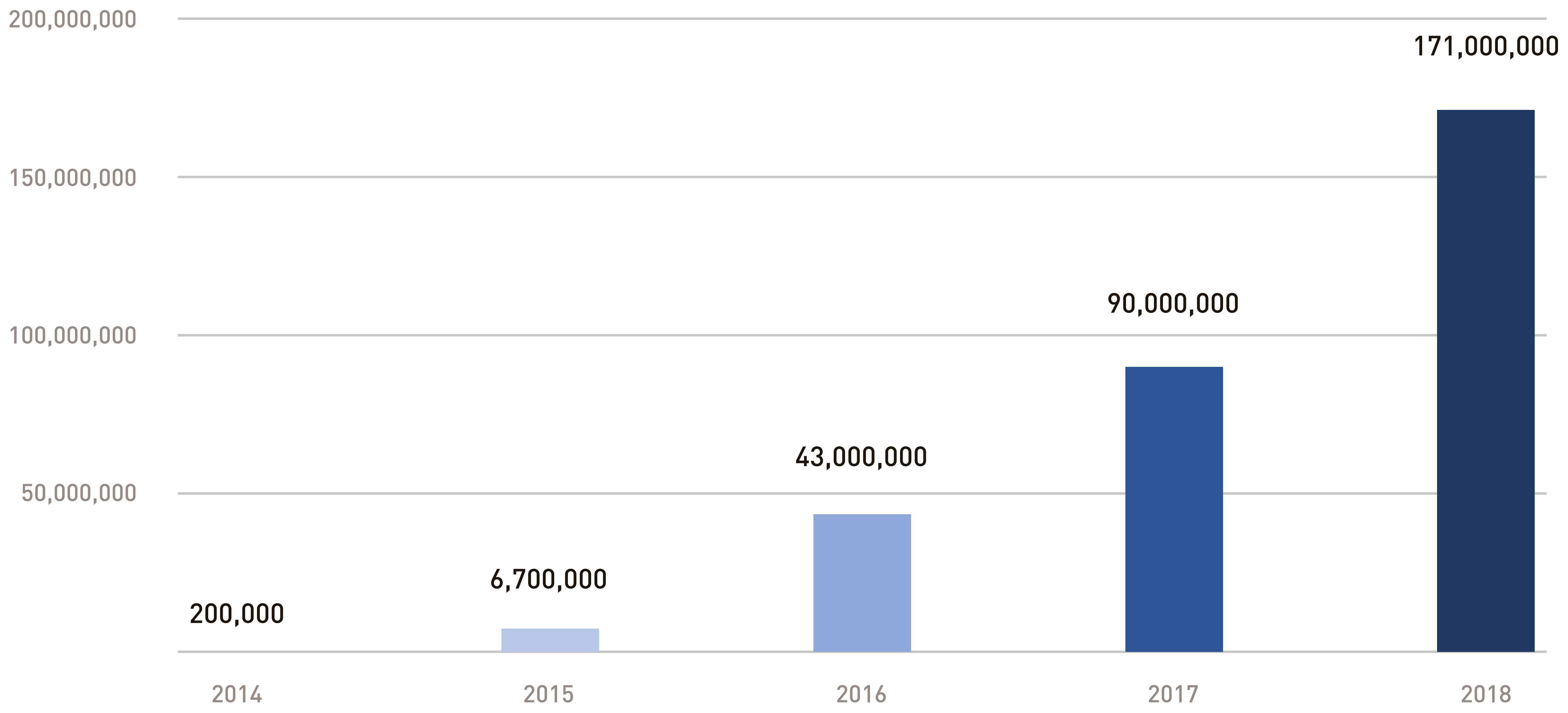

Source: Thrive Analytics, "Virtual Reality Monitor: 2017 Wave 1- Highlights", May 2017

# CONSUMER DISAPPOINTMENT

What does it mean for business?

Analysts remain optimistic about consumer sales, with users nearly doubling from 2017 to 2018. Revenue from the sale of devices is estimated to grow 5x in the next 3 years

VR USERS BY YEAR






Source: WebPage FX Data

# COMPARING VR TYPES

3 KEY VR TYPES

# TETHERED

Tethered is likely what you think of when you hear VR. Oculus Rift and HTC Vive are the most well known hardware versions of these. This is the most immersive form of VR, with 6-degrees of freedom, where the viewer can look around and move through (controlled) space.

**PROS:** by far, the most immersive experience, able to process more complex data for presentation.

**CONS:** requires significant hardware investment of both VR gear and computing power, isolates the user, frequently causes nausea.

3 KEY VR TYPES

# MOBILE VR

Mobile VR is the ability to experience VR with an untethered headset (like Google Cardboard or Samsung Gear VR) and a viewing engine, usually a smartphone. Provides 3-degrees of freedom to track head movements and allow 360 views.

**PROS:** VR experiences can be shared anywhere, complete freedom from cables, less isolating for the viewer.

**CONS:** less immersive than tethered, does not allow for movement through space, only change of gaze.

3 KEY VR TYPES

# BROWSER

Experiencing VR over a browser, on any device, without goggles. While not a true VR experience, it is potentially useful to share VR designs more broadly and does provide 360° views the user can pan around.

**PROS:** an option for motion sensitive individuals, a way for a larger audience to experience a space or presentations, without headsets.

**CONS:** not a true VR experience.

3 KEY VR TYPES

# COMPARING THE OPTIONS

| | Immersion Level | Easy to share and view remotely | Ease of setup | Ease of viewing | Risk of negative viewer experience | Price |
|---|---|---|---|---|---|---|
| **Browser** | Moderate | Yes | Best | High | None | Authoring software only |
| **Basic mobile** (Google Cardboard) | Good | If viewer has headset | Good | High | Unlikely | Inexpensive ($10) |
| **Advanced Mobile** (Better viewer like Samsung Gear) | Very Good | If viewer has headset | Good | High | Unlikely | Moderate ($100) |
| **Tethered** | Best | No | Poor | Need assistant to ensure safety | More likely | Can be $5k |

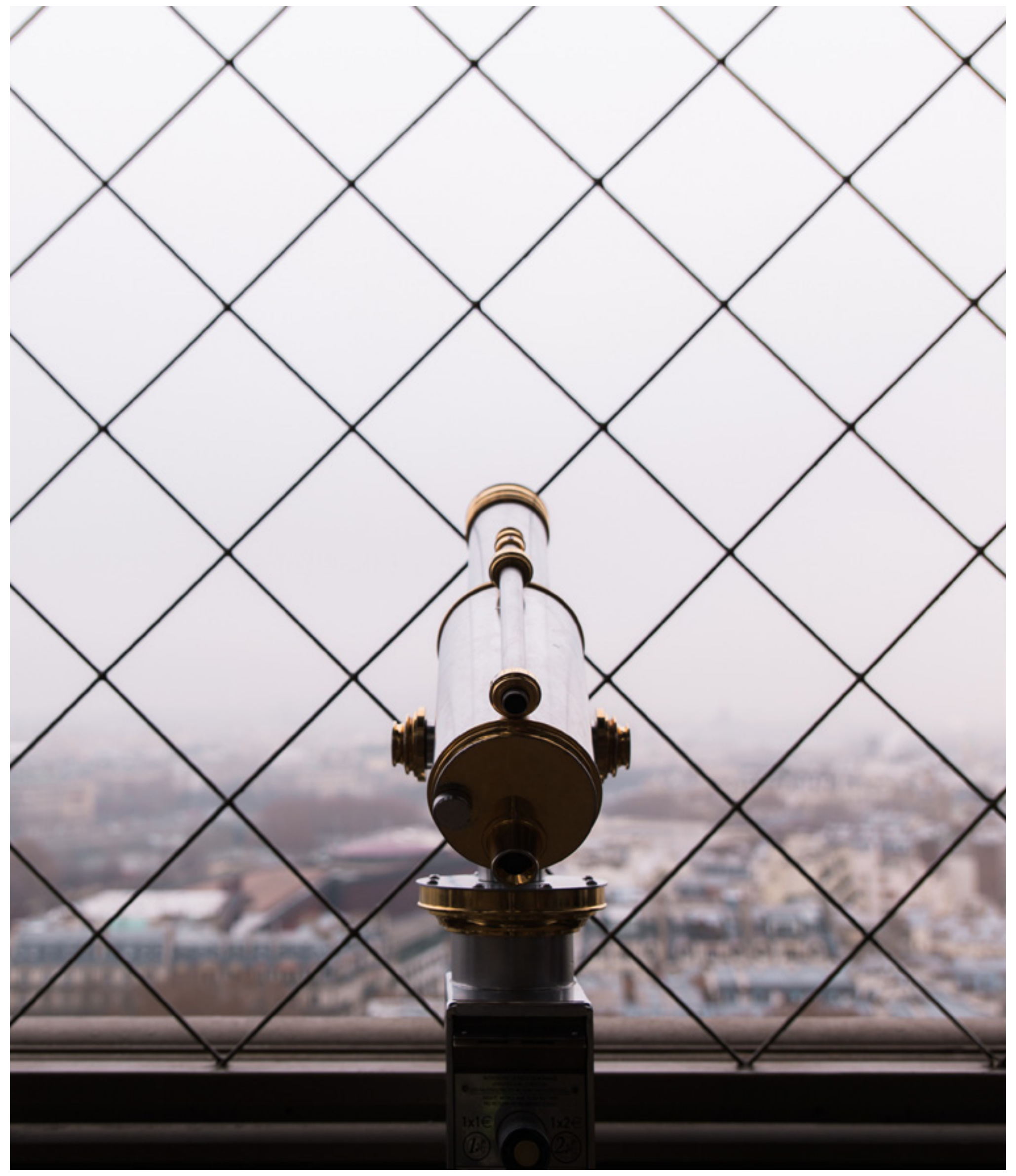
# VR MEANS BUSINESS: USE CASES

VR MEANS BUSINESS

# VR'S WINNING PATTERNS

Successful VR Use Cases Typically Fall into One of Three Categories. VR can brings us to something that:

**DOESN'T EXIST YET**



**EXISTS BUT IS FAR AWAY**

**IS TOO LARGE, EXPENSIVE OR IMPRACTICAL TO MODEL**

VR MEANS BUSINESS

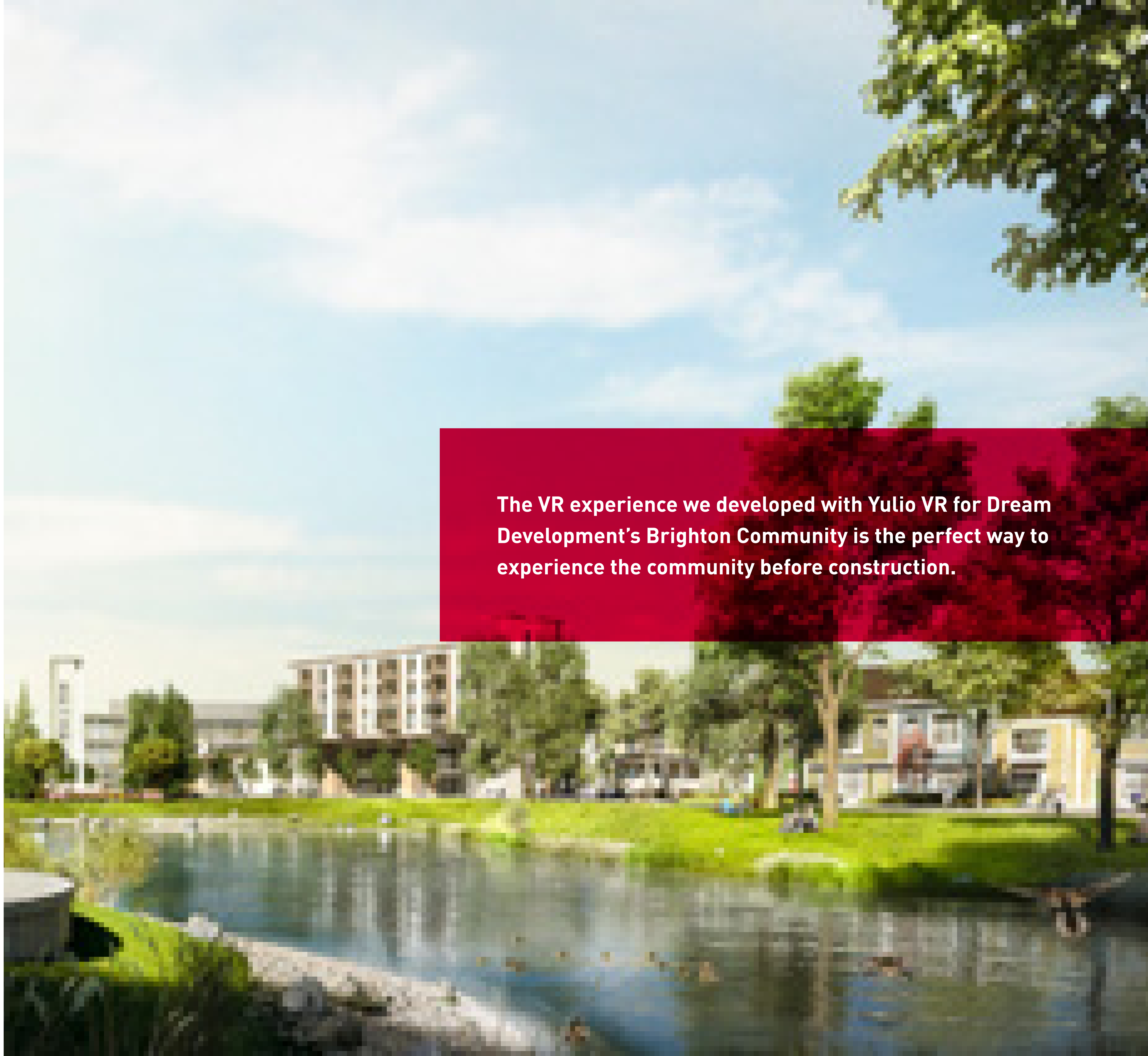
# MAKING IT REAL

**In the fields of architecture, planning, and interior design, VR has the power to create an unambiguous translation of a design story, which has been impossible with existing tools and language.**

Dream’s Brighton community in Saskatchewan wanted to go beyond building model homes to show potential buyers the outdoor spaces and common community elements.

Without VR, it would have been impossible to experience spaces of this scale, including shopping areas, streetscapes and huge parks.

NORM LI



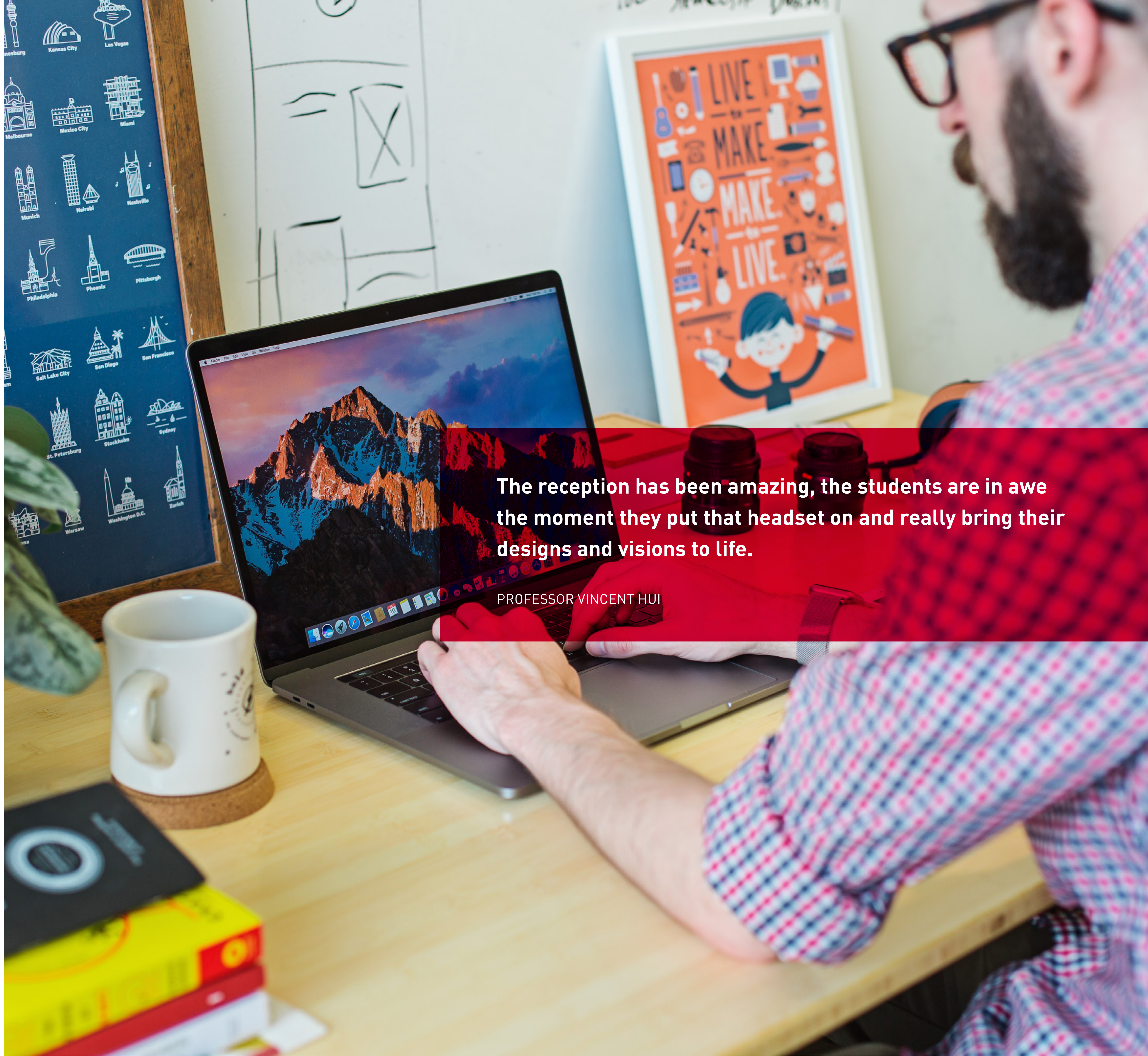
**The VR experience we developed with Yulio VR for Dream Development’s Brighton Community is the perfect way to experience the community before construction.**

VR MEANS BUSINESS

# NEXT LEVEL DESIGNERS

**The next generation of design practitioners are working with VR as a part of their workflow from the beginning.**

Ryerson University uses VR in both its architecture and interior design programs so that students can collaborate, get feedback and build portfolios in VR.



**The reception has been amazing, the students are in awe the moment they put that headset on and really bring their designs and visions to life.**

PROFESSOR VINCENT HUI

## WHAT YOU CAN ACHIEVE WITH VR

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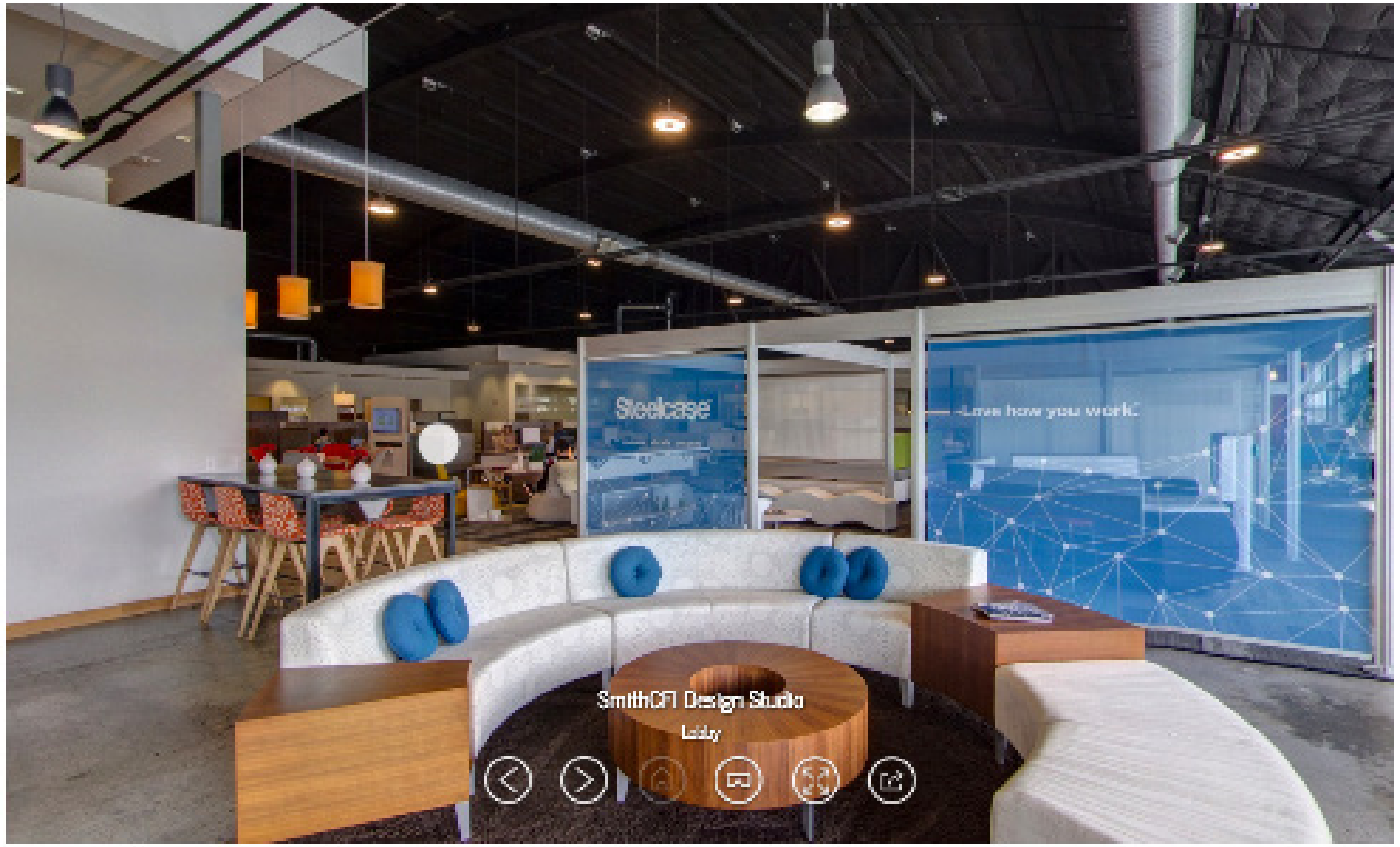
## USE VR DESIGNS TO REACH POTENTIAL CLIENTS

Share your portfolio on your website, and on social media. Track viewers and offer quotes, headsets or design tips in return for an email lead.



WHAT YOU CAN ACHIEVE WITH VR

# KIOSK MODE FORGES CONNECTIONS

With a kiosk setup, customers  have immersive VR experiences with a possible future.

Not just seeing and but being immersed in potential.

Creating emotional connections. Reducing time to sale.


WHAT YOU CAN ACHIEVE WITH VR

# LET SALES SHOW, NOT TELL

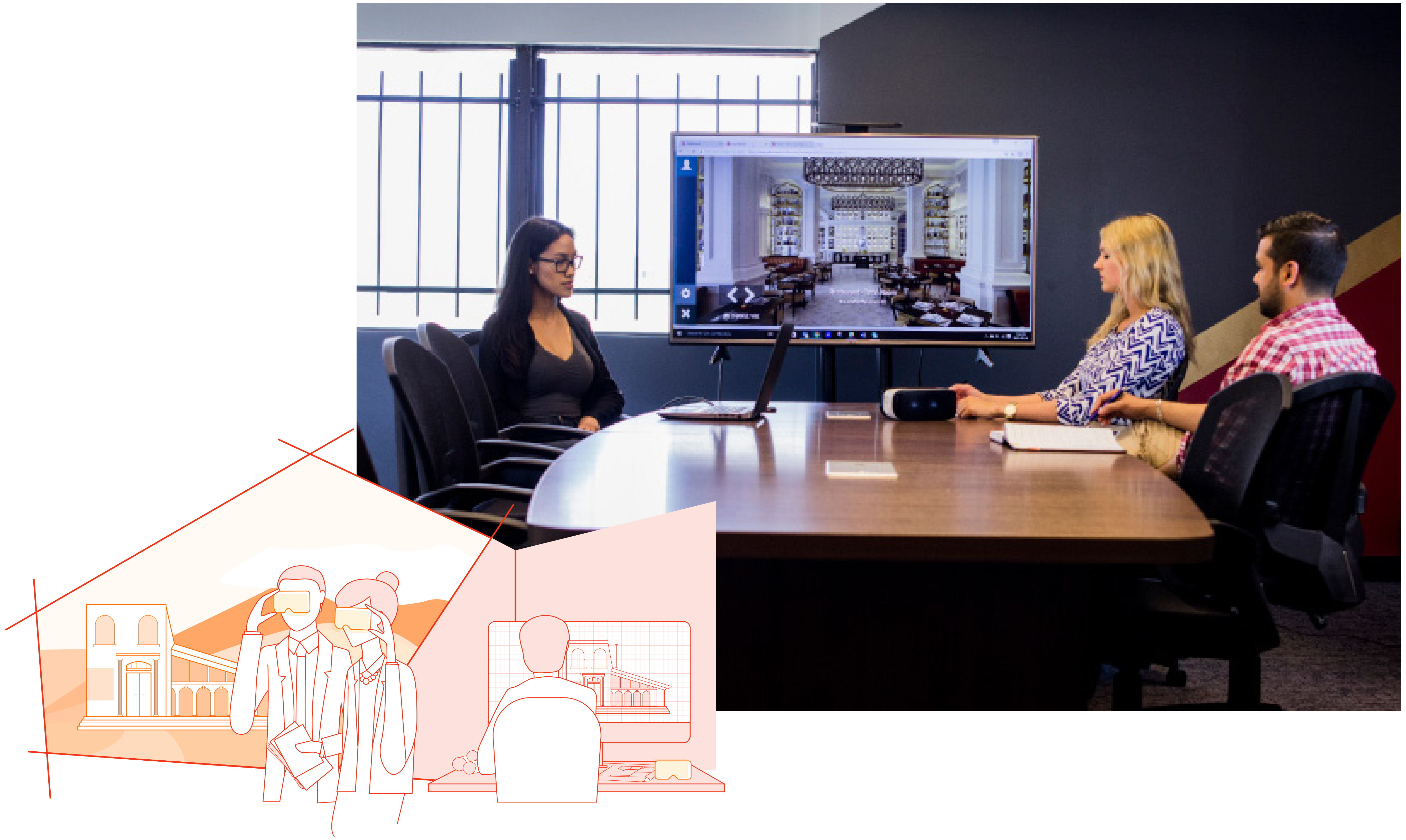
Have sales carry an impressive portfolio in their pockets. Create memorable presentations and connections to spaces you've already created to drive new business.

WHAT YOU CAN ACHIEVE WITH VR

# VR FOR IMMERSIVE DESIGN PITCHES

VR pitches allow your clients to see your vision with no ambiguity.

They speed time to signoff, simplify feedback and reduce costly changes, driving ROI before construction begins.



WHAT YOU CAN ACHIEVE WITH VR

# SHOW THE POWER OF CHARITABLE GIVING

Create emotional connections to the future of your project with VR views at fundraising events.

Let donors see the impact of charitable giving and make future projects real today.


**IN 2016 UNICEF FOUND 1 IN 6 PEOPLE PRESENTED WITH VR EXPERIENCES ABOUT THE SYRIAN REFUGEE CRISIS BECAME DONORS...**

**TWICE THEIR NORMAL RATE.**

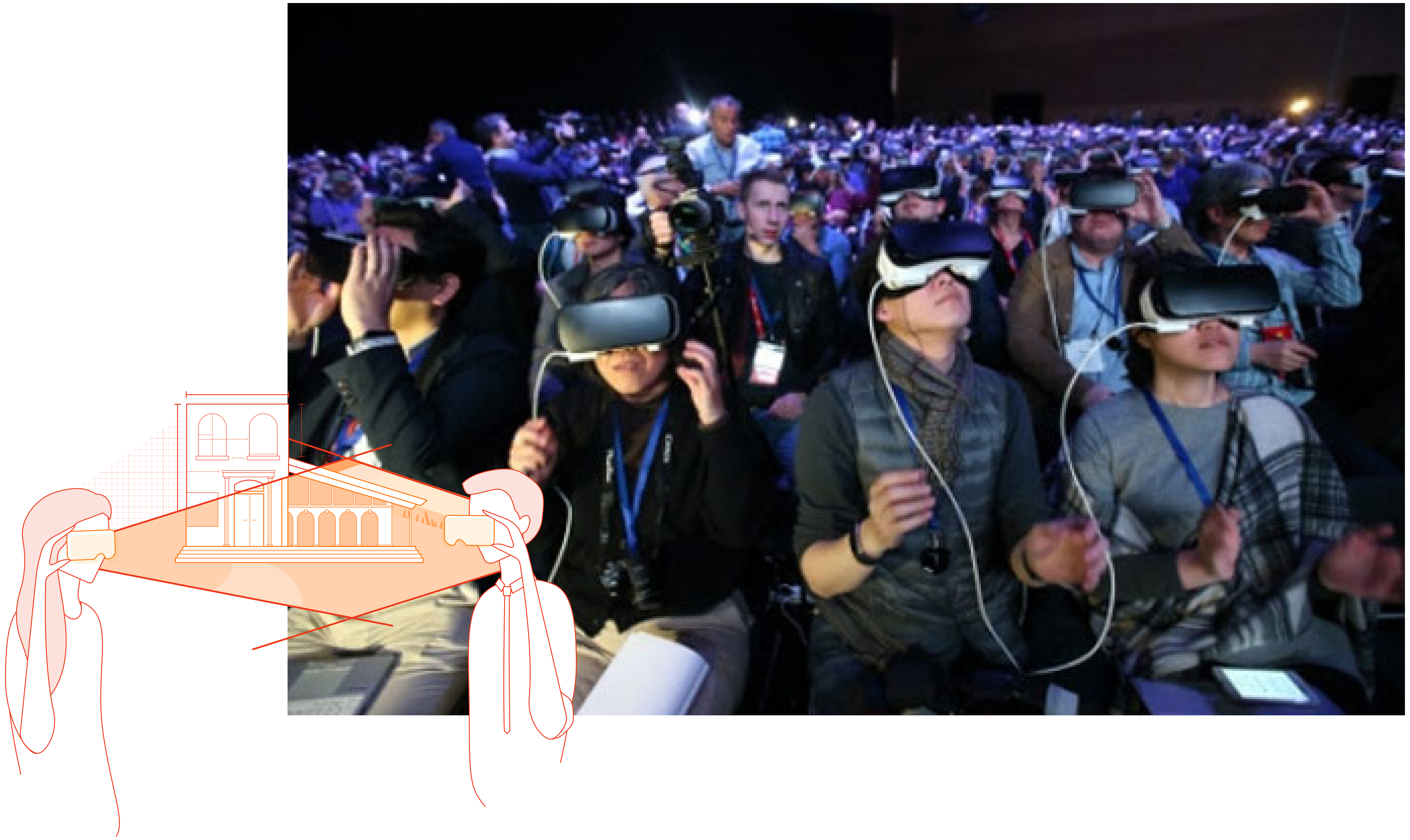
## WHAT YOU CAN ACHIEVE WITH VR

# NEXT LEVEL EVENTS

Demonstrate products, including ones too large or too complex to show at trade shows.

Engage attendees with immersive site surveys or show off your portfolio.

Go bigger and more interactive than video and stand out.



# BEST PRACTICES FOR BUSINESS INTEGRATION

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# KEY INTEGRATION POINTS FOR VR

Any solution you choose must integrate across the three key areas of your workflow, from authoring, through storage and sharing to viewing. Investigate how any VR partner can support you across these areas.

## AUTHORING

The stages of presentation, collaboration and the levels of fidelity at which you will show clients VR experiences may not be clear at the beginning of your VR integration. However, choose an experience that makes anything possible. A beautiful and immersive experience that requires 3D programmers is very different from one that works with your existing tools.

## SHARING

Look for options that allow you to author once and share many times. Will the projects be available in a few years to share in a portfolio? Will they function only on certain hardware that may become obsolete? Can your team collaborate on a design or does the storage and pricing model of the solution mandate it is for large scale, final projects only?

## VIEWING

This is where hardware options will come into play. Is the experience only available in a tethered VR solution in your office? Is it viewable to a client in a different county on a laptop? Which solution will offer a non-isolating experience and create a positive reaction to the images being shared? What hardware does the client have to have?

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BEST PRACTICES FOR BUSINESS INTEGRATION

# AUTHORING SIMPLE VR EXPERIENCES

Barriers to implementation and use of any business software are usually caused by making your team change their process and workflow. People are naturally resistant to change not only because of the discomfort, but also a loss of efficiency.

Check with a vendor about the transition from your existing 2D render to VR experience. What are the interim steps and how long does it take to create the VR experience? If programming skills are involved, how intense are they and how much can be leveraged between projects?

A lengthy authoring process which doesn't use the tools you already have in house may result in good experiences but will make creation inefficient and probably result in VR being used for only one stage of major projects.

By contrast, a simple process with turnkey outputs can potentially be used from pitch to final presentation and portfolio at multiple levels of fidelity.

One valuable use of VR is showcasing variants to clients – in lighting patterns or colour schemes, and in exploring sightlines.

Complicated process will mean the variant renders aren't feasible and limit your ability to use VR to gain client feedback and quick decisions.

BEST PRACTICES FOR BUSINESS INTEGRATION

# STORING VR EXPERIENCES

Look for an asset storage component to a VR solution that has security measures for your intellectual property, and that can be reliably accessed for an indefinite period.

Like any business software solution, the VR system you choose should be reliably world class in its service level agreements and ability to enhance, protect and present your intellectual property.

Ask any potential vendors to outline their pricing model. Any model which is based on a per project basis might limit access to your projects. If you are permitted only a few projects per month, they may not be accessible as part of long term storage.

Think about the potential for designs to be shared not only with clients, but long term as part of an online portfolio, used in PR releases and accessed in real time during pitches as you show potential clients your experience with similar spaces.

BEST PRACTICES FOR BUSINESS INTEGRATION

# SHARING VR EXPERIENCES

Look for a solution that offers you both a static experience, and one where you and your clients can move through space.

A key challenge with VR is that viewing is an isolating experience. When you have a client wear a headset, you are essentially blindfolding that person. It creates discomfort for many people, either because they fear looking foolish in front of their colleagues or in some cases, due to nausea.

Look for solutions that breakdown these barriers. You won't want to have to train clients how to view your designs – no one wants to be guided through complicated commands or which buttons to push in front of their colleagues, so you want something the end user finds intuitive.

Find a system that lets you tell your narrative. Ideally there will be a way to direct the viewer's attention to specific elements of the design, rather than have them wander on their own. Their response and feedback will be much more coherent when their gaze is properly directed, and the experience will be less isolating.

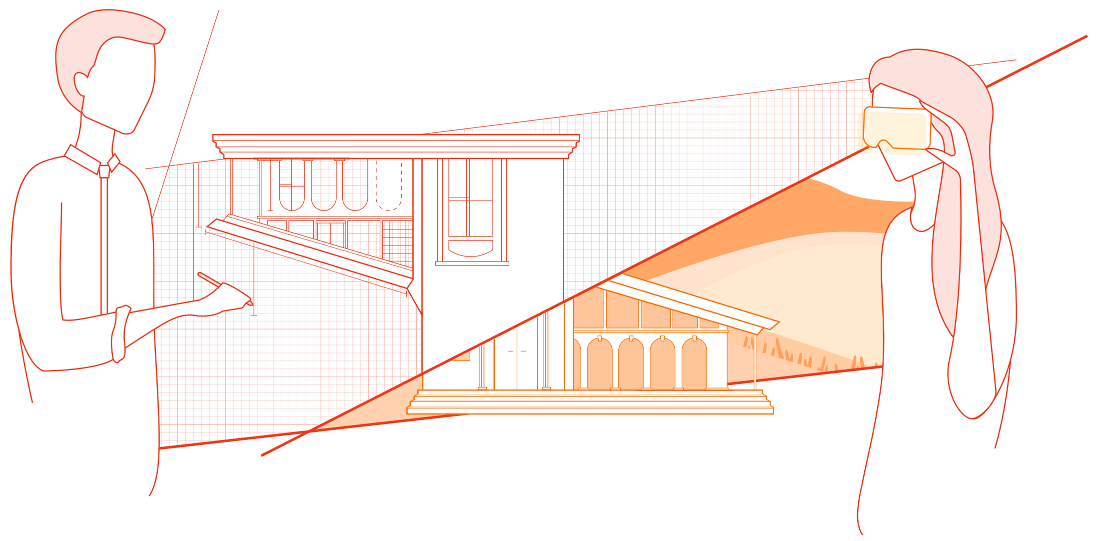
Investigate how design elements can be linked. Does the software allow for hotspots, or for the presenter to easily switch views?

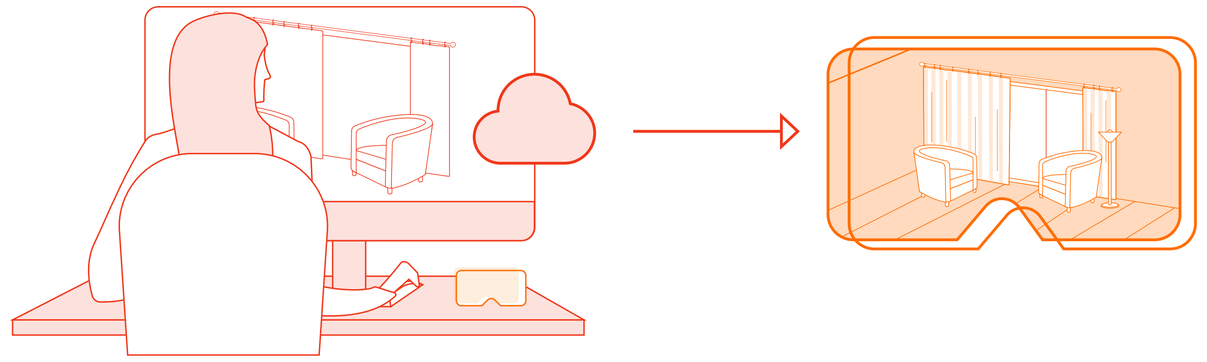
A fishtank or screen based view is also important. You will encounter motion sensitive people who are reluctant to try the headsets,

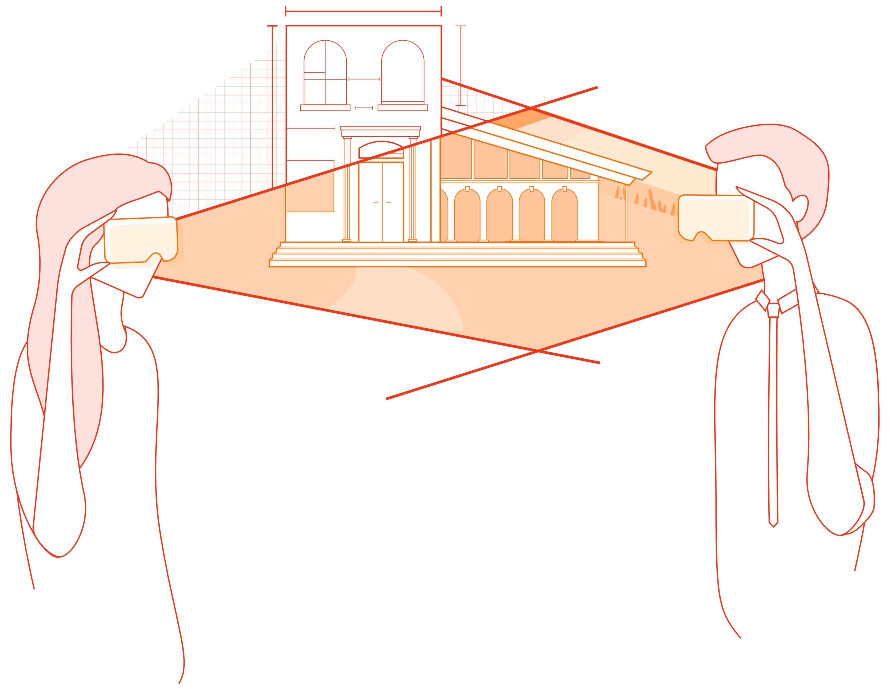
The solution should work whether you are presenting something in person, or remotely. Consider the presentation modes that fit into your workflow when evaluating sharing.

BEST PRACTICES FOR BUSINESS INTEGRATION

# OTHER INTEGRATION CONSIDERATIONS







## HARDWARE

Is sharing the experience technology agnostic, or will you have unusable experiences in a few years if certain viewers are obsolete

## IT INTEGRATION

Does adopting this technology require integration with your storage and security systems, and what is the extent of that work.

## TRAINING

How intuitive is using the viewer, or will clients need training to view your designs.

BEST PRACTICES FOR BUSINESS INTEGRATION

# IN CONCLUSION

With investment from the major consumer tech firms, VCs and increasing interest from industry in using VR for sales and marketing, VR is poised for growth and adoption in the coming months.

Integrating VR into workflow should be a primary consideration when choosing a technology for business environments.

The best solutions offer end to end integration, from authoring the experience through storing and sharing it, and are available in mobile and static formats.

The real power of VR is in storytelling. The right VR solution will strike an optimal balance between experience, communicating your message and practicality of authoring and allow for easy end to end integration of these key stages.


IN THE END THERE ARE TWO KINDS OF PEOPLE...
THOSE WHO THINK VR WILL CHANGE THE WORLD,
AND THOSE WHO HAVEN'T TRIED VR.
JEAN-MICHEL LEMIEUX, SHOPIFY


# THANK YOU

TO LEARN MORE ABOUT INTEGRATING VR INTO YOUR BUSINESS, CHECK OUT YULIO.COM/WHITEPAPERS

AND WHEN YOU'RE READY TO BEGIN YOUR DESIGNS, VISIT YULIO.COM TO SIGN UP FOR A FREE ACCOUNT.