

# VR/AR/MR Offerings



Our specialized team of **XR UX Experts** have the experience and the know how to understand your needs and develop a customized plan ensuring you're using VR/AR/MR to its fullest potential.

## FOUNDATIONAL RESEARCH

We can help discover where XR should play into the customer journey and how customers might embrace the experience.

### WHAT YOU GET

Customer Needs & Expectations  
Opportunities and Areas of Focus

### HOW WE GET IT DONE

Ethnographic research  
Literature Review  
Persona Development  
Customer Journey Mapping

## IDEATE & VALIDATE WORKSHOPS

An effective XR Solution should fit its intended purpose; validate your solution for a desirable and viable experience.

### WHAT YOU GET

Team Alignment & Ideation  
Actionable Recommendations

### HOW WE GET IT DONE

Design Thinking Workshops  
Customer Validation Testing  
UX Readiness Scores

## XR STRATEGY SERVICES

Understand ways to establish your presence in the XR ecosystem and how best to define your vision.

### WHAT YOU GET

XR Vision & Strategy  
Competitive Analysis

### HOW WE GET IT DONE

Competitive Benchmarking  
Customer Sentiment Surveys

## ADVANCED XR USABILITY PROGRAM

Does your XR Solution work as it was intended to? We find moments of frustrations & turn them into directive insights.

### WHAT YOU GET

Improved User Satisfaction  
& Performance

### HOW WE GET IT DONE

Usability Testing (Interaction, Locomotion & Controller Schema)  
Physiological & Simulation Data  
Presence & Immersion Evaluation

## IMPACT & EVALUATIVE SERVICES

We take the guesswork out of measuring your product's impact and help you strategize how, where & when to incorporate XR solutions.

### WHAT YOU GET

Product Effectiveness & Impact  
XR Company Strategy

### HOW WE GET IT DONE

Surveys & Interviews  
XR Pipeline Evaluation  
Areas of XR Opportunity Analysis  
ROI Design Assessments

# VR/AR/MR Immersion & Believability



## HOW IT WORKS

XR applications that make users feel engaged and connected with the content can be extremely powerful experiences; however, the reverse is true for ones that break immersion & presence. This can throw a wrench into the entire experience and leave your users with a poor impression, despite all your development efforts.

Our researchers, with XR industry-level & academia expertise, will work with you to find the appropriate measures of immersion & believability at any stage of development: from early design to prototype phases to alpha & beta releases to fully released product assessment.

## RESEARCH EXPERTISE

Physiological & Biometric Data Capture

Cybersickness & Simulator Sickness

Emotion & Affect Quality and Intensity Scales

Sense of Agency

Perception of Time

Measures of impact including **Repeatability, Retention, Learnability** and **Shareability**

## BENEFITS OF BELIEVABILITY

A more **memorable & engaging** product or service

Users easily entering into the **flow state**, losing track of time and staying invested longer

Ability to bridge the gap between **theory & practice**

Improved user **satisfaction & performance**

**A safe environment to make mistakes**

Potential for **embodied learning & enhanced recall**

## TERMINOLOGY



Flow  
State



## IMMERSION

How engaged a user is based on sensory and perceptual stimuli and interactions.



## PRESENCE

The subjective state in which the user feels they are “in” the experience. They should feel connected to and interact with the surroundings.



## BELIEVABILITY

This is the next step to presence, with increased interactivity and cohesiveness. Keep in mind that not all applications need to follow the rules & physics of the real world to be believable to the user.

# VR/AR/MR Ergonomics



## HOW IT WORKS

Though free from the constraints of traditional physical screens and keyboards, XR does not guarantee optimal design, usability, or form factor. Spending more time viewing devices in suboptimal position can hurt posture, strain necks, or over-exert the eyes, resulting in impairments to breathing, blood flow or even mood. Users can even experience severe strain or discomfort depending on the size of the controller compared to their hand size, if/when a headset does not accommodate aspects such as their glasses or their hair or if they cannot properly see the content. The design of XR technologies should also focus on user comfortability to ensure overall satisfaction.

Our researchers, with XR industry-level & academia expertise, will work with you to uncover best practices in posture, positioning, form factor, visual acuity, alertness, and other health options for your users to better emphasize comfortability and reduce unnecessary strain when using the latest XR technologies.

## RESEARCH EXPERTISE

### Subjective Task Load Index Measures

- Mental, physical, & temporal demand
- Discomfort & frustrations

### Objective Task Load Index Measures

- Motion tracking and body capture
- Eye & head tracking
- Gestures and hand positioning
- Performance & amount of effort needed

## BENEFITS OF ERGONOMICS TESTING

Improve **comfortability, reachability** of content & **body position** for the user

Customizable and refined options that promote **healthy posture and increased productivity**

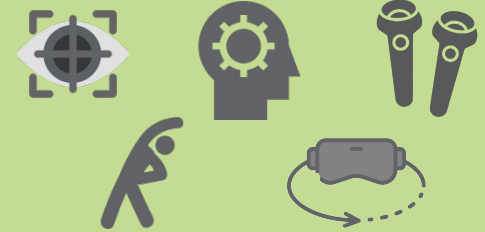
**Incentivization** to prevent back and neck stiffness

Improved user **satisfaction & performance**

**Repeatable long-term usage for users**

## XR ERGONOMICS

Physical • Cognitive • Organizational



**Comfortable Content Zone** - the optimal viewing distance of virtual or augmented content

**Control/Display Ratio** - the thresholds and magnification of user movement; lower threshold reduces fatigue

**Multisensory feedback** - using a combination of feedback; too much of one kind (*e.g. visual only feedback*) can induce fatigue

**Form factor** - size, configuration or physical arrangement of device hardware; ideally, the design should comfortably fit to the user

**Interpupillary distance (IDP)** - being able to adjust the distance between the lenses to improve perception

# VR/AR/MR Pulse Program

5 Week Foundational Research



## WANT TO LEARN HOW TO STAY AHEAD OF THE COMPETITION?

Let Us Help You Get a Pulse on the EmTech Industry

### HOW IT WORKS

The “Pulse” Program will help **bring your customers into the future** at speed and scale. We can help you unlock your business value through VR/AR/MR technologies to improve the customer experience, optimize performance, and help you refine cutting edge content and services. Our experts will work with you to explore your customer’s aptitude towards emerging tech and develop a customized plan.

### DELIVERABLES

Discover customer adoption to VR/AR/MR with **Customer Sentiment Surveys**

Provide you with best design practices with **Industry Literature Reviews**

Identify pain points, opportunities & trends with **Competitive Benchmarking**

### BENEFITS

**Synthesized VR/AR/MR solutions**

Identified **key differentiators** for your product based on the competition

**Directional recommendations** based on feedback from existing customers

Week 1	Week 2	Week 3	Week 4	Week 5
<i>Screener</i>	<i>Recruitment</i>	<i>Study Plan</i>	<i>Fielding</i>	<b>Competitive Benchmarking</b>
		<b>Customer Sentiment Survey</b>		
<b>Design Patterns Literature Review</b>				

# VR/AR/MR Evaluation & Usability Testing



## NEED HELP MAKING SURE YOUR XR PRODUCT IS ENGAGING & GETS THE JOB DONE?

Let Us Help With Evaluation And Usability Research

### HOW IT WORKS

Evaluation and usability research helps you make sure that your product works for the masses and provides the best possible user experience. Our XR experts take the guesswork out by validating different product features along with gauging user reactions. We provide actionable insights that get you to your goal faster and help evaluate your product's impact.

### REMOTE CAPABILITIES

Our EmTech experts will hold your hand and guide you through our process including but not limited to:

**Task-based** remote sessions | Wizard-of-Oz **Role-playing** | **Co-creation** sessions inside prototyping tools | WebVR and mobileAR **qualitative interviews**

### RESEARCH EXPERTISE

**Usability Testing**  
Interaction, Locomotion, UI, Workload

**Physiological & Simulation**  
Data Capture

**Onboarding & Tutorialization** Design and Testing

**Impact Evaluation**

**Cybersickness** Testing

**Human Factors** Evaluation

**Qualitative Studies**  
Surveys & Interviews

**Study Design & Execution**

**Equipment Setup & Troubleshooting**

### TECHNICAL EXPERTISE

Our team has experience with various tools and devices including but not limited to:

**HTC Vive HMDs**

**Oculus HMDs**

**Windows MR HMD**

**Microsoft HoloLens**

**Magic Leap One**

**Mobile AR**

**Unity & Unreal**

**SteamVR**

**Vuforia**

### BENEFITS

**Reduced time & development costs** with user testing

**Actionable Design Recommendations** to improve your product

**User-validated** workflows

A more **memorable & engaging** product or service

Improved user **satisfaction & performance**

A means to measure your product including its **Repeatability, Retention, Learnability, Reputation** and/or **Shareability**

# VR/AR/MR Ideate & Validate Workshop

## 2 Week Design Sprint



### HOW IT WORKS

Our EmTech Ideate & Validate Workshop is a **2-week program** to help companies identify the problem, align on essential attributes and discover the most appropriate VR/AR/MR technology solution to implement.

Our EmTech experts collaborate with your team during the ideation process as we explore various VR/AR/MR possibilities for your product. By incorporating early concept validations, we help you create a robust plan to **reduce development cost & time** by testing the concept early on with your customers.

DAY 1 DEFINE	DAY 2 IDEATE	DAY 3 CO-CREATE	DAY 4-5 DESIGN	DAY 6-7 TEST	DAY 8-10 LEARN
<ul style="list-style-type: none"><li>Align on Workshop Goals &amp; Agenda</li></ul>	<ul style="list-style-type: none"><li>Workshop with Stakeholders</li></ul>	<ul style="list-style-type: none"><li>Workshop Analysis</li><li>Moodboard Creation</li></ul>	<ul style="list-style-type: none"><li>Storyboard &amp; Wireframe Development</li></ul>	<ul style="list-style-type: none"><li>Concept Validation with Customers</li></ul>	<ul style="list-style-type: none"><li>Analysis &amp; Report</li></ul>

### BENEFITS

**Reduced time & development costs** with early customer validated concepts

**Increased confidence** in the success of VR/AR/MR direction

**Team alignment**

**Customer-approved solutions** that strengthen customer relationships

### DELIVERABLES

**Workshop Summary Deck**

**Actionable Recommendations** based feedback from Customers

Co-created design materials to **jumpstart development** such as moodboards and wireframes

### REMOTE CAPABILITIES

Our EmTech experts will hold your hand and guide you through our **virtual workshop & user testing** processes

At Key Lime, we help steer you in the right direction every step of the way