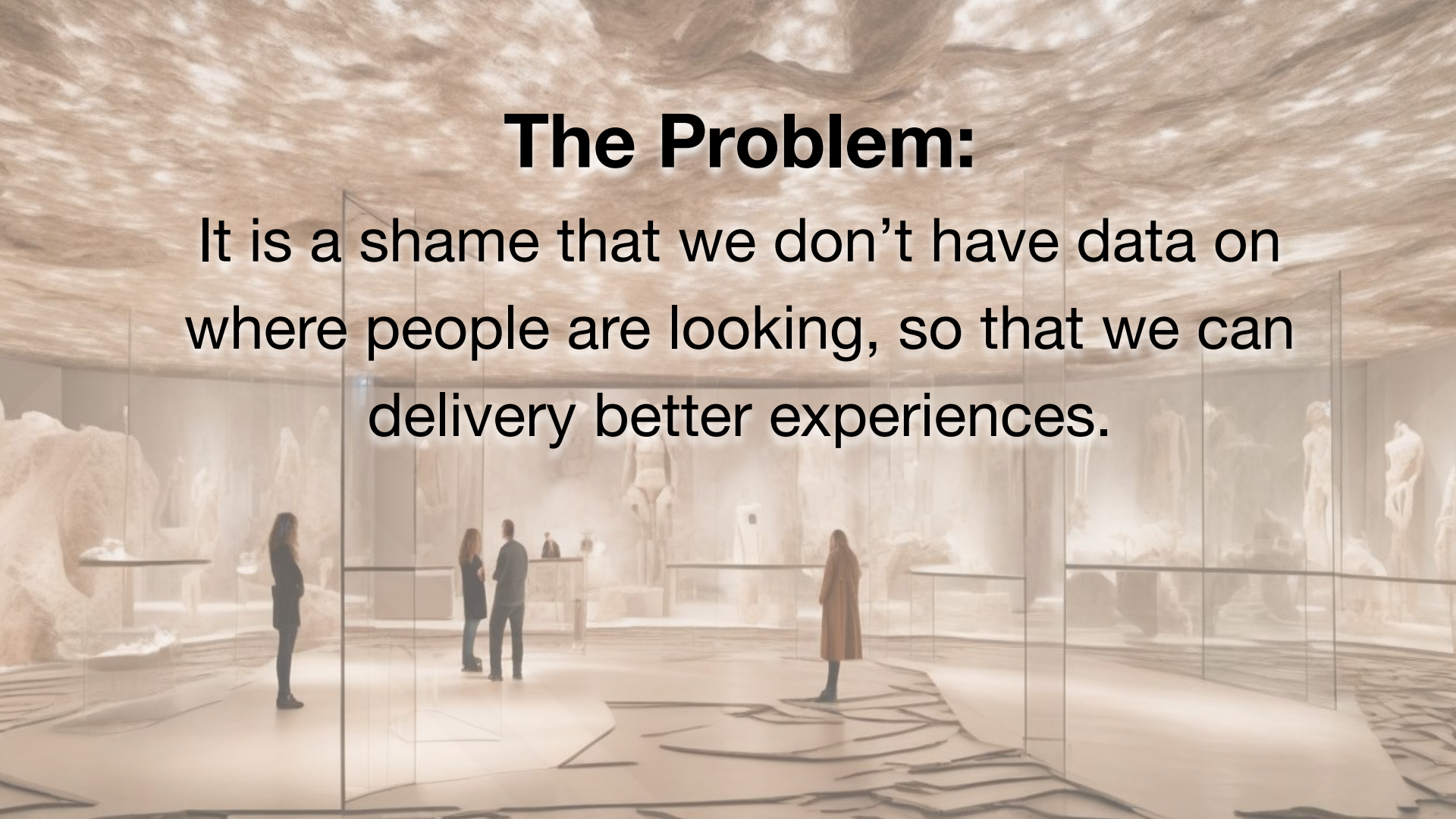# The Problem:

It is a shame that we don't have data on where people are looking, so that we can delivery better experiences.

**Introducing**

# knoWhere

Science fiction grade attention, and emotion tracking infrastructure

**Why Now:**

Eye tracking exists, and monitoring of human emotion exists. Tracking of humans in spaces with cameras is commonplace. Combining both is incredibly hard and fraught with trust abuse potential.

**We have a solution in this moment thanks to AI and advances in camera technology**

**One platform, many incredible use cases**

- This call targets creative media, but we are exploring other use cases in detail. We'd love to tell you more about how we can optimise high end retail, in physical spaces.
- Expanding ultra high end digital exhibitions.
  - *What if we can give each visitor and experience that's crafted for just them.*
  - Viable MVP. Two year development arc..

*Every visit is different, every visit is personal.*

*Today's digital experience destinations need to be able to differentiate themselves,* **attracting the best global creatives***, driving revenue, creating lasting memories. Our AI solution,* **knoWhere***, offers a unique approach, significantly* **enhancing visitor experiences***. By utilising images from* **on-premise cameras***, we unlock* **enormous narrative potential** *for experience designers. Our solution's unique value proposition provides detailed real-time data about every visitor, enabling* **sound and images to be created in real time, and targeted per user***, providing personal journeys.*

**It works like this:**

- Combine personal contextual data, human gaze, and real-time emotional tracking.

- knoWhere distills a simple anonymous data stream.

- Nothing touches disk. Nothing touches the internet. Everything is instantly destroyed. Assured private.

- Designers build incredible emergent journeys, weaving generative AI with core themes; presenting different light and audio to each visitor.

**A strong team**

You will all doubtless have seen the Time cover by now, but what might be less clear, (I am embarrassed to admit), is that I was forced to photoshop my hat back on for this presentation today.



THE 100 MOST INFLUENTIAL PEOPLE IN ARTIFICIAL INTELLIGENCE

TIME100/AI

# Collaboration Partners



Marco Ghilardi · 1st
Simulation and Modelling Expert | Founder and MD @ QuasiScience
Talks about #business, #nonprofit, #technology, #simulations, and #machinelearning

- **QuasiScience** Bespoke data engineering
- **Flossverse** - High bandwidth real-time AI and graphics
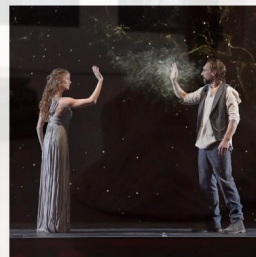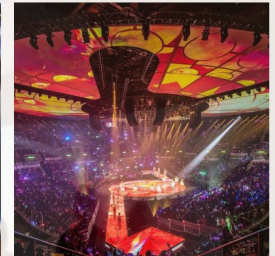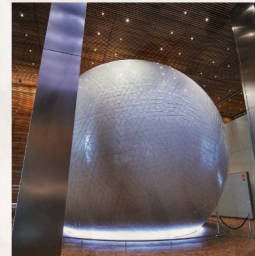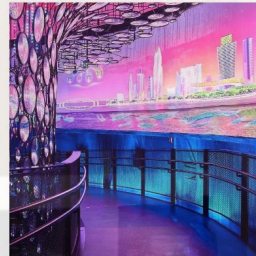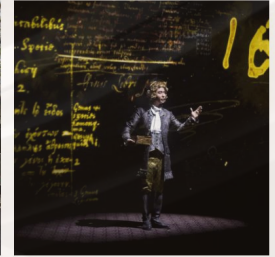- **Immersive International** World class experience design

John O'Hare, Ph.D.

**Immersive** is a creative masterplanning, design and innovation studio, unifying Experience Architects, Creative Technologists and Spatial Storytellers.
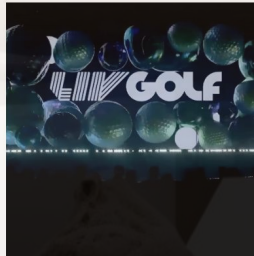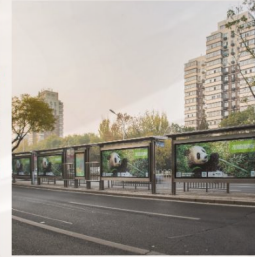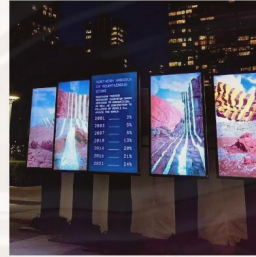
# What's behind this AI approach?

- Alphapose (2) - mature code, available under license

- Insightface (5) - new and credible MIT license code

- Face-Emotion-Detection (3) - many options, bias?

- Micro and macro body and facial gesture (1)



Basic Emotions

Fear | Anger | Sadness | Disgust | Joy | Surprise

AlphaPose
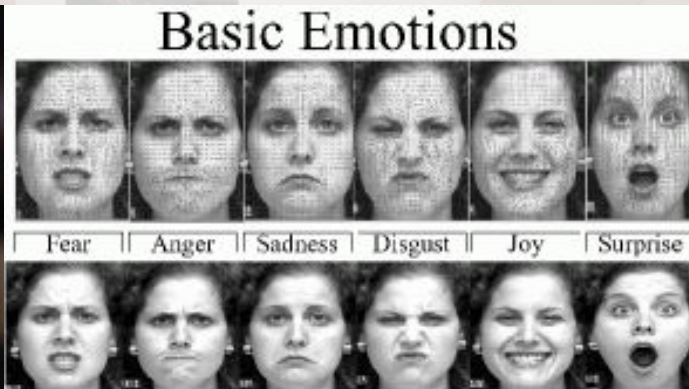
# How we support the experience designers to disrupt their industry:

- Elevating experience through personalisation
- Truly novel disruptive
- Rapidly to market
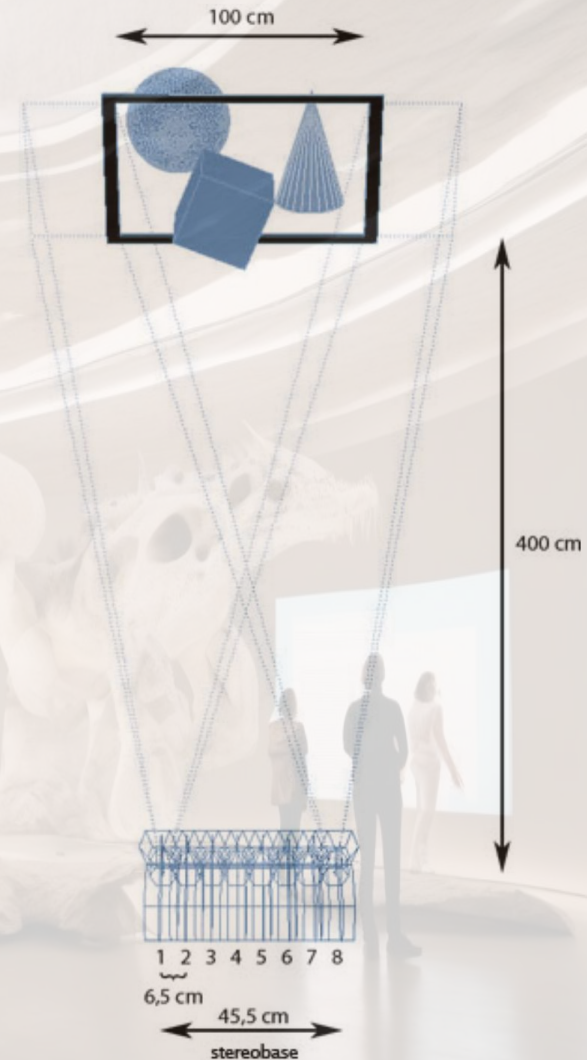
A BLACK MULTIVIEW SCREEN CAN
BE MADE TRANSPARENT FROM THE
VIEWPOINT OF ANY OBSERVER.
THIS STUFF IS INCREDIBLY
POWERFUL

## NOW

- Funding for hardware and development time

- Attack the harder problem first

- Product market fit, market size

- Comprehensibility of the idea

## NEXT

- Develop MVP test bed with Immersive

- Iterate and refine

- Branch for prosumer and retail vertical

- Quantitative analysis

## LATER

- Series A R&D development sprint

- Risk managed live pilot

- Scale to a hero venue / exhibit

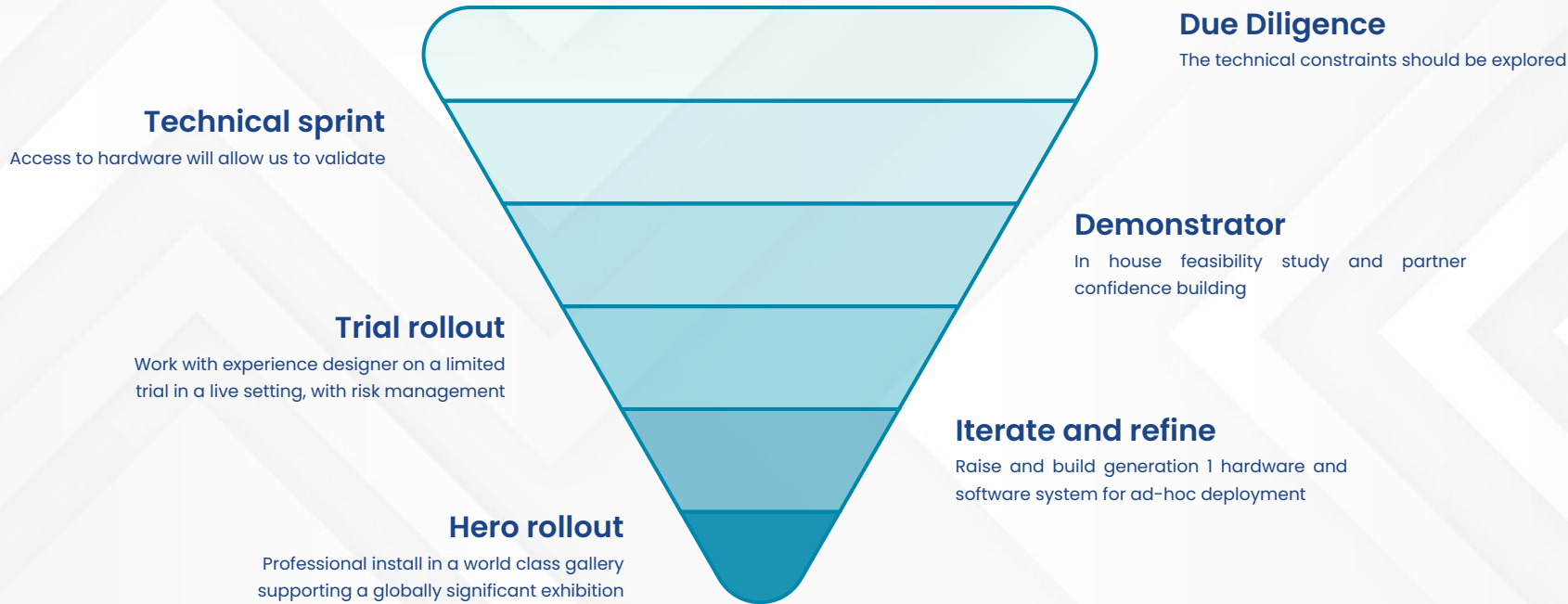- Refine to global markets

# Two year path to global market (exhibitions only)

We feel well positioned to begin exploring and implementing.

**Due Diligence**
The technical constraints should be explored

**Technical sprint**
Access to hardware will allow us to validate

**Demonstrator**
In house feasibility study and partner confidence building

**Trial rollout**
Work with experience designer on a limited trial in a live setting, with risk management

**Iterate and refine**
Raise and build generation 1 hardware and software system for ad-hoc deployment

**Hero rollout**
Professional install in a world class gallery supporting a globally significant exhibition

# Estimated addressable market £25-200M

**Biggest challenges in implementing the system**

- Immature market. Experience designer constraint

- Real time pose engine is noncommercial

- Occlusion can be tricky with space constraints

- Macro gesture is hard, micro gesture is harder

- Potential biases (mitigated by visitor data)

- The rich dataset is a privacy concern (nullified)

- Data bandwidth is incredibly high (trial needed)
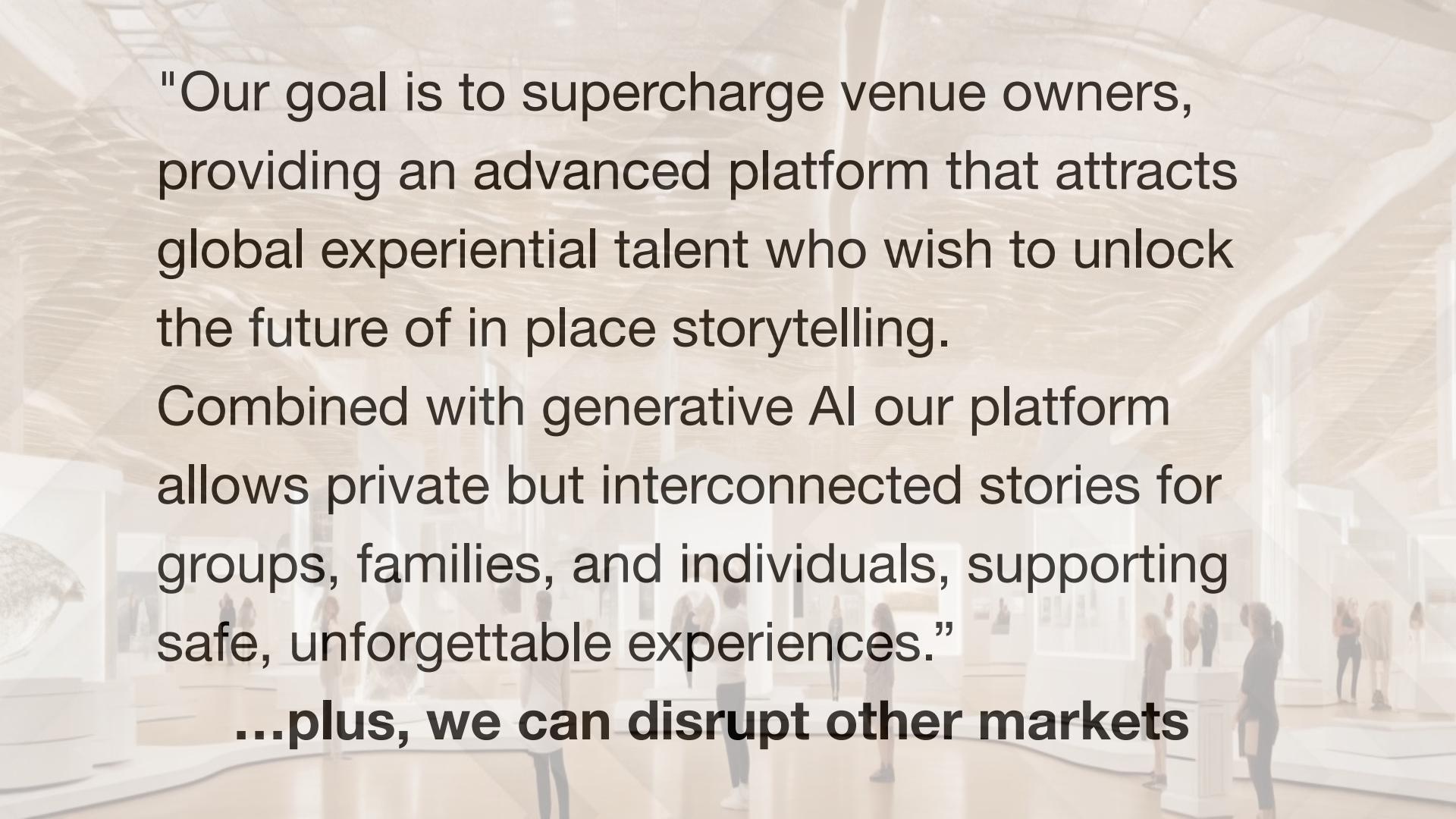
PRELIMINARY

## VP-144/288MX2 Series

144/288-Megapixel Thermoelectric Peltier Cooled Camera
with CoaXPress 2.0 Interface

Bleeding edge tech, this is only JUST viable this year

150Gbps per room At 20FPS at around 7 meters distance

"Our goal is to supercharge venue owners, providing an advanced platform that attracts global experiential talent who wish to unlock the future of in place storytelling.
Combined with generative AI our platform allows private but interconnected stories for groups, families, and individuals, supporting safe, unforgettable experiences."
**…plus, we can disrupt other markets**
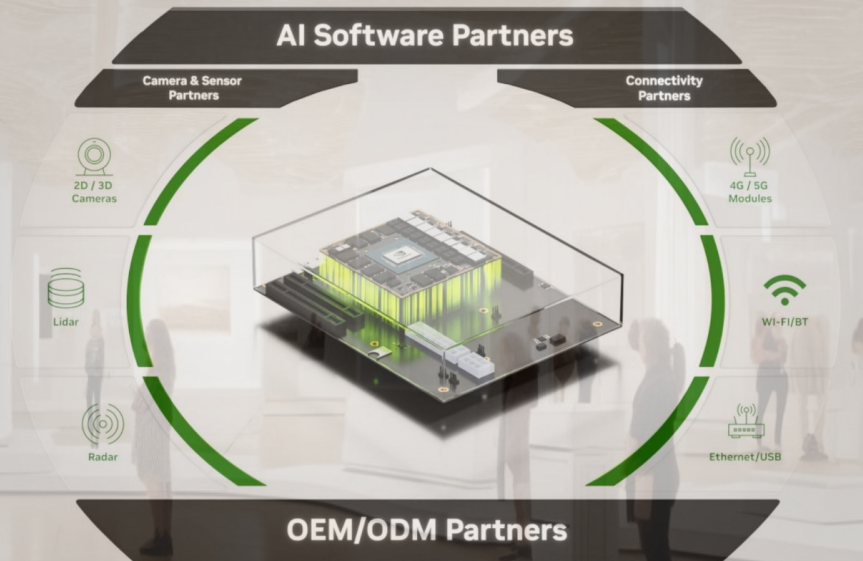
# Retail high level plan:

Edge compute strip and anonymizes commodity cameras in the shelving.
Pose mesh and attention data are sent from known locations wirelessly
No camera data is stored. Wireframe pose data and eye target is stored

## NVIDIA Jetson Partner Ecosystem

The Jetson partner ecosystem offers a wide range of AI and system software, developer tools, and custom software development. A broad range of Jetson Xavier systems and carrier boards are also available, as well as peripherals such as sensors, cameras, connectivity modules (5G, 4G, Wi-Fi), and more.

**Xavier-Supported Development Systems** >

**Xavier-Supported Cameras** >

AI Software Partners

Camera & Sensor Partners

Connectivity Partners

2D / 3D Cameras

4G / 5G Modules

Lidar

Wi-Fi/BT

Radar

Ethernet/USB

OEM/ODM Partners

# knoWhere

SciFi Attention Infrastructure Today

Thank you.

**Marco / John**

## *Appendix, retail application*

*For today's high end retail environments, navigating the complexities of **debugging consumer choice in a physical space**, our AI solution, **knoWhere**, offers a unique approach which will result in **best in class data**. By utilising images from **on-premise cameras**, we enable **to monitor and analyse browsing attention against purchase outcomes**.*
*Our solution's unique value propositions **include spatial and attention tracking through AI**, because of our deep understanding of high bandwidth data stream and AI.*