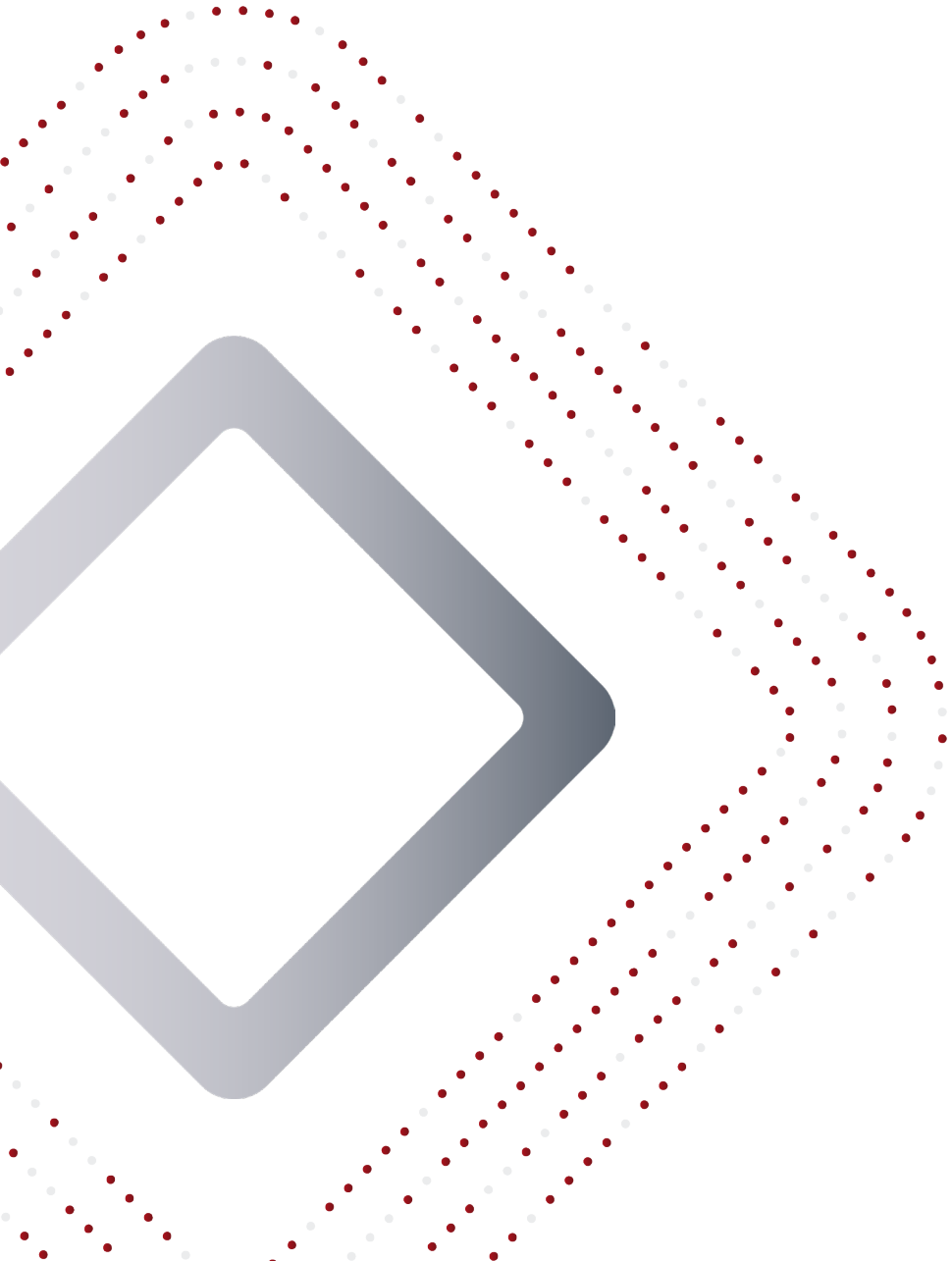
ANDREWS COOPER

Navigating the Product Development Life Cycle

BOOK 2 OF 5

PROOF OF CONCEPT

TECH TALKS™ EBOOK SERIES



www.Andrews-Cooper.com

Building a Solid Foundation for Valve's Virtual Reality Product Vision

In this series, we highlight the PD engineering journey to describe how integrating our engineering services with Valve Corporation helped them realize their vision to innovate VR gaming hardware to launch the Valve Index VR system. Through this eBook series on Navigating the Product Development Life Cycle, we explore the progression of the interdependent stages that underpin end-to-end engineering success.

Image Credit: Valve Corporation

ANDREWS COOPER

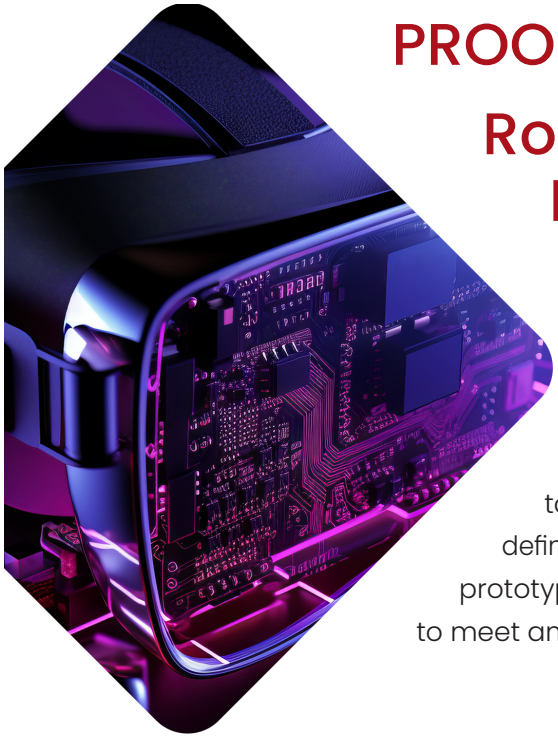
Andrews Cooper (AC) excels at advanced engineering for emerging technologies, specializing in Research & Development, Product Development, Hardware Testing, and Manufacturing Automation. We cater to ambitious, tech-focused companies seeking to innovate and lead their industries. With expertise in multiple engineering disciplines, our engineers function as force multipliers, propelling the development of HardTech solutions. With a focus on rapid development using proven methodologies, we de-risk the development process and integrate validation and testing to ensure high-quality, manufacturable products.

&

VALVE

Valve Corporation first turned to AC's Integrated Engineering Teams (IETs) for R&D support with gaming systems and controllers. To innovate in the highly competitive and evolving VR gaming market, Valve needed a partner capable of de-risking and developing core technologies. AC provided comprehensive engineering solutions necessary for the successful development and launch of its Index VR system.

Looking for a snapshot of our Product Development services? Watch our 1-Minute Video.



PROOF OF CONCEPT:

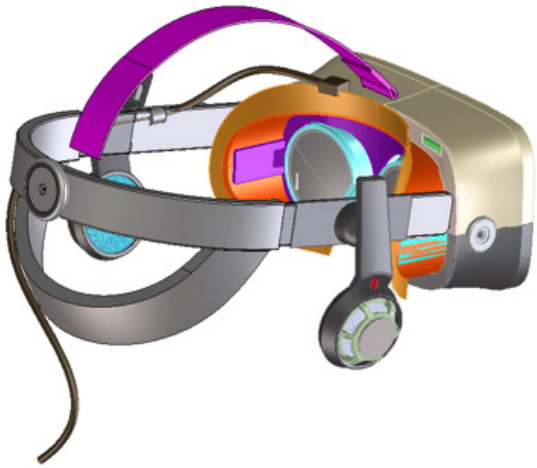
Robust Hardware Development & Iterative Prototyping

Creating a proof of concept (PoC) is a critical milestone in the product development life cycle, where ideas start to take physical form. At this stage, our engineers define the product architecture and develop targeted prototypes to validate product feasibility and refine requirements to meet ambitious goals.

1 | Defining product architecture

At the heart of any successful PoC is a robust product architecture. For Valve's VR hardware, this meant designing a scalable and flexible system that could accommodate the latest VR technologies. AC collaborated with Valve's engineering team to define a comprehensive architecture that included sensors, optics, haptics, and user interface components. This foundational work was crucial in guiding the subsequent development phases.

OBJECTIVE: Component definition confirms technical design and scalability.



Early Prototype Drawing of VR Head-Mounted Display Technologies

Engineering innovative products requires navigating a complex and dynamic product development life cycle.

2 | Developing targeted prototypes

Prototyping is where theoretical designs are tested. AC's Integrated Engineering Teams (IET) worked alongside Valve to develop prototypes that embodied the envisioned product features. These prototypes were iterated based on feedback from internal testing and user studies. For Valve, the focus was on creating a prototype that demonstrated technical feasibility and innovative UX design.

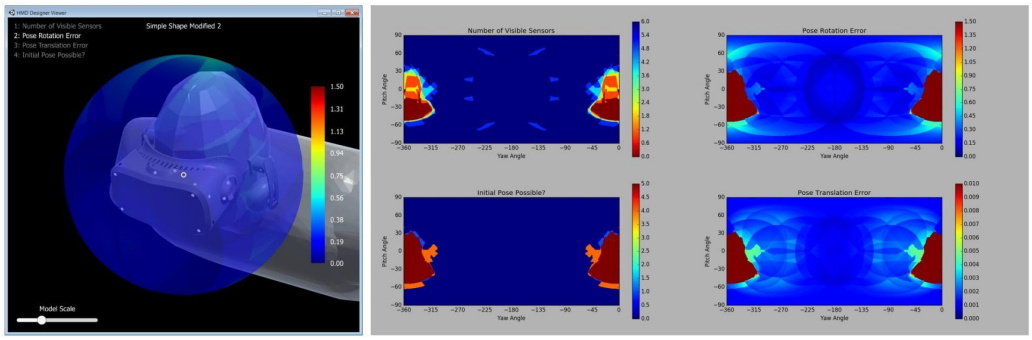
VR Head-Mounted Display Prototypes

OBJECTIVE: Iterative prototypes are developed to demonstrate functional and UX design feasibility.

3 | Validating product feasibility

Feasibility validation involves rigorous testing to ensure prototypes meet the defined requirements. AC conducts extensive tests on prototypes to evaluate performance, durability, and user experience (UX). For Valve, this meant ensuring their VR hardware could deliver high-resolution visuals, precise motion tracking, and comfortable ergonomics. This phase confirms that a product can be realized within the constraints of current technology and manufacturing capabilities.

OBJECTIVE: Prototype testing completed to confirm functional and UX performance.



HMD Sensor Tracking Test Analysis

INFO@ANDREWS-COOPER.COM

4 | Confirming product requirements

As prototypes take shape, revisiting and refining the product requirements is essential. AC facilitated workshops with Valve to review the findings from the prototype testing and make necessary adjustments to the requirements. This iterative process ensured that the final product would meet the highest quality and user satisfaction standards.

OBJECTIVE: Prototype refinements are verified against functional and user satisfaction requirements.

> "It's crucial to ensure that new technologies, like VR hardware, are ready for global markets without any regulatory hurdles."

5 | Determining compliance requirements

Compliance with industry standards and regulations is critical for any hardware product. At this stage, we identify and address all relevant compliance requirements, including safety certifications and regulatory approvals. It's crucial to ensure that new technologies, like VR hardware, are ready for global markets without any regulatory hurdles.

OBJECTIVE: Compliance requirements are identified and integrated into product development plan.

Groundbreaking Innovation Through Advanced Product Engineering

Navigating the product development life cycle is a multifaceted process that requires strategic planning, technical expertise, and a collaborative approach. Our experience with Valve Corporation and other game-changing developers enables us to rapidly integrate advanced engineering services at each product development stage, leading to groundbreaking innovation, premium quality, scalable supply chain management, and seamless contract manufacturing for a successful product launch.

Our engineering team can support your product from concept to production or at any stage in your development journey. Looking for more in this journey? Read about the next stage of the product development life cycle in our series, Stage 3: Engineering Validation.

Regardless of where you are in your product lifecycle, improve your speed to market with AC's engineering teams in Research & Development, Product Development, Hardware Testing, and Manufacturing Automation.

Let us know how can we support your current needs and solve your ambitious challenges.

503.256.2000

Info@Andrews-Cooper.com

OREGON: McMinnville,
Lake Oswego, Corvallis
WASHINGTON: Bothell

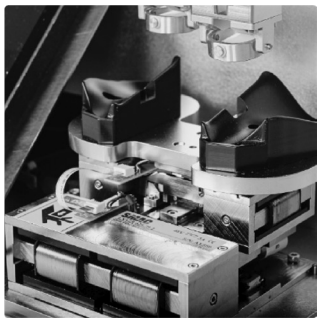
ANDREWS COOPER

Info@Andrews-Cooper.com

503.565.2000

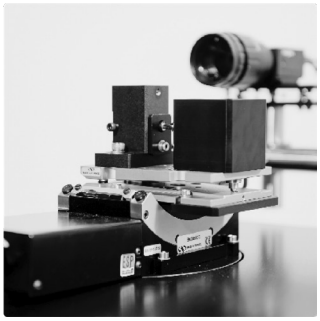
www.Andrews-Cooper.com

R&D Accelerator



Product Development

Hardware Testing



Manufacturing Automation

Integrated Engineering Teams

(PD2406V1-EB2O5)