

A person with a beard and dark hair, wearing a blue safety vest over a dark t-shirt, is seated at a desk in a workshop or laboratory. They are wearing a white VR headset and holding a white VR controller in their right hand, which is raised. On the desk in front of them is a computer monitor displaying a 3D CAD model of a mechanical part, a keyboard, a mouse, and a white mug. The background shows industrial equipment and blue lighting.

# Extended & Virtual Reality In Portugal

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Market Research - January 2026

Now, for tomorrow



# Intro

- Sector Summary
- Size and growth
- Key Opportunities

# Market Positioning & Strategic KPIs



**€165M**

Est. Market Value

Market range estimated between **€110M - €165M** in 2025.



**~200**

Active Organizations

**17%** are scale-ups with annual revenue >€5M.



**>55%**

Export Oriented

Startups maintain strong international commercial operations.

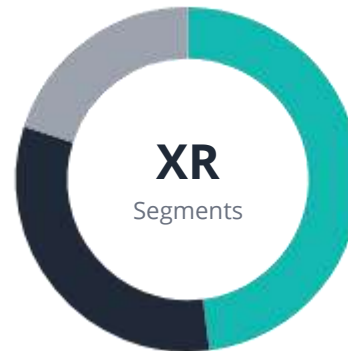
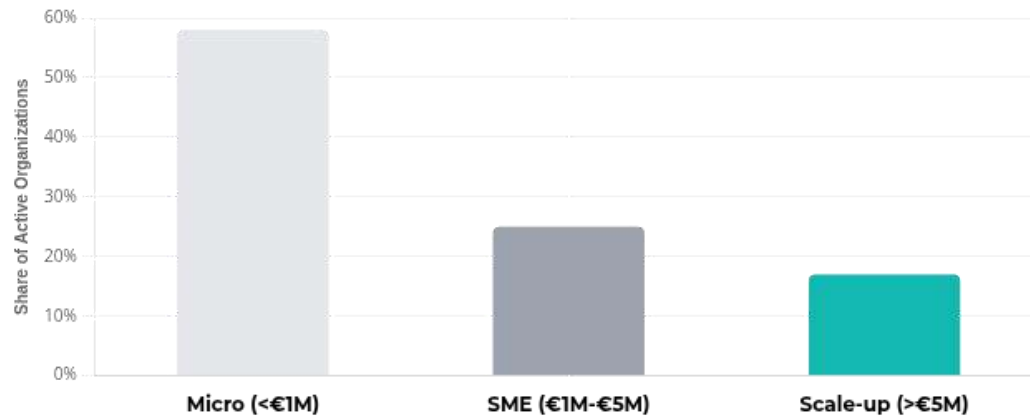


**100%**

5G Coverage (Munis)

Covering all municipalities and **75%** of parishes nationwide.

## Firm Maturity by Revenue Tier



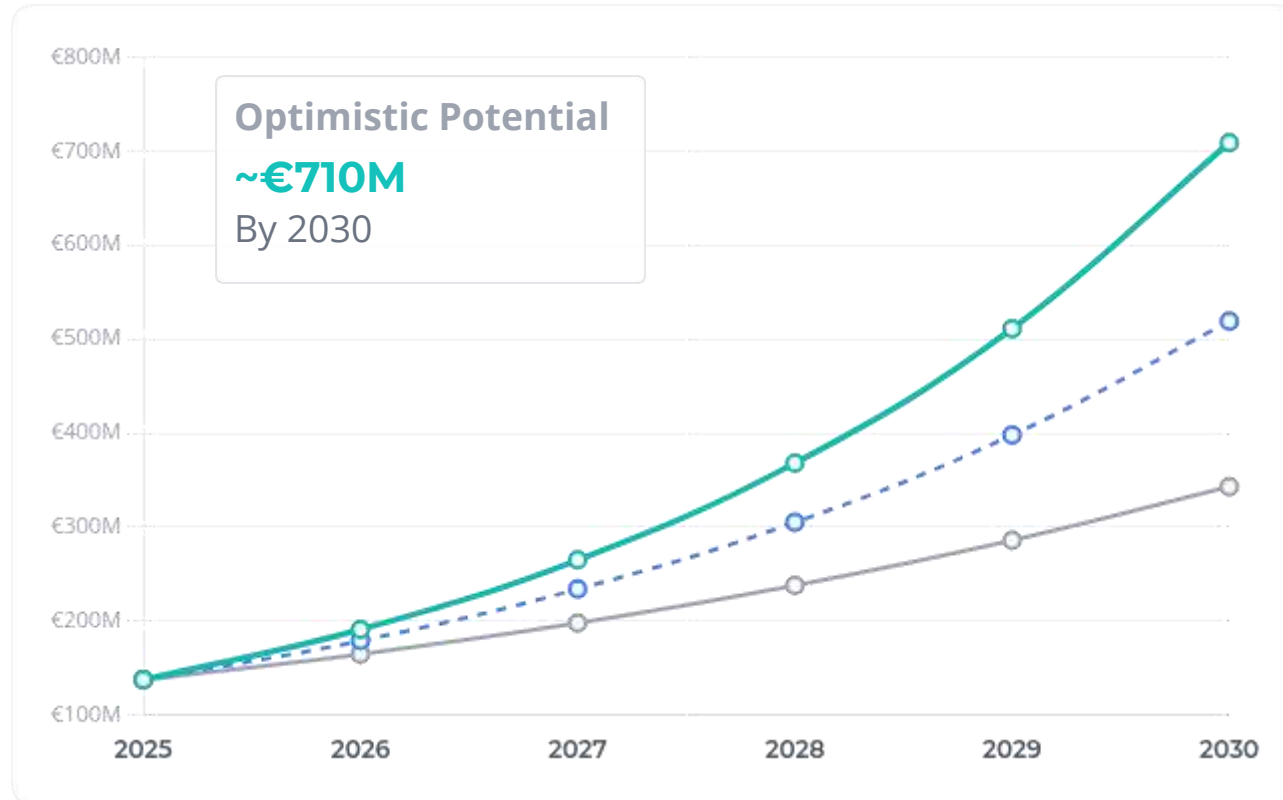
- 48% Software & Platforms**  
B2B SaaS, Industrial Metaverse interfaces, specialized apps
- 32% Professional Services**  
Custom integration, R&D consulting, content creation
- 20% Hardware & Infra**  
Commercial HMD procurement, medical displays, 5G edge

# Portugal Growth Projections 2025–2030

## CAGR Projections

Market Valuation Forecast (€ Millions)

● Conservative ● Baseline ● Optimistic



\*Base year 2025 estimate: ~€137.5M (Midpoint)

## Scenario Drivers

### Optimistic

**41.0%**

- ✓ Full PRR funding execution & 5G ubiquity
- ✓ Aggressive Industrial Metaverse adoption

### Baseline

**30.5%**

- Alignment with EU Digital Decade targets
- Steady growth of Lisbon-Porto ecosystem

### Conservative

**20.0%**

- ⚠ Sustained high hardware costs
- ⚠ SME adoption resistance & VC slowdown

# Key Opportunities for Growth



## Industrial Metaverse

### Manufacturing & Logistics

- ✓ **HMI for Digital Twins:** XR serves as the primary Human-Machine Interface for navigating high-density AI data.
- ✓ **Persistent Virtual Worlds:** Moving beyond simulation to create mirrored virtual production lines.
- ✓ **Predictive Ops:** Anticipating climate and supply chain shifts via immersive modeling.



## Tourism 4.0

### Virtual Heritage

- ✓ **Telepresence:** Increasing impulsive travel desire through risk-free virtual exploration.
- ✓ **AR-Guided Heritage:** Enhancing authenticity without compromising physical landscapes (e.g., Quintas).
- ✓ **Smart Development:** Balancing mass tourism with sustainable "before, during, after" engagement.



## Healthcare XR

### Clinical Validation

- ✓ **VR Health Champions:** Initiative driving tech from TRL 6 (Prototype) to TRL 9 (Market Ready).
- ✓ **Regulatory Path:** Structured support for CE marking and ISO 13485 compliance.
- ✓ **Digital Therapy:** Validated solutions for cognitive rehabilitation and surgical planning.

# Segmentation & Use Cases

# Segmentation Overview & Strategic Logic




## High-Complexity & Value-Added

### LOGIC & DRIVERS

Characterized by high barriers to entry, "sticky" long-term contracts, and demand driven by safety-critical ROI.

 **Industrial**  
Mfg & Maintenance

 **Healthcare**  
Clinical Validation

 **Utilities**  
Energy & Infrastructure



## Compliance & Regulatory

### LOGIC & DRIVERS

Adoption driven by state-mandated standards (e.g., BIM). Stable but price-sensitive revenue base.

 **AEC**  
Arch, Eng, Const

 **Education**  
Public & Technical



## Commodities and Retail

### LOGIC & DRIVERS

Highly scalable, fragmented segments driven by discretionary marketing budgets and engagement metrics.

 **Retail**

 **Real Estate**

 **Advertising**

 **Travel**

 **Events**

 **Art**

 **Culture**

 **Gaming**

 **Sports**

# End Users & Key Use Cases

## Industrial

- **Guided Maintenance**

Step-by-step AR overlays reducing error rates by up to 45%.

- **Remote Expert**

Real-time collaboration connecting field techs with HQ specialists.

- **Safety & Compliance**

Hazard visualization and automated safety protocol checks.

## AEC

- **BIM Walkthroughs**

Immersive exploration of 3D models before construction begins.

- **Clash Detection**

Identifying structural conflicts in mixed reality on-site.

- **Site Planning**

Visualizing project phases (4D) and logistics in context.

## Utilities

- **High-Voltage Safety AR**

Visualizing energized zones to prevent accidents.

- **O&M Training**

Risk-free simulation for substation and turbine maintenance.

- **RTLS Geofencing**

Location-based alerts for workers entering restricted areas.

## Healthcare

- **Surgical Simulation**

Pre-operative planning and haptic feedback training.

- **Rehabilitation**

Gamified physical therapy and motor skill recovery.

- **Cognitive Assessment**

VR-based neuro-diagnostics for dementia and focus.

## Retail / Real Estate

- **Virtual Try-On**

AR mirrors and mobile apps for fashion and cosmetics.

- **3D Property Tours**

Remote viewing of residential and commercial spaces.

- **Space Planning**

Visualizing furniture and layout changes in real-time.

## Culture / Travel

- **Heritage Reconstruction**

Restoring ruins digitally for on-site AR tourism.

- **Telepresence**

Live guided tours for remote visitors (Tourism 4.0).

- **Immersive Exhibits**

Interactive museum narratives enhancing visitor engagement.

# 5F's Porter

- Key Supplier Categories
- Complementary Products
- Substitute products
- Competitive Landscape

# Supplier Ecosystem Overview



## Digital Infrastructure

### ROLE & FUNCTION

Foundational connectivity layers (Cloud, 5G, Edge) enabling low-latency XR data transmission.

#### 5G Providers

NOS, Altice, Vodafone

#### Edge & Cloud

IP Telecom, Claranet

#### Data Centers

Equinix (Lisbon Hub)



## Hardware & Photonics

### ROLE & FUNCTION

Manufacturing of optical components, display units, and sensors for immersive devices.

#### Photonics/Optics

Lightspace Technologies

#### Sensors & Touch

Displax (Multitouch)

#### HMD Integration

Various OEM Partners



## Core Software & MSP

### ROLE & FUNCTION

Core engines, specialized platforms, and managed service providers for vertical solutions.

#### Industrial Platforms

Glartek, NextReality

#### Health Engines

Virtuleap, NeuroPsyAI

#### Content Studios

Massive Virtual, IT People



## Standards & Regulators

### ROLE & FUNCTION

Governance bodies ensuring compliance, interoperability, safety, and funding standards.

#### Telecom Regulator

ANACOM

#### Innovation/Funding

ANI, IAPMEI, IPN

#### Cybersecurity

CNCS (National Cyber Security)

# Complementary vs Substitute products

## Digital Infrastructure

- Start Campus: 1.2 GW capacity in Sines for off-headset rendering.
- EllaLink: Reduces transatlantic latency by 50% for global collab.

## Core Engines & AI

- Oligopoly Tools: Critical dependency on Unity & Unreal Engine.
- AI Synthesis: "Agentic AI" multiplying value through real-time assistants.

## Sensory & Haptics

- Tactile Realism: Bridging the gap for surgical and safety sims.
- White Space: High M&A potential due to lack of local hardware IP.

## Mobile AR

High Risk

Smartphone-based AR leverages existing hardware (5.3M 5G users), offering a zero-cost entry point that cannibalizes headset sales in consumer retail.

## High-Res 2D

Med Risk

WebGL and interactive 3D on flat screens provide 80% of the value with 20% of the cost, remaining a strong competitor for user attention.

## AI & Markerless

High Risk

Computer Vision AI (Markerless) disrupts hardware-dependent tracking, enabling "world-scale" AR without specialized proprietary sensors.

## Critical Ecosystem Bottlenecks

### Photonic Components

Supply chain scarcity and high manufacturing complexity for advanced waveguides limit hardware availability for mass industrial deployment.

### Integration Talent

Significant shortage of engineers skilled in bridging XR platforms with legacy industrial systems (ERP, PLM, BIM) creates implementation lag.

### Clinical Validation

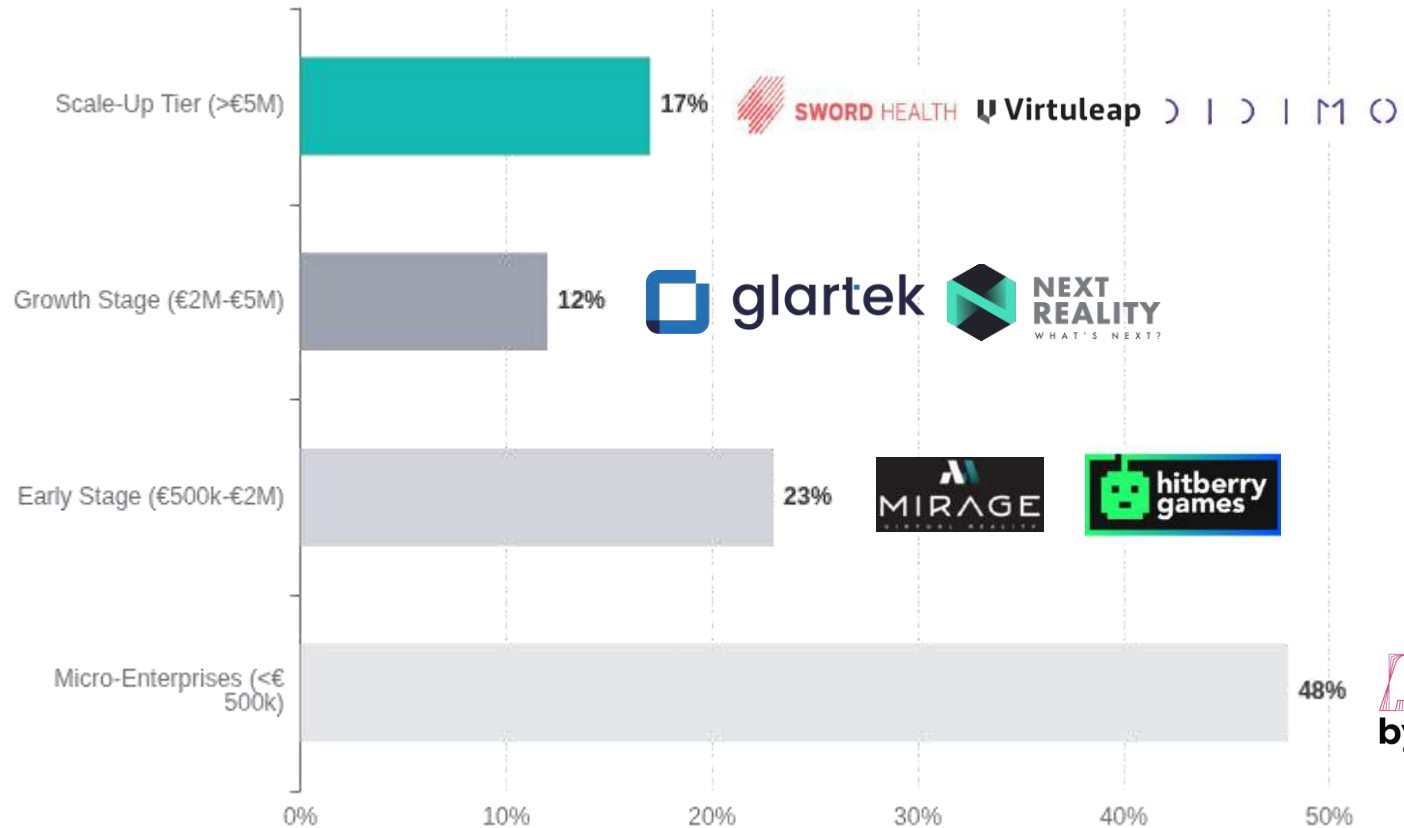
The long timeframe for TRL6 to TRL9 progression and CE marking processes slows down the commercialization of Healthtech XR innovations.

# Competitive Landscape - Key Players

The ecosystem is characterized by a mature "scale-up" tier emerging from a micro-enterprise base, with strong international commercial focus.

## Revenue Tier Distribution

Breakdown of XR organizations by annual revenue



 **>55%**

**Export Orientation**

More than half of Portuguese startups maintain strong international operations, leveraging the localized XR market as a launchpad for global export.

 **17%**

**Scale-Up Tier**

A significant minority has achieved scale with annual revenues exceeding €5M, distinguishing themselves from early-stage micro-enterprises.

# Value Chain & M&A

# Value Chain Flow

01



## Digital Infra

Foundational Layer

- 5G Networks
- Edge Computing
- Cloud Storage

02



## Hardware

Enabling Tech

- HMDs & Optics
- Photonics
- Packaging

03



## Core Engines

Value Creation

- Software Engines
- Platforms (SaaS)
- Managed Services

04

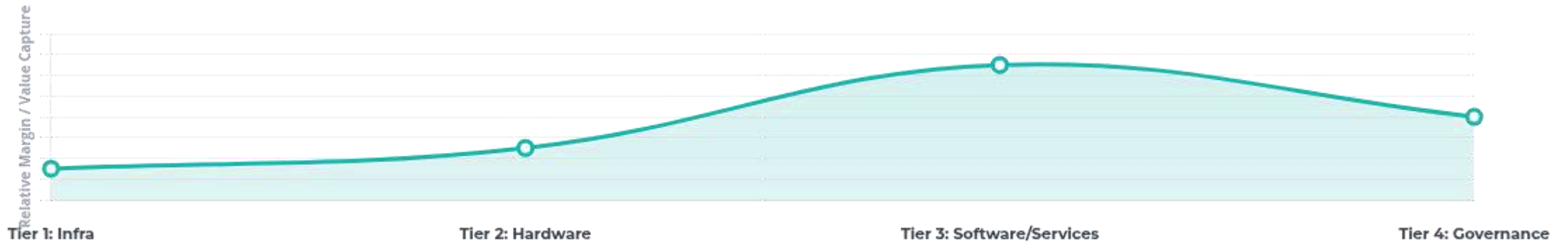


## Governance

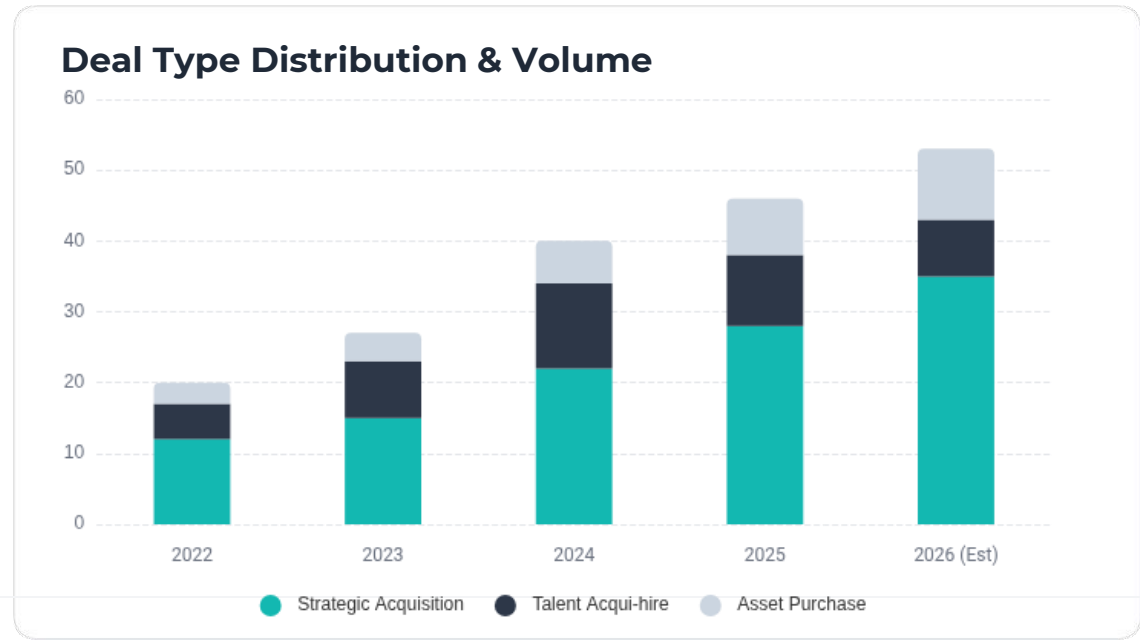
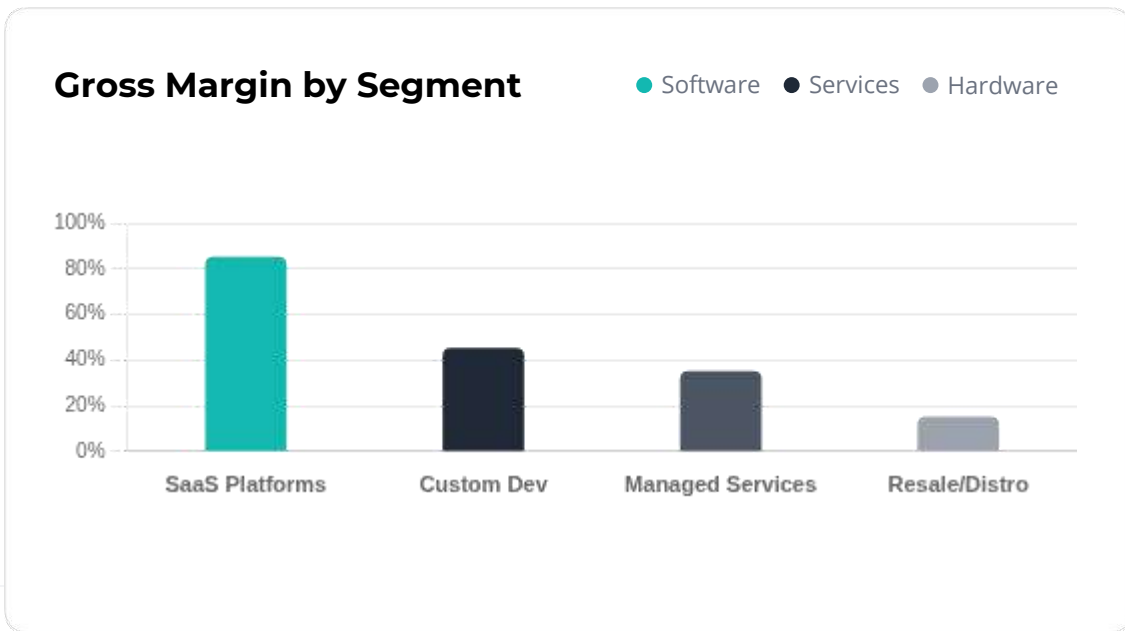
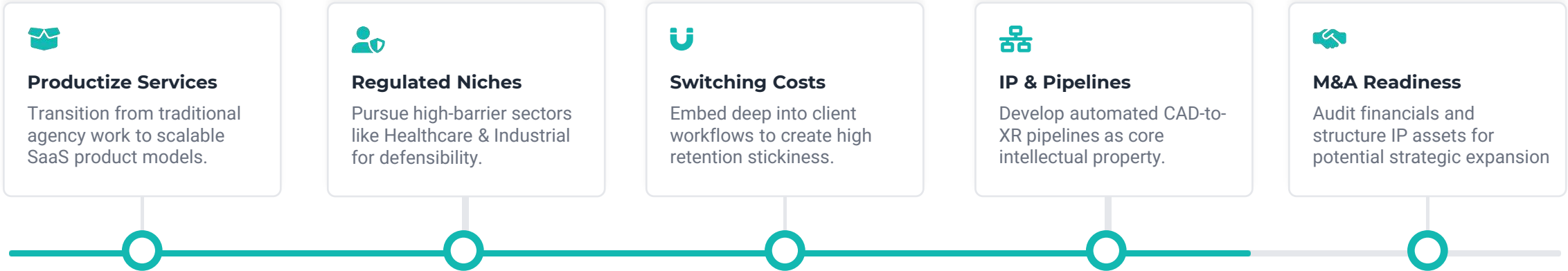
Market Validation

- Regulatory Bodies
- Standards Orgs
- Compliance

Economic Value Capture Curve



# Strategic Roadmap – M&A



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