REALITY CHECK:

Why the U.S. Government Should Nurture XR Development

FINDINGS AND HIGHLIGHTS

This document summarizes the findings and highlights of the research paper coauthored by XRA and The Digital Trade and Data Governance Hub at George Washington University.

U.S. policymakers have long believed that America's soft power and its military might are built on a foundation of technological superiority. **In the current U.S. National Security Strategy**, Biden Administration officials asserted that critical and emerging technologies "are poised to retool economies, transform militaries, and reshape the world." **One of these paradigm-shifting technologies is XR.**

Immersive technology (also called "XR") will revolutionize the way we work, play, learn, engage with one another, and deliver essential human services. **XR's importance to the global economy has been affirmed by leaders of the world's seven largest industrial nations (G7):**

> "We recognize the potential of immersive technologies, and virtual worlds such as metaverses, to provide innovative opportunities in all industrial and societal sectors, as well as to promote sustainability."
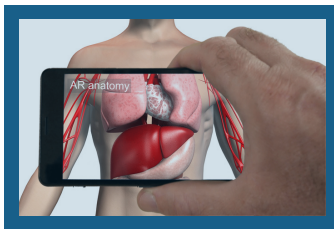>
> **– G7 Communique, May 20, 2023**

WHAT IS XR?

Virtual Reality

VR uses computers and head mounted devices (HMDs) to replace or occlude a user's physical environment with virtual one.

Augmented Reality

AR uses computer graphics and visualization technology to layer digital content onto a user's view of the physical work, thus providing a composite view.

Mixed Reality

MR blends augmented and virtual reality, allowing users to experience simulated content within their physical environment and to manipulate and interact with virtual elements in real time.

WHY XR MATTERS

- **XR IS ALREADY DRIVING ECONOMIC GROWTH.**
- **XR IMPACTS ESSENTIAL SECTORS AND PUBLIC WELFARE.**
- **XR TECHNOLOGY WILL HELP THE UNITED STATES ADDRESS STRATEGIC CHALLENGES.**
- **THE UNITED STATES HAS DESIGNATED XR A CRITICAL TECHNOLOGY.**
- **XR WILL UNDERPIN THE NEXT ITERATION OF THE INTERNET.**

REALITY **CHECK**: *Despite its importance to the economy and to national security, the United States Government has not yet weighed how to nurture and govern XR technology.* **Meanwhile, U.S. competitors and allies alike are incorporating XR into their national strategic thinking**. *The governments of the UK, the EU, and South Korea are all taking steps to create the enabling environment needed for XR to flourish in their countries. China has included the development and deployment of XR in official government strategies at both the national and provincial levels.*

SOUTH KOREA

South Korea is a global leader in leveraging immersive technology to improve public services and the government is focused on creating the environment needed for the XR industry to grow.
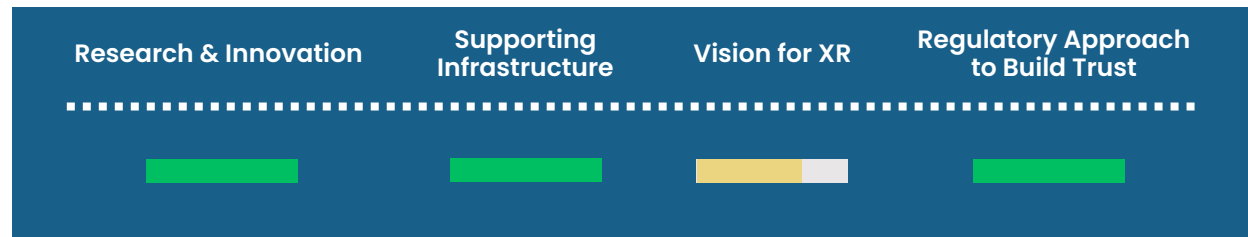
Since 2016, South Korea has recognized the potential of immersive technology to drive economic growth and improve public welfare. **Korean officials consider XR to be a strategic technology that aligns with their ambitions for technological sovereignty.** The Korean government has concentrated its support for XR into three principal areas: 1) developing the core technologies; 2) supporting immersive cultural content creation; and 3) encouraging the development of products and services that integrate XR with other technologies.

Research & Innovation	Supporting Infrastructure	Vision for XR	Regulatory Approach to Build Trust
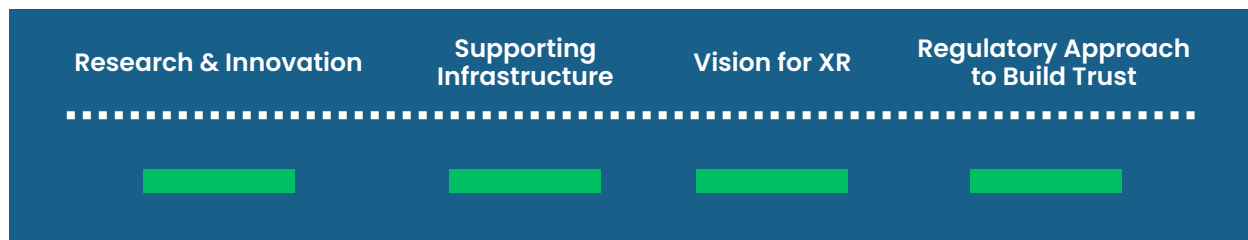
UNITED KINGDOM

The UK wants to be a global leader in building digital twins and incorporating the technology into its national infrastructure.

The British government has identified XR as an important strategic technology and has **prioritized immersive technology as a component of its vision for a 21st century Cyber-Physical Infrastructure.** The government has also invested in research and development through a variety of strategies including government-sponsored challenges, missions, and funding partnerships, and has created new organizations like Immersive UK and Digital Catapult to provide support to the XR industry. The UK has taken a pro-innovation approach to building flexible regulatory frameworks to govern emerging technologies through initiatives like the Digital Regulation Cooperation Forum and the Regulatory Sandbox Program.

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EUROPEAN UNION

The EU aims to be the world leader in XR at enterprise scale and a dominant force behind the metaverse.

To support its ambitions, the EU has launched numerous initiatives to ensure that the next computing platform is built in Europe and aligns with European values. **In July 2023, the EU released an official recommended strategy for Web 4.0 and virtual worlds**. Brussels has allocated significant funding for XR research and development, targeting sectoral applications for health, education, and entertainment, as well as XR components like semiconductors and cloud capacity. What's more, the discussion around XR regulation is well underway in the European Parliament.
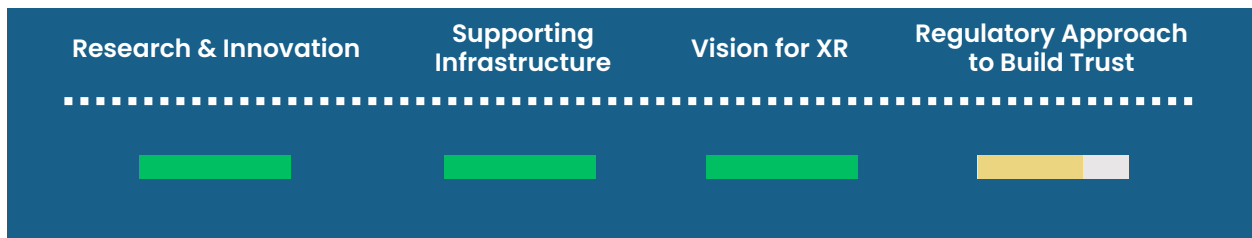
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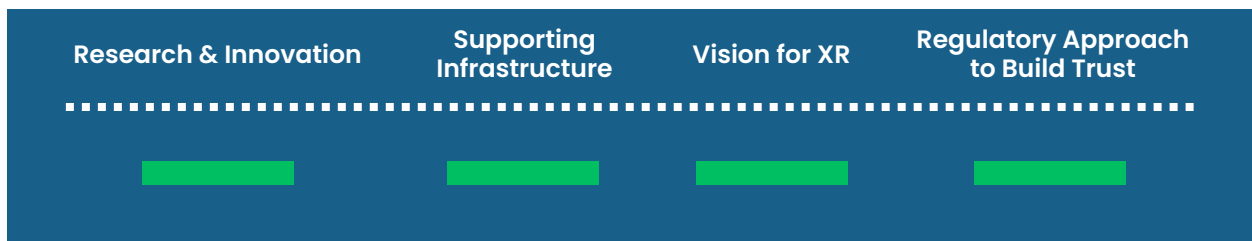
CHINA

China has integrated XR into its national, industrial, and technology strategies to position itself as a leading producer of immersive technology.

The Chinese Communist Party has made the nation's digital development a top priority as a way to enhance economic progress and national security. **Chinese officials have identified immersive technology as one of the "7 key industries of the Digital Economy," and Chinese officials are actively working to shape the development of the metaverse.** China has provided long term funding and support for XR-related initiatives and encouraged provincial and local level competition to advance the industry by consolidating supply chains and industrial efforts through what it calls "VR Towns."

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UNITED STATES

Despite being the world's largest market for XR, the United States Government has not developed a strategy or institutional structure to support the XR sector.
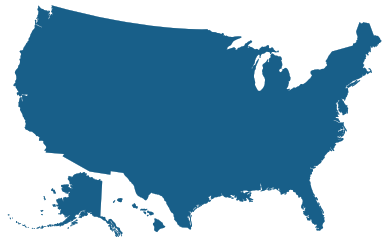
The United States is home to some of the world's largest producers of XR content and hardware. **Yet America remains behind the curve.** The U.S. has supported research in immersive technologies and invested in underlying infrastructure, like 5G. And these lines of effort are further strengthened by the passage of legislation like the CHIPS and Science Act. However, the U.S. has not articulated a vision for XR. **The U.S. is the world's epicenter for disruptive innovation, thanks to its exceptional research infrastructure and low barriers to entrepreneurs and start-ups. America should be the world leader in XR.**

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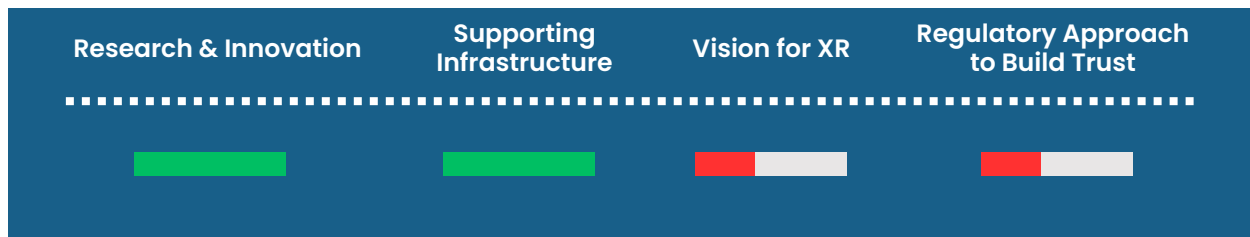
FINDINGS & RECOMMENDATIONS

Based upon the findings of our research, we urge the U.S. Government to enact the following recommendations in order to **maintain America's position as a global technology leader and leverage the transformative economic, security, and societal benefits of XR.**

1. Congress should introduce legislation authorizing an **advisory committee to develop a strategy to nurture XR in the U.S.**

2. Congress should empower **U.S. government agencies to model how digital twins can be leveraged** by the government to serve the public interest.

3. Congress should pass a technology-neutral **comprehensive federal data protection law** that clearly delineates the rights and responsibilities of both the individuals that provide data and the entities that collect, analyze, and control data.

4. The White House should establish structures to coordinate and enhance **federal XR research and development.**

5. The Department of State should host a **global summit to foster debate and cooperation around complementary regulatory and governance frameworks** and ensure that XR technology reflects democratic values.

Scan the QR code to stay updated and receive the complete report, *Reality Check: Why the U.S. Government Should Nurture XR Development*

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