

SITE

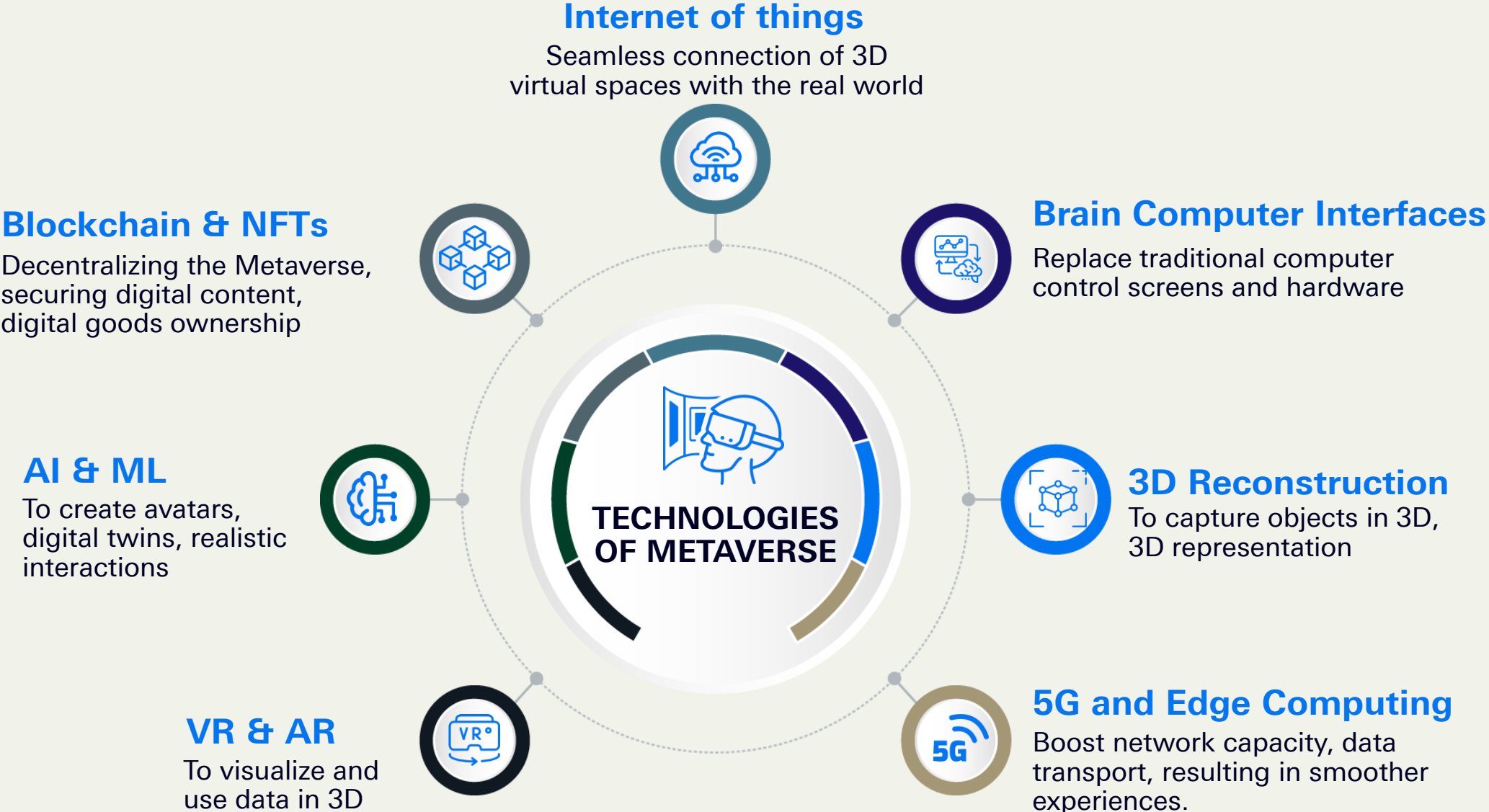
# The Metaverse: Immersive Cybersecurity Threats

Bushra Alahmadi, Chief Scientist  
Research & Innovation, SITE

الشركة السعودية  
لتقنية المعلومات  
Saudi Information  
Technology Company

PUBLIC

# The integration of multiple technologies play a vital role in the development of the Metaverse and bringing the virtual and real world together



# Immersive experiences enabled by HMDs' complex sensors that integrate existing surroundings with virtual elements

## What are you **looking** at?

- Eye Tracking Cameras

## Where are you?

- Tracking
- Location Sensors

## What are you **doing**?

- Bio sensors
- Accelerometers



## Where are you **hearing**?

- Directional Microphones

## What are you **seeing**?

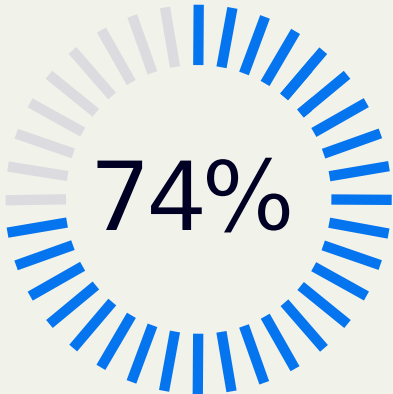
- Forward facing tracking, recording 4k Cameras
- Depth Sensing sensors
- IR sensors
- Ambient Light Sensors

\* Source: Adopted from Communications of ACM

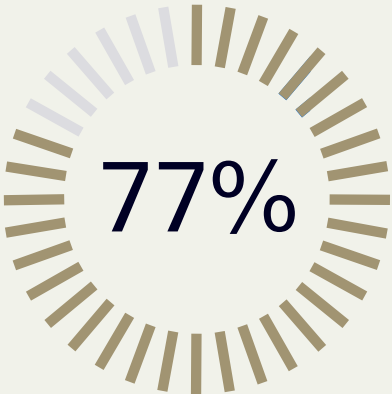
A hand holding a glowing cube in a digital space with various geometric shapes and lines.

The more **immersive** the Metaverse becomes, the more **dangerous** the cyber attacks

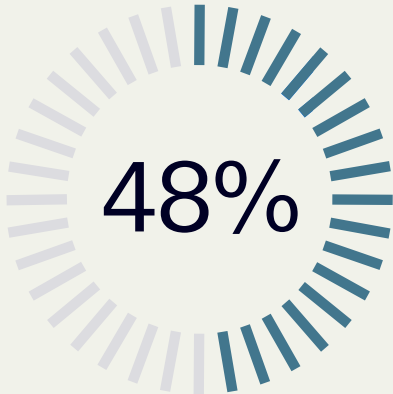
# Metaverse Cybersecurity



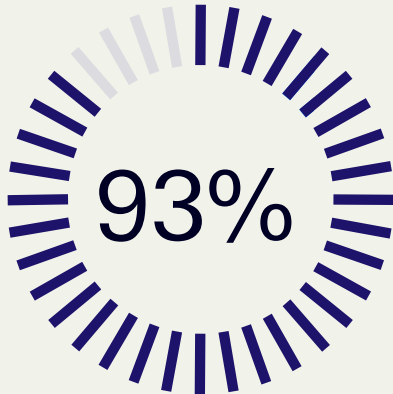
**Invisible-avatar eavesdropping or “man in the room” attacks**



**Cloning of voice, facial features and hijacking video recordings**



**Respondents are confident in their ability to curb threats in the Metaverse**



**Respondents said they need a solid cybersecurity plan**

*\* Source: Tenable report, The Metaverse Promises Big Opportunities and Even Bigger Cyber Risk, 2022*

# Top Metaverse Cybersecurity Threats & Challenges

Cybersecurity in Metaverse is a concern as the immersive experience in capturing users' senses introduces even more dangerous cybersecurity threats and attacks.



## Privacy & Data

- Decentralized vs. Regulations
- Unauthorized Data Collection by Companies & Data Monetization
- Users have no knowledge of data being collected



## Identity

- Digital Twin & Avatars
- Man-in-the-room
- Biometrics



## Social Engineering

- Deepfake
- 3D Phishing



## Physical Wellbeing

- Cyber Sickness
- VR Data Integrity
- Cyber-physical Threats



## Psychological Wellbeing

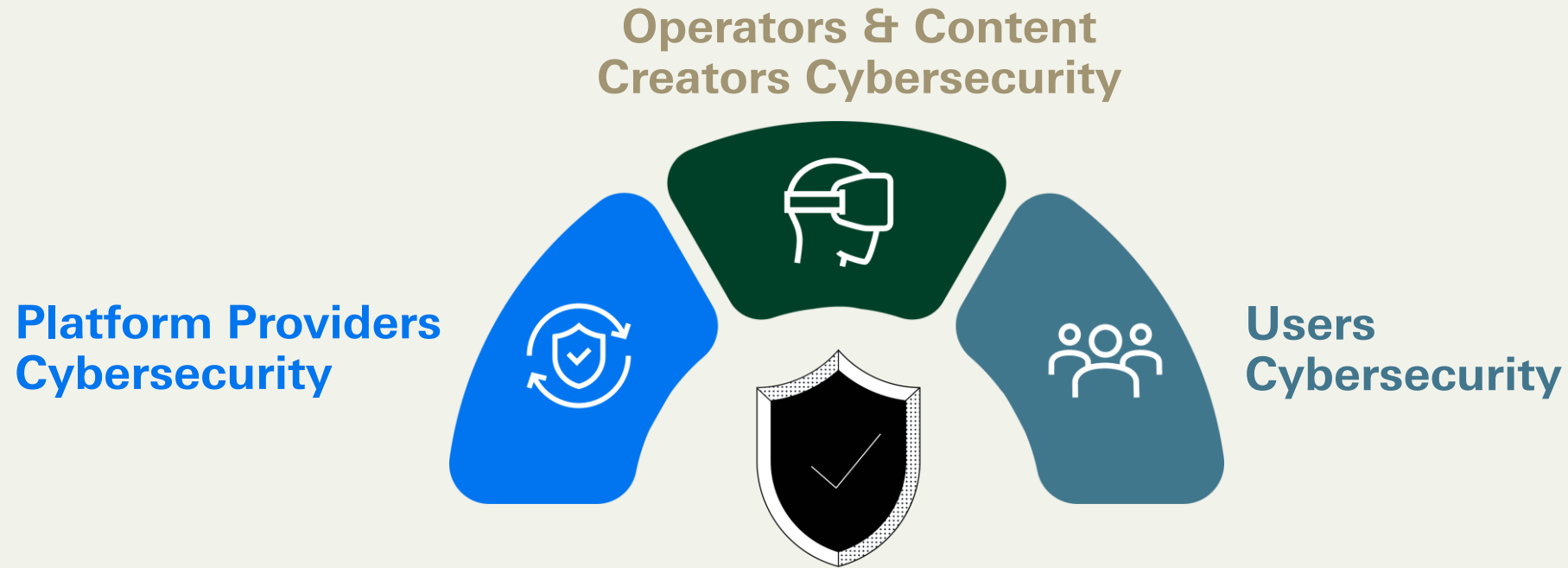
- Harassment & Bullying
- Perception of Reality

# Metaverse Cyber Crime

- Ransomware & Malware
- Financial Fraud
- Hate, Harassment, Misinformation
- Darkverse



# Moving Forward with a Shared Responsibility for a Safe and Secure Metaverse



**Privacy**

**Accountability**

**Responsibility**

**Regulation**

**Authentication**



# Thank You



**SIT** 

PUBLIC

الشركة السعودية  
لتقنية المعلومات  
Saudi Information  
Technology Company