

## OPPORTUNITY #21

WHAT IF WE KNEW HOW WELL OUR COMMUNITY WAS DOING?

# INTERNET-OF- MENTAL-HEALTH

Supporting community mental health  
through active monitoring



Nearly

# 1 billion

people globally suffer from  
mental health conditions

### WHY IT MATTERS TODAY

Good mental health makes people more resilient and more productive as well as better able to realise their potential and contribute to their families and communities. However, nearly 1 billion people globally suffer from mental health conditions.<sup>203</sup>

Up to 85% of people in low- and middle-income countries who suffer from a mental health disorder, if identified, lack access to care.<sup>204</sup> Half of those in high income countries will suffer from a mental health condition at some point in their lives.<sup>205</sup> Mental health will therefore continue to be a global priority.

Mental health can be addressed by services provided at the community level through multi-sector partnerships,<sup>206</sup> involving individuals being treated by multi-disciplinary teams or connecting with others in groups.<sup>207</sup> Research on approaches and effectiveness of community-based mental health interventions is limited although, in cases explored by the WHO, community-based services had lower costs than comparable mainstream services.<sup>208</sup>

### SECTORS

EDUCATION · HEALTH & HEALTHCARE · INFRASTRUCTURE & CONSTRUCTION ·  
INSURANCE & REINSURANCE · UTILITIES



### THE OPPORTUNITY TOMORROW

Sensors and wearables can collect and collate data from individuals and locations to enable local government leaders to make assessments of the overall mental health levels prevailing in the area and act accordingly.

Research has identified over 100 neurotransmitters that can be monitored – chemical messengers connecting neurons and influencing appetite, mood, concentration, sleep and heart rate.<sup>209</sup> These include cortisone, serotonin, dopamine and oxytocin. Nanostructure-based sensors and biosensors for neurotransmitters can detect early signals for conditions such as Alzheimer's and Parkinson's.<sup>210</sup>

At community levels, advances in neuroscience, endocrinology and materials can enable real-time monitoring of neurotransmitters affecting mental health through a combination of wastewater testing and anonymised data from wearables and smart home technologies. Leaders would be able to see how well their community is doing with a real-time report card of mental health as part of the information needed to make good decisions on how to mobilise services and nurture health and prosperity through community-level support.

### BENEFITS

Real-time analysis leads to interventions to provide mental health support and address external sources of depression or anxiety, such as financial stress or poor housing. Greater awareness and more proactive measures can improve societal well-being and promote a greater sense of prosperity. Targeted insights can help people take control of their own health and well-being, improving their life prospects.

### RISKS

Potential risks include invasive, non-consensual monitoring and privacy issues along with interoperability and compatibility issues with data from wearables and other IoT infrastructure.

The malicious use of mental health data could pose risks to individuals' privacy and well-being, particularly in communities with limited access to wearables and low adoption of smart home technologies. Malicious falsification or misrepresentation of data could influence decisions and policies.