Step two: Unlock exponential opportunity (and trust)

Today's organizations know more about their operations, their customers, their ecosystems than ever before. Wearables, internet-connected devices, and robots are generating new data streams from factories, oil rigs, construction sites, and shop floors. Like puzzle pieces, each piece of data fits with others to reveal a bigger picture. Their quest for context is getting both more compelling and more challenging with each technological breakthrough.

Showrooms, for example, can capture data from customers' gestures, facial expressions, and vocal intonations as they interact with products they wish to buy. Machinists can project digital manuals and virtual displays as they reconfigure a production line. Blockchains can track the sources and origins of data. AI can make sense of intricate patterns of contextual data and learn from them.

Exponential technologies like virtual and augmented reality reveal context at scale. Every person and every thing becomes "more knowable"—not just in the abstract, but in the moment. These technologies, like the microscope and telescope before them, can make citizen scientists of all of us. They allow individuals to see up close and far afield, sparking new ways of thinking as surely as they illuminate new ways of working and innovating.

Among the more compelling tools emerging from these new technologies—aided by truly big data streaming from connected sensors—are "digital twins": precise data replicas of intelligent workflows, innovative prototypes, and breakthrough processes. Digital twins offer engineers and plant managers alike a chance to simulate a multitude of scenarios involving their physical assets.

Digital twins reveal what is happening now, or what could happen far into the future. Data sent from sensors attached to the physical object could be used to troubleshoot a manufacturing bottleneck from afar, optimize a crew and its machinery on a construction site, or monitor the safety of workers on an oil rig.

Torchbearers, having proven that they can generate robust returns on established technologies—such as cloud, Internet of Things (IoT), and mobile—are confident in their powers to do the same with exponential technologies (see Figure 10).

Figure 10

Ahead of the curve

Torchbearers expect to excel at next-generation exponential technologies