

## **Abstract**

### **Three New Technologies That Will Profoundly Affect Society**

The pace of technological change and its impact on society are accelerating. There is likely to be even more technological change in the next 15 years than in the last. Who would have predicted in 1998, for example, that in barely 15 years, most of the world's knowledge would be available instantaneously anywhere in the world on a smartphone in the palm of your hand? This report focuses on three technologies likely to have a profound impact on society. Algorithms already have a major impact, if little appreciated by the public, and will have an even greater impact as they become more sophisticated and govern even more aspects of our lives. The new robotics are in a nascent but important stage and are poised to be widely present in society, as robots move far beyond the assembly line. The third technology, quantum computing, may not be on the scene for another 10 to 15 years, but when it arrives, it will have a transformative and disruptive impact on all aspects of society – and its likely arrival will require preparations in the near term, especially regarding encryption. The new robotics are made possible by, and rely on, information and communications technology (ICT), artificial intelligence (AI), big data and the cloud. Big data and the cloud depend on algorithms and virtually free and unlimited computing power and storage. Quantum computing, when it becomes a reality, will put this ecosystem on steroids. These technologies should not be viewed only as separate entities but rather also as parts of a social-technological ecosystem in which the whole is greater than the sum of its parts. These technologies will evolve into a highly networked, intelligent, and global knowledge-based economy, which some have dubbed as the Third Industrial Revolution.