         The networking industry is evolving very rapidly and various types of technologies such as data, voice and video networks are converging. Describe emerging technologies and trends in the telecommunications industry from a corporate and consumer perspective. Provide at least two current examples of each type (corporate and consumer) with references. What technologies do you see becoming mainstream in the next 18 months, 5 and 10 years?

There a wide range of emerging technologies and trends currently shaping the telecommunications industry. From a **corporate perspective**, three trends that stand out are: (1) cloud-based computing and software as a service (SaaS)1; (2) the use of machine learning and big data solutions to improve/facilitate a wide range of business processes, including marketing, analytics, and product development2; and (3) message/channel-based communication in the workplace (i.e. Slack; video conferencing, etc.)3. These trends will make it easier for companies to benefit from customizable “app-based” business tools, leverage consumer/client data to improve profitability and anticipate shifts in preferences, and collaborate with coworkers in real time, regardless of their location.

These trends manifest in different but related ways from the **perspective of consumers.** With respect to cloud computing and big data, the ways (and frequency) with which consumers interact with their smartphones, tablets, and other mobile devices (in addition to PCs) will continue to evolve as faster wireless networks become more available and affordable to people around the world. This means more people’s data (whether it be their search queries, biometric data, Facebook “likes”, or other sorts of meta-data about their online activities) will become inputs for machine learning algorithms. While there are rather predictable implications for increasingly tailored marketing (on and off-line), the same logic has, and will continue to be, applied to fields such as education (i.e. Kahn Academy, Code Academy, etc.), and will presumably be applied to healthcare/medicine.4:6 These developments coincide with, and are in part fueled by, the rise of the Internet of Things (IoT), in which consumer wearable devices and household appliances “talk” to one another over wireless and blue tooth networks.

Over the next 18 months, I think we will see virtual reality become accessible to an increasing number of consumers7, and I think we will see many major tech companies make large investments in artificial intelligence, aimed to take us to the next generation of “search queries” (i.e. predictive search/requests based on other features of the “use case”; automation of common/predictable tasks, and other sorts of predictive/associative tasks related to our social networks and online behavior.8 I also think the tension between this sort of technological progress and security/privacy concerns will be a persistent pain point, which will bring issues such as end-to-end encryption versus national security concerns to the forefront.9

Over the next 5-10 years, virtual reality technology and artificial intelligence will undoubtedly become more affordable and widespread (i.e. self-driving cars, increasingly autonomous robots and OS), although it is unclear whether the net impact of such devices will be positive or negative from an economic and/or sociocultural perspective (i.e. if an increasing number of jobs are automated, will new technologies create new jobs that we can’t imagine yet, or will large numbers of people become structurally unemployed?).

Additionally, over the course of the next decade, large numbers of people around the world—particularly in developing and historically authoritarian countries—will be able to access the Internet in greater numbers at greater speeds. This will have implications for ecommerce and digital currencies (among other fields), but it’s also worth noting that these people will be able to contribute to open source projects and public forums for the first time, and their contributions may well lead to the creation of other sorts of technologies aimed at solving problems of the developing world (i.e. scarcity of credit, government censorship, desire for transparency and open data, etc.)

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2. <https://hbr.org/2012/10/big-data-the-management-revolution/ar>
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5. <http://techcrunch.com/2015/08/05/target-launches-beacon-test-in-50-stores-with-expanded-rollout-later-this-year/>
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