What’s Next in Computing? Important Trends for Startups and Investors



Opinions expressed by *Entrepreneur* contributors are their own.

Since technology and business evolve continuously, it is critical for startup founders, corporate executives and venture capital investors to understand the latest trends. Doing so puts them in a better position to design product or service offerings, build partnerships between startups and corporations and make financially smart investments. Let’s look at the latest developments in computing, and I’ll share my advice to help you navigate what’s ahead.

Growth in high-performance computing

As big data-based research and analysis grow and cloud computing evolves, I expect high-performance computing usage to surge in 2022. It will become increasingly important – and more mainstream – because quantum computing technology needs to keep up with business demand. Businesses across the globe use quantum computing to explore space, conduct medical research and discover more effectively.

We've recently seen innovation and growth in quantum computing space by players including Google, IBM, Microsoft, Amazon, and Alibaba. Cutting-edge startups, Rigetti Computing, D-Wave Systems, ColdQuanta, 1Qbit, Zapata Computing and QC Ware have surprised industry insiders with their technology and their growth.

As we progress through 2022, we will likely see even more evolution in quantum computing, especially due to the massive demand for larger machine power. This demand will rapidly accelerate quantum computing development. I advise that startups, corporations and investors be on the lookout for large qubit developments soon. Commercial quantum computing will be within our reach, and new breakthroughs will occur rapidly.

Expansion of artificial intelligence, big data analytics and cloud computing

While we once regarded artificial intelligence (AI) as a far-away notion, it's already become a key component of our lives. AI helps computers improve personalization, recommend products, control devices and rank search results. It's also

integral to build improved models of the environment. Moving forward, I expect that we'll see AI in an even wider range of business and technology applications.

What's more, predictive analytics are being used to forecast potential future trends. Based on a report published by Facts & Factors, the global predictive analytics market is growing at a compound average growth rate of around 24.5% and is expected to reach $22.1 billion by the end of 2026.

I also expect major growth in cloud computing this year, as it becomes more prevalent with more computing workloads running on the cloud. The growth of the Internet of Things will help push cloud computing forward. According to predictions from Gartner, global spending on cloud services is expected to reach over $482 billion in 2022, up from $314 billion in 2020.

Expansion of 5G-6G and satellite-based internet usage will drive networking

Internet connectivity and reliability is more critical than ever as employees continue to work remotely. The Internet of Things (IoT) makes the internet an even more integral part of our lives; developments at all network levels will drive research and stimulate the internet economy.

The Cisco Visual Networking Index forecast update for 2018 states that there will be 1.4 billion more people using the internet in 2022, compared to 3.4 billion users in 2017. This equates to almost 60% of the global population, assuming a population of 8 billion in 2022. By then, internet users are expected to consume 4.8 zettabytes of data per year, 11 times the amount of IP traffic generated in 2012, with 437 exabytes.

Even though 5G is in its infancy, I anticipate that we'll see more focus on 6G in 2022. Back in 2018, China started

researching 6G technology. By late 2020, the country launched a satellite to test terahertz signal transmission. Huawei and ZTE were involved. The U.S. also started 6G research in 2018; in fact, the Federal Communications Commission (FCC) opened a higher frequency spectrum for experimental use. A Next G Alliance was started in 2020, with companies on board including Apple, AT&T and Google. Japan, Korea and several European countries now take 6G seriously, and I expect that we'll see more announcements about this technology.

The growth of high-performance computing makes security and privacy even more important for businesses and consumers. Therefore, it's important that you consider these when making decisions. Several corporations – including Colonial Pipeline, Acer and the National Basketball Association – have been the target of major cyber attacks recently, and businesses have become more vulnerable to destructive attacks.

A growing number of cyber attacks will spur more counteractive measures across the board. Defending cyber attacks will include educating individuals so they can identify and avoid network assaults, thereby safeguarding their company's image. The use of AI can enable cybersecurity to spot risks and learn the behaviors of cybercriminals, thus preventing prevent future attacks.

Seeing what's ahead

While we can't predict the future, we can make smart business decisions today by understanding the latest technology and business trends in computing. This helps businesses and investors know where to apply their efforts now and how to anticipate how computing will evolve in future years. It's not easy to predict, but understanding the patterns of innovation in computing will help startups, and the corporations and venture capital firms that invest in them become even more successful.

https://www.entrepreneur.com/article/423093