



RUMBLE

7 Edge Computing Predictions for 2021

Perry Lea, Co-Founder

IoT Continues its Rapid Evolution and Adoption Across all Industries. Capabilities Continue to Advance and Evolve.

2021 will lead to some realizations of the value of IOT and edge computing. While we see constant growth in these areas, it is now time to demonstrate and deliver value. Technologies are evolving and we see a transformational shift in some areas that may prove valuable to anyone considering edge computing in their organization.

1. 5G continues to make progress with consumer 5G radios now arriving from suppliers like Qualcomm, Apple, and Samsung. While this infrastructure starts adoption, municipalities are responding as fast as possible to prop up small cell infrastructure. We do believe 5G has a place especially in the MEC and Network Function Virtualization which will prove useful for content delivery providers and industrial IOT use cases.
2. Citizens Band Radio Spectrum, or CBRS, will increase adoption. While 5G infrastructure allows for high speeds, capacity, and density of communication, it is still burdened for service level agreements with carriers. CBRS reuses the unlicensed spectrum and allows for the benefits of cellular communication without a tie to a single carrier (or any carrier for that matter).
3. Low Earth Orbit Satellites will see tremendous growth. In January 2020 there were 60 Starlink satellites at an orbit of about 340 miles above the earth. Twelve months later there are 955 with plans to encompass the earth with 12,000 satellites. These satellites have now demonstrated they are capable of about 30ms latency and 160

Mbps bandwidth. That is faster than 95% of all US broadband coverage. We believe low earth satellites will be a game changer for IOT and edge adoption especially in rural areas worldwide with poor or non-existent internet access.

4. Moore's law still has room to grow in IOT and edge deployments to reduce cost, power and improve performance. We will see an advent of new silicon and computing power as these devices start taking advantage of high-performance nodes like 7nm and 5nm. Additionally, technologies like NVMe storage will migrate to edge appliances providing a stair-step in performance gains. What will we do with all this power?
5. Edge systems will be the play space for AI accelerated silicon. A myriad of startup (and not so startup) companies is producing silicon for inference at the edge. Technologies from companies like Perceive will allow for ultra-low cost and fast machine learning applications close to the edge. No longer will cloud services or high-cost GPUs be required to perform real-time analysis of edge events.
6. We see a huge migration of CoLo and edge services that require ultra-low latency and dynamically adjusted capacity. Industries such as content delivery networks, online video gaming, medical services, and mission critical applications will utilize edge computing.
7. New technologies will arise utilizing standards like Bluetooth 5.1 and 5.2. We expect to see advanced 3D spatial tracking systems and new audio experiences utilizing these technologies that were out of reach before. They will open new experiences and transformational opportunities for consumer and enterprise applications like location tracking, agriculture, and logistics.

ABOUT RUMBLE

RUMBLE is dedicated to helping clients harness the power of IoT. We leverage data to support near real-time decision making and action. The result is performance improvement and revenue growth.

RUMBLE was formed because IoT Architecture and Implementation are complex and a specialty that few companies possess, RUMBLE being one of them.

Progressive businesses, and businesses that will outperform their competitors, are connecting real-time operational performance to the people, or machines, that can act to improve outcomes. Agile and innovative business management requires access to data. Most companies have siloed data, stagnant data, reporting lags, and disconnections that hinder impactful decision making and action. RUMBLE specializes in tools, like IoT solutions and situational intelligence software, to break down these barriers and present the data in a near real-time, actionable format. We have the expertise, the experience, and the tools to deliver the promise of IoT and performance improvement to your organization. Let's get started with a conversation.

ABOUT THE AUTHOR

Perry Lea, RUMBLE co-founder, is a 28-year veteran of the technology industry. He served as Distinguished Technologist and Chief Architect of the Imaging and Printing Group of Hewlett Packard. There he architected and technically steered the design of over 60 product lines in a \$20B industry. He also worked with HP Labs and various industries in a processor technology, security and memristor design. He then served as Distinguished Member of Technical Staff and Director of Strategy at Micron where he developed the world's first non-Von Neumann computing technology to directly address the inefficiencies of computer vision, machine learning, and big data analytics. Later he worked as Director of Technology for Cradlepoint building a successful IoT business and technology line. He now serves as CEO and Founder of Computational Vision providing professional services and consultation in areas of emerging compute, IoT and edge computing, and business development.

He is author of over 50 patents and has recently published "The Internet of Things for Architects" through Packet Publishing. He holds engineering degrees in computer science, computer engineering and a post-graduation degree in electrical engineering from Columbia University Perry.Lea@rumblenow.com.

