



A Supercharge Lab Whitepaper

# FUTURE PROOFING YOUR BUSINESS WITH EDGE COMPUTING



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## **ABOUT SUPERCHARGE LAB**

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Supercharge Lab is an artificial intelligence company that analyzes human approaches to decision making and applies it to practical corporate functions like sales, marketing, and strategy.

Founded in March 2020 by award-winning serial entrepreneur, Anne Cheng, Supercharge Lab launched the Sigmund brand in August 2021 and has since worked with a singular focus of shipping solutions that reduce human effort and increase our capability to scale businesses quickly and effortlessly.

Supercharge Lab currently operates in North America and Southeast Asia.

## **ABOUT SIGMUND**

One-click marketing strategies in fifteen seconds that consider:

- Your competition's paid, organic, and content strategies
- Search terms that flow into your website
- The psychological triggers of your audiences
- Your past paid and organic strategies
- Attribution of traffic to your site

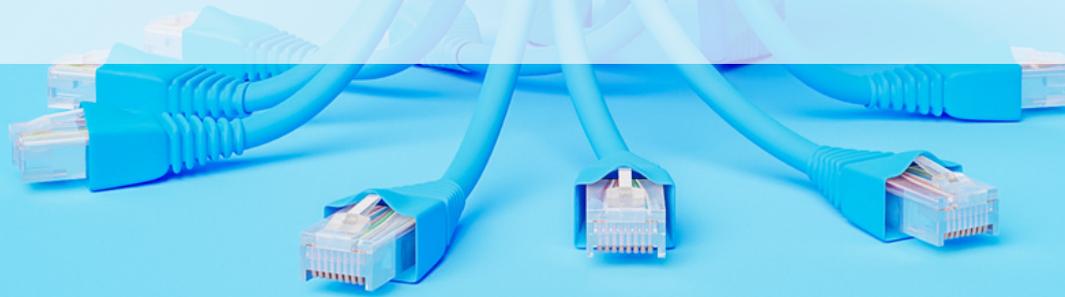
A data-driven expert marketing platform for the modern digital-first economy

- B2B agencies, consultancies and service providers can now scale quickly, get lighter, faster, and better
- Single platform that drives outcomes in content marketing, SEO, performance marketing, and optimizes funnels
- Focus on customer relationships, leave the execution to us
- Cost efficiencies with economies of scale



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## PREAMBLE

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Most people would agree that the future is unpredictable. However, there are a few things we can be sure of, like the continued growth of data and the ever-increasing demand for faster access to information. To stay ahead of the curve and future-proof your business, you need to embrace edge computing.

The term "edge computing" was first used in a white paper by Cisco in 2010. The company described edge computing as a way to improve the responsiveness of applications and services by deploying resources closer to the user. Edge computing can be used to improve performance for applications that require low latency, such as real-time communication and gaming, or for applications that generate large amounts of data, such as video streaming or Internet of Things (IoT) devices.

Since its inception, edge computing has been widely adopted by telecom companies and web-scale companies such as Amazon, Facebook, and Google. These companies have built massive data centers that act as hubs for their global networks. Edge computing allows them to reduce the load on these data centers by deploying resources closer to the users.



## **WHAT IS EDGE COMPUTING?**

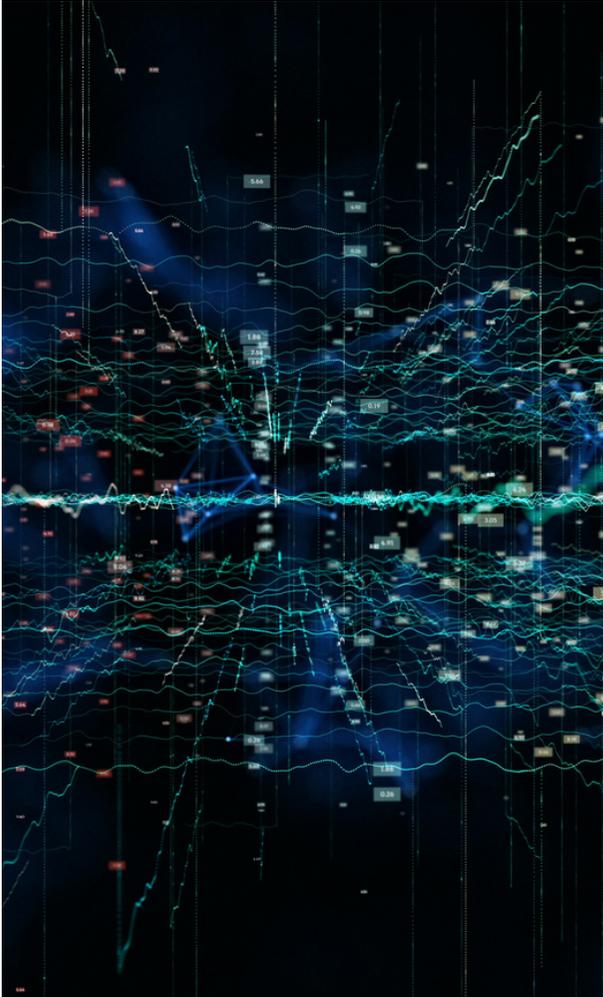
In a nutshell, it refers to the practice of processing data as close to the source as possible. This can be done in two ways: either by bringing the data closer to the user, or by reducing the distance between the user and the data.

## **BENEFITS OF USING EDGE COMPUTING**

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Here are the top 5 future-proofing benefits of adopting and using edge computing:

1. Ensure that business critical applications are always available
2. Facilitating real-time decision-making
3. Enhancing and improving sustainability
4. Reducing data and operation costs
5. Meeting data sovereignty regulations



## **ENSURE THAT BUSINESS CRITICAL APPLICATIONS ARE ALWAYS AVAILABLE**

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Hosting business-critical applications in the cloud is a high-risk move due to the possibility of connectivity issues, such as an accidentally severed network cable. Even in remote locations, an edge computing solution enables more efficient operations without interruption. Because the solution is less vulnerable to interruptions from outside sources, reliability rises and the likelihood of failure decreases.

This dependability, when coupled with real-time processing, can support a wide range of technologies that enhance the end-user experience. IoT and AI-powered apps are made possible by edge computing, which opens new, more productive methods of doing things.



## **FACILITATING REAL-TIME DECISION-MAKING**

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By utilizing edge computing, data is processed without having to travel back and forth to central data centers or clouds, which reduces latency to the levels required to support real-time analysis and decision-making.

This almost instantaneous decision-making is essential for meeting a wide range of current and future needs in business, from streamlining production to running closed loop programs to optimize energy use and cut down on carbon emissions.

## **ENHANCING AND IMPROVING SUSTAINABILITY**

The benefits of edge computing for improving sustainability come from two main sources: reducing energy consumption and reducing waste. First, edge computing can reduce energy consumption by avoiding the need to send data all the way back to a central data center for processing. This is especially important for devices that need to communicate with each other in real time, such as autonomous vehicles or drones. By performing some processing tasks locally, edge computing can avoid unnecessary delays and conserve energy.

Second, edge computing can reduce waste by keeping data local. When data is processed centrally at a large data center, it often needs to be replicated many times to be accessible by different devices across the network. This replication creates needless waste, both in terms of energy used to store and transport data and in terms of physical space used by data centers. Edge computing can keep data local and thus minimize replication, leading to significant savings in both energy and space requirements.

## **REDUCING DATA AND OPERATION COSTS**

Edge computing can help reduce data and operation costs by allowing companies to process and store data closer to where it is generated or used. This can reduce the amount of traffic that needs to be sent over the network, which can save on bandwidth costs.

Edge computing can also help reduce server costs by allowing companies to deploy fewer servers in their data centers. By offloading certain tasks or functions to edge devices, companies can reduce the number of servers they need to purchase and maintain.

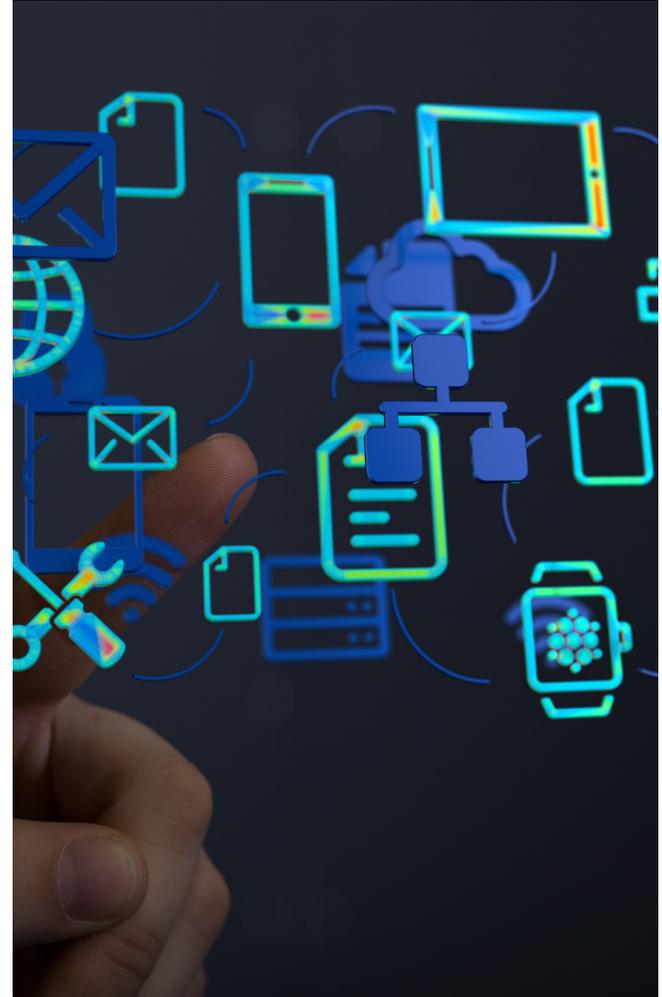
## MEETING DATA SOVEREIGNTY REGULATIONS

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There are several advantages to using edge computing for meeting data sovereignty regulations. First, by distributing processing power and storage close to the users, it becomes much easier to keep track of where specific bits of data are located and who has access to them. This can make it simpler for businesses to ensure that they comply local privacy laws.

Second, edge computing can improve performance by reducing latency and bandwidth requirements. This can be important for applications where responsiveness is essential, such as financial trading or healthcare monitoring.

Finally, edge computing can be used to create secure virtual private networks (VPNs) which can help keep sensitive information away from prying eyes.



## **DRAWBACKS OF EDGE COMPUTING**

Given the rise of popularity in edge computing to help deal with the massive influx of data that companies are facing, there are still certain drawbacks of integrating edge computing. One drawback is that edge computing can be expensive.

Because Companies need to deploy servers and storage at the edge of their network, this can be a costly endeavor. Another drawback is that it can be difficult to manage all of those servers and storage devices. Managing a distributed system can be complex and time-consuming.

Finally, another potential drawback is that edge systems can be less reliable than traditional centralized systems. If one part of the network goes down, the whole system may go down. This could have serious implications for businesses who rely on their IT systems to run their operations.



## COMPETITIVE ADVANTAGE

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Cost and latency rise as data is transported from the edge to a centralized data center for processing. Furthermore, it's not required to return all data to a single, centralized location. Every single piece of unstructured data won't contribute value or be strategically significant to an organization in a world where it is growing exponentially. It is necessary to have a gatekeeper who can distinguish between information that should not be moved around and information that does not require a physical gatekeeper. This uniqueness will foster innovation and provide us a competitive edge.

Automation makes it easy to manage edge locations: infrastructure-as-code can be readily deployed and maintained across numerous sites, whether they are edge or centrally situated. Then, without having to first send the data back to a centralized location, a distributed analytics platform can analyze data from anywhere. This will hasten the process of insight and raise the bar for difference.

If they haven't already, organizations should start seriously considering edge computing and deploying solutions in the near future for reasons including faster response times for decision making at an edge location, resilience, and protecting operations. Companies who do not prioritize investing in their competitive edge will soon wonder why their rivals are outperforming them.

## IN CONCLUSION

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As compared to traditional solutions, edge computing can be complex and expensive to deploy. It can be difficult to determine which applications should be run at the edge and which should be run in the data center. And while edge computing can improve performance, it may not be necessary for all applications.

All in all, the future of edge computing is bright, and businesses that take advantage of it will be better prepared for whatever comes their way. Edge computing is an attractive option for businesses that need improved performance and scalability. However, businesses should carefully consider the specific needs of their applications before deciding whether or not to deploy an edge computing solution.