Title – Revealing The Potential Of IoT With Cloud Computing

Des – 4 reasons why organisations should be using the cloud if they want to unleash the full value of their IoT devices.

Caption - Cloud delivers much more than just the connectivity that IoT devices depend upon. Want to know more about IoT and Cloud Computing? Join us.

The Internet of Things (IoT) is disrupting how we operate our homes and businesses. Since it first emerged as a concept 20 years ago, IoT has become an established feature of our daily lives. From Fitbits to the Amazon Echo and Google Home, today’s consumers are using connected smart devices and wearables to track daily activities like heart rate, activity, or calories. Or to manage their heating, lighting and home security and re-order household staples when supplies run low.

One of the most important contributing factors to IoT’s growing success is its inter-relationship with cloud computing. Put simply, cloud delivers much more than just the connectivity that IoT devices depend upon. Indeed, IoT devices are reliant on the cloud to store important data in one central location that can then be managed and distributed in real-time.

Let’s take a look at four reasons why organisations should be using the cloud if they want to unleash the full value of their IoT devices.

**1 Deployment and Scalability**

Cloud can help organisations overcome the significant technical and cost hurdles that can come with deploying an IoT solution. Eliminating any need to set up physical servers, deploy databases, configure networks, manage connections, or undertake a number of other infrastructure tasks, cloud platforms make it fast and easy to spin up virtual servers, launch databases and create the data pipelines that are needed to operate an IoT solution.

While on-premises IoT network infrastructures require a lot of hardware and time-consuming configuration efforts to ensure things run properly, implementing a cloud-powered IoT system is significantly more streamlined. For example, scaling up the number of IoT-enabled devices is a simple process of leasing another virtual server or more cloud space.

Similarly, cloud services streamline remote device lifecycle management. Delivering both a 360-degree view of the device infrastructure, together with tools that automate the update and setup of firmware and software over the air.

**2 Communication and data management**

IoT devices are valuable to enterprises and consumers because of the information they provide. But they become even more valuable when they are communicating with each other. For example, smart thermostats can tell smart refrigerators when the temperature is getting too warm, while a connected microcontroller can predict when preventative maintenance is needed to prevent an assembly line coming to a grinding halt. Cloud plays an important role in this process by streamlining and optimising machine-to-machine communications and facilitating this across interfaces.

Increased interactions between a growing number of devices and the huge volumes of data generated means that organisations will also need to find a cost-efficient way to store, process and access data from their IoT solutions. Plus, they need to be able to scale up to handle peaks of demand or increase the infrastructure that is needed to handle additional functionality whenever they add more features into their IoT solution.

IoT solutions generates large amounts of data. Featuring in-built management tools and processing capabilities that support the successful transference of data between devices effectively and efficiently, cloud can also provide a hosting platform for Big Data and data analytics in a way that significantly lowers overall cost.

**3 Data mobility and interoperability**

Data stored and processed in a cloud server can be accessed from anywhere in the world without any infrastructure or networking constraints. Similarly, data can be acquired remotely and in real-time from any devices, located anywhere and in any time zone.

Interoperability can also hamper the ability of enterprises to link or integrate data generated by IoT devices to other data resources. The cloud can help link applications and seamlessly integrate all these data sources so they can be analysed, regardless of source. Similarly, the cloud can help organisations streamline how they integrate their IoT solution with other smart products created by other third parties to generate additional value for users.

**4 Security**

In recent years, concerns about how security lapses and failures to update IoT devices have created a gateway for cyber criminals to infiltrate have hit the headlines. Cloud platforms can help enterprises bolster their security posture in two ways. Firstly, as we’ve already seen, cloud providers make it easy to undertake regular software and firmware updates, which can be signed with digital certificates that assure users these updates are secure and legitimate.

Secondly, cloud platforms make it possible to initiate customised client and server-side encryption that secures as much data as possible as it flows through the IoT ecosystem and when it is at rest in databases. Many cloud providers also provide 24/7 monitoring that can help minimise the risk or impact of a major security breach.

**Conclusion**

Adopting a hybrid cloud approach will allow IT teams to establish the right mix of hosting opportunities that make it possible to manage rapid rollout and enablement, as well as getting the most out of IoT devices and future-proofing the IoT strategy without having to sink significant time, money, and effort into building out costly infrastructure.

Ultimately, the cloud can help organisations develop IoT products faster, manage and handle all the data that is produced, appropriately secure the IoT ecosystem, and achieve better integration with existing systems and other IoT devices.