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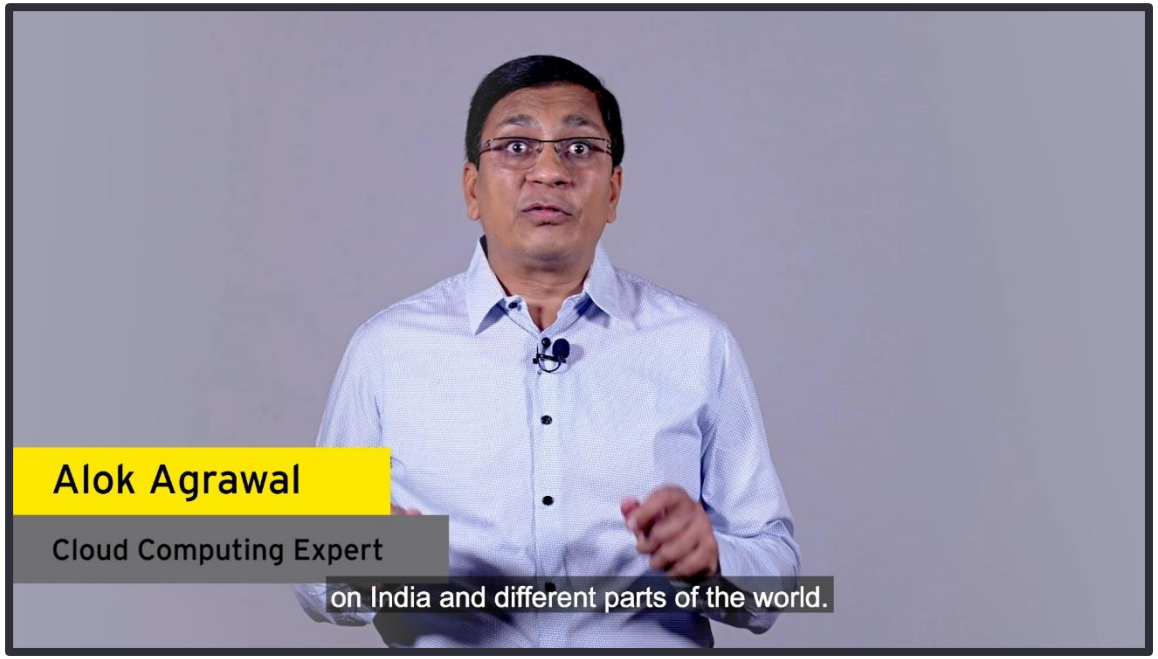
Empowering Sustainability Initiatives

Hello, Many of us have been reading about the Global Warming and the effects of Global warming on India and different parts of the world.



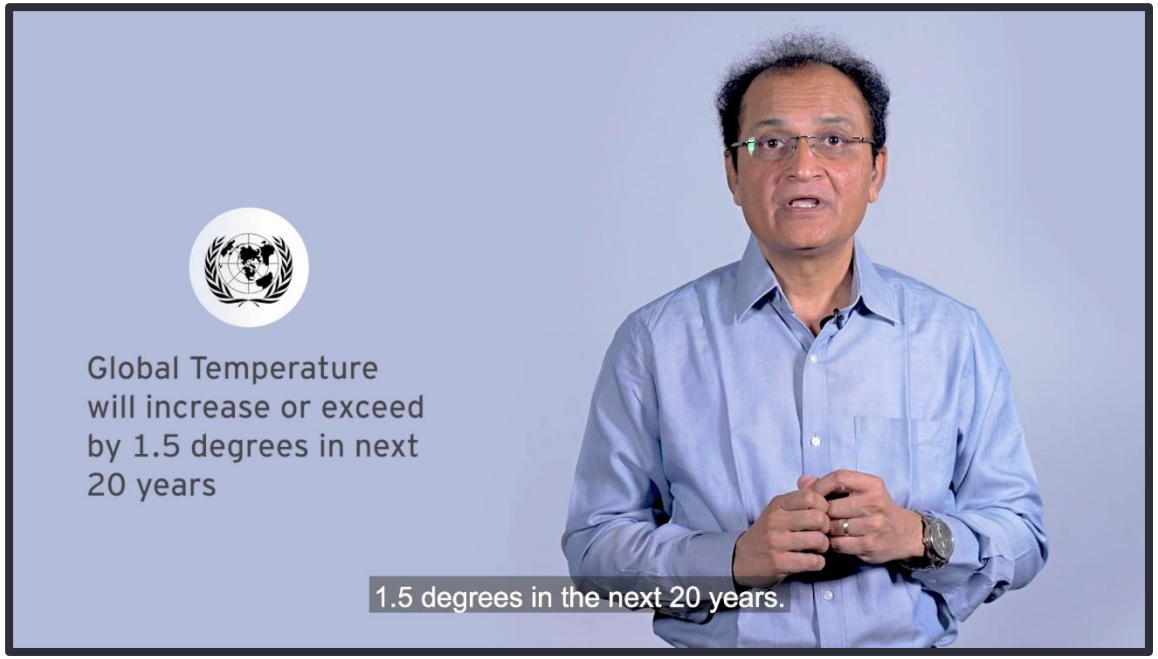
Empowering Sustainability Initiatives

Today, we have Himanshu Shukla who will talk about the sustainability trends and dwell upon how technology can help companies to drive sustainability.

We will look at multiple challenges being faced by the organizations; governments and we will present you case studies on how technology is being used proactively to advance sustainability initiatives.

Empowering Sustainability Initiatives

Recently, United Nations issued a detailed report with a code red warning that the Global Temperature is likely to increase by or exceed 1.5 degrees in the next 20 years. What does this mean to us? Well, we are already facing an increasing number of severe weather events such as Cyclones, Floods, heatwaves, lake outbursts and landslides. Such events are not restricted to India. The floods in China, Germany and Belgium in the month of July 2021 have been unprecedented and devastating. Western Canada and the US recorded scorching heatwaves in 2021.



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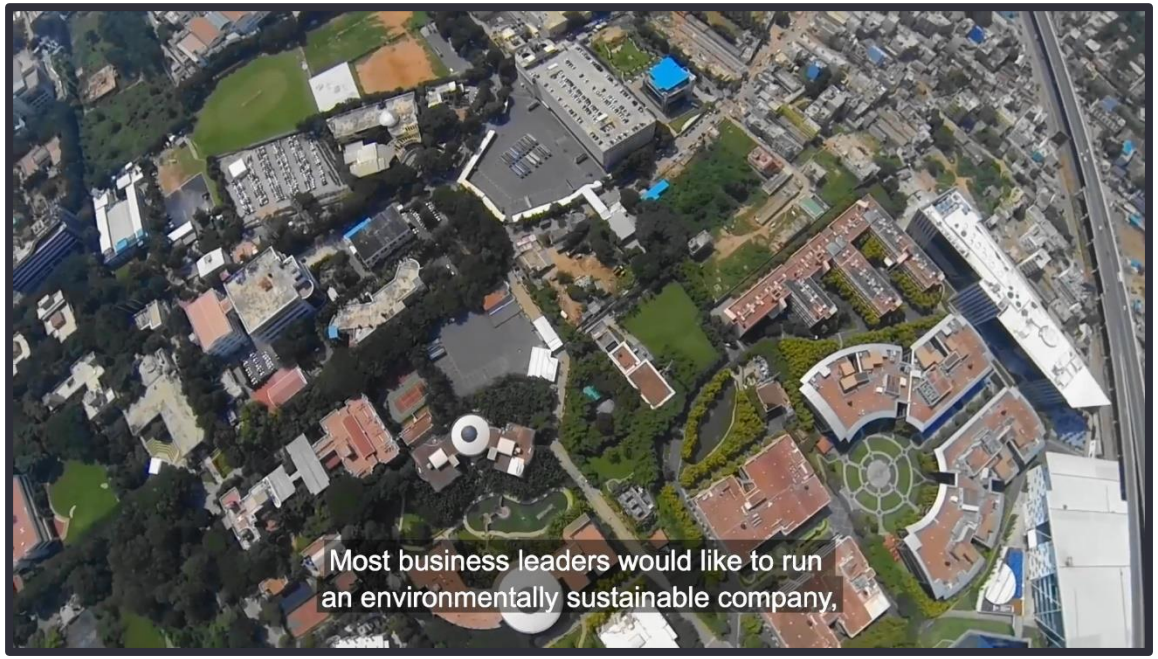
Over the next decade, sustainability is going to become central to corporate strategy.

Most business leaders would like to run an environmentally sustainable company, one that does little harm to the natural world and that leaves its employees and customers healthier. Sustainability presumes that resources are finite and should be used conservatively and wisely with a view to long-term priorities.



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Today, companies have realized their responsibility and started reporting their sustainability activities and demonstrating their commitment.

Empowering Sustainability Initiatives

However, change is harder for any organization and for major businesses, sometimes sustainable practices don't seem very cost-effective to executives.

Overcoming the challenges

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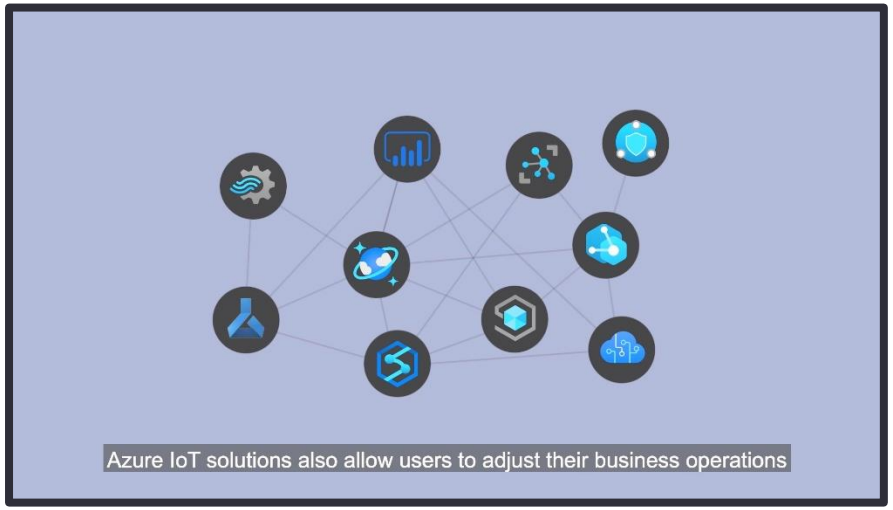
For Example, Microsoft Azure IoT

proves to be valuable to renewable energy suppliers.

It helps them with real-time data on their renewable energy, energy storage assets, and their customers consumption, so that they can continue to supply their customers with continuous renewable energy .

Azure IoT solutions also allow users to adjust their business operations to better fit the availability of renewables. This helps them to utilize energy optimally and decrease their carbon footprint.



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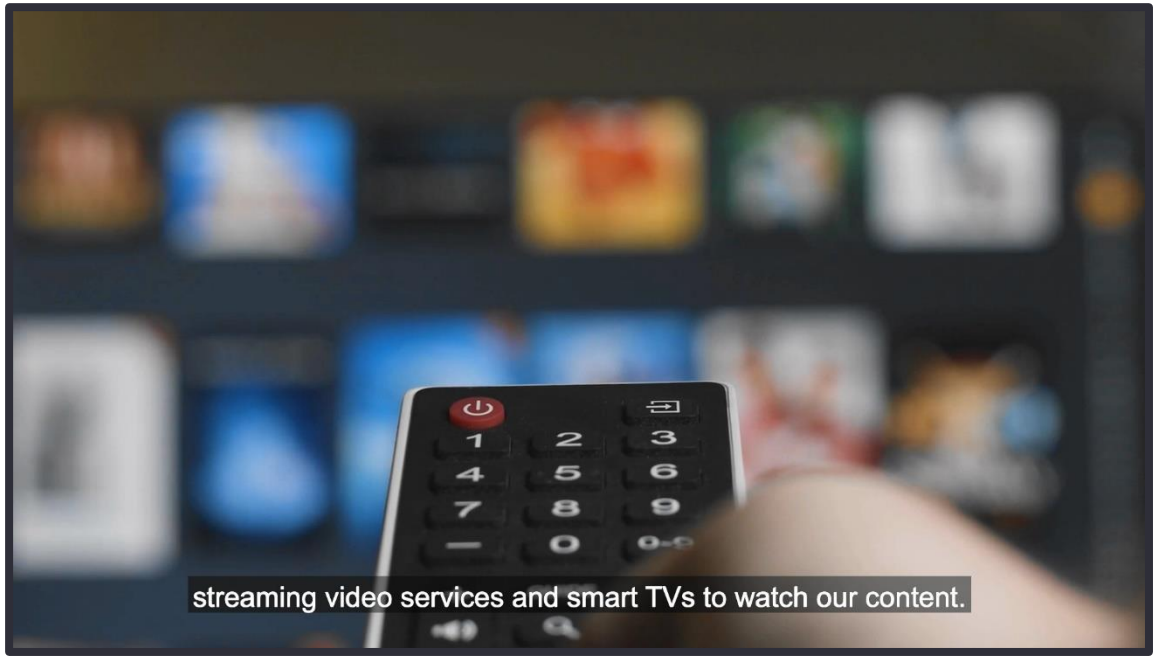
As our technology becomes more efficient, there is a tendency to simply use the extra capacity for additional requirements.

The adoption of home fiber broadband and 4G

has lowered the energy cost of getting more data to our homes, but this has enabled us to invent streaming video services and smart TVs to watch our content.



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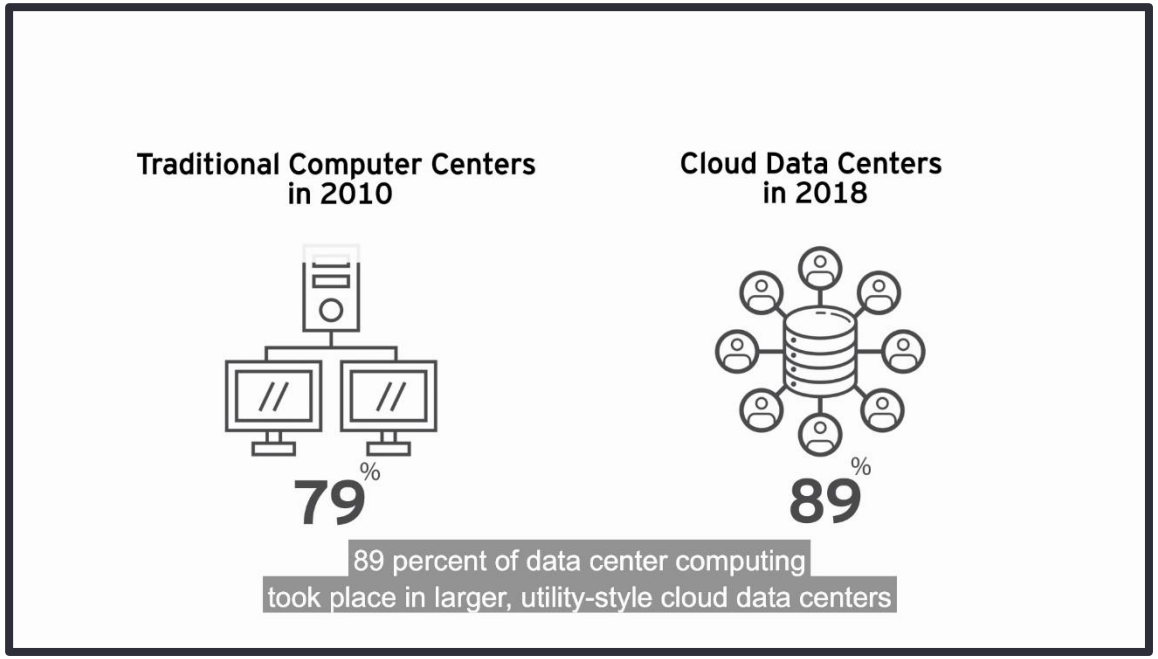
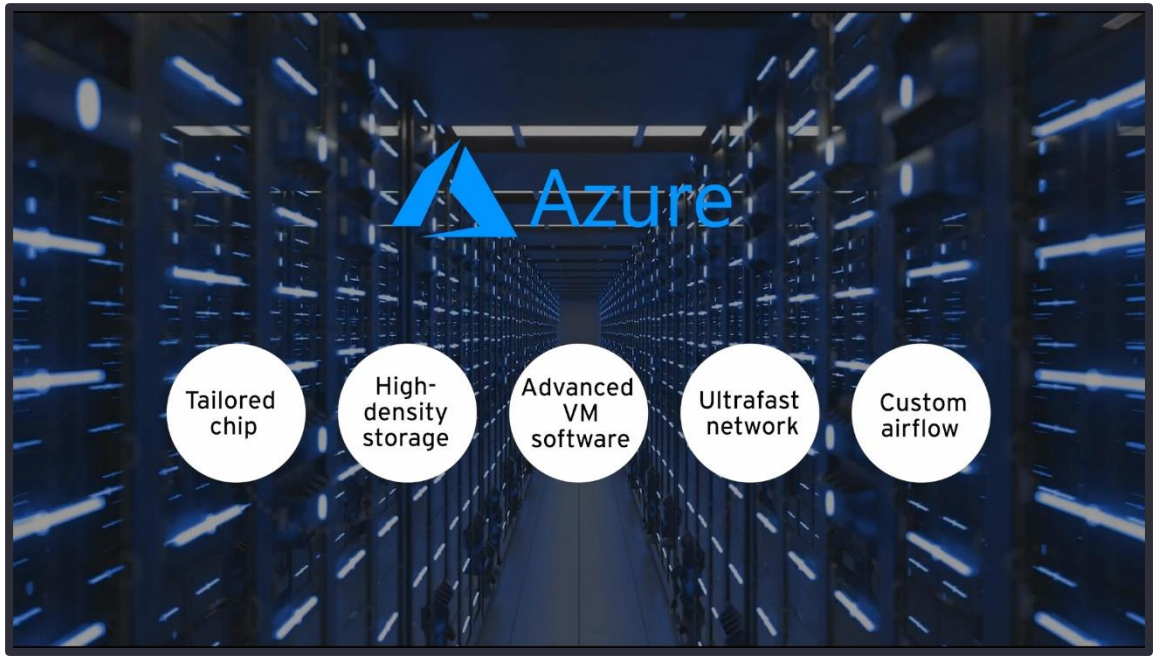
In 2010, almost 79 percent of data center computing was done in smaller traditional computer centers, which were owned and run by non-tech companies. But By 2018, 89 percent of data center computing took place in larger, utility-style cloud data centers such as Azure Cloud.



Empowering Sustainability Initiatives

The big cloud data centers such as Azure Cloud use tailored chips, high-density storage, advanced virtual-machine software, ultrafast networking, and customized airflow systems – all to increase computing firepower with the least electricity.

Each of these sprawling digital factories, house hundreds of thousands of computers, rack upon rack. Some have been built near the Arctic for natural cooling and others beside huge hydroelectric plants.



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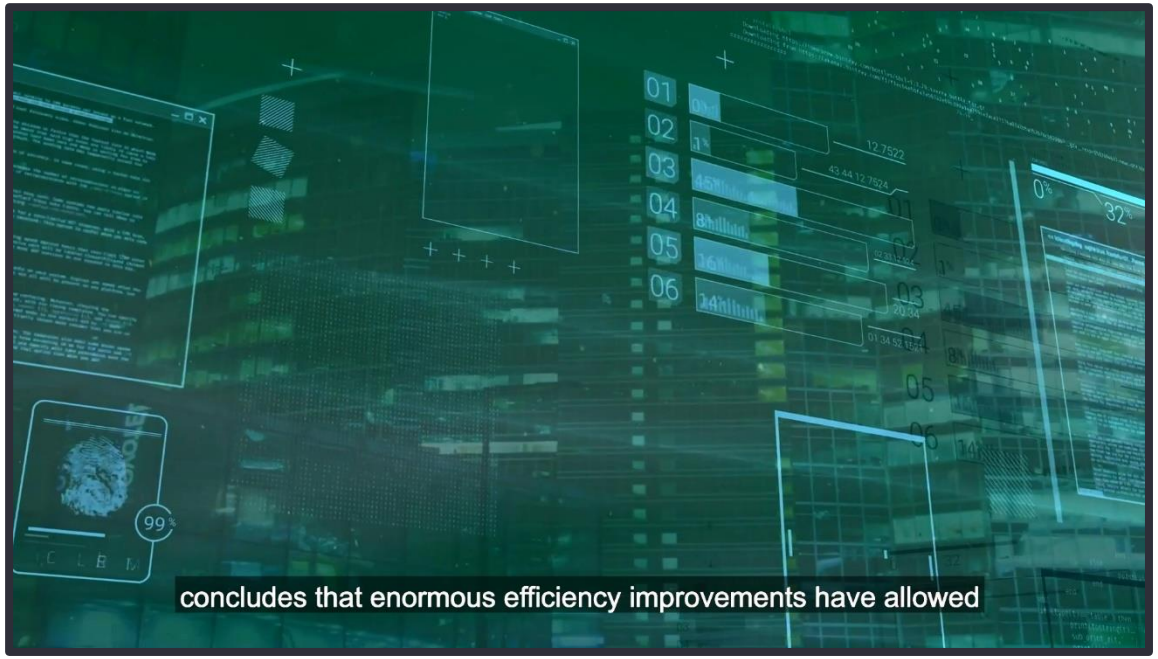
Microsoft will use zero water for cooling for more than half the year at their new Azure datacenter region in Arizona, taking advantage of adiabatic cooling. Microsoft will also use solar energy rather than traditional electricity, which is expected to save more than 350 million liters of water annually. Atmospheric water is used in Microsoft's new datacenter region in South Africa, to cool data centers.

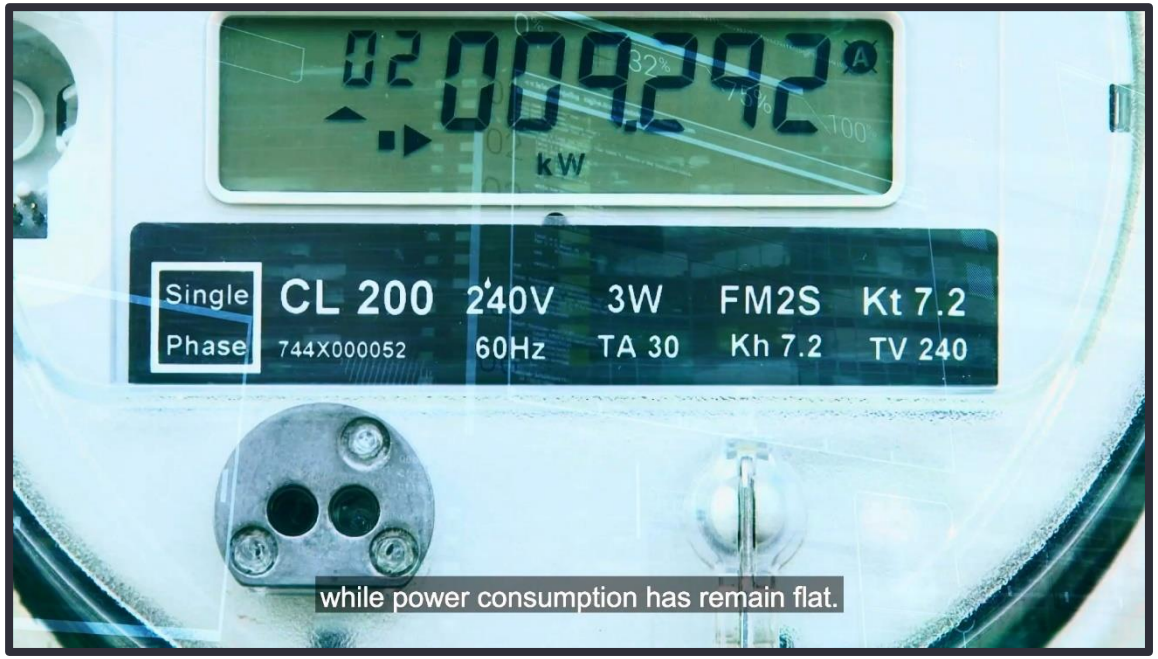
Empowering Sustainability Initiatives

The research done in 2020 concludes that enormous efficiency improvements have allowed computing output to increase very sharply while power consumption has remained flat.



Empowering Sustainability Initiatives

Public Cloud continues to have many advantages because you can avoid paying wages to expert staff, the cost of upgrade of hardware and software may be included in your contract, your energy consumption costs can go down but Azure datacenters also provide safe and secure location for your data so, even if you are hit by a natural disaster, you can start accessing your data quickly and run your business as usual. You can also share your records in a collaborative manner with your colleagues located in another part of the world very easily.



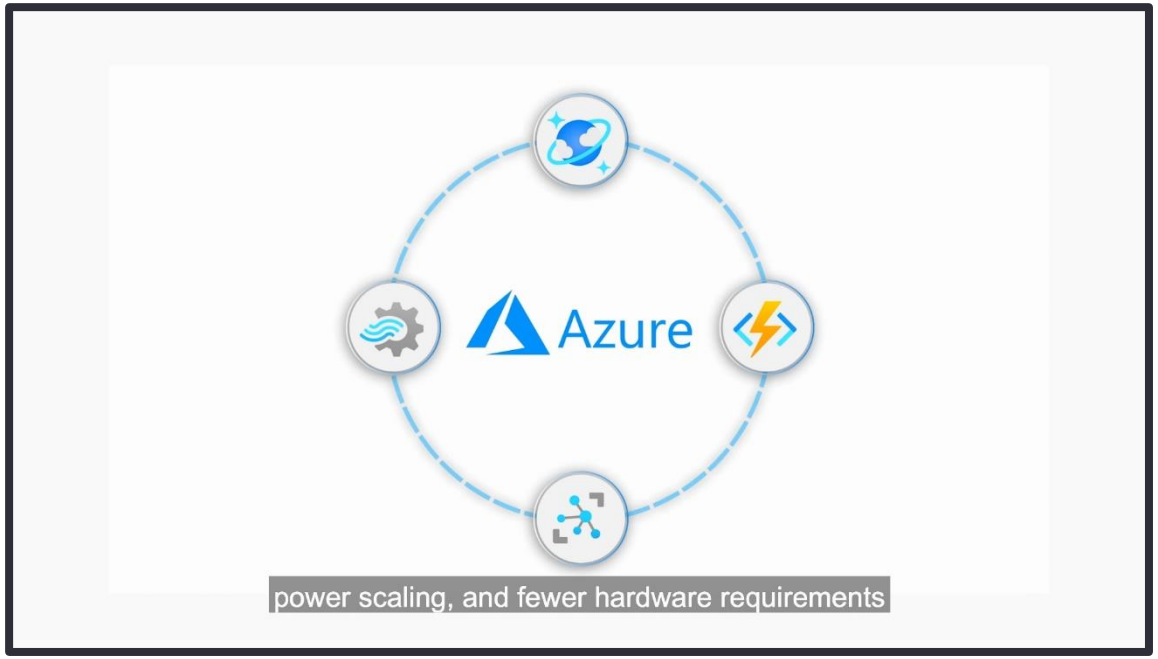
Empowering Sustainability Initiatives

You also have the flexibility to access your data from home, on holiday, or during travel.

You can focus on applying technology to solve core business challenges instead of managing secondary aspects of Energy Management, Power Supply, etc.

Empowering Sustainability Initiatives

Typically, Servers are bought with peak load in mind in on-premises datacenters but they are hardly used at peak loads So, server underutilization in on-premises datacenters results in energy waste as servers are left unused. Hence, migrating to the Cloud significantly reduces these staggering energy costs and wastes. This is powered by better utilization of servers, power scaling, and fewer hardware requirements than on-premises datacenters.



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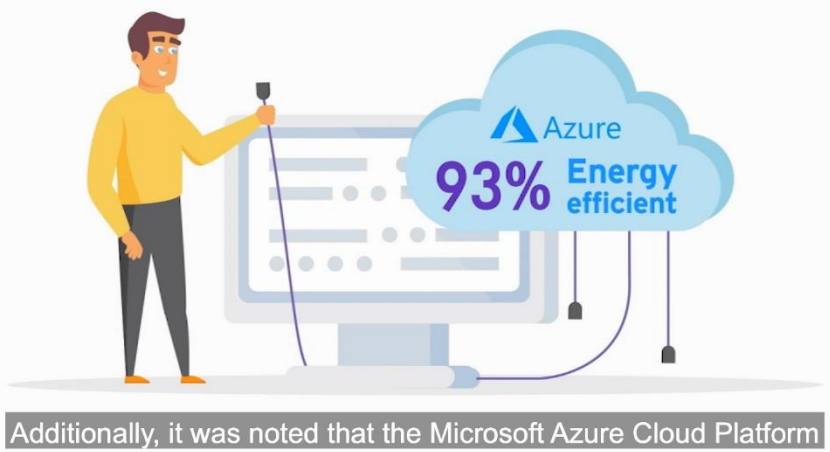
Microsoft and WSP USA conducted a study where in it was discovered that Microsoft Azure cloud was 93% more energy efficient. Additionally, it was noted that the Microsoft Azure cloud platform had 98% lower carbon emissions than on-premises datacenters.



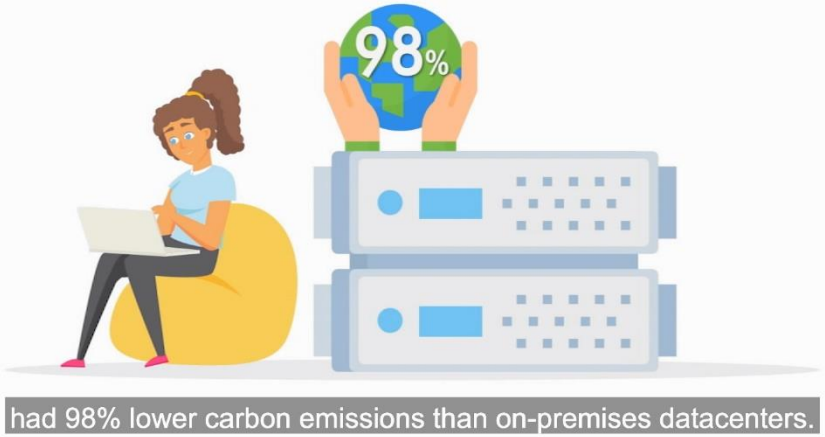
Empowering Sustainability Initiatives

Public clouds are able to deploy ‘Green Datacenters' by utilizing other energy sources.

For example, Microsoft’s Azure datacenters use renewable energies like wind, solar, and hydroelectricity.

Migrating to the Cloud will replace high carbon-emitting machines with virtual equivalents.

98% of the emissions can be reduced by designing applications specifically for Azure Cloud.



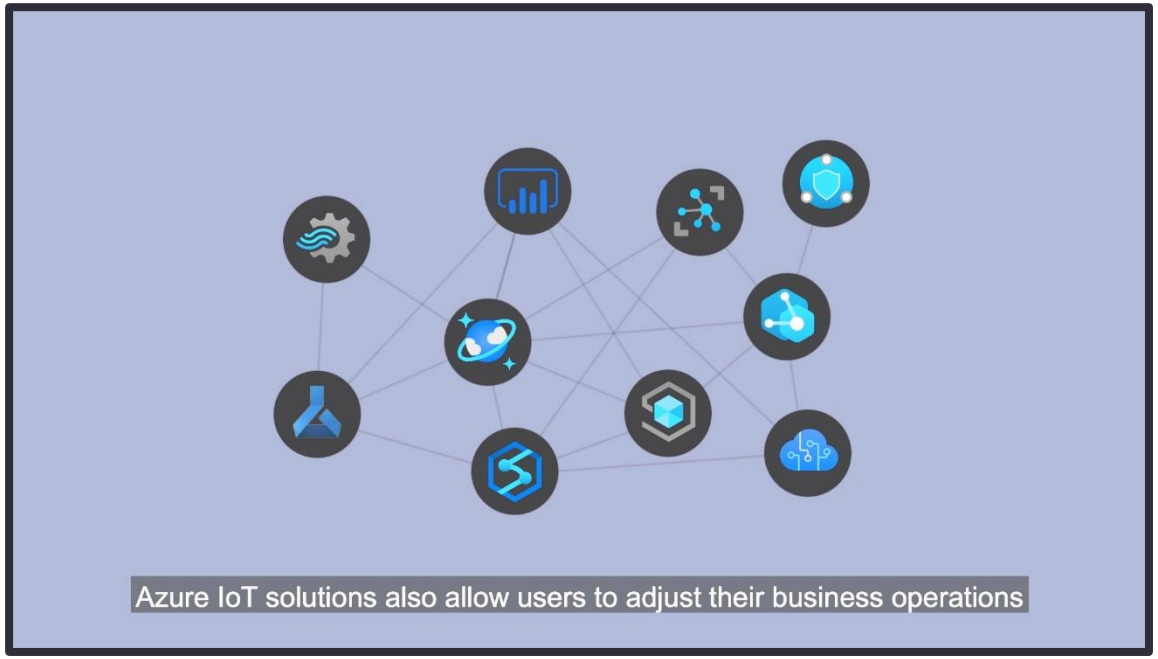
Empowering Sustainability Initiatives

There's a lot sitting on the shoulders of IT leaders today.

After changing the delivery route of corporate IT services during the pandemic year they're being tasked with helping their organizations become sustainable businesses.

How do they achieve that?

By using technology to drive sustainability initiatives such as digital collaboration platforms to reduce travel and applying Artificial Intelligence to optimize supply chains that reduce wastage.



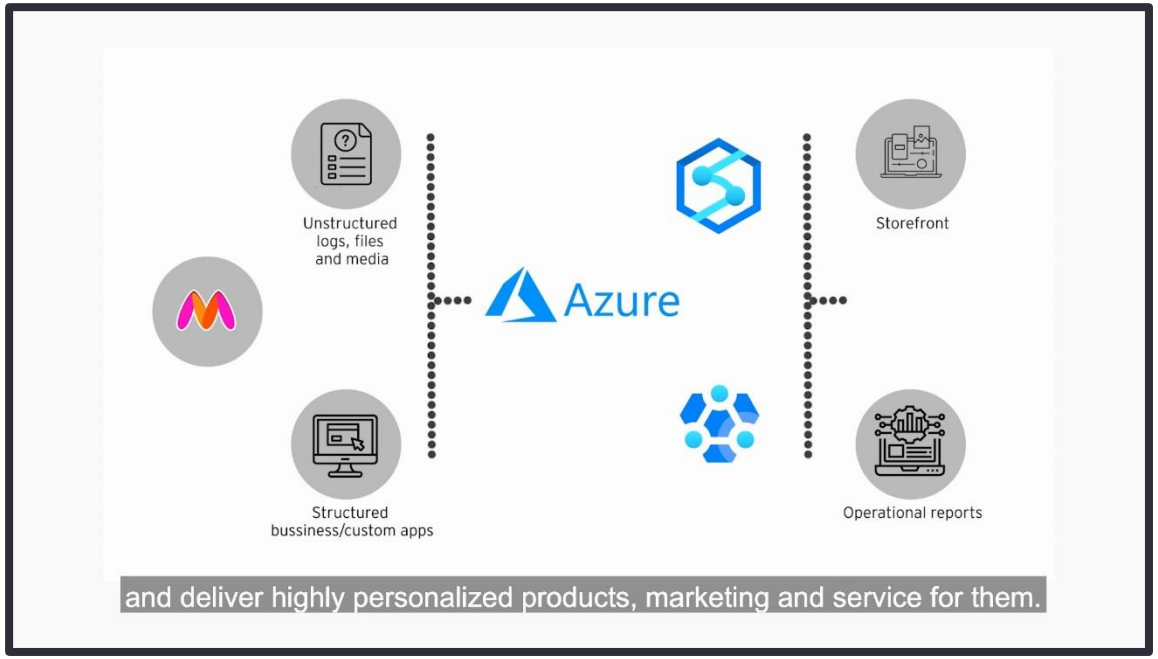
Empowering Sustainability Initiatives

Analytics is something every department needs in a modern business.

Myntra, a leading fashion platform in India, needed a cloud-based supply chain management and inventory solution with massive scale and high performance. Myntra migrated its entire portfolio to Microsoft Azure in just nine months.

Empowering Sustainability Initiatives

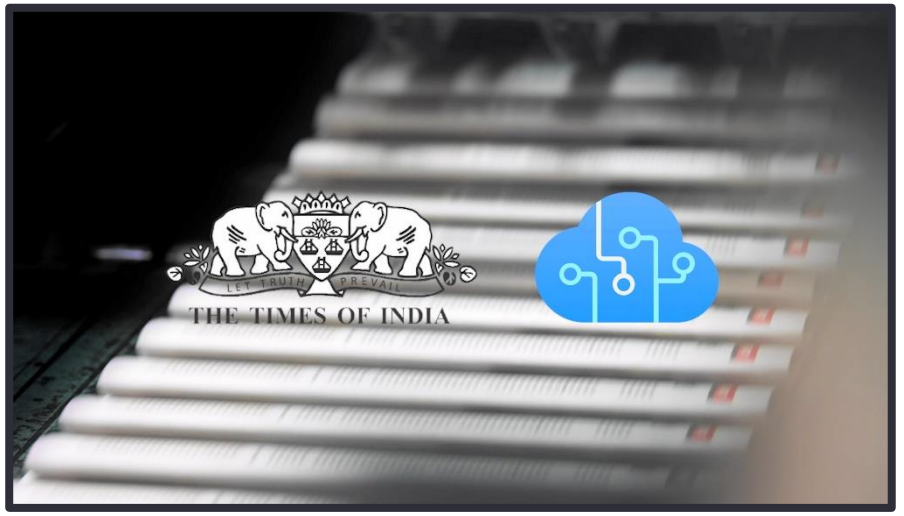
Myntra is extensively using Azure Synapse Analytics and Azure HDInsight to achieve near limitless scale, to gain a comprehensive understanding of customers and deliver highly personalized products, marketing and service for them. You can find more information on this link here..

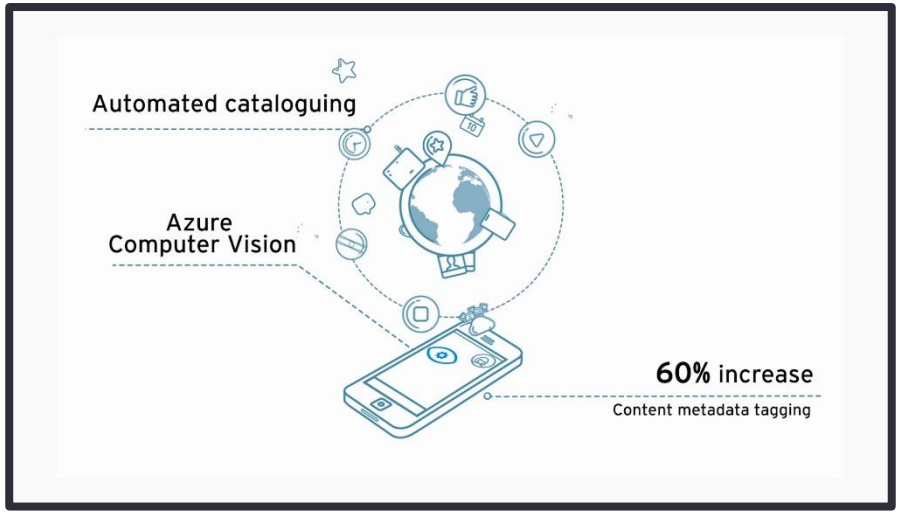


Empowering Sustainability Initiatives

Times Group used Azure Computer Vision to enhance discoverability of content through metadata inclusion in their digital asset management system. BCCL (Bennett Coleman)

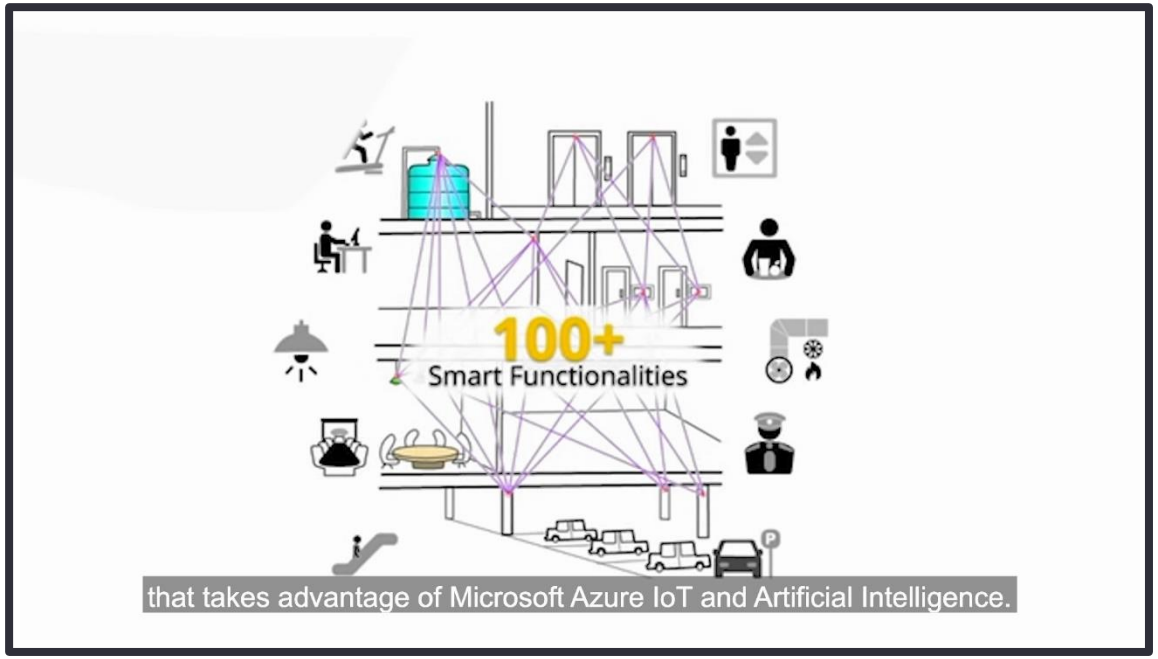
moved from a manual and complex process of cataloguing thousands of images to automated process using Azure Computer Vision, which led to a 60 percent increase in productivity in content metadata tagging and an improvement in tagging accuracy You can find more information on this particular case on this link here..





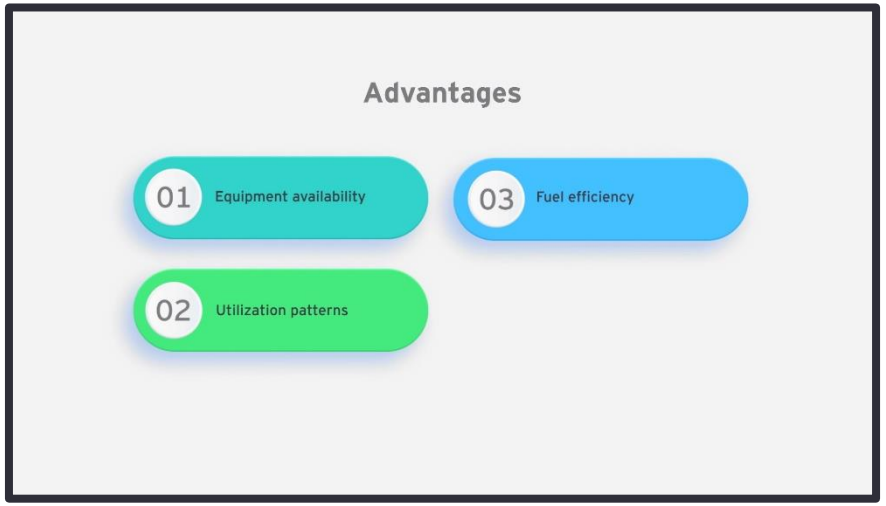
Empowering Sustainability Initiatives

L&T Construction has developed and deployed a digital solution, Asset Insight, which is a connected equipment platform that takes advantage of Microsoft Azure IoT and Artificial Intelligence.



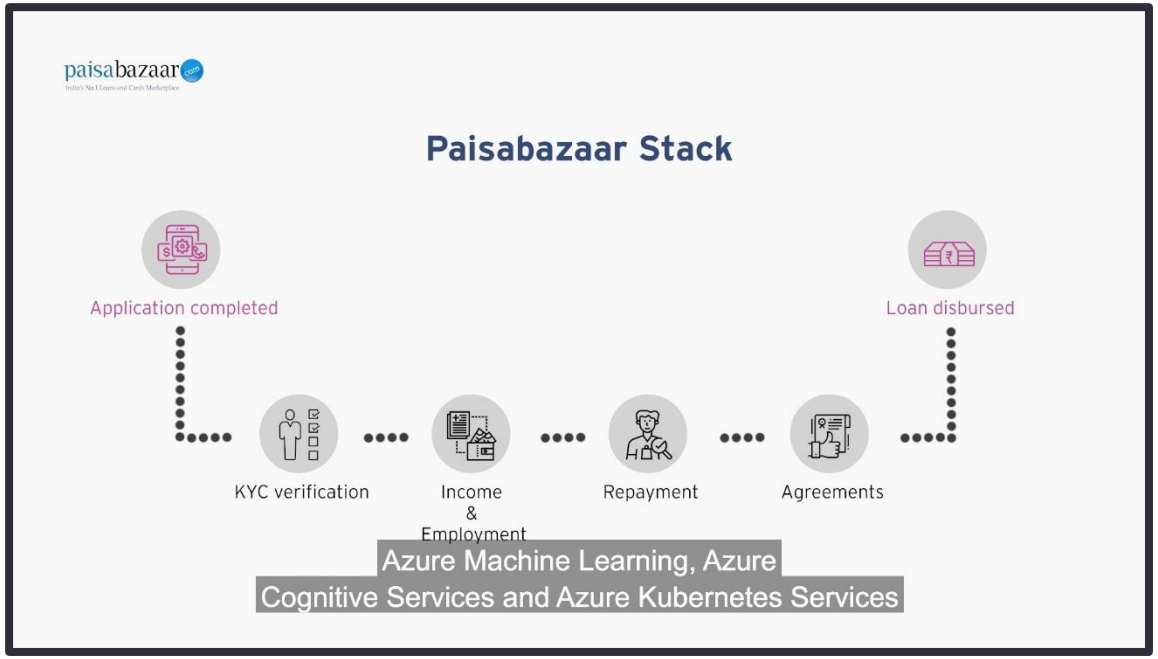
Empowering Sustainability Initiatives

The Asset Insight platform was built using several Azure Platform as a service components such as, Azure IoT Hub, Stream Analytics, Blob Storage, HDInsight, Azure Cosmos DB, Azure SQL Database, App Service, and Microsoft Power BI Azure IoT Hub helps to provide data from thousands of field IoT gateways which are fitted on construction equipment. Stream Analytics creates streaming data pipelines flowing into Blob Storage. HDInsight provides analytics ranging from time series to machine learning All these components help L&T derive insights on equipment availability, utilization patterns, fuel efficiency, and productivity. You can find more information on this particular link here



Empowering Sustainability Initiatives

PaisaBazaar has digitized lending processes when COVID-19 hit India. The company's end-to-end lending process has been digitally replicated through the creation of a digital stack called PaisaBazaar Stack. This disburses loans and issues credit cards using Microsoft Azure, AI Builder, Azure Machine Learning, Azure Cognitive Services and Azure Kubernetes Services You can find more information on this link here..

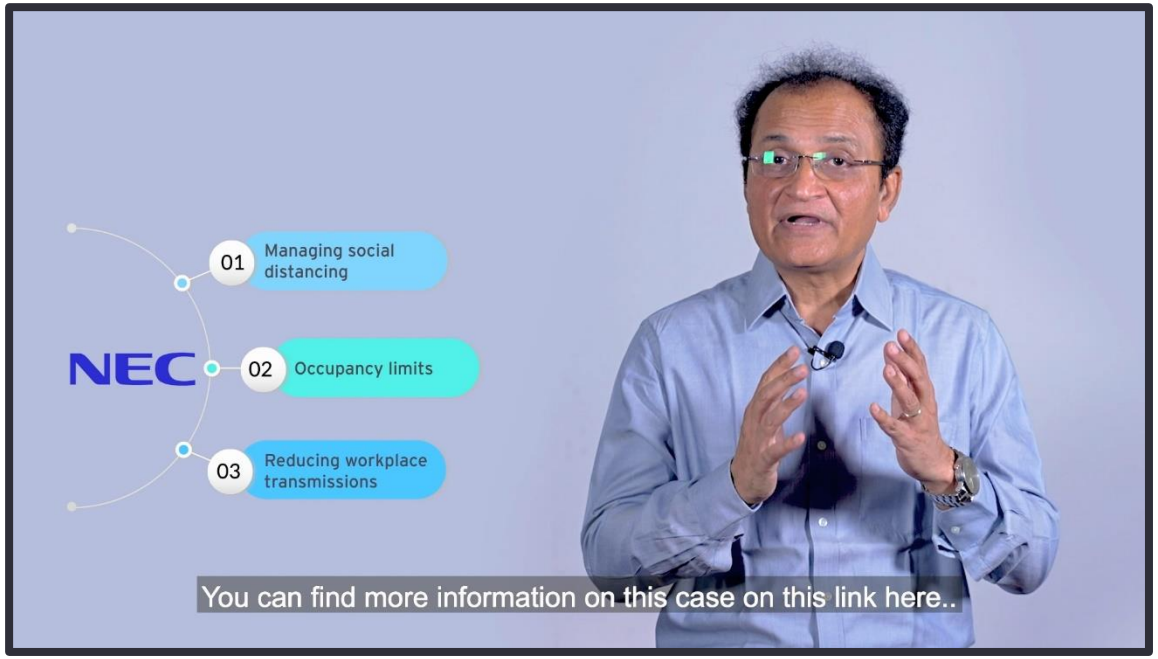


Empowering Sustainability Initiatives

NEC Corporation India is using Microsoft Azure Cognitive Services in combination with other Azure Cloud resources to extend the functionality of the NEC Mi Eye video analytics platform.

Customers can use the capabilities of the combined solution to effectively manage social distancing, occupancy limits and other COVID-19 requirements and help reduce the risk of workplace transmissions.

You can find more information on this case on this link here..



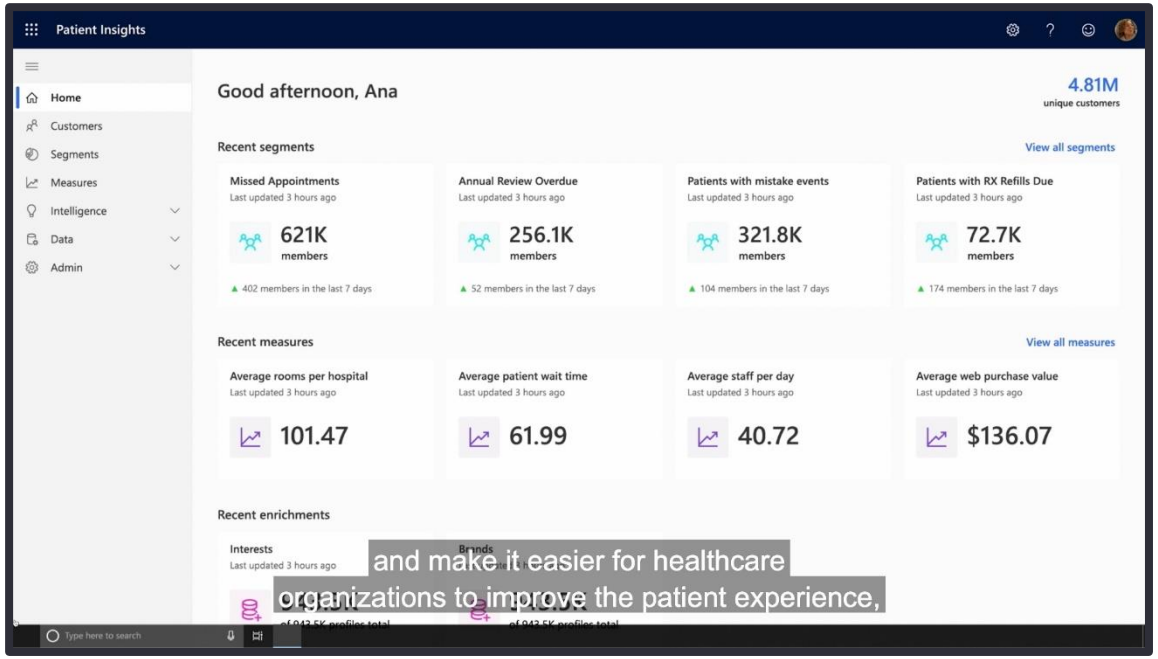
Empowering Sustainability Initiatives

Microsoft Cloud for Healthcare provides capabilities to manage health data at scale and make it easier for healthcare organizations to improve the patient experience, coordinate care, and drive operational efficiency.

You can now connect clinical and operational data across systems to predict risk and take necessary steps for treatment.

Azure Cloud will help to protect sensitive health data to support privacy and security while managing compliance requirements.

You can find more information on Microsoft Cloud for Healthcare here.



Empowering Sustainability Initiatives

Microsoft Cloud for Manufacturing is designed to deliver capabilities that seamlessly connect people, assets, workflow and business processes,

empowering organizations to be more resilient.

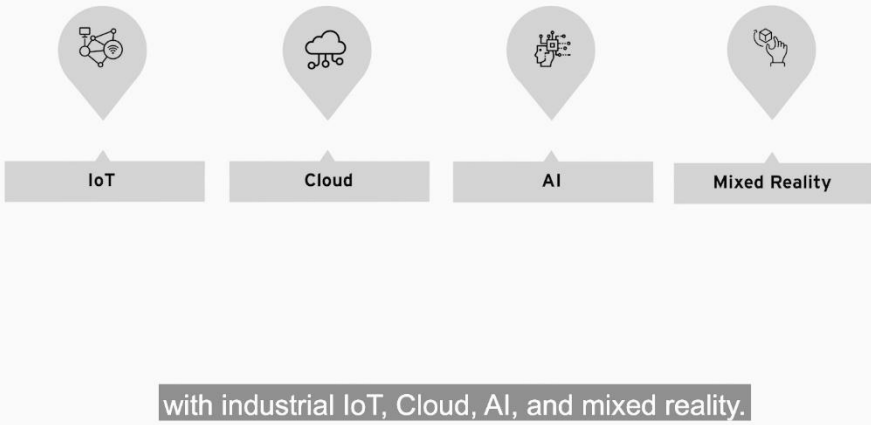
You can build the productive, smart factory of the future with industrial IoT, Cloud, AI, and mixed reality.

You can find more on this link here..

Empowering Sustainability Initiatives

Azure Cloud has helped to reduce energy consumption for many businesses.

AGL, one of the leaders in Australia's energy sector, has used Azure Data Explorer to manage the solar batteries of their customers remotely and create a virtual power plant to improve grid reliability.

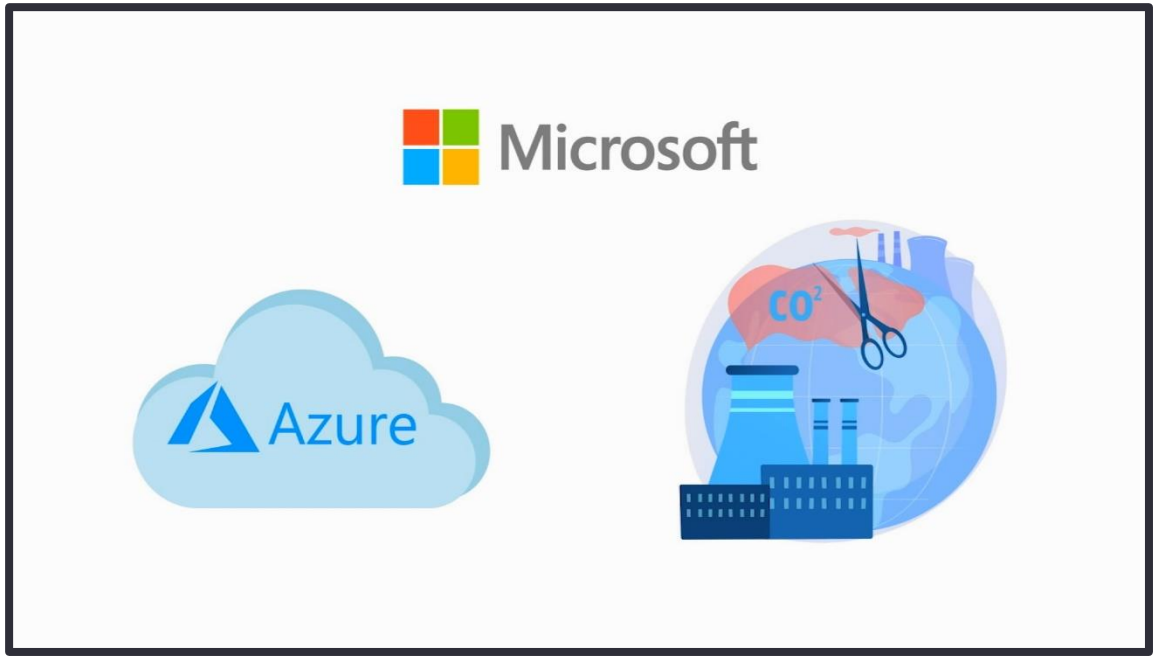


Empowering Sustainability Initiatives

Microsoft's Azure Cloud has been carbon neutral since 2012 and Microsoft has pledged to be carbon negative and water positive by 2030.

Microsoft has also introduced Azure Cloud for Sustainability.

Such a vision and commitment highlight their efforts and accountability towards serving the community.



Empowering Sustainability Initiatives

Microsoft has implemented some unique company policies including internal carbon taxes that push departments, to minimize their climate impact.

Carbon Taxes

Empowering Sustainability Initiatives

The company is also making big investments in clean energy projects.

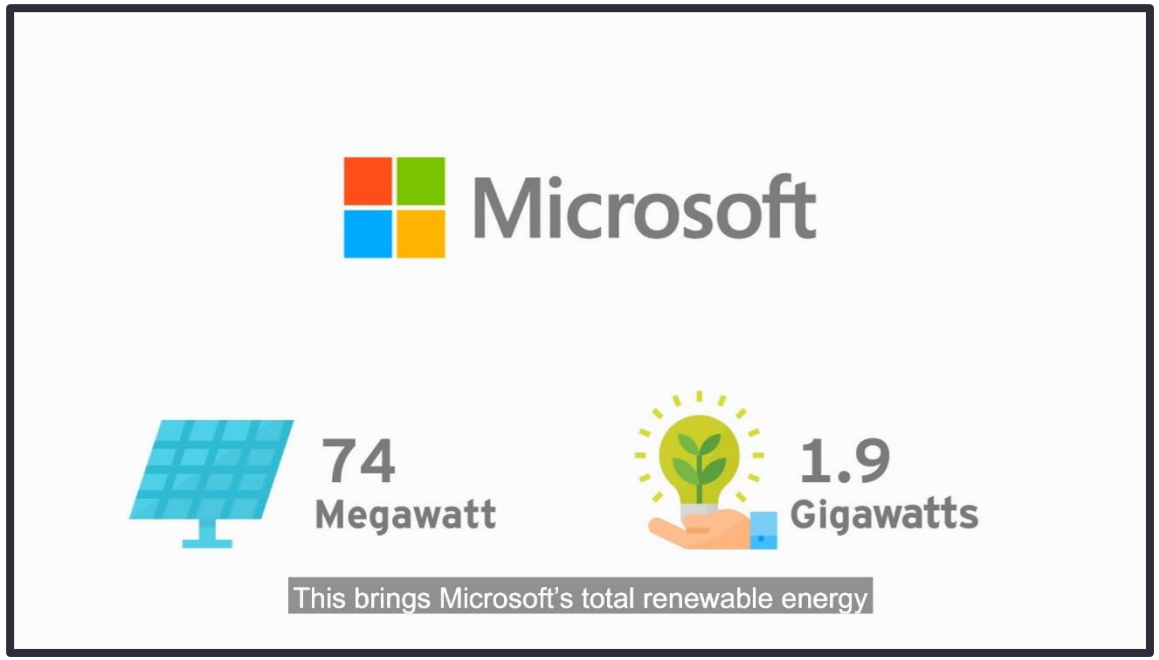
It entered a five-year hydro power purchase agreement in Washington and began negotiations to purchase power from a new wind farm in the state.

Empowering Sustainability Initiatives

Around the same time, Microsoft closed a deal for a 74-mega watt solar project in North Carolina.

This brings Microsoft's total renewable energy portfolio to around 1.9 gigawatts This is a roughly 60 percent increase over the previous year. Some time back, the company began experimenting with datacenters on the ocean floor which could lower or eliminate cooling and other energy costs.

Microsoft has also been exploring hydrogen fuel cells to power its datacenters

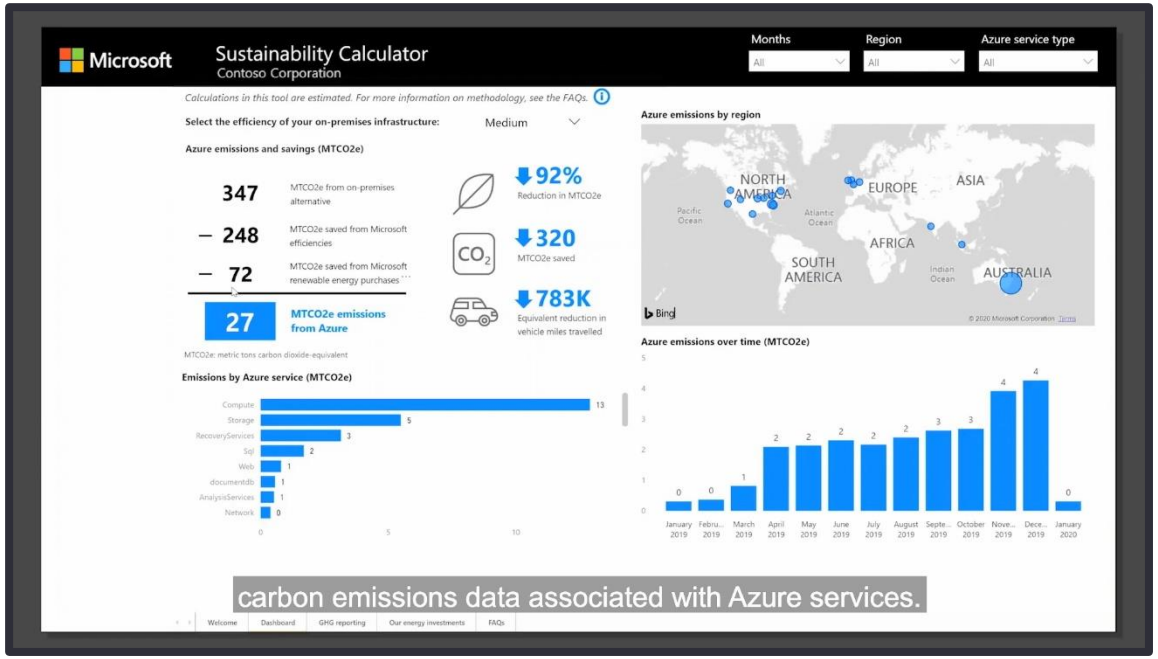


Empowering Sustainability Initiatives

Microsoft has released a new Power BI application for Azure enterprise customers

called the Microsoft Sustainability Calculator.

This tool provides new insight into carbon emissions data associated with Azure services.



Empowering Sustainability Initiatives

So, if you're a current Azure customer, you can connect to your account and see how much carbon is attributed to your usage You will also be able to estimate carbon savings from running those workloads in Azure versus on-premises datacenters. 90% of Fortune 500 companies are using Microsoft Azure to drive their business. Azure Cloud supports a wide range of programming languages, frameworks, operating systems, databases, and devices, allowing enterprises to leverage varied tools and technologies.

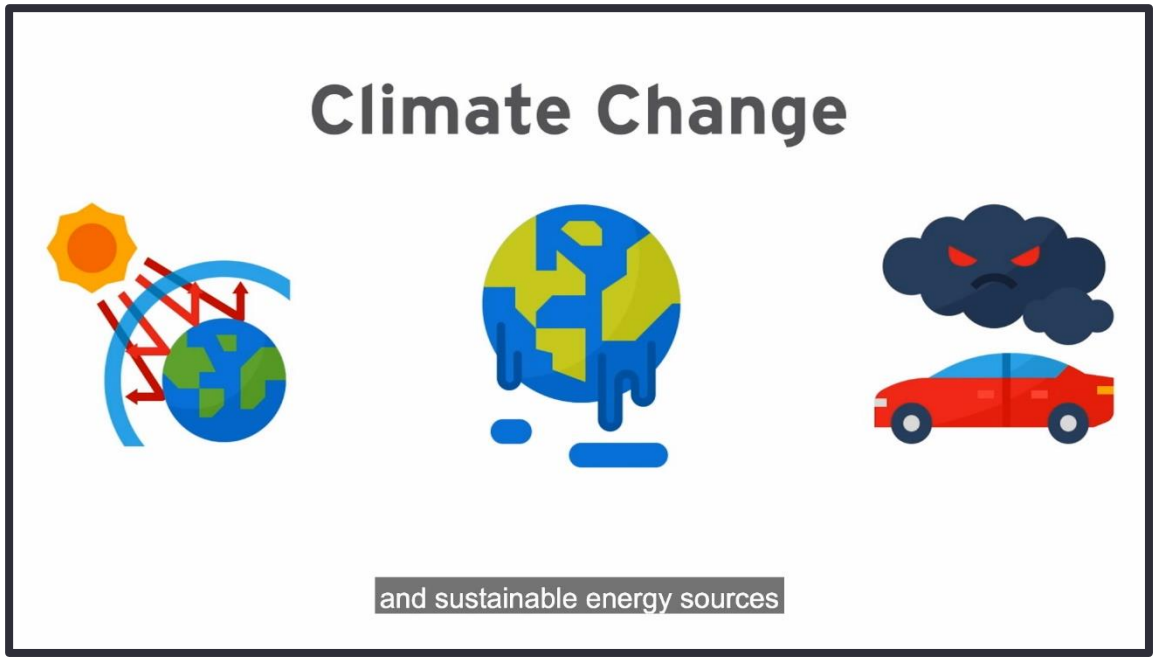
Empowering Sustainability Initiatives

Azure Cloud offers secure identity and access management capabilities with Azure Active Directory Service to enable right users to access the right information.

With Azure Cloud, Enterprises can adopt mature IAM capabilities to reduce identity management costs and become more agile, thus supporting innovative business initiatives. There are lots of customers which are continuing to innovate every year with Azure Cloud. Let's know see how some of these customers are using technology on Azure Cloud to become sustainable businesses.

Empowering Sustainability Initiatives

Let me know how tell you, How Solytic is making solar energy more efficient with Azure Cloud Solytic used Azure Cloud as the fastest way to analyse huge amount of data while ensuring scalability and availability of their software platform. Climate change is one of the greatest challenges in our time and sustainable energy sources are instrumental in meeting these goals. Solar plant operators use equipment which produce electrical energy from solar power The equipment installations must be very efficient for carrying out this activity but sometimes the solar panel gets chipped by a stone, or dirt gets accumulated on them.



Empowering Sustainability Initiatives

Solytic is in the business of collecting data from solar plants and help derive insights from such data for identifying drop in performance of solar plants and enabling decision making.

Solytic monitors over 130,000 photovoltaic plants across 60 countries and the volumes of data generated by round-the-clock monitoring are gigantic.

At one time they had to even turn down customers as they were simply unable to handle such large volumes of data.

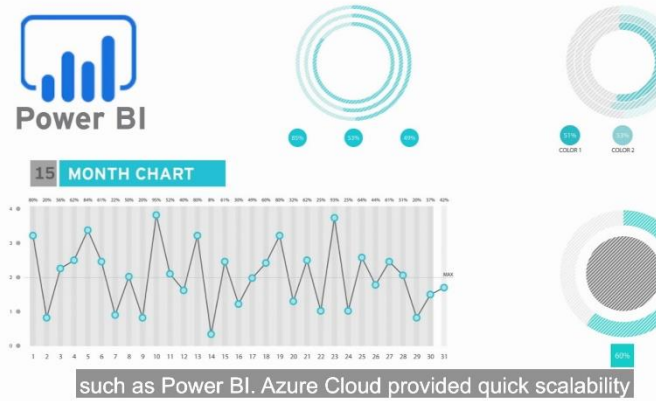
Empowering Sustainability Initiatives

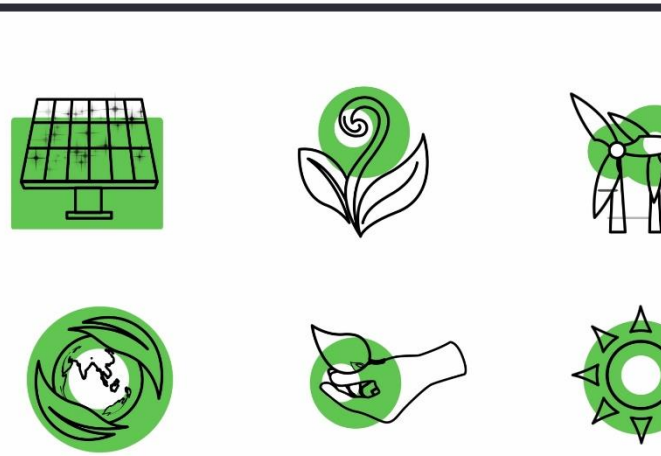
At this point, Solytic started experimenting all kind of services in the Azure environment to start its journey including analytical tools such as Power BI. Azure Cloud provided quick scalability for their huge data while it was easy to host and maintain their software Platform securely on Azure Cloud with minimum personnel. While their developers concentrate entirely on software development and the innovation. Solytic has 20% of customers located in different countries and Solytic leverage.

Azure datacentre global locations which became important for their customers to host their data locally. Now, Solytic could monitor and analyse the systems centrally with a simple internet connection.

Empowering Sustainability Initiatives

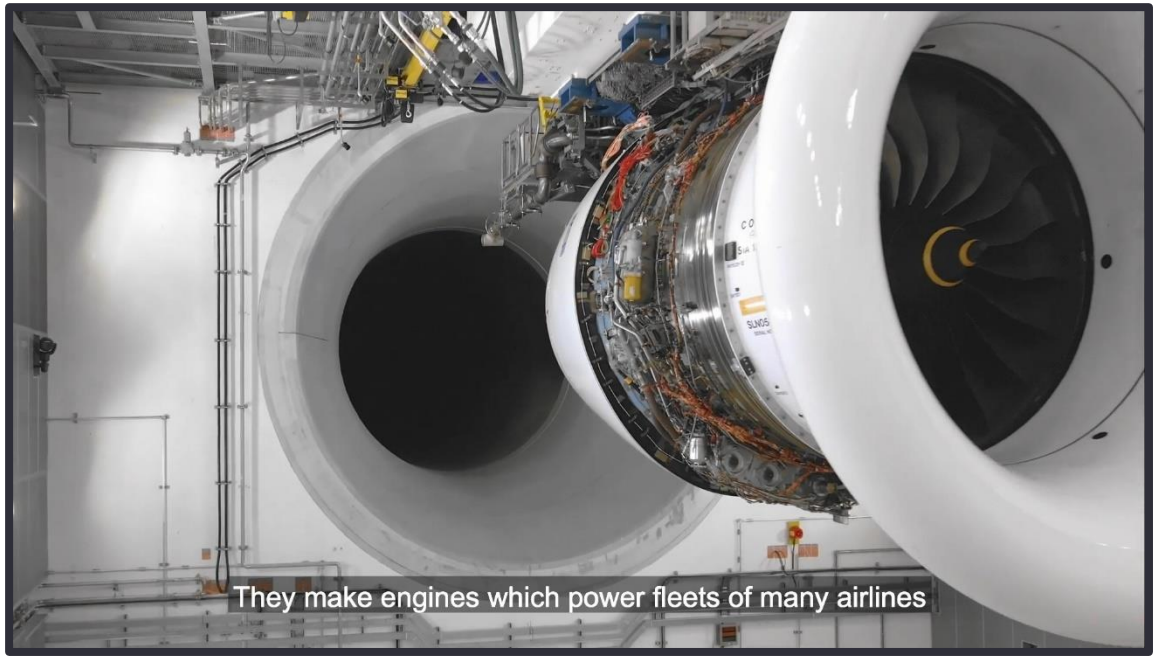
Solytic has set up fully-fledged, three-stage process model comprising monitoring, analytics, and marketplace. The Photovoltaic installation sends the data to the Azure Cloud, where it is visualized for monitoring. The subsequent analysis pinpoints the installation's problems and potential issues and then marketplace offers concrete solution proposals to combat the issues. The entire process is driven and optimized by data. The process ensures customers get the maximum efficiency out of their solar plants while keeping costs down The founders have set up a goal to equip one million installations with Solytic software over the next three years, which will help to generate more green energy and thus accelerate the energy transition.





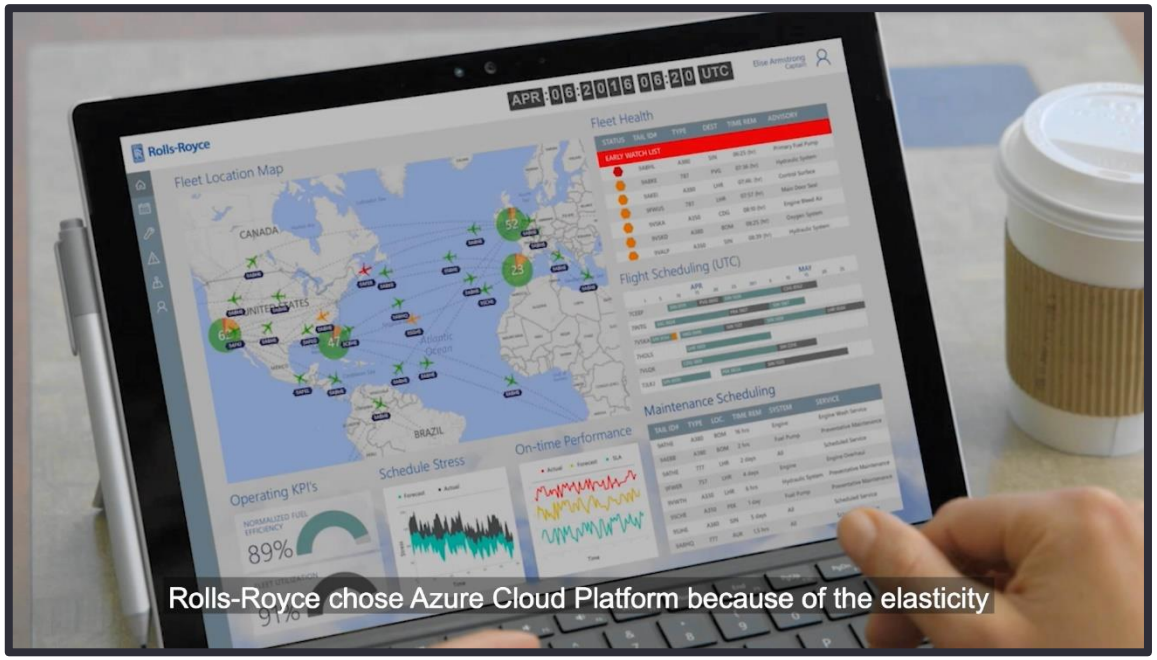
Empowering Sustainability Initiatives

Now let's find out how Rolls-Royce combined the power of Azure Databricks with Microsoft Power BI to optimize carbon output. Rolls-Royce operates in some of the most critical industries. They make engines which power fleets of many airlines As a leading power systems provider Rolls-Royce has a fundamental role to play in meeting the environmental challenges that the world faces. Rolls-Royce realized that for helping airlines to reduce carbon output they will have to invest in processing modelling and interrogating flight data. Rolls Royce move to the Cloud since the magnitude of data volume and processing power was just not possible with an on premises hosted infrastructure.



Empowering Sustainability Initiatives

Rolls-Royce chose Azure Cloud Platform because of the elasticity and scalability that it offered They combined the computing power of Azure Cloud Platform with Microsoft Power BI to provide new data insights to the engineering team. By looking at wider sets of operating data and using machine learning and analytics to spot subtle correlations ships, They optimize their model and provide insight that might improve the flight schedule or a maintenance plan and help reduce disruption for the customers.



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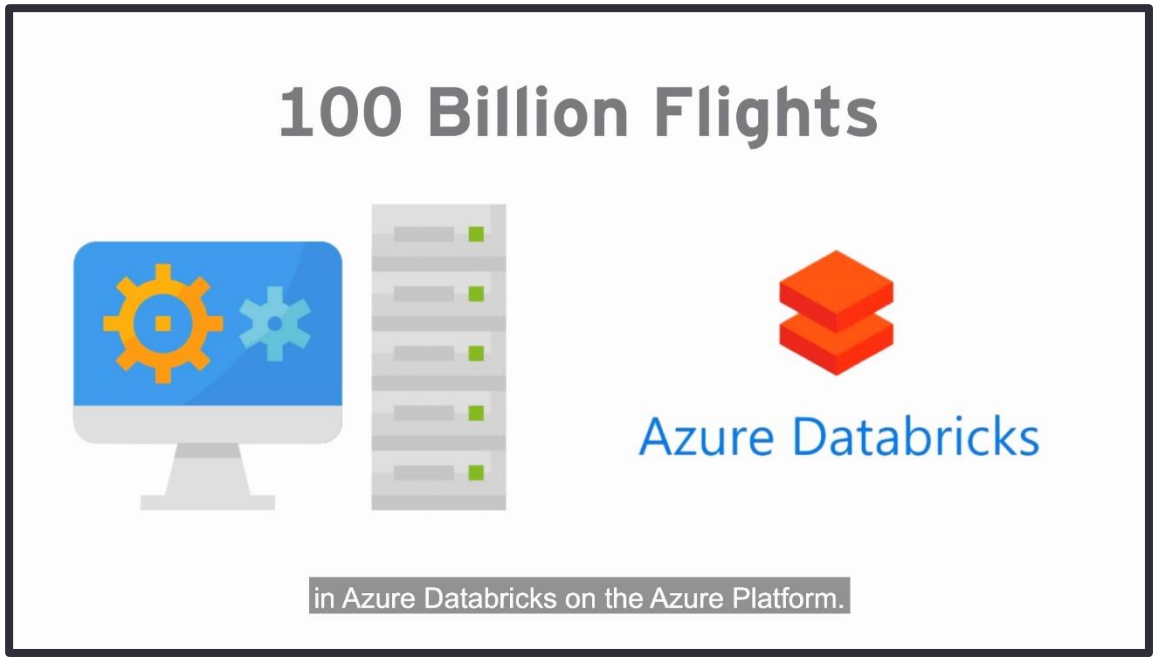
In a week, Rolls-Royce managed to run 100 billion flights in Azure Databricks on the Azure Platform.



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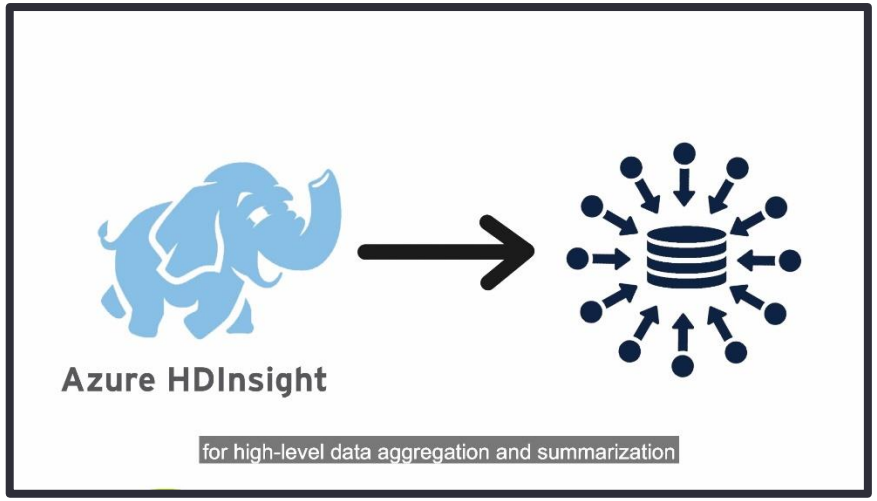
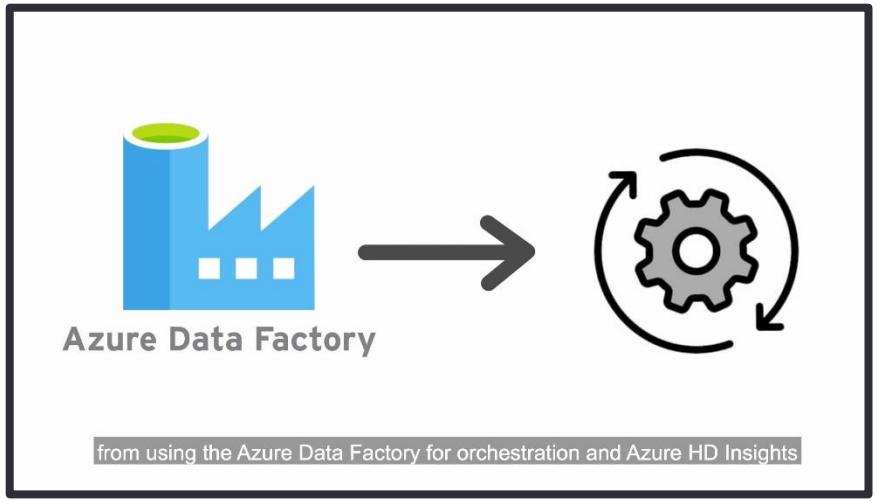
Rolls-Royce has employed a wide range of Azure Platform Services from using the Azure Data Factory for orchestration and Azure HD Insights for high-level data aggregation and summarization to using Azure SQL and Azure Blob Storage to handle all the different types of storage needs. Rolls-Royce is taking full advantage of the integrating Azure Platform Services to improve their sustainability initiatives.





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So, what are the key takeaways?

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The Azure Cloud offers greater efficiencies for businesses Computing on Azure Cloud can offer enterprises greater efficiencies and collaboration around people Because of high availability features the Azure Cloud can provide a Risk reduction for businesses without investing in backup datacenters in other locations within the country or globally.

Businesses can align their technology consumption with their technology needs and peak load requirement in short bursts because Azure Cloud offers very high scalability. Azure Cloud also allows businesses to implement technology in a matter of hours thus reducing their time drastically to automate their process of testing or the process of launching the product.

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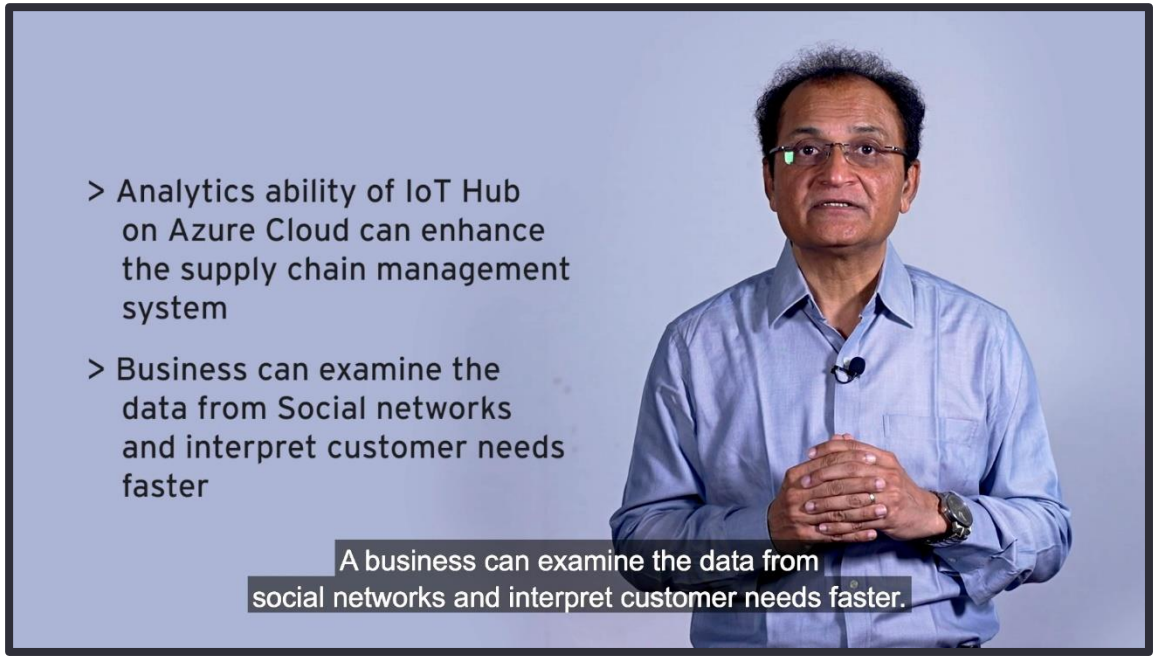
Azure Cloud is changing the IT leadership role.

Today, a CIO is being called to the executive table to help drive and transform the business innovation through technology.

IT can form a strong alliance with business and enhance the supply chain management system

with the help of IoT Hub on Azure Cloud.

Using the analytics ability of Azure, a business can examine the data from social networks and interpret customer needs faster.



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Greater efficiencies for business - Azure Cloud also allows businesses to implement technology in matter of hours along with a risk reduction for businesses without investing in backup datacenters in other locations

Change in IT leadership role - IT can form a strong alliance with business and drive business innovation through technology.

Industry-specific Azure Cloud offerings

Cloud services, tools and applications which are specifically designed for use in a specific industry, help to take the risk out of their Cloud migrations.

For example, Microsoft and SAP partner to deliver SAP supply chain solutions through Azure Cloud for Manufacturing.

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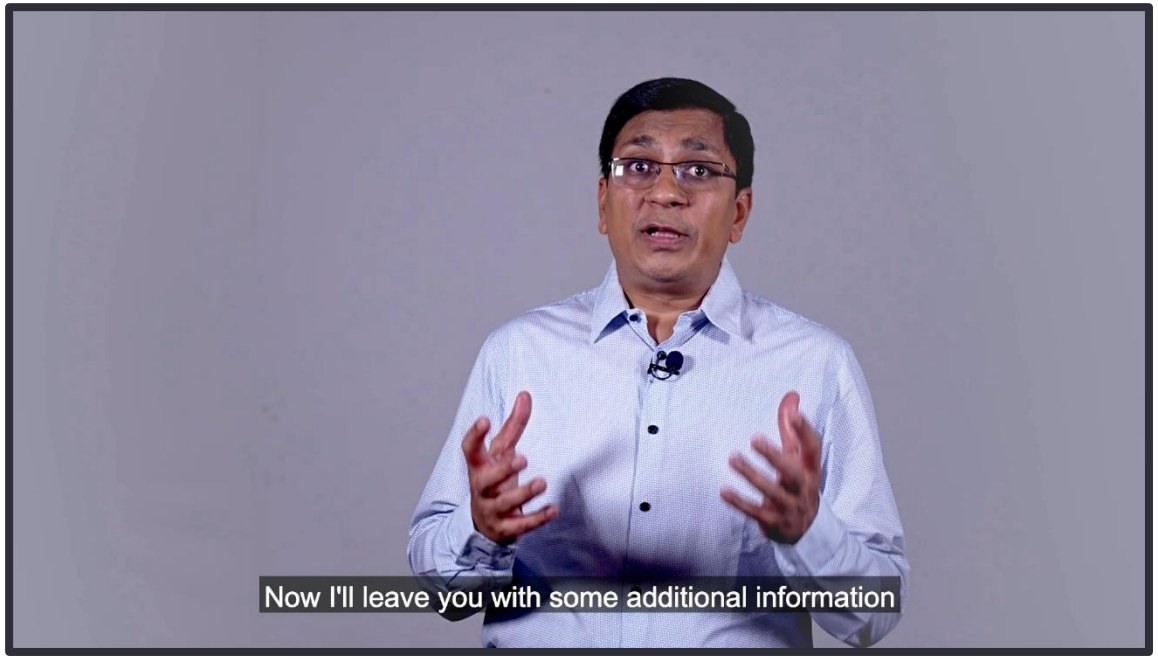
Now I'll leave you with some additional information to enhance your knowledge.



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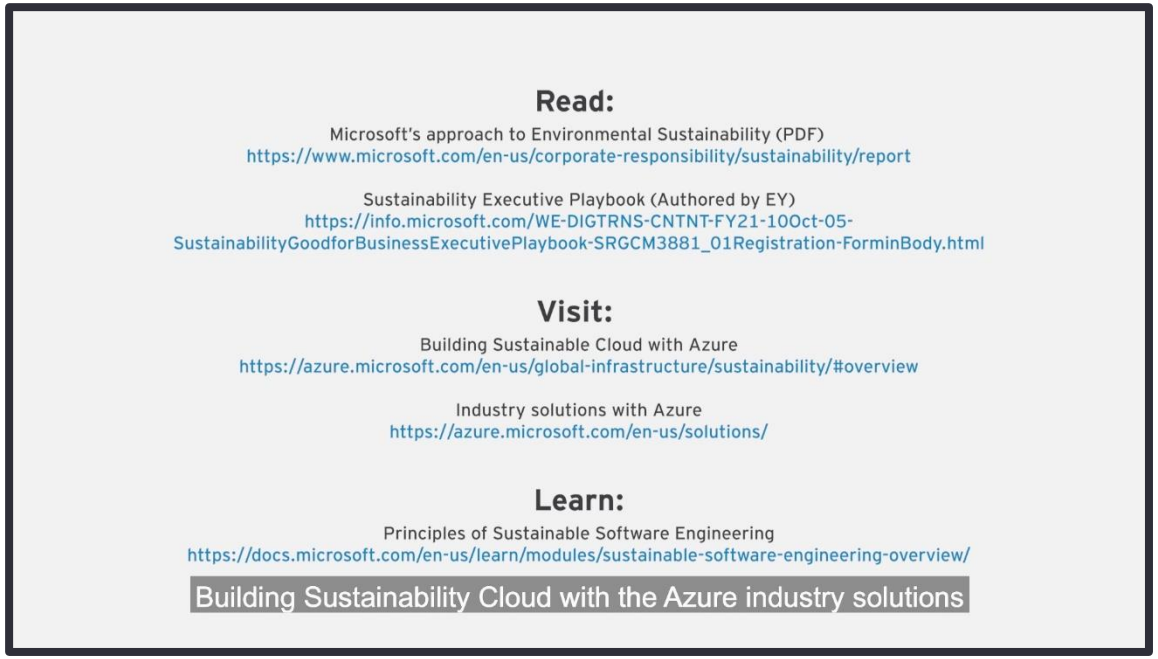
I would highly encourage you to look at Microsoft approach to Environmental Sustainability Report Sustainability executive playbook Visit this link "Building Sustainability Cloud with Azure" You can also learn about The Principles of Sustainable Software Engineering.



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