**Microsoft Ignite 2021**
**Scott Guthrie Keynote Transcript**


**SCOTT GUTHRIE:** Hello, and thank you for joining me at Microsoft Ignite. I'm Scott Guthrie, and I lead the Cloud + AI group at Microsoft.

Our mission at Microsoft is to empower every person and every organization on the planet to achieve more, and to achieve this we're delivering the Microsoft Cloud. The Microsoft Cloud is the most trusted and comprehensive cloud in the world, and you can use it to build, transform and accelerate your organizations.

The Microsoft Cloud is a full stack cloud. It delivers infrastructure capabilities, productivity solutions, business process applications, deliver services and more. You can use each of these capabilities on a standalone basis, or take advantage of the seamless way we've integrated and architected them to work well together, while still providing openness at every layer of the stack. No other cloud offers the breadth and depth of the Microsoft Cloud, and this enables you to accelerate your time to value, reduce your costs and increase your agility.

You can now use the Microsoft Cloud in any of more than 60 datacenter regions we now have around the world. This is more regions and locations than any other cloud provider. And with the richest in-country data residency support of any cloud provider, the Microsoft Cloud helps organizations achieve their digital capability needs, all while ensuring data compliance and data sovereignty.

The Microsoft Cloud is built on trust and security, trust in our technology, but also trust in our business model that's designed to empower our customers and not compete with them. The Microsoft Cloud is used by organizations of all sizes, from brand-new startups to the Fortune 500. In fact, the Microsoft Cloud's already being used to run 95% of the Fortune 500 today.

Microsoft and our partner ecosystem are only successful when you're successful, and you can trust us to help accelerate your businesses and organizations. And throughout this conference, you'll hear stories about how many, many customers are already using our solution to digitally transform.

Throughout Ignite this week, there are a variety of great talks that will cover each of the different components of the Microsoft Cloud, as well as the new innovations and improvements that we're announcing this week. And I'm going to spend the rest of this session going deeper on Microsoft Azure.

I'm going to talk today about four areas of Azure that we're advancing with some great new capabilities. Let's start by talking about hybrid and multi-cloud.

Now, when I talk to customers about their cloud strategy and adoption, I often hear that they want the new innovation and agility that the cloud enables, but they also need it to integrate with the existing technology investments within their organizations. They sometimes have dozens, hundreds or even thousands of servers, applications and databases that they need to manage across their multiple cloud and on-premises environments.

And they sometimes have regulatory or latency reasons why they can't yet move some of these workloads to the cloud. And when they do move workloads to the cloud, organizations increasingly want the flexibility to be able to architect solutions to work across multiple cloud providers.

This is why we designed Azure from the beginning to be the most comprehensive hybrid and multi-cloud platform. Azure enables you to seamlessly build, deploy and manage your workloads literally anywhere. Microsoft has a long history of providing solutions to enterprise customers of all sizes, with our operating systems, database platforms, identity systems, management tools, developer tools and more.

And our decades of experience with these products helped us make key design and architectural decisions when it came to building Azure. With Azure, we enable you to leverage these technologies not just within VMs, but as fully managed cloud services that provide capabilities like high availability, automatic patching, backup, security management and more.

And we provide these types of managed cloud services not just with traditional Microsoft products, but both with Linux, Kubernetes and opensource-based solutions, as well. And with Azure Arc, we now make it possible for you to use these managed cloud services literally anywhere and have a consistent way to secure and govern your servers, your applications and your databases, regardless of where they reside.

Let's hear from a customer that's taking advantage of our hybrid and multi-cloud solutions, and modernizing their technology estate with Azure Arc.

(Begin video segment.)

**VINH TRAN:** I'm Vinh Tran. I'm the head of cloud engineering here at RBC. The Royal Bank of Canada is the largest bank here in Canada. We've been around for over 150 years. We continue to drive innovation and new capabilities through technology and public cloud to really enable our customers and provide them the best of breed user experience.

We were introduced to Azure Arc at a previous Ignite event, and it really piqued our interest in its ability to automate deployments and manage our on-prem database. As a Kubernetes based deployment, it allows us to leverage our existing infrastructure and our investments on-premise, and our capabilities and skillset to manage and automate database deployments.

Azure Arc-enabled Data Services has really allowed us to accelerate our time to market and development of our products. It's also allowed us to focus more on the integration of these products and capabilities into our systems than building, securing and managing them ourselves. It's allowed us to reduce our operational overhead, managing on-premise databases at scale.

(End video segment.)

**SCOTT GUTHRIE:** Azure Arc enables all of this by extending the Azure management APIs and by providing a rich set of Azure application development database, AI virtual machine and security features that work in any environment, including on-premises, multi-cloud and edge scenarios. And we're doing it in a way that enables you to confidently invest in a durable set of skills and processes that you can use in Azure or anywhere else, including other cloud providers like AWS and Google.

Our goal with Azure Arc is to meet you where you are and be super flexible with your needs. If you're looking to modernize your datacenter or edge infrastructure environment, you can choose to take advantage of our Azure Arc and Azure Stack HCI offering. Azure Stack HCI is our hyperconverged infrastructure solution that can run both VM workloads and our first-party Kubernetes platform to enable Azure Arc-enabled services and modern container-based applications.

But we also recognize that a lot of you already have existing VMware, vSphere-based systems installed and running in your existing environments. And we're also now – we also now support Azure Arc running on those as well. With Azure Arc, you can secure and manage VMs, Azure application services, databases and AI capabilities on your existing hardware and VM/vSphere environments.

And I'm happy to announce that starting today, you can enable your teams to fully manage all of this, including the full life cycle of VMs on vSphere, all within the Azure management portal. This gives you the power and flexibility to use your Azure skills literally everywhere.

This week, we're also announcing several new hybrid and multi-cloud updates. Azure Virtual Desktop is one of the fastest growing services on Azure. Many of you have asked for this to also work in your own datacenters because of regulatory and data residency needs. And I'm excited to announce that we're bringing Azure Virtual Desktop to also now work on top of our Azure Stack HCI offering. And we're continuing to update our Azure Data Services, making available additional management, security and governance capabilities this week through Azure Arc as well.

Now, organizations are also using Azure Arc to build brand new applications and deploy them on to edge hardware environments that haven't previously existed. SKF is a global manufacturer of bearings and seals that operates in over a hundred factories in 28 countries

around the globe. They needed an edge cloud solution that was able to support distributed development, high availability, scalability and ease of deployment.

SKF created an architecture running Azure Arc-enabled Data Services and Azure Kubernetes service on top of Azure Stack HCI hardware within their factories. And this enabled them to make real-time decisions using data AI intelligence at the edge. By extending cloud services to run within their factories, SKF gained operational efficiency, resulting in 40% savings on hardware costs and about 30% reduction in OT-related downtimes of the machinery.

Intelligent edge-based solutions like the ones SKF are building are going to become essential in the years ahead. And with Azure and Azure Arc, you now have the services and tools to start building them today.

Now, hybrid is foundational to accelerating transformation, and data is key to unlocking new value and enabling new use cases. Microsoft provides the most comprehensive and consistent platform to manage all of your data. We continue to invest heavily to make our database, analytics and governance products best in class, and provide customers with an integrated experience across our data portfolio.

As we saw in the SKF and RBC examples, customers can deploy Arc-enabled Azure SQL on any Kubernetes environment, be it on any cloud, obviously, including Azure, but others as well, as well as any on premises environments.

This week, we're also announcing the preview of the next version of SQL Server. SQL Server 2022 is the most cloud-enabled release of SQL Server yet. It includes exciting new capabilities that address the needs of data professionals by offering business continuity with built-in DR to Azure, with bidirectional flexibility between our on-premises and cloud services, seamless analytics for your on-premises, operational SQL Server data with our Azure Synapse Analytics running in the cloud, full integration with Azure Purview, providing visibility and data access control through a single pane of glass. And SQL Server continues to be an industry leader in security and performance with the fewest vulnerabilities of any database over the last 10 years. And it consistently scores No. 1 in broadly recognized, industry performance benchmarks.

As customers continue to accelerate their cloud adoption, we've seen a clear need for three core data capabilities. The first is the database platform that offers the scale and performance needed for any workload. The second is an analytics platform that enables immediate insights from all data. And the third is a unified data governance solution that helps customers manage and govern their data wherever it resides. Azure is the only cloud in the market that offers industry-leading solutions across all three capabilities, which are all required to drive successful transformations.

A great example of a customer already doing this today is FedEx. FedEx scans millions of packages and receives about 40 billion status messages per day. And they're streaming data into Azure and developing their own AI/ML algorithms to gain insights from it. Using IoT devices

and other signals, their intelligent edge can facilitate an explosion of data, signals and insights. Azure's cloud data services provide instant insights to the FedEx team, allowing them to have greater control over shipment movement, make corrective actions within minutes of anomaly detection, and be able to govern their data no matter where it resides now.

Now, Azure's Database Services offer a choice of fully managed relational and no SQL databases, spanning proprietary and opensource engines to fit the needs of modern app developers. We offer these services with literally limitless scale and performance. For example, with Azure SQL DB Hyperscale, you can now scale a single relational database up to a hundred terabytes in size, more than any other cloud database in the market.

And Azure Cosmos DB is the only database service in the world to offer both five nines availability and single-digit millisecond latency SLA. And with the serverless deployment options we now provide, you only pay for what you use out of these data services. There are no minimum charges and no capacity planning required.

Only Azure enables real-time insights on top of your OLTP data with no performance impact to your operational systems, thanks to our new Azure Synapse Link capability. Azure Synapse Link effectively breaks down the silos between your operational and your analytic data systems, enabling you to get real-time insights without complex or costly ETL workflows.

As customers look to gain in-the-moment insights on their business and to be agile in today's dynamic business environment, they need a unified experience to ingest, explore, prepare, manage and serve data for business intelligence and machine learning needs. Azure Synapse Analytics brings together the worlds of data integration, enterprise data warehousing and big data analytics into a single integrated data service. And Azure Synapse has experienced significant adoption with a 350% increase in consumption, year over year, and customers are now performing over 20 million queries per hour against it.

And we're building on that momentum today with a preview of the new Data Explorer compute engine in Azure Synapse, which enables streaming and log analytics. We're also announcing the GA of Azure Synapse Link for Dataverse and a preview of it for SQL Server 2022, enabling customers to gain immediate insights from more of their operational and line of business data workloads.

Let's now move to governance, a topic that we know is also top of mind for many customers. Azure Purview is our unified data governance service that helps manage and govern on-premises, multi-cloud and SaaS based data. It easily creates a holistic, up-to-date map of your data landscape with automated data discovery, data sensitivity classification and end-to-end data lineage, helping data consumers to find valuable, trustworthy data.

Purview has been generally available since September, and we've seen tremendous customer interest and growth with it. Over 57 billion data assets have already been discovered by

customers using Azure Purview, running across all of their cloud and on-premises environments. Azure Purview gives you a complete understanding of your data. It scans data from on-premises sources such as SQL Server, Teradata and SAP, your multi-cloud environments and SaaS apps as well.

Let's take a look at a video that shows how all these innovations and capabilities come together.

(Begin video segment.)

**NARRATOR:** Scott talked about the integration of all these systems to provide a unified data and governance experience. Let's take a look at an example.

Applications using Dataverse, like Dynamics 365, contain rich customer data like account information and sales opportunities. With Synapse Link for Dataverse, you can selectively share that data for analytics without ETL pipelines. In Azure Synapse, I can now query the data versus data directly. I can use that data for machine learning with Azure AI, create a Spark Notebook or use SQL.

Next, I can join the sales data in Dataverse with the retail application data in Azure Cosmos DB, enabling me to see how the mobile app relates to sales opportunities and get richer insights.

Governance is critical and Purview has been fully integrated into Synapse. I can search for specific words right within Synapse Studio. As I search on opportunities, I'm provided with matching results across my entire data estate. I can select this table and automated data classifications will flag PI information as sensitive data.

Lineage provides a left-to-right view of the Azure Synapse table showing it originated from Dataverse and is being used in Power BI, which is fully integrated, and I can author my reports within my Synapse workspace.

What we just saw is how easy it is to get immediate insights from high value dynamics data, understand the data sensitivity and lineage and produce visuals in mere minutes. That's the power of Azure's end-to-end data platform, providing the capabilities customers need in an integrated, secure and easy-to-use experience.

Back to you, Scott.

(End video segment.)

**SCOTT GUTHRIE:** As you build new apps going forward, you're going to want them to be cloud-native. Cloud-native apps are designed to take full advantage of the cloud. They can support new levels of scale and performance and can provide even greater reliability to your

customers. Tens of thousands of customers are building cloud-native apps on Azure today. This includes organizations like Walmart, Starbucks, HSBC and their partner, PayMe, the National Health Service in the U.K. and gaming companies like Krafton. Using cloud-native design patterns has helped each of these organizations achieve the agility, reliability, scalability and security demanded by their businesses and end users.

The ability to quickly scale up or down cloud-native app resources enables organizations of all types to adjust to the dynamic world we live in. And this is needed with every industry right now, whether it's a gaming launch, COVID-19 related spikes and shopping peaks – such  as Black Friday and holiday shipping – are just a few examples of the types of highly elastic usage demands that modern apps must address.

And the great thing about the cloud and the cloud services we have on Azure is that you can build to support cloud-native application patterns easily to handle these spikes, and only have to pay for the actual resources that you consume. This gives you even greater agility and enables you to grow your business in fundamental new ways.

Walmart, the largest retailer in the world, is a great example of a customer on Azure who's doing this. The e-commerce platform generates billions of dollars in annual revenue, and it grew 79% last year. As they prepare to handle the demanding load of their business – busiest time of the year, which is Black Friday and the holiday season, they built a cloud-native solution that could provide single-digit, millisecond latency and handle billions of daily requests with extremely high availability during their busiest days. This solution is helping transform how Walmart does business.

Walmart.com uses our Azure Cosmos DB database as a core service of their cloud-native architecture. Azure Cosmos DB is the only database service in the market to offer SLAs guaranteeing single-digit, millisecond latency and 99.999 availability through turnkey geo-replication. These guarantees are available even if you are executing millions of concurrent transactions a second against a petabyte-size database.

Developers can build new applications while using existing skills by choosing among familiar APIs such as MongoDB and Cassandra. And it's easy to run flexible and low cost workloads of any size, not just petabyte-sized solutions, but it's also now very cost effective for small database solutions with low transaction throughput.

Kubernetes is another core enabling technology for cloud-native applications. Our Azure Kubernetes service, also known as AKS, is the best way to get fully managed Kubernetes clusters on Azure, with integrations across Azure and the Microsoft Cloud. AKS enables you to provision a fully managed Kubernetes cluster in minutes.

With AKS, we've made it easy to take advantage of best practices for Kubernetes. For example, we offer pre-configured templates with enterprise security and policy built in. And Azure

Advisor recommendations enable you to get the most out of Kubernetes capabilities, while our Azure Security Center monitors and alerts you about common sources of Kubernetes attacks. AKS also offers integration with developer tooling, such as our Visual Studio offerings, as well as code to cloud pipelines through both GitHub and or Azure DevOps solutions.

Now, Kubernetes offers a tremendous amount of power, but it can also be a little daunting for developers to get started with, and we want to make Kubernetes even easier and more flexible for all of you. Today, we're excited to announce our newest cloud-native offering, which we call Azure Container Apps.

Container Apps provides the same microservice benefits as Kubernetes, but runs in a fully managed and serverless platform. This enables teams to start building microservices without having to understand and master the full concepts of Kubernetes. Container Apps enables you to easily start building container-based microservices with just your app code, while giving you the flexibility to choose to upgrade to our full Azure Kubernetes service if and when you're ready to leverage the full power of Kubernetes.

Now, Azure Container Apps is just one way we're helping developers and teams deliver with more speed. With technology and software development increasingly at the core of how organizations are transforming their businesses, we recognize that developer velocity is critical to driving overall business performance. Our developer tools like GitHub, Visual Studio and Power Apps, in combination with Azure, accelerate developer velocity, enabling you to deliver apps faster than ever before.

And we're continuing to release major new enhancements and improvements to all of these solutions. Let's talk about two of the great new improvements we've recently released with GitHub.

One of the biggest pain points for any development team is the time lost setting up development environments and keeping them up to date. Organizations can now take advantage of GitHub Codespaces to create new developer machines in the cloud. With Codespaces, you can now literally click a button in GitHub and have a full, isolated developer machine provisioned with your code already cloned onto it in under 15 seconds. These are secure, container-based environments hosted in Azure and usable from any machine that only has a web browser.

These cloud-hosted developer environments are not only quick to set up, but they also provide much faster performance than the typical laptop or even desktop developer machine, and you can use up to 32 cores of CPUs and 64 gigabytes of RAM available. And a Codespace-based environment automatically shuts down after you stop using it, and you only pay for the time you're actively using them. And there are built-in cost controls for administrators. It provides an ideal way to make developers dramatically more productive.

We're also taking the next leap in cloud-based developer productivity with GitHub Copilot, which provides an AI-powered pair programmer that can help you code. Trained on billions of lines of public source code, GitHub Copilot saves you time and helps you stay focused by synthesizing code suggestions right in your editor.

GitHub Copilot is context aware, converting your comments into code or quickly helping you with repetitive coding tasks, all while adapting to your current application and coding style. Copilot is available in technical preview today, and we're adding support for more programming languages all the time. Visit Copilot.GitHub.com to learn more and sign up today.

Toyota is one of many organizations in the world today who are integrating their professional developers with business domain experts, and using this fusion of the two to build even better business solutions. One of the applications Toyota's recently launched is a new vehicle delivery app that is now being used by all Toyota dealerships to verify that vehicles have the accessories correctly installed before a customer takes delivery of the vehicle.

Toyota built the API backend of the solution using Azure. Professional developers in Toyota wrote code to implement the API, using services like Azure Functions and Azure API Management. Business domain experts in Toyota who understood the unique needs of the employees in the dealerships then built the dealership mobile app that called these APIs, using Microsoft Power Apps. They then hosted this power app within Microsoft Teams to enable multi-employee collaboration. The resulting solution is helping Toyota accelerate their business.

If you look inside your organization, you'll find lots of business processes today that often involve spreadsheets being passed around over email. Each of these processes can now be automated using the Microsoft Power Platform, and the apps built with Power Apps can easily and securely call any API that your professional developers publish using Azure. Being able to use your low-code and pro-code solutions together enables you to easily go after the long tail of apps within your organizations and unlock tremendous business value, as you saw Toyota just did.

And Microsoft's unique in having all of the tools in cloud solutions necessary to go after this app gap. "Fusion teams" refers to cross functional teams made up of developers, business experts and IT admins that come together to build business solutions. The Microsoft Cloud enables you to leverage the knowledge and skills of experts across all these different areas of your organization and to come together to build great solutions together.

With the Microsoft Power Platform, you have the richest suite of low-code, no-code tools available. You can use them to connect to Office 365, Dynamics 365, Azure and literally hundreds of other SaaS apps without having to write even a single line of code. There's built-in connectors for all of them.

And with Azure Visual Studio and GitHub, you can build in host code that provides any custom API functionality needed by your Power Platform solution. Being able to use the Power Platform and Azure together gives you the ability to dramatically accelerate the delivery of business solutions.

This week at Ignite, we're announcing several great improvements to our fusion team offerings. One of the improvements is a new Power Apps pay-as-you-go licensing model on Azure. This enables you to build and deploy Power Apps throughout your organization without having to buy a Power App subscription ahead of time for each employee who wants to use them. Instead, you can just use your existing Azure subscriptions and pay only when the Power Apps you build are actually used by an employee. This takes a lot of friction out of using Power Apps and makes it easier for organizations to get started and scale without having to buy any licenses upfront to do so.

We're also enabling you to distribute Power App mobile apps natively. This means that you can now use Power Apps to build and release standalone native apps in the iOS and Android app stores that are branded and look just like any other native mobile app. This gives you ultimate flexibility to build enterprise apps that look and feel just like consumer experiences and further reinforce your organization brand. And we're really excited to see the great new solutions you build with all these new capabilities.

Now, I covered a lot of things today, and I want to close where we started. No other cloud offers the breadth and depth of what the Microsoft Cloud provides. And with Microsoft Azure, you can innovate anywhere, from hybrid, multi-cloud and the edge. Be sure to check out more of our Microsoft Ignite into focus sessions this week where you'll hear more about the great new innovations happening across our infrastructure, application development and data and AI solutions.

I hope you enjoy the rest of Ignite, and I'm really looking forward to seeing what you build. Thanks so much.

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