Microsoft Aims To Upend The RPA (Robotic Process Automation) Market

Tom Taulli Contributor Entrepreneurs *I write about tech & finance.*

Robotic Process Automation (RPA) is kind of a confusing term. It's not about physical robots—instead, it refers to software bots that streamline repetitive and tedious processes in the workplace. Something else to note: RPA is the fastest growing segment in enterprise software, according to Gartner. As a result, the mega tech operators are looking at the market. SAP, for example, has acquired Contextor to bolster its efforts. And yes, expect much more dealmaking. "It's possible that IBM or Oracle may pursue a similar acquisition strategy," said Ryan Hollenbeck, who is the Senior Vice President of Global Marketing at Verint.

Yet Microsoft will perhaps be the most impactful. At the Ignite conference, the company announced **Power Automate**, which is an offshoot of its **Power Platform** (this includes business intelligence capabilities, low code and workflow management). There are more than 275 prebuilt connectors for apps and services. Of course, there are deep integrations with Office 365, Dynamics 365 and Azure.

"I see a strong relationship between the dramatic rise and growth of RPA, low-code, and this announcement," said Jay Jamison, who is the Chief Product and Technology Officer at Quick Base. "These all target common and urgent problems that enterprise-level organizations face today, namely: growing demand to digitize business and drive innovation, a mounting developer shortage, and the enormous footprint of existing legacy systems as a mountainous barrier to innovation. There is a gap in the market here, and it's natural that new solutions via Microsoft's Power Platform are popping up. The opportunity here is enormous."

As for the current RPA market, the main players include **UiPath**, **Automation Anywhere** and **Blue Prism**. All have raised substantial amounts of capital and have significant market shares. It's also important to keep in mind that there are actually more than 70 RPA software vendors! In other words, there will likely be consolidation in the coming years. So what will be the impact of Microsoft? Well, here are some responses:

- Automation Anywhere: "Last week at Microsoft Ignite, we announced a deeper collaboration to provide more simplified access to Automation Anywhere Enterprise A2019 from Microsoft Azure. As the partnership expands between the two companies, customers will be able to leverage Automation Anywhere software bots to automate more complex business processes and provide greater capabilities with Microsoft products."

- UiPath: "UiPath is focused on providing a comprehensive platform to customers who are in need of a flexible solution that can be tailor-fit and easily integrated with a wide range of solutions in the AI ecosystem. Our latest product release validates that strategy, as we've made it easier than ever for every employee—regardless of their technical proficiency—to reap the benefits of rapidly automating their work without the need for developer resources or coding."

- Blue Prism's Bruce Curling, who is the SVP of Alliances: "Blue Prism focuses on enterprise interoperability over robotic desktop automation. Because Blue Prism is the only end-to-end solution on Azure, we see Microsoft's move into this market as a strategic partnership opportunity and a chance to tell a 'Better Together' story that benefits customers with a broad range of solutions to meet their hybrid and multi-cloud needs."

While Power Automate is a good solution, Microsoft is still playing catch up. According to Bill Galusha, who is the leader for product strategy for RPA and content intelligence for ABBYY: “The features announced are really table stake-type features you would expect where business users automate tasks by recording human interactions with an application. Still, there’s a lot more sophisticated capabilities that RPA vendors have today that focus on making orchestrating hundreds of these robots in production enterprise-ready.” Consider that RPA has been a fairly mechanical technology, like a typical CRM or ERP system. But this is starting to change as AI becomes more important. “We see RPA as a step in the journey towards intelligent automation,” said PR Krishnan, who is the Executive Vice President & Global Head of Enterprise Intelligent Automation & Artificial Intelligence at Tata Consultancy Services. “Intelligent automation is where enterprises truly benefit from connectivity, data, talent and capabilities across a business ecosystem that transcends functional, organizational and even industry boundaries.”

However, for the existing RPA players, there will certainly be a rethinking of strategy because of Microsoft. The company’s CEO, Satya Nadella, has shown a keen ability to fight hard and win battles. “Current dominant RPA players such as UiPath, Automation Anywhere and Blue Prism will need to focus on enhancing the user experience with orchestrating tasks and managing automations,” said Thomas Phelps, who is the Vice President of Corporate Strategy and CIO at Laserfiche. “Microsoft’s sheer size and adoption by corporate IT will help it to establish a foothold in the RPA software categories and scale quickly.”

But one thing is clear with Microsoft’s move: it’s a big-time sign that RPA technology is strategic, not just a passing fad. "Having Microsoft step up and participate in the RPA market is great validation of the need for this critical piece of technology in the enterprise,” said Ryan Duguid, who is the chief of evangelism and advanced technology at Nintex. “More importantly, by making it part of a broader automation story, it supports our view that RPA shouldn’t exist in isolation from existing investments in business process automation and low/no-code technology. The change of name reflects the view that automation is a broad category, made up of process discovery, documentation, forms, workflow, RPA, document automation, electronic signatures, and deep insights, all designed to leverage advances in AI and ML to drive greater efficiency and effectiveness.”

Microsoft Goes All-In On Hybrid Cloud And Edge At Ignite 2019

Patrick Moorhead Contributor Enterprise & Cloud *I write about disruptive companies, technologies and usage models.*

I jumped straight from Samsung’s SDC event in San Francisco and analyst life on the road continued in Orlando, where I attended Microsoft’s annual Ignite customer conference for all things enterprise IT. The event is an industry can’t-miss, and I make a point of attending every year to find out what Microsoft has cooking for big and small businesses (see my coverage of 2016, 2017, and 2018 if interested in further background). Microsoft CEO Satya Nadella led off the keynote stressing trust, where I believe it has a certain advantage with end customers versus some of its big tech peers. Let’s take a closer look at what all was announced this year. My briefing book was 87 pages, so, of course, I will only be hitting the high points.

Hybrid cloud Azure Arc and Stack

To me, the biggest “lean-in” for Microsoft at Ignite was around hybrid cloud and the edge, led by **Azure Arc**.

Satya Nadella announces Azure Arc
PATRICK MOORHEAD

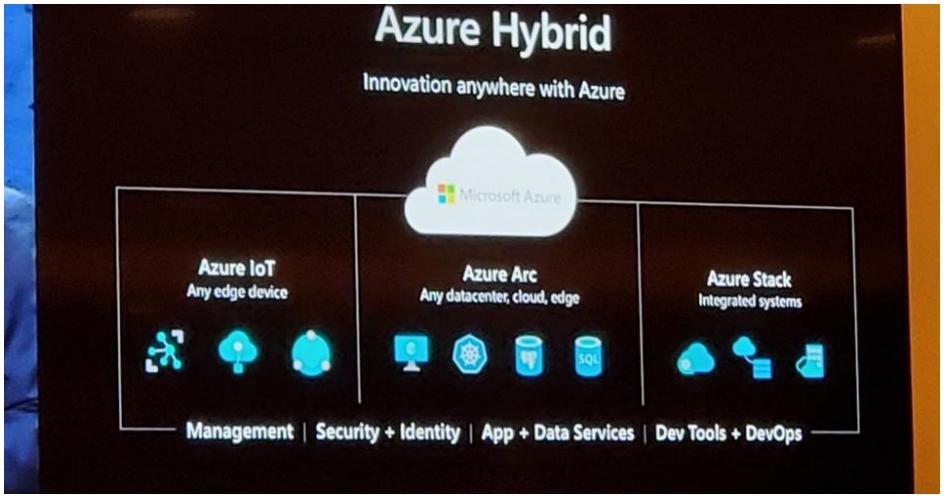
Azure Arc is a set of technologies that will bring Azure services and management to what Microsoft characterizes as "any datacenter, cloud, and edge", including Windows and Linux servers and Kubernetes clusters. This includes on-prem, the edge, and even competing clouds like AWS and Google Cloud. Out of the gate, Azure Arc includes a variety of capabilities, including **Azure Resource Manager (aka Arm)**, **Azure portal**, **API**, **Microsoft Azure Cloud Shell**, **Marketplace** and **Microsoft Azure Policy**. First out Azure Arc services include **Azure SQL database** for **PostgreSQL Hyperscale** running a Kubernetes cluster, but I'm expecting many, many more services in the future. Microsoft's Erin Chapple demonstrated Azure Arc, showing a single pane of glass for managing on-prem and multi-cloud environments, even replicating data to Amazon.com's AWS cloud. It's important to understand the difference between Arc and Stack. Azure Arc is a follow-on to Azure Stack, which has morphed literally into a full stack of hardware, software and services. Azure Stack is characterized as "integrated systems" and are comprised of:


New Azure Stack Edge device can be carried in a backpack.
PATRICK MOORHEAD

- Azure Stack Edge: this is a cloud-managed appliance for edge compute, ML at the edge, IoT and network bursting to the cloud. Microsoft announced a small, backpack-sized and battery operated edge device which could be used to process drone video.

- Azure Stack HCI: this is what you would expect, a hyperconverged solution for rack-scalable virtualization and a storage, for remote branch offices and even HPC workloads.

- Azure Stack Hub: this is a fully-integrated, cloud-native system for disconnected scenarios, environments where data sovereignty a requirement, and app modernization



Azure hybrid portfolio spans IoT, Arc, and Stack
PATRICK MOORHEAD

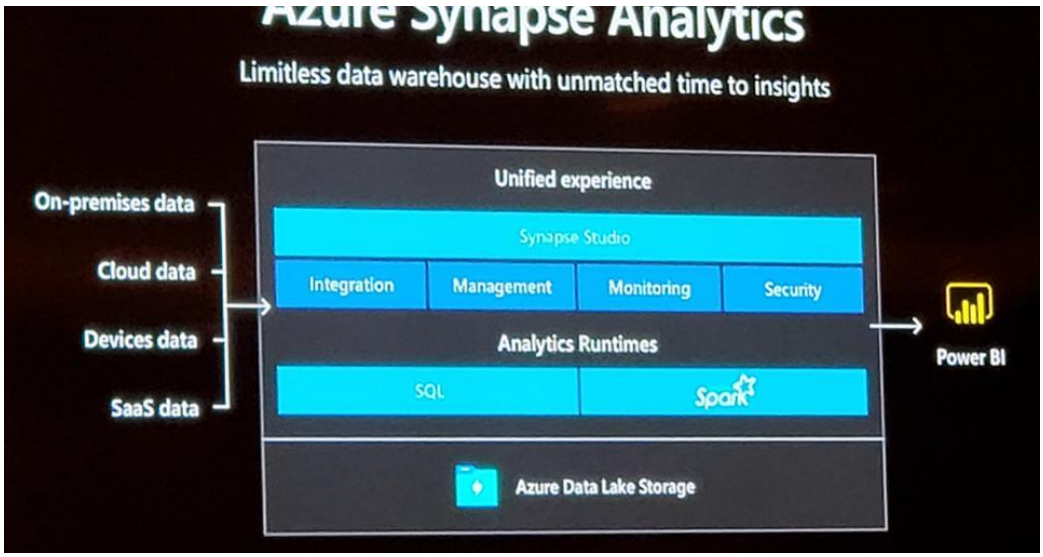
Microsoft leaned into its hybrid story more than ever and reinforced that "unlike others, we believe hybrid is a permanent, not temporary state." It will have some very solid competition from AWS and Google Cloud. AWS Outposts (details here) wasn't AWS's first hybrid offering. AWS also offers Snowball Edge, VMware Cloud on AWS and many ways to integrate on-prem resources with AWS including Amazon Storage Gateway, VPC, Direct Connect, Systems Manager, Identity and Access Management, Directory Service, OpsWorks, and CodeDeploy. Google Cloud has Anthos (details here).

Azure Synapse Analytics

Azure Synapse promises to combine data warehousing and analytics
PATRICK MOORHEAD

Microsoft announced a new analytics service called **Azure Synapse Analytics**, an offering that brings new capabilities to its **Azure SQL Data Warehouse** solution. The company says Azure Synapse will combine enterprise data warehousing and Big Data analytics and bring together structured and unstructured data. This is a Nirvana state. While businesses typically have to maintain two different types of analytics systems (data lakes and data warehouses), Azure Synapse Analytics wants to bridge the gap so both can be utilized via a single cloud-native analytics service. It seeks to provide a unified space to perform data prep, management, warehousing, big data, and AI functions. The company touts the solution's "limitless scale," and claims it is the only data analytics system capable of running all TPC-H queries at petabyte-scale. Microsoft claims

Synapse can process queries roughly 75 times faster than Google Cloud big query—fighting words to say the least.

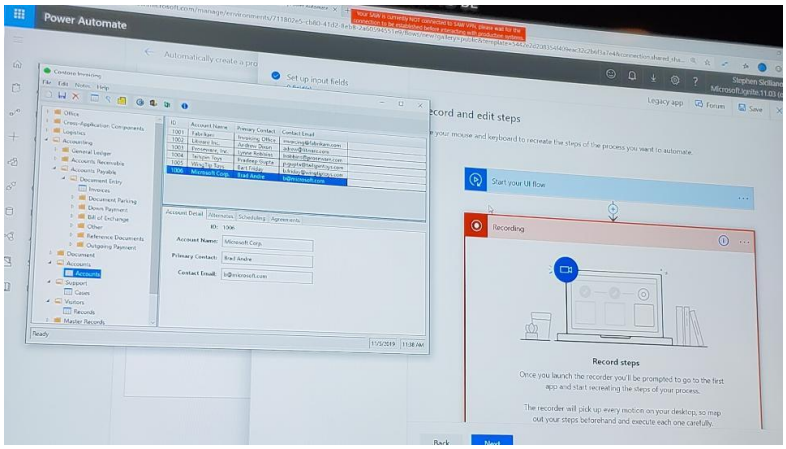


Deeper dive into Azure Synapse Analytics
PATRICK MOORHEAD

Azure Synapse is integrated with Power BI and Azure Machine Learning, which should allow customers to apply ML models and derive insights from all their data. Going back to that trust thing, Azure Synapse also features an impressive number of security and privacy features, including always-on data encryption, automated threat detection, column-level security, native row-level security, and dynamic data masking. All in all, it's a lofty undertaking on Microsoft's part. Kudos to Microsoft for its ambition here.

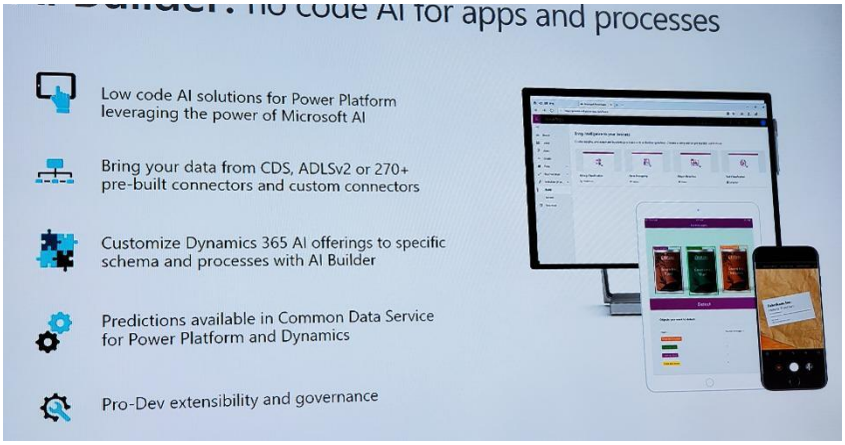
Microsoft Power Platform enhancements

The **Microsoft Power Platform** is the company's low-code developer platform and includes **Power BI** (biz analytics), **PowerApps** (app dev), **Power Automate** (workflow automation), and **Power Virtual Agents** (new) which sit on its **Common Data Service**, **Data connectors (**275+), and **AI Builder**. Net-net Microsoft wants to increase the amount of developers, increase their velocity and scale it through collaboration. This is in direct response to close the "talent gap", which cited an Indeed survey which said that "86% of organizations struggle to find technical talent to build applications" and other studies saying there will be a 1M developer gap by 2030. Microsoft announced a slew of big updates to Power Platform, its platform for visualizing data and writing custom business applications.



Power Automate in action
PATRICK MOORHEAD

These include the renaming of Microsoft Flow to Microsoft Power Automate (not so big), but more consequentially, the addition of robotic process automation, or RPA, to Microsoft Power Automate. RPA is getting a ton of attention given the hige need for apps but the limited developer resources. The addition of RPA, makes Power Automate a full, end-to-end solution, by spanning AI, APIs, and UI. Microsoft's new RPA capability, called UI flows, enables users to change manual tasks into automated workflows by recording and playing back human interaction with software systems that lack support for API automation. I saw a crazy (in a good way) demo where a new employee profile was created in Sharepoint automatically by pulling data from Microsoft Forms without APIs, but rather Windows UX locations and clicks.



AI Builder
PATRICK MOORHEAD

Another new feature is **Microsoft Power Virtual Agents**, which is an app that enables people to create and deploy AI-powered virtual agents—no (or low) coding necessary. I see new "citizen dev" capabilities like this as essential moving forward, given the growing developer shortage. Along similar lines, Microsoft also announced a new set of prebuilt, more advanced models for AI Builder, including key phrase extraction, language detection, text recognition, and sentiment analysis. Additional enhancements include new data security enhancements to Power BI, and tighter integration between Power Platform and Microsoft Teams. My analyst take on all of this is that Microsoft Power Platform has the highest ratio of value/credit. Together with Dynamics 365 and Microsoft 365, it's a killer combo—I'd say it poses a big threat to Salesforce, Tableau, Pega and maybe even SAP.

Visual Studio Online Preview

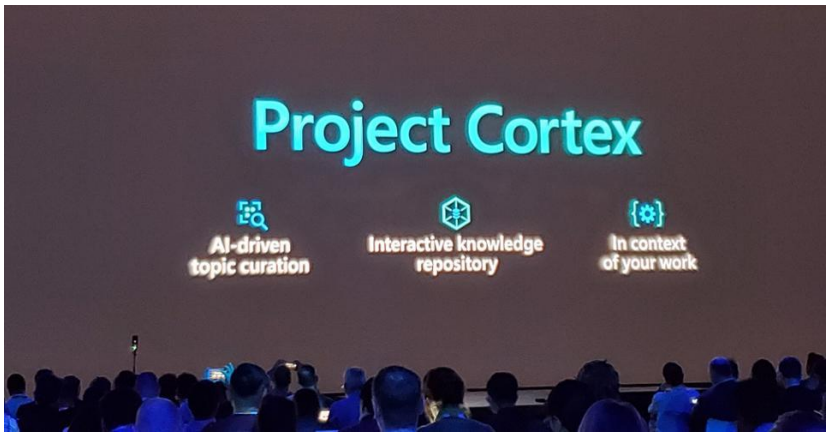
In addition to no and low-code "citizen" developer tools, Microsoft also has very robust developer tools and environments. Before I dive in, I wanted to say that I believe Microsoft doesn't get enough credit for what it does for developers, but the facts speak for themselves:

- Visual Studio is the #1 dev tool with 17M monthly active developers and includes Visual Studio, Visual Studio Code and Visual Studio for Mac
- GitHub has 40M devs and is the place to store, iterate and from which to deploy code
- Azure is the #1 choice for PaaS for devs on Github

Visual Studio Online is exactly what developers would expect, which is to make Visual Studio available from a browser editor from the cloud. Everything, and I mean everything is being made cloud-accessible so why shouldn't an IDE? Developers can literally work from anywhere on any kind of infrastructure. I also

think there's a case to be made that as dev collaboration increases and open source workflows become more popular, cloud-based IDes like Visual Studio Online make a lot of sense. You can try it here.

Microsoft 365: a new knowledge network and more



Project Cortex
PATRICK MOORHEAD

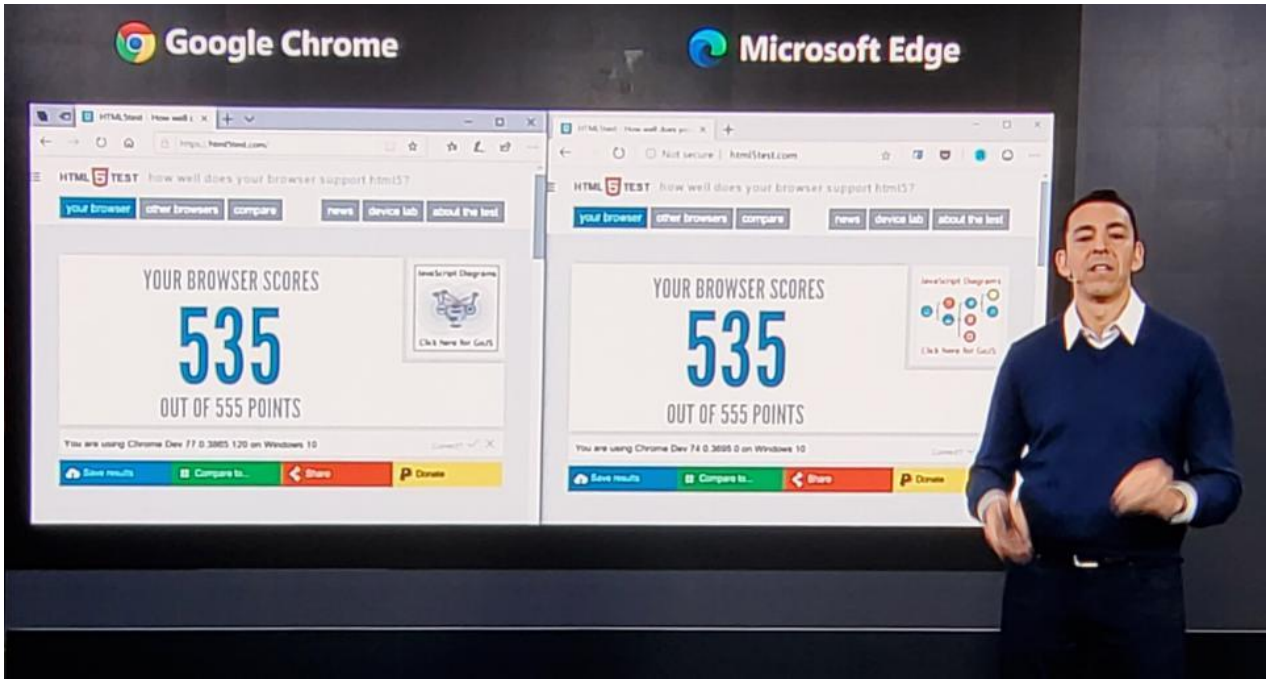
There was a raft of new enhancements announced to **Microsoft 365**. I wanted to hit on a few that seemed particularly noteworthy. The big announcement, in my opinion, was **Project Cortex**, Microsoft's first new service since the introduction of Teams. Project Cortex is a so-called "knowledge network" that the company calls "a cross between a powerful organizer of enterprise content and a digital concierge that brings people the information they need in the context of their workflow." Microsoft says Cortex leverages collective knowledge and utilizes AI to bring insights and information to customers within their everyday apps. It seems to me like Project Cortex is a real culmination of the "**big data + AI = knowledge**" equation. This is exactly what it should be in an enterprise. Several other new Microsoft 365 experiences caught my eye. Microsoft announced a new **Teams Chat button for Outlook**, which allows you to move pesky back-and-forth email conversations into a Teams chat module. Additionally, it announced a new Outlook feature called **"Play My Emails,"** in which Cortana utilizes natural voice and language recognition to read your emails out to you aloud. Lastly, it announced a new "voice enhance" function for Stream, which leverages ML algorithms to detect and get rid of unwanted background video noise. Frankly, I think I'll make good use of all of these new features. They all serve to streamline the work experience in helpful ways. It's going to be really, really hard to slow down Microsoft in its end user 365 experiences as it keeps its incumbent spot and keeps adding useful, ML-enhanced capabilities.

The new and improved Microsoft Edge and Bing

Microsoft's Yusuf Mehdi shows off the new Edge browser's performance versus the older Edge

I wanted to mention the launch of the new Microsoft Edge and Microsoft Bing, which the company hails as "the browser and search engine of business." The new Microsoft Edge features tracking prevention (set as default), which, in conjunction with SmartScreen, better insulate users from phishing schemes and malware. Both Edge and Bing now offer InPrivate mode, which is different from Chrome and Google search as incognito mode can still send data to Google search. Edge also now features **Collections**, a feature that lets users collect and organize web content for export into Word and Excel which will finally become a post-beta reality. According to Microsoft, the new Edge is twice as fast as the old version and is compatible on new sites and with IE. I believe that the new privacy features protecting search are a huge differentiator. Again, it all comes back to trust.

The new Microsoft Search in Bing looks nifty, because you can now search both the internet and your intranet in one single browse and search experience. For example, you can use the address bar to locate people in your company through searching by title, team name, or office location. Microsoft also announced that users can now access Microsoft Search in Bing on their mobile phones. All in all, it seems like Microsoft really upped the ante with Edge and Bing.



Microsoft's Yusuf Mehdi shows off the new Edge browser's compatability versus Chrome
PATRICK MOOORHEAD

I have used the **Canary Edge** as my primary browser and this is the first time in years I can confidently say there are good reasons for both consumers and enterprises to use the new Edge as the primary browser. For enterprisers, it's a no-brainer, as it's a "two-fer" with IE mode. Enterprises can standardize on one, single browser instead of two which most do today with IE for legacy web apps and Chrome for modern sites.

Wrapping up

Ignite 2019 was a great event, chock full of 87 pages of enterprise announcements spanning Azure, Power platform, Microsoft 365, and Edge. While I didn't mention it in my analysis, Moor Insights & Strategy quantum analyst Paul Smith-Goodson wrote about Microsoft's open hardware approach with Honeywell here. Microsoft never fails to cram the announcements in during these events, and this year's conference was no exception. Microsoft appears to be protecting its incumbent positions, aggressively attacking current markets it doesn't hold high market share positions and investing in the right growth areas. I look forward to seeing all of these updates in action over the coming year.

A Glimpse Into Honeywell's Quantum Play Through Microsoft's Azure Ignite Announcement

Paul Smith-Goodson Contributor Enterprise & Cloud *Analyst-in-residence, Quantum Computing*

HONEYWELL

Honeywell Quantum Solutions took part of the center stage at Microsoft's Ignite conference on Monday when Microsoft announced a new service called "Azure Quantum." **Azure Quantum** will provide internet cloud access to Honeywell's quantum computer along with those of **IonQ** and **QCI**. The service also includes access to Microsoft's open-source **Quantum Development Kit** and a quantum simulator. At present, Microsoft has a classical computer on Azure, but it does not have quantum hardware available. Until now, Honeywell was relatively silent about its quantum research. But I learned a long time ago that silence isn't an indication of how much work is being done.

For example, many years ago, I had a meeting scheduled with a few researchers at Bell Labs in Murray Hill, New Jersey. When I walked into the conference room, a few of the researchers looked like they were nodding off, and the others were staring into space. To an average person, it might have appeared these people were disinterested or perhaps even disconnected from the task. But from my experience working with Bell Labs, I knew what was going on. Despite appearances, they were all working, and probably very hard. Based on Microsoft's announcement, one thing is for sure: Honeywell has been hard at work. While the big techs, IBM, Google and Intel, use superconducting qubits, trapped ion is Honeywell's technology of choice—for several reasons aside from the technical advantages it offers.

One reason is that Honeywell gained prior experience with the technology when it previously worked on a trapped ion program with Intelligence Advanced Research Projects Activity (IARPA) in 2014. Another factor is that Honeywell has the expertise and a long history of producing successful products and services using the same technology necessary to build a quantum computer. These include state-of-the-art hardware and software control systems, advanced electronics, photonics, lasers, modulators, fiber optics, ultra-high vacuum environments and cryogenics. Honeywell has put their experience and expertise to work. It fabricates one of the most critical components, the ion trap, in its microfabrication production facility in Minneapolis. It also makes its own control system and user interfaces.

Last week, Patrick Moorhead, President and founder of Moor Insights and Strategy, and I had the opportunity to talk to Tony Uttley, President of Honeywell Quantum Solutions (HQS). For the reasons above, Uttley believes that quantum is a logical extension of the company's decades-long legacy in control systems. He is also realistic about the future timelines of quantum computing. "I think of three eras," says Uttley. "The first era is when quantum computers and classical computers work together to solve problems." He went on to define the next era as one he calls "classically impractical." According to him, that will be a time when some things are feasible on a classical computer but, because of speedup considerations, a quantum computer might be a better choice. Lastly, he defines the final era as "classically impossible." That's when quantum computing becomes a mature technology and some computations can be done on a quantum computer that are impossible on a classical computer. Others have referred to this as the era of fault-tolerant quantum gate computers.

We asked Uttley about the number of qubits in Honeywell's most current quantum computer, and how many were on the horizon. Uttley correctly answered that while the number of qubits is important, many other technical factors are equally important to the performance of a quantum computer. It was clear that Uttley subscribes to the importance of IBM's Quantum Volume, a method introduced in 2017 that evaluates key performance elements of a quantum computer. The three primary metrics that govern a quantum computer's QV are how many qubits the quantum computer has, how connected the qubits are (can every qubit easily interact with every other qubit?) and how many operations it can perform before too many errors occur or before the quantum states collapse. We believe Honeywell's first quantum computer will have a relatively small number of qubits compared to IBM or Google. However, we also expect it to scale up in a reasonable amount of time. Keep an eye on Honeywell Quantum Solutions. Considering Honeywell's history, expertise and financial strength, it will likely become a significant player.