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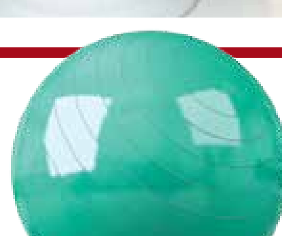

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COVER STORY

THE EVERYTHING CONTRACTOR

AWS is fast eclipsing its rivals when it comes to the federal cloud

BY ROBERT J. TERRY | rterry@bizjournals.com | @FedBizWBJ

There were no new iPhone reveals, no trademark black turtleneck nor barely contained sense of superiority. But Teresa Carlson's keynote at a recent Amazon Web Services gathering in D.C. had some distinct Jobsian flourishes. ¶ The room was dark. Emo music blared. Some people queued in line for 45 minutes at the Walter E. Washington Convention Center just to get into the two-day Public Sector Summit. Anticipation surged.

Carlson, chief of the cloud computing giant's public sector business, commanded the stage. She stood before a big screen, prompting an off-stage Alexa to give recommendations on technical sessions and sprinkling an exquisitely crafted series of growth metrics throughout her almost two-hour presentation to a rapt audience:

► A $22 billion run rate for AWS, constituting year-over-year growth of 49 percent

► More than 10,000 industry partners added to the AWS partner network in 2017, almost 700 of them public sector-specific

► New hiring goals for military veterans, including an apprenticeship program expected to grow fivefold this year

► The unveiling of a cloud computing degree program at Northern Virginia Community College, one of the first degrees of its kind offered by a two-year school

► 1,430 new services and features added to the platform in 2017, the vast majority of them sparked by feedback from AWS cloud users

► 66 price reductions since its launch in 2006, thanks to economies of scale that are the envy of the industry

She also welcomed a series of speakers testifying how the AWS cloud computing platform had catapulted their organizations to new technology heights, not just in terms of performance but security. That's the big hurdle for would-be customers, especially federal agencies leery of becoming news fodder over embarrassing data breaches.

"It has transformed our ability to build new capabilities, and it has transformed our ability to solve seemingly impossible intelligence problems," said Sean Roche, associate deputy director for digital innovation for the CIA, whose $600 million contract in 2013 was AWS's climactic first step into the public sector. "Security is an absolutely existential need for everything we do at the agency. The cloud on its weakest day is more secure than a client-server solution."

For AWS, the result is a brand that was all but unrecognizable a half-dozen years ago and now strikes fear into the hearts of some of government contracting's biggest and most-established players. The business is a dominant corporate tech provider – controlling one-third or more of the cloud infrastructure market, depending on which analyst you ask – and could see its cloud business with the government almost double this year.

We're still early in the federal cloud game, which means opportunity for companies eager to partner with AWS. It also means AWS has a chance to cement its status as the de facto cloud hosting environment for the federal government – especially if it wins a huge $10 billion Pentagon program that could radically reshape how our nation's warfighters use technology.

Carlson describes AWS's aspirations in the federal market in simpler terms: paving the way for disruptive innovation and enabling government agencies to access the same capabilities that we utilize in our day-to-day lives.

"We just provide the tools," she said during her summit keynote. "It's the customer that does the heavy lifting to really pull it all together."

That mention of the customer is key, as it pulls directly from parent Amazon.com Inc.'s playbook. Founder Jeff Bezos laid it all out almost 20 years ago, in the now famous shareholder letter he wrote after the fledgling e-commerce company went public in 1997: "Amazon.com uses the Internet to create real value for its customers and, by doing so, hopes to create an enduring franchise, even in established and large markets."

Fast-forward two decades and it's worth asking: What happens if AWS becomes so dominant in the federal cloud market that it crushes the competition? What if, as seen on the commercial side of the business, AWS decides to add enough muscle to its platform to move into services offered by its partners?

That is, after all, Amazon's way. Once just a humble bookseller, the Seattle giant has cast its disruptive gaze at retail, grocery, Hollywood, health care, economic development and, lately, the pharmacy business, promising to upend each in the process.

THE BIG NUMBERS

$20 billion
Amount of federal cloud projects and initiatives that are "up for grabs" in the next five years, according to GBH Insights

50 percent
Compounded annual growth rate of unclassified prime contract awards to companies utilizing Amazon Web Services from fiscal 2014 to 2017, according to government market research firm Govini. Homeland Security comprises 26 percent of the spending during that time, far more than any other agency.

6,000
Estimated number of U.S. government data centers that will migrate to the cloud, according to Wall Street investment firm GBH Insights. AWS as well as Microsoft, Google, IBM and Oracle are among the top competitors for this lucrative work.

Teresa Carlson, who leads AWS's public sector business, stressed the customer in her recent keynote, taking a page from her boss, Jeff Bezos.

ROB TERRY / STAFF

A GRAND MARKET ENTRANCE

The first sign of Amazon Web Services as a player to be reckoned with came in 2013, when it surprised everyone as an underdog winner of the CIA's $600 million, 10-year commercial cloud computing contract. It had vanquished Microsoft, AT&T and eventually IBM, which took its protest to court.

Suddenly, an upstart was providing all 17 intelligence agencies with access to on-demand computing, analytics, storage, collaboration and other IT services.

"No one thought we were going to win," Carlson, a former Microsoft executive, said in an interview. "Because no one expected us to be able to bid or have the capabilities, they sort of ignored us. And then when we won, everybody said, 'Well, they can't really deliver on that.'"

Then came the public sector business's announcement last fall that it was rolling out its "Secret Region," a cloud service for the federal government's intelligence community that can host software and data classified at the "secret" level. It's essentially intel agencies' own commercial data center shut off – what they call "air gapped" – from the rest of the internet, a key evolution in commercial cloud computing technology. The Defense Department began, for the first time, moving classified data and applications to the Secret Region in the spring.

And yet, we now enter what appears to be an unquestionable turning point in AWS's federal quest: the Pentagon's revelation at its March industry day that its Joint Enterprise Defense Infrastructure procurement – a high-profile 10-year, $10 billion commercial cloud computing program to transform the Department of Defense's IT posture in support of the warfighter – would be structured as a single award rather than multiple contracts to multiple companies.

The sniping from competitors was swift, with some claiming the procurement was being specially tailored for AWS. The frustration is more with the Pentagon and its insistence on crafting the procurement as a single award, but it wasn't lost on many that the draft proposal came mere months after Bezos hosted Defense Secretary James Mattis at Amazon's Seattle headquarters.

"I'm disappointed in what we see right now. I think you very clearly see AWS's fingers all over this," said an

HOW CLOUD COMPUTING WORKS

Cloud computing describes the on-demand delivery of computing power, server capacity, database storage, applications and other IT resources hosted in remote data centers and easily accessed over the internet. It is less expensive than installing and purchasing those individually, offers flexible pricing and allows users to scale use up or down depending upon demand.

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executive who requested anonymity to speak freely with the procurement still several months away. "That answer of a single award is simply not the right answer, and all the reasons that they're citing for the need to do that fly in the face of technical reality."

AWS's steady rise looms large in the minds of the market's established systems integrators, casting a cloud over an otherwise boom time of healthy defense spending increases, a lucrative bid environment and wide push for technology modernization. Cloud computing specifically is moving from simple adoption to utilizing all of its bells and whistles, particularly data analytics, to drive innovation and support agency missions.

It's those trends that have led New York research firm GBH Insights to label the federal realm the "golden goose opportunity" for AWS going forward.

SIGNS OF SUPREMACY

There is $20 billion worth of federal cloud projects up for grabs in the next five years, estimated Daniel Ives, head of technology research for GBH Insights. The U.S. government, meanwhile, spends more than $80 billion annually on IT, particularly cyber, infrastructure, software and hardware – and a good chunk of that money is spent simply keeping outdated IT systems running.

AWS, which set up a new 400,000-square-foot, East Coast campus in Herndon just 25-some miles from the federal seats of power, has had a head start of several years – it already controls one-third of the commercial cloud market, according to analysts. And along with its high-profile proof of concept of sorts with the CIA, Ives estimates it's invested another $800 million in the last five years in building out its local senior leadership team, as well as its sales reps, partner cohort and R&D activity to capitalize on a cloud shift.

Its cloud platform is one of 109 to be authorized by the Federal Risk and Authorization Management Program (FedRAMP) for its security protocols, but one of only five platforms with the green light to handle the highest-impact data, along with Microsoft Corp.'s Azure and Oracle's Integrated Cloud. Other companies, in turn, run the software they're selling to federal clients on AWS's cloud.

As a result, Ives predicts that AWS's cloud business with the government is expected to grow to $4.6 billion in 2019, more than 15 times the amount it logged in 2015. AWS, led by CEO Andy Jassy, does not break out public sector revenue.

The cloud computing division drove 10 percent of Amazon's overall first-quarter sales both this year and last year and an outsized portion of the larger company's operating income – 74 percent for the quarter this year and 89 percent in that same period last year.

Prime awards to companies utilizing the AWS cloud platform leapt from $20 million in fiscal 2016 to $45 million in fiscal 2017, according to Arlington government market research firm Govini, which analyzed unclassified contracting data – which means the actual number is significantly higher. Investment by the departments of Homeland Security, Commerce and Veterans Affairs drove most of that.

Tara Murphy Dougherty, president of Govini's national security practice, sees a possible strategy coalescing: Secure a few of what she calls "high-leverage" cloud hosting contracts – one with CIA, perhaps another with DOD and DHS – "and it becomes a fait accompli that AWS is who departments and agencies go to for cloud hosting services."

That could leave competitors – those utilizing legacy contracts to build expensive custom tools that need to be maintained for years – scrambling.

"It's an interesting story around how they are upending this model – or they could, if they're successful with this cloud approach – of some of the more traditional partners of the federal government like the IBMs and the Oracles," Dougherty said. "All the attention of doing that is more toward these very nontraditional companies coming straight out of Silicon Valley. Amazon is not a Silicon Valley company, they're actually fairly traditional. They're huge, they're established, but they're still a major disruptor to a CACI or an IBM or a CSRA," which was recently acquired by General Dynamics in a blockbuster $9.7 billion deal.

WHAT'S AT STAKE

In recent weeks, Leidos Holdings, CACI International, SAP NS2 and others trumpeted their achieving new partner status levels within the AWS network, designations that prove these companies' ability to unleash cloud tech for customers.

It's a sought-after imprimatur – even as companies complain to President Donald Trump about AWS's role in the JEDI procurement, as Oracle reportedly has, or question the wisdom of a customer like the Pentagon casting its cloud lot via a single award.

That approach, critics say, raises security concerns and erects a barrier to entry for new and emerging technologies needed for national defense by connecting 3.4 million IT end users, more than 4 million endpoint devices and 1,700 data centers.

Pentagon officials maintained the award would go to the best vendor or team following a full and open competition, and that having several contractors handle various parts of the Pentagon's cloud infrastructure would exponentially increase the program's overall complexity.

And the prospect of a contractor filing a protest after the final RFP was compiled, delaying the award, "makes me sick to my stomach," Tim Van Name, deputy director of the Defense Digital Service, told Bloomberg in the spring. He described a recent trip to Iraq and seeing U.S. soldiers sorting photographs of potential targets – all by hand.

But Steve Harris, senior vice president of Dell EMC's federal business, pointed to the very nature of the program as the main reason to use a multicloud strategy. It contains mission-critical, diverse, complex and geographically dispersed capability requirements for a huge set of IT workloads.

The JEDI contract, it turns out, probably won't signal the sea change some anticipated when the draft proposal and single-award strategy were made public. A nine-company coalition banded together to knock it down. Some of the companies are not considered direct competition for the contract but are concerned that by awarding the deal to AWS or Microsoft or any single company, it would hurt their current deals with the military and any chance they may have of obtaining future contracts.

Those concerns had found sympathetic ears in recent weeks, and opponents notched a victory July 11 when Dana Deasy, the Pentagon's new CIO, confirmed he was overseeing a "full top-down, bottom-up review" of JEDI. He's in no hurry, he added, to issue a final RFP.

LINK UP OR LEAVE?

Not all fellow contractors see AWS as an existential threat.

John Wood, CEO of Telos Corp., an Ashburn IT and cybersecurity firm with 500 employees and about $108 million in revenue, works with AWS on the CIA's CS2 private cloud program. A Telos tool enables what's called "authority to operate," or ATO, so each workload can be quickly configured and assessed for security standards before being given the go-ahead to operate.

Security and compliance automation is something Telos pushes to customers. What if AWS decided to push that as well? Wouldn't that have the potential to eat into a big chunk of Telos business? Turns out, AWS already can, according to Wood, but his customers are a long way from putting all their assets in the cloud – that's probably a decade away. So in the meantime, his customers run some applications in the cloud, on their own premises and still others on a hybrid of the two, and Telos leverages the AWS platform to offer all kinds of complex cyber services.

"I am very happy that there are modern technology organizations out there like Amazon and here's why. The other guys didn't take risk. Amazon took risk," he said. "There's an old guard kind of thing going on. You have a bunch of organizations trying to protect their legacy businesses. And then you have a bunch of providers that have a much more efficient way to deliver goods and services, and there's an argument about which way to go."

That's indeed the value proposition AWS's own Carlson pitches to other contractors.

"I love our partner integrators, and I continue to build those relationships," she said. "We could not do our work without them."

She's also not likely to tip her hand on future strategy, and those leery of AWS's aspirations as a government contractor point to the track record of its parent company in spotting new ways before anyone else to go straight to customers. They also comfort themselves in the knowledge that successful commercial enterprises have tried and failed before to go all in on the federal market – the regulations are too onerous, the sales cycle too complex, the margins too thin, the overhead too specialized. Systems integrators will be needed to customize, migrate and secure cloud tech.

But still …

For her part, Carlson issues a challenge – to be more disruptive. Modernize your old contracts with customers, she said. Do quicker-turn work with rapid development, deployment and turnaround. Think differently about how to propose and deliver capabilities and skills needed to move up the technology stack of programming languages, tools and other frameworks to create web and mobile applications.

"Systems integrators don't need to be moving servers around anymore – that's a low skill," Carlson added. "A lot of these companies still want to build custom tools and that's just not advantageous for government anymore."

AWS's ultimate aspiration in the federal marketplace, as Carlson describes it, sounds a bit benign, even a bit "Pollyanna-ish," she concedes.

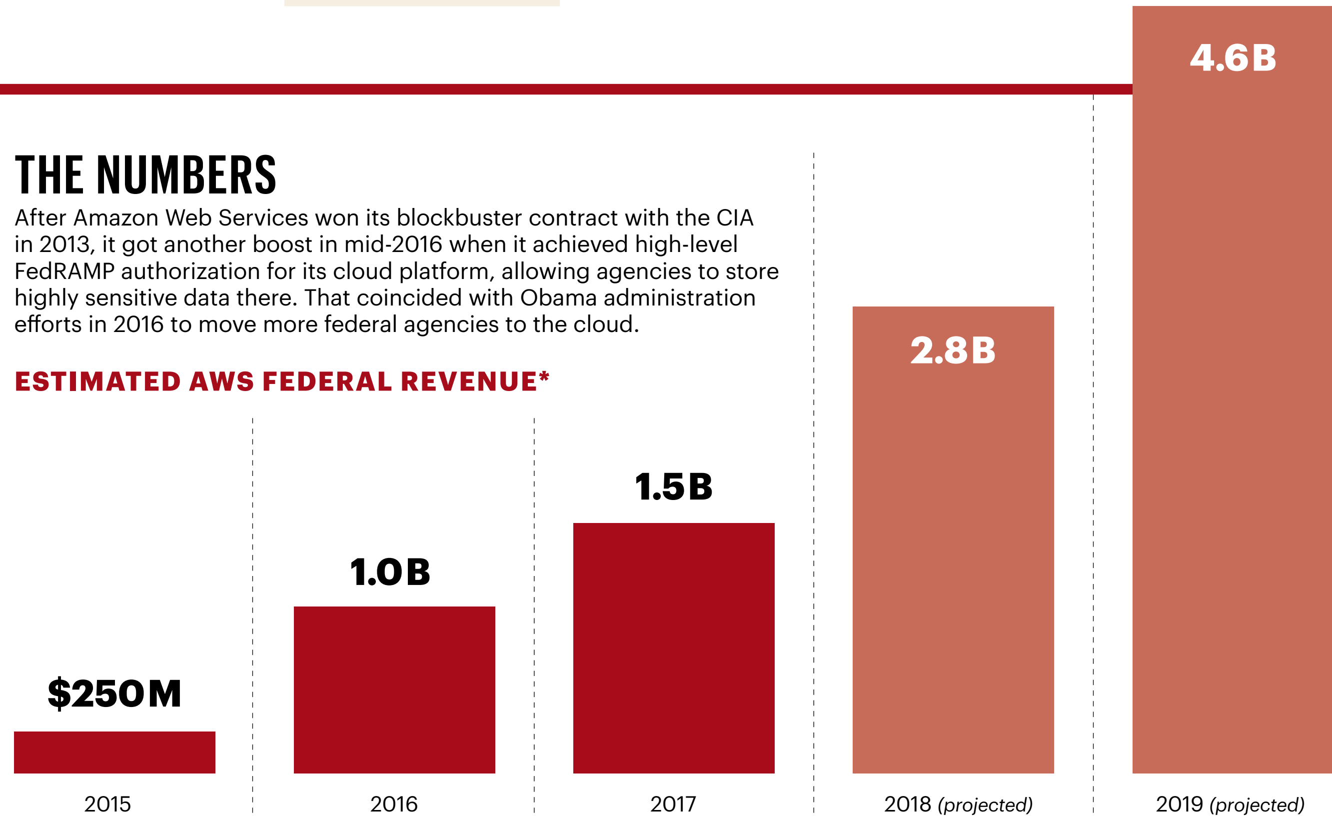
"I'm going to tell you what we have said from day one, which is paving the way for disruptive innovation and helping make the world a better place," she said.

"Those are words, but what do they mean? They mean bringing and delivering commercial capabilities into the U.S. federal government and allowing [agencies] to have the same capabilities for citizens and mission just we like do in our day-to-day lives," she added. "We're going to have to do that through multiple arenas – with policymakers, acquisition officials, the government leaders themselves, our partner community, through education and training. There's a lot that goes into that."

THE NUMBERS

After Amazon Web Services won its blockbuster contract with the CIA in 2013, it got another boost in mid-2016 when it achieved high-level FedRAMP authorization for its cloud platform, allowing agencies to store highly sensitive data there. That coincided with Obama administration efforts in 2016 to move more federal agencies to the cloud.

ESTIMATED AWS FEDERAL REVENUE*



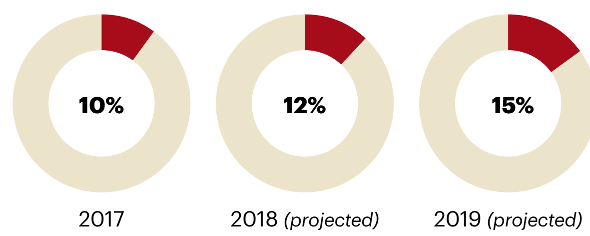
WHERE THE PROFITS ARE

The cloud division, which saw its first-quarter revenue and operating income soar some 50 percent year over year, has made up a healthy bulk of its parent company's income.

	REVENUE (In billions)		OPERATING INCOME (In billions)	
	AWS	Amazon	AWS	Amazon
2017, Q1	$3.6	$35.7	$0.9	$1.0
2018, Q1	$5.4	$51.0	$1.4	$1.9

PERCENTAGE OF FEDERAL BUSINESS

Federal cloud work is expected to grow within AWS's larger, fast-growing portfolio.



SOURCE: Amazon quarterly reports, GBH Insights * AWS does not break out federal sector financials

THE HQ2 QUESTION

AWS GROWTH 'BODES WELL' FOR REGION'S CHANCES

You may have heard that Amazon is considering Northern Virginia, along with D.C. and Montgomery County, for its $5 billion second headquarters, dubbed HQ2.

Its fast-growing cloud computing business, and its increasingly voracious federal government customer, could be a key catalyst in Greater Washington getting the nod for the $5 billion headquarters, estimated to generate 50,000 jobs.

Amazon Web Services already has a significant presence in what writer Andrew Blum calls "the bullseye of America's Internet" — the parts of Fairfax and Loudoun counties home to data centers coursing with an estimated 70 percent of the world's web traffic.

AWS is behind a nearly 600,000-square-foot data center campus proposed for a roughly 44-acre site on the north side of Route 50 just south of Dulles International Airport in Loudoun County. And AWS has established an East Coast corporate hub at One Dulles Tower near Herndon in Fairfax County.

Everyone from plugged-in analysts to armchair economic development pundits have weighed in on the AWS factor, as well as an expected surge in regulatory scrutiny given the company's desire to expand into financial services and health care, among other industries. "Having 50,000 employees going to the same country clubs and putting children in the same schools as government officials is a shrewd strategy if Amazon wants to fend off government attacks," The Economist wrote.

Count Tara Murphy Dougherty, head of the national security practice at market research firm Govini, among those who think the growth of AWS's federal business could drive this HQ2 decision.

"They can't help but look at AWS as a component of Amazon and consider whether its success could make them lean toward this region," she said. "I think it all bodes very well for the D.C. area."

COVER STORY

Telos CEO John Wood said AWS's affinity for risk is good for the market. Telos builds upon the AWS platform to offer all kinds of complex cyber services.

FILE PHOTO

THE AWS BRAIN TRUST

AWS's public sector executive team includes people with ties to top tech companies, as well as the Pentagon and Capitol Hill.

▶ **JENNIFER CHRONIS** is general manager of Department of Defense programs, overseeing accounts in the four U.S. service branches. She joined AWS in 2016 from IBM and is an Army veteran.

▶ **DAVE LEVY** is vice president of U.S. government at AWS. He joined the company in 2017 after leading government sales for Apple Inc.

▶ **SHANNON KELLOGG** is AWS's director of public policy. Prior to joining Amazon in 2012, he was senior director of government affairs for EMC Corp., heading the company's public policy office in D.C.

▶ **ANDREW KO** leads global education for the worldwide public sector business. Prior to joining AWS, he served as corporate vice president of Samsung Global Education and general manager for Microsoft Corp.'s U.S. education business.

▶ **KIM MAJERUS** is general manager of state and local government. She came to AWS after more than 16 years at Cisco Systems, rising through the ranks to become vice president of state, local and education sales.

▶ **MAX PETERSON** is the London-based vice president of international sales for AWS's worldwide public sector business. Peterson joined AWS after almost five years as the general manager of Dell's federal civilian and intelligence agencies business.

▶ **PETER MOORE** is regional managing director growing the public sector business across Australia and New Zealand, India, South East Asia, Japan, Hong Kong, Taiwan and Korea. He's a former Microsoft senior exec based in China.

▶ **TROY BERTRAM** is the business development general manager for the public sector business, leading its capture and proposal management work.