PBN

TABLE OF

DATA CENTERS

EXPERTS

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AlohaNAP Servpac

PANELIST

RICHARD ZHENG
President, Servpac Inc.

Entrepreneur Richard Zheng is the President of Servpac Inc, the largest independent local telecom provider in Hawaii. After being educated in China and receiving extensive telecom training and experience in Canada, Richard moved to Hawaii in 2001.

Three years later, he founded Servpac, one of the first companies to compete with Hawaii's telecom establishment. Since that time, his company has grown from a two-person start-up to a multi-million-dollar enterprise deploying over ten thousand phones, powering a private Internet network in hundreds of office buildings, and delivering secure, local Cloud Computing services from the most advanced facility of its kind in the State.

While other local telecom providers have filed for bankruptcy or been absorbed by others, Richard's relentless innovation has enabled Servpac to thrive by lowering costs and increasing efficiency for over a thousand small and medium-sized businesses including Zippys, City Mill, and Roberts Hawaii.

PANELIST

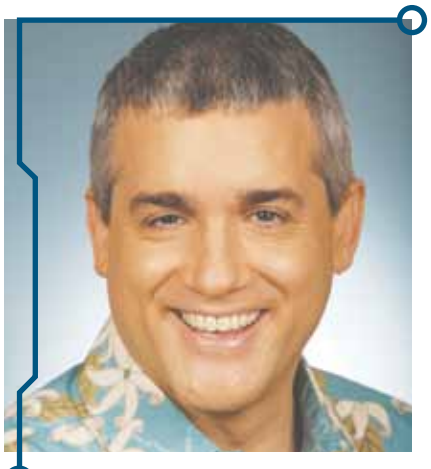
ROBERT DEVITA
Chief Sales Officer

Mr. DeVita leads the sales and marketing strategy for the firm. He has an extensive background in management, direct and indirect sales, and development for datacenter technology.

Mr. DeVita has presented at many new technologies and applications top tier conferences, with sessions including "Cloud and Mobility" at 7×24 Exchange; "Patriot Act & NSA: Protecting Your Data" at HostingCon; and "Connectivity Challenges & Opportunities in 2014, including Adoption of the Open IX Model in the U.S."; at CRE's Texas Data Center Summit & Peer 2.0 Conference. He has been a panelist at many IMN events as well.

Mr. DeVita served as the President of the Dallas-Fort Worth AFCOM Chapter and currently serves on the Board of Directors for the Metroplex Technology Business Council.

MODERATOR



PETER KAY
President, CyberCom, Inc.

Peter Kay is commonly recognized as the voice behind Your Computer Minute on the radio. He is the President of CyberCom, Inc., a high-tech management consulting firm founded in 1994 that provides fractional Chief Technology Officer services.

His personal mission is to lead technology-leveraged transformation in corporations, governments, and non-profits and has done so in Hawaii by founding 6 different tech-related companies since 1984. Peter's firm, CyberCom, built the first commercial Web site in Hawaii as well as the initial site for most of the local blue-chip firms.

Peter was named Entrepreneur of Year by Ernst & Young and has won numerous awards in Pacific Business News. He has appeared on the cover of Midweek and twice on Hawaii Business Magazine. Peter's unique understanding of how business, technology, and human nature overlap brings a unique perspective that takes on today's challenges.

PACIFIC BUSINESS NEWS TABLE OF EXPERTS

DATA CENTERS

Contributing Writer - James Charisma

These days, everyone's talking about data. But when it comes to accessing and protecting your company's critical information, do you host your own server, collocate by keeping your server at a secure facility, or operate entirely on a cloud platform? And what's the difference?

As part of an ongoing Table of Experts discussion series, Pacific Business News brought together two local experts in the digital fields to explore the topic of data centers.

Richard Zheng, President of Servpac, and Robert DeVita, Chief Sales Officer of AlohaNAP, came together on November 24 to discuss the pros and cons of collocation and the cloud, the importance of minimizing digital latency, and Oahu's future in the trans-Pacific exchange of information.

The discussion was moderated by Peter Kay, of CyberCom

KAY ***How do you both define your companies? What does AlohaNAP do?***

DEVITA *AlohaNAP is a carrier neutral data center located in Kapolei. Our facility has some strong points that we bring to the market; we're two-and-a-half miles inland and 130 feet above sea level. But more importantly, it's our infrastructure itself: we have poured concrete walls and are the only purpose-built data center on the island. The critical systems in back allow us to provide 100% uptime for our customers, whether that's from a cooling perspective or a power perspective. What we try to give people on the island is choice: the ability to come into our facility to choose your network provider, choose your cloud provider, if you want to put your information on a terrestrial network, or if you want to hook up to the 40 satellites that we can reach with our orbiters on the campus. We have a robust mission critical infrastructure for enterprises on the island to pass their information.*

KAY ***You mention being two miles inland and 130 feet above sea level; why is that important?***

DEVITA *From more than fifteen years of experience, I can say that customers look to reduce their risk when going into a data center. When we talk to customers, one of the first thing that intrigues them is where our facility is located. No one wants to be able to hit a three wood into the water from the top of their data center.*

KAY ***So if we get hit with a hurricane or tsunami and the low-lying areas are covered in water, you guys don't have much of a concern about that because you're 130 feet above sea level?***

DEVITA *Correct. So when an enterprise trusts someone with their infrastructure, they want to know the critical systems in back of it are robust and that the location is situated outside of any of the threat zones.*

KAY ***How about you, Richard? What does Servpac do?***

ZHENG *We're the largest independent telephone company in Hawaii. We provide phone services, internet, and cloud services. When we first started VOIP, which relies on the internet to work well, we found out the internet in Hawaii is not top-notch. Our customers had a lot of issues with other people's internet. So about four years ago, we started building our own internet. We have a private network and fiber optics underground. A couple of years ago, we also started building cloud services; today, we're a full service company.*

KAY ***When you mentioned the cloud, you said you guys have your own fiber? You guys have buried fiber throughout parts of the island?***

ZHENG *Yes.*

KAY ***Other than the big companies, who else has done that?***

ZHENG *When I talk to people and say we provide internet to customers, lots of people's first impression in Hawaii is, who do you resell? Do you resell Hawaiian Telcom, do you resell Oceanic? When actually, we've built our own network. When I say we're the largest independent telephone company, it's based on a few factors. We have 19 Hawaiian Telcom central offices collocated; we've put equipment in Hawaiian Telcom central offices and then service adjacent businesses. We have 19 which cover about 80 to 90 percent of the businesses in Hawaii.*

KAY ***When you say 19, you mean you have 19 locations of Hawaiian Telcom with collocated network nodes, which gives you very close proximity to where those customers may be. Why is that important?***

ZHENG *Because Internet is all based on location. The closer you get to the customer, the better service you can get to the customer.*

KAY ***So if I'm a customer and my network nodes are nearby, then the closer it is, the better throughput I'm gonna get; better performance, better response time, screensharing, remote access, and things like that?***

ZHENG *Exactly. These offices are around the state. Some are in south shore Oahu, with a couple on the windward side and also the major neighbor island cities. A couple of years ago, we started deploying fiber optics in the business-concentrated areas, such as downtown, around Kapiolani, and Waikiki.*

KAY *That's awesome.*

ZHENG *A couple of years ago, we also took a look at the market and saw a lot of people going towards the cloud. So we started building our cloud services. Instead of putting our cloud platform in other people's data centers, we built our own data center. We shared the same concerns that Robert [DeVita] had, that the location needs to be far from the ocean, so ours is one and half-mile from the ocean and about 100 feet elevation. The difference is that we built this data center; a 'cloud center' really, and our whole facility is built around it. So we don't allow customer collocation. So if you want collocation, facilities like Robert's facility would be a good choice, and if you want the cloud, then we provide the whole service with the cloud.*

KAY ***Let's shift the conversation to the cloud; when would you tell someone they need to move their data to a cloud versus when you need to use collocation? Let's say there are three situations: first situation is that a business has a bunch of servers that they've got in their offices that are sitting under a desk or in some kind of a closet. Second situation is collocation, where these businesses can put their servers in someone else's facility. And third is to just tap into a digital cloud, where data is maintained elsewhere. So when is it correct to keep a server in your office, when is it right to collocate, and when's it right to go to the cloud?***

DEVITA *It's definitely an individual decision for each company. We see more and more small and medium-sized businesses moving to the cloud, especially for folks who don't have that robust IT staff in-house. With larger enterprise customers, we're also seeing a lot more virtualization on their own, so when they're doing that upgrade from their standard one-use server and they're starting to virtualize their environment and making a large capital expenditure at that time, that's when we think they should look at collocation. You're going to make this big investment and you don't really want to be relying upon an infrastructure that isn't built with 100% uptop, because it doesn't do you any good to be in a virtualized environment if you can't access it. Which is why we see a lot of the larger enterprises creating their own private cloud and moving that into collocation facilities.*

KAY ***So there's the collocation side of the decision matrix. So that's the collocation justification, what's the cloud justification?***

ZHENG *As technology becomes more complicated and very specialized, your typical IT guy will need to worry about setting up a server, setting up security, making sure that the AC and power is good, and so on; there's a lot of things to worry about. In the meantime, most businesses are not focused on IT. If it's an insurance company, they're focused on selling insurance; if they're in retail, they're selling stuff, so the big advantage of using the cloud is that people don't have to worry about those things. In our cloud, we set up everything for them. We migrate their cloud on their servers into our virtual platform, we set up the system and the network for them, so they don't have to worry about it.*

KAY ***Why would I want to do a collocation over a cloud, or a cloud over a collocation?***

ZHENG *Collocation is a good option if you have the expertise and if you have any special requirements, if you want to set up your own system.*

KAY ***So if a company goes with collocation, they'll still need to set up and run their own server. They'll still need the expertise to run it, to know about security issues, to deal with patches and updates, and they'll still have to do server and system administration?***

ZHENG *Correct. Whereas with a cloud, you can just hand it off and just use the services. We have several big customers that just give us their servers, then we virtualize them, manage them, and then basically they can just go in as users.*

KAY ***Robert, I want to circle back about virtualization. What is it?***

DEVITA *Traditionally, customers would run one application on one server and they'd have a multitude of different servers, each with a different application. Not really being able to utilize the full compute power or storage space that's on that one server because it was only dedicated to one application. Virtualization allows you to run multiple applications on the same physical infrastructure, so you're able to reduce the amount of servers you have by fully utilizing the compute and storage on one machine.*

KAY ***So back in the old days, you had to run only one application per server because it would conflict. But today, the way we kind of address that now is by creating three or four virtual servers inside a physical server. And each of those virtual servers runs one application still, but now it doesn't need all these separate pieces of hardware, is that right?***

DEVITA *You got it. It separates the application layer from the physical layer, when before those were together.*

KAY ***Roger. So if we were to kind of summarize this really quickly to give people an understanding of the difference between keeping servers in your office, collocating, or going to cloud, could we say that if you're going to keep it in your office, you're going to need to have environmental expertise, power, electricity, and physical hardware; if if you collocate, you let go of the physical requirements expertise, but you still have to have system administration expertise. You still have to know your operating system, updates, and security at the collocation level. If you go to the cloud, you just have to have end user expertise: how to use your apps and programs. Is there any sort of additional clarification within those three levels?***

DEVITA *When we talk about the physical infrastructure and the cost for building an office, it's essentially a hundred dollars per square foot. When you look at building a mission critical data center space, you're looking at about fifteen hundred dollars a square foot. So the question to ask is, do you really want to take on that upfront expense to have it in your office, to build the systems that are needed? Or to just go someplace with this already built? The goal, whether it's virtualization or collocation, is to stay with what your main business is, which probably isn't running a mission critical facility or being your own system administrator. Look at the resources that you have and try to focus those on what's going to drive your business. The technology should never inhibit your business, it should always be able to help.*

ZHENG *These days, it's going to be very hard to just put the system in your own office or build your own data center. Because for lots of smaller businesses, it makes no sense. Even for the bigger ones, building a data center is not an easy job. You have to worry about power,*

cooling, and lots of people don't have the facility. We've seen several big customers in Hawaii try to build their own data center, where when you price it out, you're talking about ten cabinets which needs over a million dollar budget.

KAY *So what do you tell the customer who says, you know, I feel so much more comfortable looking at my server, it's right there.*

ZHENG *Well, if you really want to see your server, you can visit our data center anytime. [Laughs]*

DEVITA *I would ask them to think about what their boss is going to say when they lose power or coolant. And does that outweigh how much they want to look at it? The choice comes down to business continuity and disaster recovery; how do you mitigate those risks? Do those elements outweigh you being able to look at your server and that green blinking light?*

ZHENG *Another thing I want to highlight is security. That's the hardest thing, to keep your office safe. These days, we have so many issues with hackers and data breaches, and lots of these companies are liable for these breaches. It's very hard to keep your own facility safe.*

KAY *So you really have to go far to justify keeping servers in the office or having an in-house or in-office data center.*

DEVITA *We have one customer where, every Thursday night at 2 a.m., they were seeing an outage. Their offices were closed but they decided to sit in one night and realized that the cleaning lady would unplug one of their servers and plug it back in.*

KAY ***Wow. Ok, so let's say you've spoken to some clients and they're with you about data centers, but they mention a huge company like Amazon, that spends a billion dollars on data centers and how they're all over the world. They may want to support Hawaii businesses, but why wouldn't someone just go with a company like Microsoft or Amazon?***

ZHENG *It's true, lots of big companies are located on the mainland. The problem is that Hawaii is really far from anywhere and the market's too small; the big guys are never going to put their facilities in Hawaii. So when people access Amazon or Google or Microsoft servers and systems, they're going all the way across the ocean. Just to give you some numbers, Hawaii to the west coast has about a 60 to 70 millisecond latency. But if you access our system on the island, it's about a 2 to 3 millisecond latency. And this is not something you can change. This is basically the speed of light, there's nothing you can do about it. Even if they bought a bigger pipe, it would do nothing to help with latency.*

DEVITA *I think it really has to do with the application, its latency and responsiveness requirements. There are some applications that you have to be very close to. Choosing one that's on the island is going to be the best way to go. What we tried to really concern ourselves with is how people connect with those cloud environments. The big movement right now is direct connect: how do I go ahead and connect directly with a server pack; providing customers with the ability to direct connect via various carriers to those different environments directly instead of traversing the public internet.*

KAY ***Is that something that you guys do? For example, if a customer says they love the idea of collocating locally because of that latency we discussed, but they have to run, say, an Amazon web service from the west coast because their customers are on the west coast, can you guys offer a direct connect to Azure and Amazon web service?***

DEVITA *Our carriers inside our facilities do, so essentially it's just a cross-connect away. If you wanted to connect to Azure on the west coast or you wanted to connect to IBM softlayer out of Virginia, we have carriers that can connect you to both of those and essentially you're directly connected into their network fabric. So really our goal is to provide the ability to connect to the different cloud providers outside of the public internet, which should improve your latency by having a direct connection and also improve your security. The last thing you want to do is to go over the public internet with a lot of your proprietary data.*

ZHENG *Once you pass the decision of going to the cloud or staying local, the next big question that Robert mentioned is network connectivity. Because you want to be connected to your cloud environment directly and as fast as possible. So you don't want to just connect to the internet; first, you don't have quality of service control. If your internet is congested, then it's going to affect your service. Second, it's going to be affecting performance because you're going on the internet with encryptions, which is going to slow down your traffic.*

KAY *I want expand on latency. When people talk about technology these days, it's all about speed. High speed this, 200 megabits, gigabits, and so on. But you rarely hear about latency. Us technical guys know how in some ways, latency is an even bigger issue than speed.*

ZHENG *It's really depending on the application you run. So if you just go to email, it doesn't really matter. But when you get to interactive applications; for example, when you move your internal server to the cloud, that's a point-of-sale, or POS system. So when you press a button and scan an item, you want the price to show up right away. If you check your inventory, you want the information to show up fast. You don't want to sit there and wait. Latency is responsible for giving you that faster response.*

KAY ***What other types of applications would trigger a need for quicker latency?***

DEVITA *Anytime you're doing video over the internet, latency is a very big concern. Anytime you're doing any type of 3D imaging or any of those applications that require a back-and-forth request of information, when you're requesting information and you're in the 3D imaging application, you need to be able to move those workloads quickly between the server and the end user.*

KAY *So what I'm hearing you both say is that when we have an application that requires a quick response time back and forth, by the time a user does something and there's a response back to that something, that response is really where latency really matters. So whether I scan a UPC code and I need to get that response back, or whether I'm working on a video, or using a 3D app where I'm designing some sort of image and I click a button and I see a change, latency is the key factor in responsiveness.*

DEVITA *I think one of the best examples you can give is with videogames that you're playing online. You don't want to see a lag in your game because you'll probably be shot and you'll be dead in your game. You need your connection to be very interactive and have very little latency.*

KAY ***What roles do data centers play in content delivery in Hawaii, how is it done today, and how do we help increase the performance? And what's the importance of Oahu in the trans-Pacific exchange of information; can you guys speak to these questions a bit?***

DEVITA *There are two main "eyeball networks" on the island: Time Warner Cable and Hawaiian Telcom. By "eyeball networks," I mean organizations who connect to end user consumers through DSL, home routers, or a cable network. And these consumers are people who use Netflix, Facebook, YouTube, and so on. We're working with those networks to be able to bring content closer to the island. Right now, there are very few, what we'll call, caching servers where digital content sits locally. For example, people like to watch Game of Thrones. And the networks will keep certain episodes locally, such as the most watched ones, here in Hawaii, but for the others, they'll have to go to another region to access. So how do we move that content to the end user and closer to the island where more of that content is cached locally to provide a better viewing experience on the island? When you look at these content delivery networks, traditionally it was done via third party CVN. Now all the major content providers are building out their own distribution networks. We're working to bring those to the island.*

ZHENG *Our customers are mainly small-to-medium sized businesses. For them, the biggest problem they have now is the lack of a good network for the business community. Traditionally you have cable internet and DSL but they're designed for residential: big downloads and very small uploads, because it's usually just watching videos on Netflix or YouTube. But for businesses, it's two ways; you have voice traffic, you need to push your content out, and remote workers working away from the office pulling the content. These slow upload connections are really affecting businesses moving to the cloud. So what we've been doing has been to deploy fiber and encouraging collocation to provide a larger scale business-focused network. With our network, it's a symmetrical bandwidth so download and uploads are the same speed. It's also dedicated, so when you're running your business, you don't want to compete with someone at home downloading big YouTube videos or on Netflix because you want to make sure you have priority in the system. In our network, we design the whole system and network around this business community, business users.*

KAY *I think these are two great different sides of a coin here. Rob had talked about how you're creating local caches so you have a better YouTube or Netflix experience; and Richard, on your side, you're talking about more on the business side of things, where we need to have data not just flowing down but also flowing up, pushing data up through the network, to the other side. Let's expand on that just a little bit, because I'm not sure a lot of businesses understand that dynamic. A good example you gave was of a remote worker. Someone's working out of their house and they want to access some files on the company's server. So from their perspective they're downloading it, but from the company's perspective, those files are being uploaded. And if the company's server doesn't have a high upload speed, it's going to be difficult for the end user, the worker who's remote.*

ZHENG *It's difficult not only for the remote user because the download speed is very slow, but it's also tough for the office worker because their upload bandwidth is all being taken by this remote user. So that's why, when we design our network from the ground up, we're designing for business users, not residential users.*

KAY ***Are there challenges and benefits to being a new entrant in the Hawaii data center market? So Richard, you serve small business but you have these giants out there--Hawaiian Telcom, Oceanic Business Class...what's it like for you to try to compete in that market? And Robert, there are other people highly established in the market as kind of household names in data centers and here you're trying to move yourselves in. So what are you guys doing to try and insert yourself into the market and compete effectively?***

DEVITA *When we originally acquired the building, our business plan was built on companies from the west coast of the mainland and then Asia-Pacific. That was going to be 80% of our business; people wanting to use Hawaii as an aggregation point for traffic going between the Pacific Ocean. We've been pleasantly surprised that 80% of our opportunities right now are coming from people on the island, who have been starved of choices of carriers from a data center perspective. Especially one that has the physical attributes and location that our facility does. Our market strategy is to really put feet on the ground in 2016 from a sales perspective, to help connect with and fulfill the need we see from local businesses here. The community has really welcomed us to the island and it's giving them more choice of providers on the island. The more choices available, the more educated a decision these companies can make in placing critical infrastructure. Again, it's been a pleasant surprise, the amount of business on the island and the amount of businesses that are interested in our facilities so far.*

ZHENG *When we first started in 2004, Servpac only had two part-time employees. Now, we're a multi-million dollar company. While most of our customers are small to medium sized, we work with quite a few large ones, such as Zippy's, City Mill, Roberts Hawaii, and others. Meanwhile, if you look at the telecom industry: Hawaiian Telcom declared bankruptcy once, WaveCom declared bankruptcy twice then was absorbed by Hawaiian Telcom, SystemMetrics was absorbed by Hawaiian Telcom...lots of people ask, what makes Servpac different? How are we able to not only survive but also keep growing? One thing I say is that we're a small company, but we're really innovative. We always look at ways to try and bring new services to Hawaii. We look at the market: for the Internet, all the dominant players focus on building an asymmetrical network and that's not what businesses need. We built a symmetrical network with our own fiber and with our own collocation and when we get into the cloud businesses, we built a facility specifically for cloud services. So with all this combined, we're in a very unique position. Not a lot of companies in Hawaii are doing this.*

KAY *You're serving a very good niche because you're focusing on the symmetrical network, one designed for symmetrical data exchange and a purposeful, cloud-based facility.*

ZHENG *Yes. One thing that I'd also like to talk about are independent third party evaluations to data centers. When we first began, security was a big concern. People want their data to be safe in the facility so we've been going through some rigorous third party reviews. We have auditors from the mainland who flew here and gave us an audit, looking at everything from physical security to environmental security to the operations side. Because being a cloud provider isn't just about physical security, it's about operations. If you're putting your data in a critical data center, you want to make sure that only people who are authorized can have access. So an auditor came in and went through the whole process to who can sign up and who has access to data, so if something goes wrong, people can go back and see who was there.*

KAY ***That's a good point, I'm glad you brought that up, Richard. Is there any kind of a certification level that your company has achieved?***

ZHENG *We have three compliance certifications. One is the Statement on Standards for Attestation Engagements (SSAE) 16, Service Organization Control (SOC) 2, and also the Health Insurance Portability and Accountability Act (HIPAA) compliance for medical coverage. So it doesn't matter if you're a publicly traded company, a financial institution or a medical practice, you can put your data in our facility and be sure that it's secure. If your auditor ever comes to you and says, I want to make sure your system is safe, we can turn around and give you the audit report.*

KAY ***Great. Robert, are there similar things that you're qualified for?***

DEVITA *Yes, we're in the middle of doing our SSA16, our SOC2, as well as our Payment Card Industry (PCI), which has to do with the handling of financial information. Another thing I'd like to note is that we're a single tenant building so it's a purpose built data center. There's no one else in the building, no one next door. It's a facility that we own and operate. I think those are very important attributes when you're looking at outsourcing your infrastructure. We tell our customers, we'll give you the flexibility inside of your space to do different things, but more importantly, it cannot harm the facility or your neighbor. And it's a lot easier to do when your neighbors are all data center customers and not office tenants. You don't want a bathroom upstairs, for example. We're the only purpose-built data center on the island and that's a very important attribute that we bring to the table.*

KAY *And you're not subject to environmental factors out of your control, like the bathtub that overflows and leaks into the ceiling or unusual use of power in the building or who knows what.*

DEVITA *That's right. It's very important for us to control our own environment and more importantly, it's the critical infrastructure. It's being able to make sure the generators are maintained, that the uninterrupted power supply system and the batteries are up-to-date. We do that ourselves so we can ensure that we keep it to the high standard that our customers expect when they allow us to house their infrastructure for them.*

ZHENG *As businesses grow and technology gets more complicated, they should really think about moving their systems to a data center or a cloud provider. We have one very good customer who has about 100 employees, 5 IT guys internally, and they just handed over all their system to our cloud because they want to worry about their own business, how do they improve their business, sell their stuff, rather than worry about how to keep their system up.*

KAY *Yeah. I want my IT guys focused on growing the business and helping sales or operations, I don't want them worried about the last patch or the upgrade or a security hole or so on.*