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HOW TO RUN AN IoT ENABLED BUSINESS

TALKING HEADS

iBASIS CTO explains the new role of connectivity management platforms in simplifying mass-scale, global IoT

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Simple, open, flexible and automated connectivity enables the new wave of mass-scale global IoT deployments

Ajay Joseph, the chief technology officer of iBASIS, the communications solutions provider that is enabling operators and digital businesses to transform and connect worldwide, has a clear vision of easy to configure, flexible to use and efficient to manage global IoT connectivity. The rigid, use-it-or-lose-it, capacity-based operator-specific connectivity deals of the past impose too many constraints on multinational IoT deployments and the arrival of embedded and integrated SIMs are freeing IoT service providers from the shackles of traditional contracts.

Now, he tells Matt Hatton, the founding partner of Transforma Insights, the technologies are coming together across networks, the SIM landscape and with in connectivity management platforms (CMPs) to make that simplified, de-risked era of IoT communication a reality. This new flexibility and radically increased automation are arriving just in time for modern CMPs to enable hyperscale IoT service deployments

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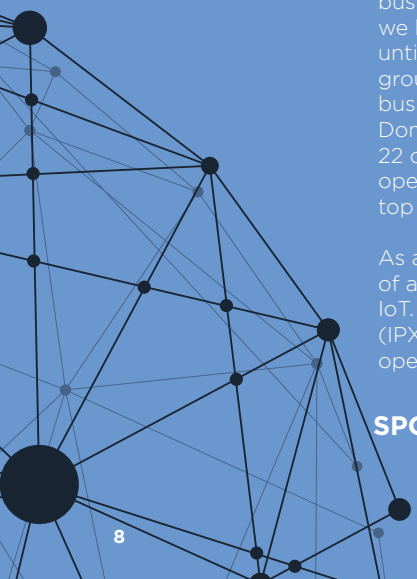


Matt Hatton: For the benefit of any readers who aren't familiar with iBASIS, can you tell me a little bit about the company?

Ajay Joseph: The origin of the company is as a start-up in the Boston area with a DNA in wholesale voice services. In 2007 we acquired **KPN Global Carrier Services**, the international voice business of KPN, the Dutch incumbent telco, and then in 2008 the international wholesale voice business of the Danish incumbent **TDC**. After that we became a wholly owned subsidiary of KPN, until in 2019 we were acquired by **Tofane Global**, a group which also acquired the international businesses of carriers in France, Portugal and the Dominican Republic. Today, we have presence in 22 countries and we connect to more than 1,000 operators worldwide, making **iBASIS** one of the top three international carriers.

As a big player in the voice market we have a lot of assets which are very important for addressing IoT. We act as an Internetwork Packet Exchange (IPX), we connect to hundreds of mobile network operators as customers and suppliers and we facilitate roaming between mobile network operators around the world. For instance we support roaming on 700 LTE networks, and an ever expanding number of 5G networks.

MH: That's the background in voice. What's the interest in IoT?

AJ: We started in IoT for two reasons. Firstly, our customers were coming to us and asking to provide access for their things. Secondly, we have deep and extensive relationships with mobile operators that we can make use of. About four years ago, we started with a customer in travel and transportation, supporting hundreds of thousands of SIMs. Having the relationships with all of those operators meant that we were in a great position to buy from the operators and sell to enterprises. Our ideal customer is an IoT service provider or device manufacturer that needs connectivity for their enterprise or consumer customers.

MH: Tell me a bit about the tools you have within the organisation for connecting IoT devices. ▶

AJ: There are a couple of things that are very relevant. Since the beginning, iBASIS Global Access for Things has offered **GSMA** standards-based eSIMs with connectivity from across the world. In 2022 we acquired CMP provider, **Simfony**. Simfony's Connectivity Management Platform augments the iBASIS IoT Portfolio. In addition to serving the IoT service providers, this integration has expanded the offering to enable IoT mobile virtual network operators (MVNOs) to launch and deliver IoT connectivity services under their own brand.

MH: What was the rationale for the purchase of Simfony?

AJ: Simfony has become the business layer of our offering. We have three layers that we provide. The network layer includes all the networking technologies, the eSIM, remote SIM provisioning, intelligent network selection, enterprise virtual private networks (VPNs) and so forth. Above that is the business layer, which provides for things like service management, device management, visualisation and analytics, real-time notifications, rate plan management and mobile network permissions.

Think of this as a journey for the customer creating a plan. They start with needing 10MB of data in a certain set of countries. The CMP is the interface for MVNOs, resellers and end users. Within the CMP, orders get placed, the SIM cards are tracked for delivery, and activated, traffic starts, and location of the SIM, rating, billing and volume tracking all occur. All features are also available via application programme interfaces (APIs).

MH: And you mentioned there were a couple of things that were relevant for connectivity, what was the other?

AJ: The other thing was that we developed patented software for profile switching. We onboard profiles from mobile operators onto the remote SIM provisioning (RSP) platform and, using a set of patented software, provide intelligent profile switching. There's a lot of sensitivity at the moment around following the regulations around ▶

Think of this as a journey for the customer creating a plan

Matt Hatton
Transforma Insights

Ajay Joseph
iBASIS

Our connectivity is based on eSIM and the flexibility that it brings which enables products to have a single stock-keeping unit (SKU) number that can be deployed anywhere in the world

Matt Hatton

local rules for permanent roaming, both from regulators and from operators, a lot of the time due to taxation implications. Lots of companies have found that they can get away with it for a while, but ultimately permanent roaming may get your devices shut down. Operators are very sensitive to it and intelligent profile selection is very important for ensuring that any connected device is compliant with the local rules.

MH: Using remote SIM provisioning and eSIM profiles is very hot at the moment. Tell me what you're doing there?

AJ: We at iBASIS have a very close relationship with operators such as **Verizon**, meaning that our customers can download a profile onto their SIM cards in real-time. There aren't many companies that have cracked the code on real-time donation. Some have used multi-international mobile subscriber identification (IMSI), but that runs into some issues with not being standards-based and secure. We follow the standards. To get the donation of profiles from tier one operators there's no other way to do it. This is why IoT service providers and MVNOs chose to work with us, our longstanding relationships with operators and eSIM technology allows them to benefit from multiple carrier profiles.

MH: How would you summarise your approach to the IoT connectivity space? What are your company beliefs?

AJ: Our belief is that connectivity should be simple and we should de-risk the process of buying and using connectivity for the customer so that they don't face problems. We talk a lot about the concept of unlocked freedom, which comprises a few areas.

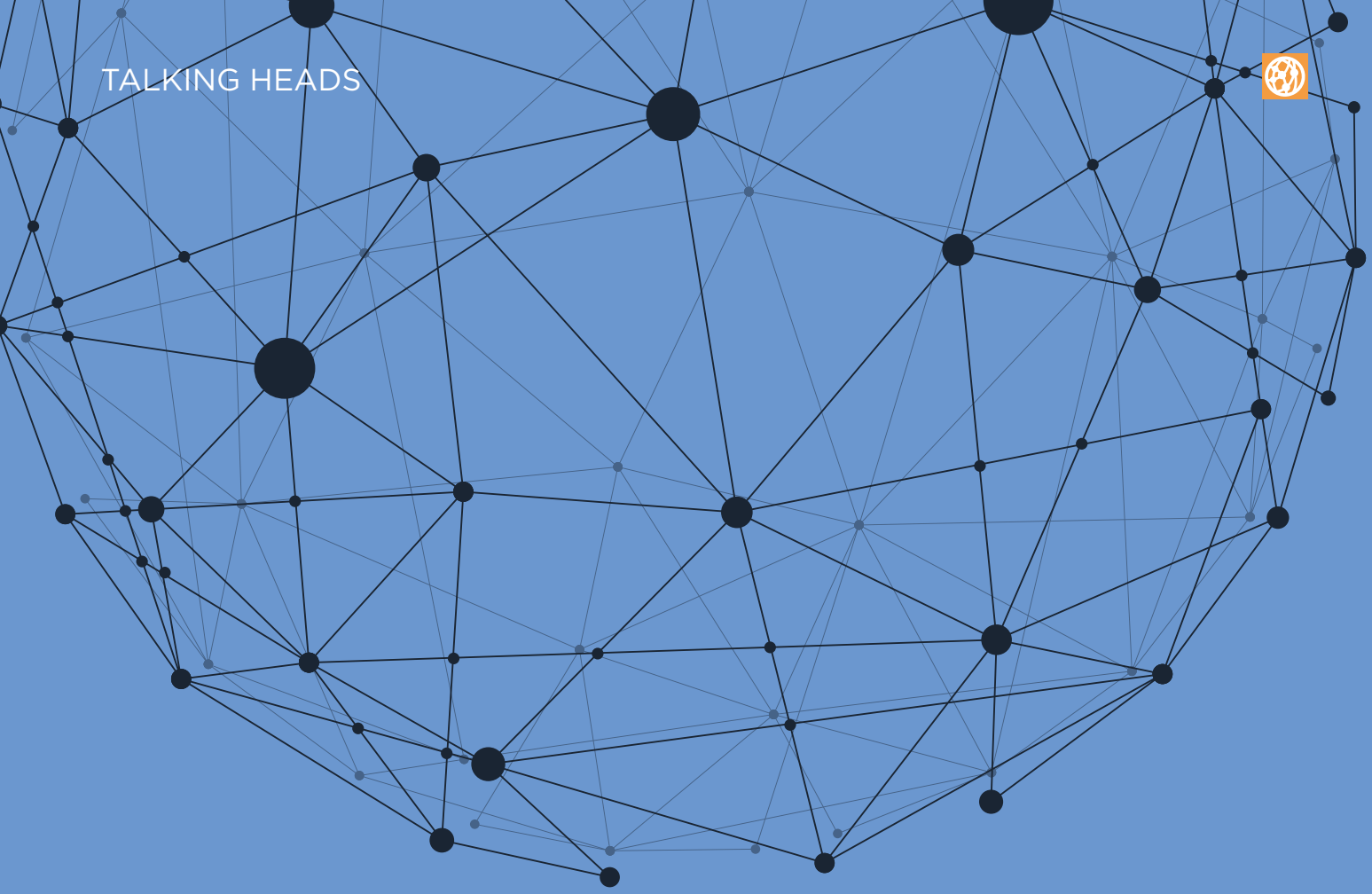
The first area is that it should be safe, with devices connected over a private network. We are also an IPX provider so we're connected directly to mobile network operators.

The second consideration is that of economics. Lots of customers have package plans where if you don't use all the data in your bundle, you lose it, meaning it's the carrier who is keeping the bulk of the revenue. iBASIS prefers to only charge for services used, which means next to a nominal monthly service fee, it is primarily a pay-per-use model. Most others don't have that, they typically have plans for a certain number of megabytes and if you don't use it, you lose it.

Third we have reliability. This is related to the use of eSIM. iBASIS provides customers with multiple operator profiles between which the best can be selected for quality and cost. The SIMs use a combination of local and network based intelligent profile selection, which means that it selects the optimal profile for that device. If that doesn't work there is a fall back to a roaming profile. There's always some kind of connectivity regardless of where the device is deployed.

Another key belief is around flexibility. Our connectivity is based on eSIM and the flexibility that it brings which enables products to have a single stock-keeping unit (SKU) number that can be deployed anywhere in the world. This is really important from the point of view of inventory control. There's no requirement for different SIMs for different countries or regions.

The final belief is that the provisioning of IoT connectivity should be automatic. We try to automate as much of the process as we can. For instance, the question of which profile to use ▶



where and when and for which plan is all automated. Similarly, alerts from the connectivity management platform are automated too.

MH: How does that impact the customer experience in the market?

AJ: This all helps to unlock the customer. IoT service providers face the nearly impossible challenge of a physical SIM swap in scenarios of migrating away from one operator card to another. The iBASIS multi-profile eSIM gives them the ability to move connections across providers. This isn't something that is usually offered by IoT connectivity providers. iBASIS can deliver extra value because we're independent of the operator. We have an independent view which means we can make selections based on the right business logic, for instance whether the client needs high data rate, network quality, low latency or other functions that might be enabled by 5G in the future perhaps.

MH: Any views on the current state of the standards for remote SIM provisioning, particularly the SGP.31/32 IoT variant?

AJ: Well, the specification is not out yet but we're getting prepared for it. It's not clear yet how the mobile network operators are going to embrace it. The machine-to-machine (M2M) variant was clearly aimed at the enterprise department, and the consumer one at the consumer department, but for the new IoT type, is it the consumer department? Or the enterprise department? Or maybe it's wholesale? There's a lot that's not clear about it now, and it will be two years before it's really ready.

MH: What about the other interesting SIM-related development, iSIM? What do you think of that?

AJ: We've been involved in a few prototypes on the integrated SIM (iSIM). Currently it's very complicated, simply due to the number of players who are involved, including the likes of the chip vendor, the module vendor, the iSIM OS vendor, the mobile network operator and iBASIS. This all has to scale with secure hand-offs. What we've seen done by most players so far is just proof-of-concept. To get to scale the processes need to be industrialised and the ecosystem needs to mature.

MH: How about 2G and 3G sunsets, how do you see that affecting your customers?

AJ: The sunsetting is not a tremendous concern because we have multiple profiles and fallback roaming. Our customers will always have the ability to switch to another network for as long as there are networks available.

MH: Are there any other interesting trends that you're seeing in the US?

AJ: There are a couple of other quite significant trends that we're seeing. First, we're seeing lots more customers asking for multi-operator profiles, covering several of the network operators. Only a player like iBASIS is in a position to really support that. The operators themselves can't.

The other big thing we're seeing is demand for ultra-high bandwidth unlimited traffic applications like fixed wireless access growing like wildfire. That will become ready for eSIM soon, with iBASIS offering unlimited multi-operator tariffs. It's a router requiring a lot of bandwidth. Is this an IoT use case? It's a grey area, but we have it in the arsenal and we're able so sell to those businesses that demand it. We expect those plans to grow greatly in the coming years.

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