Jason Hoffman: the wisdom of clouds

We're at the very start – **not the end** – of the cloud era. As industry pioneer **Jason Hoffman explains**, today's dominant cloud players are actually small relative to the possibilities – and the future is **there for the taking**.

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In the cloud business? Buckle up – things are about to get really interesting.

But let's take a step back first. Over the past few years, the cloud conversation – particularly in the telecom industry – has largely been focused on technology. We've talked about governance and automation pretty much non-stop, and rightly so, since those are some of the most fundamental concepts behind the businesses that everybody in this space is looking to build. That discussion is pretty much done, and now we need another one – this time about platforms.

A platform is easy to spot – it's when you give away one thing while getting paid (and making sure others get paid) for a second thing. Facebook is a platform, since it offers free social media, gets paid for ads and makes sure other people get paid through ads. Everybody knows how successful many of today's platform companies have been in capturing value, and the telecom industry's cloud businesses can learn a lot from them.

When the industry started rolling out the world's communications infrastructure decades ago, we built a remarkable platform of our own. Considered purely from a technology standpoint, it was a huge achievement. However, it wasn't much use for anybody other than operators. And that seemed reasonable enough, since at the time there wasn't really anybody else. The idea that other companies would be running multi-billion dollar businesses over the top of this infrastructure just wasn't on the radar.

But we're now at the point where the services offered by these platform companies are shaping the kind of infrastructure that we need to build. And we have a stark choice in front of us – given that we have to transform the networks anyway, are we going to put in a platform this time that other people can use?

Last time around, we didn't make our platform multi-tenant. We didn't make it accessible or convenient. We didn't offer any technology options that enabled other people to explore new business ideas over the top of it – and yet companies like Amazon Web Services (AWS) showed up and did so anyway.

I think the lesson here for our industry is pretty clear – platforms are the way to go. It's fascinating to see this concept starting to pop up in very different spaces. For example, the transition to 5G is often presented in terms of latency or capacity, but the decision I personally find most interesting is the decision to make it multi-tenant. We've decided that it makes sense to have multi-tenant hardware that runs things defined in software, and there's even the possibility of different companies using the same hardware footprint. That's a platform concept that we're using in radio, of all places.

THE TWO-TRACK PLATFORM

So platforms it is. This approach will have two tracks. First of all, we will need to support telecom applications that are usually very smart. These applications handle their own availability,

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failure modes and restarts, for instance, and the focus here should be simplification, automation and bringing these different functionalities under common lifecycle governance. The critical point is that the platform has to be appropriate for the applications running on top of it – there's no sense in adding cool stuff just because you can. If your applications are smart, the platform should probably be pretty dumb, relatively speaking.

The second track is the opposite of the first. Here it's about building flat, distributed architecture with a complete set of operational network, compute and data features in the platform. This platform takes care of the intelligence on behalf of fairly lightweight applications. If you want a good example of this idea in action, look no further than AWS.

At the same time, we have to be practical (which is another way of saying realistic). If an ecosystem like OpenCompute already exists, why continue designing our own mechanics? If AWS has an API for a given type of service, why not just conform to it? Instead of spending valuable time and resources on reinventing the wheel, let's use it as the foundation on which to build much more interesting and original things.

INTO THE MIRROR

But let's stay on the realism track for a while longer. We also have to face up to some truths about cloud from an organizational perspective – and that's a real challenge for a lot of people.

Today, many businesses – both vendors and enterprises – are attempting cloud for the second or third time (in some cases, it's even more). There's a growing realization that cloud is much more than a technology or architecture question – it comes down to organization and often just plain old willpower. Architectural changes mean the structure of your engineering team changes. The structure of your operational team changes. And when technical functions become directly tied into what you do as a business, your business changes.

Sometimes we forget the basic mirroring hypothesis that needs to exist between products and companies. This is common to all businesses, and is not specific to cloud in any way. A new architecture creates a new class of products in which it is substantiated, and these should mirror both the teams that create them and the teams that operate them. Right now we're in the middle of a journey toward simplification through automation and governance, and if we're destroying technical silos, then the operational silos need destroying too.

TRUTH TEST

For all vendors, the realization is slowly sinking in that we have a responsibility to understand all this even better than our customers — whether operators or enterprises — do. We have to do more than engineer things differently – we need to sell them differently while customers must buy and operate them differently.

Even Tier 1 operators are moving things to AWS. This gives vendors a strategic choice between copying the portfolio of incumbent enterprise IT players, or getting on the side of the disruptors and moving what should be moved while replacing what's left with something more progressive. My view is that what operators and enterprises really want on site is some kind of local AWS. They want hyperscale approaches, open hardware and appropriate use of containers. The telecom industry has a unique ability to build these products – leveraging everything we've learnt over the years about industrialized infrastructure and deployment at scale – so that's exactly what we should do.

It's easier said than done, of course. For a start, vendors have to be both better and cheaper than anything the customer can get elsewhere or do themselves. The customer may be thinking: "All I need is an open-source API combined with a few engineers and I can solve everything." Our challenge is to explain why we should do it for them – they get a lot of additional requirements basically for free, combined with long-term support, industrialization and so on.

But we still need to cost less than those engineers. And on top of all this, the product or service now needs to encapsulate a new truth or insight that is transformative for the customer. We can't just show up with a product or service and expect the procurement process to run like it did before. How well – and how fast – we make this transition as an industry will be decisive for our future.

ROLLING CLOUDS

And make no mistake – the future is definitely there for the taking. Despite what you might have read elsewhere, I don't think anybody is remotely close to rolling up the cloud market. Naturally, there are some players who have taken an early lead, particularly in public cloud. But the cumulative revenues are comparatively small in what is supposed to be a general platform for everybody, everywhere and across everything. This will be a multi-trillion dollar industry, and there's simply no way that the winners are already determined. If you're looking for the biggest opportunity, think about today's cloud infrastructure on the one hand, and the transition to 4G and 5G networks on the other. There's a huge amount that needs to happen – in every market – between those two bookends, and that's the part to address. If the telecom industry starts from the 5G edge and does more infrastructure as we head into the network, while somebody like AWS moves more to the edge, at some point we'll meet each other in the middle. Watching that particular dynamic play out over the coming years will be very interesting indeed.

WISDOM OF THE CLOUD

Human beings have a strange habit of assuming that things will basically stay the same, often in the face of overwhelming evidence to the contrary. The participants in today's cloud conversation are certainly sometimes guilty of this, even though we spend a lot of time talking about change and transformation and so on.

The reality is that the infrastructure we use today to take pictures of our food and laugh at cat videos is going to enable very significant things that we just can't imagine today. There are applications in transportation, health care and government, to take only three examples, which nobody has thought of yet, and which will make a huge contribution toward making the world a better place. These applications are going to be orders of magnitude larger than anything that we see on existing infrastructure, and if they come to full fruition, then the current players in the space start looking pretty small relative to the possibilities that will be created.

Throw in the Internet of Things (IoT) and you're potentially talking about thousands – or millions – of new traffic sources. What happens if a hundred new IoT ideas show up all at once, each the size of Netflix, and they're all upload traffic? Right now, the infrastructure is struggling to handle two or three of those.

So even if things don't change, we're already looking at a world of cloud opportunities. But things will change – dramatically – and that's where the real possibilities can be found. ●

ABOUT THE AUTHOR

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