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HD Internet of things the way of the future in a connected world

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Veteran Cisco chief executive John Chambers believes the internet of things has just turned from hype to reality and he sees the future of IOT technology as one of the biggest tech trends ever.

He sees the mass sensorisation of everything on the planet from electricity grids to crop fields and the accompanying cloud computing, big data streams and analytics systems as a major opportunity for Cisco in being the architectural glue that ties IOT tech together.

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Mr Chambers, who turns 65 in August, is one of the world's longest serving tech leaders and has bossed Cisco since the beginning of the internet boom in the mid-90s.

Along the way he has steered the networking giant through booms, busts, reinventions and more than 160 acquisitions, including one of the largest Australian tech buyouts when Cisco bought local wireless networking **firm** Radiata for $400 million in 2000.

Not all of those buys have turned to gold. He is the first to admit that Cisco's strange foray into handheld video player outfit Flip Video, just before the boom in camera equipped smartphones, was not one of his best. However, he maintains he and Cisco are hardly ever wrong on picking the big trends. Mr Chambers said the change in customer thinking around IOT came on rapidly from August last year. Before then he says, customer CEOs weren't listening to pitches based on IOT, now they are all ears.

The internet of things is the tech industry's hot buzz phrase of the moment and Cisco, with its networking expertise well placed to take advantage of a market where more and more devices and sensors interconnect. What is Cisco's IOT strategy right now and where do you see the IOT headed in the next five years?

So the internet of things is the general industry concept that we have been the key driver of for the past seven or eight years.

If you think about merely connecting things that gives you very little benefit. As you connect things, whether its traffic, health systems or a manufacturing process in a plant it's about connecting things, changing process, getting the right data to the right person at the right time to make the right decision.

As simple as that sounds it is hard to do because the vast majority of things you are collecting have no relevance to the decision you want to make.

So how do you combine these architecturally — that's what wecall the internet of everything which is things, process, data and people.

I have seen a lot of movies and when you have seen a lot they are identical. You get excited early, then lose interest a bit and then get a little bit more excited and then it hits an inflection point and it ramps much quicker than people expect.

A year ago, it wouldn't matter if I was in Australia, the World Economic Forum in Davos or in the US, if I were talking to business leaders they would be very polite when I talked about the internet of things for the first two or three minutes and then they would lose interest and I would have to **buy** them a drink or two if I wanted them to pay more interest.

Today they get it. It doesn't matter if you are talking to the president of South Korea or Mexico or the leadership in Canada or the UK.

The inflection point is happening. It occurred somewhere between October and January, I can't tell you what caused that exactly but in October we did the first internet of things forum in Barcelona and 800 people showed up, today, six months later, that could be 20,000 people if we wanted it to be that big.

CES (the Consumer Electronics Show in January) occurred next and the internet of everything stole the show.

The inflection point has occurred and key for us is how fast can we take advantage of our thought leadership and industry leadership and turn it into a benefit for our customers and our **company**.

We see it being the biggest transition in hi-tech over the next decade — I don't think I am going to be wrong on that. Not the equivalent of the internet today but five to 10 times the internet of today.

We make mistakes and we occasionally slip and fall but we are almost never wrong on long term trends. This trend feels really good and it feels like it's happening very rapidly now.

What are your picks as the hot IOT technologies now? What's the low hanging fruit?

I think the low hanging fruit is not picking a specific application but seeing how they tie together. Digital cities or digital countries where you can combine smart electricity grids and smart buildings with traffic and street lights — you can dramatically decrease the cost of street lighting.

You can improve safety capabilities, health care, education, smart garbage collection. You can completely change a city. But don't do them in silos. If you don't relate them, they come apart.

Industry wise probably manufacturing is the hottest. Retail, oil and gas are hot.

In Australia, you could understand the effect on mining. A large mining **site** probably presents to the owners of the equipment as many as 100,000 data points a second. If one of the pieces of equipment fails it can shut down the whole **site** or block things.

It's about analytics and getting the right information at the right point in time to the right device or person to make the right decision. That's about architecture.

Where will your product sets sit with IOT. You are not in the business of making billions of sensors, you are more in the business of tying it all together.

Where our strengths will be is taking those thousands of sensors — they could be in people or cars or in devices or on the plant floor or a construction **site** — and getting the information to make the right decision to the right point at the right time.

Most of that data will not go back to a central **site**. With most of the data in a retail store that action will be made locally with a smart card based on the combination of what is the consumer — with proper authorisation from the consumer — doing.

When do they want assistance? How do you deal with an out of stock issue, how do you ask them if you want an associate there, how do you watch their gestures, how do you watch when they stop and didn't **buy** something, how to act to change that.

You can increase a shopping basket by probably 15 to 25 per cent with the consumer being much happier if you do that right with the proper privacy and consumer protections.

Those decisions will be made in the store but it will be eight or nine applications there.

It will be mobile, it will be video it will be traffic monitoring about the parking lot outside and whether you put on extra tellers or not.

It will be about sensor capabilities and a social interface to your friends. Tying all those together is where our strengths are.

So it's the architecture that differentiates us, not the number of sensors. We want everything to get connected and we want to do it in an open fashion. We want to provide a lot of the intelligence with a lot of the data analytics out at the edge.

What sort of a threat to Cisco is software defined networking systems that use cheap **Chinese** made switching hardware?

We made a decision over three years ago both on software defined product direction as well as white label and we knew it was coming so it wasn't something that surprised us.

We started on our outside software defined networking spin-in Insiemi around three years ago and instead of considering SDN as a threat we said there's a lot of capability and programmability in the network and actually that makes tremendous sense. What we are going to do is embrace it and build it better than anyone else.

Instead of having a virtual network and a physical network which costs you an awful lot because you have issues with problem determination and a whole bunch of different vendors.

We learned a long time ago a physical and virtual network isn't going to achieve what you want — we will do the two in combination and we are going to lead this.

And while this was a nice statement six months ago, you watch our customer take up with this — we have already blown past all our competitors and most of our competitors are struggling to scale software defined networks.

In a world where cutting edge technology can be rapidly copied or reverse engineered in jurisdictions that don't respect intellectual **property**, is it getting harder to extract full value from your own innovations?

I think it's getting more difficult for the IT industry as a whole. That's why you are seeing an IT disruption where out of the top five IT players only two, at most three of us will exist in a meaningful way five years from now and it won't be Cisco unless we reinvent ourselves.

What is your response to customers who have ditched or are considering ditching Cisco due to concerns about Cisco systems having back doors that can be accessed by the NSA?

We lose very, very few customers. Governments around the world, everybody asks us for our code and have for 20 years. They would know if we were giving it to anyone.

We don't give our code to anyone. That is a decision I made 20 years ago and it hasn't changed.

We don't do that but it doesn't mean we don't occasionally have a (security) issue we have to fix and when there is one I would hope governments would tell us and let us fix as opposed to exploit it and if we find it then we just very quietly change it and drive forward.

So as far as you are aware there are no back doors within Cisco systems for the NSA or anybody else?For anybody. This is where we give no software code out and if find issues we close them.

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