

IoT — from challenge to opportunity

Training 1-1.5 million people in deep technologies is vital to tap the potential of Internet of Things

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Would it be a stretch if I suggested that our lives are dominated by devices one way or the other?

Arguably not, when one considers the 20 billion connected devices in circulation (globally) which is approximately three times the human population. For now, are we able to derive optimum economic value from this mountainous heap of data being generated by the IoT devices?

Examples abound of traffic monitoring on apps to taxi hailing service that have impacted all of us, and the industrial side is not left behind either.

Let's take the example of a wind turbine connected to the internet with numerous sensors which incessantly transmit data on several parameters.

Simply capturing data is an insufficient condition, if the backend maintenance processes aren't in place.

In this case, the supply chain will fail to deliver the replacement part when it's required. It comes as no surprise then, only 30 per cent of IoT projects (globally) go beyond the pilot phase.

Need for vision

Like every other deep technology adoption, leaders need to have a clear vision but critically enough, are they also equipped to act on the insights?

Just as Alexa and Google Assistant have been dominating the connected homes space, Industrial Internet can be equally lucrative and widespread in its outreach.

Particularly in India, we are seeing meaningful traction in verticals such as industrial manufacturing, automotive and retail. There's a strong possibility that industrial IoT will surpass the consumer applications by 2020.

Well, it's not going to happen just like that and it isn't a frictionless natural progression as predictions may suggest. There are

certain teething challenges which will have to be addressed.

India doesn't rank too high in bandwidth and that has to be fixed eventually. Imagine an IoT device not being able to connect to the cloud in real time due to this.

Sure, 5G will provide some of the answers but for it to be economically viable at scale, we are still the distance away. For now, the LPWAN (Low Power Network) market is a hotly contested one and telecom service providers are locked in a fierce battle to leverage this opportunity which will enable networks to support remote IoT applications (e.g. agricultural drones) and go deep.

Crucial cloud

As always, the true impact of emerging technologies is due to their combinatorial power. Cloud plays a crucial role here — presumably that's where the data and applications will reside. Driven by high adoption levels in India, the cloud market is expected to grow three times by 2022.

In 2018, the cloud market in India was at \$2.5 billion, whereas the comparable IoT figure was way higher, at \$9.2 billion. From an IoT proliferation standpoint, we have to expand the cloud market, sensitise users to shift and simultaneously create many more data centres.

Let's look at it from another angle. Is cloud the only option? In a remote industrial environment, data transmission costs remain high, therefore analytics performed at the "edge" (adjacent to where the data is produced) is a viable option. In many industrial applications (e.g. rapid response time required in driverless vehicles) edge computing may be a better option.

The debate on whether to store data and analytics at the "edge" or centrally in a cloud will eventually be settled by affordability of edge computing vis-à-vis the cost of latency in data transmission.



Making connections Industrial IoT may surpass the consumer applications by 2020 ISTOCK

Undoubtedly the outlook is positive but we can't shy away from the twin challenges of data privacy and interoperability. Many CIOs struggle to address concerns on data storage, accessibility, and in the eventuality of a security breach the kind of recourses that are available.

Bot attacks

IoT devices, unless secured are most vulnerable to bot attacks. We await the tabling of the draft Data Protection Bill in Parliament and remain hopeful that our concerns will be suitably addressed — especially around data localisation.

IoT devices are diverse in nature and applications. The sheer range of manufacturers is no less overwhelming.

If we are to oversee a connected world in the real sense then these devices should be able to talk to each other through com-

monly agreed industry standards. In its absence, interoperability will not be possible resulting in economic value not getting created — almost \$4 trillion every year if we don't fix it by 2025, as per a McKinsey study.

We keep saying silos are passé and the IoT ecosystem embodies this idea like no other comprising, OEMs, SMBs, start-ups, end users, cloud service providers et al. Only a collaborative approach will bring diverse players together in common pursuit of value creation.

IoT start-ups

The rise in IoT start-ups has been 10-fold during the period 2014-18. This momentum will keep going and over the next five years, a 15-17 per cent CAGR is estimated as well.

This kind of growth is observed equally in other areas — particularly in data analytics and AI-

based start-ups (which registered growth even higher, at a phenomenal 50 per cent CAGR). Innovation is the big piece which is being driven by them and helping us inch closer to the avowed estimate of a \$28-billion IoT market by 2020.

As a final word, a lot will remain unsaid if we miss out on talent, particularly in AI, Advanced Analytics and Cloud Computing. Without these capabilities, the IoT industry will remain dysfunctional. India produces the second highest STEM talent globally and the digital era posits a tremendous opportunity for us to reshape and emerge as a talent hub.

We must all join hands to ensure that we train at least 1-1.5 million people in the next 4-5 years with greatly enhanced multi-disciplinary skills in deep technologies.

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