

THE AMOUNT OF FIBRE IN INDIA IS ONE-TENTH THAT OF CHINA AND 80% OF TOWERS IN CHINA ARE FIBRE-CONNECTED BUT THE SAME IS ONLY 20% IN INDIA

Is India up for the IoT challenge?

IN JUST A few years, the world we know has been transformed by “smart” technology. Technology that studies us and intuitively anticipates what we need. Indeed, smartphones dominate our day-to-day activities and our e-mails now write themselves. Intelligent devices such as Amazon’s Alexa have become invaluable mainstays in many homes. Countries such as Sweden, South Korea, Japan, and Estonia have actively embraced intelligent technology to conserve natural resources, reduce pollution, enforce traffic control, and digitise their services. The Indian government plans to leverage Internet of Things (or IoT) technology to improve water and electricity conservation, lighting, transportation, agriculture, and access to healthcare. The Indian IoT market is estimated to reach \$15 billion by 2020 and will constitute 5% of the global market. While we collect, analyse, share and store this enormous amount of data in real-time, how can we protect our privacy and information?

IoT refers to cutting-edge, intelligent inter-connected devices designed to improve the quality of our lives. This level of connectivity is a natural evolution of the internet. However, it comes with its share of concerns—particularly around the topics of data privacy and protection. Through IoT devices, the general public shares details about their personal habits by the minute. Little wonder that 97% of surveyed risk professionals were worried about cyberattacks on unsecured IoT devices as per the Ponemon Survey. After all, the world’s 13th largest economy is the cybercrime market. Large-scale data breaches of Uber, Yahoo, and Facebook have monopolised global headlines. As IoT continues to make inroads into every aspect of our lives, individuals who prefer non-IoT devices will soon be unable to opt out. From household items like refrigerators and washing machines to trains, planes, and automobiles, IoT will be offered by default.

The Indian government plans to develop 100 smart cities across the nation and has allotted a budget of ₹7,000 crore towards this mission. Investing in IoT will bring India a two-fold benefit. Firstly, advanced IoT technology requires significant upgrades to the underlying infra-

structure to support it. Improved infrastructure and driving futuristic IoT implementation will continue to maintain India as a hotbed of investment. Indian VC, Blume, created a \$100 million investment fund specifically for IoT startups. TATA communications committed \$100 million to smart cities, services and improving public safety. The most significant areas of investment for IoT companies is in utilities, manufacturing, transport, automotive, healthcare, retail, and agriculture. So, how ready is India to embrace IoT technology and protect the privacy of its citizens?

First and foremost, the Indian Supreme Court deemed the right to privacy as a fundamental right for all Indians. Additionally, meitY (ministry of electronics and information technology) introduced the draft IoT policy that proposes an advisory committee (AC) comprising of vital stakeholders in the government, industry, and academia. This policy also introduces an IoT Program Management Unit led by a director of IoT operations and smart city support to identify new IoT opportunities, drive implementation, and track performance. It remains to be seen what level of access to data will be granted to the committee members.

The landmark NDCP (National Data Protection Policy) released earlier this year is also an essential catalyst in prioritising the right breeding grounds to receive IoT technology. The policy aligns all digital communication stakeholders, and introduces a ‘fibre-first’ policy for greater fibre connectivity. This supports 5G technology that IoT will rely on. The amount of fibre in India is one-fifteenth that of the United States and one-tenth that of China and

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80% of towers in China are fibre-connected but the same is only 20% in India. Another NDCP goal is to increase the number of public Wi-Fi hotspots in the country. More hotspots will grow IoT use by consumers. India, currently at 35,000 hotspots, will need more than 8 million to meet demand.

The draft Data Protection Bill has provisions for data privacy such as the Right to Information but also proposes enforcement of data localisation. Some entities feel this leans towards protectionism which could affect free flow of data across borders required for business and personal transactions. The draft bill advocates

an overseeing committee but does not specify when and how this committee may access the personal data of Indian citizens.

Can we, as a nation, incorporate IoT-related measures that have been successful globally? The EU’s GDPR (General Data Protection Regulation) requires ‘privacy by design’ to be a core element of every step in the design of products and

services. All IoT manufacturers can follow these guidelines to ensure that protecting privacy takes centre stage and is not added as an afterthought. Manufacturers can add a layered approach to data access and limit access to sensitive data. Devices must be upgraded regularly and tested for vulnerabilities.

Digital certificates and publicly key infrastructure (PKI) need to be incorporated to identify devices. Investing in sophisticated anti-breach software and security measures will improve data privacy upfront. This is advisable, rather than waiting for a breach and closing the metaphorical stable door after the horse

has fled. Manufacturers can follow guidelines set by the Internet Society’s Online Trust Alliance (OTA) IoT Trust Framework.

With greater data privacy measures, Indians can enjoy the benefits of IoT just like several of our global counterparts. The US has almost 3,000 IoT-related businesses for an estimated value of \$613 billion. Sweden is the world’s most cashless society with less than 20% of financial transactions conducted through cash. Thanks to this forward-thinking strategy, the Swedes experience greater convenience and higher national security. The busy Shibuya station in Japan has over a million individuals passing through it per day. More than 60 bluetooth devices now connect to commuter smartphones through an app and direct traffic efficiently.

South Korean businesses saw revenues grow 23.4% to 7 billion won thanks to their government’s investment in IoT technology early on. The residents of the smart city of Daegu, with a population of 2.5 million, reap the benefits of smart LED streetlamps, crosswalks, CCTVs for security, and intelligent parking. Gochang city reduced water costs by almost 20% in one year through smart IoT water metre installations. Estonians in Europe are members of an approximately 100% digitised society. Their government successfully moved most services onto a single, online platform and increased efficiencies.

It is high-time India joins the ranks of these nations in leveraging advanced IoT technology. We can control rising pollution levels. Healthcare can be more accessible and timely medical interventions can be made more likely. April 28th this year was a historic day in the development journey of India when the last village, Leisang in Manipur, was electrified. With smart IoT technology, we can bring greater connectivity to each household. The Indian government can realise the dreams outlined in the ‘Make in India’ and ‘Digital India’ missions through sophisticated IoT technology. As the world turns towards greater connectivity and technological advancements, IoT is here to stay. It is up to us to read the signs, drive progress and embrace this change for a vastly better India without losing focus on data privacy.

Research inputs by Chandana Bala

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