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India Must Get On the IoT Highway Fast

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(This editorial is based on the article "India Must Get On the IoT Highway Fast" which appears in BusinessLine on 20th December.)

Internet of Things(IoT) is the natural

evolution of the internet and has many benefits including boosting global economies, improving public utilities, and increasing efficiencies.

Over 30 billion 'smart' devices will be connected by 2020. That's equivalent to every single person on this planet with four connected devices. These devices that communicate with each other in real time are the examples for the Internet of Things.

Internet Of Things (IoT) is a computing concept that describes the idea of everyday physical objects being connected to the internet and being able to identify themselves to other devices.

IoT is significant because an object that can represent itself digitally becomes something greater than the object by itself. No longer does the object relate just to its user, but it is now connected to surrounding objects and database data.

India & IoT

- **The Indian government outlined a plan to leverage IoT as part of the Digital**

India mission. The government provided a budget allocation to develop 100 smart cities, conserve water and power, and improve healthcare, transportation, and security.

- **According to Nasscom, the Indian IoT market is expected to reach \$15 billion by 2020 and constitute 5 % of the global market.**
- In India, the NDCP (National Digital Communications Policy) brought alignment from critical stakeholders to advance India's infrastructure and security around digital communications. **Ministry of Electronics and Information Technology (MeiTY's) draft IoT policy seeks to establish committees to govern and drive IoT-specific initiatives.**
- The Data Protection framework submitted by the **Justice Srikrishna Committee** had provisions for personal data protection including a consumer's right to information, consent, and right to request companies to erase their data if preferred. However, it leaned heavily towards greater regulations and did not specify how to protect consumer data from unnecessary government surveillance.

Recommendations of Justice BN Srikrishna Committee

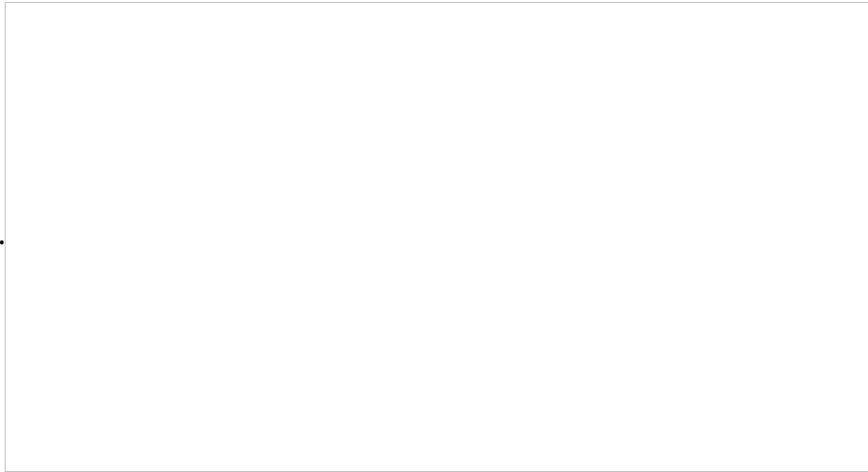
The committee recommends that:

- Processing (collection, recording, analysis, disclosure, etc) of personal data should be done only for "clear, specific and lawful" purposes.
- The committee also recommends giving a person the "right to be forgotten"
- "Sensitive" personal data (such as passwords, financial data, sexual orientation, biometric data, religion or caste) should not be processed unless someone gives explicit consent.
- A Data Protection Authority which is supposed to "protect the interests of data principals (persons giving their data) should be set up.
- Aadhaar Act 2016 should be amended to ensure the autonomy of the UIDAI and to "bolster data protection".
- RTI Act 2003 should be amended so, that there is no obligation to reveal personal information which was not related to "public activity or interest".

Benefits

- **Investing in IoT will boost India's economy on par with global leaders.** Many of global counterparts have already begun reaping the rewards of investing in IoT-based

infrastructure.



- **IoT will bring in investments, create jobs and improve Indian public infrastructure.**
- With a network of interconnected devices, the economy becomes digital, thereby increasing efficiencies and personal security. **For Example**, a city in Austria increased driver efficiency and reduced carbon dioxide emissions by about 500 tonnes through connected trams and buses; the city of Oakland, California, tracks air pollution at a hyper-local level and can take measures to combat it.
- There are a lot of other benefits associated with increased connectivity. **For example**, it will facilitate routine activities and decrease the waste of personal time, like imagine someone being able to review the inventory in their fridge and order groceries remotely at the click of a button.
- **IoT could also help the elderly** move around in self-driving cars, shop, and receive timely assistance. Japan is already using humanoid smart robots as elder care robots. Apart from monitoring their assigned senior citizen, they also assist with mobility, entertainment, and rehabilitation.
- **Significant changes can be made in the field of healthcare** as well with patient monitoring. For example, voice-enabled systems to remind people to take their medication in time and a 'smart' pill that measures variables as the pill passes through the digestive system.

Challenges

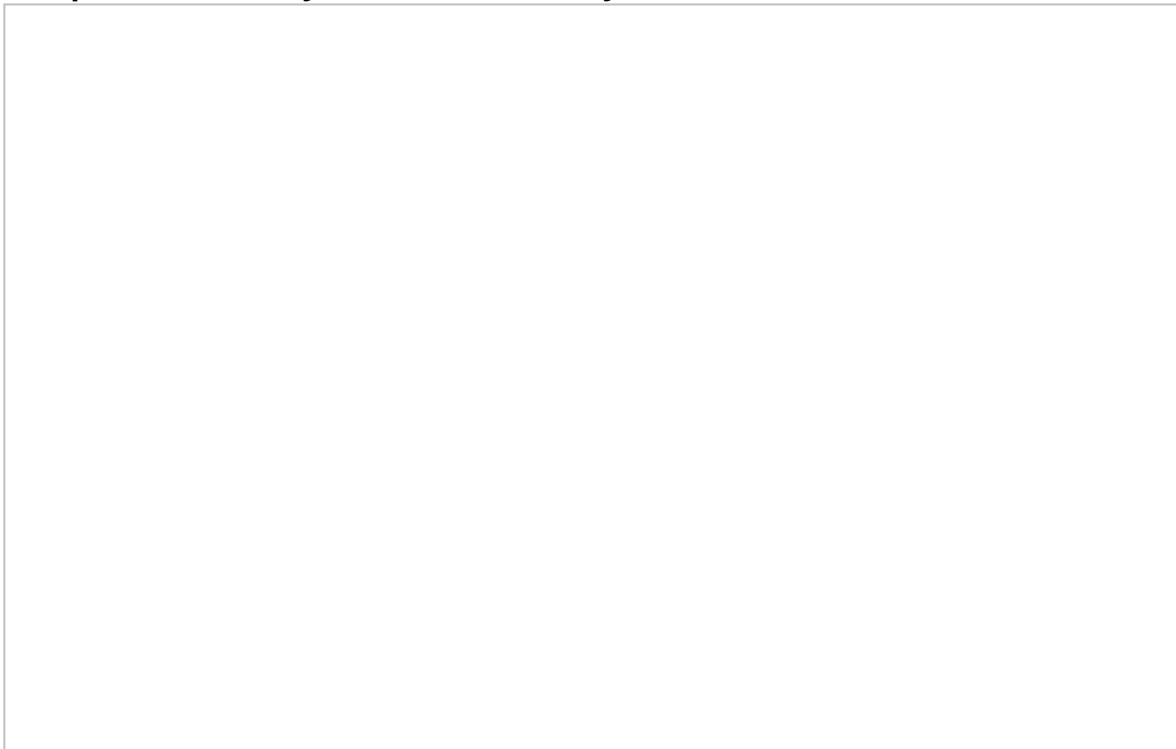
- **Nine out of 10 global consumer IoT brands studied in an IoT Security Foundation report (IoTSEF) did not allow researchers to share findings about the vulnerabilities they found.** There is thus, a lack of transparency in the research and development of IoT technologies.
- IoT devices also collect and share personal data in real-time, making protecting our information and privacy one of the major challenges.
- In the near future, IoT may be a default feature in home appliances, cars, transit systems, and much more. Consumers may soon be unable to avoid IoT devices.
- **There is in this data-driven future**, a growing concern about the potential for

increased government surveillance and the resulting encroachment of civil rights, and the suppression of dissent or of marginalized communities.

- **Processing the tremendous amount of real-time IoT data is possible only through artificial intelligence or AI algorithms.** If AI systems power essential functions of smart cities, preventing hackers and miscreants from accessing it and manipulating its data still remains a challenge.

Way Forward

- **While IoT technology is clearly of significant advantage to citizens worldwide, along with greater advantage comes a potential risk to privacy.** This concern over data protection will need to be addressed and IoT manufacturers will have to build and sustain consumer trust in their devices.
- **Around the world, legislators, device manufacturers, and law enforcement agencies should come together to figure out how to benefit from IoT while mitigating risks.**
- Despite the challenges, India must drive full speed ahead towards IoT technology for the greater good of our citizens. With effective global alliances and by aligning Indian stakeholders, India can work to create more secure devices and help citizens.
- The day when smart ambulances save lives through timely medical interventions, or when criminal behavior is curbed through remote monitoring, is the day when IoT arrives into our lives and society. **Until that happens, we need to debate, discuss and plan extensively for that crucial day.**



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