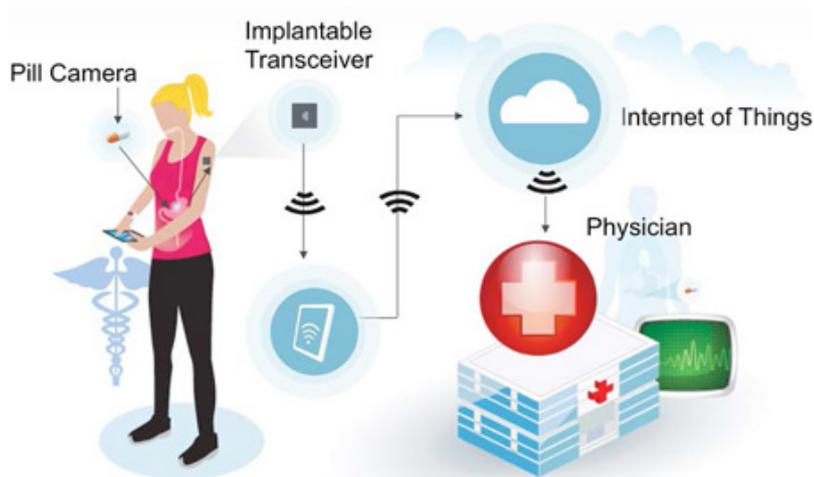## Is Planet Earth Gonna Wear an Electronic Skin?

Written by Dr. Kavita Saxena, Associate Faculty at EDI of India, Gandhinagar (Gujarat)
Friday, 31 July 2015 15:05



**A Ne Mega-Trend in Technology:**

Sensors are gradually becoming a part of modern world. Thanks to internet penetration and upsurge in the usage of smart phones; remotely monitoring and managing things by combining sensors and networked intelligence has become a reality. This new mega-trend in technology – known as Internet of Things (IoT) collects and manages massive data from the network of devices and sensors, processes this data and finally shares it with other connected devices. It not only facilitates capture of meaningful data but also gives access to real-time information. Its application is being seen not only on industrial fronts where it helps to improve productivity and reduces costs but also in personal lives – be it in the form of a reminder gadget to take your daily dose of medicine or tracking your activity levels throughout the day using your smartphone's range of sensors or intelligent cars that drive and park themselves.

**Internet of things – envisioning an opportunity:**

Having smart cities is no more a distant dream and so having smart lives either. Given the rapid pace of IoT expansion coupled with Cloud Computing, Robotics, Big Data and Semantics, many opportunities are opened up for application developers across various industries. But some of the basic questions stated below needs to be answered first:

**Is Planet Earth Gonna Wear an Electronic Skin?**

Written by Dr. Kavita Saxena, Associate Faculty at EDI of India, Gandhinagar (Gujarat)
Friday, 31 July 2015 15:05

- Are our companies fully equipped to grab this opportunity?
- Have the CEOs and decision makers understood the future benefits of IoT well?
- Have they made proper business models to implement IoT?
- Are the customers ready to experiment internet enabled lives without human interference?

- How are they going to adapt to smart cars, smart homes, smart cities and smart lives?

**Commitment to the Industrial Internet of Things: 73 percent of businesses have yet to make concrete progress. Only 7 percent have developed a comprehensive strategy. (***Source: From Productivity to Outcomes: Using the Internet of Things to drive future business strategies, Accenture 2015.)*

Many business opportunities can be created via IoT platform/s. Here is a quick look at some of the examples:

- **Personal and home:** Air conditioners, microweaves, washing machines, refrigerators, etc. can all be controlled remotely due to IoT revolution. This will not only lead to energy saving but also better home management. Imagine receiving a facebook notification from your washing machine on your android phone for the laundry done well and dried and for that matter any "Thing/s" in the house giving you periodical update on something crucial that can be followed from anywhere using IoT. Sounds interesting!!!

Application of IoT in healthcare too seems to be a boon in recent times. It helps to monitor the health of patient remotely using a continuous automated flow of information without the need of having a health professional come by at regular intervals to check the patient's vital signs.

Nike shoes + iPod is another example that tells you your time, distance, pace and calories burnt during the entire workout.

Imagine, you're walking down the supermarket aisle, and your shopping trolley vibrates as you pass through the dairy section. "There is no yogurt in your fridge. Would you like to purchase some?" – displays the screen mounted on the trolley handles. There are many more applications where IoT can be implemented successfully which can make the lives easier and smarter.

- **Enterprize:** Business process monitoring, control and optimization has become possible because of big data being managed effectively. IoT enabled systems of engagement are helping organizations to stay meaningfully connected with customers 24x7. Speed of decision making is accelerated through the analysis and application of digital information. Whether it is managing traffic and fleet or resource and energy monitoring; whether it is having a connected production floor or monitoring employee safety and security; IoT is soon going to change the face of industrial environment. Smart inventory management using RFID technology and predictive maintenance for smart warehouses are also going to become enablers of enterprize based IoT.

- **Virtual reality through wearables:** Everyone is eyeing on the medical wearbable devices wherein the physician can not only diagnose the patient but can also prescribe a treatment without actually examining the patient physically. Only time will tell how successful such concept will be in the Indian market where patient-physician relationship is more on one2one and personal grounds. But if impletmented successfully, IoT has a tremendous potential to boost India's medical tourism too. Google glass was another breakthrough application of IoT and was projected to help retail industry in a big way. Store managers could scan bar codes to get extended product information as well as inventory positions using Google glass but the concept failed in the testing phase itself owing to privacy and health concerns.

Given the plethora of applications that IoT can offer, companies like Cisco, IBM, Dell, HP, Samsung to name a few are investing in IoT start-ups and spending heavily on lab testing for offering services and/or products that are connected to the IoT.

**The Road Ahead:**

**Is Planet Earth Gonna Wear an Electronic Skin?**

Written by Dr. Kavita Saxena, Associate Faculty at EDI of India, Gandhinagar (Gujarat)
Friday, 31 July 2015 15:05

The concept of IoT is at its nascent stage in India. But the race has begun and companies have sensed that this mega-trend is there to stay. Even The Government of India's IoT policy announcement seems quite encouraging. The objectives of the same are as mentioned below: (Source: http://deity.gov.in/content/internet-things)

1. To create an IoT industry in India of USD 15 billion by 2020. It has been assumed that India would have a share of 5-6% of global IoT industry.
2. To undertake capacity development (Human & Technology) for IoT specific skill-sets for domestic and international markets.
3. To undertake Research & development for all the assisting technologies.
4. To develop IoT products specific to Indian needs in all possible domains.

There are challenges like network scalability and flexibility, availability of suitable and robust device management platforms, affordability in terms of price of the IoT enabled systems, devices and accessories and overall infrastructure development challenges. But technology vendors and analysts vouch for the significant impact that IoT will have on India's technology landscape and society in the times to come. This is the right time for technology start-ups to innovate internet-enabled sensors, services and products so that they can compete to provide the hardware, software and services compatible with IoT infrastructure. If this happens, concept of smart cities and smart lives will become a reality and India will find a place for herself in the list of technologically progressive nations.

-----------------------------------------------------------------------------------------------------------------------------------------



*Dr. Kavita Saxena is an academician, trainer and management professional working as Associate Faculty at Entrepreneurship Development Institute of India, Gandhinagar, Gujarat. She is a life-long learner and has more than a decade's experience of working in industry and*

## Is Planet Earth Gonna Wear an Electronic Skin?

Written by Dr. Kavita Saxena, Associate Faculty at EDI of India, Gandhinagar (Gujarat)
Friday, 31 July 2015 15:05

*academia. She has worked with some of the best B-schools of Gujarat and was also associated with IIM – Ahmedabad as a research associate. Her areas of interest are Marketing Management, Consumer Behaviour, Retail Management, General Management and Entrepreneurship. She has published many research papers in journals and magazines of international repute and is also acting as reviewer and member of editorial advisory board for many international journals.*