Role of Internet of Things(IoT) In Entrepreneurship

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ABSTRACT
The advent of Internet of Things (IoT) is changing the day to day functionality of our life dramatically. IoT and Make in India project are creating waves by spreading its range to different sectors from homes to smart homes, from health to smart healthcare and much more. With an objective to transform India as the global manufacturing hub, the Government of India has launched the significant dream project by the name ‘Make in India’. Make in India initiative has the ability to take the Indian economy to the new pinnacles and create enormous employment opportunities. Because of its favorable approach, it has started getting attention from all over the world. The business-centric policies and the conducive environment for the investment are expected to play a major role in the realization of this project. Make in India campaign is immensely benefited by IoT for providing innovative ways to the sustainable development of manufacturing organizations. Taking into account the current scenario of technology, this review addresses the impact of IoT on entrepreneurship. Moreover, this research article focuses on definitions, characteristics, business value, relevance to manufacturing sector and adoption of Internet of Things in India. The main objective of this paper is to provide an overview of Internet of Things, digital transformation in India, and opportunities made available for startups through Make in India campaign.

Keywords: IoT, Make in India, Sustainability, Entrepreneurship, Economy

INTRODUCTION
The economic development of the country depends upon the industrial growth, which in turn relates to the entrepreneurial skills of the people. Thus the entrepreneurship acts as a building block for the economic growth of the nation. According to Santhi N. et al. an entrepreneur transforms ideas into reality with his entrepreneurial skills which include creation, innovation, business expertise and the risk-taking ability.

The Government of India, with an aim to transform India into the global manufacturing hub, has started an ambitious flagship program called ‘Make in India’ under the leadership of honorable Prime Minister of India in the year 2014. Every possible efforts is made by the government to initiate probusiness opportunities for opening manufacturing plants in the country. However, the Government is only focusing on attracting the business and sustaining the growth of the manufacturing in the country. On the other hand, the government should envision the new ways with the help of upcoming technologies to help the manufacturing companies To optimize their activities which will boost their sustainability of doing business in India. The new technology called Internet of Things can be proved to be useful in enhancing the business capabilities of the organizations by removing the current obstacles which they are facing. This technology provides round the clock services to the manufacturing organizations by associating them with their shop floor boards. This helps manufacturing companies to get the real time information about their units. This facilitates them to control the manufacturing unit by taking the correct decision in precise time, resulting in an optimized manufacturing operation.

What the 'Internet of Things' Means for Enterprising Entrepreneurs?
It’s the tech term du jour: the "Internet of Things." Simply stated, it’s the connection of technology devices to the Internet, everything from smartphones, coffeemakers, cars and lamps to anything with an on-off switch.
In many ways, the move has been almost inevitable with the cost of broadband Internet decreasing, the creation of more devices with Wi-Fi capabilities and the penetration of smart devices further into the human experience. The Internet of Things is just the logical next step.

So yes, the Internet of Things is growing significantly but perhaps more important from a business perspective is the recognition of the benefits that result from connecting devices to the web. This has seeded the makings of a brave new world for enterprising entrepreneurs looking to capitalize on a market projected to add almost $2 trillion in value to the global economy by 2019. Unlike managers at large corporations, entrepreneurs have more freedom to explore and experiment with new ideas. But where should they start? Here are just a few areas for possible exploration:

Related Ways the 'Internet of Things' Will Impact Your Everyday Life :

1. **Medicine**
   Hospitals collect a massive amount of data. But what if that information were connected to a central or aggregated intelligence-management structure that allowed for deep, complex analysis.
   Sure, the distribution of drugs and monitoring of blood pressure is observed regularly by hospital staff. With the Internet of Things, this data could be channeled into activities to dramatically improve care, reduce the length of stays and lower the transmission of diseases and infections rates.

2. **Manufacturing**
   Take a moment to consider the typical manufacturing facility. It might be made up of hundreds of tools and processes. Many of these likely produce intelligent data that could be used to improve efficiency.
   At an automobile manufacturing facility, dozens of tools are connected to networks and storage devices, but more often than not this information is kept in discrete silos. The Internet of Things could deliver this information to a central intelligence forum, where it could then be used to more quickly improve processes and achieve operational goals.

Related Steps the 'Smart' Home Industry Must Take to Develop a Consumer Market

1. **Retail**
   Historically, retail operations have had very few functions fully connected. Sure, point of sales systems have been connected to inventory management systems and security systems have become intertwined with video, audio and sensory technology. But overall, this has been only done mostly on the individual store level and has provided little opportunity for retail franchises to manage.
   Today, with customers calling the shots and demanding a world-class consumer experience, the Internet of Things can play a central role in delivering it. When customers call, agents could figure who they are, their buying history and what they might want to buy next. The Internet of Things can allow for innovation, a sales lift and a happier customer base.
   But where is the business opportunity for entrepreneurs? Opportunities can be created by investment, supported by data. Delivering data accurately is where the opportunity lies. A few key products and services that enterprising entrepreneurs might want to consider offering include the following:

2. **Sensor enablement**
   The benefits realized from the Internet of Things are only as good as the data that feeds it. Development of sensors for the machines, gadgets, transportation systems and people that fuel Internet of Things will continue to grow.

3. **Data analytics**
   The need to dig deep and provide well-informed recommendations based upon real-time data will increase astronomically. At first, such services might be performed in-house staffers or by consulting firms. Over time, however, it will need be done by business professionals who are well-versed in the specific skills. The need
for intelligent software that can perform this type of analysis for business-minded end users to act on is no
doubt rising.

4. Infrastructure investment

Deployment of the Internet of Things requires strong, innovative and secure network infrastructures. More
bandwidth will be required to handle the higher demand, data usage and new users involved with the Internet
of Things. With projections from Gartner showing that by 2020, the Internet of Things will support a base of
26 billion devices, the time to act is now. The opportunity to help deliver and do consulting related to the
network infrastructure expansion will only continue to grow.

The Internet of Things is slated to change business as usual. It will provide the opportunity to create unique,
practical and innovative products and services for a new generation of consumers. Getting there will require
hard work and ingenuity and entrepreneurs are suited to deliver just that.

ROLE OF DIGITAL TRANSFORMATION IN INDIA:

The era of digital transformation has changed our lives tremendously. It has a significant influence on the way
we interact with each other. It has not only helped us to carry our daily chores smoothly but also to solve
business problems and resolved various other issues. Hence, over the past two years, the government of India,
envisioned the importance of information technology as the main driving force for the growth of the country.
The technology acts as an enabler for providing various services ranging from a digital educational material,
better citizen services to efficient and productive work at the manufacturing units and thus is cable of
transforming the entire scenario of doing business.

Indian economy, for the past few years, has been transforming towards becoming a digital economy. This has
led to the adoption of a new technology called Internet of Things (IoT). The technology facilitates connection
of various devices to the Internet and thus automatically shares data among all the people who are using those
devices. Some of the popular IoT devices; fitness band, smartwatches, solar backpack, connected glucometers,
smart cars and much more are gaining popularity among the new generation. The key technologies used in
IoT include Wi-Fi, Bluetooth Smart, NFC, and GPS. It was predicted that by 2019, wrist–worn wearables
which include watches, bands and bracelets are likely to increase by 80%.

INTERNET OF THINGS:

The Internet of Things (IoT) though does not have a standard definition acceptable to the world, was the term
first coined by Kevin Ashton, an expert on digital innovation in the year 1999. The Internet of Things is a
system of physical devices having sensors and built-in intelligence and people connected to the Internet. They
talk to and monitor each other over the mobile Internet thereby conserve resources, take better decisions, and
increase the efficiency and productivity.

During the last ten years, the technology which is growing exponentially in the IT world is the Internet of
Things. It has envisioned the global network of physical objects which can be linked to facilitate a new
concept of round the clock connectivity from anywhere at any time for all. It has made possible to have
communication between almost anything; be it between human-to-human, human-to-things and things-
to-things in this world by providing the unique identity to each and every object. IoT is a world of connected
devices which are commutating intelligently with each other using sensors and actuators embedded in them.
These devices include electronic devices such as servers, computers, tablets, telephones and smart phones
which are linked through wired and wireless networks of same Internet IP used to connect the Internet. These
networks generate the massive amount of data that can be analyzed with the help of computers. These devices
are tools designed in such a way that they can recognize the changes occurring in the surroundings and
respond to them quickly. The advent of IoT has revolutionized the IT world by making these physical systems
work on their own without human intervention. These everyday objects are connected and coded using IoT so
that they can become machine readable and traced individually using the Internet.
INDIAN MANUFACTURING SECTOR AND IoT:

The global trend is switching over towards IoT which is foreseen to generate favorable prospects for the manufacturing sector in India. IoT is believed to bring the ‘fourth industrial revolution’ widely known as ‘Industry 4.0’. An extensive survey carried out by Forrester Consulting suggests that the organizations using IoT applications and operations have better profit rate, healthy and long-term customer relationships, improved strategic decision-making ability and efficient process execution.

IoT STARTUPS IN INDIA:

IoT products like fitness monitors and smartwatches are becoming popular and easily preferred by consumers because of their ease of use. Our daily life will be largely affected by the usefulness of these wearables. AIM Smart City accelerator programme is created by Microsoft Venture in collaboration with DLabs at the Indian School of Business and Ashoka University. It will provide startups with technological support, financial assistance in the form of funding, essential skills, and direct access to investors as well as customers. By 2020, it is predicted to have 80 billion connected devices. There are noteworthy contributions by the Indian companies in the field of Internet of Things. Some of them are mentioned below.

CarIQ Technologies:
The CarIQ is a Pune based company that has created an IoT for making cars smarter. It helps the car driver to take decisions based on surrounding real-time data. CarIQ helps businesses to deliver personalized services to car owners as their cars are now connected. The key car manufacturing companies like Toyota, Mahindra, Tata, Hyundai, etc. have supported CarIQ after 2008.

IoT OPPORTUNITIES IN INDIA:

IoT market is slowly increasing. People are also getting used to the change taking place in the technology every now and then and accordingly accommodating these changes in their life style. IoT solutions will always grow as there exist a continuous demand from end users and the industry. We are going to experience a day sometime in the near future when people will become used to IoT as they are to a smartphone

The effective use and implementation of IoT proved to be beneficial for the large as well as small organizations. IoT by using sensors connect the different devices used throughout the manufacturing unit of the industry. In this way, this cutting edge technology is changing the entire working scenario of the enterprises by providing better customer service, enhanced processes, new avenues for business, wellstructured insights and better control over others.

Connovate Technology:
The company basically focuses on consumer electronics and home automation market founded in the year 2012. They have developed a multi-function Bluetooth device called Gecko that can be used as a camera trigger and warns on the motion. It also works as a track--and–find tether for android 4.3 devices

Mango Man Consumer Electronics Pvt Ltd: The startup was founded in 2013, and allows users to channelize media wirelessly via a smartphone application to their television. The TV can also be used to play YouTube videos and files on users’ phones or laptops. The company enables the customers to watch digital content like movies, TV shows and live streams on their TV with its HDMI dongle called Teewe.

Pluggx Labs:
Pluggx incepted in 2012, suggest ways to use electricity efficiently. This smart device with the help of smartphone can control user’s home appliances and electronics. Both applications as well as manual switches can be used by the user. The device is tuned intelligently to take decisions according to the user’s habits, lifestyle, and schedule.
CONCLUSION

Our day to day life is changing because of the tremendous technological changes brought by Internet of Things. IoT with the help of various technologies and applications is making our life simpler and more comfortable. IoT offers the countless benefits to the varied range of diverse areas which include medical, manufacturing, industrial, transportation, education, governance, mining, habitat etc. In the coming days, the entire globe will be connected by the IoT. In the near future, we would not be able to imagine our life without IoT which will form an essential part of our day to day life. Hence it is predicted that entrepreneurs with the creative mind, potential to excel and take risks have the rare opportunity to capitalize on this to become industry leaders. Make in India is offering all possible avenues to the budding entrepreneurs, it is up to them to turn adversities into rewards.

REFERENCES :