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New Technologies Changing Our Lives

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Digitalization is Changing our Social & Business Environment

- Agriculture, manufacturing, education, healthcare, entertainment and other services have changed drastically in the last ten years.
- New technologies such as mobile Internet, IOT, Cloud, Big Data Analytics, 3D printing, Blockchain, digital valets, drones, and driverless cars are creating new industry giants at the cost of old businesses.
- Start-ups in every area such as Edtech, Fintech, healthcare and entertainment are disrupting Institutions such as banks, hospitals, universities, etc.
- Agriculture uses driverless tractors, drones and algorithmic decision making for field preparation, fertilizers, sowing, weeding, irrigation and harvesting.
- WhatsApp and Twitter have replaced the telephone and email. Indeed, tweets by heads of countries have become the official communications.
- Use of machine learning and AI is becoming the new norm for decision making both in Government and Industry.
- The past ten years the prices of natural resources: energy, food, water, and materials (steel) are scarce, extraction is expensive.

Disruptions

- We have seen the downturn in the Globally competitive IT industry that provided employment to millions of graduates.
- The retail industry is undergoing structural change with e-commerce making its mark.
- Shared and peer-to-peer services are affecting taxi and hotel services. Banking and healthcare are also facing the similar disruptions.
- Digital start-ups funded by deep-pocket venture capitalists, rise of sharing economy, government policies and finally jobless growth is creating societal unrest.

Changes in the Global landscape

- In the previous era of industrialization, globalization had enabled closer integration between communities and countries through the free movement of goods, capital, people, and ideas around the world, enabling many remarkable achievements.
- Several institutions around the world flourished using outsourcing and also attracting foreign talent.
- This situation has dramatically changed in the last few months. United States and key European countries now demand a reorientation around narrow national interests, proclaiming, “Let other countries deal with their own problems.”

Issues before the Community

- Scientific research currently had been curiosity-driven basic research it is important to be motivated to solve immediate problems including job creation using new technologies and resource constraints.
- Initiatives, such as Smart Cities, Make in India, Food security, Start-ups, etc, can be targets for open innovation.
- How should the School, College and Institutions of Higher Education Modernize themselves with the aim of employability of their graduates.



Good & Bad of Digitization

- Hacking, Phishing, stealing data & passwords, Blackmail using the pictures and text are cyber crimes we hear often.
- Blue Whale is a dangerous game.
- Teenagers are involved on their devices and spend less family time. Social networking with friends & family is diminishing.
 - Addiction to the cell phone ; makes children lonely.
 - Making connections is easier, life is more isolated
- Cyber security is an important issue

Today's Agenda

- **Prof Navakanta Bhat** (IISc): PathShodh: A Journey from Science to Product (diagnostic device for multiple chronic diseases including diabetes)
- **Dr Venkat Padmanabhan** (Micro-soft): Low-cost IoT to address societal challenges (road safety and agriculture)
- **Prof Bharadwaj Amrutur** (IISc):IoT Framework for Smart Cities: A data centric perspective
- **Prof Jaywant Arakeri** (IISc): Technological and scientific issues related to precision agriculture