CHANGING TECHNOLOGIES

Promises for Future

Perspective by: Dr A Didar Singh
Secretary General,
Federation of Indian Chambers of Commerce and Industry, India

What is Changing?

Mega Trends Leading to Three Primary Forces for Future

Globalization

Deglobalization has already begun

The forces of Globalization & Demographics are creating diverse market needs, many of which are being fulfilled today because of advances in Technology. This fulfilment is fueling further newer trends which is causing a cycle of unprecedented disruption of our businesses, economies and societies.

Ageing Developed World, Young Developing Economies

Demographics

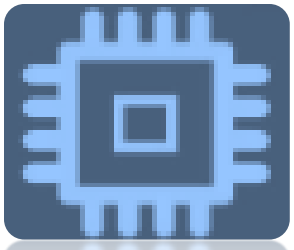
Technology

3D Printing, IoT, Robotics etc.

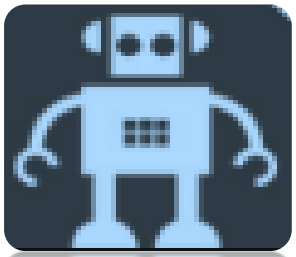
How has Technology Impacted?

Growing Footprints of Technology

Knowledge Sharing

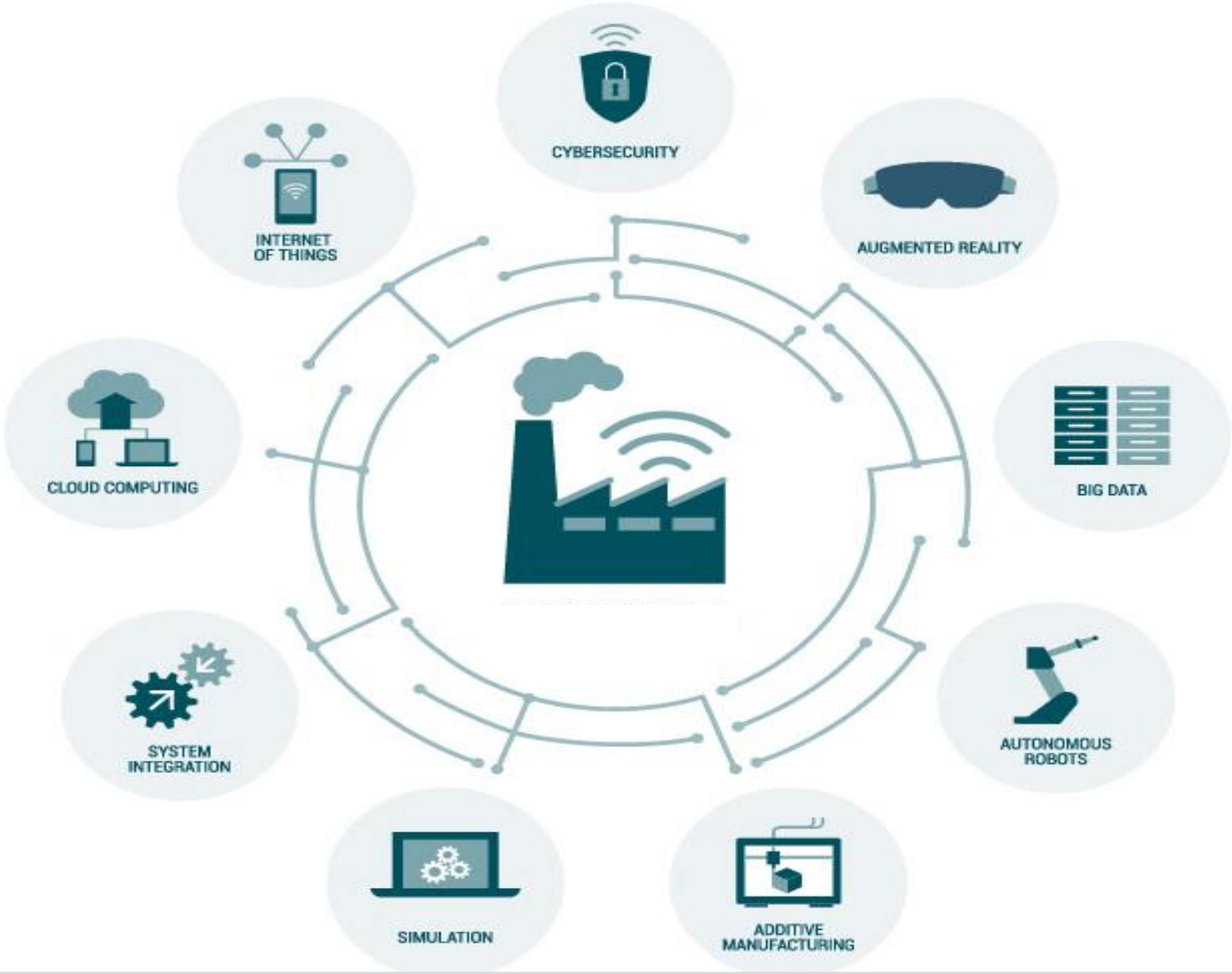


Resource Sharing



Space Sharing

Building Blocks of Technology



Impacting Every Aspect of Value Chain

Healthcare

Education

Industrial Control Systems

Space Exploration

Manufacturing

Services

Maintenance Repair & Overhaul

Banking & Financial Sector

Enterprise Resource Planning

Knowledge Sharing: Technology in Education

Knowledge Sharing: Changing Classroom Learning

Global Classrooms: No longer confined to boundaries of classroom, education aided by technology has crossed borders, e.g- Skype, Google Hangout, ezTalks, Zoom, FaceTime, Webex etc.

Experiential Learning: Simulating real life problems through various tech-based teaching tools are bring about behavioral changes in the students, e.g.- gaming consoles, mobile learning etc.

Addressing Diverse Learners: An assortment of various educational tools, audio/visual stimulus and animations, e-learning modules address students with different learning styles.

Knowledge Sharing: Leading to New Age of Innovations

Cognitive Machines

-Deep Mind **AlphaGo** program defeated world Go champion, Lee Sedol of China by employing techniques and cunning strategies.

-Armed with significant computing power and self-learning algorithm, **AlphaGo** is today being deployed for medical diagnosis and pursuing scientific research

Robotic Workforce

-The cost of hiring robots is constantly reducing with technology becoming cheaper, thereby potentially has threat of replacing costly labour.

-In future, robots and humans will be working together, hence new age skill sets would be required to match the machines.

Autonomous Cars

-Fully autonomous cars are expected to be ready by 2030, and are poised to replace many human drivers. Consequently, taxi-hailing companies such as UBER have already started testing their services with tailored models of driverless cars

Artificial Intelligence

-Generative Adversarial Networks (GANs) are systems consisting of one network that generates new data after learning from a training set, and another that tries to discriminate between real and fake data.

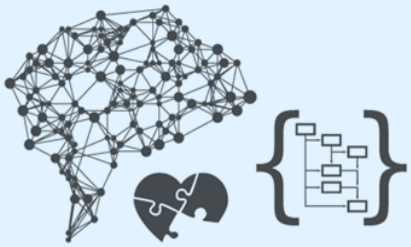
Knowledge Sharing: New Age- New Skills

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity



Source: Future of Jobs Report, World Economic Forum

Resource Sharing

Resource Sharing: Key Pillar Structure

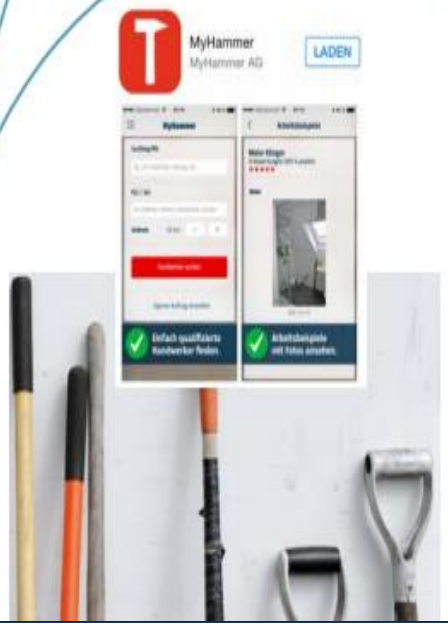
Industries	Technology Interface	Individuals
SMART MANUFACTURING DESIGN	3D, Collaborative Virtual Factory Platforms	SMART AND INTEGRATED PRODUCTS
OPTIMIZATION OF SERVICE DELIVERY	AI, Big Data, Advanced Human Machine Interaction	MORE CONTEXUALISED PREFERENCES
DATA TRACKING	Big Data Analytics, Machine to Machine Learning	USAGE BASED PRICING
PERSONALIZED MARKETING	Smart Data Collection and Interaction	EASY ACCESSIBILITY AND COMMUNICATION
PROCESS MONITORING AND CONTROL	Sensor Networks, Cloud Technologies	REAL TIME TRACKING OF PRODUCTS/SERVICES

Resource Sharing: Touching Everybody's Life

From **bookstore** to **e-book**

From **record store** to **streaming**

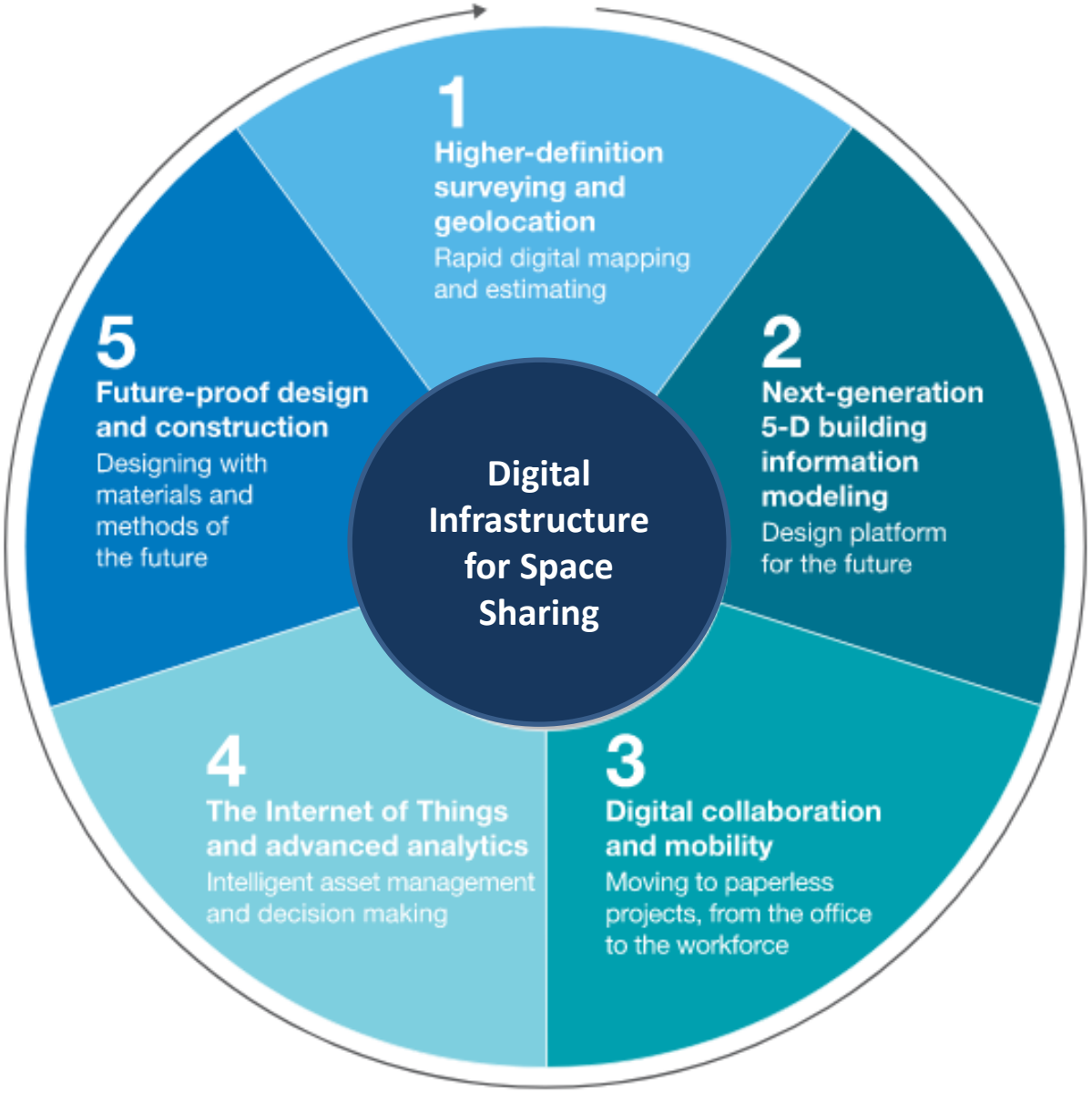
From **Yellow Pages** to **marketplace**



From **taxi** to **ride-sharing**

Space Sharing

Space Sharing: Global Online Space



BOX: Cloud Storage for collaborative businesses

CITRIX: Storage services for businesses & individuals

EGNYTE: Centralized administrative data sharing

SUGARSYNC: Global platform to sync data across OS

Friends !!