



**GE**  
**Intelligence**

ASIA 2018

4-5TH JUNE 2018 | MANEKSHAW CENTRE, NEW DELHI

**GEOSPATIAL: A FORCE MULTIPLIER FOR DEFENSE AND INTERNAL SECURITY**

# **HANDLING the New Norm- *Convergence of Emerging Technologies***

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# About the Speaker

## SHORT-TERM IT CONSULTANCIES with INTERNATIONAL AGENCIES....

- ✓ WTO, WCO, GENEVA (2018)
- ✓ UNCTAD (United Nations Conference on Trade and Development), GENEVA (2018)
- ✓ The Swiss Embassy-India (2017)
- ✓ The World Bank (2000 – till Now)
- ✓ The Economist Intelligence Unit , HK-2017)
- ✓ IIMD- International Institute for Management Development (Lausanne, Switzerland) (2016)
- ✓ ADB - Asian Development Bank (2014)
- ✓ Panthéon Sorbonne, PARIS (2016,2014)
- ✓ Wollongong University, AUSTRALIA (2011)
- ✓ The Winrock International

## NATIONAL AGENCIES....

- ✓ CENTRAL UNIVERSITIES – JNU, DU, BHU, Rajasthan Univ, IIT-D
- ✓ CENTRAL MINISTRIES – MeitY, DoPT, MHA, MEA, DST, CPWD, DARP&G
- ✓ STATE GOVTS – KARNATAKA, HARAYANA
- ✓ INDUSTRY ASSOCIATIONS - NASSCOM
- ✓ MEDIA/ Civil Society – The Lok Sabha, DEF



## Generated

- Almost 7 Crores for IIPA in last 5 years (2013 till Now)

## Guided

- 20 Mphils/PhD (2013 till Now)
- In CLOUD, MOBILE, USOF, CyberWar, CyberSecurity, ICT4D, TeleMedicine

## Published

- 30 papers / chapters / articles
- 6 handbooks
- 5 Reports

## Training – A Passion

Thames Valley, UK certified Trainer of Trainers (ToT)

## 28 years of IT journey ---

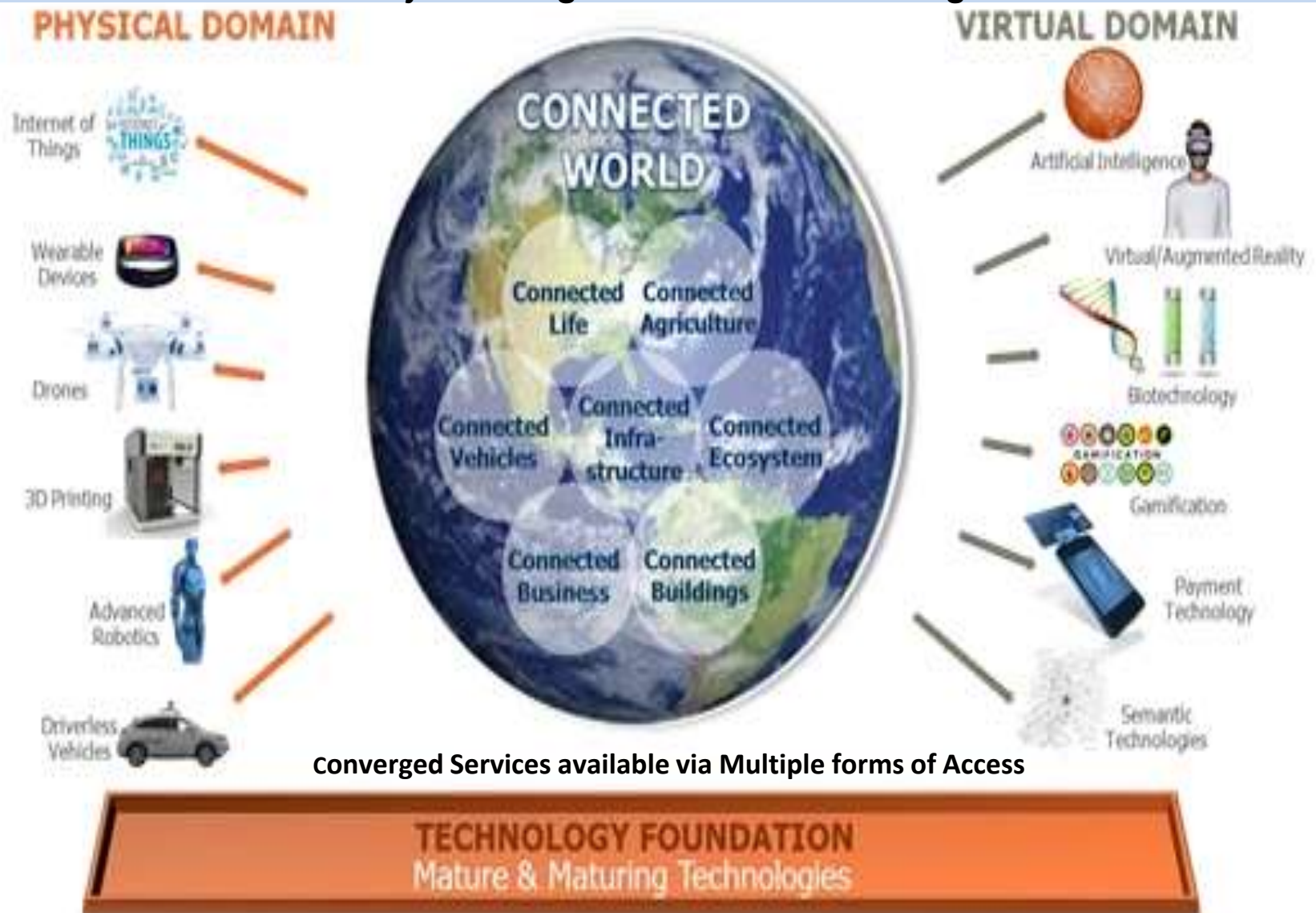
- From MIS/IT/ICT realm (MCA ,MCSD )
- to....
- the 'real world' (IIT-Delhi)
- of....
- 600 villages of India (2005-2009)
  - NE (Sikkim, Shillong, Mizoram)
  - South (TN, Kerala, K'tka)
  - North (Punjab, Haryana, Rajasthan)
  - Centre (MP, 36garh,UP)

# Agenda

- Existing Technology Scenario
- Changing Landscape-Convergence
- Newer Opportunities - Global & National
- Reality Check
- Redefining ...Revamping  
...Reinvigorating...Reimagining Security
- A Road Map

# Emerging Technology Landscape

**“Always On” Connectivity, At Home/At Work, On the Go...  
It does not just change what we do--- It changes us**



## Artificial Intelligence Everywhere

- Machine Learning
- -Deep Learning
- -Cognitive Computing
- -Robotics
- - Smart Robots
- - Cyber knife
- -Autonomous vehicle
- -Drones
- - Natural Language Processing
- -Conversational user interfaces
- -Enterprise taxonomy and ontology management



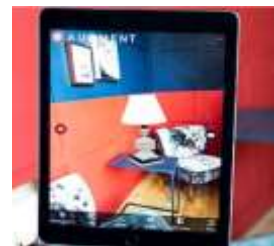
## Transparently Immersive Experiences

- -Ambient /Ubiquitous Technologies
- -Assistive Technologies
- -Wearable Technologies
- -Virtual reality
- -Augmented reality
- -Computer-Brain interface
- -Additive Manufacturing
- -4D printing
- -Volumetric displays
- -Nanotechnology
- -Smart Dust
- -Connected home
- -Smart workspace
- -Wireless Body Area Network

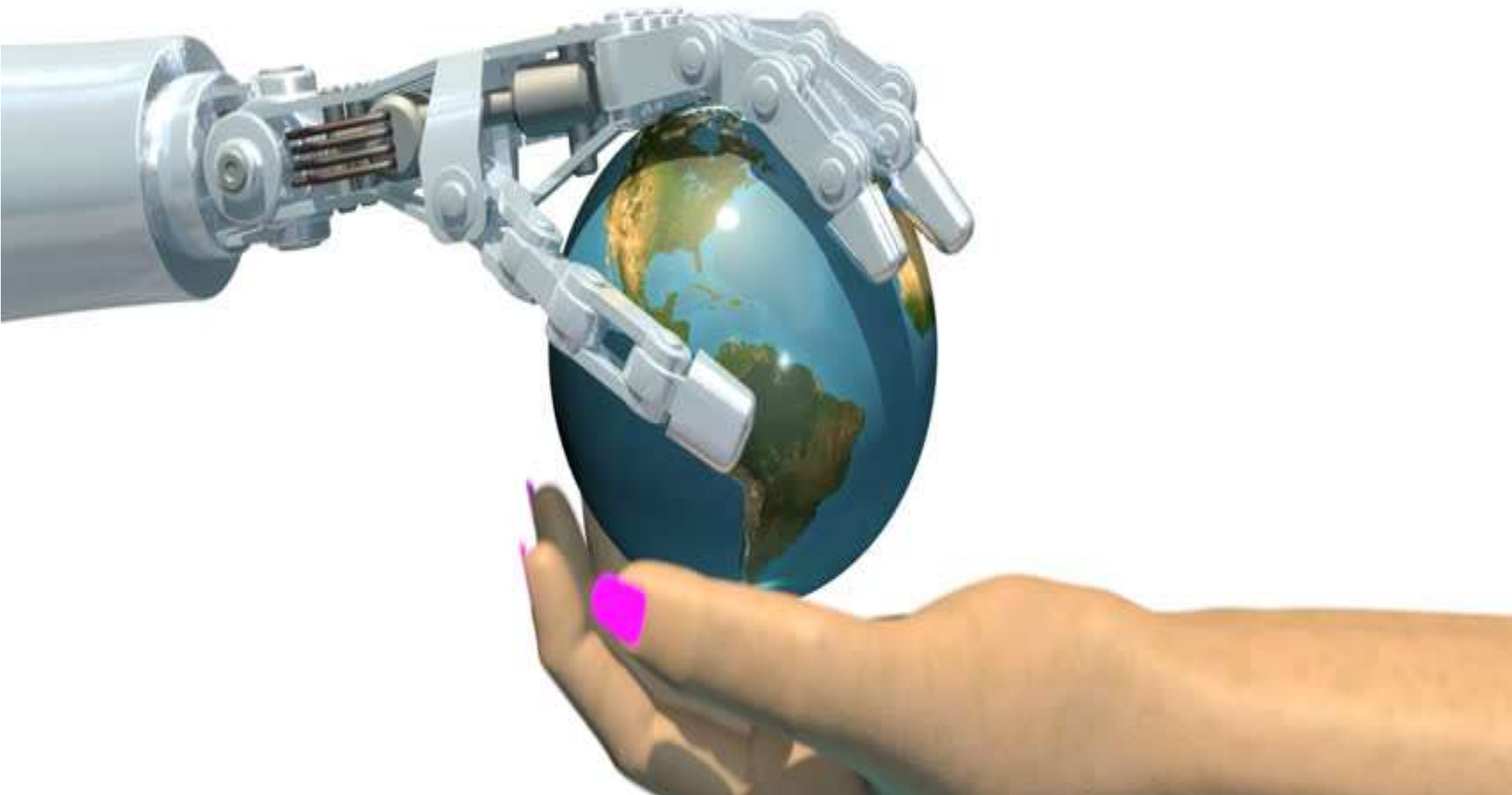


## Digital Platforms

- Cloud Computing
- -The Internet of Thing (IoT)
- -Big Data Analytics
- -Server-less Computing
- -5G
- -Digital Twin
- -Edge computing
- -Crypto-currency
- -Block chain
- -Neuro-morphic engineering
- -Quantum computing
- -Software-defined security(SDS)



# **Some Glimpses into the Changes IT has wrought...**



**SCIENTIST CREATE REMOTE-CONTROL  
ROBOTIC FISH WHICH SWIMS  
THROUGH CORAL REEFS AND TAKES  
HIGH-RESOLUTION PHOTOS**





# **U.S. Army General Says Robots Could Replace One-fourth Of Combat Soldiers By 2030**

Courtesy: <https://www.cbsnews.com/news/robotic-soldiers-by-2030-us-army-general-says-robots-may-replace-combat-soldiers/> (January 23, 2014, 2:19 PM)



News > UK > Home News

# Isis videos targeted by artificial intelligence that can detect propaganda before it's uploaded

Developers hope to combat threat of lone-wolf attacks by 'cutting propaganda off at the source'

Lizzie Dearden Home Affairs Correspondent | @lizziedearden | Tuesday 13 February 2018 00:15 GMT |  23 comments



 Like [Click to follow The Independent Online](#)



# Unmanned Aircraft Systems for civilian Missions



*Source: BIGS Policy Paper, Unmanned Aircraft Systems for Civilian Missions, 2012*

# Scientists use artificial intelligence to eavesdrop on dolphins

Algorithm enables research team to sift through millions of echolocation clicks made by marine mammals in the Gulf of Mexico

Josh Gabbetio Science Correspondent | Friday 8 December 2017 18:37 GMT | [Share](#) [Print](#)

[f](#) [t](#) [e](#) **183**  
shares

[Like](#) Click to follow  
The Independent Online



Scientists were able to listen in on the dolphin population of the Gulf of Mexico using underwater sensors. Getty

**CHANGING GLOBAL  
LANDSCAPE:**

**Using Technology  
Convergence**

# Convergence – All ETs have to Blend

**A DM Query**

- Conversational User Interface / Virtual Assistant

**Capture the data**

- IOT (Internet of Things)

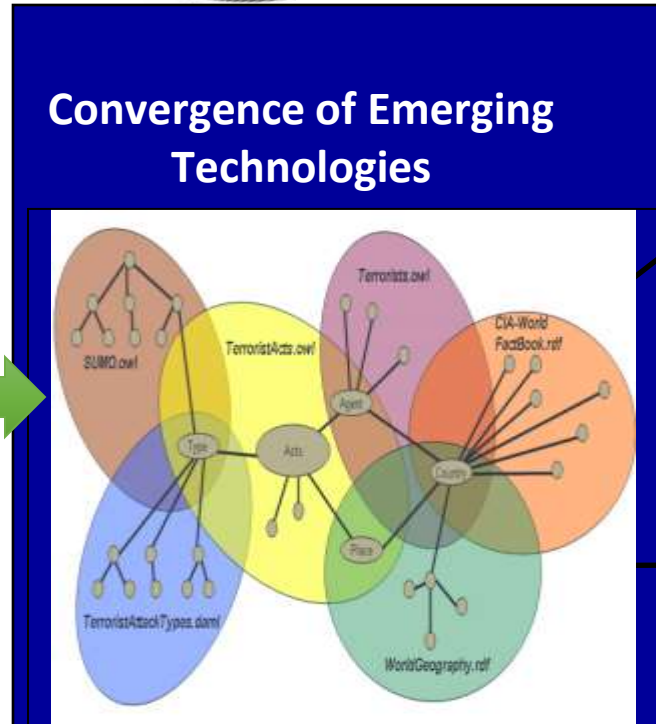
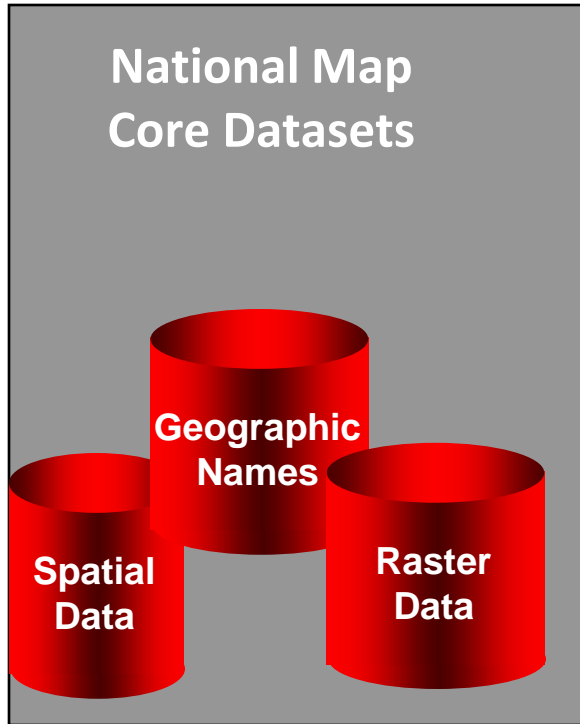
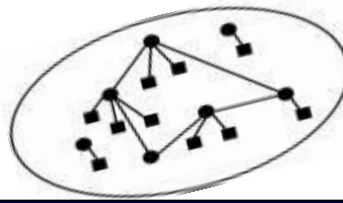
**Analyze the Situation**

- Artificial Intelligence (AI), BIG Data

**Respond to the Problem**

- AI and Geographic Information System (GIS)

# Blending Layers



Intelligent Targeting

- Simple Features
- Geo Raster
- Topology
- Networks
- Gazetteers (??)

- Artificial Intelligence-AI
- Big Data Analytics
- Cloud Computing
- Internet of Things

# Advantages of Convergence

**Time**



Define the areas of highest potential for new Products or Services

**Independence**



Decrease of Eliminate dependence on Analytics/Big Data teams for complex queries

**Analysis**



Helps to generate multiple Scenarios to reach sound Conclusions

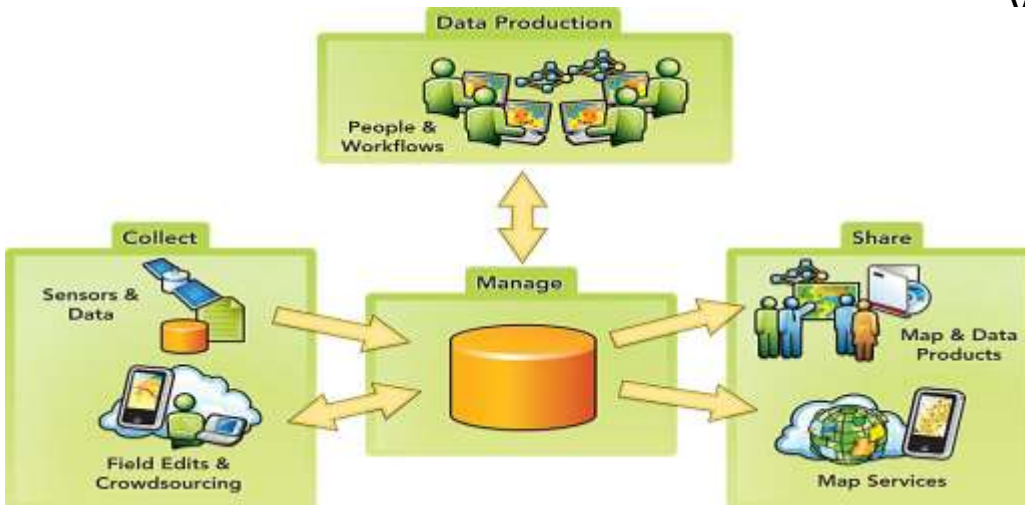
& with GIS layer visualize results as maps in real time

**Freedom**



Ask ANY Question, play directly with the RAW Data

& aggregate TeraBytes Automatically send alerts to key personnel



# Converging All – 2030

**IoT is the King,**

**Data Analytics is the Queen,**

**GIS the Trusted Companion,**

**AI the Slave,**

**Cloud/Big Data is the Palace**

*Future is Already  
our Past*





- Predictive maintenance or condition monitoring
- Warranty reserve estimation
- Propensity to buy
- Demand forecasting
- Process optimization
- Telematics

## Manufacturing



- Predictive inventory planning
- Recommendation engines
- Upsell and cross-channel marketing
- Market segmentation and targeting
- Customer ROI and lifetime value

## Retail



- Alerts and diagnostics from real-time patient data
- Disease identification and risk stratification
- Patient triage optimization
- Proactive health management
- Healthcare provider sentiment analysis

## Healthcare and Life Sciences



- Aircraft scheduling
- Dynamic pricing
- Social media – consumer feedback and interaction analysis
- Customer complaint resolution
- Traffic patterns and congestion management

## Travel and Hospitality



- Risk analytics and regulation
- Customer Segmentation
- Cross-selling and up-selling
- Sales and marketing campaign management
- Credit worthiness evaluation

## Financial Services



- Power usage analytics
- Seismic data processing
- Carbon emissions and trading
- Customer-specific pricing
- Smart grid management
- Energy demand and supply optimization

## Energy, Feedstock, and Utilities



**MEDICAL**



**MOBILE**



**EDUCATION**



**DEFENCE**



**AGRICULTURE**



**FINANCIAL SECTOR**



**BUSINESS**

# Some Global Convergence Instances

## source

### Big Data & GIS for Observing Earth's climate

By The NASA Langley Research Center (Deogawanka S., (2014), *Empowering GIS with Big Data*)

### More proactive and responsive Government through Big Data analysis –

The **city of Glendale** used Big Data and ArcGIS web mapping functionality to assess and manage street signs across the city. (Deogawanka S., (2014), *Empowering GIS with Big Data*)

### Tracking Ebola with Big Data

(Deogawanka S., (2014), *Empowering GIS with Big Data*)



# Sentiment Analysis Using Twitter Data & AI

## COLLECTION AND LABELLING

- Create twitter crawlers
- Store and label data

## PREPARATION

- De-duplication, tokenization and filtration of stop words

## MODELLING

- Generate word vector using AI algorithm & select the best model

## SCORING

- Score the tweet as positive/negative or neutral data set

## CALCULATION

- Aggregate scoring result by Telco provider to get count of positive tweets and negative tweets

# Use of facial recognition in CHINESE schools

- “Intelligent classroom behavior management system”
- facial-recognition technology to monitor and analyze students' behavior.
- Main purpose to predict **CRIME**
- Categorises facial expressions into :happy, angry, fearful, confused, or upset.
- Used for paying at canteen, library and recording attendance.



学生课堂行为诊断 (测试版)  
Students' Classroom Behavior Diagnosis

# Convergence Stories of India

Use of AI and Big Data Algorithms to detect Anomaly in any system to predict unexpected disasters/Governance concerns ( Tol, Sep 27, 2017)

Drones , AI, ML, GIS for predicting Natural Disasters , Soil Health– Karnataka/Odisha  
May 17, 2018, 19:00 IST

Data analytics foretell Riots/ Foreign intrusions ..( not just FB fiasco)

*The next intrusion is likely to happen in the wee hours of the morning, around 2 am, about 11 or 12 days after a herd of cattle meanders close to the Arunachal border.....*

...(based on ) social media posts, hashtags, news articles or posts by religious group. Based on these correlation metrics, we merge all the data with the intelligence data from police agencies. (ET, Sep 5, 2017)

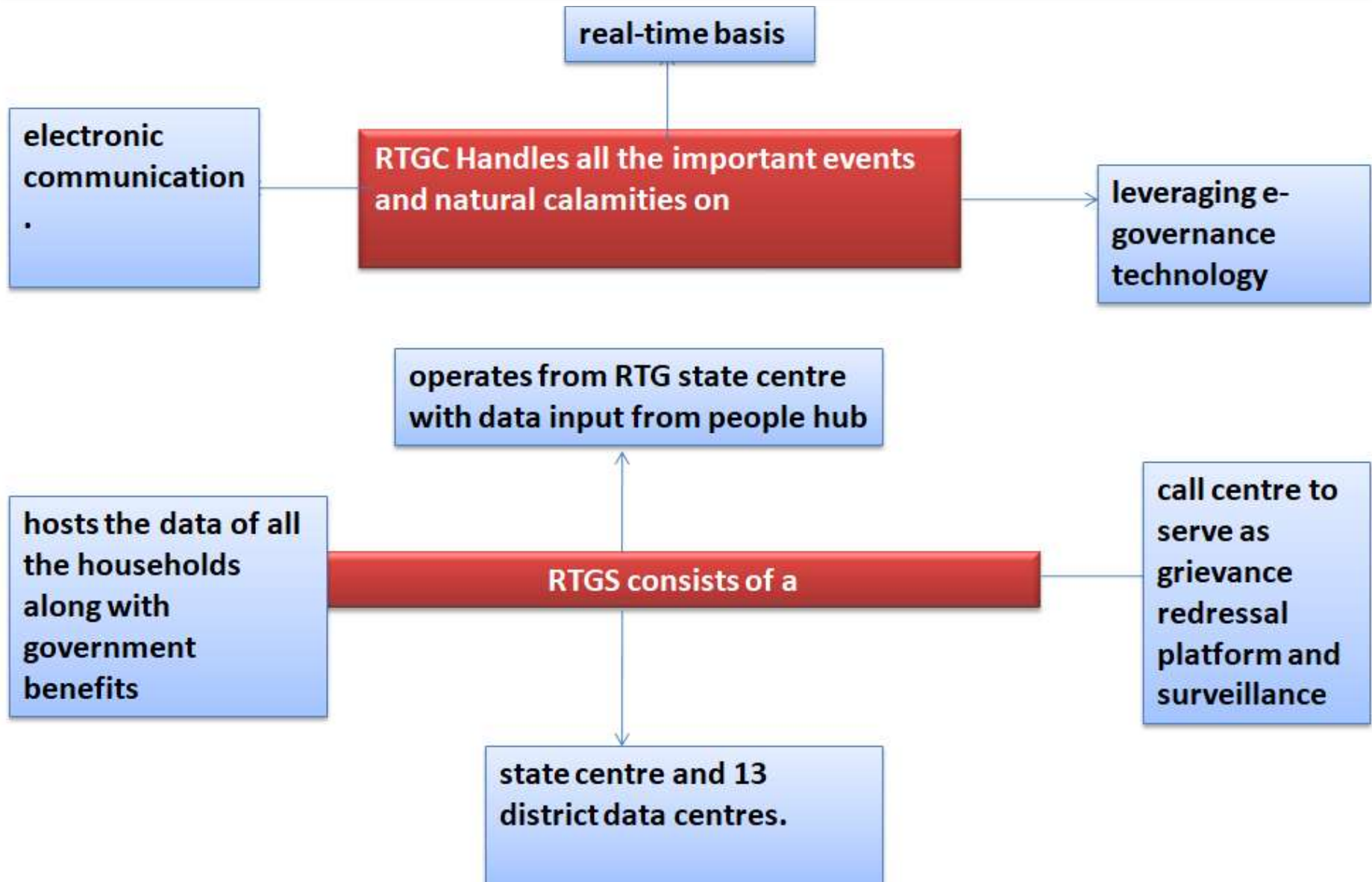
Robots excavators are coming to Bengaluru soon. Bruhat Bengaluru Mahanagara Palike (BBMP) – the urban local body – has plans to procure ‘robot multi-purpose excavators’ for dredging and cleaning of drains in Bengaluru. ( Sep 5, 2017)

Apps, drones likely to map infrastructure projects [Dipak K Dash](#)  
| TNN | Dec 6, 2017, 04:19 IST

# Real Time Governance Center (RTGC – A.P.)



# REAL TIME CONVERGENCE CENTER (RTGC)





## QUICKER LIGHTNING ALERTS

- Convergence of technology can now be used for providing safer, reliable and faster data about where, when and intensity of lightning



Using RADAR, IoT Big data analytics and AI

**NO  
GUESSWORK**

**PRECISE  
ALERTS**

**SAVES TIME  
AND ENERGY**

**SMART AGRICULTURE:**  
***CONVERGENCE FOR INDIAN FARMERS***

# Indian Farmers

## Current Scenario:

- The productivity and financial well-being of Indian farmers has been low since long due to the lack of access to quality information about crop demand, market prices, weather conditions, best practices, etc.



# Machine Learning for Better Agricultural Productivity

## Proposed Concept- Life Cycle Approach to Farmers' Day:

- ML be used to 'take' decisions about crop qty to be cultivated by integrating inf. from:
  - **soil condition reports** from satellites with the data on the types of crops sown in particular areas
  - **Weather reports** from the meteorological department
  - **mandi pricing reports** indicative of demand in the market
  - **current levels of supply** in the market, etc.
  - **Farmers preferences 'foot-printed'** all over his purchases
  - **Buyers choices**
  - **vulnerability of each crop to pests**
- This can be extended to supply the right quantity of seeds "just in time", additional pesticide requirement, send targeted advisories to the farmers in that region
- Blend with Horticulture, Fish-Farming etc etc



# AI Based Conversational User Interfaces & USSD SMSs & Sahayaks

## Proposed solution:

CUI can

- recognize natural local languages
- provide real time information to farmers
- And 'share' k/w on-demand

while overcoming the limitations of current app-based solutions provided by the Government that require smartphone knowledge, pose language barriers, etc.



# **NATIONAL SECURITY LANDSCAPE : USING CONVERGENCE**

**REALITY  
CHECK**



**Life & Resources  
trade-off**

**Paucity of  
time**

**Defence  
Scenarios-  
Unpredictable/  
Unique/  
Constrained**

**Protocols to  
be followed  
diligently**

**Most Excruciating  
Conditions**

# **Some Interesting CASES in Defence**



# MODELING THE BEHAVIORS OF MILITANT GROUPS

**AIM** : To revolutionize intelligence analysis with the help of machine learning

**Dr. Paulo Shakarian:**

(an ex-US army intelligence officer)

pioneered an AI -driven method



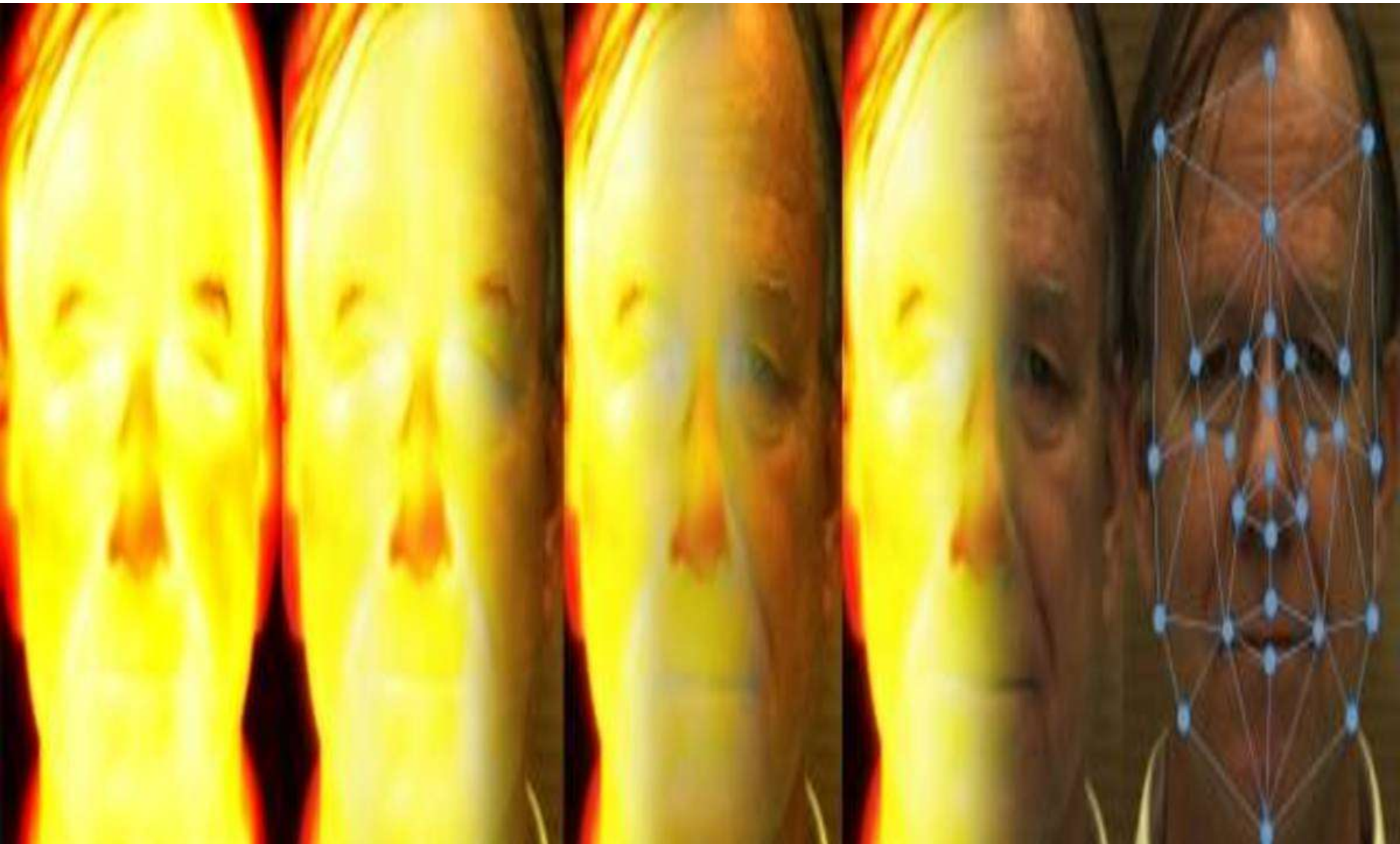
Screen shot of sample Google Earth output from SCARE compared with attack data for Baghdad. Predicted caches are yellow bulls-eyes, attacks (those used for the reasoning of the predictions) are pink push-pins. Image Courtesy University of Maryland and Google Earth.  
Read more at: <https://phys.org/news/2009-12-ied-technology.html#jCp>

**CONTRIBUTION:**

**SCARE software used to detect IEDs in Afghanistan**

**GANG and SNAKE social media analysis package**

# US Army boffins use AI to spot faces in the dark



## HOW IT WORKS :

Neural network recreates real images from thermal cameras.

Uses convolutional neural network and a range of algorithms to recognise faces in the dark.

Matching b/n thermal face images & existing biometric face databases

# When Pirates Meet Advanced Analytics

Earlier...officers would decrease the activity in a high crime area

- But, it would pop up again

Now....Analysis of structured data and oceanographic conditions

- Reported drop of 54 % of piracy activities

In Future..With AI, IoT, Big Data Analytics

- A map of greatest risk zones can be created using history of crime and local behavior and physical characteristic

**SMART SOLDIER:**  
***CONVERGENCE FOR ARMED FORCES***

# THERMAL MAPPING FOR TARGETED AMBUSH



Using IoT, thermal data can be communicated in real time



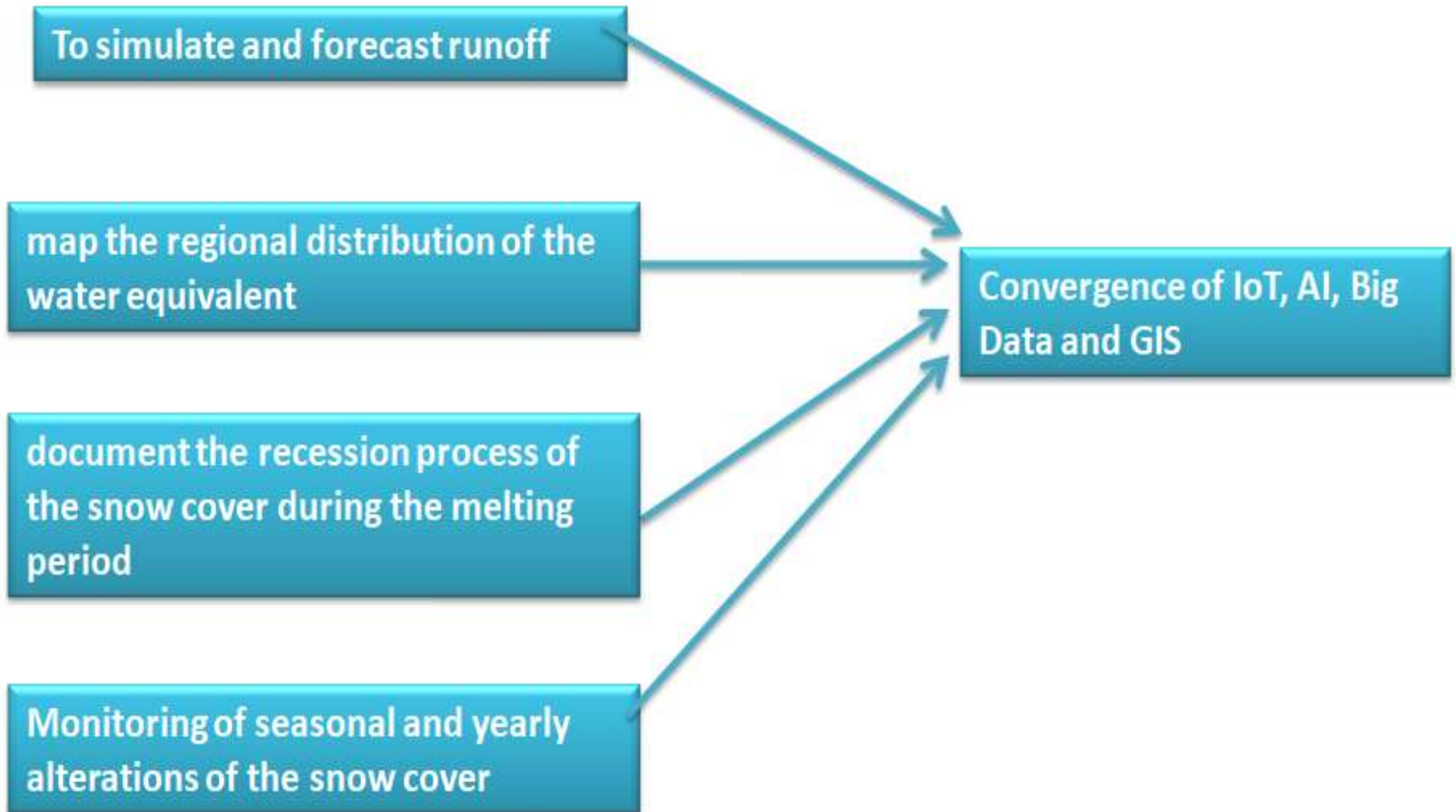
Big Data Analytics can be used to analyse the trend



AI algorithms to predict reliably the conditions of a particular place

# Snow Cover Mapping and Runoff Prediction

- Systematic, periodical and precise snow cover mapping supported by GIS technology



EMERGING TECHNOLOGY LANDSCAPE :

**TRANSFORMATIVE / DISRUPTIVE ?**



# Converging All - 2030

IoT is the King,

Data Analytics is the Queen,

GIS the Trusted Companion,

AI the Slave,

Cloud/Big Data is the Palace

**AND....**

**IoE is the Crown Prince**

**Block Chain its Trusted  
Companion**

**5G the New Carriage**

**RL the New Aide**

**Everything gets  
More & More  
Interconnected  
Interrelated  
Integrated**





# 5G TECHNOLOGY

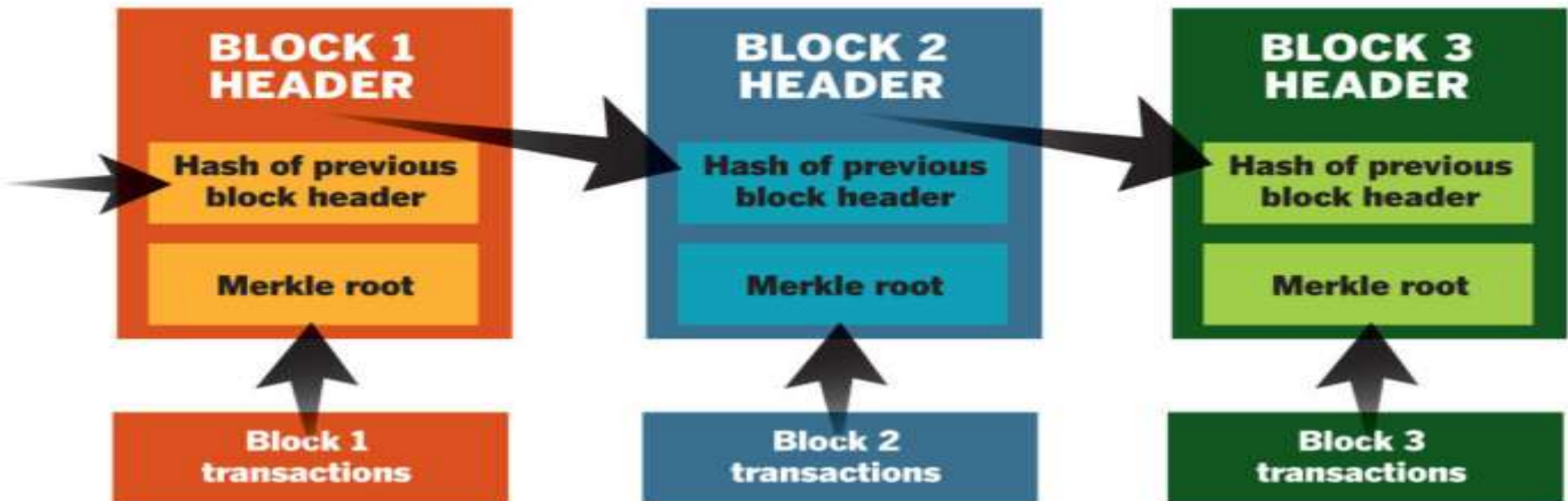


- 5G technology refer to short name of fifth Generation
- which was started from late 2010s.
- 5G will be about **1000 times faster than 4G**. It provides download speeds up to 10 Gbps and latency less than 1ms which enable users to enjoy faster download and upload speed.
- 5G is designed to **meet the machine-type communication (MTC) required by IoT applications** and other connected devices
- It is highly supportable to **WWW**(Wireless World Wide Web).
- 5G will make communications so fast they become almost real-time, **putting mobile internet services on a par with office services.**

# BLOCKCHAIN

A decentralized ledger of all transactions across a peer to peer network. Using this technology, participants can confirm transactions without the need for a central certifying authority.

**With blockchain technology**, each page in a ledger of transactions forms a block. That block has an impact on the next block or page through cryptographic hashing. In other words, when a block is completed, it creates a unique secure code, which ties into the next page or block, creating a chain of blocks, or blockchain.



SIMPLIFIED BITCOIN BLOCK CHAIN

# INTERNET OF EVERYTHING (IoE)

Networked Connection of People, Process, Data, Things

## People

Connecting people in more relevant, valuable ways



## Process

Delivering the right information to the right person (or machine) at the right time



## Data

Leveraging data into more useful information for decision-making



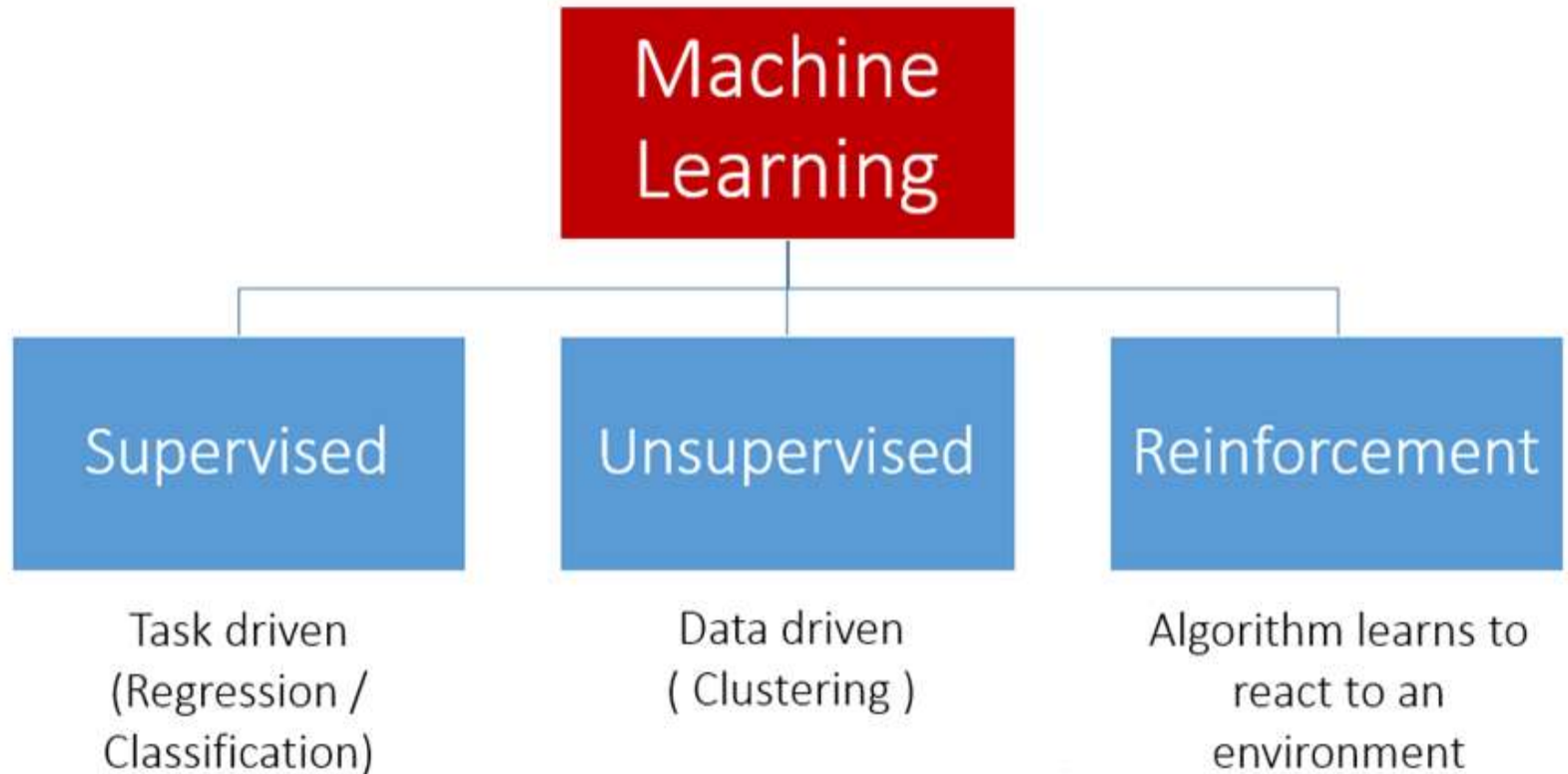
## Things

Physical devices and objects connected to the Internet and each other for intelligent decision-making; often called Internet of Things (IoT)

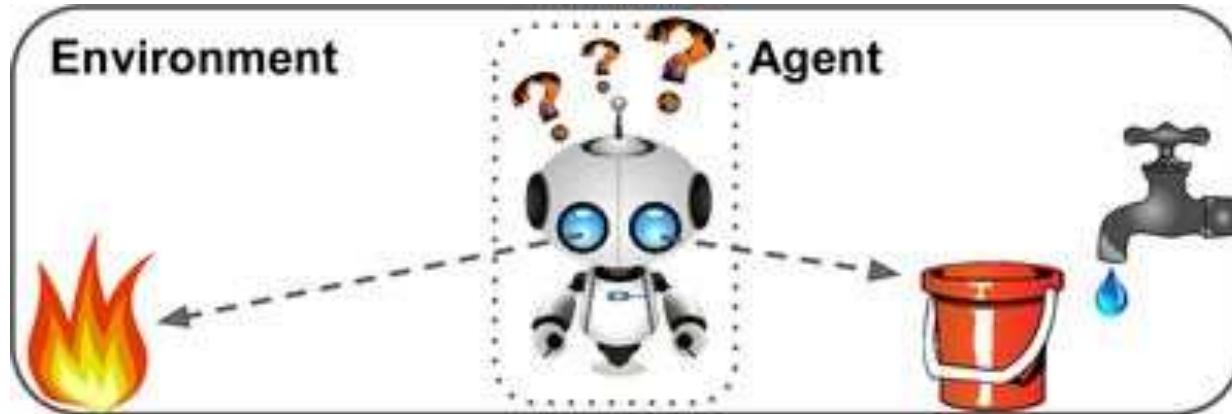


IoE

# Types of Machine Learning



Courtesy: <https://medium.com/deep-math-machine-learning-ai/different-types-of-machine-learning-and-their-types>



- 1 Observe
- 2 Select action using policy



- 3 Action!
- 4 Get reward or penalty



- 5 Update policy (learning step)
- 6 Iterate until an optimal policy is found

# The whole planet is getting more instrumented, interconnected, intelligent creating newer versions of *Challenges*



Smart Supply Chains

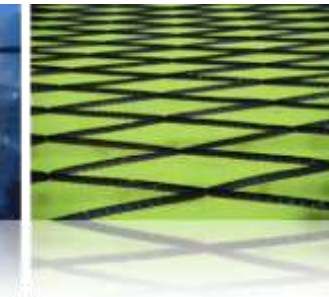
Smart Countries

Smart Retail

Smart Water Management

Smart Weather

Smart Energy Grids



Smart Oil Field Technologies

Smart Regions

Smart Healthcare

Smart Traffic Systems

Smart Cities

© 2012 IBM Corporation

Smart Food Systems

It will go full throttle on data protection in 2 months

Dark Internet

THE TIMES OF INDIA  
INDIA  
WannaCry ransomware cyberattack fails to paralyse India; some businesses hit

Dark Web

Court's privacy ruling opens Pandora's box for Modi govt  
Ransomware attack: India issues red alert, experts warn of more trouble today

Invisible Web

How cyber theft has hurt banks

India Is 8th Most Cyber Attacked Nation In World, With Return Of An Old Deadly Malware In 2017

CryptoJacking

Union Bank was hacked and govt officials' data leaked

RTO website hacked, certificate downloaded

CyberWarFar

nindustanimes  
Gurgaon: Top company official's email hacked, 1 lakh siphoned off

Dark Data





# 2030: GENERIC ISSUES TO BE ENCOUNTERED

**ETHICAL  
CONCERNS**

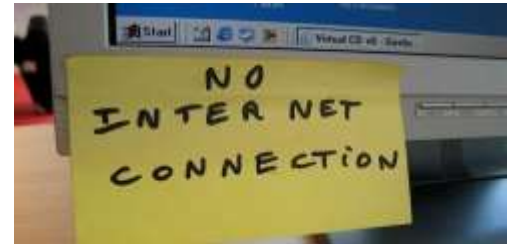
**TECHNICAL  
CHALLENGES**

**GOVERNANCE  
CHALLENGES**





**Internet  
Blackout-** *Sophie at IIT*



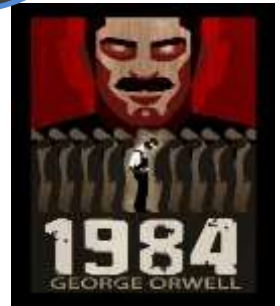
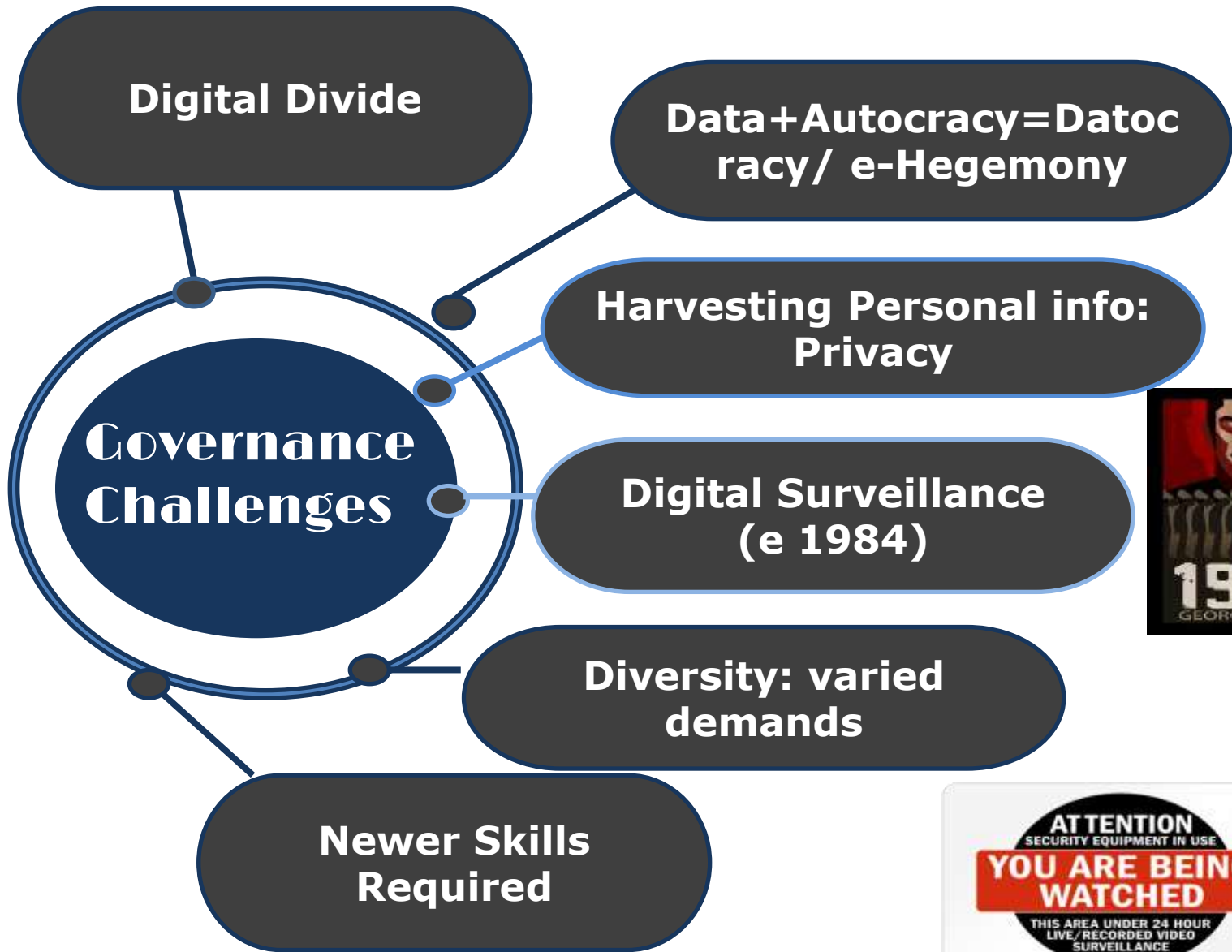
**Technical  
Challenges**

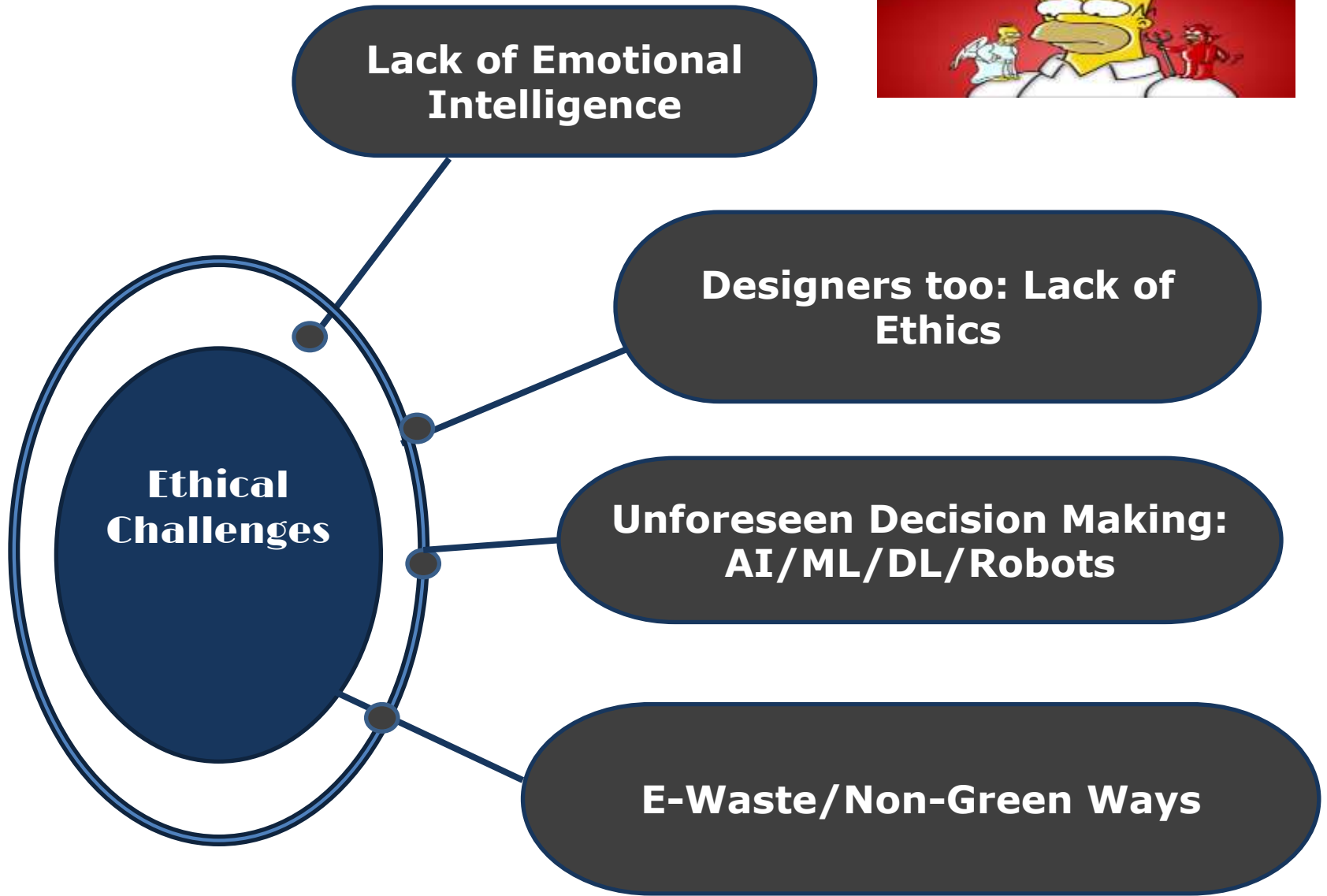
**Servicing and  
Maintenance**

**And Where is 5G ????**

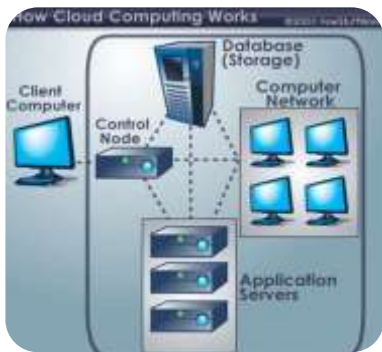
**Cyber Security**







**SPECIFIC ISSUES :**  
**Using Convergence in**  
**DEFENCE**



## Hardware Challenges

- Fast Obsolesce
- Proprietary Solutions
- Tardy Procurement Processes
- Weaponry still more 'critical' & 'tangible asset' than IT investments



## Lack of Systems Approach

- Different Agencies : For Data Collection, D Mgmt, D Analysis, Broadcast
- Lack of integration : No Digital standards
- Silos approach -> Latency -> Legacy: Hardware/ Software / Related Systems/ Capacities 'arrive' at different times
- Mistrust of TKS :Local Knowledge Systems Ignored

## Archaic -- Data , Methods and People



- Still analogue data at some places and not digital defence series map (DSM)
- Tech-Phobia- Anything LED could be 'scary' for some
- Ill defined policies ( National Map Policy-2005)
- Lack of structured procedures for Industry collaboration
- Lack of K/w Mgmt of Best / Failed Practices:need to popularize Best Practices Web Map Service(WMS) created by Survey of India from Open Series Map (OSM)



INDY/TECH

# GOOGLE'S DECISION TO BUILD AI FOR PENTAGON DRONES DIVIDES COMPANY

A US Air Force drone in flight over southern Afghanistan / Rex

Use of Silicon Valley search giant's TensorFlow technology in unmanned flights over warzones leaves employees questioning defence role

***Industry Leads the Change ....  
for a Change***



ES OF INDIA  
CITY

**DIGITAL MARKETING COURSE**

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Learn Online Training Counsel

# Newspapers at your doorstep, Bangalore boy's drone

Bangalore | Aug 24, 2017, 12:53 PM IST

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8,173+ Ratings

LET'S TALK



By Hemant CS

The much-hyped deliveries at are a reality in the ne

**HOME**

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14,412+ Trainees

# Robot reporter gets its first news article published

Bangalore | Aug 30, 2017, 10:57 PM IST



AI of language processing is not only about fine-tuning a robot like Jarvis. A better way intelligent system like the one here has



# Businesses need chatbot

Businesses possess an intelligence capability, similar to that used in live chat programs of



**THE ECONOMIC TIMES**

Corporate Trends

Aug 21, 2017, 08:38 PM IST

**DIGITAL MARKETING COURSE**

14,412+ Trainees

**MARKET STATS**

31,856 ▲ 124.84

9,963 ▲ 43.95

29,748.00

# AI, automation to be next disruptions for Indian businesses: Report

NEW DELHI | Updated Aug 13, 2017, 07:36 PM IST



Smaller kind of disruption is also visible in the transportation sector. Electric cars accounted for 6.8 per cent of new car sales in 2016, and their sales figure are witnessing a steady rise.

The advent of artificial intelligence, sharing economies, automation and digital currencies are likely to disrupt the face of

**India to get armed UAVs from Israel: Drone are potent add-ons to military but human intelligence makes them lethal**

14.4K+ Trainees

**BusinessLine**

India should build a future around cognitive computing: IBM President

# Artificial Intelligence enters newsrooms, are jobs at stake?

For those who still believe that AI and automation will not hit jobs in the media industry just consider the kind of investments that media houses are now making in AI for the newsroom. Clearly, the next five to ten years would be decisive.



# Cancer treated in just one day, courtesy Cyberknife

The latest version of a robotic radio surgery system is all set to revolutionise cancer treatment by bringing down the treatment time as well as the side effects associated with radiotherapy. The Cyberknife VersaBeam Single Intensity (VSI) has been launched at the Veterans - The Hub City.

The latest version of a robotic radio surgery system is all set to revolutionise cancer treatment by bringing down the treatment time as well as the side effects associated with radiotherapy. The Cyberknife VersaBeam Single Intensity (VSI) has been launched at the Veterans - The Hub City.

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4. The future of AI in marketing

5. AI in marketing: A game-changer

# 4D printing is the new craze

PTI | Apr 27, 2015, 10:30 PM IST

Launch Sept 7

News Company Industry Economy Politics and Nation Brandwire Defence Internet

Finance Foreign Trade Industries Infrastructure Policy

Health Economy Agriculture

Market Focus: Direct Plan-Growth

NAV: ₹215.14

Day Change: 2.25 (1.06%)

Class: Daily Category: Multi Cap

India beat Sri Lanka by 6 wickets in final ODI match

## Nano-technology will soon make GM obsolete: M.S. Swaminathan

NEW DELHI: Noted agricultural scientist M.S. Swaminathan, hailed as the mentor of the Green Revolution that saw India achieve

ANN AUDITOR

## Wearable tech: New wristband device can detect emotions in real time

BOSTON: A new wristband-like device developed by MIT scientists can recognise changes in human emotions and help detect seizures in epileptic patients as well as monitor stress and anxiety in real time.

Related: Motion-tracking wristband may help tackle depression

Researchers developed an automated machine learning method that can detect compulsive seizures by combining measures of electrical activity in the skin and wrist motion.

Other clinical applications for the wristband include anxiety, mood and stress monitoring and measuring painkiller drug responses.

## Virtual reality now takes video gaming to new high

CHENNAI: While gaming space developers across the world choose to invest in virtual reality (with an eye on the Asian, here is a Chennai-based



## Now, Facebook is developing augmented reality glasses

SANS | Aug 10, 2017, 02:07 PM IST



Facebook-owned Oculus is developing this technology, but it is not expected to be ready viable until 2022

SAN FRANCISCO: A patent application filed earlier this week has revealed that Facebook is working on developing augmented reality (AR) glasses that could blend digital objects with the physical world.

According to a report in Quartz on Friday, Facebook CEO Mark Zuckerberg had previously shown photos of similar glasses, saying that they would be the future of AR, but he did not reveal that the company was developing such a product.

Related

THE TIMES OF INDIA BUSINESS

Business India Business International Business Markets



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## Market size of assistive technology for persons with disability is Rs 4,000 crore

Sumitra Deb Royl | TNN | Feb 20, 2016, 12:58 AM IST

The 5th Edition of Techshare India will be organized on the 3rd and 4th March, a two day conference and exhibition. Techshare India aims to bring together the

## Connected Air: Smart Dust Is The Future Of The Quantified World

STARTING APRIL 2017 IN SAN FRANCISCO



## How virtual reality pushed AR Rahman towards 'multi-sensory' filmmaking

What does AR Rahman have in common with Frank Sinatra, David Bowie, Bob Dylan and Madonna? A bit of inspiration perhaps from each of their musical genres apart, all these musicians have tried their hand — a few not too successfully — at filmmaking.

Now it's Rahman's turn to make his directorial debut with Le Musk, which is being billed as the world's first virtual reality feature film. Unsurprisingly, Rahman drew Rahman to film a story that is evolving and ever-changing technology exciting and

## NASA running out of space suits: 4D printed space suits might be the future

NASA might be running out of space suits soon



RELATED STORIES: Maharashtra becomes first Indian state to use Automated Weather Station for forecast; Shah Rukh Khan on 11.11.11: 'I got a message from the Bollywood Babylon'; Time travel may soon be a reality: Scientists predict viable model; Real State Act comes into effect: The law will protect home buyers and encourage job creation; Greenwood Labour Day: All you need to know

## Startup Simulanis uses augmented virtual reality to skill professionals

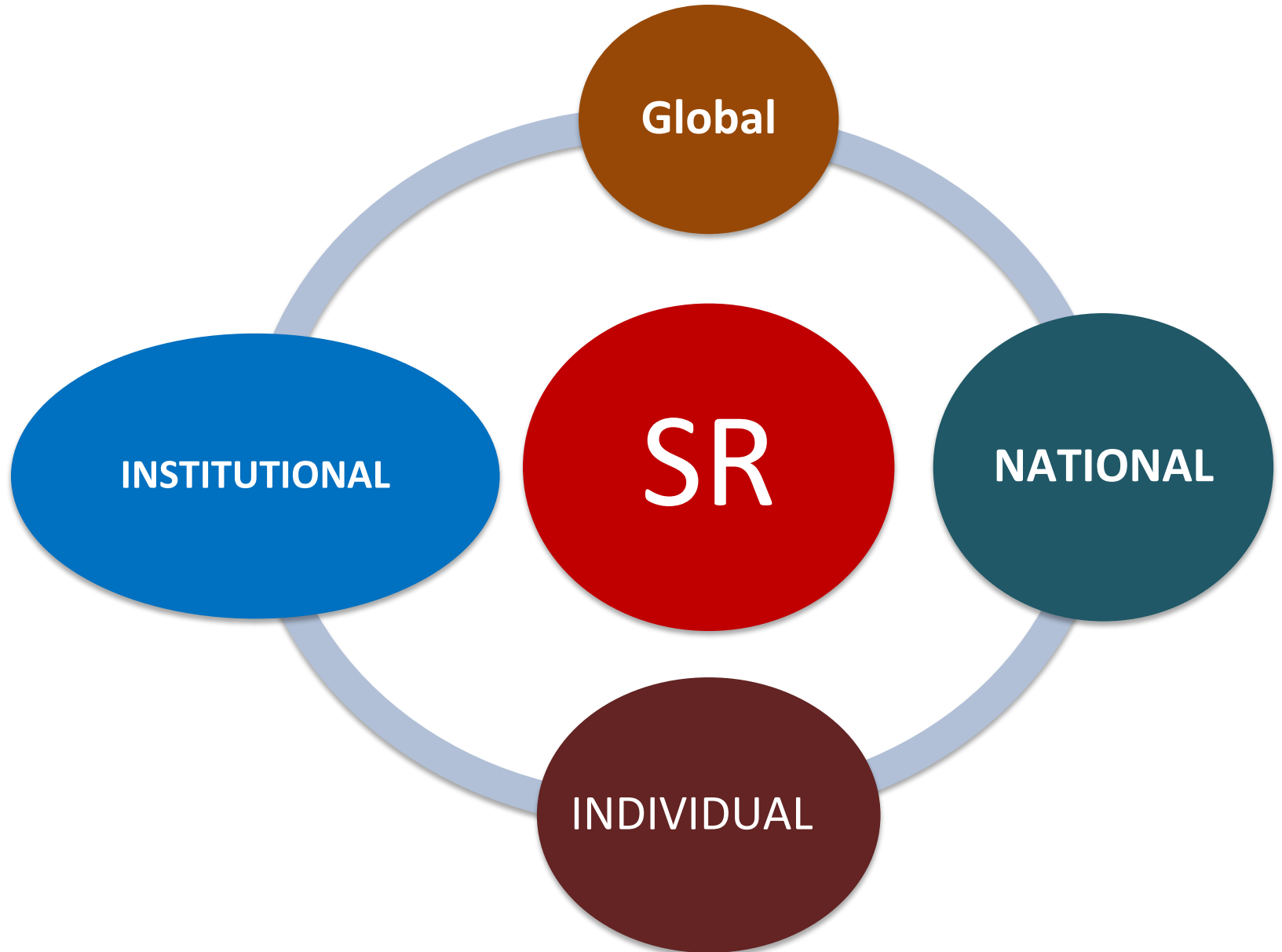
By Vinay Dandekar, ET Bureau | Aug 21, 2017, 06:30 AM IST

The widening gap between the skill requirements by businesses and the know-how of students has led to a number of engineering students getting jobless. Simulanis founder, Anil Talwar started on his entrepreneurial journey in 2013.

With an aim to help bridge the gap between the skill requirements by businesses and the know-how of students, Simulanis started on his entrepreneurial journey in 2013. Simulanis offers a range of courses including an AR-based course, and a gamified course. Simulanis is currently in its seed stage and is looking for investors.



# PREPAREDNESS



***LET US REALIGN***

**NATIONAL EFFORTS**

## Issues & Challenges

- **Absence of a comprehensive framework** to deal with cyber security- No Law, No Act
- **Role of government in cyber security not clear** – regulation v/s market driven; PPP?
- **Lack of capabilities and skills**
  - Absence of intelligence and information sharing mechanism.
  - Lack of training and knowledge available to LEA and judiciary

## Possible Solutions

- **Need A Cybersecurity Act** that recognizes cyber security as a **strategic domain of national security**
- **Need National Academy, CoEs,** institutions, platforms FOR e-Gov and CyberSecurity
- **Redefine the roles-** leverage PPPPP models; participatory policy formulations
- **Jugaad** - Promote research & development, innovation, investments and entrepreneurship
- **CB-** Augment awareness, capabilities and skills

# Participatory Policy Framework

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Newer ways of funding Smart Republic major projects need newer policy recommendations.

- Need for *evolving newer models* for **private funding using PPP forums - better contract management strategies**
- proactive **role of civil society** with **adequate checks-inbuilt – social audit, use of Web 2.0** in system to ensure transparency etc.
- Emphasis **GPR** before blindly aping ICT/ e-gov
- user-friendly **public sensitization mechanisms**
- **capacity management of public functionaries.**
- **Newer policies – Green, disaster-resilient, Gender-sensitive, Disable-friendly**

# INSTITUTIONAL PREPAREDNESS

Commitment.... Mindset ..... Change...

Processes- The  
Windows

- Re-engineering
- Quality
- MAP/DFDs/PROCE  
SS MAPS/DDs---  
where,how,when,  
who of BEEG DATA
- 'Create' pseudo  
disasters

Tech- The  
Gate

- Architecture
- Standards
- Technology
- Components
- HW, SW, NW
- Connectivity

People-  
The User

- CB & CM - Education,  
Awareness, Training
- Collaborate with  
Costumer
- Consultants/YLs  
make u Competitive
- PAMPER ur ETHICAL  
HACKERS

SOUND POLICIES & CS CULTURE-Legal Framework,  
Administrative (RiskM, DRP), Institutional Culture...

# **Organisations- Face Challenges in this Complex Landscape**

## **Be Prepared to handle Herculean Data/ Integrated Information**

- Need for organizations to be ready with tremendous *data storage capacities* to handle amazing *velocity of transactions* as well as stupendous *volume of data* .
- Effective utilization of emerging Knowledge management strategies using Big Data tools and techniques.
- Resilient Data Creation , Secure Data Manipulation and Trusted Data Retrieval



*If you can't fight them, join them!!!*

**Saviour Kit:  
TRAIN/ RE-TRAIN using  
Emerging Technologies**

# US Exercise Hedgehog Southern Estonia

May 7th 2018



March 15, 2013.

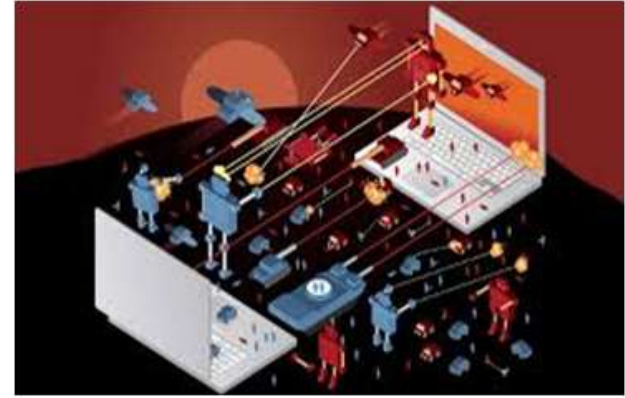
Courtesy:  
<https://www.voanews.com/>

Courtesy:  
[https://www.army.mil/article/205336/guard\\_exercises\\_cyber\\_awareness\\_with\\_estonian\\_comrades](https://www.army.mil/article/205336/guard_exercises_cyber_awareness_with_estonian_comrades)



**US & South Korean soldiers being trained together in a US military camp in Seoul, South Korea**

# TRAINING



**India**-The Indian Army conducted a war game called **Divine Matrix,2009**

**Estonia**-EU CYBRID 2017, Tallinn, Estonia where EU defense ministers took part in a simulated cyber attack 2 hrs exercise

**USA**- the Naval Academy, the Coast Guard Academy, the Marine Academy, the Military Academy and the Royal Military College of Canada joined in the Cyber Defense Exercise, looking to see who could best fend off the National Security Academy(NSA)'s cyber attacks,2018.

# PEDAGOGY

- fun interactive, competitive games  
Cyber Jeopardy", "Are You Smarter Than A Cyber Tech?", "The Best Cyber-Ranger Event"
- cyber offensive
- defensive scenarios
- dumpster diving



## Outcome

- facilitate a culture of awareness
- increase security posture

# ENGAGING CITIZENS

## THREE WAYS



# 1. USING SOCIAL MEDIA FOR SOCIAL CHANGE

- India has launched a dedicated social network to let citizens and businesses propose ideas to government.



## 2. HACKING FOR PUBLIC GOOD

Singapore's Ministry of Defence has used hackathons to involve citizens in tech procurement. The Ministry's business units worked directly with shortlisted teams on ways to use data analytics, for instance.



### **3. When citizens share skills with the government**

The city of São Paulo, Brazil, has launched the Agents of Open Government programme, which allows private citizens to share in-demand skills with the government.





# ENGAGING WITH STAKEHOLDERS at Indian Institute of Public Administration

**2005-onwards** : A sneak – peek !!!

## Women Centric Initiatives at IIPA



CRR-Citizen Centric Round (Nagrik Paramarsh Daur), October 5, 2009



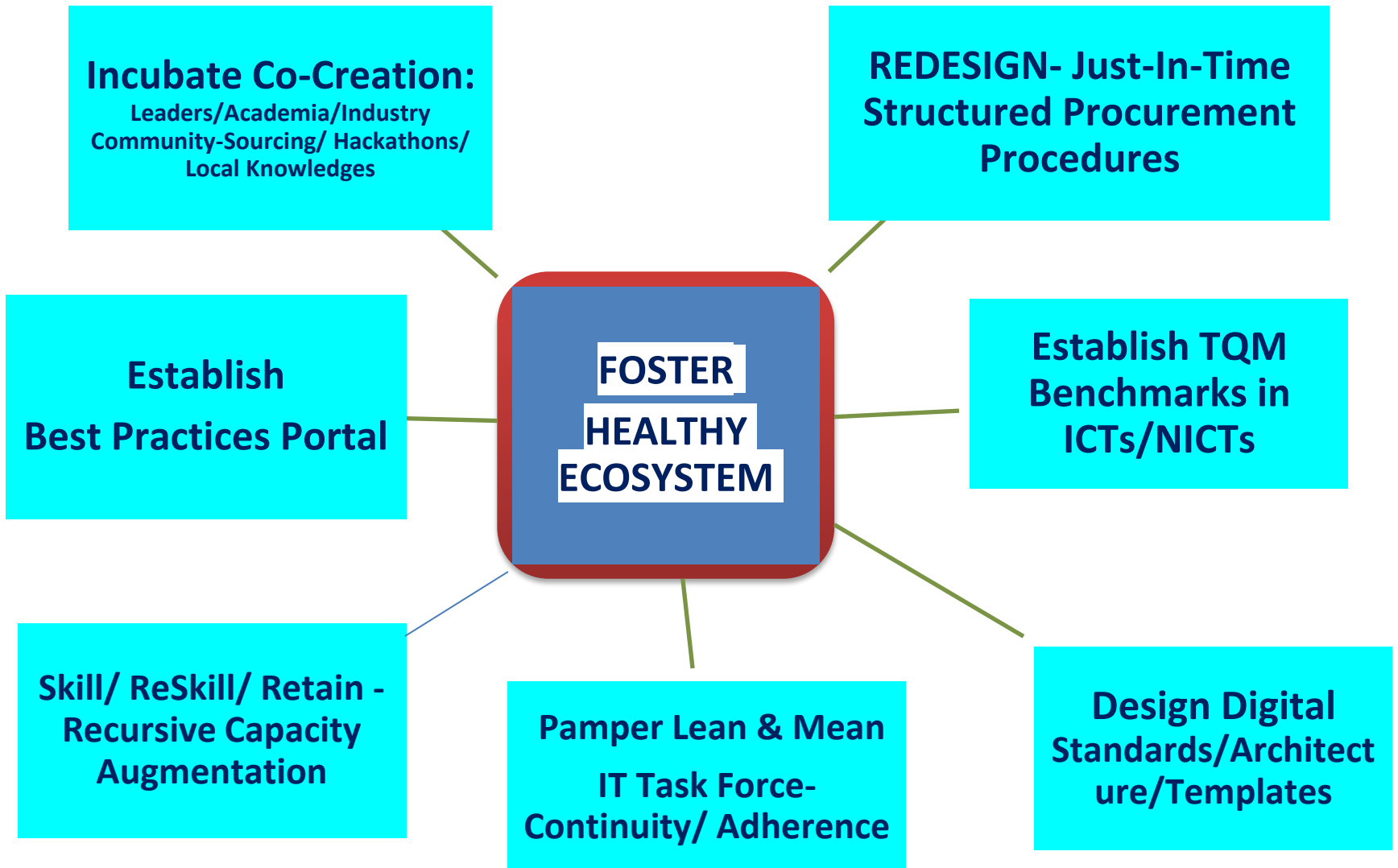
Officer Response Round-ORR, Dec 29, 2009



Rural Round Table e-Governance-RReG  
Sep (16-17), 2010

ICT4W, (Feb 9-10), 2015

# Policy Makers Need to...





**Intelligence  
Rational  
Scientific**



**Empathy ,  
Sympathy**



**PURPOSE, PEACE**

**SPIRITUAL  
QUOTIENT**

# The Last Thought- Ethics in Convergence of Technology

- Autonomous robots/weapons : **Killer Machines**
- Quest on for Military Dominance: Extreme dependence on AI
- Missiles/ drones/ robotic spies/ landmines: autonomous decision
- HOW TO decide WHO TO KILL?
- TARGET: enemy humans
- ETHICAL ALGORITHM NECESSITY

Ethical Approach: Strike a balance between 3 Q's

Intelligence  
Quotient (IQ)

Emotional  
Quotient (EQ)

Spiritual  
Quotient (SQ)

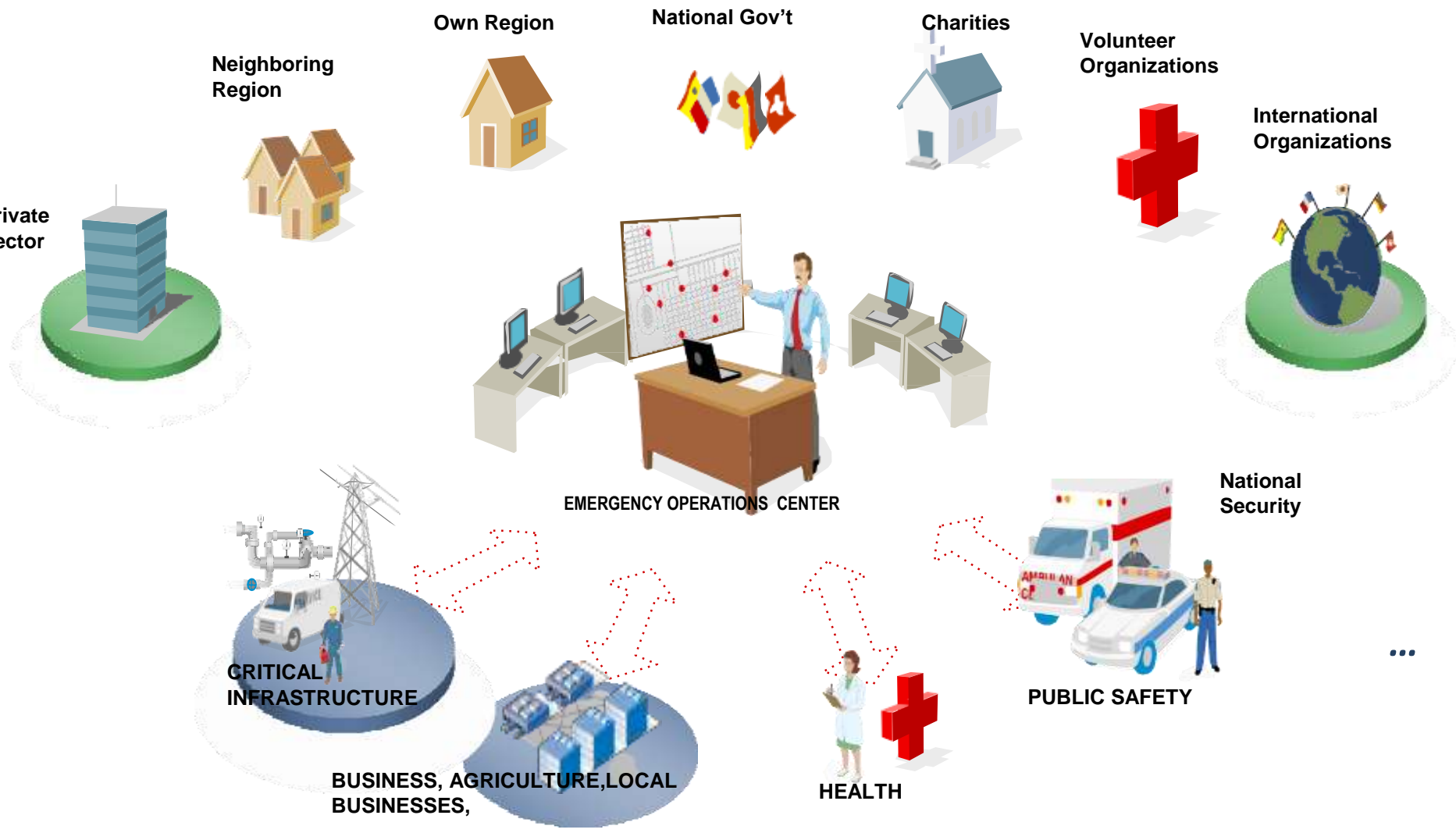
ENGAGE ALL to  
EXPLORE CREATIVITY using TECH

From  
“ **Securing the Nation** ”  
to  
“ **SAFETY FOR ALL ;  
SAFETY WITH ALL** ”

What emerges.....



# THE NEW NORMAL







# Questions? *Please*



***Our Future is already our Past!!!***



# ***Special Thanks***

## **Team IIPA**

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जय हिंद

*Jai Bharat*