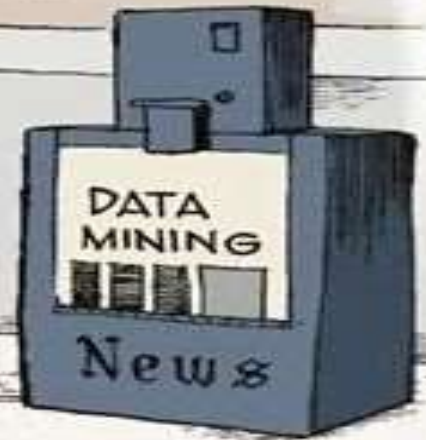


DATA SOVEREIGNTY AND DATA PROTECTION WITH GEOSPATIAL FOCUS

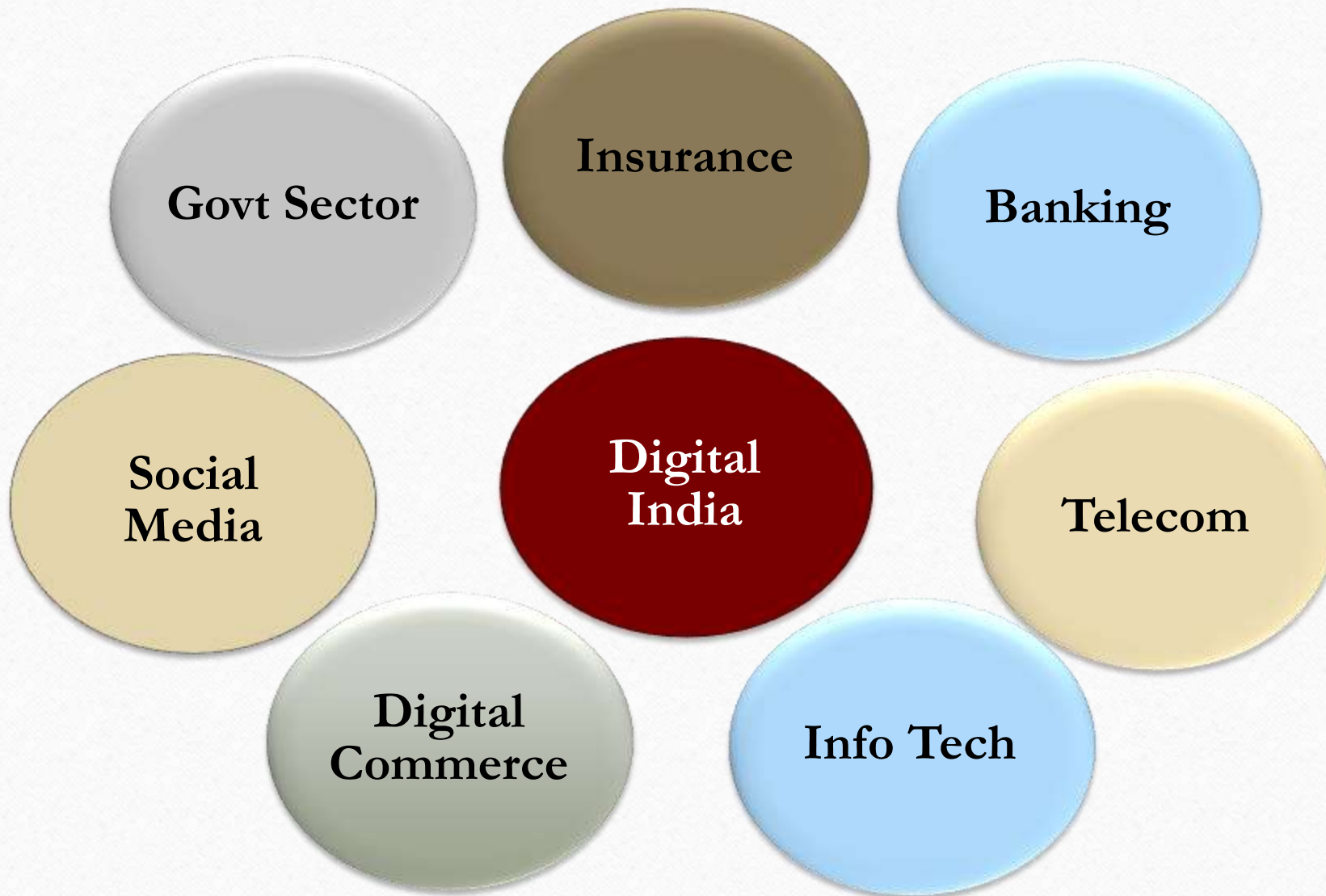
Maj Gen K Shankar, ADG T

GOOGLE GLASS,
A SMARTPHONE,
A SMARTWATCH...
I NOW HAVE
EVERYTHING.

...EXCEPT
PRIVACY.



BTW U-T San Diego
CREATORS.COM



DIGITAL DATA CONSUMPTION IN INDIA GROWING AT TWICE THE GLOBAL RATE.

INDIAN DATA CENTRE INFRA MKT – 2ND LARGEST IN ASIA-PACIFIC.

INFRA & REGULATORY MECHANISM – PROMOTE DATA LOCALISATION.

TERMINOLOGY

- Data Sovereignty
- Data Residency
- Data Protection
- Geospatial Data
- Geospatial Analytics
- Geospatial Info Systems (GIS)

DATA SOVERNIGNTY

- Right to privacy
- Security and Unity of country
- Political autonomy and non-interference
- Economic significance
- Service delivery
- Law enforcement

DATA PROTECTION

- Lawfulness, Fairness and Transparency
- Purpose Limitation
- Data Minimization
- Accuracy
- Storage Limitation
- Integrity and Confidentiality
- Accountability

INTERNATIONAL INITIATIVES

- USA - US Privacy Act, 1974, Gramm-Leach-Bliley Act, US Patriot Act 2001 provides US Govt access to all data stored on Servers of US firms
Uniting & Strengthening America by providing appropriate tools required to intercept & obstruct terrorism
- Russia - Federal Law No 242 FZ mandates Data Localisation
- China - Personal Information Protection Law (PIPL) 2021, Cyber Security Law 2017 mandates Data localisation
- Canada - PIPEDA (Personal Info Protection & Electronic Docu Act) stipulates storage on Canadian Servers
- EU - General Data Protection Regulations
 - GDPR 2018 – Considered Gold Standard in data protection regulations. -
 - Extra-territorial jurisdiction over data controller / processor whose subjects are EU citizens
 - Adequacy standards for storage in 14 other countries

INDIAN INITIATIVES

- RBI Directives
- Personal Data Protection Bill
- Osaka Track
- Digital India Program
- Information Technology Act, 2000
- Other Acts and Regulations
- New guidelines for acquiring and disseminating Geo Spatial Data - 2021

LINES OF EFFORT

- Define & identify Negative attributes
- Negative list for Positional Data
- Include Geo-spatial data in Data Protection Bill
- Self-reliance in PNT : NAVIC
- Legal framework
- Development of Data Localisation facilities
- Enforce Localisation of Geo-spatial Data

MILITARY APPLICATIONS OF GEOSPATIAL DATA

Typical

- Terrain Evaluation
- Positioning and Navigation
- Land Survey (Military Land)

Specific

- Optical Networks
 - Management of exhaustive fiber network
 - Siting of Critical Communication Nodes
 - Routing of Network Traffic
- Precision Targeting

MILITARY PERSPECTIVE

SENSITIVITY OF INFORMATION

- Spatial info of critical military installations, logistic nodes, HQs
- Prevent illegal collection, duplication & distribution

ACCESS TO USERS

- Stringent access control measures
- 2 factor authentication
- Access on need to know basis
- Maintenance of user logs

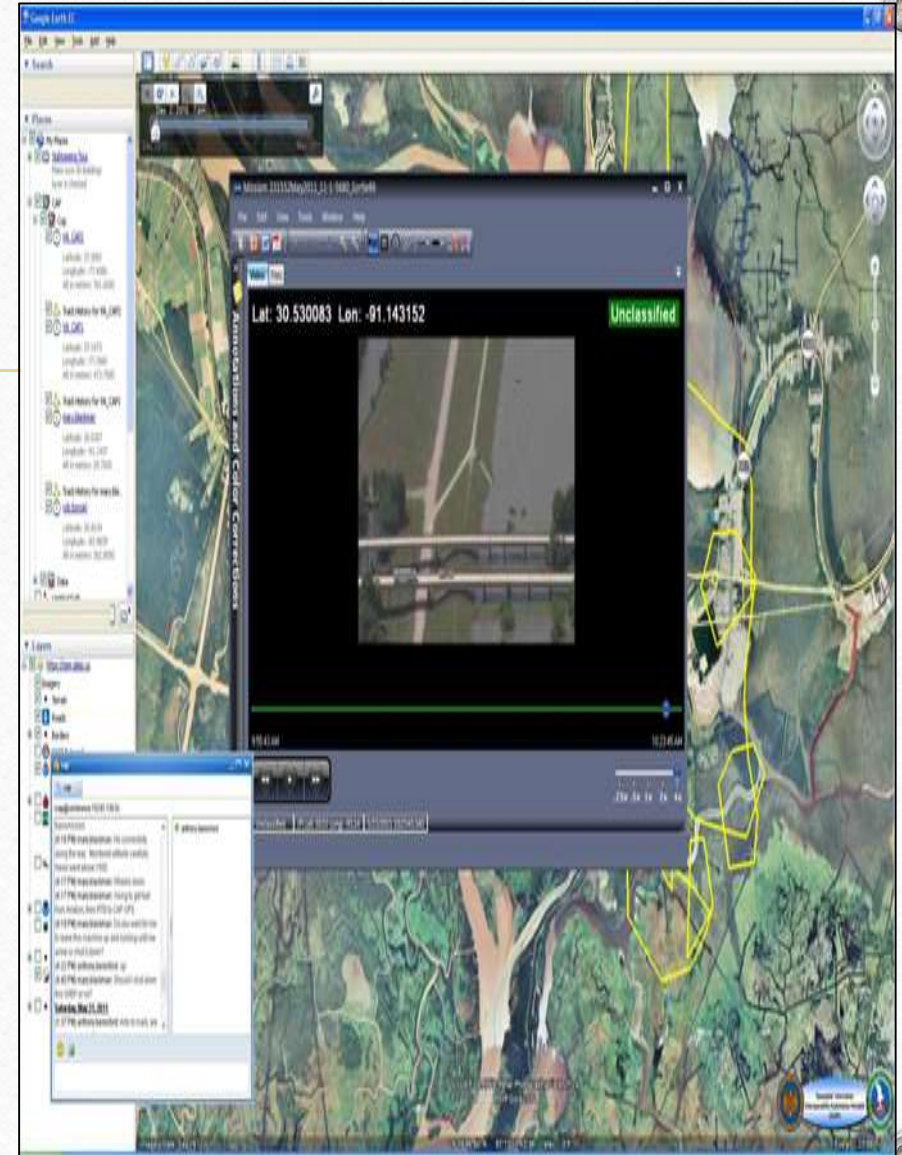
ENCRYPTED DISTRIBUTION/ DISSEMINATION

- End to end encryption
- Commercial or Military Grade
- Digital watermarking of data

EXPANDING CYBER DOMAIN

- Use of IW tools
- Cyber-espionage / DDOS attacks

HR - TRAINING TOWARDS SKILLING



THREATS

- ❑ SOCIAL ENGINEERING ATTACKS
 - By adversary's intelligence agencies
 - Phishing, Spams, Quid Pro Quo
- ❑ MALWARE ATTACKS
 - Spyware Installation
 - Sabotaging – Example: Stuxnet Attack
- ❑ STATE SPONSORED ATTACKS
 - Exploit trade secrets, technology
 - Attack critical infrastructure
 - Diminish defensive capabilities
- ❑ THIRD PARTIES
 - Vendors, Contractors, Partners
 - Critical Data Breach
 - Operational Disruption
 - Reputational Damage



REMEDIAL MEASURES

□ SECURE DATA AND APPLICATIONS

- Securing of all maps and attribute data
- Encryption in transit and rest
- Use of Captive cloud
- Powerful authorization and access controls
- Central and federated monitoring through NOCs and SOCs

□ CIVIL MILITARY USE OF GEOSPATIAL TOOLS

- Securing Internet and Mobile Data Communications
- Securing Cloud Computing and Internet of Things
- Securing Big Data and Big Data Analytics



CONCLUSION

- Increasing importance of data
- Need for data regulations
- Devising data protection regimes
- Implementation of Personal Data Protection Bill 2019
- Addressing tech gaps vis-à-vis digitization pace
- Integrating geospatial in cyber domain