



Big Data Analytics for Defence & National Security

Session I: Geospatial Enabling Combat, GeoSmart Asia, 2017

Wed., 23 August, 2017, 13:00-14:30 pm

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B.Tech. (ECE) - HBTI Kanpur 1988

M.Tech. (ECE) - UTU 2012

Ph.D. (ECE) - UPTU 2005

Govt. Certified Energy Auditor

Experience Break Up

Mahindra and Mahindra

UNICEF

Swatantra Bharat

Alpha Pharmaceuticals

Business & IT Consulting

Director SET - Noida Intt, Univ.

Director Academics - ABESEC

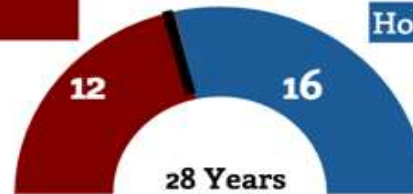
Director RKGITW

HoD ECE - Galgotias College

Sr. Faculty - JSS Noida

HoD ECE - NIEC Lucknow

Consulting



Academics



Ph.D. Scholars



Books Published



Conference/Camp
/Workshop
Fundings



International
Journals



International
Conferences



Distinguished
Academician &
Outstanding
Administrator
Award - AIC



Best Private
Engineering
College Award -
Brand Academy



Upcoming
Women
Engineering
College Award -
Brand Academy

Defence & National Security

- Defence from enemies and neighbors: difficulty due to mountains, 3200 km land border and vast sea.
- Insurgency in areas of North East, Central India, and Jammu & Kashmir
- National Security to persons and places of national Interest in particular and public at large.
- Terrorist actions are no longer circumscribed by defined boundaries



सत्यमेव जयते

POLICE

Possible Targets

- VIPs
- Official Functions and Meetings
- Security Forces Camps/HQs
- Ammunition and Petroleum Oil & Lubricant Dumps
- Convoys(Arms, Ammunition, VIP)
- Family Quarters
- Hospitals
- Schools
- Railway stations, Religious Places, Markets & Malls, anyplace which toll rate will be more



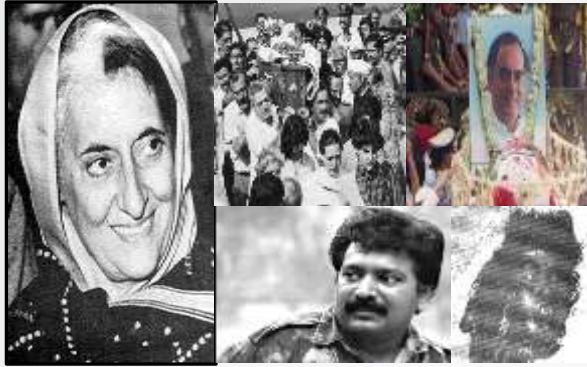
सत्यमेव जयते

POLICE

BOMBING



ASSASSINATION



HIJACKING / SKYJACKING



ARMED ATTACK



HOSTAGE SITUATIONS



SLEEPER CELLS



Beginning of Global War on Terrorism since Sept. 11, 2001,



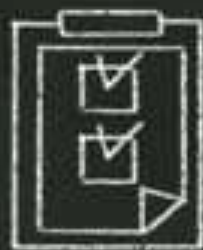
General Strategy

- Preparing a data Bank with photographs, descriptions and relevant important information about anti-national elements.
- Keeping strict vigil on printing /distribution of literature pamphlets, magazines and propaganda on electronic media to prevent anti-national designs of ISI.
- Preparing updated information system, incorporating the latest details about membership, foreign linkages, weapons, transport, bank accounts, lockers, passports, associates in the bureaucracy, e- mail accounts, mobile phone numbers, fax and other phone numbers, etc.
- Movement pattern Identification

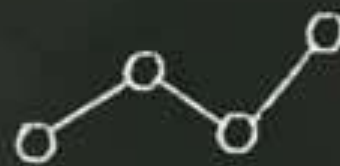
General Strategy

- Having constant interaction with chartered accountants, I.T. department, brokers of the stock exchange, property dealers etc. to keep a close watch on the financial activities of the key players.
- Keeping a close watch on the activities of the hardcore gangsters, public servants, politicians, support groups, by effective physical surveillance and telephone & mail interception.
- Identification of financial transactions that appear to launder funds. Havala and trans border financial activity, foreign funding put to a closer scrutiny.

Confidence

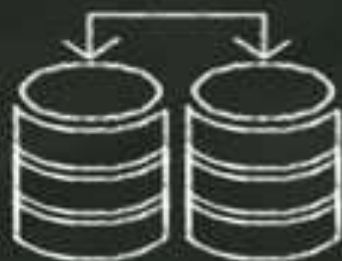


Electronics

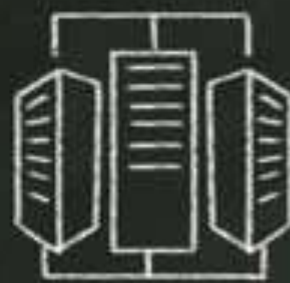


Analytics

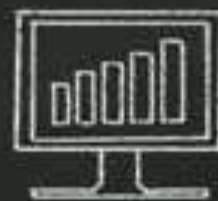
Data



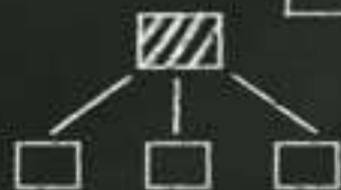
Storage



Innovation



Digital



BIG DATA

101010
101010

Information



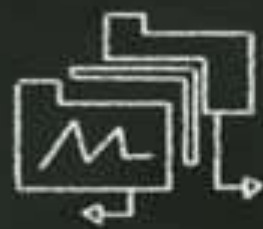
Business



Creative



System



Networking



Cloud



Development

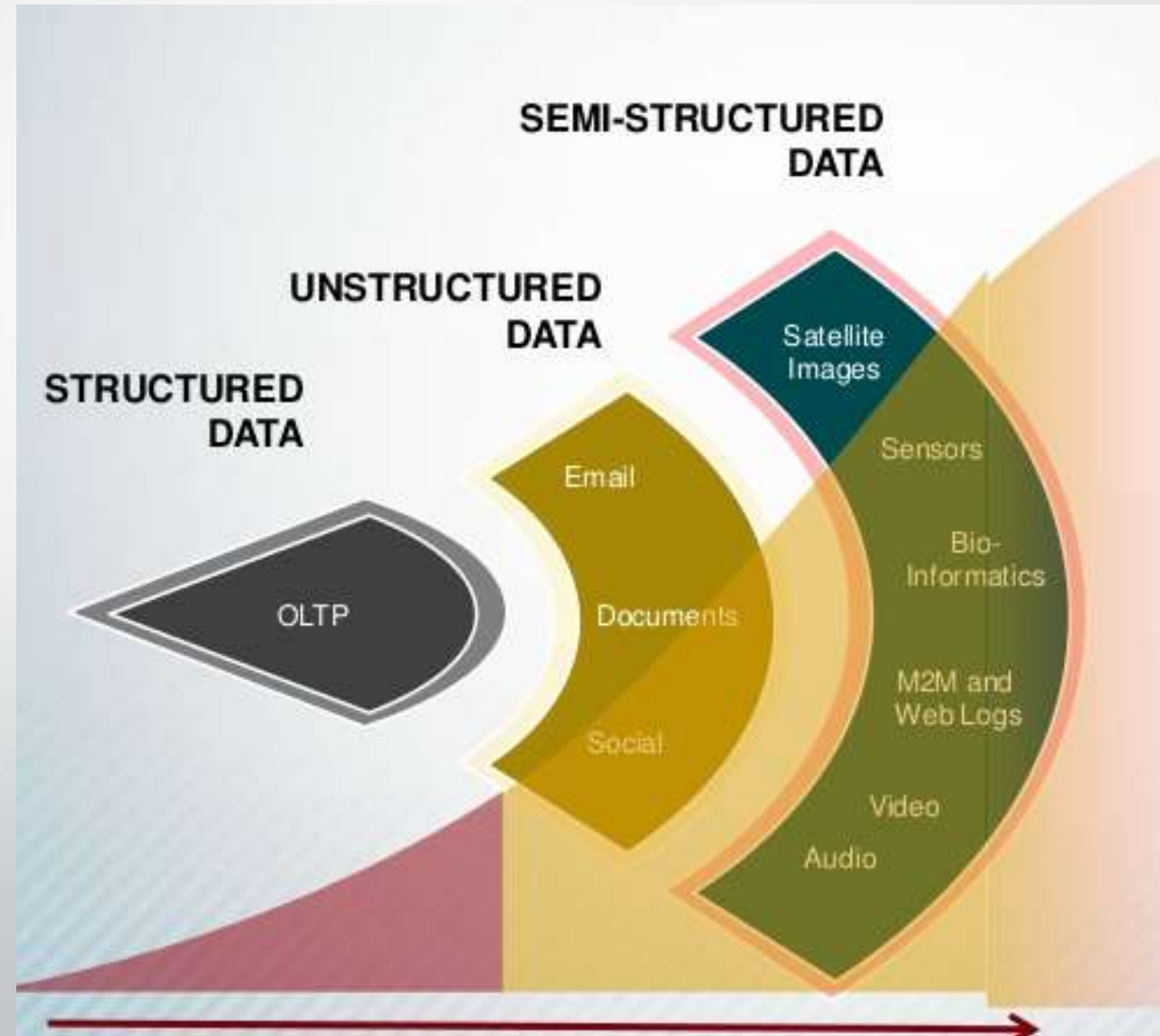


Social

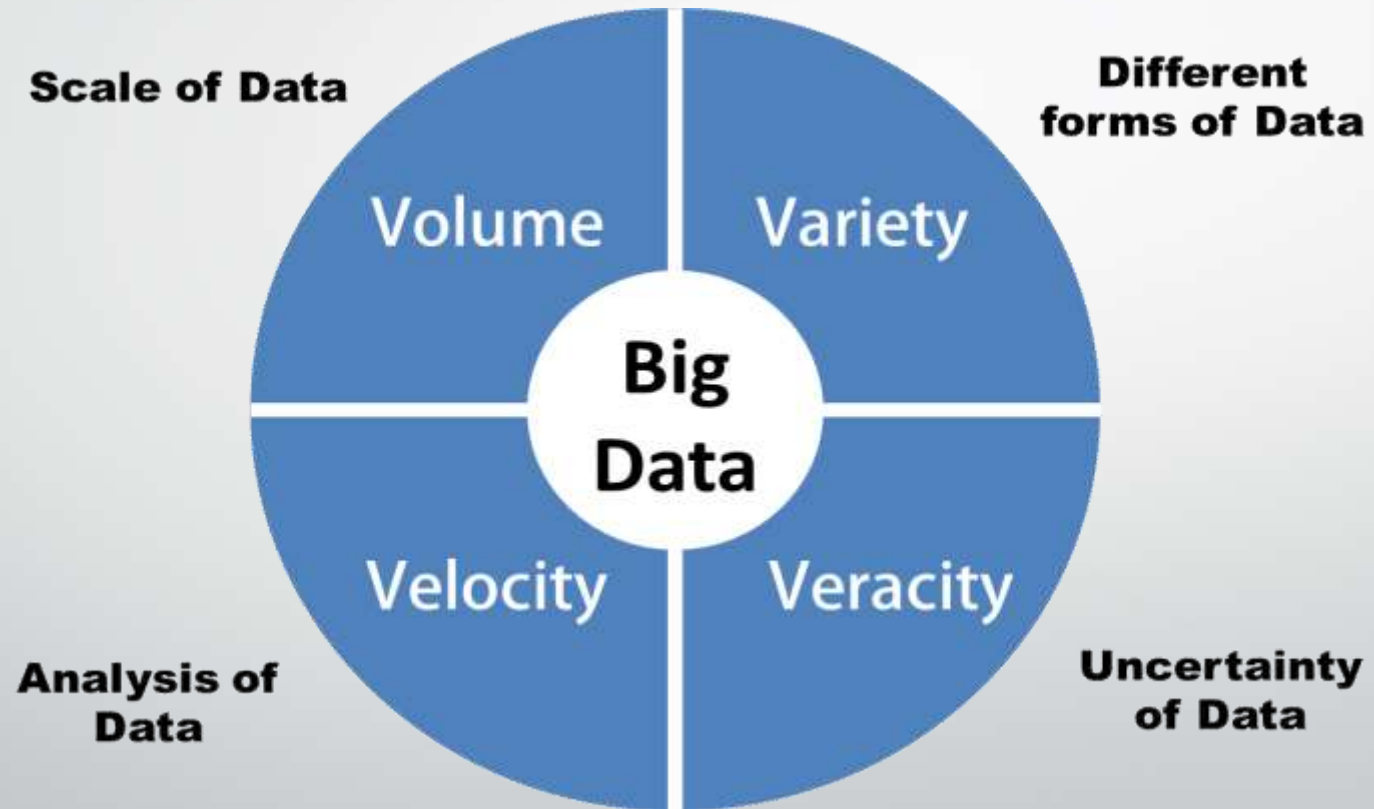


Big data is not just about size

- Context?
 - Context!
 - Context...
- (The Tone of it)



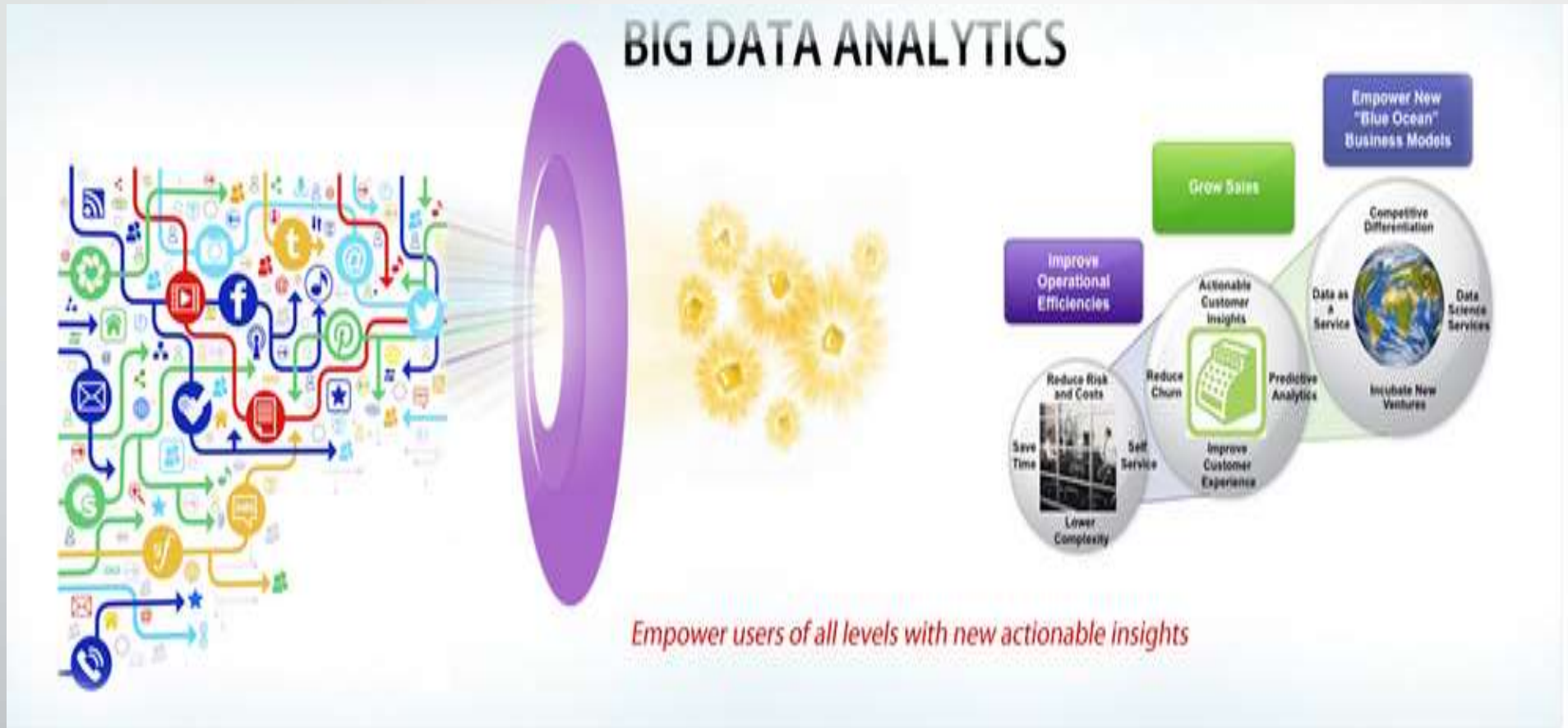
Four Vs of Big Data



BIG Data Analytics



WHAT NEEDS TO BE DONE

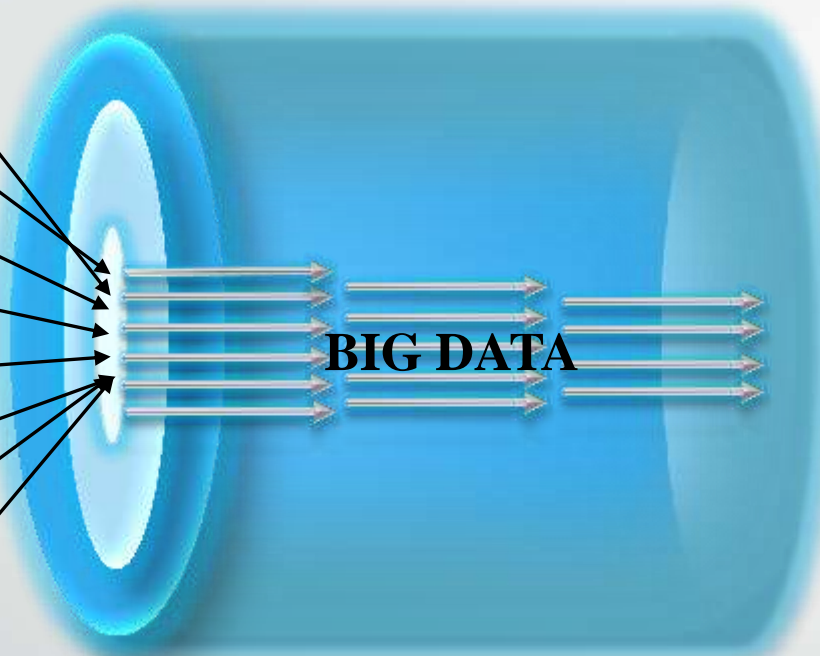


TECHNICAL INTELLIGENCE

Technology at the state level and experts to intercept terrorist e-mails, satellite phone calls and monitor banking channels

Habitual Stone Pelters in Kashmir

- Financial Details
- Speech
- Audio
- Pictures
- Number
- Emails
- Location
- Social Media



- Top separatists
 - Funds to mid-level Hurriyat leaders for stone pelting.
- Hurriyat Leaders
 - Pays to 48-habitual stone pelters.
- Habitual Stone-pelters
 - Pelts the stones because they are paid to do so.

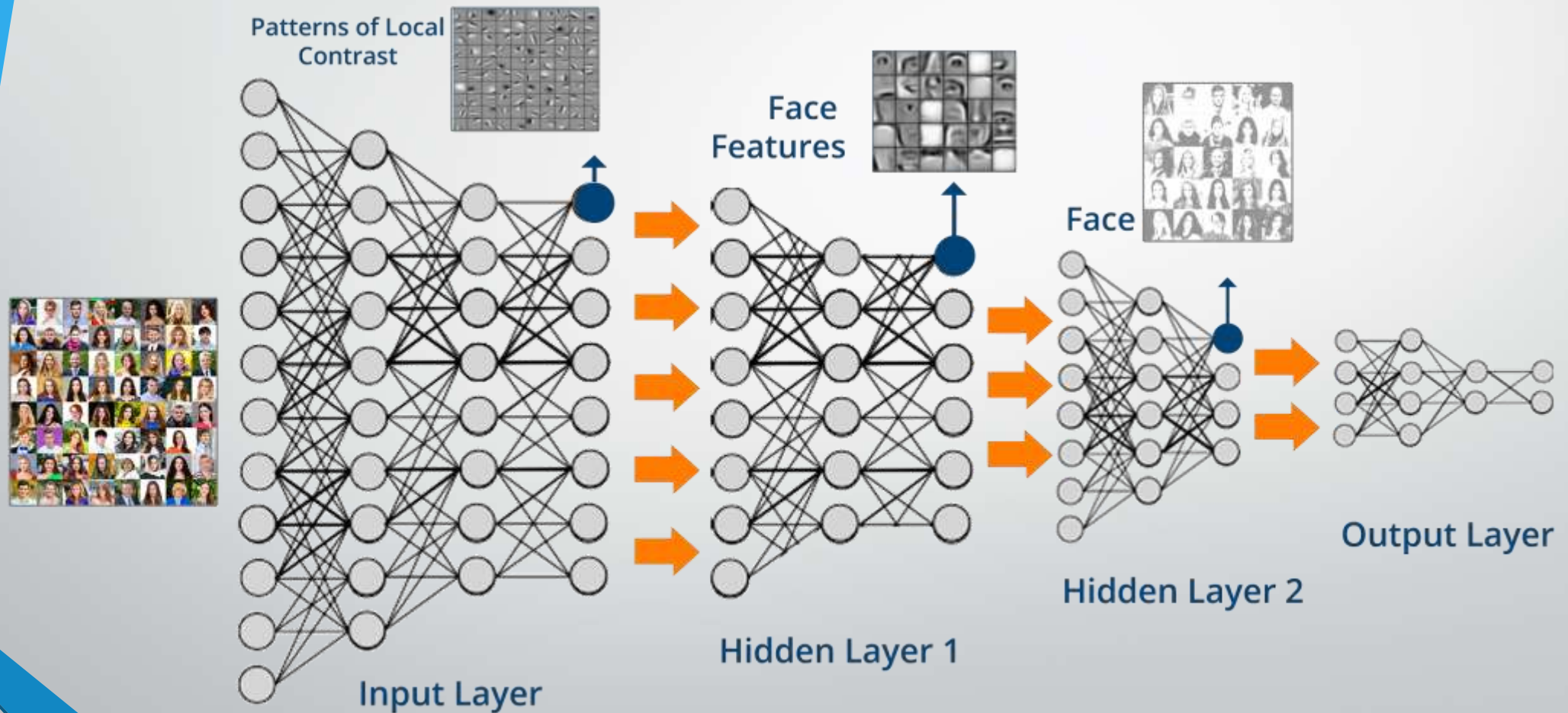
This is how Analytics Works

Challenges of Big Data Analytics

- Format variation of data
- Fast moving streaming data
- Highly distributed Input source
- High dimensionality of data
- Trustworthiness of data analytics
- Noisy or Poor quality of data
- Scalability of algorithm
- Feature extraction
- Imbalance input data
- Inadequate data storage
- Unsummarized & uncategorized data
- Data indexing & classification
- Fast information retrieval.



Deep Learning



Big Data for Defense and National Security

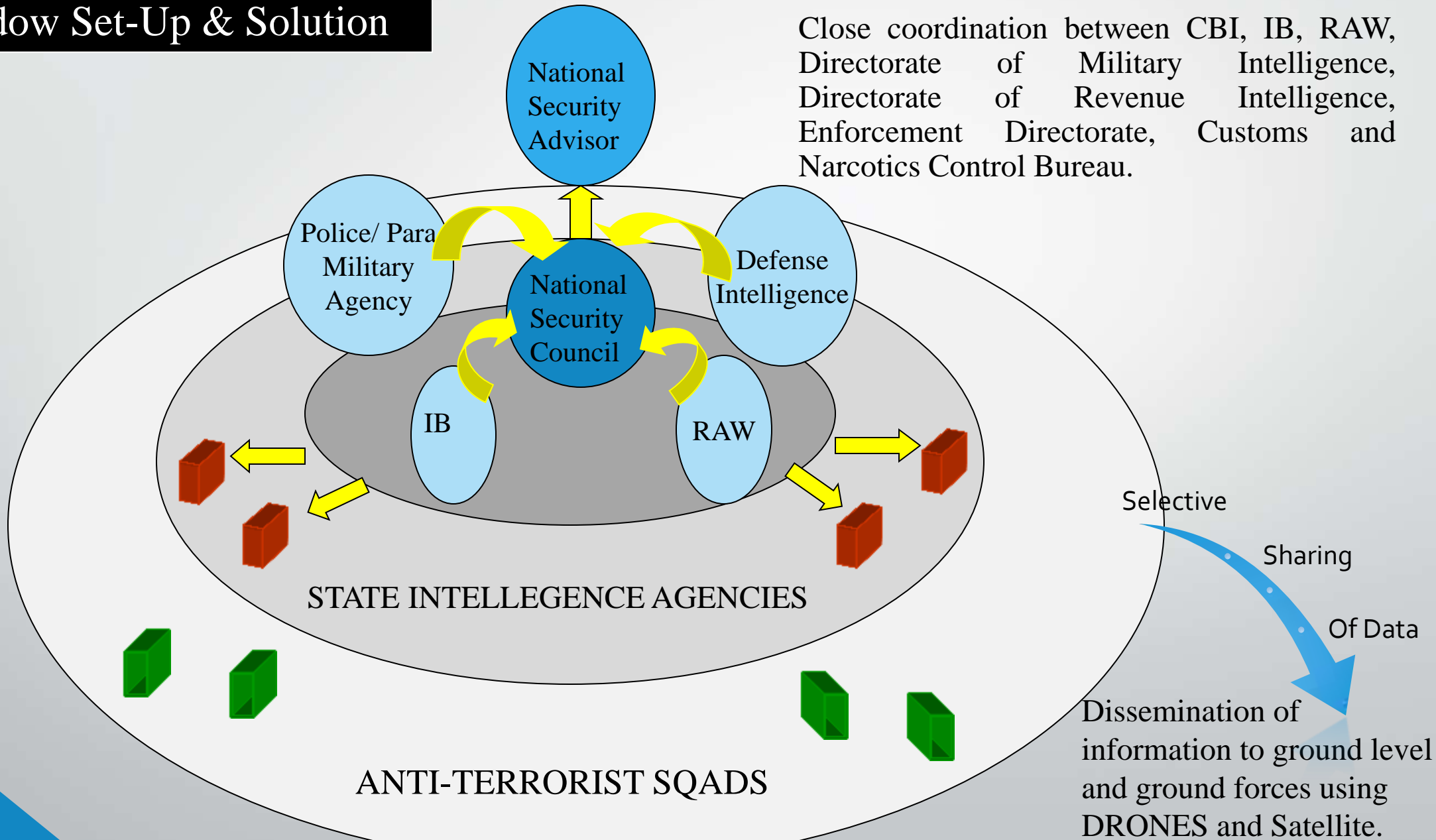
- Can we balance data collection for the purpose of national security with privacy concerns?
- What can be done to mitigate the risks of false positives?
- How do we translate the insights into operational relevance?
- What is the future of big data analytics relating to defense and national security?



सत्यमेव जयते

POLICE

Single Window Set-Up & Solution





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