Smart Policing and Role of Technology

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India: Some numbers

- India’s population will reach 160 crore in 2060
- 10-24 years: 35.6 crore, compared to 26.9 crore in China
- 65% population below 35 years
- India just crossed 100 crore mobile connections
- Indian economy growing at 7%+ annually
- 443,000 road accidents, with 147,423 deaths
  - 3% of GDP
Priorities of Policing – The FBI Example

1. Protect the United States from terrorist attack
2. Protect the United States against foreign intelligence operations and espionage
3. Protect the United States against cyber-based attacks and high-technology crimes
4. Combat public corruption at all levels
5. Protect civil rights
6. Combat transnational/national criminal organizations and enterprises
7. Combat major white-collar crime
8. Combat significant violent crime
9. Support federal, state, local and international partners
10. Upgrade technology to successfully perform the FBI’s mission
Priorities of Indian Policing

• Maintain public order
• Prevent, investigate and deter crime
• Protect women, children and the elderly from violence
• Combat terrorism
• Manage traffic
• Enforce social justice legislation
• Guard India’s borders
Prime Minister's Vision of Smart Policing

• Strict and Sensitive
• Modern and Mobile
• Alert and Accountable
• Reliable and Responsive
• Techno-savvy and Trained
Strict and Sensitive

• Rule of Law
  • Free registration: Multi Channel Receipts (CCTNS)
  • Speedy investigation: Reduce Paperwork (Pen computing/Apps/Custom forms)
  • Deter potential offenders: Use projection through personalised messaging
  • Tracking of convicts: Databases, workflow, interoperability

• Customised approach
  • Rehabilitation of victims: Work with NGOs, open to collaboration
  • Population segmentation: Crime Prevention messaging
  • Juvenile protection, handicapped population
Modern and Mobile

• Openness to learning
  • Use of LMS, customised planning, buffet of courses

• Incentives for knowledge sharing/Premium on expertise
  • Use of knowledge management platforms/mailing lists/Wikis

• Mobility through sensors: Will you ever have a Ferrari?
  • State of the art communications
  • Robust and resilient
  • ‘Reach scene of crime in a jiffy’
  • High state of fitness: diet and exercise/duty scheduling/work planning
Alert and Accountable

- Citizens as eyes and ears: Single number model
  - MP Police Project
- Internet of Things: Traffic management, CCTV, gunshot sensors
- Body cameras
Reliable and Responsive

• Quality initiatives
  • TQM
  • Six Sigma
  • Standards
  • External audits

• Responsive
  • Use of metrics
  • Feedback surveys
  • Mystery shopping
Techno-savvy and Trained

• Create techno-core: recruit appropriately
  • Make technology a way of life: look out for opportunities of identifying, understanding, testing and implementing new technologies

• Training Mantra
  • Define the training goals
  • Set up infrastructure
  • Outsource content creation
  • Measure effectiveness
Importance of learning

“The only sustainable competitive advantage is an organization's ability to learn faster than the competition.”

— Peter M. Senge
So, how do we ride the technology horse?

• Important to have a long-term vision, with clear priorities
• Technology, by itself, is not sufficient: People + Process + Technology is what counts
• Technology is expensive: Money needs to be spent wisely
• Start small -> Test quickly -> Scale successes
• Seek help from technologists: how can NCETIS help?
Internal Security Issues for Technology

• Urban Terrorism and LWE Problems
  • Several bomb blasts
  • Terrorists using state of the art technologies

• The Policing
  • Multidimensional involving intelligence and technology integration
  • Forensic investigation, evidence management and evidence authentication

• Internet and Social Media
  • Internet telephony and Voice over IP by perpetrators of crimes

• Public Safety Disaster Recovery and Emergency Response

• Cyber and Economic Crimes
Homeland Security Centers in US and UK

• Center of Excellence in Security and Cybercrime, Scotland, UK.

• Department of Homeland Security Centers of Excellence, USA.
  http://www.dhs.gov/files/programs/editorial_0498.shtm
Technology - a key enabler

• Use of technology improves intelligence gathering, crime detection and law enforcement

• Modern Technology enables in a significant way forensic investigation

• Technology for Homeland Security - an upcoming focus research field
National Center of Excellence in Technology for Internal Security
Scope of the Center

• National Center focusing on the needs of internal security
• Coordinate with other institutes and labs in the country
• Strong engagement with industry
• Target towards self sufficiency in the area of ESDM for strategic sector
Objectives of NCETIS

• To undertake research to address the technology innovation gaps for security
  • Short term, long term and medium term
• To transform the research outcomes into prototypes and facilitate technology transfer for product
development – engage with Indian industry for strategic needs
• To undertake research related to regulatory issues
• To undertake consulting and advisory services for security forces about technology choices
• To undertake training activities for technology appreciation
• To serve as a resource center for state police forces to help them with various challenges
• To act as nodal agency to provide technology assistance at all levels to central and state police
forces and other policing agencies
Focus Areas of the center

• Wireless Communications System
• Social Networking and Internet
• Video Surveillance and Analysis
• Ground Penetrative Radar (GPR) for Landmine Detection
• Unmanned Vehicles
• Cyber and Data Security
• Biometric Applications
• Sensors and Detectors for Explosives, Landmines, Chemical and Biological Warfare
• Thermal Imaging
• Product Design, Product Interaction Design and Prototyping
Global Trends in State of the art Communications

• Other nations transitioning to broadband wireless for public safety
  • State of the art system deployed in urban warfare (NATO operation in Afghanistan)

• US National Broadband Plan includes broadband public safety communication as one of the goals

• Several trials reported using 4G systems in emergency scenario
  • May 2011 US defense force demonstrated such system during raid on terrorists hidden in Pakistan
Technologies Developed at IIT Bombay

Explosive Detector
Technologies Developed at IIT Bombay

Night Vision : Long range surveillance