India Security Market Assessment

Prepared for:

A multinational defence and aerospace company

IMA India

21 October, 2009

# Security Issues: Definition & Description

Sources of Security Threats

India faces a diverse range of security threats that emerge from the following factors:

Hostile neighbours –India shares borders with 7 countries, most of which are unfriendly, and has to protect a coastline of 7516 kms surrounded by the Arabian Sea, Bay of Bengal and the Indian Ocean

Ethnic diversity – with over 800 official languages and 1,800 recognised dialects, India is culturally one of the most diverse countries in the world. The struggle for expressing individual identities leads cultures to conflict with each other – often through violent means

Religious fanaticism – Due to a combination of economic, political and cultural factors, religious extremism has become increasingly violent and widespread over the last two decades. Political expediency and inadequacy of the law enforcement agencies, have both contributed to the growth of this phenomenon.
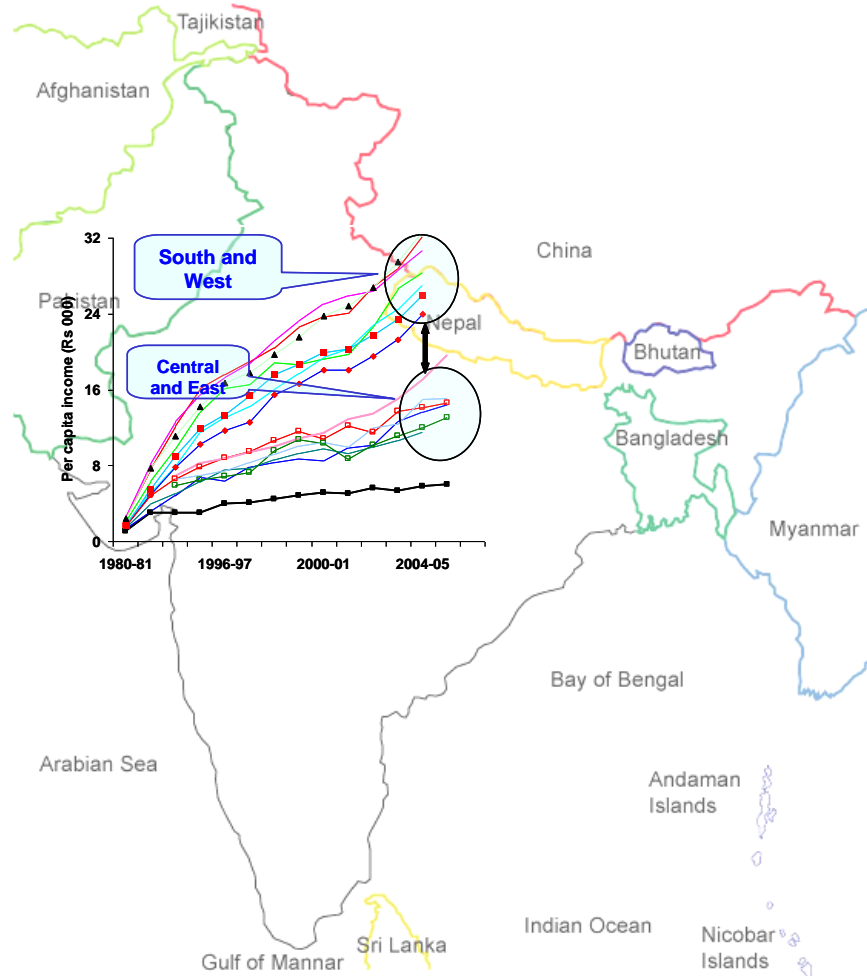
Historical background - The Republic of India was born through the partitioning of British-occupied India in 1947; since then, the country has had a number of armed conflicts some of the neighbouring countries, especially China and Pakistan

Economic disparity – the enormous and growing economic disparities across the country have given rise to political and social tension and unrest. This has led to the growth of left wing extremism, and is increasingly spawning violent uprisings across the country.
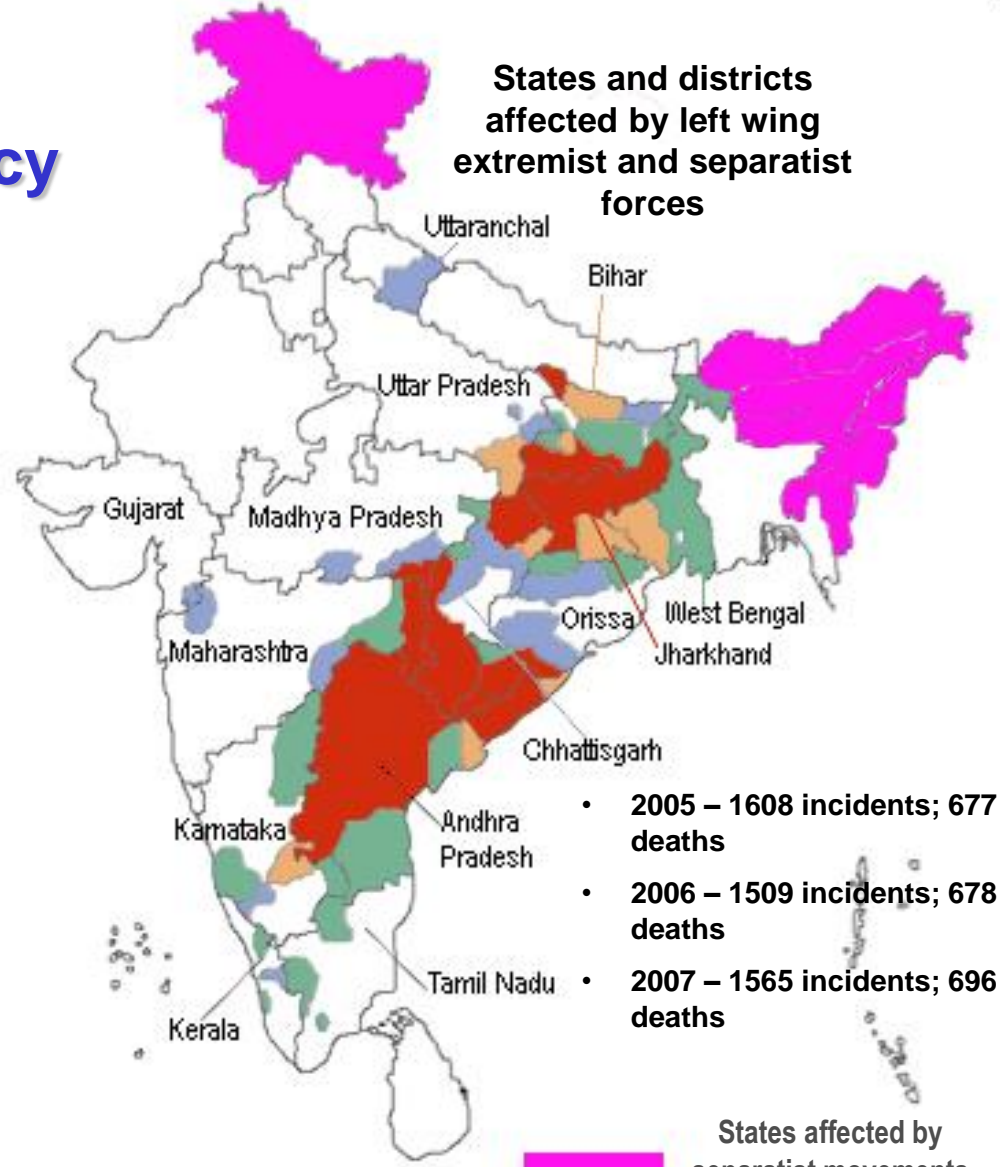
Security Threat 1: War

- India has had a number of armed conflicts with its neighbours. In the current geo-political background, there is heightened perception of a threat of war amongst policy-makers and the armed forces.

- Strategic thinkers in India view China as a serious threat due to
  - Its claims on Arunachal Pradesh and Sikkim;
  - Rapid escalation of its naval capabilities and suspected ties with disruptive forces, encircling India

- The threat from Pakistan has been a persistent factor in India's strategic policy making; the instability within Pakistan, as well as in Afghanistan, and its support to terrorist forces has only increased the threat perception

Instances of war in independent India's history

India-Pakistan War, 1947

India-Pakistan War, 1965

India-Pakistan War, 1999

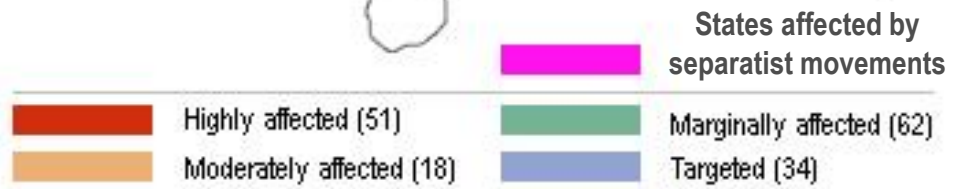India-China War, 1962

India-Pakistan War, 1971

Security Threat 2: Insurgency

- It would not be an exaggeration to say that the problem of Naxalism is the single biggest internal security challenge ever faced by our country.

  - Dr Manmohan Singh, Prime Minister, 2006

- Our response therefore will be police action to wrest control of territory that is now dominated by the naxalities, restoration of civil administration and undertaking developmental activities – in that order.

  (P Chidambaram, Minister of Home Affairs, at the Conference of Chief Ministers on Internal Security, 17 August, 2009)

States and districts affected by left wing extremist and separatist forces

Uttaranchal
Bihar
Uttar Pradesh
Gujarat
Madhya Pradesh
Maharashtra
Orissa
West Bengal
Jharkhand
Chhattisgarh
Karnataka
Andhra Pradesh
Tamil Nadu
Kerala

- **2005 – 1608 incidents; 677 deaths**
- **2006 – 1509 incidents; 678 deaths**
- **2007 – 1565 incidents; 696 deaths**

States affected by separatist movements

Highly affected (51)		Marginally affected (62)	
Moderately affected (18)		Targeted (34)	

Total affected districts - 170   **States - 15**   Source: CNN-IBN; IMA research

Allocated Responsibilities

Armed Forces (Army, Navy, Air Force; Coast Guard); BSF, SSB, ITBP, RR, NSG; RAW; IB; NTRO
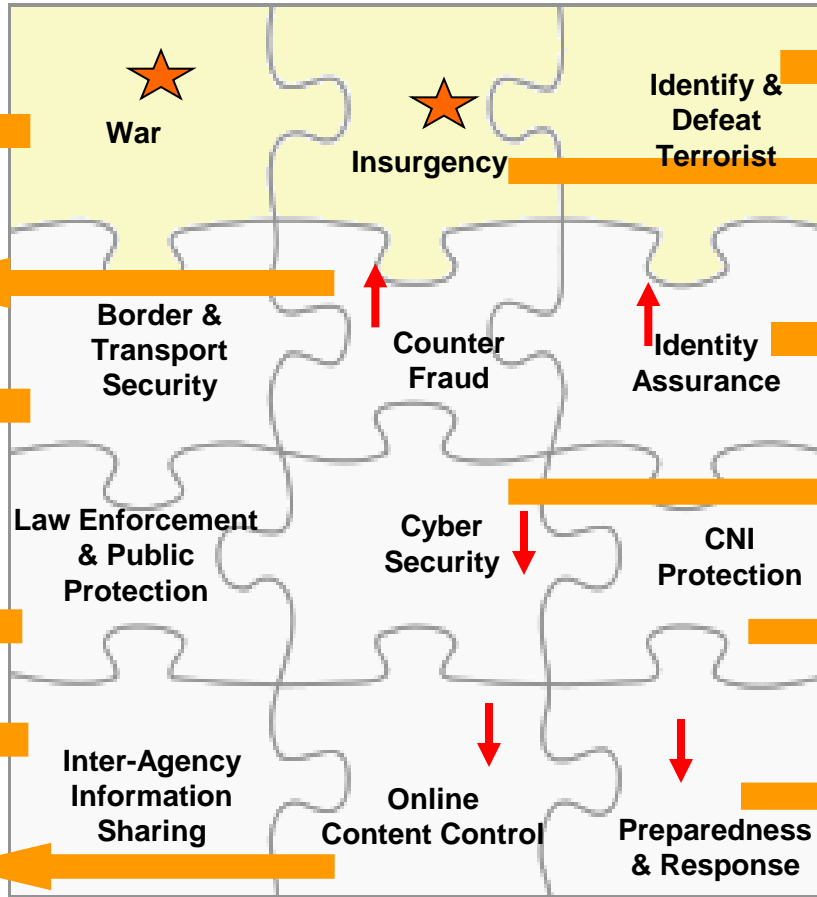
Armed Forces (Army, Navy, CBI; Customs; CEI; D-IT; DRI; CEIB; Dir. Of Enforcement; FIU; TERM; Bureau of Narcotics Control

IB; RAW; NTRO; Armed Forces; SSB; BSF; AR; ITBP; NCB; Customs; Immigration; DRI; Police Forces; Civil Aviation Security

Police forces, CRPF, CBI; NCB; DRI; CEIB; ED; FIU; CISF

NIA; DIA; JIC; NSA; IDH; MAC/SMAC

CERT, Police forces; Ministry of Information & Broadcasting; HRD

War

Insurgency

Identify & Defeat Terrorist

Border & Transport Security

Counter Fraud

Identity Assurance

Law Enforcement & Public Protection

Cyber Security

CNI Protection

Inter-Agency Information Sharing

Online Content Control

Preparedness & Response

RAW; DMI; IB; RR; Naval Intel; Air Intel; Coast Guard; CRPF; Police forces; NSG; Telecom; NTRO; NIA

IB; RAW; NTRO; DMI; RR; CRPF, Special Forces; Police forces; NSG; Telecom

UID; EC (voter's ID); MEA (Passport), MHA (ration card), MOST (vehicle license); MoF (PAN card)
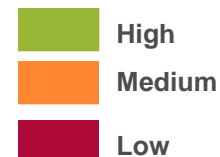
Department of Information Technology (CERT); IB; RAW; NTRO; State Police (Cyber crime cells); TERM

Ministry of Home Affairs (CISF), Police forces; CERT; TERM

Ministry of Home Affairs (Disaster Management Authority); Police Forces; NSG; Ministry of Health; Ministry of Environment; Ministry of Water Resources; etc

Each issue is dealt with by multiple agencies with minimal coordination and ample duplication – the messages and propositions have to be tailored to the agency
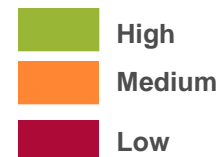
Assessment of key concerns

Legend:
- High (green)
- Medium (orange)
- Low (dark red)

PRIMARY MISSIONS		SCALE OF MARKET	CLARITY OF DEMAND	RELEVANCE	GROWTH POTENTIAL	SUMMARY OF RATIONALE
PRIMARY MISSIONS	**War**	High	High	High	High	The perceived threat of war is high among Government as well as defence forces & intelligence agencies. There has been a steady growth in investment to augment the capabilities of the armed forces and related intelligence gathering & processing.
PRIMARY MISSIONS	**Identify & Defeat Terrorists**	High	High	High	High	With a surge in terrorist attacks and activities, there is growing realisation among the Government and other stakeholders to establish an integrated security framework to deal with this. The recent establishment of a federal agency and the thrust towards inter-agency coordination are indicative of this trend.
PRIMARY MISSIONS	**Insurgency**	High	Medium	Medium	High	Insurgency issues such as that of left wing extremism, political separatism, have been proclaimed by the PM to be India's biggest security threat. The new Home Minister is trying to augment the country's capabilities to deal with this threat, after decades of negligence. The immediate focus is on basic capability relating to manpower, weapons and hardware.
Sub Mission areas	**Counter-Fraud**	Medium	High	High	High	Economic enforcement agencies have already achieved a certain level of technological sophistication in terms of information processing and are aware of immediate and future needs.
Sub Mission areas	**Law Enforcement & Public Protection**	Low	Low	Medium	Medium	The Central Government, in recent years, has been the driving force in modernising the huge police force, largely controlled by states. Recent developments point towards more state initiatives.
Sub Mission areas	**Border Security**	Medium	Medium	Medium	High	The problems of militancy in the border states, infiltration, illegal immigration and high levels of smuggling has led to increased levels of investment in border surveillance – both through paramilitary forces and civil authorities.

Note: Colour coding is based on relative score within the Indian context. For 'growth potential', the colour is green if the estimated 5 year CAGR in spending is >50%; orange if the CAGR is 30-50% and red if the CAGR is below 30%.

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Assessment of key concerns

Legend:
- 🟩 **High**
- 🟧 **Medium**
- 🟥 **Low**

Sub Mission areas

	SCALE OF MARKET	CLARITY OF DEMAND	RELEVANCE	GROWTH POTENTIAL	SUMMARY OF RATIONALE
Cyber security	Medium	High	High	High	Cyber security & online content has emerged as a security and law & order issue very recently. While capabilities of the defence and intelligence agencies are high; the capabilities of enforcement agencies remain will need to be scaled up significantly to address the threat comprehensively
Online Content Control	Low	Medium	High	High	
Preparedness & Response	High	Low	Medium	High	The institutional framework of agencies responsible for disaster-preparedness and planning is in place, but is seriously under-resourced and ineffective in most instances. The exceptions are the intelligence agencies.
Identity Assurance	Low	Medium	High	High	India has a number of ID schemes being implemented by various agencies to serve different purposes. Although these are likely to continue, and more may well be added, the Government has recently initiated a programme to assign a unique identification number to each citizen in the country.
Critical Infrastructure Protection	Medium	Low	Medium	High	Protection of critical infrastructure is becoming an increasing concern against the backdrop of rising insurgency and terrorism. However, current level of capability is well below desired standards.
Inter-Agency Information Sharing	Low	Low	High	Medium	Repeated terror attacks and a recent armed conflict has led the government to create institutional frameworks for sharing intelligence/information. These initiatives are at a nascent stage but could potentially imply an attractive market.

Security Market Assessment

The Architecture of Security Establishments

The overall architecture of the security establishment in India is a matrix of innumerable organisations (both central and state-level), established at various points of time during the past 62 years, often working to fulfill common objectives, but usually without coordination. The problem of multiplicity aggravates as usually the Government's first response to an incident is to set up a new organisation to face the problem from a new perspective.

Function	Organisations
Intelligence	Intelligence Bureau, Research and Analysis Wing, National Technical Research Organisation, Directorate of Military Intelligence, Naval Intelligence, Air Force Intelligence, Central Economic Intelligence Bureau, Directorate of Revenue Intelligence, Financial Intelligence Unit, State Intelligence Departments, Multi-agency Centre (MAC), State-level MACs
Homeland Security	Army, Navy, Air Force, Indian Coast Guard, Paramilitary Forces (Border Security Force, Indo Tibetan Border Police, Rashtriya Rifles, Assam Rifles, Sashastra Seema Bal, Central Industrial Security Force, National Security Guards)
Law Enforcement	Central Police Force (Central Reserve Police Force, Provincial Armed Constabulary) State Police Departments, Railway Protection Force, Central Bureau of Investigation, National Investigation Agency, Directorate of Income Tax, Directorate of Enforcement, Narcotics Control Bureau, Central Bureau of Narcotics, Customs Department
Civil Government	Bureau of Immigration, 'Telecom Enforcement, Resources and Monitoring', Computer Emergency Response Team, Unique Identification Authority, Consular Passport & Visa Division
Inter-agency Coordination	National Security Council, Integrated Defence Headquarters, Defence Intelligence Agency, Joint Intelligence Council

Security Market Size and Growth

Introduction to market sizing analysis

- The market size in India has been estimated on the lines of the suggested mission and sub mission areas, based on the budgetary allocations of the relevant customer agencies which are responsible for the specified areas. Given that multiple agencies have involvement in multiple mission areas, IMA has 'allocated' their budgets across each mission area under defined assumptions. This approach is necessary in the Indian security context, given that most agencies develop their own capabilities, usually in isolation from other agencies, even if they have common objectives.

- An analysis of the budgetary allocation and spending of the security-related agencies also shows that there is no clear trend in agency-specific budgets, i.e., budgets do not show a linear or uniform increase over the years. Moreover, budget heads do not always clearly reflect the purpose of allocation. To that extent, IMA India's market size estimates entail assumptions made on the basis of data analysis and interview inputs. Hence, they should be treated as indicative, generally erring on the side of the conservative.

- The security market is also characterised by a high degree of secrecy. Although projects/programmes are occasionally announced publicly, the implementation mechanism and level of engagement with vendors remains ad-hoc and generally secret. Therefore, an attempt at estimating the market size by service lines (i.e. managed services versus project services versus products and systems) is practically impossible.

- In order to arrive at 2013-14 forecasts, IMA India used as its basis, the historical CAGR of security spending at an individual agency/programme level. In some cases, the CAGR was modified based on IMA's assessment of sustainability and likely future spending.

Opportunity assessment and current position

	LAW ENFORCEMENT	BORDER & TRANSPORT SECURITY	COUNTER FRAUD
DESCRIPTION	Protecting citizenry; preventing riots, organised crime – economic, civil, etc Focus: Basic capability (manpower, weapons, etc); selectively, intelligence capability (key states and economic agencies); eliminate corruption	Preventing infiltration; smuggling; trade in contraband items; illegal migration Focus: High tech surveillance; proactive action capability through intelligence	Detection of tax evasion, corruption, money laundering, commercial fraud Focus: Intelligence-led solutions; risk based action
CLIENTS	State Police, Coastal Police, Central Police Forces, Economic Enforcement Agencies	Customs, Border/Immigration Authorities, Army, Navy, Coast Guard, Paramilitary Forces, Coastal Police, Intelligence Agencies	Central Bureau of Investigation; Revenue Intelligence; Financial Intelligence Unit; Customs; Excise

MARKET SIZE

INDIA — GBP million

	MKT	+5YRS	CAGR		MKT		CAGR		MKT		CAGR
SW	346.45	1157.98	27%		134.48	663.70	38%		69.16	294.15	34%
HW	407.84	2111.82	39%		339.21	1909.49	41%		79.92	485.15	43%

National — GBP million

	MKT	+5YRS	CAGR		MKT	+5YRS	CAGR		MKT	+5YRS	CAGR
SW	8.16	51.14	44%		113.70	366.25	26%		69.16	294.15	34%
HW	9.77	72.17	49%		262.89	705.20	22%		79.92	485.15	43%

State — GBP million

	MKT	+5YRS	CAGR		MKT	+5YRS	CAGR		MKT	+5YRS	CAGR
SW	338.29	1106.84	27%		20.78	297.45	70%		0.00	0	0
HW	398.06	2039.65	39%		76.32	1204.29	74%		0.00	0.00	0%

CURRENT POSITION

HEAVY INVESTMENTS
Major effort towards basic police modernisation (heavy investments); for select state police forces and economic agencies, priority is to move up the intel ladder

FOCUS ON SURVEILLANCE
Fortify physical protection (fencing, etc); improve electronic surveillance and intelligence gathering capabilities; risk based screening for cargo

SCALING UP TECH CAPABILITIES
Most economic/financial agencies have fairly advanced IT systems; however, they are aiming to augment their capabilities further

OPPORTUNITY & STRATEGY

Immediate opportunities in economic agencies and 'Induction of Latest Technology' programme of Delhi Police; Modernisation of Police Force programme of states a secondary opportunity. Will need direct approaches with extensive education and persuasion efforts.

Surveillance capabilities for the armed and paramilitary forces; sophisticated intelligence processing solutions for immigration and customs authorities. Will need a combination of top-down and direct approaches.

New agencies (such as the FIU) and traditional agencies (such as Income Tax Dept) are in mission mode to scale up their capabilities. Will need direct approach and tailored solutions.

Note: SW – software; HW - hardware

Key concerns market analysis

WAR

MARKET

RAW
Intelligence Bureau
Directorate of Military Intelligence (Army)
Rashtriya Rifles
Directorate of Naval Intelligence
Directorate of Air Intelligence
Indian Coast Guard
Sashastra Seema Bal
Border Security Force
Assam Rifles
Indo Tibetan Border Police
National Security Guards
Telecom Enforcement, Resources & Monitoring
National Technical Research Organisation

Software

MARKET 2008	MARKET 2013
£56.3m	£207.2m
	GROWTH (CAGR)
	30%

Hardware

MARKET 2008	MARKET 2013
£179.3m	£509.5m
	GROWTH (CAGR)
	23%

INSURGENCY

MARKET

Intelligence Bureau
CRPF
Delhi Police; Special Police; Coastal Police
State & District Police Departments
RAW
Directorate of Military Intelligence (Army)
Rashtriya Rifles
Indian Coast Guard
Border Security Force
Assam Rifles
Indo Tibetan Border Police
National Security Guards
Telecom Enforcement, Resources & Monitoring
National Technical Research Organisation

MARKET 2008	MARKET 2013
£85.7m	£540.6m
	GROWTH (CAGR)
	45%

MARKET 2008	MARKET 2013
£210.1m	£1611.1m
	GROWTH (CAGR)
	50%

IDENTIFY & DEFEAT TERRORISTS

MARKET

National Investigation Agency
Directorate of Naval Intelligence
Directorate of Air Intelligence
Intelligence Bureau
CRPF
Delhi Police; Special Police; Coastal Police
State & District Police Departments
RAW
Directorate of Military Intelligence (Army)
Rashtriya Rifles
Indian Coast Guard
National Security Guards
Telecom Enforcement, Resources & Monitoring
National Technical Research Organisation

MARKET 2008	MARKET 2013
£82.8m	£534.7m
	GROWTH (CAGR)
	45%

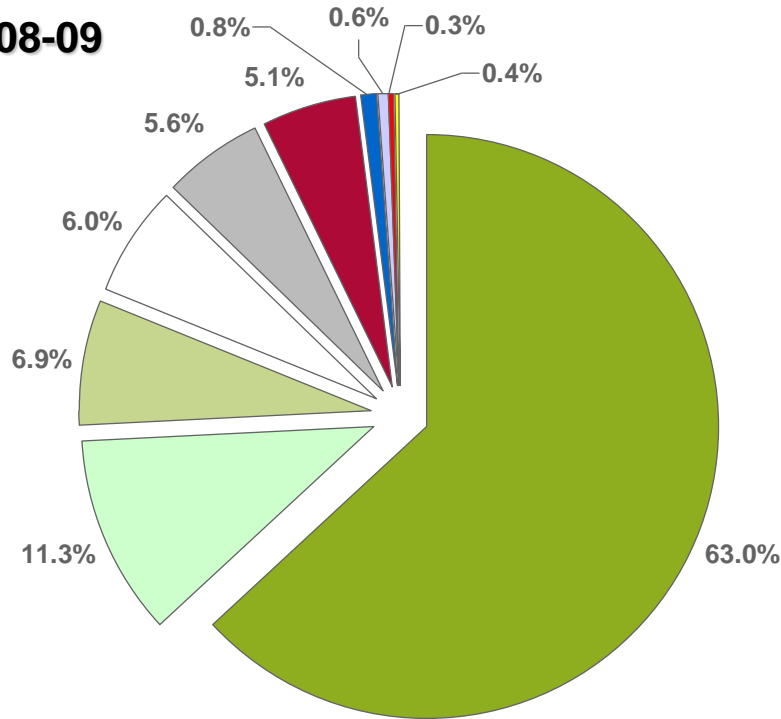| MARKET 2008	MARKET 2013
£263m	£1736.7m
	GROWTH (CAGR)
	46%

Key concerns market analysis

LAW ENFORCEMENT

MARKET

Coastal Police
State & District Police Departments
Narcotics Control Bureau
CRPF
Delhi Police; Special Police
Central Industrial Security Force
Bureau of Police Research & Development
Directorate of Revenue Intelligence
Central Bureau of Investigation
Central Economic Intelligence Bureau
Directorate of Enforcement
Financial Intelligence Unit

Software

MARKET 2008	MARKET 2013
£346.5m	£1158m
	GROWTH (CAGR)
	27%

Hardware

MARKET 2008	MARKET 2013
£407.8m	£2111.8m
	GROWTH (CAGR)
	39%

CYBER SECURITY

MARKET

Telecom Enforcement, Resources & Monitoring
Intelligence Bureau
RAW
Indian Computer Emergency Response Team
State & District Police Departments
Delhi Police
Special Police
Central Bureau of Investigation

MARKET 2008	MARKET 2013
£52.1m	£403m
	GROWTH (CAGR)
	51%

MARKET 2008	MARKET 2013
£116.8m	£1367.6m
	GROWTH (CAGR)
	64%

ONLINE CONTENT CONTROL

MARKET

Telecom Enforcement, Resources & Monitoring
Indian Computer Emergency Response Team
State & District Police Departments
Delhi Police

MARKET 2008	MARKET 2013
£19.7m	£320.3m
	GROWTH (CAGR)
	75%

MARKET 2008	MARKET 2013
£76.2m	£1249.4m
	GROWTH (CAGR)
	75%

Security Market: Ministry-wise (XX)

2008-09

Total: GBP 999.04 mn

- 0.8%
- 0.6%
- 0.3%
- 5.1%
- 0.4%
- 5.6%
- 6.0%
- 6.9%
- 11.3%
- 63.0%

2013-14

Total: GBP 5193.85 mn

- 2.0%
- 0.5%
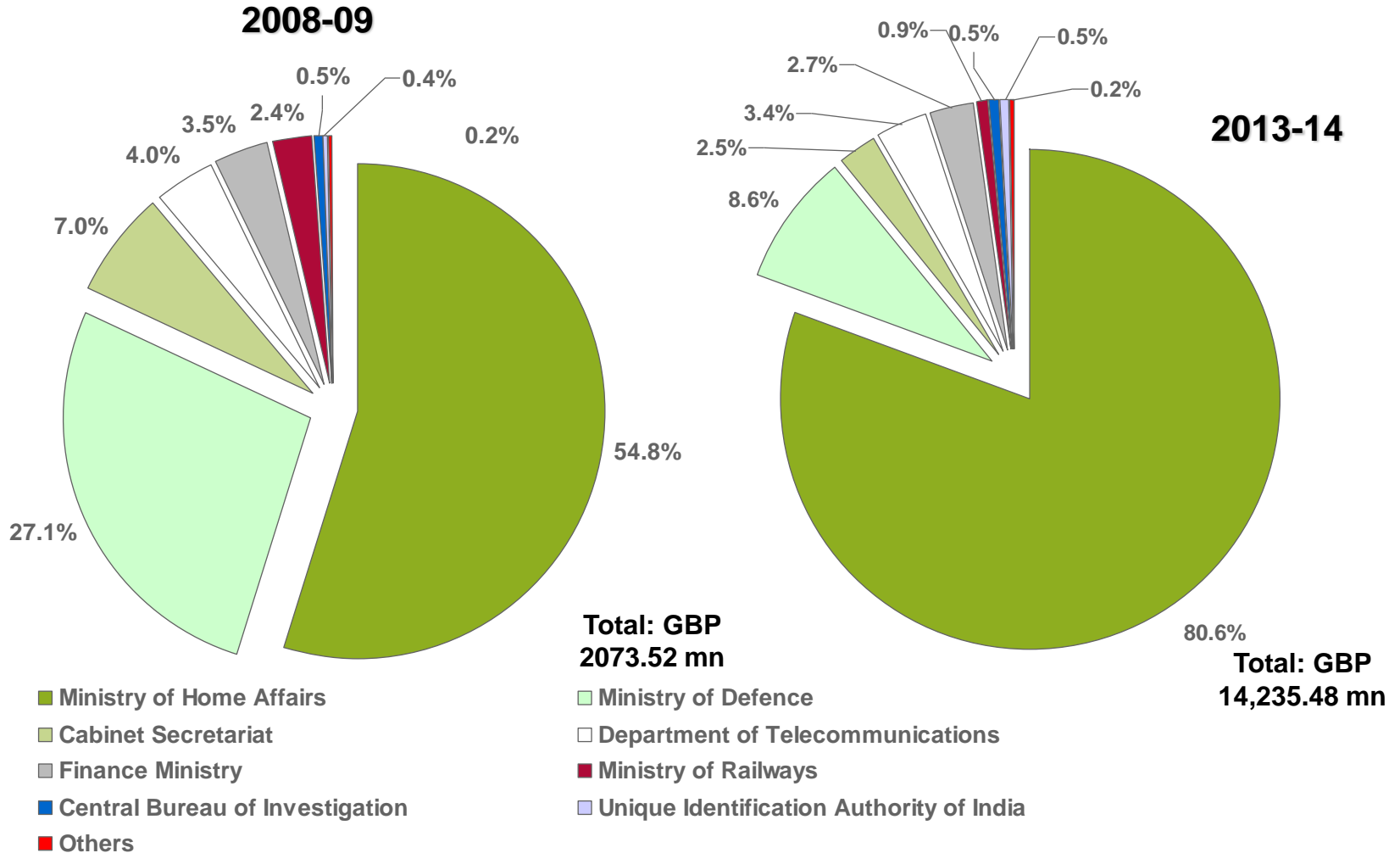- 0.9%
- 0.5%
- 8.3%
- 0.1%
- 4.4%
- 2.8%
- 5.4%
- 75.2%
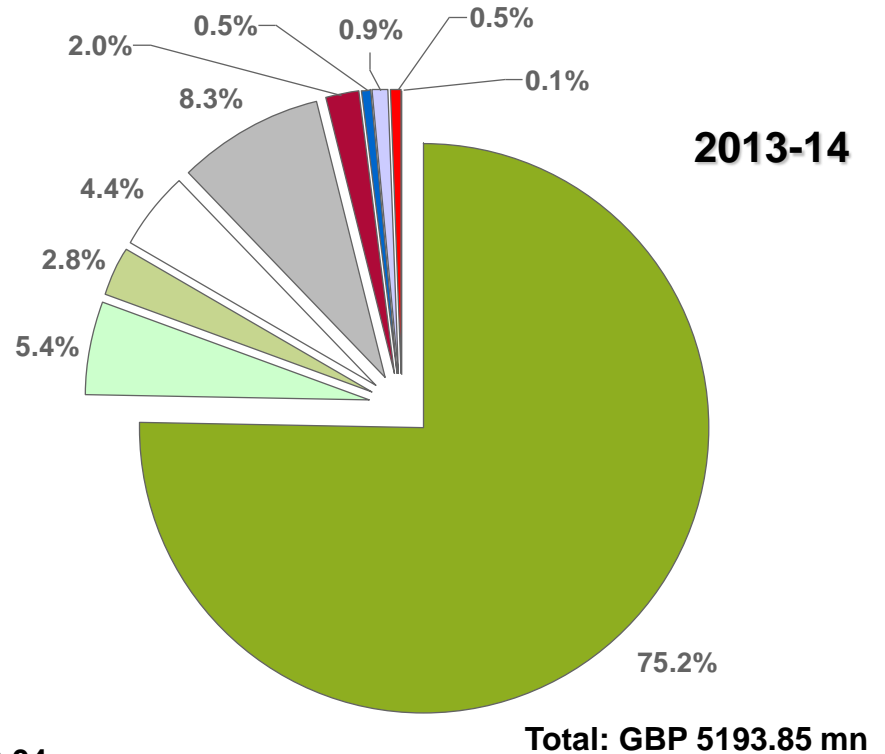
Legend:
- Ministry of Home Affairs
- Cabinet Secretariat
- Ministry of Defence
- Finance Ministry
- Department of Telecommunications
- Ministry of Railways
- Central Bureau of Investigation
- Unique Identification Authority of India
- Department of IT
- Others

Key Programmes & Agencies

- **Annual Information Return**
- **National Economic Intelligence Network**
- **Secure Information Exchange Network**
- **Suspicious Activity Reports**

Finance Ministry

Integrated Security Scheme covering 195 sensitive railway stations in the country

Ministry of Railways

No specific programme

Central Bureau of Investigation

Others

Unique Identification Authority of India

Being implemented by the UID Authority, under Planning Commission

Department of IT

- Resource Centre for Cyber Forensics
- Indian Computer Emergency Response Team
- Strategic Electronics Technology Development

- Networking of Central Foreigners Bureau (CFB) with Immigration Check Posts and Foreigners Regional Registration Offices
- integrated e-Governance model for Immigration, Visa and Foreigners Registration and Tracking
- Advance Passenger Information System (APIS)
- Multi-purpose National Identity Card
- National Population Register and Issue of Identity Card in Coastal Areas
- Multi-Agency Centre (MAC)
- National Intelligence Grid
- Fencing and high tech surveillance programmes along international borders and coasts
- Modernisation of Police; Induction of latest technologies in Delhi Police
- Police research

Centralised Monitoring System

Department of Telecommunications

Research & Analysis Wing, NTRO
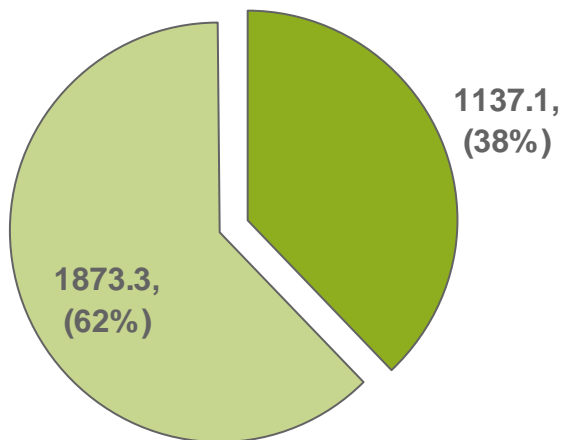
Cabinet Secretariat

Ministry of Defence

Ministry of Home Affairs

No information is available on specific security-related programmes in the Ministry. However, the Ministry has set up a Defence Information Technology Consultative Committee with the mandate to provide an IT roadmap. Organisations such as NASSCOM and CII are involved in deliberations of the committee.
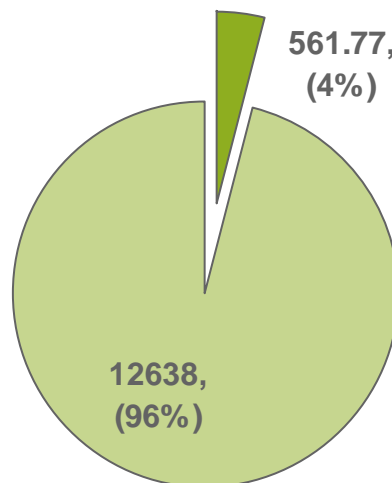
Other key divisions in the armed forces include Directorate of Information Warfare and Information Technology (which formulates guidelines for information warfare and monitors their implementation by the army), and Directorate of Signals (which operates IT infrastructure for the army, and is responsible for transferring signals from troops to headquarters, and operational plans from headquarters to the troops; ensures cyber security for defence forces).
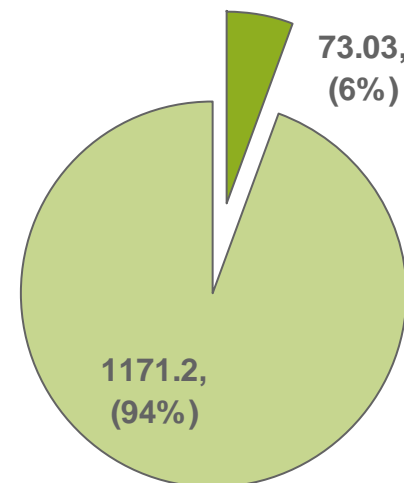
State-level Initiatives

| State	Key Initiatives
Karnataka	• The Karnataka Police has recently set up a 750-member Anti-Terrorism Squad (ATS) headed by an Additional Director General of Police, assisted by three Inspectors General of Police, in charge of intelligence and analysis, operations and coastal security. This new squad provides a platform for integration of anti-Naxal force, coastal security force and an existing ATS, each of which has been working separately under various wings (Intelligence, State Reserve Police, etc). The new ATS also has a strong technical team with responsibilities such as ethical hacking, phone log analysis and data banking. • A joint Special Task Force (STF) has been mooted for anti-naxal operations across all naxalite-affected states • Approximately GBP 8.7 mn has been provided to the state for modernisation of police
Jharkhand	• Has constituted a Special Task Force (STF) to counter the operations of left-wing extremists (Naxals). The STF is trained in jungle warfare and is equipped with special equipment such as GPS navigators, advanced communication and imaging devices, bomb detection and disposal squads and sniffer dogs to detect the weapon of choice of Naxals, i.e. landmines.[1] • Has set up a Cyber Crime Cell under the state CID, known as the Cyber Forensic Wing (CFW) with an initial expense of GBP 62,5000. The cell deals with online cyber forensic analysis, forensic imaging, online hacking-related offences, illegal intrusion, collection of volatile data, monitoring of network traffic and identification of viruses that attack software.[2] • Approximately GBP 8.73 mn has been provided to the state for modernisation of police

State-level Initiatives

State	Key Initiatives
Andhra Pradesh	• Approximately GBP 10.5 million has recently been allotted to the state for modernisation of its police force. • One of the first few states to set up a Cyber Crimes Police Station and computerise police stations in the state – a programme popularly known as 'E-cops'. • The "Greyhounds" unit of the state police was set up to combat left-wing extremism and other grave law and order situations in the state.
Tamil Nadu	• The state's Special Task Force Jungle School has moved to incorporate the latest techniques in combating terrorism, insurgency and poaching as part of its training programme • The State Police has a separate Coastal Security Group with an allocation of GBP 0.6 million
Assam	• The state has approved the formation of a Special Task Force to conduct specific operations against insurgents in Assam
Rajasthan	• Enhanced communication measures – Simputer-type GPS-enabled beat book. • Greater use of scientific aids and technology – facilitation of on-site matching of finger prints, along with other electronic augmentation of support: laptops, mobile phones, digitalised crime and geographic maps and online updating of investigations20 • The state police's Special Branch is entrusted with internal and border intelligence, counter intelligence and coordination with the IB, other intelligence agencies, defence services and paramilitary forces.

Priority States

- States have been assessed at two levels:
  - on the basis of their 'need' for security solutions, as measured by incidents of naxalist, terrorist and cyber crime attacks
  - on the basis of their 'capability' to spend and efficiently use money for security, as measured by their state GDP per capita, police budget and E-governance readiness score
- States that ran high on both parameters are 'high priority' states and coloured in green
- States that rank high on one or the other parameter are 'medium priority' states and coloured in orange
- The others are coloured in red

Map not to scale

High priority states
Medium priority states
Low priority states
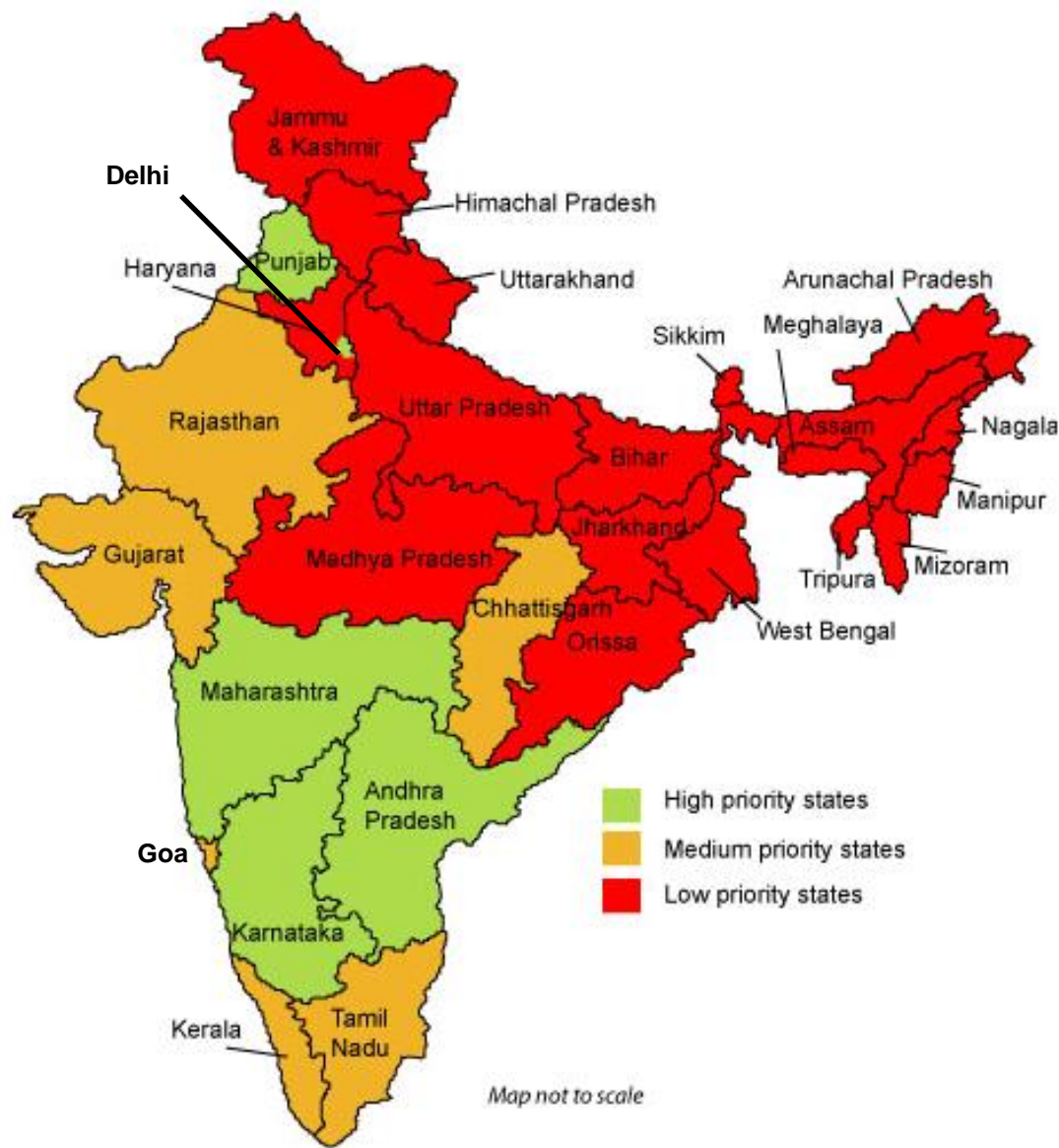
Summary Information on Key Agencies

Intelligence Bureau

Reports to: Home Minister, National Security Advisor

Key Functions: Responsible for gathering intelligence within India with specific focus on linkages and cells of Pakistan-based terrorist groups such as the Lashkar-e-Taiba (LeT); Bangladesh- based groups like the Harkat-ul-Jihadi al Islami (HUJI); indigenous groups such as the outlawed Students Islamic Movement of India (SIMI) and the Indian Mujahideen; insurgent groups in the northeastern states and Left-Wing Extremists (LWEs or Naxalites/Maoists). Handling immigration operations is another key function. Also involved in political espionage for the ruling party of the day

Key Official: Rajib Mathur, Director, IB

Technology Intensity: Among the most technologically sophisticated in the Indian context.

Key Programmes: The Multi Agency Centre (MAC) intended to improve coordination and intelligence sharing across various agencies is operated by the Intelligence Bureau. Subsidiary MACs are being set up at all state capitals.

Observations: Faces an acute shortage of field operatives, estimates range from a low of 2,000 to a high of 3,000, a paltry figure for a country of India's magnitude in terms of geographical area, complexity and multiplicity of agencies at the central and state levels, and the diverse nature of threats to security. The focus is now shifting from HUMINT (human intelligence) to TECHINT (technical intelligence) to provide "actionable intelligence", something that the agency has been found to be wanting on each time a terror strike has taken place over the past few years

Research and Analysis Wing

Reports to: Cabinet Secretariat, Prime Minster's Office, National Security Advisor

Key Functions: Collection, production, analysis and assessment of external intelligence, in political, military, economic, scientific and technological fields; conducting special operations abroad, including psychological warfare; act as nodal agency for counter intelligence operations outside India; member of the Nuclear Command Authority in India; technical surveillance and aerial surveillance of installations in neighbouring countries through the Aviation Research Centre (ARC)

Key Official: KC Verma, Secretary (R), Director

Technology Intensity: High degree of technological sophistication. Technical intelligence has emerged as the main source of information gathering, as opposed to dependence on human intelligence. The organisation is not accountable to any public authority (Parliament, Comptroller and Auditor General), and its budget is not made public. Therefore, there is no constraint on the amount of spending. The telecom division and the Aviation Research Centre are two major centres of spend.

Key Programmes: Programmes are kept secret and information available in the public domain is not credible.

Observations: One of the most secretive organs of the Government; acquisition is usually through selective bidding routed through internal channels, where manufacturers are contacted directly. The most effective method of approach would be through the intelligence coordinating agencies.

National Technical Research Organisation

Reports to: National Security Advisor, Cabinet Secretariat

Key Functions: Key functions include remote data gathering and processing, providing cyber security, developing cryptographic systems, strategic hardware and software, and strategic monitoring. Works with economic intelligence agencies to provide them technical support. However, according to experts, the intelligence processing capability of NTRO remains underdeveloped, primarily due to turf war with IB and RAW. As a result, the organisation is said to be providing satellite imagery to the Government, which receives airborne intelligence from RAW.

Key Official: K.V.S.S. Prasad Rao, Director

Technology Intensity: Envisioned as the repository of the country's technical intelligence, NTRO operates through sophisticated technologies for intelligence gathering. As in the case of RAW, the budget and spending of the organisation is kept secret.

Key Programmes: NTRO has set up the National Institute of Cryptology Research and Development (NIRCD) to design and develop encryption products for national security applications; the organisation also has a Disaster Recovery Centre that functions as a information repository exchange. NTRO is reported to be developing an information sharing platform for intelligence agencies, in collaboration with the Indian Institute of Technology (Chennai); the programme is still at the initial stages, as it requires consent from various levels of administration before becoming fully operational. Centre for Cyber Applications and Research is yet another important department in the organisation.

Observations: Although its core operations remain out of public view, NTRO works in collaboration with academic institutions such as Indian Institute of Technology (Chennai), Anna University, Pondicherry University, National Institute of Technology, Madurai Kamaraj University, etc.

Defence Intelligence Agencies

Reports to: Directorate General of Military Intelligence (Army), Naval Intelligence and Air Intelligence report to their respective headquarters

Key Functions: DMI - counter-insurgency operations; policing the army, rooting out corruption and misuse of facilities and equipment by army personnel; NI - Maintains a range of airborne, surface and submarine electronic intelligence systems; intercept signals; intercepts are routed through the Director of Naval Operations/Director of Naval Signals; AI - Imagery intelligence collection (through MiG-25R and Jaguar reconnaissance aircraft)

Key Official: General Deepak Kapoor (Chief of Army Staff), Admiral Nirmal Verma (Chief of Naval Staff), Air Chief Marshal PV Naik (Chief of Air Staff)

Technology Intensity: Although the armed forces have fairly advanced technological capability in the Indian context, the amount of money spent on the intelligence divisions is not explicitly stated.

Key Programmes: The Defence Information Technology Consultative Committee, headed by Chief of Integrated Defence Staff to the Chiefs of Staff Committee (CISC) Air Marshal Suresh Chand Mukul, provides a framework for interaction between the Ministry of Defence, armed forces and industry. The committee has a mandate of providing an IT roadmap in the Ministry, army, navy and air force. Members of the committee are also drawn from Ministry of IT and the industry. Organisations like NASSCOM and CII involved in deliberations of the committee. Other key divisions in the armed forces include Directorate of Information Warfare and Information Technology (which formulates guidelines for information warfare and monitors their implementation by the army), Directorate of Signals (which operates IT infrastructure for the army, and is responsible for transferring signals from troops to headquarters, and operational plans from headquarters to the troops; ensures cyber security for defence forces). The armed forces are also working on collaborative R&D projects with academic institutes, such as the Indian Institute of Technology (Kharagpur).

Observations: In the recent years, there has been a perceptible shift in the nature and extent of the defence establishment's engagement with the private sector, towards enhanced transparency in procurement and increased private sector involvement.

Directorate of Income Tax

Reports to: Finance Ministry

Key Functions: Heads the investigation wing of the Income Tax Department at the regional level; collects intelligence pertaining to evasion of Direct Taxes; disseminates information and intelligence collected among the concerned authorities; organises search action to unearth black money; liaises with other organisations in the region to ensure co-ordination and smooth flow of information

Key Official: Milap Jain, Director General

Technology Intensity: Relatively large spender on information technology; has been using data mining software and in the process of upgrading capability; has the clarity in terms of requirements

Key Programmes: Technology spending is in line with increasing more efficient tax collection and fraud detection; the income tax department also has a tax administration programme under the national e-governance plan

Observations: The income tax department is in the process of upgrading its data mining and fraud detection capabilities and is actively seeking service providers. It has specifically expressed an interest in a service provider that has end-to-end capability and can provide complete hand holding to the Department. A previous tender was cancelled after it was noted that none of the bidders had this capability.

Border Security Force

Reports to: Ministry of Home Affairs

Key Functions: Prevent trans border crimes, un-authorised entry into or exit; anti-infiltration duties in specified areas; protection of vital installations during wartime. BSF has its own intelligence division.

Key Official: Raman Srivastava, Director General

Technology Intensity: Being a para-military force, the focus of BSF's security-related expenditure has been the acquisition of arms and ammunitions and other accessories to augment the combat capability of the force in difficult terrains. However, in the recent past, the Government has initiated capacity building in terms of high-tech surveillance along India's borders. Security-related expenditure (excluding arms/ammunitions etc.) is just about 5% of its total budget.

Key Programmes: Although technology spend is relatively low, the MHA has initiated a programme for modernisation of the BSF, under which significant amounts are allocated for upgrading its technological capability.

Observations: Although the primary role of the BSF is in border security, it is also being involved increasingly in the Government's anti-insurgency operations. In October, the central Government deployed 3,700 BSF personnel to combat Naxalite forces in Maharashtra's Gadchiroli. The intelligence division of the BSF has been reported to be facing severe manpower shortage.

Central Reserve Police Force

Reports to: Ministry of Home Affairs

Key Functions: Serves as reserve to assist the State/Union Territories in police operations to maintain law and order and contain insurgency. The deployed units return to the barracks once their objective is achieved. Specific functions include crowd control, riot control, counter- insurgency operations, dealing with left wing extremism, fighting aggression during war time, rescue and relief operations at the time of natural calamities, etc. CRPF has its own intelligence cells to support counter insurgency and internal security related operations

Key Official: AS Gill (IPS), Director General

Technology Intensity: CRPF's role being defined as a reserve force for state-level law and order situations, it has had very low focus on high-tech expenditure. Security-related expenditure (excluding arms/ammunitions etc.) is just about 3% of its total budget. However, with greater emphasis on CRPF's role as the main anti-Naxalite force, technology spending is likely to see a surge.

Key Programmes: The Government has initiated a modernisation of machinery and equipment programme for CRPF with a budget of just over GBP 4 million. The CRPF is in the process of establishing its own intelligence network, with formal government sanction received recently. Will take 6-8 months to put it in place trained personnel and network units deployed for counter-insurgency in Jammu and Kashmir and anti-Naxal operations.

Observations: From being a reserve force, the CRPF has evolved as the main bulwark in the Government's programmes on internal security. This trend is likely to continue with further capacity building programmes in the near future.