

Homeland Security 2011

Building safe and secure Indian cities –
a perspective



Foreword



The world is moving toward urbanization at an unprecedented rate. The United Nations predicts that 69% of the world's population will be classified as urban dwellers by 2050. Moreover, globalization has meant that cities all over the world are more connected, accessible and advanced. The three most important factors that make a city an attractive place in which to live and work are job markets, city infrastructure and safety and security.

Demographic trends in India are rapidly moving toward urbanization. This is changing the face of the country. However, the deterrent to this ever-increasing urbanization of Indian cities stems from crime and fear of crime, both of which constitute serious threats to the stability and social climate of cities, sustainable and economic development, the quality of life in these and human rights. In this paper, we analyze threats posed to the citizens of Indian cities and suggest ways in which to counter these. The paper provides an insight into the various ways of making a city safe through adequate funding, governance, technology and planning.

We sincerely hope you find this knowledge paper insightful and useful to understand the drivers of Homeland security: Towards safe and secure Indian cities.

We would like to thank FICCI for giving us the opportunity to present some insights on homeland security through this knowledge paper at the "Homeland Security 2011" conference held in New Delhi.

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Major cities and towns, the key drivers for economic growth, are increasingly becoming the target for terrorist activity. Indian cities today have a fast growing, migratory population and divergent socio-economic strata. Monitoring of activities related to Homeland Security is therefore a challenge. To keep city centres safe, protect public buildings, streets, public parks, and more importantly, prevent potential crimes & violations, various security mechanisms should be deployed in towns and cities.

The serial blasts in Mumbai on July 13, 2011, accentuate the need for a "Homeland Security 2011" - a community based initiative that leverages partnerships and technology to help communities and businesses reduce such threats. Many cities around the world have created a network of surveillance, security and response systems in order to discourage terrorist attacks and reduce crime. This in turn leads to greater economic dynamics in these towns and cities.

This report attempts to address various issues and drivers of Homeland Security for Safe & Secure City. I am confident that the information present in this report would serve as a valuable material for all stakeholders of homeland security by projecting right technologies and assisting them in integrating these into their existing system.

Dr. Rajiv Kumar
Secretary General - FICCI





Homeland security: an understanding

History teaches many lesson

The security of a city dates back to ancient India. There are many references to forts and fortifications in ancient and medieval literature dating from the Vedic times. The *Rigveda Samhita* mentions tribes living in fortifications known as *pur*, meaning earthworks strengthened by stone walls. The *Aiteraya Brahmana* refers to the three *agnis*, or fires, as three forts, which prevent the *asuras* (demons) from disturbing sacrifices. The *Ramayana* and the *Mahabharata* also include accounts of forts, and the *Puranas* state that ramparts and ditches are the important elements in the fortification of a castle.

Safety and security has always been of prime importance. Therefore, cities were designed to counter external attack or disturbance. The same principles are of great importance today as well.

The world at large

Homeland security is a comprehensive and concerted exercise aimed at maintaining the territorial integrity of a state and ensuring sustained peace, public order and rule of law in it. The US Department of Homeland Security came into existence in November 2002 with legal enablement in response to the 9/11 attack. Similarly, after the London blasts in July 2005, British authorities reportedly initiated the post of counter-terrorism coordinators in all important police stations in London. There were to regularly interact with the business community and the public in their respective jurisdictions and advise the latter on preventive measures. After the 26/11 Mumbai attack, the Government of India also begun implementing significant initiatives to curb terrorism and crime in its burgeoning cities.

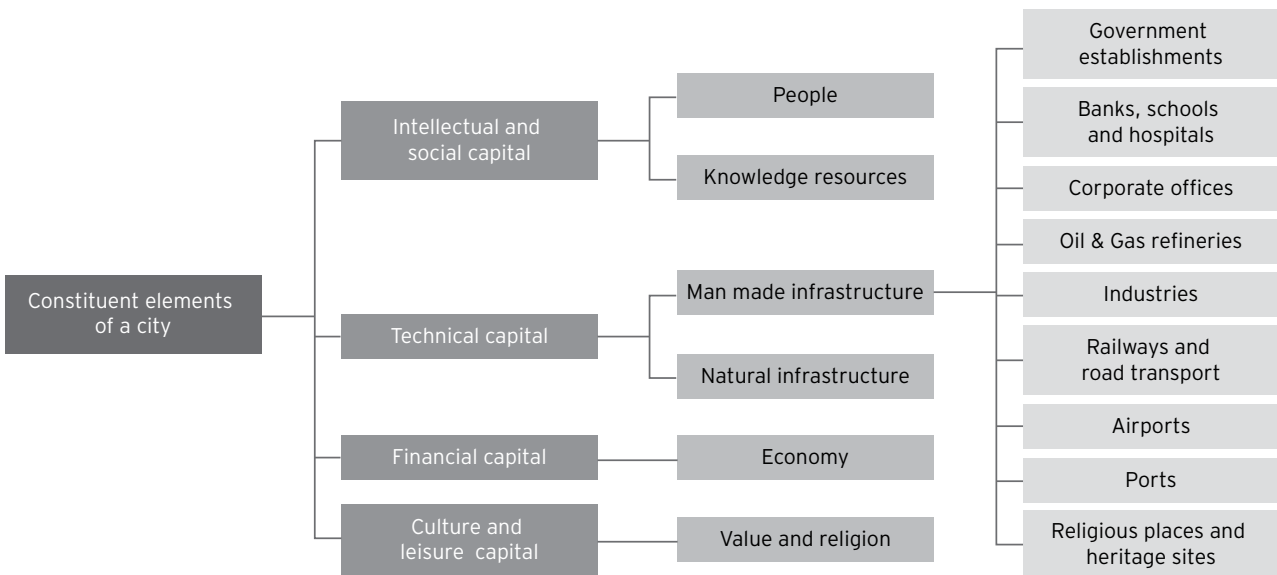
Our homeland: India

India is the tenth largest economy in the world by nominal GDP, with a 7,500 km long coastline, 15,107 km land border, over 5,500 cities and towns, 2.6 million monuments and religious places, and about 1.21 billion residents¹. Constant unrest in the subcontinent, the influx of illegal immigration through the east and north because of porous littoral and land borders, the rise of factions due to caste/class rivalries, issues in the North East, Maoist insurgency throughout central India and some serious terrorist attacks are the challenges facing the country. A combination of internal disturbances poses unprecedented challenges for India and makes imperative the formulation and implementation of an all-embracing security framework.

Our focus: Indian cities

About a quarter of India's population is urban. Numerically, that is about the whole population of the US. At least 23 Indian cities have over million residents. A modern Indian city embodies people, knowledge, resources, finances, democratic and political aspects, and cultural values. These constituent elements can be classified as asset groups or capital, including intellectual, social, technical, environmental, culture, leisure and financial capital and each capital faces potential threats due to certain factors, some of which have been highlighted above.

Figure 1: Constituent elements of a city



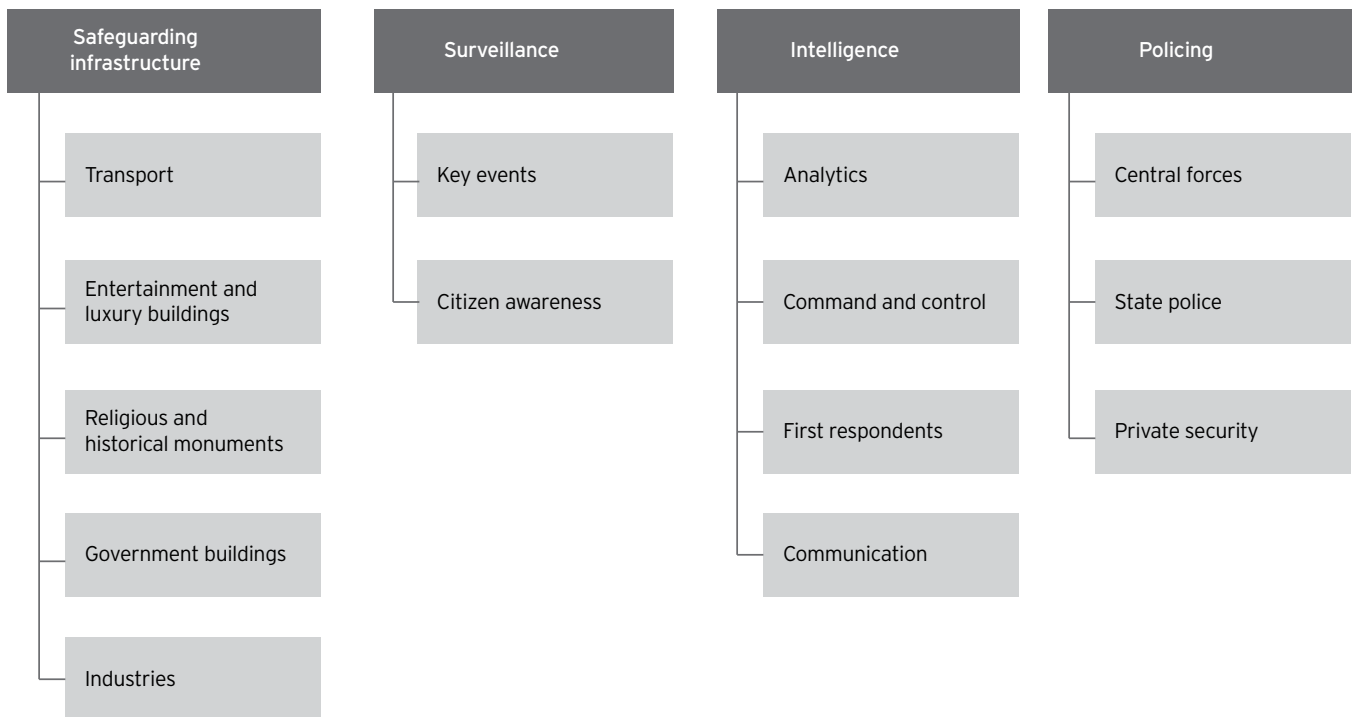
Source: A&S India, May 2011

1 Source: FICCI

Homeland security: a concept

Homeland security is a comprehensive and concerted exercise that is aimed at maintaining the territorial integrity of a state and ensuring sustained peace, public order and rule of law in it. Homeland security strategies are aimed at preparing, protecting, detecting and responding to any kind of aggression on a city and its citizens.

Figure 2: Homeland security – a concept



Source: Ernst & Young Research



While making a city secure, the focus areas under homeland security include:

- ▶ **Counter terrorism:** Recent incidents like the terrorist incidents on 26 November 2008 and 13 July 2011, the Mumbai terrorist attacks, bomb explosions in Jaipur, Pune's German Bakery attack, etc., accentuate the need for counter terrorism strategies to enable a safe city environment.
- ▶ **Safeguarding infrastructure:** Infrastructure is the backbone of a city. Once affected by terrorism or crime, it can break down and bring the city to a standstill. Therefore, infrastructure is one of the key focus areas to be considered while securing a city.
- ▶ **Surveillance:** The recent Commonwealth Games in New Delhi is the example of key events that need to be protected from terrorism or crime through using high-end technology. Citizens can also become the eyes and ears of the police and law enforcement agencies. They must be aware of what should be noted in the public places and how to communicate any suspicious behaviour and what action should be taken in an emergency.
- ▶ **Intelligence:** Intelligence includes information gathered through technology and human sources. This enables the Government to analyze, interpret, prevent, protect, detect and respond to any crisis. Homeland security must aim to develop intelligence in the security eco system to help built secure Indian cities.
- ▶ **Policing:** The police (central, state and private) are responsible for securing a city. They are also responsible for protecting citizens from any kind of threat. Therefore homeland security must endeavour to provide strong policing in Indian cities.

The ensuing sections discuss the current scenario in Indian urban centres and a strategy for making them safe and secure cities.



Indian cities: current security scenario

Cities central to India's economic growth

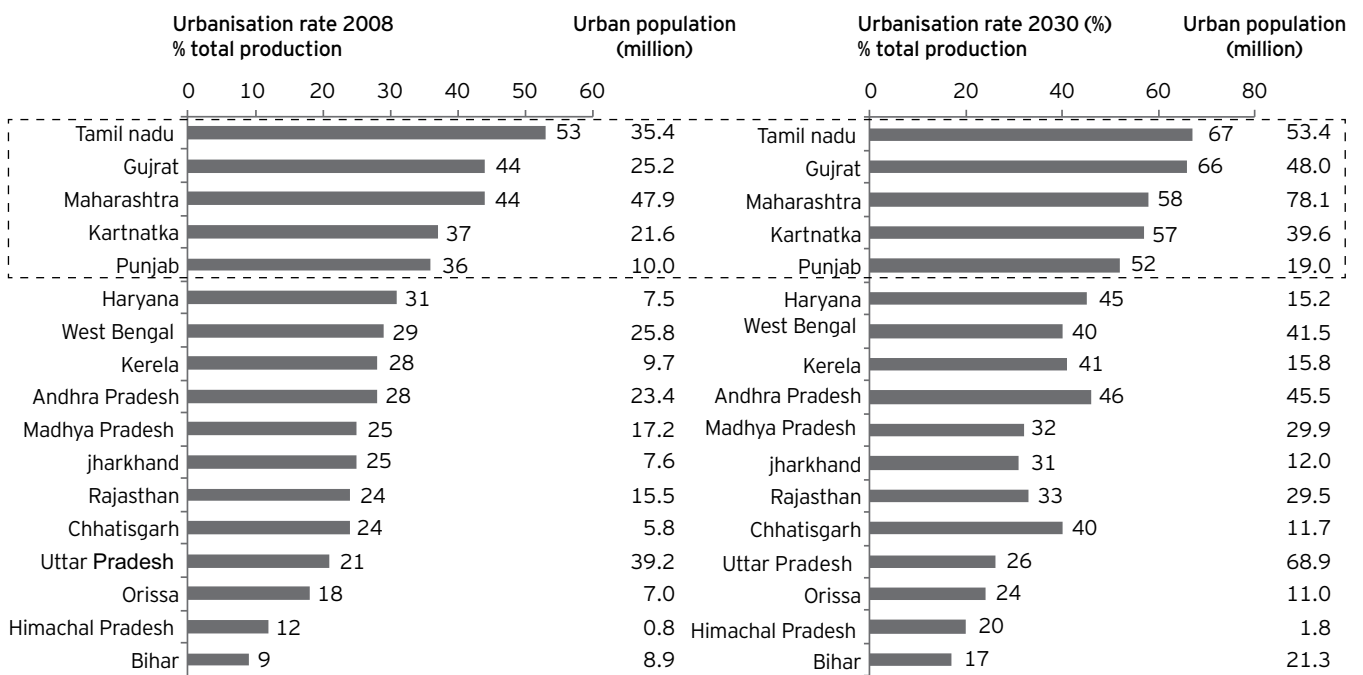
According to Ernst & Young's 2011 India Attractiveness Survey, the population of Indian cities will increase by 379 million by 2050 from an estimated 340 million in 2008. The McKinsey Global Institute (MGI), in its report on urbanization, also projects that the population of Indian cities will increase to 590 million by 2030, which is almost 40% of the country's total population. Cities are expected to generate five times the GDP, as compared to today, and 70% of net new employment; need US\$1.2 trillion of capital investment to meet the projected demand. By 2030, there are likely to be 700-900 sq meters of commercial and residential space added every year, 2.5 billion sq meters of roads paved and 7,400 kilometers of metros and subways.

Urbanization will impact almost every state. Five large states, Tamil Nadu, Gujarat, Maharashtra, Karnataka and Punjab, will have more people living in cities than in villages. Furthermore, India will have 68 cities with a population of more than 1 million, 13 cities with more than 4 million people, and 6 megacities with of over 10 million (with at least two of these – Mumbai & Delhi – ranking among the five largest cities in the world by 2030).

However, the momentum of this growth and recognition is largely dependent on how India is able to maintain and preserve its internal security.

Figure 3: Urbanization in India

Five states are likely to be more than 50% urbanized



Source: India Urbanization Econometric Model, McKinsey Global Institute Analysis

This shift in demographic trends assumes added importance, given the current focus on growth rates and development. Furthermore, the demand for equitable and safe sharing of all social, environmental, economic and financial facilities will increase correspondingly as the urban population rises.

Cities need to offer a certain quality of life for their citizens. Moreover, to become globally competitive and attract private sector investment, cities must provide a safe business and living environment, which necessitates preparedness to deal with terror threats and internal crime. The need of the hour is therefore ensuring the security of India's cities and its constituent elements.

According to a global quality of living survey by Mercer (April 2009) in the *Mint* newspaper, which had published worldwide city rankings, security concerns as well as other factors may have contributed to major Indian cities not improving the quality of life they provide. The survey also indicates that while Indian cities improved on rankings in 2008, they fell in 2009

due to security concerns. Bengaluru fell by two places to 142 in a survey of 215 countries, as compared to 2008; Delhi remained at 145 and Mumbai fell back by 4 places to 148.

Threats to city security

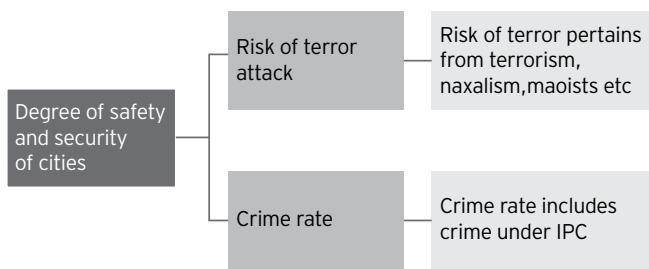
In the Arthashastra, Kautilya wrote that a state can be at risk from four types of threats – internal, external, externally aided internal and internally aided external.

In the present context, the diversity of the integral constituents of India's internal security have broadened and acquired multifaceted dimensions. This encompasses threats from a mixed bag of separatist, ethnic and terrorist violence; challenges pertaining to infiltration and sponsorship of terrorism from across the borders; the subversive activities of some groups or individuals within the country; threats to the security of individuals, vital installations and services; transnational crimes relating to drug trafficking, smuggling of arms and fake currency, and local crimes such as murder, theft,

rape and kidnapping. Since many of the internal problems have external linkages, the line between internal and external threats has become blurred.

The degree of city security measured in terms of the security of intellectual, social, technical, environmental, cultural, leisure and financial capital (as depicted in Figure 1) should therefore be viewed from the twin dimensions of the 'crime rate' and the 'risk of terror attacks', both of which can be of internal or external origin.

Figure 4: Degree of safety and security of cities



Source: Ernst & Young Research

Risk of terrorism attacks

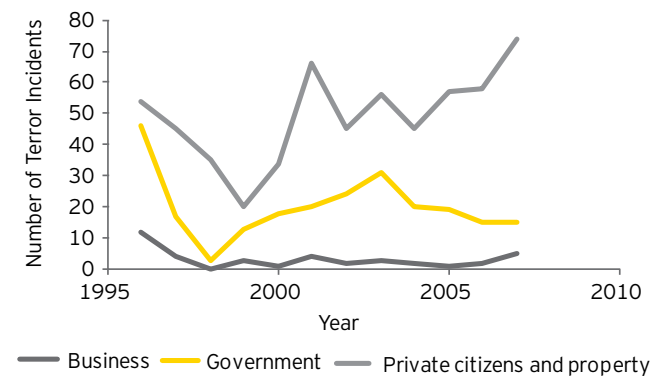
The Global Terrorism Database² (GTD) has a specific definition of terrorism as covering acts of intentional violence perpetrated by sub-national non-state actors. Furthermore, the acts must satisfy two of three criteria –they must be aimed at attaining a specific political, economic, religious or social goal; there must be evidence of an intention to coerce, intimidate or convey some message to a larger audience than the immediate victims and/or the actions must occur outside the context of legitimate warfare activities.

In India, violence stems from incidents of terrorism in cities. Such incidents typically occur through the use of bombs in crowded locations. In recent years, there have been some instances of multiple coordinated bomb blasts in Indian cities. These include the seven explosions in Mumbai’s trains in July 2006, the twin bomb blasts in Hyderabad in August 2007, and most recently, the series of bomb blasts in Jaipur, Bengaluru and Ahmedabad in 2008, the terrorist attack in Mumbai on 26 November 2008 and the bomb blasts in Mumbai in 13 July 2011.

Terrorists aim to maximize loss to urban life and assets. With this in mind, they have shifted their focus from merely targeting government bodies to crowded areas in which they can wreak the maximum loss to life and property. A look at the targets of such incidents recorded in India since 1995 clearly indicates this trend.

The Global Terrorism Database is an open source database – Copyright - 2009-2011, National Consortium for Study of Terrorism and Responses to Terrorism (START), Center of Excellence of US Department of Homeland Security and University of Maryland, US; <http://www.start.umd.edu/gtd/about/>

Figure 5: Number of terror attacks by target type



Source: Global Terrorism Database

The possibility of a terror attack on a city stems from its criticality as far as its national growth is concerned and its vulnerability, which includes its susceptibility to a few or all physical, economical or strategic damaging incidents. The magnitude of vulnerability is directly proportional to the impact that can be caused on the subject. To quantitatively determine the level of susceptibility to a terror attack, the following drivers can be identified for the four constituents of a city (as described in Figure 1).

² The Global Terrorism Database is an open source database – Copyright - 2009-2011, National Consortium for Study of Terrorism and Responses to Terrorism (START), Center of Excellence of US Department of Homeland Security and University of Maryland, US; <http://www.start.umd.edu/gtd/about/>



Table 1: Drivers of a city’s vulnerability with respect to terror attacks

Risk to	Potential loss	Identified drivers
Intellectual and social capital	Loss of life	The Population Index is defined as “Population” when accentuated by a factor of its density. Evidently, the vulnerability of a city grows exponentially with its population and presence of important people (including bureaucrats, celebrities, foreign nationals, diplomats, ambassadors etc) in it.
Technical and environmental capital	Loss of property	The presence of critical infrastructure (refer Figure 1) is measured by the presence of the following: <ol style="list-style-type: none"> 1. Cities with a rich foundation of civic amenities present more opportunities for greater impact to be created by potential threats, which increases their susceptibility.
Culture and leisure capital	Loss of life and property	<ol style="list-style-type: none"> 2. Cities that have heritage properties and critical government establishments are more probable candidates. 3. Cities that house places of religious importance are also vulnerable
Financial capital	Economic loss (loss of money and assets)	The Economic Index, measured by GDP: The healthier the economy of a city, the greater the impact of a potential threat

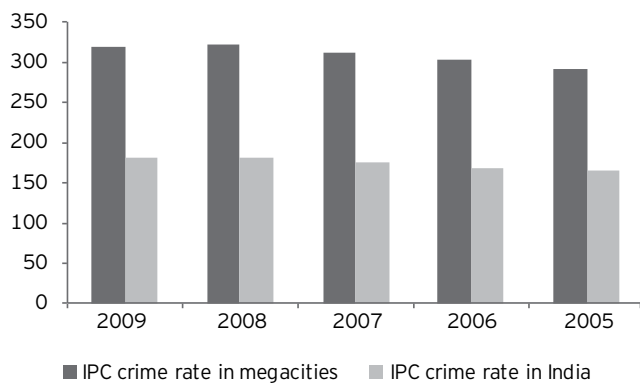
Crime rate

The second source of disturbance in the cities is local crime, theft and violence, such as burglary, murder, rape, kidnappings etc. in addition to organized crime that pertains to drug trafficking, gun running, money laundering, extortion, murder for hire, fraud, human trafficking and poaching. In India, crime broadly pertains to cases identified under major heads of Indian Penal Codes (‘IPC’) and Special and Local Laws (SLL): For the purpose of identifying threats to a city’s security, the note is restricted to crimes defined under the Indian Penal Code, and “gender-specific crimes,” defined under the SLL category, have not been considered. IPC crimes are further categorized as “crime against body,” “crime against property” and “crime against public order.” These threaten all the four constituents of a city (as discussed above).

In most parts of the world, crime is studied in terms of the ‘crime rate’, which denotes a diffusion of crime over blocks of population rather than geographical areas. The National Crime Records Bureau (NCRB), an agency operating under the Ministry of Home Affairs, maintains the crime data of the IPC and SLL categories at the Centre, the states and the cities, and according to a recent report released by NCRB, *Megacities*, India is witnessing increased criminal activities on account of a number of socio-economic factors. (The term mega cities refers to those that have a population of over 1 million. India has 35 such cities at present.)

According to the latest NCRB report (for the year 2009), the average rate of IPC crimes (number of crimes per 1000 people in a year) in urban agglomeration centers was much higher than the national ‘crime rate’ of 181.4 at 318.6. The rates of IPC Crimes in cities is much higher than national average which emphasizes the fact that urban agglomeration centers are more susceptible to crime versus their domain states.

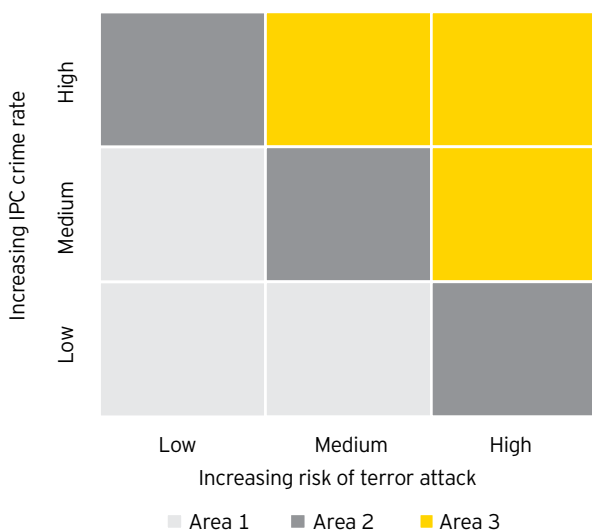
Figure 6: Comparison of crime rates in megacities and India



Source: National Crime Records Bureau

Internal security in Indian cities can be analyzed, based on two parameters – the ‘risk of terror attack’ and local ‘crime rate’ (Figure 3). In order to identify what changes could transform the situation on the ground, cities can be mapped on a 3X3 matrix, in which each square identifies a city with respect to its security scenario. The IPC ‘crime rate’ and ‘risk of terror attack’ form X-axis and Y-axis of the 3x3 Matrix.

Figure 7: Comparison of cities based on internal security situation⁴



Source: Ernst & Young Research

The IPC ‘crime rate’ is the ratio of the number of incidences of IPC crimes to the total population of a city, expressed per 1000 people per year. Cities can be ranked on the basis of the ‘crime rates’ published by the National Crime Records Bureau (NCRB) on a scale of 0-100 points on the Y axis.

On the second axis, cities can be ranked on the basis of the perceived risk of another terrorism attack on a scale of 0-100 points. An analysis of historical terror attack trends shows that the vulnerability of a city to a terror strike depends on its weak points (Table 1), which impact its susceptibility to a terror strike. The following contributing factors need to be identified to determine the risk rating of a city:

1. **Population index:** This index is defined by population X population density. A city’s vulnerability to a terror strike grows when it has densely populated areas within its parameters. Therefore, population accentuated by density can be a major contributor in the process of identifying cities that face a high risk
2. **Economic index:** Measured by a city’s GDP, a healthy economy faces a high risk to its security, since a terror attack on it would result in a substantial financial loss
3. **Presence of critical infrastructure:** Cities with a rich foundation of heritage properties, government establishments, places of religious importance and other establishments such as airports, ports, oil refineries, etc., (Figure 1) are susceptible to terrorist attacks.

A combination of these factors can be useful for determining the terror risk rating of any city. Each factor can be assigned equal or differential weightage, and the city score (0-100) can be calculated and mapped on the grid (Figure 6).

This concept can be used by various agencies to determine security strategies for cities identified by each square on the grid and direct their investments, based specifically on a city’s needs.





Safe and secure city: a strategy

The focus of a city's security strategy lies in the integration of the Government, business and the public's efforts to effectively offset and respond to threats. All three sectors need to work together to strengthen and align the activities of law enforcement agencies, emergency management services, urban planners, urban local bodies and citizens. Therefore, to make a city ready to respond to any eventuality, human or natural, departments need to be seamlessly integrated for effective delivery by the adoption of the latest technologies. A study of how different cities and countries have approached city security shows that five dimensions/aspects – governance, planning, technology, funding and citizen awareness are of paramount importance.

Figure 8: Elements of city security strategy



Source: Ernst & Young Research

Together, these five building blocks constitute a potential operating model that can act as a framework for ensuring security in India's cities:

- ▶ **Governance:** The effectiveness of governance increases when a governing body is closely accountable to the citizens of a city. Governance directly impacts the security strategy of the city, since it is responsible for Acts, policies and the laws of the land.
- ▶ **Planning:** A planned and efficient urban environment design is critical for the safety of a city, since it can prevent the occurrence of terror and crime in it.
- ▶ **Technology:** Technology is required for preparedness to detect a threat, process information and respond in time. It is a key enabler for counterattacking terror and crime.
- ▶ **Resources:** Cities should be able to identify sources to fund their security initiatives. Although the Government allocates a budget at the Central and state levels, a city needs to identify opportunities where businesses and private parties can contribute to the effort.

- ▶ **Citizens:** Citizens need to be aware of the options and facilities available and also proactively aid the city or local government, district, state or central police force to effectively respond to such threats and coordinate their efforts in the implementation of preventive measures

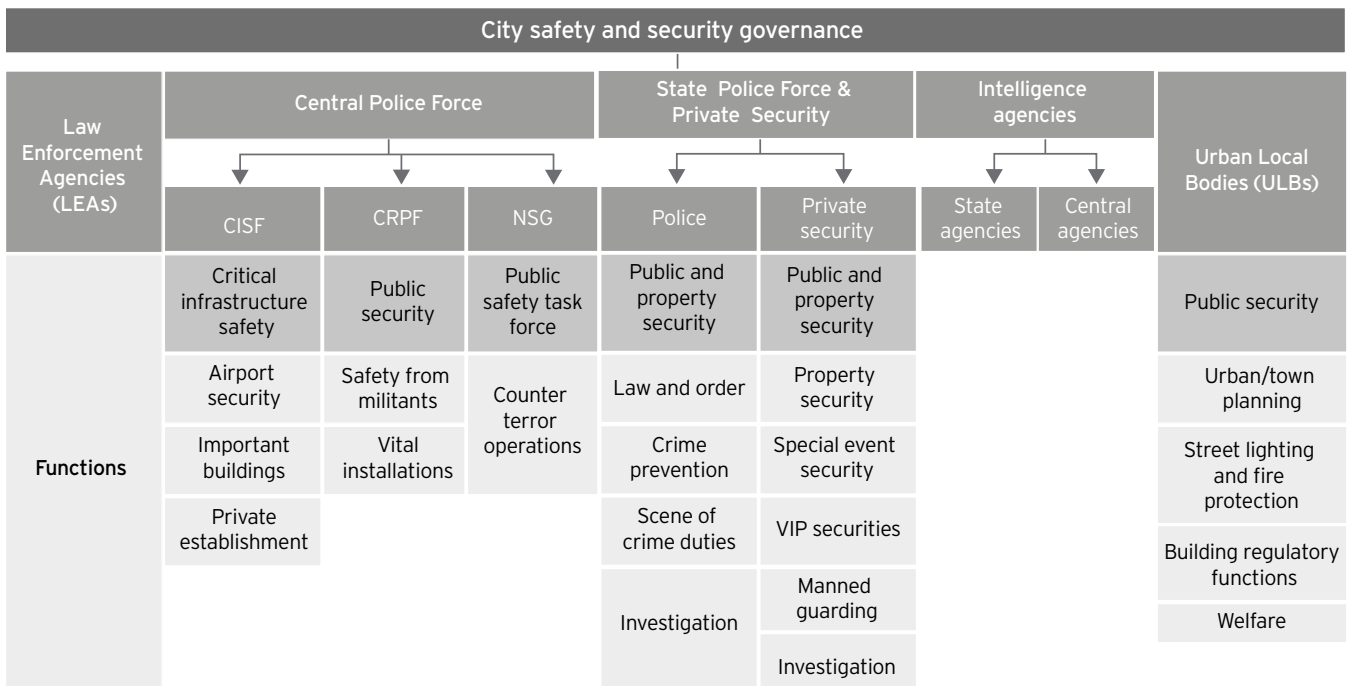
Governance

Governance that governs and protects citizens

Effective policing and law enforcement are essential for developing respect for the law, regulating conflict and building public confidence in the criminal justice system. Law enforcement therefore has an important role to play in reducing crime by dispensing justice to offenders and deterring potential offenders. Building effective governance is about designing effective structures, delegating power, embedding accountability and making sure that cities have appropriate and adequate facilities at their disposal.

A city's security is governed by a multitude of bodies and law enforcement agencies that have complex functional and reporting relationships, as depicted below in Figure 7.

Figure 9: City's safety and security governance



Source: Ernst & Young Research

At the Central government, internal security is the responsibility of the Ministry of Home Affairs (MHA). In pursuance of its obligations, the MHA continuously monitors situations, issues appropriate advise and extends manpower and financial support, guidance and expertise to state governments for maintenance of security, peace and harmony without encroaching on their constitutional rights.

At the state level, the state's police force is responsible for maintaining peace and security within its respective territories. To support state police bodies, there are Central police forces such as the Central Reserve Police Force (CRPF), Central Industrial Security Force (CISF) and the National Security Guards (NSG), which can intervene in the event of law and order problems of a city.

The state police is aided by private security agencies, which are appointed by the state Governments by granting licenses to agencies to carry out the business of security agencies and other related functions. These agencies need to qualify according to the minimum standards set, e.g., undergoing 160 hours of training before being deployed. According to a security magazine, the ratio of private security personnel to the police in India is 2:1 and will soon reach 3:1. The Private Security Agency (Regulation) Act was enacted in 2005 to ensure that private security agencies provide additional support to government law enforcement agencies, but currently there are only a handful of states such as West Bengal, Gujarat, Madhya Pradesh, Rajasthan and Maharashtra that have implemented this.

A snapshot of agencies associated with the security of cities against terror and crime is provided in the table below.

Table 2: Snapshot of internal security agencies

Parameter	CISF	CRPF	NSG	State Police	Private Security
Applicable Act	CISF Act	NA	NA	State Police Act	Private Security Agency (Regulation) Act
Strength	128, 494 ³	128 Battalions ³	1086 ³	1,557,497 ⁴	7 million
Year of establishment	1969	1939	1984	Different for states	2005
Coverage	Provides security cover to 303 units including 58 domestic and international airports, fire protection cover to 80 industrial undertakings and security of 50 government buildings, including North Block, part of South Block and CGO Complex at Delhi	Law and order, counter insurgency, anti-militancy and anti-terrorism operations	Counter hijacking, counter terrorist operations, VIP security, important events such as Republic Day, Parliament sessions and Independence Day	Law and order in the state	Security to top businessmen, industrialists and celebrities; accompany consignment containing cash (from banks' head offices to their branches or to replenish funds at ATMs), gold and precious stones; monitoring the movement of visitors at shopping malls, construction sites and other places
Expenditure (2008-09) in INR million	2170.22 ⁵	5477. 87 ⁵	210.45 ⁵	31,748.30 ⁵	2700 (estimated market size)

3 MHA - Annual Report, 2010 - 11

4 NCRB - Chapter 17 - Police Strength, Expenditure & Infrastructure

5 BPRD - Chapter 5 - Police Budget

In addition, there are three areas where municipalities or urban local bodies (ULBs) can help in ensuring a city's security:

- ▶ Crime prevention through social development: This focuses on the social, economic and cultural factors that contribute to criminality. This approach tackles individual, family and community risk factors that can lead to crime and victimization. For many of these programs and projects, municipalities will need to work jointly with the Departments of Education and Social Development, as well as non-governmental organizations. Some of the key risk factors that can be tackled through social crime prevention include:
 - ▶ Inadequate living conditions including overcrowding
 - ▶ Factors that affect the family, such as poverty, poor parenting and alcohol abuse
 - ▶ School-related factors such as the optimal functioning of schools, school drop-outs and poor school performance
 - ▶ Creating employment opportunities by providing training on skills
 - ▶ Programs and projects directed at children and young people at risk of becoming offenders
- ▶ Crime prevention through the physical design of a city a form of situational crime prevention: In this case, crime is reduced through appropriate planning, designing and management of the physical environment. This can include:
 - ▶ Reducing the amount of vacant land or open spaces in an area
 - ▶ Ensuring that public spaces such as residential streets and public parks are well lit and maintained
 - ▶ Developing safe pedestrian routes and trading centers
 - ▶ Designing safe public transport nodes
 - ▶ Improving surveillance systems in crime "hot spot" areas
 - ▶ Applying crime-prevention principles when designing new towns and residential areas
- ▶ Enforcement of local laws: Municipalities should collaborate with the criminal justice system as far as law enforcement in their areas of jurisdiction is concerned.
 - ▶ Enforcing laws related to health and safety, land and housing
 - ▶ Using regulations to control where and when certain activities take place, e.g., sale of alcohol



Strengthening the governance framework

The recent 26/11 Mumbai terror attacks, increasing instances of domestic terrorism and crime rates, ethnic conflicts and other real and perceived threats have emphasized the need for stronger governance and an effective law and order machinery at the Central and state levels. Therefore, areas where the intervention of governance is required, and in some areas already underway, can be summarized as the following:

Table 3: Intervention of governance

Intervention of governance	
Intelligence gathering, analyzing and sharing	<p>Efforts are being made at the Centre to strengthen the intelligence machinery, streamline arrangements for gathering, analyzing and sharing intelligence among the different agencies and ensure coordination among state governments in an institutionalized manner. Some of the initiatives taken in this direction include:</p> <ul style="list-style-type: none"> ▶ National Intelligence Grid (NATGRID), including 21 sets of data sources, e.g., telecom, air travel, income tax, banking transactions, credit card transactions and immigration records, will be networked to achieve quick, seamless and secure access to desired information that can be used by Intelligence or law enforcement agencies. ▶ Multi Agency Centers (MACs) can be set up for better intelligence assessment at the national level. ▶ CCTNS is the database of crime, criminals and their biometric profiles, which can be shared between police stations, state headquarters and Central police organizations.
Investment regulations	<ul style="list-style-type: none"> ▶ Union and state government regulations are required to encourage private investments and make security equipments more accessible by revisiting: <ul style="list-style-type: none"> ▶ Import customs and excise duties ▶ Service Tax on guarding services ▶ Classification of security equipment ▶ The Central Government can enter strategic alliances with other countries to improve security apparatus, megacity policing, technology, sharing of intelligence, forensics capability and training of security personnel in the country.
Modernization of police forces	<p>Policing being a state subject, the Central Government cannot directly influence the quality of policing. However, it can continue to support state governments in this endeavor.</p> <p>Under this scheme, assistance will be provided, inter-alia, for procurement of modern equipments for surveillance, communication, forensic science laboratories, etc., weaponry, vehicles, computerization, training infrastructure as well as for construction of police infrastructure including housing/police stations/outposts/barracks, etc.</p>
Police reforms	<p>There have been many recommendations on police reforms by various committees. These were the National Police Commission (1981), the Ribeiro Committee (1998), the Padmanabhaiah Committee (2000) and Supreme Court directives in 2006 to tackle the major ills that plague policing today. After the Supreme Court judgment, the Central Government set up the Police Act Drafting Committee (PADC) that submitted the Model Police Act in 2006 to the Home Minister. This Act complimented the Supreme Court's judgment of 2006 and provided detailed instructions through which the directions could be most effectively implemented.</p> <p>Eleven states have implemented the Model Police Act till date.</p>

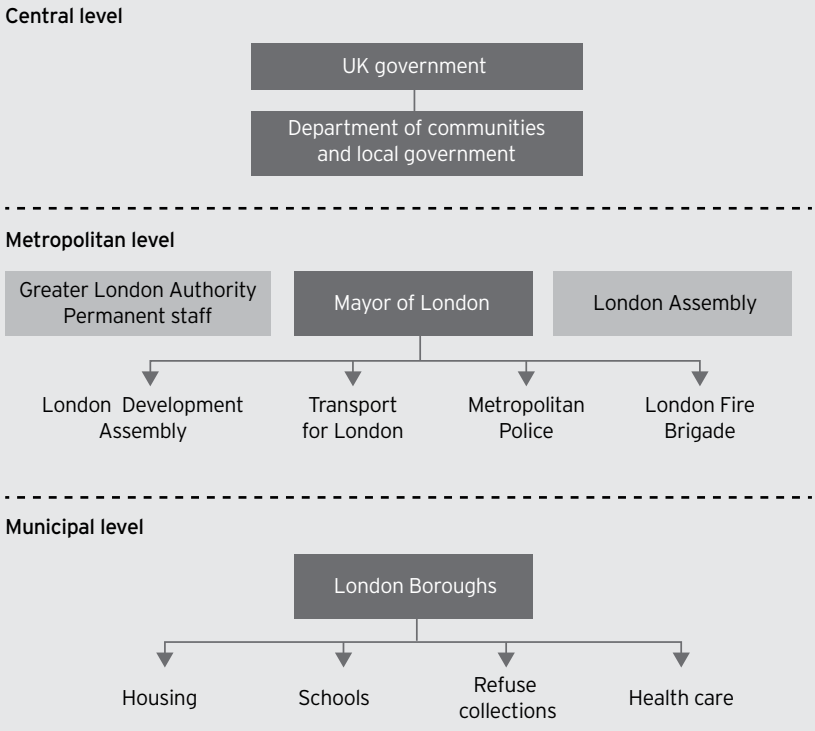


Intervention of governance	
Police reforms (cont'd.)	<p>Some of the recommendations of the Act (2006) include:</p> <ul style="list-style-type: none"> ▶ Constitution of a State Security Commission to (i) ensure that the state government does not exercise unwarranted influence or pressure on the police, (ii) lay down broad policy guidelines and (iii) evaluate the performance of the state police ▶ Fixed tenure of Director General of Police ▶ Police officers on operational duties (including Superintendents of Police in charge of a district and Station House Officers in charge of a police station) having a minimum tenure of two years ▶ Setting up of a Police Establishment Board to decide all transfers, postings, promotions and other service-related matters for police officers of and below the rank of Deputy Superintendent of Police, and making recommendations on postings and transfers of officers above the rank of Deputy Superintendent of Police ▶ Setting up of a National Security Commission at the Union level to prepare a panel for selection and placement of the chiefs of Central Police Organizations (CPOs), who should also have a minimum tenure of two years ▶ Setting up of independent Police Complaints Authorities at the state and district levels ▶ Separating investigation and law and order Functions of the police
Devolution of power at city level	<p>Many cities across the world have faced challenges similar to those with which India grapples today, and in response, have devised strategies that have led to effective management. Taking London⁶, for example, we see a clear articulation of what the city has to offer. Boroughs (equivalent to India's municipalities) in London are responsible for local services, including schools, social services, waste collection and local roads. The Mayor drives city-wide strategic functions including economic development, transportation, metropolitan planning, and police and emergency services.</p>

6 Source: www.communities.gov.uk; www.london.gov.uk

Intervention of governance

Figure 10: Devolution of power in London



Source: www.communities.gov.uk; www.london.gov.uk

Private security regulations

- ▶ The Central and state police are currently facing shortage of manpower. The actual strength of the civil police, including the District Armed Police in the country, stood at 12,15,050⁷ in 2009, against the sanctioned strength of 16,12,735⁷. The actual strength of the Armed Police was 3,42,447⁷ in the same year, which indicates an increase of 0.3% over 2008 (from 3,41,393⁷), whereas the sanctioned strength was 4,12,332⁷.
- ▶ Legislation in favor of private security agencies can go a long way in supporting the police forces.

7 NCRB - Chapter 17 - Police Strength, Expenditure & Infrastructure

Table 4: Police capacity statistics

Parameter	Value (in 2009) ^a
Police personnel per 100 sq. km.	49.2
Number of police men available per 100,000 population	133
Expenditure on per policemen per annum	INR203,814
Number of motor vehicles (including motor cycles, cars, jeeps, etc)	134,386
Number of wireless equipment (including VHF/HF, walkie talkies)	331,830
Number of police stations	13,499

Planning

Planning safer cities

Crime follows opportunity. Making crime harder to commit can limit it significantly. Even during the medieval age, cities were designed to anticipate criminal behavior, and consequently, to “design-out crime” cases, for instance by building settlements on high ground and constructing hidden tunnels.

One of the best examples of security planning in forts is the Dевgiri Fort situated in Daulatabad. The fort was never conquered by force, since the task was impossible, even for an army of 50,000. Some of the security features of the fort included:

- ▶ Multiple layers of strong and high walls protected the fort so that had gates could withstand several hoards of charging elephant.
- ▶ There were 40 feet deep moats, full of crocodiles, as the second level of security in the event the walls were crossed.
- ▶ After the moat, there were narrow passages that allowed in two soldiers at a time and were blocked by fresh and strong swordsmen of the defending army.
- ▶ After crossing these narrow passages, a dark and deadly maze awaited the attackers. It had poison-dipped iron

thorns, archers hiding in strategically caved-out holes just below the ceiling. Moreover, the attackers were split into two parties if they continued in this maze, and there were blazing hot braziers blowing hot and poisonous fumes of sulfur and many other deadly fumes that were humanly impossible to endure.

Methodologies may have become sophisticated, but the philosophy remains the same even today, with the need for effective security being designed into our cities.

Design of the physical environment

Proper designing and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life in cities.

An analysis of crime rates in megacities shows that the highest rates are in the category of crime against property, which includes thefts, robbery and vehicle theft. In these types of crimes, the built environment and location are significant. Safety could therefore be improved by better designing and management of the built environment. Urban planners and municipalities can therefore weave security into the existing urban fabric of the country by using crime prevention through environmental design (CPTED) principles.

CPTED is widely regarded as one of the most effective strategies that can be employed by local authorities in the fight against crime. It entails the application of CPTED principles in building new structures and/or remodeling of existing ones. Possible actions that a city can take include adjusting its building codes to provide for CPTED principles, and using its inspection authority to ensure adherence.

Two safety principles can therefore be defined on which urban design should depend:

1. Maximization of visibility and surveillance
2. Reduction of opportunity for crime by denying access to potential targets

The following matrix illustrates possible options to incorporate safety in city design, based on the two principles given above:

Table 5: City design components

	Transport infrastructure	Open spaces	Industrial buildings	Culture and leisure	Critical infrastructure	Housing
Surveillance	A		B			
Access Control						

Building a safe city

A. Development of the organized surveillance network to adequately cover of key economic and transport locations as well as crime 'hot spots'

Angel (1968) predicted that certain critical levels of street activity and population density were linked to crime. A critical crime "zone of intensity" was therefore one that could support low numbers of people but in sufficient densities to contain both victims and offenders.

Physical design has the capacity to promote informal or natural surveillance opportunities for residents and their agents and surveillance is part of capable guardianship (Painter and Tilley, 1999). If offenders perceive that they can be observed (even if they are not), they may be less likely to offend, given the increased potential for intervention, apprehension and prosecution. Different types of surveillance include:

- ▶ Natural : Self-surveillance opportunities as facilitated by windows
- ▶ Formal or organized surveillance facilitated by police patrol and private security guards
- ▶ Mechanical surveillance strategies through CCTV surveillance and street lighting

B. Access control

Access control is a CPTED (Crime Prevention through environmental design) concept focused on reducing opportunities for crime by denying access to potential targets and creating a heightened perception of risk in offenders. Access control can include informal/natural (e.g. spatial definition), formal/organized (e.g. security personnel) and mechanical (e.g. locks and bolts) strategies.



London Ring of Steel - A case study⁹

In today's world a terrorist attack is imminent in most global cities. City Police departments are gearing up for this challenge by establishing a stringent system of surveillance cameras, manned and monitored entry and exit check of the cities. London with a population of more than 7 million, financial capital of Europe and with large numbers of people transiting through it, is quite vulnerable to any threat or attack.

London's Ring of Steel came into existence after increasing IRA bombing campaigns in the city during the 1990s. The 1993 IRA Bomb attacks on Bishopgate led to the idea of the ring of steel. The Plan was to extend the existing cordon to cover almost 75% of the city. It involved 14 changes including the creation of new access points and closure of many road junctions to vehicle traffic. Roads entering the City were narrowed and had small chicanes to force drivers to slow down and be recorded by CCTV cameras. Initially the ring of steel consisted of plastic cones and on duty policemen, which was replaced by permanent structures consisting of concrete barriers, checkpoints and thousands of video cameras.

After the 9/11 attacks in New York and the July 7 London bombings, the ring of steel was further strengthened and extended to include the greater London Area. The city has 16 entry and 12 exit points, where the roads were narrowed and marked/painted a decorative red, white and black. A network of closed-circuit cameras are mounted on the sides of building or on poles. At each entry point to the city, a camera screens the license plates and the data is fed to a computerized system. The Service level for police to get an alert message upon spotting an unwanted car is 4 seconds. London Metropolitan Police says that last year almost 35 million plates were read and 91,000 positive matches were found. As a result, almost 550 arrests were made and possible attacks averted.

9 <http://www.mindfully.org/>; [http://en.wikipedia.org/wiki/Ring_of_steel_\(London\)](http://en.wikipedia.org/wiki/Ring_of_steel_(London)); <http://www.thisislondon.co.uk/lifestyle/>





Technology

China building US\$2.6 billion megacity security system¹⁰

China plans to build the world's largest surveillance security system for the megacity of Chongqing at a cost of US\$2.6 billion. The system will involve manning and building of a surveillance system of 500,000 cameras across the city. Computerized cameras will be manned under one network, enabling the city's emergency authorities to keep a check on its 30 million population. The installation will be initiated in 2012. The system will be mainly used for crime prevention, emergency control and rescue operations. It was envisaged after China successfully used face recognition technology during the 2008 Beijing Olympics Games.

Technology plays a vital role in building a safe city. With threats hovering over cities all the time from unexpected elements, it is the need of the hour that response times are improved to meet these challenges.

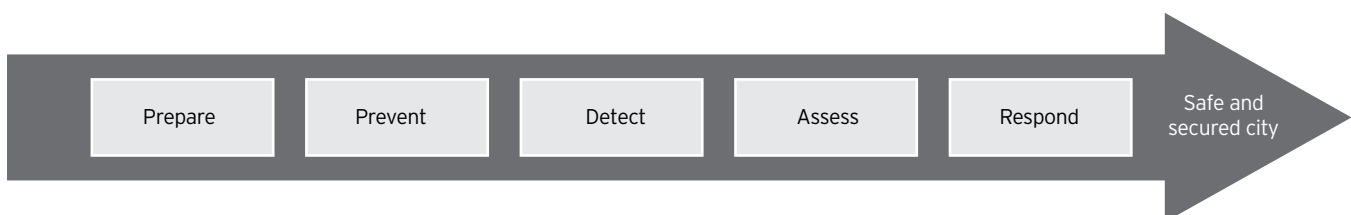
In an earlier section, we identified "IPC crimes" and "risk of terror attacks" as the two threats to a city's security. Incorporation of advanced technology apparatus in a city's security system is required to ensure its preparedness to prevent or combat threats, its ability to detect these, process information related to security issues, and make a timely and efficient response to any untoward incident.

In addition, the changing nature of terrorism needs better networked resources to effectively combat growing instances of such activities in the country. Unwanted security cannot be completely eliminated with access to such systems, but security agencies should be adequately prepared to handle any situation.

Technology offers a wide variety of options to make the security architecture more robust and provide aid in the following functions:

- ▶ **Prepare:** Establishing continuity and response plans, sharing information between organizations and reviewing forensic evidence from previous incidents to improve processes and systems
- ▶ **Prevent:** Employing prevention techniques including physical barriers, access control systems, cameras and guards that can be used to prevent, deter or delay security incidents
- ▶ **Detect:** Minimizing the impact of a security incident through rapid identification and notification of security breaches and other threatening incidences
- ▶ **Assess:** Determining the scope of an incident and what needs to be done next
- ▶ **Respond:** Coordinating real-time communication between the commanders, first responders, the public and other organizations during an emergency

Figure 11: Security functions that can be impacted by technology



Source: http://www.cisco.com/web/strategy/smart_connected_communities.html

¹⁰ <http://www.breitbart.com/>



This section details different equipment and technologies needed to respond to security threats faced by cities in India. Some of these technologies are summarized in the table below:

Table 6: Security technologies

Function	Technologies to tackle	
	IPC Crimes	Terror Threat
Prepare	<ul style="list-style-type: none"> ▶ Police stations and other security agencies connected to common database for information exchange on near real-time basis – Crime and Criminal Tracking Network and Systems (CCTNS) is a crucial technology implemented by the government to combat threats. 	<ul style="list-style-type: none"> ▶ Access to data sources (telecom, airlines, banking and financial services, transportation, etc.) in near real-time ▶ Intelligence gathering and leveraging collected information through centralized database systems to preempt terror attack
Prevent	<ul style="list-style-type: none"> ▶ Video surveillance system ▶ Closed Circuit Television (CCTV) ▶ Electronic access control ▶ Metal detectors ▶ X-Ray baggage screening ▶ Body scanners 	<ul style="list-style-type: none"> ▶ Video surveillance system ▶ CCTV ▶ Explosive detectors ▶ Border and coastal monitoring and patrolling systems
Detect	<ul style="list-style-type: none"> ▶ Interception systems ▶ e-Tolling systems ▶ Fire detectors 	<ul style="list-style-type: none"> ▶ Interception systems
Assess	<ul style="list-style-type: none"> ▶ GIS technology – GIS-based Crime Analysis and Reporting Engine ▶ Command & Control Centre 	<ul style="list-style-type: none"> ▶ GIS technology – GIS based Crime Analysis and Reporting Engine ▶ Command & Control Centre
Respond	<ul style="list-style-type: none"> ▶ Automatic vehicle location system ▶ Communication systems (Tetra radio network, etc.) 	<ul style="list-style-type: none"> ▶ Automatic vehicle location system ▶ Communication systems (Tetra radio network, etc.)

A brief description of some technologies in the field of city security is depicted below:

A. Centralized data system for crime analysis and intelligence gathering

Conventional systems of intelligence and criminal record maintenance need to be upgraded to match the requirements of today's world. We need to use IT tools to gather information and take decisions in a timely manner to check growing criminal activities.

Centralized data system

A large number of Intelligence & Law Enforcement Agencies (LEAs) at the Centre and state levels have access to valuable information. Realizing the need for enabling exchange of data in near real-time between intelligence

agencies and LEAs, as well as from data providers such as telecom providers, airlines, banking and financial services, transportation, government databases, etc., the government has taken an important step in creating the National Intelligence Grid (NATGRID), which will help intelligence agencies and LEAs get better and easier access to desired information to combat terrorism.

GIS-based analysis and reporting

The Geographic Information System (GIS) uses geography and computer-generated maps as an interface for integrating and accessing massive amounts of location-based information. It enables police personnel to plan effectively for their response to an emergency, analyze historical events and potentially predict events in the future. The intelligent database helps in decisions being

taken and the GIS software displays data from multiple sources on layers in a map form, by taking various parameters from the most critical to the least critical into consideration. This technology is used by police departments and other agencies in many countries to provide mapping solutions for crime analysis, tracking of criminals, traffic safety and community policing.

These systems benefit police forces and law enforcement agencies through the following:

- ▶ **Crime analysis:** This entails a set of systematic and analytical processes to provide accurate and timely information on crime patterns and trend correlations to assist the relevant personnel in planning deployment of resources. Using this can lead to optimized utilization of resources to combat criminal activities. It can be divided into three categories:
 - ▶ **Tactical:** Information is used to assist personnel to identify specific crime trends, patterns, series, sprees and hotspots, providing investigative leads and clearing cases. Analysis includes associating criminal activity by the method of a crime, as well as the time, date, location, suspect, vehicle used and other types of information.
 - ▶ **Strategic:** This helps the police department and various law enforcement agencies make a strategic analysis and decision, to analyze the increase or decrease in crime rates, etc.
 - ▶ **Administrative:** This focuses on providing economic, geographic or social information to administration.
- ▶ **Crime investigation:** To investigate a crime, one needs to look at various parameters, data and information and then arrive at a conclusion. Some factors, which influence this process, are as follows:
 - ▶ Density of population
 - ▶ Modes of transportation and highway system
 - ▶ Economic conditions, income levels and unemployment situation

- ▶ Education level and religious characteristics
- ▶ Family conditions with respect to divorce and cohesiveness
- ▶ Effective strength of law enforcement agencies
- ▶ Citizens' attitude to crime
- ▶ Crime-reporting practices of the citizens

By mapping all these factors or a combination of them on a spatial map helps to give a fairly accurate picture when a crime needs to be investigated. Details pertaining to a victim, e.g., home address, the crime location, the route used by the criminal, etc., when displayed on the map, predicts a behavior. The probable location of an offender can be predicted by using this method.

B. Surveillance systems

Over the past decade, reliance on video surveillance in the public safety domain has increased dramatically. Several factors have contributed to the growth of video surveillance, including limited staffing, tightened budgets and the need to provide an objective record of events. Today's safety environments require:

- ▶ Faster, more efficient identification, investigation, response, and resolution
- ▶ Enhanced collaboration
- ▶ Secure, remote and mobile access
- ▶ Scalability and reliability
- ▶ Investments in existing and new technologies

Video surveillance systems cover all the stages from the initial detection of a threat to the formal recovery of an operation. They collect all the data images that are required to detect risks and respond to emergency situations. The entry and exit points of a city, such as bus stands, railway stations, airports, highway toll gates, etc., can be monitored by using a well-networked video surveillance system.

The following is a case study on how a major international airport upgraded its facilities by installing an advanced video surveillance system.

A major US international airport's existing CCTV posed had functional restraints including poor video quality and unreliable storage¹¹

By phasing out the CCTV system and standardizing its surveillance cameras, the IP platform enabled the airport's security team to take advantage of a number of technological advances, including video content analysis. With control of the system's cameras that are networked into a computer, objects can be identified and tracked throughout the facility. The system can now "recognize" when a piece of luggage has been left unattended and notify security immediately. It is also possible for the system to alert security personnel when a person is entering a restricted area or walking against one-way pedestrian traffic that is being directed to a central point. Anixter's technical expertise enabled the systems integrator and airport to install a video surveillance solution that provided it with the much needed coverage and security required of a critical resource facility.

C. Electronic access control systems

These devices are used to detect and prevent unauthorized access inside premises or restricted areas. These access-control solutions are based on biometrics, smartcards, proximity cards, etc., thereby makes the system more reliable and foolproof.

D. Detectors

Table 7: Types of detectors

Technology	Description
Metal detectors	Metal detectors are used to detect possession of metallic objects such as guns and knives.
X-Ray baggage screening	It is necessary to have the most up-to-date baggage-screening systems, which are designed to prevent the cleverest attempts at hiding weapons, drugs, stolen goods and other contraband items.
Body scanners	Body scanners are detection devices that scan the human body for concealed objects such as weapons or explosives. It gives the operator a clear view of objects hidden beneath a person's clothing. By its use, operators can scan individuals without physical frisking and thereby eliminating the delay involved in frisking.
Explosive detectors	Explosive detectors are able to trace explosive materials in minute quantities in baggage, humans, vehicles or any other objects or places.
Fire detectors	Fire detection is conducted through special sensors that detect smoke and fire even before they spread. Once detected, suppressants are activated, which may be hydrant-based or dry suppressant-based. Advanced sprinklers are also available to ensure that the fire is under control and extinguished.

11 Anixter (Global Supplier of Communication & Security Products), Technology Solutions Group, North America, Case Study

E. Command and control center

In theory, a command and control center is a secure room or building in a government or military facility that operates as the central monitoring and surveillance center and coordination office. Command and control centers are operated by a government or a municipal agency and used during a crisis.

A command and control center seamlessly integrates a wide portfolio of techniques. It can simultaneously process information from multiple devices and offer actionable intelligence, thereby enabling effective decision-making and reporting. Such a center has four major components that are connected to its secure network:

- ▶ **Collection:** Collection of information received from various sources and agencies such as CCTV or video surveillance systems, access control systems and detection systems
- ▶ **Collation:** Input from various sensors is processed for actionable intelligence. It is then taken through correlation, analytics and dynamics engines to convert the raw data into intelligent information. In addition, a Global Information System (GIS) engine aids the monitoring process and directs field coordination teams to effectively respond to alerts and threats. Operator monitoring stations provide a comprehensive view of the intelligent information in audio and visual formats.
- ▶ **Interpretation:** The data has to be interpreted to transmit orders, alarms or alerts to specific agencies in times of crises.
- ▶ **Issue of orders:** This includes instructions to various agencies, forces on the ground, departments as well as warnings to the public through an automated response system, mobiles, PDAs, handheld terminals, etc.



- ▶ **Documentation and post analysis activity:** Post analysis is an important activity, which will make our systems more robust and help to strengthen them to be better prepared to deal with similar events or crises again.

An integrated command and control center is an open and flexible framework that offers support of decision-making by integrating multiple systems including video, intrusion, video analytics, fire control, access control, HVAC, chemical, biological sensors, etc. The framework is scalable to support thousands of sensors and is easily able to integrate with the various security systems of different vendors. It includes rules and a workflow engine, which enables complete workflow management, tasks and procedures to be defined, and all actionable events to be processed in a consistent manner. With the rules and workflow engine, the integrated framework enables quick collection of information related to a situation. It then rapidly consolidates critical information required by disparate response systems to make an accurate and informed decision. This enables security teams to assess situations

and resolve most incidents before expensive resources are dispatched. When an unfortunate incident occurs, the same tool can be used for post event analysis. For example, an operator can view recorded or live video, find out who accessed the area before the incident occurred, extract data, e.g., on who accessed a certain door at a certain time et al. and query other personnel databases as well. It also provides an easy-to-use and intuitive graphical interface that enables situational awareness and end-to-end incident resolution. With the Graphical Interface, operators can visualize the locations of sensors and alarms, while simultaneously viewing live and recorded video, taking control of PTZ cameras, communicating with employees and guests, initiating door commands, taking snapshots and exporting video directly from the map, view GIS maps, and communicate with all possible third-party communication systems.

This new breed of security applications makes compliance and convergence possible between various standalone products and solutions to enable a robust framework for managing security.

Surveillance video monitoring in the UK¹²

The UK is said to be the country with the greatest deployment of surveillance video cameras. Surveillance video has been used for over a decade as a measure to help thwart criminal activity or other public threats, and facilitate and support criminal investigations. It is estimated that about 4.2 million cameras are located throughout the UK and there is one camera for every 14 people. In London alone, there are about 500,000 cameras in private areas, and many more dotted throughout the people in the Greater London area. Surveillance video is also extensively used throughout the London Underground subway system. In addition to maintaining public safety, surveillance is used in the UK to monitor and manage traffic conditions, particularly in London and on major motorways.

The UK has an extensive ANPR CCTV Network. The **National ANPR Data Centre** is being built alongside the Police National Computer because of the need for constant updating of the system with lists of suspect drivers and vehicles. Car registrations are checked against lists from the Police National Computer, including vehicles of interest to the police for crimes such as burglary or theft of petrol.

The **National ANPR Data Centre** enables analyses across police force boundaries. If a vehicle enters the CCTV network, the police can view an image of it entering the area. The image may also show the driver and the passenger. As the data generated is stored for five years, the police can identify and link criminals to vehicles.

12 http://en.wikipedia.org/wiki/Police-enforced_ANPR_in_the_UK

Resources

Traditionally, homeland security is seen as the domain of the Government, but over the recent past, industry and citizens are increasingly becoming important constituents for some segments. Although homeland security activities and spends continue to be dominated by the Government (at Central and state levels), private sector interest and spending have been increasing in niche areas.

Current investments in security

The MHA is the Central Government organization entrusted with the task of internal security. Although law and order are under the purview of the states, Central Government makes investments through the MHA to assist states in their long-term capacity-building measures and provides them with financial and technical assistance to strengthen their security cover. Due to the Government's increasing focus on homeland security the MHA has been steadily increasing its budget. It has undertaken huge projects and spent about US\$4.79 billion (INR22,335 crores) in 2009-10 on security-related matters. A snapshot of its total investment in security in the year is given below:

Table 8: Total investment in security

Investment by	Security-related expenditure, 2009-10	Amount in Billion USD
MHA	Crime prevention and intelligence gathering	0.14
	Central police force (CPF)	3.06
	State Police Aid	1.28
	Other	0.07
	Border & Maritime Security	0.21
State Police	State police force	7.81
Total		12.6

Source: Homeland Security Market, Security Watch India

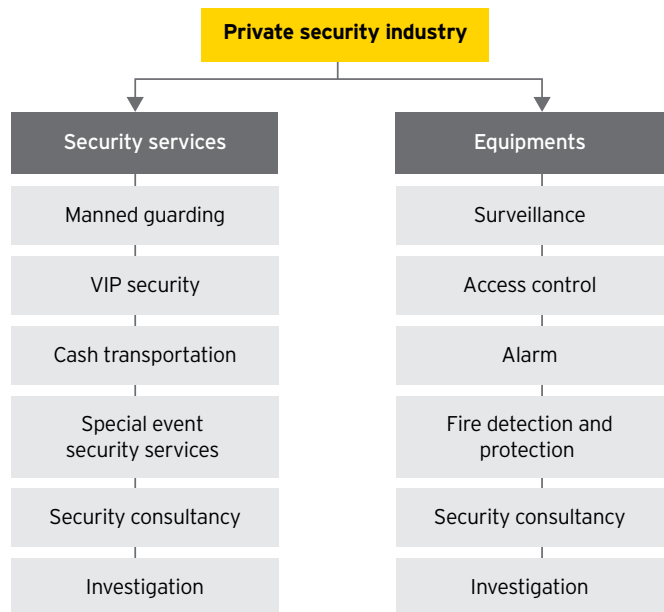
Total investment by the Government in 2009-10 was about US\$ 12.6 billion.

Private security industry

Apart from the Government, huge investments are being made by private players in the private security market to meet the

growing security needs of cities. As of today, India's private security Industry can be sub-divided into two categories. The first category includes security services that entails manned guarding and employs more than 7.5 million guards, according to the Central Association of Private Security Providers (CAPSI). The second category includes security equipment for private businesses and households. Although it is still at a nascent stage, India's private security industry is growing at a rapid pace to match up to global standards. The division of this has been depicted in the figure below.

Figure 12: Private security industry



Source: Ernst & Young Research

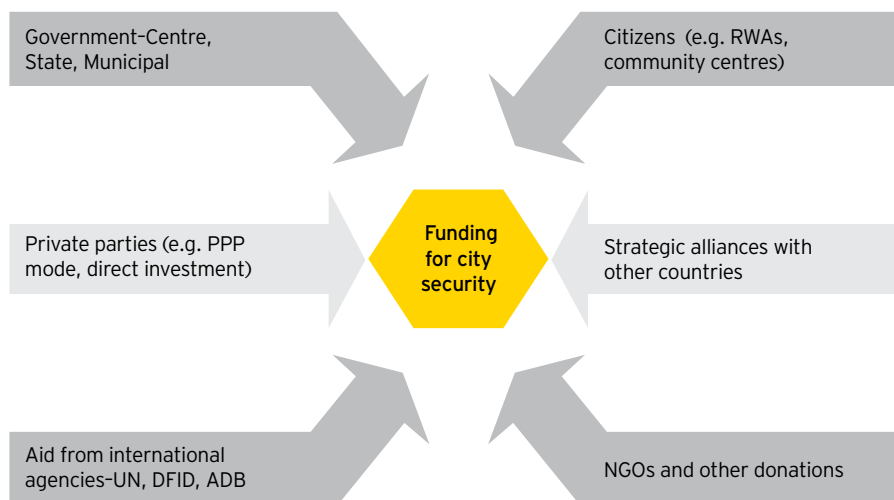
Worldwide, the industry is estimated to generate US\$140 billion in revenue, expanding at a CAGR of 10-12%. This has been primarily driven by markets including China, the Middle East, South America and other Asian economies. India's private security industry is estimated to be worth over US\$ 600 million¹³. However, only 60% of this is in the organized sector, and manned guarding accounts for the bulk of this revenue. There is, however, an increasing need for private contribution to make Indian cities secure.

13 Trends estimated September 2008

Funding options

Strong economic growth of a country requires a secure environment for businesses and citizens. Therefore, it is imperative to allocate adequate resources to enable a safe environment to ensure its citizens' efficiency and comfort levels. In essence, in a safe and liveable city, the market forces of demand and supply are able to operate efficiently to generate an efficient economy model.

Figure 13: Sources of funding



Source: Ernst & Young Research

There can be various avenues for funding security initiatives to make Indian cities safe.

- ▶ **Government:** Presently, the Government allocates an annual budget for homeland security at two levels – the Centre and the states.
- ▶ **Private parties:** There is an increasing trend of private contribution for the security of cities. Private parties can contribute to security initiatives through direct investments or Public Private Partnership (PPPs).
- ▶ **Aid from international agencies:** International agencies such as the United Nations, Asian Development Bank, etc., also provide aid to developing countries to establish a secure operating environment for citizens and businesses.
- ▶ **Strategic alliances:** The Government can also form strategic alliances with other countries, whereby funds can be obtained for joint security initiatives.

- ▶ **Others:** Other forms of funding could include funding from NGOs/charity, funding by citizens through Resident Welfare Associations (RWAs), etc., to make secure their surroundings.

Public Private Partnership

The Central Government can implement a PPP model by involving technology solution providers and system integrators in working in close partnership with it to address the security needs of cities, their infrastructure and people. Around the world, especially in the US and Europe, industry is an active participant in deployment of homeland security. A case study of the engagement of the US private sector is presented below.



The SECURE Program of the US Department of Homeland Security¹⁴

The System Efficacy through Commercialization, Utilization, Relevance and Evaluation (SECURE) Program is efficient and cost-effective and fosters cooperative win-win partnerships between the U.S. Department of Homeland Security (DOH) and the private sector. This program leverages the experience and resources of the private sector to develop fully deployable products and/or services.

The diagram below represents the overall outreach process the DOH has implemented to stimulate and engage the private sector to use its resources to rapidly develop technology, products and services that can significantly benefit the former's science and technology programs with a speed of execution that is not typically observed in the public sector.

The department posts detailed operational requirements in the form of an Operational Requirements Document (ORD) on its site to articulate specific requirements in conjunction with a conservative estimate of the Potential Available Market (PAM) of a given product, system or service.

Private sector entities with technologies or products aligned to these requirements can use this valuable information to generate a business case and develop (at their own cost) a fully deployable product or service after their verification of the market potential of these. The department provides an assurance that a product or service has demonstrated operational performance that meets a given private sector entity's published specifications through review of recognized third-party independent testing data. This enables the private sector, through the free market system, to develop products and services that capture significant revenue opportunities and demonstrate to potential purchasers that the product does what it claims to do.

In March 2011, the Commercialization Office of the US Department of Homeland Security certified its first product – a forensics camera designed to capture images in public places or on public transportation, which was tough enough to withstand fire, flood or bomb blasts. The rugged camera is designed to help investigators in their quest for answers following a catastrophic event aboard buses and trains or in public spaces such as stadiums. It is the surface transportation equivalent to the black boxes found on airplanes.

Due to the popularity of the SECURE Program, the Science and Technology Directorate has introduced a "sister program" called FutureTECH™. This program is reserved for those critical research/innovation focus areas that address the long-term needs of the department and its stakeholders through mutually beneficial partnerships with the private sector, national laboratories, university communities and other R&D organizations.

14 www.dhs.gov



Figure 14: DOH SECURE program outreach process

Phases	Requirements development	Market assessment and strategy	Open competition	Product development	Product release, Marketing and/or deployment
Activities	<ul style="list-style-type: none"> ▶ Prioritized capability gaps from Capstone IPTs ▶ Identification of representatives of customer/end users ▶ Operational and technical requirements ▶ Validation of price points ▶ Technology Commercialization Agreement (TCA) between DHS S&T and its DHS customer ▶ Project plan 	<ul style="list-style-type: none"> ▶ Market survey ▶ Technology scan ▶ Communications plan and implementation (public relations and marketing communications) ▶ Technology Commercialization Plan (TCP) ▶ Test and Evaluation Master Plan (TEMP) ▶ Standards assessment and/or development by S&T ▶ Grant program development by DHS customer 	<ul style="list-style-type: none"> ▶ CRADAs ▶ BAAs ▶ RFPs ▶ RFQs ▶ RFIs ▶ MoUs /MoAs ▶ Technology transfer licenses ▶ OTAs/ agreements 	<ul style="list-style-type: none"> ▶ New Product Development (NPD) process implemented by private sector partner(s) ▶ Project reviews ▶ Test and evaluation 	<ul style="list-style-type: none"> ▶ Transition to manufacture ▶ QC/QA ▶ Deployment (to Federal users) or Marketing (to independent users) ▶ Measure product effectiveness

Black text = Typical government activities; Blue text = Typical private sector activities

Source: www.dhs.gov

Citizens

Crime a social concept

Crime is a social and legal concept that refers to a number of anti-social behaviors that may be planned or unplanned and occur in different circumstances. Demographic, socio-economic and cultural factors are associated with high crime areas. Poverty and income inequality have also been linked to elevated crime rates. Crime prevention programs can target either the broad underlying factors or the specific circumstances of a crime. For instance, a well-planned urban development program should reduce the number of people living in informal settlements, provide parents with a better environment for the care of their children and easier access to key services such as health, education and policing. All these improvements should assist in preventing crime.

As illustrated in an earlier section, crime has been increasing at a steady pace over the years. There are no easy explanations for crime in any society. It is caused by multiple factors that interact in a complex way. Some of those that have been associated with the high incidence of crime include:

- ▶ Religious unrest: The risk of religious unrest is very high due to the presence of various religious groups in the country. In the past, India has seen many communal riots, which has led to many casualties
- ▶ Poverty and under-development: Although it is difficult to establish a direct link between poverty and crime, poverty does lead to crimes such as burglary, kidnapping, assault, child abuse, etc.
- ▶ Proliferation of firearms: Inadequate border control makes it possible for arms smugglers to bring large quantities of firearms into the country. Because of the oversupply of small arms in the region, these sell cheaply, which makes them easily accessible, and they are frequently used to commit crime or settle disputes.

- ▶ Rapid urbanization: The crime rate is generally high in cities and urban areas to which people from rural areas migrate to try to escape poverty by seeking opportunities in such areas. However, limited job opportunities subject many of them to urban poverty associated with overcrowding, lack of social and economic development, and increasing consumer demands. All these conditions have been linked to high crime rates in urban areas.
- ▶ Inadequate performance of the criminal justice system: A weak criminal justice system has a detrimental effect on public feelings of safety and fear of crime. More importantly, the speedy detection and prosecution of offenders helps to deter some criminals from committing crimes.

Social measures to be taken against crime

Some of the most common measures taken by citizens to prevent crimes include:

- ▶ Target hardening, e.g., by building fences, walls, burglar proofing
- ▶ Keeping dogs
- ▶ Carrying simple weapons for protection, e.g., pepper sprays
- ▶ Installing private security
- ▶ Coming home early and staying indoors

These are activities carried out by most citizens to protect themselves against criminal attacks. These measures are taken at the personal level for security. Extension of these activities can provide security to a group of people. For the safety of society, some initiatives can be taken at the community level.

Citizen awareness program

Initiatives taken by the police and other law enforcement agencies should be communicated to the citizens to make them aware of the options and facilities available to them in case of emergency. Awareness campaigns should be run at public places, public transport vehicles, print and media to increase the coverage of awareness.

Community anti-crime initiatives

Community initiatives against crime, such as neighborhood watch schemes, community patrols and police forums, can also help to secure an area from certain types of offences. Local councils can play an active role in organizing community anti-crime initiatives. A formal channel of communication needs to be developed for such projects

Measures taken by schools

Criminal careers seem to begin at a young age and involve petty crimes. Children are also said to be involved in drug-related crimes, some of which take place at schools. Schools and the Department of Education play an important role in preparing strategies aimed at reducing the chances that young people will turn to crime. Schools should feature courses and other modes of communication to prevent children from digressing into crime.

Role of parents

Parents directly or indirectly support crime by being either over-protective or too permissive. Sometimes parents struggle to supervise their children because of work pressure. Parents need to inculcate the sense of right and wrong in their children so that children can take decisions against crime even in the absence of parental guidance.

Citizen involvement in city security

While maintaining law and order is not a direct municipal function in most countries, municipal interest and initiative in some cities have led to a significant reduction in the incidence of lawlessness and violence.

A good example of municipal/civil society anti-crime drives come from the chain of municipal partnerships that led to the strengthening of a large number of Residents' Associations in major Indian cities, particularly in Delhi and Bengaluru, where the city administrators have given special permission to the associations to install their own special security systems, financed by the residents. The systems include night patrolling, cordoning of the neighborhood during night hours, restricting entry to outsiders and recording the late night movements of non-residents.

A close coordination between the City Council and the police department is critical for making cities free of crime and violence. Creating a tradition in the city, which enables the its Police Commissioner to present a six-monthly or annual report on the status of the rule of law in a city may help build a more responsible and constructive relationship between the two institutions. It will also help to generate greater public interest and dialogue on the rule of law. For sustainability, partnerships must be of this nature and must be institutionalized in the municipal system.

Community contribution can help in better policing, and thereby, make cities safer places for everyone.



Way forward

Cities aim to provide a warm and comfortable atmosphere, welcoming people to stay, enjoy themselves, and in doing so, spend their money. At the same time, social disunity, increasing risk of terror attacks and crime cannot be ignored. These factors motivate the ongoing struggle for cities that improve people's lives and meet their needs in all areas.

As discussed in this paper, there are five building blocks to secure a city's safety – governance, planning, technology, resources and citizen awareness. Broadly, government, business and the public need to work together to strengthen and align the activities of law enforcement agencies and the criminal justice system.

Some of the other initiatives that will ensure city safety and security can be summarized as:

Table 9: Way forward for city safety and security

City security strategy	Initiative	For cities prone to terror	For cities prone to crime
Governance	Reassessment of import duties on security-related equipment and technologies	✓	✓
	Assess the possibility of devolution of powers with city government for formulation of local laws and enforcement	✓	✓
	Issuance of city surveillance, physical environment and building design guidelines (These guidelines should be provided to various entities such as hotels, corporate organizations, factories, residential buildings, welfare associations, etc., by Urban Local Bodies)	✓	✓
	Social development and welfare initiatives by Urban Local Bodies		✓
	Strengthening of modernization of Police Forces Scheme	✓	✓
	Promotion of private security agencies through appropriate policy changes		✓
Resource	Select forms of Public Private Partnerships for developing technologies needed for Indian environment	✓	✓
Planning	Development of the organized surveillance network for adequate covering of key economic, densely populated areas, markets and transport locations as well as crime hot spots	✓	✓
Technology	Wide deployment of video surveillance and command and control centers	✓	
	Deployment of central communication network that facilitates faster emergency response	✓	
	Crime analysis and reporting through use of centralized databases, analytics and GIS		✓
Citizen	Promotion of community policing		✓
	Strengthening of citizen awareness programs	✓	✓



Abbreviation	Description
CAGR	Compound Annual Growth Rate
CAPSI	Central Association of Private Security Providers
CCTNS	Crime and Criminal Tracking Network and Systems
CCTV	Closed Circuit Television
CISF	Central Industrial Security Force
CPO	Central Police Organizations
CPTED	Crime Prevention through Environmental Design
CRPF	Central Reserve Police Force
DGP	Director General of Police
GDP	Gross Domestic Product
GIS	Geographic Information System
GTD	Global Terrorism Database

Abbreviation	Description
IPC	Indian Penal Code
MHA	Ministry of Home Affairs
NATGRID	National Intelligence Grid
NCRB	National Crime Records Bureau
NGO	Non Government Organization
NPC	National Police Commission
NSG	National Security Guards
PADC	Police Act Drafting Committee
PPAC	Police Performance and Accountability Commission
PPP	Public Private Partnership
RWA	Resident Welfare Association
ULB	Urban Local Body
UN	United Nations
UPSC	Union Public Service Commission
VHF/HF	Very High Frequency/High Frequency

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