

Social Media: Analysis of New Challenges and Opportunities for Indian Law Enforcement Agencies

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Keywords

Social Networking, SWOT Analysis, Social Media, Open Source Intelligence, Social Media Monitoring.

Abstract

Use of social networking sites by Indian internet users, especially younger generations, has grown exponentially in recent years. This has thrown several challenges to the Indian law enforcement agencies. They need to understand its implications in prediction, prevention, detection and investigation on crimes and maintenance of law and order. By properly integrating social media strategies in its police work, Indian law enforcement agencies can leverage upon the opportunities offered by social media apart from tackling the challenges it poses. Monitoring of social media content has become necessary in the backdrop of its misuse in certain recent incidents in India. Police departments in several countries have already adopted a comprehensive and integrated approach to use social media for their advantage and Indian Police can ill afford to ignore this powerful media. The paper presents SWOT analysis of the issue and recommendations for Indian law enforcement agencies.

Introduction

COMPUTERS, internet and the worldwide web have changed the way we collaborate, interact and share information with each other. The online interaction is not bound by the geographical limitations and is entirely in virtual world. Internet abounds with sites which offer facilities for interaction, uploading information, pictures

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and videos for sharing. Mobile connectivity and smart phones have added a new dimension to this new phenomenon called social media networking or Web 2.0. Children and younger generation have been quick to adopt this technology. There are several implications of this socio-technological change for law enforcement organizations. The broad adoption of social media by the public and the increasing effect that this adaptation has in police work requires police organizations to define and implement strategies for social media adaptation (Denef *et al.*, 2012).

This paper examines the implications of social media revolution for the law enforcement agencies in India. It further discusses the strategy to deal with the challenges it poses. Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis has been carried out. Successful use of social media by some of the police organizations has also been discussed. Recommendations have been made for similar use by Indian law enforcement organization.

Social Media Definition and Origin

Social Media is a term used to describe a variety of web-based applications and mobile platforms through which users can generate and share digital contents. The digital contents could be in various forms such as text, picture, audio, video, location etc. International Association of Chiefs of Police (IACP) defines Social Media as a category of Internet-based resources that integrate user-generated content and user participation (IACP, 2013A). Boyd and Ellison (2007) define social network sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. Some of the popular social media sites are Facebook, MySpace, Twitter, Nixle, Flickr, Orkut, YouTube, Wikipedia, Digg, Reddit, LinkedIn, Podcasting, Google+, RSS feed, Picasso, Pinterest, Instagram, Flickr, Tumblr, FourSquare etc.

The roots of social networking can be found in the 'Usenet' (user network) developed in 1979. Usenet predates internet and was used by universities and colleges to communicate on topics of interest. First social networking site SixDegrees.com started functioning in 1997 and it allowed users to create profiles and list friends. Since then the social media sites have been mushrooming.

Growth of Social Networking Sites

Social networking services have become highly popular among the children and youth all over the world. They not only allow individuals to meet strangers, but also enable users to articulate and make visible their social networks (Boyd and Ellison, 2007). They offer unique opportunities in terms of extent, spread, reach, accessibility, immediacy and permanence. Various social media sites have emerged over the years as shown in Table 1.

Table 1: Social Media Timelines

Timeline of Social Network Sites	
Year	Released Social Network Sites Name
1997	SixDegrees.com
1999	LiveJournal, AsianA venue, BlackPlanet
2000	LunarStorm, MiGente, SixDegrees (Closed)
2001	Cyworld, Hyze
2002	Fotolog, Friendster,skyblog
2003	Couchsurfing, LinkedIn, Myspace, Tribe.net, Open BCIXing, Last.FM, Hi5
2004	Orkut, Dogster, Multiply, aSmallWorld, Flickr, Piczo, Mixi, Facebook (Harvard), Catster, Dodgeball, Care2, Hyves
2005	Yahoo!360, Youtube, Xanga, Bebo, Ning, Cyworld (China), Facebook (High School Network), AsianA venue, Black Planet (Relaun)
2006	QQ, Facebook (Corp.Network), Windows Live Space, Twitter, MyChurch, CyWorld (U.S), Facebook (Everyone).
2011	Google +

(Source: <http://networkrangers.blogspot.in/>)

Facebook, which started in 2004, has emerged as the largest social networking site with more than 1.4 billion users in the world. If it was a nation, it would be the third largest. There are more than 900 million unique visits to YouTube every month. There are more than 645 million active registered users on twitter (Source: <http://www.statisticbrain.com>). LinkedIn, the world's largest professional network, has more than 250 million users. Google has more than 540 million Google+ users.

Social networking sites have become immensely popular in India, getting the boost from decreasing cost of computers, internet and mobile connectivity. According to a survey by Internet and Mobile Association of India (IAMAI) and IMRB International there were 62 million users of social media in urban India by December 2012 (IAMAI, 2013). According to research firm eMarketer, India will have the world's largest Facebook population by 2016, Indian are increasingly logging into their Facebook and Twitter accounts, with the country recording the highest social networking growth of 37.4% (eMarketer, 2013). According to another study, 83% of Face book users in India are less than 34 years old (Nayak, 2014).

Usage of Social Media

The use of social media started with the need of individuals to instantaneously connect with each other digitally, cutting across geographical boundaries. Today it is being used not only by individuals but by corporate, government departments, political parties and various types of organisation. Social media has now become an integral part of modern digital society and it is growing exponentially. Tapscott and Williams (2006) have termed social media as "mass collaboration". In their opinion, transparency, peer collaboration, audience participation and globalization are changing markets and companies. Comm (2010) has explored the latest trends in how businesses and marketers can integrate Twitter into their existing marketing strategies to expand awareness of their product or service and handle negative publicity due to angry or disappointed customers. In the recent times, a significant role has been played by social media (particularly Facebook, Twitter and YouTube) in Arab Spring revolutions in Middle East. During the year 2011 East Japan Earthquake and Tsunami, social media such as Twitter and Facebook served as a means of information sharing, and a way for people inside and outside Japan to volunteer and to provide information-based support to affected individuals (Peary *et al.*, 2012). Similarly, during the disaster created by hurricane 'Sandy', social media was used for warning, tracking, information updates and recovery operations. Several Indian politicians and news personalities have Twitter and Facebook followers running into lakhs. Delhi Legislative Assembly Elections in 2013 and Loksabha Elections in 2014 have witnessed widespread use of social media for political purposes.

Social Media and Challenges for Law Enforcement

Criminals have not been behind in realizing the potentials of this powerful media. Cyber is a digital beat, which now needs to be patrolled by police just like a real and physical beat. Numerous legal and illegal activities are taking place in the cyber beat. Criminals are using social media for sale of contraband items, organising terrorism, selection of targets and victims, social engineering, spreading malware, committing cyber frauds, defamation, intimidation, hacking etc. Sex offences linked to Facebook or Twitter users have rocketed in UK in the last four years. Paedophiles are increasingly logging on to the social networking sites to target children (Mirror, 2013). There have been several cases of use of social networks in human trafficking, trade in arms, drugs and other contrabands. Taking advantage of the Facebook and Twitters postings and the location information, burglars have committed theft knowing that house occupants are outside town. Using the personally identifiable information available on the social media and internet, it is possible to create a detailed profile of an individual, which can then be used by cyber criminals to commit crimes such as spamming, impersonation, phishing, vishing (phone based phishing), identity theft, cyber stalking and bullying, online harassment, online grooming of children for sexual exploitation etc.

During their research, Jain et al. (2013) were able to uniquely identify several Indian social media users who had posted their mobile numbers on social networking sites. Terrorists and extremists are using social media to propagate their ideology and recruit members. American-born Al-Qaeda leader, Anwar al-Awlaki used various social media such as Facebook, blogs, and YouTube videos to try and recruit and develop a cadre of terrorists in the United States (GPO, 2012). For crime prevention and detection, maintenance of law and order and intelligence collection, it is imperative on the part of law enforcement agencies to patrol and monitor the activities in the social networking sites. The spread of inflammatory and provocative photographs, video and other contents by miscreants through social networking sites has resulted in religious unrest in several parts of the world. In August 2012, gory and disturbing fake images and messages of alleged torture and killing of Muslims in Rohingya in Myanmar and Assam appeared on the social networking sites and spread like a wild fire. This resulted in protests and riots in several parts of India. In September 2012, a small

14 minute anti-Islam video clip from a movie “Innocence of Muslims”, uploaded on YouTube, caused widespread protests and violent riots in several countries. The efforts to block access to these contents by Indian government, under Section 69 of the Information Technology Act, were not fully successful due to various reasons. Naxalites and various other groups have also been using social media for their propaganda and support. There are reports that efforts are being made by Sikh militants to network and revive militancy using social media. While Blackberry Messenger (BBM) played an alarming role in the spread of series of riots in London in August 2011, at the same time Twitter was used to mobilize community clean-up operations (Guardian, 2012).

In December 2012, during the demonstrations related to Nirbhaya gang rape case in Delhi, protestors and journalists used social media in an unprecedented way. The event also witnessed flash mob mobilization using social media. Police realized its shortcomings in analyzing and generating pre-emptive actionable intelligence from the rapid online postings as the protests were escalating. Between 9th September to 18th September 2013, during Muzaffarnagar riots, 84,806 tweets were posted by 17,925 unique users with hashtags #Muzaffarnagar and #UPRiots (Kumaraguru, 2013). Circulation of an old fake video and rumours about the violence through social media contributed to the fuelling of riots. Recently, in a high profile case, war of Tweets culminated in a tragic death of wife of a Cabinet Minister. A large number of fake social media accounts of famous personalities, including that of President of India, have also been bothering the law enforcement agencies.

Opportunities Offered by Social Networking Sites

Notwithstanding the challenges, the unique characteristics of this media also offer several opportunities to law enforcement agencies. If used judiciously, these can be leveraged to harness the power of information technology through them. They are highly suitable for police to instantaneously connect with the public. They can be used for updating police activities, issue press releases, traffic alerts about congestions, special events, diversions, road conditions, crime prevention advisories, dispel rumours, tracing suspects and missing persons, emergency notification, community policing, etc. They can also be useful in identification of criminals, their activities and locations. The digital evidences of cyber crimes or traditional crimes,

committed with the help of social media, can be found on various social media sites. They need specialized forensic tool for collection. In 2005, Virginia Police used social media to solve the Taylor Behl murder case by tracking her MySpace page. On 8.6.2007, Wellesley Police became the first police department to use twitter. Vancouver police effectively used different forms of social media to solicit photos, videos and other information to identify rioters and collect evidence against them during hockey riots in June 2011 (ICSM, 2011). Social network analysis played an important role in the capture of Saddam Hussein and killing of Osama Bin Laden. Twitter handles of several police departments in USA are now displayed on their uniforms. Fourth Annual Survey about the use of social media by law enforcement agencies in USA, conducted by IACP, shows that 95.9% of agencies surveyed use social media in some capacity. They use it for criminal investigation, community outreach, notifying public, crime prevention, public relations, collection of intelligence, soliciting tips about crime etc. (IACP, 2013B).

Nextdoor, a social networking service for connecting with people who live in a neighborhood, is emerging as a digital evolution of time tested neighborhood watch scheme. Cyber undercover operations on social networking sites can be very effective in prevention and detection of cyber criminals proactively. In Canada, Toronto Police Service, which started its social media program in 2010, has emerged as a leader in its use. It has effectively used social media for crime prevention, traffic updates, internal communications, monitoring large events and protests, etc. It is reported that National Domestic Extremism Unit of London Metropolitan Police Service has been monitoring and keeping records on almost 9,000 political campaigners and activists on a 24x7 basis by social media surveillance team, which uses a technique called "Socmint" (Social Media Intelligence). Police Services of Northern Ireland have used Facebook as a tool to conduct local surveys to learn more from its citizens (Alderson 2011). During the 2011 riots in London, the Metropolitan Police effectively used Flickr to publish images of suspects with simultaneous announcements on Twitter. By talking about positive news, emotions, police culture and experiences of daily life on social media, it is possible to effectively portray the human side of policing to public. The benefits of Enterprise Social Network (ESN) are being realized by business organisations. According to Gartner (2013), by 2016, 50% of large organisations will have

internal Facebook-like social networks. A secured social networking platform can be used internally by the law enforcement departments to efficiently connect with its own officers for professional information sharing, human resource management and better bonding, as has been done by Toronto Police Service. In Australia, New South Wales Police have added 'Project Eyewatch' to their social media strategy under which police work together with their local communities to find solutions to local issues.

A Case for Social Media Monitoring

Law enforcement agencies can afford to ignore social media beat only to its peril. If monitored effectively, social networking sites can provide resourceful, economical and effective tactical and actionable intelligence (Fitsanakis and Bolden, 2012). Social networking sites are now one of the most fertile sources of criminal evidence. Social media monitoring and analysis has been in use by business organisations to find the market trends, sentiments, likes and dislikes of customers. Law enforcement agencies can also use social networks as a source of information, pattern and event recognition, analyzing public mood and trend. Researches by Asur and Huberman (2010) and Bollen et al. (2011) have shown that social media can be utilized to forecast future outcomes. Real time monitoring and analysis of social media can be very useful in unrest anticipation and predicting snap demonstrations. Monitoring social media will also enable police to identify provocative and objectionable contents so that they can be blocked under provisions of section 69 of IT Act and associated Rules. Although law enforcement agencies have been late to realize the opportunities offered by social networking sites, several police organisations have started working in this direction. In 2012, Federal Bureau of Investigation (FBI) had floated a 'Request for Information' to explore solutions for automated search/monitoring of social media, generation of real-time alerts and actionable information, based on select parameters/Keywords (FBI, 2012). In India, some intelligence agencies and Mumbai Police have already set up social media monitoring labs. Delhi Police is also contemplating such a cell and has floated expression of interest for implementation of "Open Source Intelligence (OSINT)" solution. Central Bureau of Investigation has recently recommended that "investigating agencies should exploit social networking sites for their

“overt, discreet and covert” probe by digging out profile photos, status messages and following the users.” Social media monitoring can be undertaken by Tech-Int agency such as National Technical Research Organisation at the national level and state intelligence departments can do so at the state level. It is pertinent to mention that US Library of Congress is now archiving every publicly available tweet ever posted on the social network Twitter since 2006.

SWOT Analysis

Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis is a technique for critically evaluating the external and internal environment of an organization for strategic decision making. Table 2 presents the SWOT analysis for the use of social media by the law enforcement agencies.

Table 2: SWOT Analysis

	Beneficial	Harmful
Internal	Strength • Young, educated and tech savvy new recruits • Smart phones being used by a significant number of police officers • Significant number of police personnel already use social media for personal use • Availability of funds under police modernization	Weaknesses • Inadequate understanding and support of police leadership • Resistance to change • Lack of comprehensive policy about the use of social media • Inadequate social media trained manpower • Misuse or improper application of provisions of IT Act • Non availability of tools for social media monitoring and analysis • Lack of social media labs • Possibility of inappropriate use by police personnel

External	Opportunities	Threats
	• Easy to setup social media presence • They are cost effective • They are instantaneous • Enabling provisions under IT Act and rules • Tech SDavvy younger citizens already on social media • Cheap internet connectivity and smart phones • Public expectatios towards police to use social media • Highlyeffective in two way communication with public • Monitoring social media contents useful for intelligence collection, crime prevention, detection maintenance of law and order and traffic management • Can be used for internal communication as well • Successful models of use available	• Misuse of social media by criminal and anti-social elements • Inadequate cooperation by social networking sites • Privacy and security concerns • Inadequate appreciation of utility of social media by criminal justice system • Adverse comments by public on police social media sites

As summarized in the SWOT analysis, social media poses new challenges to Indian law enforcement agencies and there are inherent weaknesses in dealing with them. However, at the same time, it offers numerous opportunities which can be utilized by leveraging on the internal strengths and further capacity building.

Social Media Monitoring Tools and Technologies

The ever increasing volume of the data generated by social media users makes the tasks of its monitoring and analysis humongous.

Business community and research agencies have been using number of automated tools for this purpose. A number of free and paid tools and services are available in the market for monitoring social media. Some of them are *Social Mension*, *Social Snapshots*, *Twitalyzer*, *Social Flow*, *Radarly*, *Twazzup*, *Addict-o-matic*, *Cyber Alert*, *hootsuite*, *BoueJay*, *Accurint*, *Geofeedia*, *Trendsmat*, *Buzzient* and *Twitter Investigator*, *XI Social Discovery*, *Radian6*, *TweetDeck*, *BlueJay* etc. There are software tools for social network analysis for mapping and measuring the links of people/groups on social networks. The approach, functions, coverage, extent, analysis etc. of these tools differ considerably. Since most of them have been developed for business community, they only partially meet the law enforcement requirements. Study by Human Digital (2011) shows that the social media monitoring tools, available in the market, have limited abilities to effectively deal with both scale and speed in unison to provide actionable intelligence. A detailed examination of these tools is beyond the scope of this article. A single tool is not able to cater to the wide need of law enforcement agencies and a specially developed solution is needed. Researchers at the Indraprastha Institute of Information Technology, Delhi (IIIT-D), under the guidance of Prof. P.K. Ponnuram, have come up with a new system called 'MultiOSN', which has been monitoring multiple online social media during real-world events and presenting an analysis on real-time basis. Social media forensic tools are now capable of digging into past postings on social media.

Recommendations

In the complex and rapidly changing crime and terrorism landscape in digital society, Indian law enforcement agencies need to stay ahead of their adversaries by adopting new tools and strategies. There are already several unofficial police social media sites trying to fill the gap in the absence of official social media presence by most of police organisations in India. At the moment, the use of social media and mobile applications by Indian law enforcement agencies is only at experimental stage. A very few police departments in India have put together a system to harness the potentials of social media. Even those who are using it have done it partially in a limited manner. Police in Delhi, Bangalore, Kolkata, Mumbai, Hyderabad, and Chandigarh have taken significant steps in the use of social media to disseminate information to public. Social media sites and resources are another

tool in the law enforcement investigative toolbox and should be used in a manner that adheres to the same principles that govern all law enforcement activities (Global Justice Information Sharing Initiative, 2013). The police leadership in India needs to be made aware of the leveraging role of social media and mobile applications in policing. The law enforcement agencies must develop a comprehensive strategy to leverage social media to its advantage by integrating it with their functioning. It must also be ensured that while doing so the privacy and civil liberties of individuals are not infringed. On the lines of "Social Media the Internet and Law Enforcement" (SMILE) Conference, Bureau of Police Research and Development, MHA can initiate a similar annual conference where law enforcement officers of the country can discuss and share experiences, best practices, tools and technologies about use of social media in law enforcement activities. In the digital world where everyone is becoming online and connected, law enforcement agencies in India cannot afford to miss the social media bus by falling prey to 'Digital Darwinism'.

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