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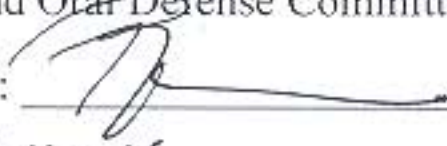
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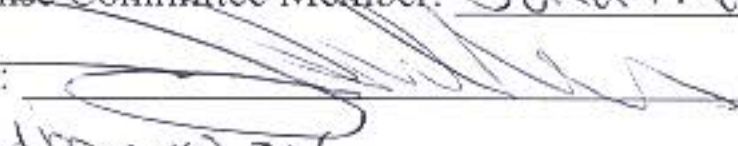
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Executive Summary

Title: Policing the Megacity with Social Media Intelligence

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Thesis: By harvesting data from the “virtual world,” lines of effort in a megacity become vastly more important than physical lines. Since we can now “see” barriers, boundaries, and divisions through the aggregation of data via social media, the need to draw physical boundaries using physical or geographic boundaries is not as important when operating in a megacity. Mapping network usage, trends, keywords, and density provides insight and predictability in terms of focus of effort and potential precision targeting.

Discussion: In World War I, aerial reconnaissance altered the perception of battlefield intelligence with the implementation of the airplane. Today, social media continues to reshape what governments know and do to address emerging issues using this redefining human intelligence. Governments using social media intelligence today are just beginning to understand the evolutionary achievement which stemmed from early law enforcement complaint statistics systems. These legacy systems manually relied on compiling data from police reports to form a better understanding of communities police departments were responsible for protecting. As information technologies became readily available, the adaptation of these systems gave new insight to better police, forecast, and even prevent crimes from occurring. Systems known as PredPol (Predictive Policing and CompStat (ComplaintStatistics)) better enabled police departments to align resources effectively in areas requiring a different response to fight crime. In the past decade, social media has created new opportunities to obtain real time intelligence from virtually thousands of human intelligence (HUMINT) operators - *the millions of citizens using social media*. In the event of disaster in a megacity, trained social media intelligence analysts can provide pinpoint targeting (hostile or friendly) to strike instigators or prevent disruption to a tightly knit network of everything (NOE) system inherent in a megacity. Using social media, military intelligence, reconnaissance, and surveillance (ISR) capabilities, and integrating military and law enforcement resources, to include synchronizing efforts in small teams, military forces can operate effectively to achieve carefully-tailored mission requirements in response to crisis events in a megacity environment.

Conclusion: Fighting in the megacity requires development of social media intelligence resources and capabilities to integrate with host nation civil authorities. The social media capabilities involve the establishment of specially trained teams that require technical training and specialized skillsets, tools, and access to tap into the intelligence value of all forms of social media. The social media teams must become experts in crowdsourcing, data mining and targeted monitoring and filtering of continuous data streams, gathering real time intelligence within the NOE to produce accurate “triggers” integrated within commanders’ decision support templates. Allowing local civil authorities to remain in control, supported by military ISR capabilities, produces effective/efficient results, with minimal unwanted impact in the megacity and without creating insurgencies, increasing tensions (a “tipping point”), in the historically volatile urban environment.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

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Preface

Deploying a military force in response to military, humanitarian, or disaster-related crisis in a megacity is inevitable, and not without historical precedent. When this happens, civil and military leaders must integrate within their decision cycle the real-time precision and risk understanding available through social media as an intelligence channel to achieve decisive results. The megacity operates in a complex web of interrelated populations, systems, infrastructure, communications, and physical and cultural borders. Daily operations are nearly chaotic, but like any complex ecosystem, stasis is achieved by the organisms within the system—the citizens, the power brokers (both legitimate and non-legitimate actors), and the network of everything (NOE) – formal and informal systems (transportation networks, food supply and distribution chains, internet and legacy communications networks, interpersonal and organizational relationships, etc.), which make everyday life in the mega city possible. Targeted deployment to support the local authorities is the optimal use of military forces in a megacity. Using today’s intelligence gathering tools, augmented by social media sourcing, provides the greatest opportunity to synthesize and integrate military and law enforcement assets to achieve mission results with the greatest chance of success and the least risk of disruption.

Completion of this project would not have been possible without the support, guidance and assistance from the faculty of Marine Corps University, Marine Corps Command and Staff College and the Gray Research Center. I would like to thank and acknowledge the Advanced Studies Program Professors, Dr. Benjamin Jensen, Dr. Jonathan Phillips, Dr. Eric Shibuya, and Commander Russell Evans for guiding, challenging, and assisting me during this project. My Faculty Advisors, LTCOL Joseph Janczyk, United States Army, and Dr. Eric Shibuya for providing outstanding instruction, extreme patience, and mentorship throughout the academic

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Controlling the Uncontrollable

As the world's populations continue to gravitate toward urbanization, careful study of the characteristics of population centers starts to unveil a landscape mapped by ethnic, religious, and sociological lines as much as by geographic or physical boundaries in megacities. Although there are many historical examples of military operations in urban settings, megacities of today present a challenging environmental dilemma that undermines, even resists, the use of conventional military force. The environmental challenge is partly due to the sheer number of people that would have neither the chance, nor desire, to leave the megacity during a civil breakdown. For the millions that stay, governance by official and unofficial members of the community is already in place, but inherent weaknesses and divisions will be exposed by the stress of the crisis. Self-regulation out of necessity (READ: survival) exists on the streets. Informal governance by illegitimate actors controls many aspects of megacity life, and both compromised and uncompromised negotiations for peace, part of daily life, will take on new and greater significance. The afore-mentioned factors are critical for two reasons. First, the population density of megacities will make it difficult to conduct military operations. Second, Megacities today already operate in a near state of disaster. The event that tips the scales toward chaos may appear at first insignificant. Daily activities and the quest for peaceful neutrality are conducted by opportunists, legitimate and illegitimate, controlling developed and undeveloped spaces.¹ Consider the few law enforcement resources responsible for patrolling various districts within a city limit. Most societies work organically once the majority of basic individual needs are met (water, food, security, shelter, clothing, Etc.).² Couple individual needs with the complexities of sociological influencers (safety, belongingness, esteem, and actualization) and the job of maintaining control in a megacity becomes exponentially harder.³ Unruly, uncontrollable civil breakdown can occur as soon as just one of these functions is disrupted in a

megacity. Resource scarcity and the psychological effect of not having basic needs met can thrust any crisis into a tipping point. A megacity operating on the brink of catastrophic failure in normal circumstances, because of the insatiable appetite required by the network of everything (NOE), puts this environment on a teetering scale the moment friction events are introduced into the system.

Putting Policing a Megacity in Context

Applying traditional military operational approaches to controlling the populace in a megacity with an emphasis on leveraging police forces creates huge challenges. Population density and pre-existing formal and informal networks complicate applying mass to clear and hold a megacity. Megacities are too big to clear and too complex to hold by applying military force alone. Military employment in a megacity must seek to employ superior Intelligence, Surveillance, and Reconnaissance (ISR) assets to support the existing authorities native to the megacity communities. Limited precision operations lean away from “tanks in the streets” and emphasize establishing a concrete understanding of the instigators, actors (formal and informal), and areas of interest that must be protected on behalf of the millions of people residing within. During a crisis in the megacity, two critical assumptions are made: many people will stay in place, and efforts by civil authorities will be exhaustive to maintain or restore critical infrastructure resources (e.g, water production, sewage treatment, power, and food distribution centers).

Military force utilization in policing actions is not new, though political dimensions of military force will undoubtedly drive usage in an increasingly constrained fashion. The rules of engagement will constitute a higher form of constraints including various restraints.⁴ A look at use of police forces provides granularity of potential outcomes of employing a military force in an urban population center. In *Police Use of Force, A Global Perspective*, a collection of various perspectives and viewpoints examines the different forms of control. Statistics about use of force

provide comparisons to the use of control via presence, influence, and societal responses to different approaches used in policing international cities. Since the use of a military force in an urban setting looks unnatural, the presence of uniformed personnel in a city could incite an insurgency.⁵

Studying modern day policing reveals how demographics, policing (force) posture, and different forms of government (paramilitary vs community focused) peacefully maintain order amongst urban populations. Using accurate and timelier intelligence creates a clearer understanding of a community's grievances. This clearer "picture" allow civil authorities to incorporate better options with a less-than-military approach. The urban landscape of a megacity requires law enforcement agencies to maintain security through establishing trust, confidence, and situational awareness in the very neighborhoods it is part of. Becoming part of the operating environment to influence positive control is a fundamental principle of successful policing with direct military application. There are three important elements when considering the global perspectives in policing. First, there are the physical, psychological, non-lethal, lethal, public safety, and legal/criminal lenses (perspectives) in which to view a problem. The second element primarily deals with the use of deadly force and justification of when it is used—this may be viewed militarily as the element of Rules of Engagement (ROE). The last element consists of using emerging technologies such as social media to shape policy which also accounts for potential political considerations.

Since population density sets the conditions for group mentality, the environment is vulnerable to mass panic, mob riot, and chaos. Hence, a police and military force in the megacity should prioritize its efforts on a peaceful means to prevent anarchic spirals or to rapidly return stability, order, and control while avoiding the urge to use force to control the population. Authors Bayley and Perito research the recent wars in Iraq and Afghanistan to illustrate the many lessons learned when it comes to controlling violence in their book *The Police in War: Fighting Insurgency*,

Terrorism, and Violent Crime. From their conclusions, it becomes clear that a megacity offers fertile operating environments to rapidly breed and propel an insurgency. Competition for authority is fueled by the uncertainty of crisis, and the ability for a single instigator to influence an epidemic-style popular uprising is greater because of the population density per square mile. Police methods and trends orchestrating the “dancing” between formal and informal actors (criminal organizations, illegitimate and legitimate leaders), provide valuable insight for United States (U.S.) policy makers and military planners for future operations. Working in a police-state capacity within the megacity, coupled with military resources, will demand precise tasking with civilian objectives in mind.

As mentioned earlier, the military is increasingly finding itself in a policing role, and this role will be integral to operations within a megacity. The lines of military and police forces are blurred when violence or a civil unrest breaks out in a megacity. As examined in *Militarizing the American Criminal Justice System*, the blurred lines between military and police can encourage an escalatory response, which does more harm than good. Concepts and the reality of crime control, language, military roles in domestic law enforcement, Technostructure, human rights, community policing, and real world consequences are based on institutional paradigms and ideologies.⁶ In some instances the book is actually contradictory based on its assertion that aggressive military force can attempt to control a megacity. The author implies the U.S. military is behind “the framing of our nation’s crime control thinking, policies, and actions.”⁷ However, the intent is to shed light on what is influencing policy, current trends in the military, the blurring distinctions between military force-police force, and popular culture to include the use of technology.

Two additional references worth noting are: *The Urban Challenge in Africa: Growth and Management of its Large Cities*, and *The Real Population Bomb: Megacities, Global Security, and the Map of the Future*. In the former, the book examines the management of urbanization in both

controlled and uncontrolled (governed and ungoverned) spaces surrounding megacities in Africa. Population shifts from rural areas to urban centers are causing a new adaptation of rural links, and new strategies to manage both policy and emerging metropolises.

In the latter reference, the population outbreak is alarming and concerning. Megacities have become dangerous and destitute, offering no shelter for the vulnerable. Population numbers in the urban centers have risen too quickly for infrastructure to keep pace, and the megacity can be viewed as triumphant failures. Megacities are man-made landscapes producing waste and consuming everything at unprecedented levels. Cities, such as Cairo in this book's example, are places that "you can't hear yourself scream... To experience Cairo is to know an assault on the senses, both positive and negative-sometimes simultaneously."⁸ The megacity has taken on a life form of itself that is unnatural and disturbing for the unprepared. A military force operating in such a space does not provide positive contribution to a landscape that is already overwhelming the senses of the people within their urban environment. Unlike local law enforcement, military forces are simply not part of the city.

"The future will thus be brutal to industrialized armies with big tanks and jets, and kind to corporate-style forces in urban settings."⁹

Understanding use of force models, establishing effective training, tactics, and procedures, and defining ROE are key to discovering how a military force may be integrated with civil authorities to provide security and safety for millions of people. Establishing effective policies and procedures for military forces to synchronize and integrate with local civil authorities to better gain intelligence and deploy precision community response effects is essential to success in this environment. A next step entails defining ROE and other ground-rules and operating instructions for integrated forces to clear or hold part of a megacity. Urbanized population centers governed by

known and unknown organizations are susceptible to group pressure which can be controlled from within. Further complication comes from diffusion of responsibility, often leading to tribal and/or mob rule, with targeted instigation from an insurgency of very few to influence or control thousands, if not millions. Since the uniformed military force will immediately appear as the invader and initiator of hostilities, the insurgency has visible/tangible references at which to point an agitated mob. The lessons drawn from many international police organizations lead to a better understanding of civil control, with force employed only when absolutely necessary. The fundamental application of military resources in a megacity should be to establish an effective, scalable supporting/supported role with local police forces in the lead.

Policing Case Studies

The militarization of law enforcement is the trend for cities experiencing criminal behavior surpassing traditional police force resources and capabilities. The lines of tactical employment between military police forces are blurring as the stakes for power and control from organized criminal organizations become greater. In the eyes of the public, there is a negative stigma when academia, practitioners, and community leaders discuss military-police training, tactics or procedures (TTPs).¹⁰ The very topic of police-military affairs can make people feel uneasy. For domestic issues, the idea of militarizing a police force is disconcerting. On the other hand the use of military forces for “policing” actions on a global scale are equally disconcerting. As law enforcement agencies become increasingly militarized, military forces deployed find themselves repeatedly in traditional policing actions/roles.¹¹ When considering potential challenges of deploying military forces in a heavily concentrated, densely populated, mega city, a different approach may be required. The converging trends of military forces for policing and policing forces that are militarized are, in fact, a point of intersection. Operations in a mega city may

provide the setting where the lines of responsibility become clear and where leaders can optimize the alignment and integration of capabilities between military and local law enforcement agencies. In fact, military forces deploying to a megacity may find the most effective strategy is to present a much less aggressive, nearly transparent, public appearance and achieve mission objectives quietly, using and manipulating the existing infrastructure. Priority of action is to identify the mega city's power brokers, community agents, and leaders (legitimate and non-legitimate), and then to assist that leadership structure, its people or organizations, within a city to stabilize, secure, and transparently restore stability and the conditions that enable stability, as quickly as possible. This approach is similar to what police departments have to do every day throughout America.

Just as law enforcement agencies have much to gain from learning and applying tools such as direct action and kinetic (physically violent) response to violent criminal organizations, there is an opportunity for the military to incorporate lessons learned from police departments engaging to maintain order, peace, protection, and orderly operations of communities of all sizes. The following case study is organized into several parts with sub-sections intending to explain the following. First: predictive policing, a brief background, and law enforcement trends. Next, the role of military forces if/when deployed in response to catastrophic events involving a megacity. Last, the implications of using military forces in response to crisis in a megacity.

Predictive Policing

In 2014, the Community Oriented Policing Services (COPS), U.S. Department of Justice, published their *Future Trends in Policing* report outlining the top trends police departments have adopted, or intend to adopt in the near future.¹² The trends discussed in this study serve as examples of police departments' realized success when adapting toward new, and even not-so-new, techniques to combat criminals, public disturbances, and community challenges in their

jurisdictions. If the data embedded in the COPS report is accurate, assumptions resulting from the success of these law enforcement trends support a closer examination for military application if, or when, the need arises to employ a military force in or around a megacity. An overarching theme embedded in the trends is the concept of predictive policing.¹³ In the words of Beth Pearsall in her June 2010 article: “Predictive policing, in essence, is taking data from disparate sources, analyzing them and then using the results to anticipate, prevent and respond more effectively to future crime.”¹⁴ Although some could argue that predictive policing is nothing new, the use of data to drive future policing actions is now becoming widely accepted. The idea of predictive policing came from Police Chief William Bratton (Ret) and the LAPD in 2008.¹⁵ As for many Police Chiefs at that time, the idea of using statistical and geospatial analysis for forecasting was not new. Using the aggregate data in analytical tools (automated, coordinated with interagency, and shared) for predictive analysis is transformational. Chief Bratton, working closely with the director of Bureau of Justice, recognized that criminals and victims follow behavioral patterns. Having a means to analyze data and recognize patterns faster and more efficiently would give law enforcement agencies the ability to predict where and when crime would be most likely to occur. The interest and demand for predictive policing analytical tools led to the development of a system called PredPol (Predictive Policing) software. With the help of the media bringing attention to the usefulness of PredPol software, several law enforcement departments in California implemented PredPol to forecast criminal activity¹⁶

As with most automated analytical systems, the usefulness depends heavily on the quality of data inputted.¹⁷ The amount of data required to generate the type of analysis by PredPol requires a fusion of many sources. This fusion of data brings together multiple sources of information and intelligence to map the criminal and victim “terrain” resulting in a clearer view of what a police

department deals with and the insight provided – software and analytic filters - filters out the real conflict from the noise of minor infractions.¹⁸ Once the correct data is aggregated, the analytical tools can now frame problems and concerns creating a key mapping of terrain that includes vital information not previously thought of as relevant. For instance, prior to tools such as PredPol, police departments relied specifically on reacting to distress calls and for decades exhausted resources responding to calls after a crime was already committed or in progress. With the ability to aggregate all forms of data regarding criminal activity, victims, language, gangs, vandalism, intelligence, neighborhoods, weather, and ethnicities, police departments are now able to overlay data and map key human terrain with historical and future analysis. This enables deployment of resources to “respond” (or in truth, pre-stage and preempt) a crime *before* it is likely to occur.¹⁹ The notion of predictable human behavior is also supported by anthropologists. One worthy of mentioning is Jeff Brantingham, who helped the LAPD develop their predictive policing concept. In his words “The naysayers want you to believe that humans are too complex and too random – that this sort of math can’t be done... but humans are not nearly as random as we think... In a sense, crime is just a physical process, and if you can explain how offenders move and how they mix with their victims, you can understand an incredible amount.”²⁰ This point of view is also supported by what is known as the *blended theory*, broken down into three basic parts:

- Criminals and victims follow common life patterns; overlaps in those patterns indicate an increased likelihood of crime.
- Geographic and temporal features influence the where and when of those patterns.
- As they [criminals and victims] move within those patterns, criminal make rational decisions about whether to commit crimes, taking into account such factors such as areas, the targets’ suitability, and the risk of getting caught.²¹

Prior to LAPDs PredPol, There Was the New York Police Department

Before predictive policing and today's law enforcement trends became current practices, the innovator for many policing TTPs in the world of law enforcement was, and continues to be, the New York Police Department (NYPD). The NYPD is known as the gold standard for law enforcement agencies worldwide. New York is no stranger to bombings and saboteurs. Long before the attacks on September 11th, 2001, people have plotted against the city and the fast paced life of its citizens and survivors. Two such attacks took place in 1916 and 1920. In both incidents the targets were an ammunitions dump and the financial district, respectively.²² In 1994 New York City (NYC) was committed to fighting crime. To make the streets safe required an outsider's view and a different approach than what had become the status quo. NYC and the NYPD made a commitment to fight and win the war against crime. Because of the magnitude, scope and complexity of the crime problem in a city of 8 million residents and multiple police forces totaling more than 41,000 personnel, a comprehensive strategy was required to align resources against the challenge.²³

Planning began by first looking at the numbers – data analysis. Securing the city meant taking the time to look at statistics and reports. Checking the numbers revealed bigger problems and effective solutions. The creation of four fundamental principles took root and the NYPD was committed to follow them dogmatically. They were: 1. Accurate, timely intelligence, 2. Rapid deployment, 3. Effective tactics, and 4. Relentless follow-up and assessments.²⁴ The demand for data and the revealing significance behind the data led to a process known then as Comstat, which in turn led to an integrated analytical system known as CompStat (ComplaintStatistics). Prior to CompStat systems there was a series of independent databases with no connection to a central repository.²⁵ The central gathering of information and aggregated analysis led to a clearer picture of

what was going on in NYC and the NYPD. “²⁶CompStat cut through a lot of crap... common crime continued to drop...The computers and interrelated databases in operation now can turn out numbers, maps, and relational diagrams...could only dream of 15 years ago {stated in 2002}. Banks of computers fill the room and can project their findings... when it comes to tracking terrorists-discovering whether they are lonely, angry young men or part of global networks.” Creating a more effective police force through the use of better intelligence and responsiveness had profound effects. The decrease in crime was partly related to deterrence. As the criminals witnessed first-hand the effectiveness of the improved TTPs in the NYPD, crime rates dropped. “No law and no threat of retribution will stop a man or woman planning a suicide attack. Only the threat of “failure, capture, and humiliation is likely to be effective.”²⁷ CompStat paved the way for creating future trends in policing. The increased visibility through intelligence produced by means of aggregating data points gave the NYPD Oracle-like prediction.

Another key aspect that the NYPD adopted earlier than most was the idea of interagency coordination through trading of information. Whether this was with the FBI, CIA, or informants, trading of information became crucial to generating favorable outcomes. The NYPD put an emphasis on language proficiencies recognizing that if an officer was going to trade information with a community or informant, they needed to speak the language.²⁸ “You can’t run informers in immigrant communities, much less undercover cops, if you don’t speak the dialects. That’s true whether you are talking crime or terror or both, and out on the street you can’t always tell the difference.”²⁹ Recruiting from immigrant communities became essential to establishing trust, increasing legitimacy, and trading information making community relations a two-fold enterprise for the police departments and the safety of the local communities.

Law Enforcement Trends

As stated previously, the COPS report outlines the top trends in law enforcement. These trends today are the results of world class police departments using intelligence, derived from an aggregation of data, to predict future events. The top trends to fight crime in law enforcement agencies today are:³⁰ Community policing, Use of Social Media³¹, Directed patrol/Focused deterrence, Target problem addresses / Locations, Crime Prevention Programs, Problem–Oriented Policing, Crime Mapping, and Crime Analysis. The effectiveness of any of these trends is greatly reliant on the ability to gather data, conduct efficient analysis to produce valuable intelligence, and employ forces in anticipation of predictable events.

Two trends worth highlighting for the purpose of this paper are community policing and use of social media. Community policing goes beyond the old paradigm of police officers working in their communities. Today's community policing concept is much more involved and complex. Partnerships between police departments are formed with businesses, universities, social clubs, not-for-profit organizations, and even hiring retired cops to reengage in targeted communities as civil liaison representatives. Community policing also entails building partnerships with other agencies to complement operations at multiple community levels.³² When it comes to using social media, police departments are quickly recognizing the power of these technological innovations. Also stated in the 2014 COPS report - Police departments use social media for two basic purposes: disseminating their own messages to the public, and gathering information from social media platforms to prevent and investigate crimes.³³ For a crisis involving a megacity, using social media is probably the most effective tool to inform the public, prevent panic, and harness streaming data to paint a real time, accurate, intelligence picture of the environment. For police departments, use of social media informs them of the mood/sentiment during tenuous events, gang activity through the

use of cyber affiliation infiltration, and even facilitating investigations.³⁴ A police force using an integrated systems approach, such as CompStat or PredPol, gives agencies (Intra and Inter-agency) timely information to shape and align operations effectively. Today's community policing efforts and social media are increasing the intelligence stream into police departments' current operational picture. Using community policing and social media data-points only serve to increase the utility of predictive policing. "As police departments, we have gotten better at pushing down crime. Now we are looking for the thing that will take us to the next level. I firmly believe predictive policing is it."³⁵ If this holds true, agencies that are short on resources and in low density, high demand operating environments need to get better at predicting events to develop courses of action before a catastrophe occurs.

Implications

Compare the analytical tools such as CompStat and PredPol to some of the systems the U.S. military uses during an operation and one should quickly conclude all COCOM commanders require timely, accurate analytical resources to do more than make educated guesses at what may happen next in their area of responsibility. If the U.S. military were able to train with law enforcement agencies and develop, or use, the analytical tools like those employed by the NYPD or LAPD, the predictability of effectiveness in a combat zone could improve exponentially. Taking this concept a step further would look like tapping into systems like these as they are rolled out in other cities, or using social media and 'chatter' of the city (from patrol reports to social media) to plot complaints and trends. The old model of manual creation of graphs and charts at the small unit level, based on independently-derived intelligence analysis, with little time or attention given to deeper analysis of multi-source fusion, is rapidly becoming irrelevant in modern warfare, and is severely limited in the mega city environment. The employment of similar systems in law

enforcement agencies, within inter-agency communities, and for U.S. military forces has become an operational imperative for creating a safer, more effective strategic approach for all operations, including within a mega cities, where multi-agency coordination is a crucial precondition for success.

Conclusion

As civilizations become increasingly urbanized - a historical trend for society – effective policing in densely populated environments will require response forces with military-“like” resources.³⁶ The forward facing “police” force (civil control oriented) with military backing/support may be the answer to future operations in a megacity.³⁷ A police (civil-military) force that is capable of: 1) domestic policing, restoring, maintaining peace, 2) military capabilities enabling broader (time and space) effects, and 3) influence areas inside and around a city while simultaneously supporting stabilizing efforts may be the answer. Capability sets that meet all three afore-mentioned requirements demand increased coordination, training, and sharing/trading TTPs from military to civilian law enforcement agencies and vice versa. Megacities are strategically vital centers of gravity with extreme domestic and international significance. Catastrophic events challenging the stability of a megacity have global impacts and consequences. The role of a megacity in the international community is significant enough to conclude destruction, or sieges, are not viable solutions. A response to a megacity catastrophe requires a civil (“soft”) approach and tempered reaction. The sheer gravity of a catastrophic event affecting a megacity requires military backing and support, calculated in such a way to not undermine concerted efforts of established infrastructure to keep the peace. Military backing and support enables civil forces best suited to resolve, restore, and renew order. The civil-military response force becomes most effective when units know each other’s TTPs, creating better opportunities for law enforcement agencies to achieve

desired end states. Studying law enforcement trends allows military commanders to incorporate insight from predictive policing techniques found most effective by police departments all over the U.S. into operational planning. Law enforcement's use of social media allows officers to engage, shape, achieve information operations goals, influence criminals, and inform law-abiding citizens. If law enforcement agencies are militarizing, and military forces are "policing", where these two concepts intersect may be the answer to the megacity response.³⁸

"We have, in short, somehow become convinced that we need to tackle the whole problem, all at once. But the truth is that we don't. We only need to find the stickiness Tipping Points."

— Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference*³⁹

Purpose of Concept and Problem Framing

The purpose of this concept is to engage military leaders to think beyond the traditional mindset of solving a "wicked" problem.⁴⁰ In the case of fighting in a megacity, the author believes deploying a military force into this dense environment would have catastrophic effects.⁴¹ Multiple law enforcement agencies throughout the United States (U.S.) are using predictive policing techniques driven by evolutionary analytical tools to police and control populated areas where the numbers of police officers to citizens are greatly outnumbered.⁴² The analytical tools enable officers to make a bigger impact with limited resources through capturing efficiencies. More importantly, the analytical tools, or systems, are resources (tools) for increased effectiveness and efficiencies in an arena that demands a less-is-more (LESISMORE⁴³) approach in order to disrupt the preconditions and behaviors necessary for a 'Tipping Point' event to take hold.⁴⁴

Effectiveness in the minds of military leaders has long been tied to effects based actions showing near term results. While intended effects should always drive military action, immediate military results in a megacity have the potential to spark massive problems orders of magnitude

larger than similar actions on less populated battlefields, due in large part to the inherent inability of a megacity to sustain itself without continuous, externally supplied, artificial life support. Most megacities already operate in a near catastrophic environment since such a high volume of goods and services are required to maintain a completely synthetic quality of life. A megacity, unlike battlegrounds of the past, is completely reliant on the unfettered availability of goods and services to supply necessary inputs and outputs (food, water, sewage, trash, electricity, transportation, and connectivity). Incredible population density—the mind-blowing number of people per square mile—along with the infrastructure required to sustain life in the urban domain, demands myriad tightly linked activities to sustain life within a concrete and steel incubator.⁴⁵ Without the constant in and out-flow of life supporting goods and services, life in a megacity ends dramatically just days after service disruption. Any disruption to essential services or even mundane details of city living (trash disposal - output, food for millions - input, order – susceptible to criminal elements exploiting perceived weaknesses in the normal governance of a precinct or district boundaries, has the potential to escalate exponentially. Because things are so delicate in a megacity, we need better tools to maneuver effectively in that space to achieve military objectives. Thankfully, those tools are being developed and refined today by agencies and universities already working in that environment – police departments and universities respectively. These tools are evolutionary byproducts to what law enforcement agencies developed and used in the 1990's and 2000's known as Predictive Policing (PredPol) and Complaint Statistics (CompStats).

Speaking with one Voice [the one voice just happens to be the voice of millions]...

Proliferation of social software has ramifications for US national security, spanning future operational challenges of a traditional irregular, catastrophic, and disruptive nature. Failure to adopt these tools may reduce an organization's relative capabilities over

time...Governments that harness its potential power can interact better with citizens and anticipate emerging issues.⁴⁶

Social media tools have long been dismissed as informational technology fads and their value as predictive policing aids were overlooked. However, newly discovered insight from using social media tools such as Facebook, Twitter, Instagram, and YouTube is allowing the average citizen to provide intelligence and analysis to make possible: human terrain mapping, crowdsourcing for verification, information dissemination, and investigations - all of which are compliments of the widespread use of social media. The aggregate data derived from social media platforms is being used to create and understand an entirely different perspective of the world around us. In a megacity, this is even more significant since people are more tightly connected by information than anywhere else. Insight provided by connecting multiple layers of social media can create entirely different mindscapes.⁴⁷ If perception is reality, then social media and the widespread, epidemic, use of technology shapes people's ability to only see and understand the synthetic world they live in (aka a megacity).⁴⁸ The fight for objectivity while persistent information by the NOE shapes our subjectivity senses creates noise and sometimes confusion making it hard to differentiate the real world from the virtual world.

The belief in an external world independent of the perceiving subject is the basis of all natural science. Since, however, sense perception only gives information of this external world or of "physical reality" indirectly, we can only grasp the latter by speculative means. It follows from this that our notions of physical reality can never be final. We must always be ready to change these notions - that is to say, the axiomatic basis of physics - in order to do justice to perceived facts in the most perfect way.⁴⁹ - Albert Einstein

The megacity fight is won with military in support. If perception is reality, then military forces must respond to support the megacity. Perception = reality is a philosophical argument. That perception, for the millions of people in a megacity, has the potential to act as a tipping point, prevent a tipping point, or reveal the conditions of actual tipping points about to happen that cause epidemic movements within the megacity environment. Using elements of military operations (information operations (IO), PsyOp, Information security, Deception, etc.) that are tailor-made to influence perception in a way that police are ill-equipped and ill-trained to do further enables a less effective local force to become exponentially more effective. Police respond to public reactions to shape perception; military commanders shape public actions by driving intended perception.

The vast Intelligence, Surveillance, and Reconnaissance (ISR) assets U.S. forces possess can greatly contribute to applying data and analysis to similar analytical tools such as CompStat. Additionally, the increased understanding, analysis, filtering, and interpretation of the millions of tweets, posts, blogs, and texts – using social media smartly – provides the most accurate situational awareness. Having accurate, real-time, situational awareness answers two critical questions: 1) What are the priority of actions?; and, 2) What is just “noise” and does not require energy or resources right now?⁵⁰ Since the strength of a megacity is the network of things and people, there is no need to respond to everything. A commander must have the correct priority of actions resulting in precise response, with the right force (preferably not military) for desired effects.

Time Horizon, Assumptions, and Risks

Initiate implementing social media tools and analytics now. The tools and people using them are getting better every day. There is no finish line for “implementation” – we will always be implementing new features, platforms, feed integrations, etc. Also, police agencies have ideas about this, but there is little chance they have a unified strategy for implementation. It’s going to

happen as thousands of individual ‘Agile’ information technology developments over the next decade – with poor lateral integration between agencies (in the same city, and between different cities). The implementation of social media applications and analytical tools simply builds on previous variations of predictive policing systems, integrating social media with ISR feeds, and establishing a reasonable time horizon. Through an integrated implementation approach, a collaborative, coordinated strategy shall be forged. As forecasted by law enforcement agencies in the U.S. According to the 2014 *Future Trends In Policing Report*:

Police departments across the country are embracing a variety of social media platforms, and that trend is expected to continue, as 98 percent of PERF [Police Executive Research Forum] survey respondents said that their agency will increase their use of social media within the next two to five years.⁵¹

Table 4 from the Policing Report illustrates this trend amongst various law enforcement agencies.

In the next 2-5 years, the chart below specifies which social media tools are intended to be put into use for community messaging, control, investigations, and partnering.⁵²

Social Media ⁵³	% of agencies currently using	% of agencies planning to begin using in 2 to 5 years
Agency website	100%	
Facebook	82%	14%
Twitter	69%	18%
YouTube	48%	20%
LinkedIn	34%	20%

Assumptions for making such an investment in using social media are:

- Current social media trends are indicative of future social media trends.

- Threats, terrorists, Transnational Criminal Organizations (TCOs), street gangs, criminals, high value targets, average citizens, activists, hacktivists, and the public at large will continue to engage in social media activity with the same vigor and candor as today.
“Increase in gang membership..., the facilitation of communication and recruitment through the Internet and social media, the proliferation of generational gang members, and a shortage of resources to combat gangs.”⁵⁴
- Current technology and social media tools will continue to be similar to those used in today’s internet of everything (IOE) environment⁵⁵
- Increase in gang membership..., the facilitation of communication and recruitment through the Internet and social media, the proliferation of generational gang members, and a shortage of resources to combat gangs.
- The IOE (can also be referred to as the Internet of Things (IOT) increases the reliance of social media platforms and the megacity becomes completely reliant on interconnectedness.
See Appendix 1 Figure 1 for IOT illustration

Risks in expanding social media capabilities and committing an organization to increased reliance on using social media tools are:

- The IOE takes another form or medium for mass communication, rendering social media as we know it today antiquated
- These platforms can be manipulated. Social media users can be robots. Facebook posts that look like they are happening now can be written days or months in advance. Pictures and videos can be faked or manipulated

- The trap of believing too quickly a ground-truth sense of the battlefield based on data drawn only from social media platforms
- Each social media platform is merely a “Sensor” in the Megacity environment. Sensors can transmit false data, so the current intelligence fusion process must be employed to turn sensor data into actionable intelligence.
- Suspects stop using social media to thwart adopted social media analysis training, tactics, and procedures (TTPs)
- Law enforcement and military forces become overly reliant on the social media analytical tools and lose core competencies reducing effectiveness during a network outage or cyber attack

Description of Military Problem

Megacities of today generate more trade, wealth, communication, sharing, crime wealth, services, waste, pollution, etc, than nation states have for centuries. They are economic engines requiring constant attention, engagement, and activity from legitimate, illegitimate, official, and unofficial entities, agents, operators, and “leaders”. Without the presence of military forces, megacities thrive and sustain themselves within the latticework interconnections of people, systems, and processes already in place. The interconnectedness of the network of systems, including people, takes new shapes every day. Nothing is static in a megacities complex network...the pharmacist everyone trusts dies, then they each fan out seeking a replacement and a “new guy” takes over the old pharmacy and turns it into a bicycle repair shop. These changes happen overnight, in big ways and small, thousands of times each day. So then, for military leaders, the way to tap into *How the networks are connected today* becomes smarter, more integrated use of

social networks to rapidly gain and maintain situational awareness and a sensory based network to develop actionable intelligence.

Catastrophe, or crisis, does not automatically warrant adding external military response variables to an already functioning network of systems (albeit degraded). The megacity is resilient as its own operating environment that has determined interconnectedness with purpose and meaning. The many organizations that form communities within a megacity are the fundamental “restart” button. Civil authorities are the most efficient and a reliable agent to maintain and reestablish order after a disruptive event occurs within a Megacity network. Since local civil authorities are best suited for “knowing” their environment, creating a tipping point with the military in general support is a viable answer to lessen the negative or unintended consequences elevating catastrophic conditions for residents in a Megacity. Military forces falling in on already disastrous conditions and attempting to support the civil authorities in the effort to reestablish order incite panic. The request for military involvement, integrating resources such as communications platforms, social media intelligence gathering, and predictive policing techniques and tools serve best in a supporting role to manage and engage resources in the areas of a megacity requiring right-size application of resources at the right time. Monitoring and sensing is the biggest test for the synchronizing and integrating ISR assets. Allowing for the local, state, federal authorities to maintain authority and control over a megacity is the first critical step. Enabling the civil authorities to effectively perform the functions of reestablishing order and resuming life in the megacity is the priority.

Synopsis of Central Ideas

There is not a truer sense of a highly functioning democracy than a society capable of policing itself and self-regulating governance. Masses of people are capable more now than ever

before to disseminate and use information to do this. “Private citizens — often with the support of local governments — are taking violence prevention into their own hands, rather than waiting on national governments, foreign governments, or international organizations to respond when conflict escalates.”⁵⁶ Law enforcement, U.S. military leadership, and civilian authorities can partner with educational institutions that are already performing ground breaking research in the areas of creating a better understanding of society’s landscapes. In the 13th century, explorers were interested in mapping the Earth by its physical nature. Today, and with the use of the internet and the power of social media tools allowing every single person to be “heard”, a new kind of mapping is being conducted and people are freely participating in the tireless work of globalization through freedom of expression. Whereas law enforcement agencies, the military and civil authorities focus on using social media tools to “broadcast” information, the use of these powerful social intelligence tools undermines the full capability of what they can do. “Listening” and understanding what is broadcast on social media tools are of even greater importance and providing, maintaining, and operating a network capable of sustaining continued use of all social media applications is of greater use than shutting down a network. Maintaining a megacity’s network of everything (NOE) is a priority for local, state, federal, international forces to set conditions for control even if it is breaking down the paradigms of what “control” is. Similar to dealing with mobs and riots, forces responding to these types of events go into the situation knowing they cannot control everything and everyone. In the case of a megacity crisis, forces must understand the forces at play and what needs to be addressed with precision. Using social media as a form of ISR to predict and dispatch resources to the right time and place, only when necessary, is a good start at providing what is needed, at the right time, for the right reasons. *Crowdsourcing Urban Form and Function and Linking Cyber and Physical Spaces Through Community Detection and Clustering in Social Media*

Feeds are two examples of work in this area by researchers at George Mason University.⁵⁷

Partnering with researchers in academic institutions will foster a deeper understanding of what can be gained by using social media tools to their fullest.

The emergence of social media provides a lens to study the social connections among individuals, allowing us for the first time to observe the links among the spaces in which we [people] operate. While the {tele}phone allowed connecting people on fixed locations and the mobile phone extended that to account for mobility, these interactions were still primarily person-to-person, and lacked the complexity and the networking aspect of the interactions encountered today via social media platforms. Understanding how the interactions and relations that are forged in cyber space and relate to their physical space manifestations is the challenge...⁵⁸

The fact everyone has the ability to broadcast their own message using social media tools provides an incredible opportunity for community and military leaders, and civil authorities, to “see” through the lens of the “boots on the ground” everyday citizen. Using social media allows for authorities to corroborate stories using thousands of interviewees (subscribers and social media participants) that can help determine where and when force is necessary. As obvious as it should be to urban developers, if you build a walkway and the population uses another means to get from “A” to “B”, that should tell you something about what you thought and what you might do about it to correct the mistake.

Application and Integration of Military Functions

A military force operating in a megacity environment would achieve better results if conducting operations in a General Support (GS) role. Integration, coordination, collaboration, and communication as part of an inter/intra agency team is the ideal construct for execution.⁵⁹

Developing common understanding, technical social media analytical skill sets and team organization could be achieved by integrating these social media analysts communications teams (SMAC-T) as part of the already operational Field Advance Civil Teams (F-ACTs). SMAC-Ts are comprised of small 5-9 operators not including inter-intra agency, or host nation support. Team composition (not including civilian agencies) are comprised of an Officer in Charge, Staff Non-Commissioned Officer in Charge(S)NCOIC, technical analyst (1-2), technical collections analyst (1-2), intelligence / communications specialist (1-3). The SMAC-T possess organic ISR capabilities and could also be an extension of the civil affairs detachments already existing at each MEF level organization or higher.⁶⁰ Command and control (C2) packages would be similar to what a forward command element (FCE), also known as a suitcase staff, possesses referred to as a rapid response fly away kit (R2FAK). This kit could also be employed as part of the C2 packages belonging to the deployable joint command and control (DJC2) suite. These resources, coupled with C2 Response Fly Away Kits (RFAK) like those deployed by SPAWAR teams are well suited for operation requiring these assets.⁶¹

Training involves partnering with universities such as the George Mason University social media analysis researchers. The research already being conducted at such institutions is instrumental in acquiring social media software tools and analysis training/understanding to provide many levels of government, including the military, with information and knowledge of social media applicability. A better understanding of social media applicability for use in governance and control provides a clearer picture of local grievances and resiliencies. Data mining/harvesting millions of people's thoughts and observations (perceptions) over tools such as Twitter, Instagram, Facebook, SMS ("texting"), and other open source tools is much more telling than an estimated "guess" at a situation. Other forms of training in both communications and intelligence analysis (under the premise of

military information support operations, or MISO) should target crowdsourcing techniques and analysis. The source of actionable information and analysis is performed at the national level and is best suited for social media “fires”. Cybercom, or representatives from these types of agencies are required to integrate social media activities with kinetic and non-kinetic actions encouraging coordination and de-confliction within an emergency operations center. Because the NOE is everywhere, the analysis should not be done at the MEF Level by personnel who rotate through every 18 months. It should be consolidated at DIA, NSA, CIA, or at a combatant command. Continuity and retention of “corporate knowledge” is a priority and only at these places specialists can work through dynamic data-mining challenges. The FCE SMAC-T – deployed with a MEF or Marine Expeditionary Brigade (MEB) –can prioritize the information categories and push them up. Centralized specialists perform the data mining and filtering of all available Social media sources and provide open-access, 24/7 intelligence feed channels that coordination cells, down to the battalion, can review. This requires special tools at the battalion and regimental level, but those tools allow a Commander to highlight a single “grid square” and have the intelligence feed automatically filtered to be relevant to a specific area of operation. Based on the nature of response required and the scale of the foreseeable crises in a megacity, the SMAC-T may be deployed within a Marine Expeditionary Unit (MEU), MEB⁶², or MEF as required. SMAC-T would be responsible for harvesting data and tie in with the host of interagency representatives, including United Nations (UN), to ensure consistency and validation for analytical assessments is concurrent with mission requirements and tasks.⁶³ Tactical control (TACON) or Operational Control (OPCON) is subject to the Joint Task Force (JTF) or Joint Force Commander. Since the teams and assets are considered a high demand, low density asset, the resources and capabilities should not be detached to units below a Marine Expeditionary Force (MEF).⁶⁴ The data feed is high demand. Fusion cell integration requirements not part of SMAC-T include: Intelligence analysts (as required), human intelligence teams, UAS liaison, CCTV recorders (x 3), and security (x 13 – squad size). Through the use of hidden cameras, establishing a “cloud”-like mesh network, open source, unclassified, SMS⁶⁵, pull on demand, motion per video frame

environment, millions of megacity citizens become intelligence sources. Blimps, aerostats, UASs, and balloons are also part of this mesh network and the NOE is an integral part of MISO.

Realigning military assets to perform additional functions as network nodes (ships, planes, satellites, submarines, vehicles, and even man packable Wi-Fi hotspots) reinforces the power and necessity of the NOE and enables military resources to provide instantaneously what people want most, the ability to communicate and get information. By creating and operating the mesh network, everyone can use it: Police, civil authorities, military, the population. The local authorities become an enabler of connectivity, not a dividing force. Unite by networking people and systems, not divide by tension and violent response.

Reception, staging, onward movement, and integration of the SMAC-T should coincide with an FCE deployment. Space limitations or sensitivities may warrant deployment with civil affairs detachments. Standing mission sets may include: 1) In order to (IOT), assist and enable partner capacity to regain and maintain local civil authority. 2) Restore local security through information mediums to provide predictive analysis, targeting, and precision response in unstable districts throughout a megacity.

SMAC-T employment and duties involve C2 integration, through intelligence feeds and coordination within the emergency operations center and a commander's common operational picture (COP). The ability to "plug in" to higher, lower, and lateral/adjacent communications networks is critical to enable the most efficient and effective distributed operations. Since there is more to be gained by allowing citizens to observe and report through social media channels; WIFI, cellular, and power connectivity to areas that are experiencing service disruptions should be a priority. Additionally, installing (as required), operating (as required), and maintaining (as required) a NOE in a megacity includes a network of cameras (E.g. COTS GoPro™ may be used)

providing live feed into a closed circuit television (CCTV) system. Mock cameras throughout megacity districts may include 100s to 1000s of “mock” sensory stations for the purpose of raising awareness to the local population that activity is monitored. Platforms such as Unmanned Aircraft Systems (UAS) are an integral piece to sensory and monitoring megacity activities.⁶⁶ Employment of sensors, as mentioned above, can be done at the squad level...if more development is put into acquiring easy-to-employ sensors. Some things, obviously, require specialized skillsets, but CCTV devices can be put into place by virtually anyone.

Conceptually, enable social media crises mapping anti-network analytical support IOT increase capacity of police and local authorities to provide a Safe and Secure Environment (SASE).⁶⁷ This concept can be exercised and tested during a range of military operations including humanitarian assistance relief efforts.

Critical considerations: By harvesting data from the “virtual world”, logical lines in a megacity become vastly more important than physical lines. Since we can now “see” barriers, boundaries, and divisions through harvesting data via social media, the need to draw physical boundaries using physical or geographic boundaries is not as important when operating in a megacity.⁶⁸ Mapping network usage, trends, keywords, and density provides insight and predictability in terms of focus of effort and potential precision targeting. Targeting also includes Population and Resource Control (PRC) measures for screening and/or verification.⁶⁹ Precision PRC measures prevent disruption in densely populated areas. Preventing a disruption to “normal” activities reduces igniting preexisting or newly created grievances. Also, by enabling, installing, maintaining, and operating a network, the local, federal, political, and military forces can better address a wide range of issues to restore stability and prevent criminal elements from capitalizing on a perceptually diminished civil authority.

Essential enabling element: Targeting shapes the operational space and supports a commanders intent for operations – targeting is the enabler for operations. This concept is about Information Management (IM) and IO Targeting: Offensive targets to attack/destroy. Defensive targets to protect and conceal. Trigger points drive pre-determined decisions. Align ISR efforts (including social media sensors, and physical sensors employed by SMAC-T) to support Megacity targeting efforts. The enemy in the megacity is not an individual, but a behavioral trend. Target to detect, prevent, and change behavioral trends that run counter to your commander’s intent for operations.

Necessary Capabilities

A significant advantage in researching and exercising this concept to test utility and feasibility is it requires very little in resource investment. Much of the required equipment and assets already exist. The biggest investment is time to implementation and training personnel to create and demonstrate a mature understanding of using social media to its fullest range of law enforcement, military, and civil authority possibilities. Then applying the knowledge and synchronize efforts through the integration of agencies over mediums that can be purchased COTS along with R2FAKs. Most of the communications requirements can be met with MEF and Combatant Command (COCOM) early entry DJC2 packages.⁷⁰ Establishing partnerships with law enforcement, military, civil authority, and academic researchers is the initial phase to merge planning efforts and ideas to bring this concept to fruition.

Spatial and Temporal Dimensions

Finally, as the complexity of operating in a megacity outranges many of the environmental hazards a military force would encounter in a non-urban setting. This is largely due to the exponential dangers exist when millions of people, literally and figuratively, are being held hostage by a non self-sustaining artificial environment. Keeping all services working becomes as critical as

defeating pockets of disruptive elements. What constitutes these disruptive elements can ebb and flow as quickly as each and every action on an objective depending on perception, which will be influenced from block to block. As described in MCDP-1:

In reality, each belligerent is not a single, homogeneous will guided by a single intelligence. Instead, each belligerent is a complex system consisting of numerous individual parts... Each element is part of a larger whole and must cooperate with other elements for the accomplishment of the common goal [be it based on criminal influence, basic survival, local, federal, or international influence and opportunity]. At the same time, each has its own mission and must adapt to its own situation.

No sizable military force will be able to control a megacity comprised of 10,000,000 or more people. Thus, courses of action to respond to a megacity disaster or catastrophe will depend strongly on the ability of all agencies to synchronize and integrate to respond to the critical issues at the most critical time. The density of people and infrastructure collectively command intelligent use of the NOE to ensure precise action, by the correct “force”, at the right time. Using social media tools and analytics by integrated teams and enabling local forces and civil authorities to perform effects based, distributed operations with extreme restraint and pin-point objectives affords a city to find its way back to a tightly networked operating capability. The military and a local government will not be able to do everything a city already does for itself. Therefore, enforcing community focused entities such as local law enforcement agencies whom know the areas and the people in the megacity neighborhoods is a solid springboard to reconstitute what was already occurring in the megacity. Recognizing the power in social media tools and what can be gained in producing analytical capabilities from using such tools is one way to realize the meaning behind Aristotle’s quote “The whole is greater than the sum of its parts”.⁷¹ Whereas, summing up tens of

thousands (or more) seemingly individually collected; thoughts, complaints, concerns, fears, observations, grievances, successes, needs, requests, questions, experiences, etc, creates an unprecedented “look” into what is really the problem and where a law enforcement agency, military, or civil authorities can, and should, engage. With enough “sum of the parts” collected, the “people’s” analysis may provide a predictive capability to where resources are needed most. In the end, it is the sum of each “person’s” part, courtesy of social media, which creates the bigger picture and a better, more holistic approach at solving the problems within a megacity. Intelligence gathered from the millions of people, voices, pieces of information, is the creation of something bigger than previously imagined.

“And so we have a new phenomenon in this age of megacities and mass media: the power of statelessness. The State is a burden... Modern communications and military technologies allow these [non-state actors] groups to organize, to seek help abroad, and to arm themselves with lethal weapons so that the state no longer owns the monopoly on violence....whereas the Industrial Revolution was about bigness (airplanes, tanks, aircraft carriers, railways, factories, and so on) the post Industrial Revolution is about smallness...”⁷²

Appendix 1

Figure 1⁷³



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- ¹ Most opportunists want more than neutrality...they want gain of some kind: influence, power, security, wealth, etc.
- ² <http://www.soc.iastate.edu/sapp/soc235basics.html>, 6 Basic Sociology Principles: These are the basic principles of sociology: 1. People behave differently in groups than they do as individuals. 2. People obey rules that are socially constructed. 3. People socially construct the rules. 4. Some people have more say-so than others in making the rules. 5. There are rewards for following the rules and penalties for breaking the rules. 6. The rules of society can be studied scientifically.
- ³ <http://www.simplypsychology.org/maslow.html>, 1. Safety needs - protection from elements, security, order, law, stability, freedom from fear. 3. Love and belongingness needs - friendship, intimacy, affection and love, - from work group, family, friends, romantic relationships. 4. Esteem needs - achievement, mastery, independence, status, dominance, prestige, self-respect, respect from others. 5. Self-Actualization needs - realizing personal potential, self-fulfillment, seeking personal growth and peak experiences.
- ⁴ According to JP 1-02, Constraints are things we MUST DO (to carry out HHQ intent); Restraints are things we MUST NOT DO (prohibited by HHQ, ROE, etc.).
- ⁵ JP 3-24, Successful COIN operations require an HN government that is capable and willing to counter the insurgency and address its root causes. P. I-6
Typically this involves a mix of political reform, improved governance, and/or targeted economic development initiatives.
- ⁶ <http://www.ebbemunk.dk/technostructure/technostructurep3.html>
- ⁷ *Militarizing the American Justice System*, Preface P. vii
- ⁸ *The Real Population Bomb*, P. 62
- ⁹ *The Coming Anarchy*, P. 107
- ¹⁰ Kraska, Peter P., *Militarizing the American Criminal Justice System*, 2001, The Military-Criminal Justice Blur, P. 1
- ¹¹ Ingraham, Christopher, <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/08/14/the-pentagon-gave-nearly-half-a-billion-dollars-of-military-gear-to-local-law-enforcement-last-year>, August 14, 2014
- ¹² *Future Trends in Policing*, www.cops.usdoj.gov, 2014
- ¹³ Pearsall, Beth, Predictive Policing: The Future of Law Enforcement?, <http://www.nij.gov/journals/266/Pages/predictive.aspx>, June 2010
- ¹⁴ Ibid, P. 1
- ¹⁵ Perry, Walter L., Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations, Rand, 2013, P. 3
- ¹⁶ Ibid, P. 5
- ¹⁷ Ibid, P. 13
- ¹⁸ Ibid, P. 13
- ¹⁹ Ibid, Ch. 2
- ²⁰ Ibid, P. 3
- ²¹ Ibid, P. 3
- ²² Dickey, Christopher, *Securing the City, Inside America's Best Counterterror Force-The NYPD*, 2009, Simon and Shuster, Prologue
- ²³ Giuliani, Rudolph W., *Leadership*, 2002, Hyperion, P. 198
- ²⁴ Dickey, Christopher, *Securing the City, Inside America's Best Counterterror Force-The NYPD*, 2009, Simon and Shuster, P. 104
- ²⁵ Ibid, P. 104
- ²⁶ Ibid, Pp. 106-107
- ²⁷ Ibid, P. 107
- ²⁸ Ibid, P. 140
- ²⁹ Ibid, P. 141
- ³⁰ *Future Trends in Policing*, www.cops.usdoj.gov, 2014, P. 10
- ³¹ Ibid, P. 27

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- ³² *Ibid*, Pp. 11-26
- ³³ *Ibid*, P. 27
- ³⁴ *Ibid*, P. 27
- ³⁵ Charlie Beck, Chief Los Angeles Police Department, 2014
- ³⁶ Bettencourt, Lisa, *Mass Urbanization Creativity*, http://www.huffingtonpost.com/luis-bettencourt/mass-urbanization-creativity_b_5670222.html, August 29, 2014
- ³⁷ Kraska, Peter P., *Militarizing the American Criminal Justice System*, 2001, The Military-Criminal Justice Blur, Pp 11, 12
- ³⁸ Caulfield, Susan L., *Militarizing the American Criminal Justice System*, 2001, Militarism, Feminism, and Criminal Justice: Challenging Institutionalized Ideologies, Ch. 8
- ³⁹ From Malcolm Gladwell's *Tipping Point*, 2001
- ⁴⁰ Wicked – Derived from the ideology that this type of problem is both complicated and complex.
- ⁴¹ *The Megacity Operational Challenges for Force 2025 and Beyond*, http://www.arcic.army.mil/app_Documents/ARCIC_Report_Unified-Quest-14_The-Megacity-Operational-Challenges-for-Force-2025-and-Beyond_08MAY2014.pdf
- ⁴² PredPol and CompStats are the legacy systems developed by the Los Angeles Police Department and New York City Police department in the 1990's and early 2000's. Pred-Pol Analytics software, Shotspotter, Domo, Predixionsoftware, Motorolasolutions/Law Enforcement, Aladtec, Zuerchertech, and ArcGIS are all the next generation solutions which have revolutionized trading information to affect proactive policing.
- ⁴³ LESISMORE – Law Enforcement Synchronization & Integration of Social Media Military Operations Reconstitution Efforts
- ⁴⁴ Law Enforcement GIS Solutions for Proactive Policing and Informed Response; <http://www.esri.com/~/media/Files/Pdfs/library/brochures/pdfs/lawenforcement.pdf>
- ⁴⁵ The difference between an incubator and a sewer is artificial light, heat and medical care.
- ⁴⁶ *Wiki at War*, P. 145
- ⁴⁷ mindscape mind·scape (mīnd'skāp') n. A mental or psychological scene or area of the imagination.
- ⁴⁸ <http://en.wikipedia.org/wiki/Perception>
- ⁴⁹ Quantum Mechanics: Historical Contingency and the Copenhagen Hegemony, P. 180
- ⁵⁰ Noise in this instance is: having multiple distractors or too much information which can distract a decision maker from performing accurate assessments requiring action.
- ⁵¹ Community Oriented Policing Services, U.S. Department of Justice, *Future Trends in Policing Report*, 2014. P. 28
- ⁵² *Ibid*, P. 27
- ⁵³ Other forms of social media may include: Craigslist, vimeo, instagram, Ashley Madison, match.com, vine, blog feeds – Podcasts, RSS feeds, etc. Communication happens on many different mediums now. Failure to see these as a social media platform is a gap/weakness. You have to have a military focal point that tracks and understands the ever-shifting dynamic of how the adversary communicates, shoots, and moves. How to most effectively counter those communications and the effects of those communications requires a focus of effort.
- ⁵⁴ Federal Bureau of Investigation (FBI) 2011 National Gang Threat Assessment, <http://www.fbi.gov/stats-services/publications/2011-national-gang-threat-assessment>
- ⁵⁵ Cisco. Tomorrow Starts Here. <http://www.cisco.com/c/r/en/us/internet-of-everything-ioe/tomorrow-starts-here/index.html>
- ⁵⁶ *Technology of Nonviolence – Social Media and Violence Prevention*, P. xi
- ⁵⁷ International Journal of Geographical Information Science, 2014 and Computers, Environment and Urban Systems, November 2014 (respectively)
- ⁵⁸ *Linking Cyber and Physical Spaces Through Community Detection and Clustering in Social Media Feeds*, 2014, P. 16
- ⁵⁹ General Support should be consistent with operations (to include Military Information Support Operations - MISO) and AW Joint Publication 3-57, Civil Military Operations Dtd 11 September 2013, P. 1-17. CA functional specialists advise and assist the commander and can assist or direct subordinate civilian counterparts. These functional specialists should be employed to provide analysis in their specialty area that supports planning of interagency efforts or HN efforts, and in a general support role to joint force components requiring such capabilities.
- ⁶⁰ Currently 7 Civil Affairs Detachments (including a HQ element) exist at each MEF.
- ⁶¹ *Implementation of a Modular Fly away Kits (FLAK) for C4ISR in order to counter*

Asymmetric Threats in the Coalition Riverine and Maritime Theatres.

<http://www.dtic.mil/dtic/tr/fulltext/u2/a457565.pdf>

⁶² EF21 defendable and supportable

⁶³ The actual analysis and Noise-filtering comes from a much higher echelon, pushed back down to commander's as actionable intel, based on PIRs, IRs, CCIRs, EEFI included to the analytic cell by the on-station commander.

⁶⁴ From JP-1, Doctrine for the Armed Forces of the United States. "Tactical Control (TACON). The authority over forces that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned. Also, "The JFC must designate the forces and/or military capability that will be made available for tasking by the functional component JFC and the appropriate command relationship(s) the functional component commander will exercise. Normally, the functional component commander will exercise OPCON over its own Service forces made available for tasking and TACON over other forces made available for tasking. The JFC may also establish support relationships between functional component commanders and other subordinate commanders to facilitate operations." JP-1, P. IV-18

⁶⁵ Short message service – also known as texting.

⁶⁶ <http://www2.l-3com.com/uas/services/flight.htm> "Flight Operations and ISR Services Capabilities is to provide a "systems of systems", or complete systems approach, in meeting ISR requirements. The breadth of Unmanned Systems' expertise encompasses highly experienced flight operations team, routine collaboration across multiple platforms delivering extremely capability ISR. This expansive and highly qualified team is poised to rapidly respond to the most demanding ISR requirements to provide immediate and comprehensive multi-Intelligence contractor operated ISR services. UAS ISR Services offer operational [advantages] in both benign and combat operations, deployed overseas or within the continental United States."

⁶⁷ <http://www.frontlinesms.com/technologies/frontlinesms-overview/> "FrontlineSMS is a desktop software created to lower barriers to positive social change using mobile technology. By leveraging basic tools already available to most organizations, including those in 'last-mile' settings — computers and low-cost modems — FrontlineSMS enables instantaneous two-way communication to any mobile handset. It's easy to implement, simple to operate, and best of all, the software is free; you only pay for the messages you send. Using FrontlineSMS with FrontlineSync, you can also track missed calls for the first time."

⁶⁸ Consideration: Blackhawk down scenario - Vehicles run into a hasty blockade of burning tires, and all of a sudden the physical barriers are critical. Convoy operations may result in taking the wrong left turn, 18 trucks stuck in a dead-end alley because a canal becomes a physical barrier. MCOO still applies – though it is now enhanced in the 4th dimension of time/space

⁶⁹ JP 3-24, Counterinsurgency. "Governance is the ability to serve the population through the rules, processes, and behavior by which interests are articulated, resources are managed, and power is exercised in a society. A state's ability to provide effective governance rests on its political and bureaucratic willingness, capability, and capacity to establish rules and procedures for decision making and on its ability to provide public services in a manner that is predictable and tolerable to the local population." P. 1-5

⁷⁰ <http://www.dtic.mil/ndia/2012expwar/Backus.pdf> This communications package comes with a modular/scalable capability set providing multiple networks for 10-100 + users.

⁷¹ http://humanscience.wikia.com/wiki/Part_and_Whole

⁷² *The Revenge of Geography*, P. 126

⁷³ <http://diaryofthings.com/wp-content/uploads/2014/03/iOTChartFeatured.jpg>

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