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**MODULE 2**

**CASE STUDY: COMPSTAT TO GOV 2.0**

**Big Data in NYC**

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# **SUMMARY**

Big data analytics has been a substantial contributor to wiser policy decision making, problem-solving, tackling ad hoc situations, and eventually now predicting and preparing for crime situations since its inception in 1990. The trip started around 30 years back in 1994 as a cooperative project between the then newly elected NYC Mayor, Rudolph Guiliani, and William J. Bratton, the newly appointed commissioner of the New York Police Department. Despite the fact that big data eco-systems are today incredibly complex, these two people were the pioneers.

COMPSTAT (computerized comparison crime statistics) is a computerized method for tracking criminal behaviour and crime trends utilizing the Geographic Information System (GIS). The goal of this system centers on reducing crime, enhancing arrest and community involvement with the usage of statistical data over a period of time. As the article reported, crime in New York City decreased by 50% between 1993 and 1999. Since its inception to the world, various technology advancements to the system have made the NYPD system accountable for reducing crime and safeguarding the public because they now have up-to-date knowledge of crime hotspots. The focal components of COMPSTAT include: Accurate & Timely Intelligence, Effective Tactics, and Rapid Deployment.

A comparable paradigm change from problem-solving to problem-prevention would soon take root by various other agencies like Parks and Recreation department which, gave its rendition the name ParkStat and New York Fire Department (FDNY). All different agencies were trying to solve their problems by gathering and using the data. The September 11, 2001 World Trade Center attacks were reflected by the FDNY which also saw the successes the NYPD had with COMPSTAT.

The tenure of a newly elected Mayor of the NYC, Michael Bloomberg, was marked with his vision to promote the use of data to govern better. During his tenure, his department had faced with several challenges with various solutions targeting “big data” initiatives under the way with a need to connect data mining and problems of the citizens. The appointment of Michael Flowers was one of the crucial point in his tenure for smart data campaign. The “big data” idea for the revamped administration was to collect data from different agencies across New York city and makes a centralised system.

The Mayor's Office of Data Analytics (MODA) was established by the Bloomberg administration in 2013 with the goal of combining data from various agencies and using it to address issues. In terms of the type of information gathered, the data itself varied. Various organizations gathered information on the financial, political, and cultural aspects of the citizens. In particular, MODA had assisted in overcoming obstacles to information exchange among agencies to address cross-sector issues. However, MODA carried it out outside the system, erratically, and frequently upon request, which posed a problem that needed to be solved. In an effort to better prevent fires, MODA also helped the FDNY create the Risk-Based Assessment System, and the NYC Department of Environmental Protection (DEP) found eateries that were improperly disposing of cooking oil in sewers.

# **ANALYSIS**

There are some very prominent issues related to the way on thinking and problem solving techniques employed to fight against crime between the period of 1994 and 2013, according to this case study. These issues are :

1. **Ad hoc basis approach in a specific problem. Management information history rather than a basis for decisions.**  
   The NYPD has dealt with crime and challenges on an ad hoc basis during the above mentioned timeline. Although, the implementation of a new system always take time, but in this case, it took very long to adapt for pre-emptive preventive measures. During the initial years, the base strategy of ad hoc approach to tackle crime and fight against it is applaudable, but, this approach continued for long. To get on top of crime and fight it, with abundant of resources and inflow of surplus money during this tenure, more focus should have been given to change the approach from ad hoc to predictive.
2. **Without additional support and advantage of money and officers inflow, the early stages of Compstat would have failed.**According to Smith, police departments across the nation had to spend a lot of money on meeting standards like the typical response time to 911 emergency calls. However, with more money and officers coming into the NYC police department, Bratton had room to both uphold traditional standards and try out new policing techniques and opportunity to innovate. The early stages of putting cops on dots with high crime rate would have failed and not given the boost of decline in crime across the city which might have led to decline in moral confidence and support from the administration. However, the advantage provided was taken in with maximum utilization.
3. **Upon inception of MODA, the variety of data became a challenge.**The 40 organizations acquired a range of data and each of them had a different set of identifying traits and columns. This made integrating a system with a central database challenging. The NYPD and fire department use latitude and longitude as markers, the Finance Department employs lot numbers, and the US Postal Service uses an address to identify a building. The aforementioned scenario draws attention to the data's diversity and posed a challenge to the organisation. However, with the technological advancements in the data science field and the knowledge base of the personnel working in the administration, these challenges proved to be easy to overcome.
4. **Digitization of decade long data.**Digitizing the information was also one of the key challenges because the NYPD gathered its data over a ten-year period. Locating dangerous areas utilizing data points to map the data is difficult as well. Consumption of resources and monetary expenses were very high to digitize such a large volume of data.
5. **Privacy Concerns**Because the data were shared across several government entities and contained a variety of information, including sensitive political, financial, and cultural data, privacy issues were raised. While transferring public data, governance of data is to be employed for data protection and prevention from data exposure.

# **RECOMMENDATIONS**

Many agencies have benefited from MODA's assistance in tackling issues and discovering the best answers. With the elements/components of MODA mentioned in the above introduction part as well, the analytical approach to fight and solve crime is pivotal in today’s world. Some of the key points or recommendations based on the case study and its analysis are :

1. **MODA should continue and exist as a governing body.**In addition to performing data analytics for certain organizations, MODA also acknowledges and disseminates data breakthroughs created by innovative government workers. A consolidated database might help with system optimization because the data is scattered among different agencies. This approach should also be complemented by stringent levels of data protection because a single system failure might put the data from all government entities in jeopardy.
2. **I believe this approach was the best approach**This was, in my opinion, the best course of action because the big data system made use of the prior data that was already in its possession and supported it with the system's prompt counsel. MODA had the authority to approve requests from other agencies since having access to data from other bodies contributed to a higher degree of data security. The fact that the data was collected from New Yorkers and made available to the public increased trust between the city's citizens and the government**.**
3. **The correct balance between centralization and decentralization in the use of data governance.**A decentralized system is essential when a prompt reaction is required. Employees and authorities in this decentralized system need to be knowledgeable about data governance since if there is even one error that results in a privacy breach, the entire team will be held accountable. Centralization is a smart option when the chain of command is efficient and has clear communication paths that enable them to assess the entire system and management. Centralization, however, could give higher authorities greater power and make a single point of decision-making more vulnerable to outside factors like politics, etc. COMPSTAT and MODA used its technique to hold the city of New York's administration responsible for the incidents that occurred there. As a result, the general public might have more confidence in the technology-based strategy.