Data Management and Big Data

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Week 1 Assignment 1

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**Gov 2.0 Big Data in New York City Management**

**Summary**

Big data is essential in reducing instances in New York City. Residents of New York had a sense of unease due to the threat of robberies and muggings. Focusing on the threats and crimes held in New York City data reveals a greater crime rate in the metropolis from 1980 or the beginning of 1990, indicating that this city has turned into a dangerous place for educated people.

Data indicate a drop in cases with comparison to CompStat when William J. Bratton, the NYPD's new commissioner, was appointed in 1994. because NYPD was acting quickly to stop the crime at the appropriate locations. After Michael Bloomberg was elected mayor of New York City in 2002, these regulations changed because of his quick decision-making and provision of an acceptable safety environment.

Many things that are discovered via the use of big data commanders are actively being done to combat crime with speedy execution and rapid case building. When compared to 1993, the crime rate in New York City decreased by 12% in 1994. The loss of firefighters, on the other hand, forces the FDNY (Fire Department of New York) to analyze data for effective outcomes by identifying the track of building’s risk situations to save the lives of firemen in the United States.

The most crucial thing is that the government actively engages consultants to comprehend all issues and start the process of data analysis. This will help to bridge the gap between technology and manpower, which is utilized to improve social services and lower crime rates in New York City.

In order to decrease the risk for human resources through digitalization, Bloomberg recruited CompStat after establishing the MODA (Mayor's office Data Analytics). They categorize the duties in order to provide a clear picture by identifying the tasks and the number of actions required to prove they would aid in managing the problem successfully.

Data sharing helps organizations overcome problems in a productive way. For instance, if a situation is unclear or individuals are unable to resolve it. They provide MODA the case to help the process go along by studying the facts and exchanging information.

**Analysis**

In this report, we are analyzing the data for the Police Department City of New York which was provided by CompStat. This data consists of the data from various crime complaints filed in the year of 2013 and 2014. The data shown in the case studies that the total crime complaints filled in the year 2013 were 1819 whereas we can see that in the year 2014 number of cases filed are 1830 if we see the percent of change covering the crime had been increases from 47% to 60% which was quite high as compared to the year 2013. However, murder, rape, robbery, fel. Assault, Burglary, Gr. Larceny, G.L.A. cases are mostly covered by the Police department. Whereas by looking at the data number of cases reduced for transit, housing, and Petit Larceny which was a good indication that crime rate covered by the police department on the high pace will reduce the crime and make the city safer.

If we go more deeper into the criminal complaints handled by the Police department city of New York. Looking at the historical data murder cases was gradually reduced with the help of data analysis in 1990 total number of cases registered was 2262 cases, in 1993 cases reduces to 1927, in 1998 total number of cases registered was 629, whereas in 2001 the cases increases in this year by 649, however, the cases reduced in large numbers in 2013 with the total number of 335 which shows the actual change in reporting the complaints on time and rapid action was taken at the time of incident happened. In the same manner the rape cases also decrease gradually from 1990 to 2013 with the total number of cases registered in 1990 was 3126 which reduced to 1378 cases these effect we can see by implementing the technology. Checking on the Robbery and Burglary data there is a huge decrease in the crime rate which was reported in 1990 to 2013 shows that 80 to 85 % pending cases in which reduced to 30 to 46 % respectively.

According to the crime CompStat mentioned above, New York Police were able to cover more instances and progressively lower the number of crime incidences after taking a thorough look at the data and analyzing it.

If we analyze the Crime incidents happened in Morningside Heights and Harlem which happened in February 2014, we can see that majorly cases was reported at Harlem area near park avenue, central park, Harlem academy, 116th street which shows the bigger bubbles. On the other hand, Morningside Heights is the safe area where the crime incident are less and will effectively reducing by the time.

Here, what data explain that the residents are less in the highest crime incidents happened which is 84 Precinct in the year 2013 whereas the crime incidents report in lower number which increase the availability of the resident in 2014. Data shows in 2013 residents were 1307 whereas in 2014 it increases. On the other hand, we can see that there was no difference at Brooklyn resident ratio.

FDNY shows in the risk based inspection system (RBIS) Original model which was predicted on the basis of algorithm which shows the downtown Brooklyn, park slope and bay ridge had high risk of fire zones which was the first blueprint for the fire fighters, but in reality after implementing MODA technique of statistical regression model the fire was observed in west Bronx, downtown and far Rockaways in 2011 to Present which provide the better understanding for the fire fighters to deal with the scenario.

**Answers and recommendations**

Question 1. Should it [MODA] continue?

The New York City Police Department must adhere to MODA, which provides a better understanding through data analysis of instances depending on location. What the data demonstrates is that after integrating data analytics, commanders become more engaged and assured in carrying out cases quickly and accurately. In light of the present advancements in technology, they have to upgrade by setting up fresh software with real-time data visualization, like as power BI and tableau, which will provide a better track on events and high-risk criminal areas.

Was this the best approach?

As technology develops into an exciting and potent instrument, it is transforming how we live our lives for the benefit of society. Government should hire more top-tier consulting firms with improved systems and data experts. concentrating primarily on the criminal risk to lower the incidences One of the greatest methods for centralizing everything to offer greater visibility of the occurrence that occurred in the area The insights from digitization will help us keep track of the incidents that transpired in the city.

**What, ultimately, was the correct balance of centralization versus decentralization in the use of data for governance?**

Long lead times and perhaps losing contact with the business are common consequences of a centralized data management office. However, a distributed data management office (typically inside police units) results in inconsistencies, a reduced sense of the big picture, a lack of relevant business expertise, and effects on the IT infrastructure.

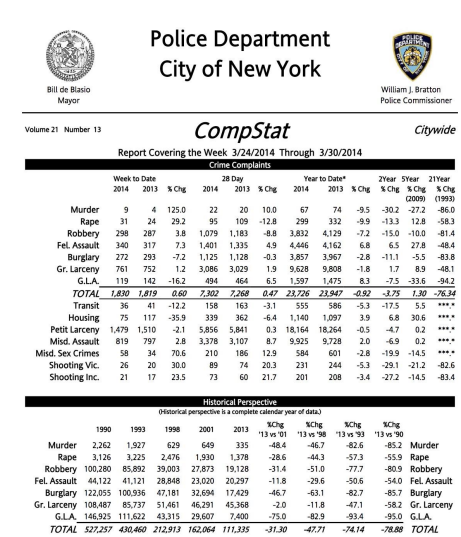
A decentralized and distributed data architecture means that each domain has its own data models and that the data from each domain is not replicated but rather preserved inside the domain (each domain does have its own data lake under one storage account). Additionally, it denotes dispersed responsibility for the information, with a separate owner for each domain.

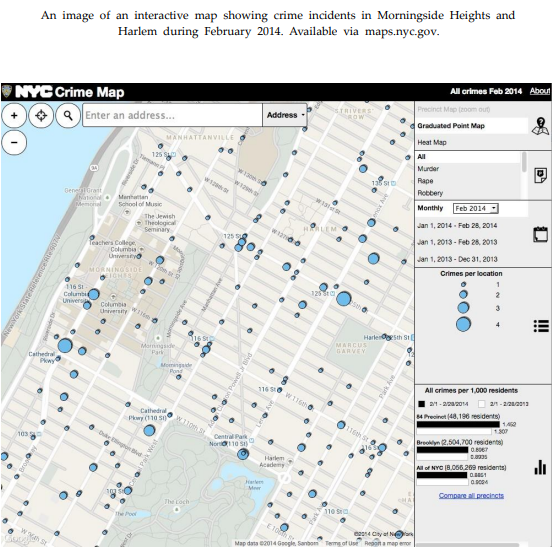
Decentralized solutions, in my opinion, are only suitable for very big businesses with complex data models, substantial data volumes, and a wide range of data domains. That implies that a decentralized strategy would, in my opinion, be overkill for at least 90% of firms.

**Conclusions summary**

Instances in New York City can be reduced with the use of big data. Because of the potential of robberies and muggings, New Yorkers felt uneasy. The most important factor is that the government actively hires consultants to understand all concerns and begin the data analysis process. This will aid in bridging the divide between manpower and technology, which is used to enhance social services and reduce crime in New York City. Sharing data enables businesses to solve issues effectively. If a situation is unclear or people are unable to address it, for instance. They provide MODA with the case so that it may investigate the details and exchange information in order to advance the procedure. One of the best ways to centralize everything is to provide more visibility of the occurrence that occurred in the region. The insights from digitization will help us keep track of the events that occurred in the city. focusing largely on the criminal risk to minimize the occurrences. Decentralized solutions, in my opinion, are only appropriate for extremely large enterprises with intricate data models, huge amounts of data, and a broad variety of data domains. In organizations, a decentralized strategy would, in my opinion, be over-perform the activities of the commanders.

References:





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