SMART CITY: INFORMATION AND SHARING

Li Haoliang
Scholar, Guangdong University of Foreign Studies, China

Abstract

With the rapid development of economy and digitech, the form and structure of the urban keep changing and developing. Problems, like resource wastage, pollution, public security, follow with the fast continuous development. As the age of data comes, data also plays an irreplaceable role in urban development. In fact, data has led the road of urban development. And also the concept of sharing economy gives a new path of developing. This paper focuses on problems of urban development, how the data impact on it and how to make the best use of sharing economy.
Keywords: *smart city: information, sharing*

With such a long history, city had its rudiment since our ancients gathered together for integrating their means of subsistence. City is such a familiar concept to human being, nevertheless, it still keeps developing and updating nowadays. It keeps refreshing people's idea.

In the past, with limited production resources, producing is a big problem for people. People's basic needs were needed to be met. For more efficient agricultural production, people integrated means of production: tools, agricultural technique and manpower. The more the production grew, the more and better means of production came. It's means more and more people became a part of the production. It led to a virtuous circle. People kept developing production and production led to the growth of population. With more and more people settled down, the place where people conducted production transformed into a comprehensive and multifunctional area. Until then the city showed out its rudiment.

Urbanization process had been slow and lengthy. However since the industrial revolution in 18th Century, the process has been booming. With the revolutionary improvement of means of production, the production scale kept expanding and as a result, demands of workers also increased at great speed. For this reason, centering on factories, a new form of urban showed up. People kept rushing into the city for living. Without governmental management, the urban layout became disorderly and unreasonable, which leads to many problems: poor public security, behindhand infrastructure, serious pollution.

In 19th Century, the technological revolution led a great impact on urbanization and accelerated the progress again. With the birth of the computer, data took an implacable role in urbanization. By collecting and analyzing the data, the computer outputs the information, which shows what's happening to our city clearly and directly. And most importantly, according to the information, we can take measures which are targeted and more efficient to prevent or solve the problems, to minimize the cost and save the most resources. Just input the data of the population in the past ten years, the computer will show us the relevant information and we can even foresee the trend of population in the next ten years. And according to the result, we can figure out a proper strategy for the population problems. This pattern of urbanization emphasizes the significance of data collection and analysis. Data of every aspect of the

city keeps flowing invisibly, like the city has its own "brain". So a new concept came out, "Urban Brain".

Urban Brain——Information Collection and Analysis

Urban Brain is an important step from industrial city to smart city. This concept was first raised by Alibaba Cloud. According to the white-book of Urban brain explores the "digital twin city", there are three standers of Urban Brain: 1.The ability to complete the process of the real-time, ultra-large-scale and multi-source data that humans cannot understand in real time (**overall understanding**). 2. The ability to understand the complex hidden discipline that humans have not discovered (**machine cognition**). 3. The ability to formulate overall optimal strategies that transcend partial suboptimal decisions formulated by humans (**global synergy**).[1]

Nowadays, with massive data, the process of analyzing and calculating has exceeded human's ability. Supposing there are one hundred million photos taken by monitor per year, only less than 10% of them would be effective by manpower.[2] As a result, about 90% of the data would be sunk in sleep.[3] This situation leads to the wastage of data. Urban administrators invest a great number of manpower and capital to set up the hardware facility to collect data while only a tip of them is applied to practice. Without denying that there are tremendous resources in the city, while the efficiency of resource usage is extremely low. This inefficient urban management is in urgent need of improving. Urban Brain leads a good way to solution. It vastly improves the usage rate of data. Meanwhile it completes the process from data perception to intervention in a short time, which improves the efficiency of urban management. In practical application, a perfect operation of Urban Brain contains three parts: well-developed infrastructure, regular information input and output, and efficient implement.

Well-developed Infrastructure

The operation of Urban Brain is a process from "visible" to "invisible" and again back to "visible". The key to start is the "visible" part, the infrastructure. Transport and communication facility are two main contents: Transport: This is the symbol of operation efficiency of a city. It includes highway, airport, port and public transportation, like bus and metro. Good-conditioned transport ensures the operation of the city goes smoothly; Communication facility: Network signal base station is the main part of it, which ensures the process of data input and output.

Continuous Information Input and Output

With regular information input and output, our city will be sensitive. It's an effective way to prevent problems. By analyzing all sorts of valid data, we can formulate a more scientific and efficient strategy on urban development. There are two main characteristics of this part: Timeliness: To solve the problem efficiently, real-time data is necessary, which requires a great amount of sensors and monitors distributed in urban; Comprehensiveness: To ensure the implement efficient and targeted, we need a large amount and a wide range of data input.

Efficient Implementation

There is no denying that we must react to the result of the information analysis, otherwise, the result will lose the meaning. At this stage of urban development, manpower is still the main resource in implement. In decision-making, to ensure

efficiency and effectiveness, the administrators should pay attention to the data analysis and learn about it thoroughly.

Smart City—Information Implement

Nowadays for most of us, we integrate information to lead a more convenient life. We can tell that information takes an irreplaceable part of city life. Basing on vast information collection and analysis, the urban operation goes in a more efficient way, which helps our city develop to a new stage.

However, with only information collection and analysis, our city fails to give real-time feedback to the result, because our city has no supporting facility to take proper action according to the information. It's like our city can think on its own by Urban Brain, but it can not make any move without arms and legs. To move forward urban development, rather than solve the problem by ourselves, consuming a large amount of manpower and plenty of wealth, now, we are more willing to let the city work it out by itself. This pattern of urban operation not only brings big convenience to people's life, but also economizes development costs and maximizes resources.

The most important part, meanwhile the most difficult part, is the information implement. To take place of manpower, it requires our city to transfer the information from sensors or monitors to the control hub. Automatically collects the relevant data information, analyzes, produces a new proper program and operates.

Case: In Jilin, China, people enjoy the convenience of the Online Court. From prosecute to arbitrament people can finish all the process online. All the data is collected and provided online. People can fill in all the relevant forms and directly send the electronic copies to court online. So far as to choose a lawyer, information of lawyers is provided online. People can hire a lawyer according to their needs. With information integrated, a mobile app or online website has become a legal enquire counter. Rather than finish the process in fresh, the data online does the job for us. In the past, people spend a whole day to finish the process of prosecute, but now it only costs us 30 minutes. All we need to do is provide the details that the court need; In Hangzhou, an outstanding smart city in China, by ten thousands of monitors recording the traffic condition of all main roads, computers keep identifying and analyzing the real- time traffic condition. Once there's a traffic accident, by adjusting the traffic signals, the city will take control of the traffic immediately and figure out the best evacuation route, which allows us to gain more time to rescue the injured and restore normal traffic in a short time. According to statistic data, the accuracy of reporting accident reaches 92%, and the time of restoring normal traffic is shortened 15.3%.[4] With the operation of real-time monitoring and feedback, the traffic efficiency got improved; Everyday in the city, many sudden events are happening: missing of children or the aged, escape of the motor vehicles in traffic accident and so on. The traditional solution is huge-crowd strategy. Through massive manpower, the police check a large number of monitor videos, to find out a single target, which costs many unnecessary resources. In this case, "Tianying", the program of Alibaba Cloud, has been launched and applied to practice. "With the world's first pedestrian recognition accuracy (Pedestrian Re-ID on Market 1501 Competition), "Tianying" (96%) even exceeds humans' ability (94%) of recognition.[5] Normally, the smart security products are deployed at 6 to 12 meters high above the road. In the record

video, we can't distinguish the face at all. We can only see the top hairline, plus variety of the weather environment, the low resolution of cameras. It comes out with the obvious error in tracking pedestrian. In the snow-light project, Alibaba Cloud, in Jiaxing and Zhangzhou, "Tianying" products rely on the comprehensive details of pedestrians, vehicles and objects to realize "precise search" in the practical police service, which provides great public welfare value for China's 200 million elderly people and aging society.[6]

Disadvantages

There's no denying that with the interaction and implement of information, smart city has brought us uncountable convenience and it's changing our life. However, it's also high time that we should pay more attention to the disadvantages that urban development has brought about.

Employment: As our demands for further urban development, our city will get more and more intellectualized, which means less and less employment opportunities. To maintain an optimistic employment rate, our government should place a great importance on education. Only if people are well-educated and well-qualified, they can participate in the further urban development to promote the process. And only with well-educated citizens, the city can continue the process of urbanization and intelligence.

Concept of Sharing: In city life, efficiency is the key. People refuse to waste their time. So it's likely that people keep focusing on the information they need, stick to their own schedule and as a result, people forget about the one by their side. It's possible that it may lead to the absence of humanistic concern. As regards, the concept of "sharing city" shows out its importance. In Fuzhou, China, the sharing kitchen has got warmly welcome since last year. With the pace of city life accelerating, people have less and less time, even for a proper lunch. It's been a serious problem in China. In sharing kitchen, people can not only cook delicious dishes by themselves, but also enjoy the moments of gathering. Simply choose a place and book a date on mobile app. It's a good way to improve people's relationships; meanwhile it also promotes economic development.

Cultural Development: Along with the physical development, urban administrators should also pay attention to the cultural development. Cultural infrastructure should remain in the city to satisfy people's needs to culture and knowledge. With personal development goes forward, urban development, even nation development makes progress. And people's value and thoughts will lead the development to the right direction.

Privacy: With the development of artificial intelligence, gradually, there is no way to hide our private life. Cameras are distributed at every corner of the city. Network activities are under monitored. Every move of us will be recorded. At that time, the limit between social life and private life will be gone. To remain the basic ethical principle, the government, the enterprise, every single of us should take the responsibility. The compulsive forceful policy should be put into practice by the government, to restrict the behavior of enterprises and individuals. Some efficient methods should be considered, like strengthening the punishment of revealing personal information, improving the protection mechanism for private details. For

enterprises and individuals, the awareness of protecting personal information should be arisen. It's every single one's duty that we have to respect other's private life and refuse to make any bad influence to them. Every step counts. With people's attention to privacy protection and government's efficient and practical policies, our private life would remain safe in the future city life.

Conclusion

This is the age of Big Data, even the city development relies on data and information. So it's a must that the public facility gets to a high level, in order to collect information from every corner of the city. But this is far from enough. With tremendous data, the city needs to get the implement done. By reacting to different data and information, people get more convenience and efficiency. It demands for a large amount and scale of investment, which should be monitored by government but operated by entrepreneurs. At the same time, we should place great significance on humanistic concern and let the concept of "sharing" be with city development. Along with the physical development, urban administrators should pay attention on people's mental needs. Only when our personal development goes in a proper direction, the urban development will continue in a scientific and efficient way. Until then, smart city will lead a great many benefits into our life.

Reference

https://yq.aliyun.com/articles/603873?spm=a2c4e.11153987.0.0.4ef75a35HKc50p
https://yq.aliyun.com/articles/603873?spm=a2c4e.11153987.0.0.4ef75a35HKc50p
https://yq.aliyun.com/articles/603873?spm=a2c4e.11153987.0.0.4ef75a35HKc50p
http://www.sohu.com/a/204535422_601552
https://yq.aliyun.com/articles/603873?spm=a2c4e.11153987.0.0.4ef75a35HKc50p
https://yq.aliyun.com/articles/603873?spm=a2c4e.11153987.0.0.4ef75a35HKc50p