



*Extended Abstract*

## **Study on Social Informatization from the Perspective of the Basic Characteristics of Information**

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### **1. Introduction**

Many scholars researched social informatization from different perspectives, including profession, economy and technology. In this thesis, the author will study social informatization from the perspective of basic characteristics of information. Firstly, the author will describe other scholars' social informationization theories. Secondly, the definition of information and basic characteristics of information will be given. Then, the production mode informatization and life-style informatization from the perspective of basic characteristics of information will be studied on in this paper. Lastly, the conclusion will be drawn.

### **2. Methods**

In this paper, the author has used literature research method to list some kinds of theories of social informatization. The history and current status of theories of social informatization could be found by researching different kinds of literatures. Besides, the descriptive study method has been used in this paper. The author stood on the point of view of basic characteristics of information to describe and explain the social informatization.

### **3. Results and Discussion**

#### *3.1. The Social Informatization*

The earliest theory of social informatization can be traced back to the 1950s. In 1959, Daniel Bell, an American sociologist, used the word "post-industrial society" to describe a new social stage for the first time in an academic conference. Daniel Bell stated that information was the core competitive factors in the "post-industrial society" and named the "post-industrial society" in which information

workers were the main professional group "information society".<sup>1</sup> It can be seen that Daniel Bell discusses social informationization from the perspective of career mobility. After Daniel Bell, another American sociologist, John Naisbitt, studied on social informationization from the perspective of career mobility, too. In his *Megatrends: Ten New Directions Transforming Our Lives* (1984), John Naisbitt claimed that most of people were processing information rather than producing the products in American in 1956 and believed that the year of 1956 was the starting point of the United States entering into the "information society".<sup>2</sup>

Besides, some scholars researched social informationization from the perspective of economy. For example, Fritz Machlup (1962), an American economist, presented the concept of "knowledge industry" in his *The Production and Distribution of Knowledge in the United States* (1962).<sup>3</sup> After that, Marc Porat (1977), another American economist, presented and described "information industry" in detail in his *The Information Economy: Definition and Measurement* (1977).<sup>4</sup>

Some scholars measured the society on the basis of the development of science and technology. For instance, Alvin Toffler, a futurologist, divided the history of development of human society into three "waves" according to the development of science and technology in his *The Third Wave* (1984) and he stated that the electronic information technology contributed to "the third wave" that led to the information society.<sup>5</sup> Moreover, Manuel Castells, a sociologist, claimed that "a new society" that was named as "the network society" came into being with the development of network technology.<sup>6</sup>

Seeing from what has been discussed above, scholars studied on social informatization with adequate grounds from the perspective of profession, economy and science and technology. Nevertheless, the author thinks that the increase of amount of information, the formation and development of information industry, the increase of workers engaging in information industry and the wide application of information technology just make the social informatization to be possible. Society is made up of people. With the development and wide application of information technology, the characteristics of information have changed people's production mode and life-style. Only if production mode and life-style have realized the informatization, the social informatization will truly be realized. So, in order to completely study on social informatization, the production mode informatization and life-style informatization should be analyzed from the perspective of the characteristics of information.

### *3.2. The Definition of Information and Basic Characteristics of Information*

In 1948, Shannon, an American scientist, published his famous paper *A Mathematical Theory of Communication* and had deduced the information entropy formula:  $H = -K \sum_{i=1}^n p_i \log p_i$  by the knowledge of mathematical statistics and stated that the information entropy formula "played an important role in the information theory as a measurement of information, selecting, and uncertainty".<sup>7</sup> This kind of "uncertainty" exactly is the "uncertainty" of information sink and the information source can eliminate the "uncertainty" of information sink by sending a message. So, generally, the information given by Shannon is considered to the elimination of "uncertainty". Though Shannon's information theory is based on the rigorous mathematical statistics, his information theory is limited to the specific communication. Comparing with Shannon's information theory, Wiener's information theory has more extensive adaptability. Wiener stated that "information was neither a matter, nor energy, and information was the information, and if you did not know it, you would not know the

materialism”.<sup>8</sup> It was observed that, Wiener considered information as an independent existence that differed from matter and energy, however, did not explain information in detail. In contrast, Wu Kun, a Chinese philosopher, carried on the thorough thinking on the nature of information from the philosophy level. Professor Wu Kun stated that “information was the philosophical category marking indirect existence and self-display of existing way and status of matter (direct existence).”<sup>9</sup> Professor Wu Kun defined information based on redistricting the field of existence and regarded information as “indirect existence” and pointed out the relationship between information and matter. It can be seen that Professor Wu Kun’s information definition is more abstract and precise than Wiener’s.

The author thinks that some scholars cannot stand on the point of view of characteristics of information to study on social informatization and mistake the wide application of information technology or the rapid development of information industry for the social informatization, because these scholars cannot grasp the nature of information from the philosophical level and just consider information as a technology. In order to study on social informatization from the perspective of characteristics of information, the author will analyze the characteristics of information based on Professor Wu Kun’s information definition from the philosophical level rather than the technology level. Though there are many kinds of characteristics of information, this paper will only choose a few basic characteristics to be analyzed. The virtuality of information, the creativity of information and the display attribute of information will be referred to in this paper.

### *3.3 The Production Mode Informatization*

From the perspective of producers, the creativity is the core competitiveness between producers in nowadays society and that will be producers who have the creative ability indeed rather than processors who only repeat mechanical labor. The core of brainwork is the memory, processing, storage and recombination of information in the brain and is creative activities of information. So, the creativity of information gets the most centralized embodiment in producers.

From the perspective of the subject of production, nowadays, producers produce new products mainly by means of recombining the information of the subject of production and remolding the subject of production in the information level. The process of information recombination of the subject of production is precisely the creative process of information.

From the perspective of the instrument of production, with the development of technology, instruments of production become more and more intelligent. The intellectualization is exactly a kind of simulation of specific function of intelligent creatures. The simulation means the virtualization of real things or process. So, the instrument of production intellectualization embodies the virtuality.

From the perspective of the product, as products are more and more rich, people do not focus more attention on the product itself but want to express themselves by the product. People can display production capacity by the product. The product not only can be used by human, but also can display human production capacity, which is the important embodiment of display attribute of the product information.

The basic characteristics of information have penetrated into all aspects of human producing activities and human producing activities have been changed by the basic characteristics of information, which is the production mode informatization.

### *3.4. The Life-style Informatization*

The life-style informatization is mainly embodied in basic necessities of life intellectualization, communication virtualization and consumption symbolization

The intellectualization of basic necessities of life is a trend in today's world. The intellectualization of basic necessities of life is based on virtualizing sensor and controller of intelligent creatures. So, the virtuality is changing our basic necessities of life.

Meanwhile, the virtuality is changing our communication. With the development of technology, especially the development of network technology, the face-to-face communication is less and less. For one thing, subjects of communication hide in the network and subjects of communication are virtualized by network. For another, both the language and the character of subjects of communication are converted to digital codes and are passed through the network. Therefore, ways of communication are virtualized by network, too.

With the improvement of human productivity, material products become very rich. When people consume material products, they more and more focus on symbolic consumption. Material products are displayed by symbol. People adore the symbol, not only just because the symbol display the material product itself, but also because people can display themselves and achieve self-identity by means of occupying the symbol. The display attribute of information is the real magic power of the symbol and this magic power is changing the society and human.

The life-style is permeated with the virtuality, the creativity and the display attribute that information gives us, which is the most fundamental impact on the life-style. So, the life-style has been informationized.

## **4. Conclusions**

This paper used a unique perspective that was the perspective of basic characteristics of information to study on social informatization. This perspective was broader and more fundamental than the perspective of profession, economy and technology and the study on social informatization was deeper from the perspective of basic characteristics of information, because the perspective of basic characteristics of information was based on Professor Wu Kun definition of information in philosophical level.

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