

## A Study on Improvements of Electric Trading System Using Big Data

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**Abstract.** With wireless communication and smart apparatuses, people now can create, share, and consume information at anytime and anywhere. In addition, development of technology has allowed the large-scale data of image, voice, and image to be spreaded and shared, from the existing data consumption pattern of users that was mainly consisted of the text. With this, the quantity of data to be consumed by individual has been geometrically increased. At last, the age of Big Data has been emerged. The big data existing in the life have included a vast information. Now, analysis and utilization of these data in what kind of aspect has been more important. In this study, the status of Big Data have been looked through and the method of its utilization in the global online business field has been suggested.

**Keywords:** Electric Trading System, Global Online Business, ICT

### 1 Introduction

Development of information technologies and equipment has accelerated the information society, and production and spread of information, and consumption have been much faster and easier, according to this. Like Fig. 1, IDC foresaw that the quantity of the digital information would be 35.2 Zettabytes in 2020, after it has been geometrically increased in 2011 with about 1.8 Zettabytes[1]. With this, to obtain a useful information by processing it as the wanted information with collecting and analyzing

“ Big Data” representing the vast quantity of data has become a social issue. World Economic Forum pointed out Big Data as the technology that should be most focused in 2012, and designated solving problem of the excessive data and utilizing by making data be assets , as the top priority issue[2].

This study is aiming at designing and proposing the method of utilizing Big Data to global on-line business. In detail methods, it is consisted of meaning of Big Data, technological trend, measures for utilizing it in the business field, and procedure for realizing the system analysis model.

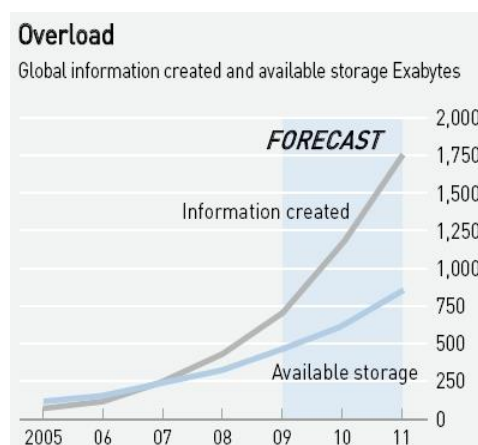


Fig. 1. Data overload

## 2 Concept and Characteristics of Big Data

### 2.1 Concept of Big Data

Definition of Big Data has started in the size of data and in the technological aspect, while There has been actually not yet agreement with specific and quantitative definition for Big Data, and there is a trend that its meaning has been expanded to values of Big Data and effect of its utilization.[3] IDC defines Big Data as “A designed next generation technology and architecture to allow to extract the economically necessary values trough high-speed capture, search for data and analysis from the vast volume of data consisted of various data”[4], and Gartner defines it as “It means that the large volume of data are streaming in real time as consistent and various types[5]”. In addition, McKinsey defines it as “a large scale of data as much as difficult in collection, save, management, and analysis with the traditional database software”[6]

## **2.2 Characteristics of Big Data**

Big Data has 3 representative characteristics: more than PB-class gigantic data volume, data variety including non-structured data, and data velocity generated in real time. In addition, four types of characteristics have been mentioned, including complexity of environment for utilization of data.

## **3 Concept & Status of U-Trade Hub**

### **3.1 Concept of U-Trade Hub**

U-Trade means doing business and sharing information anytime, anywhere using mobile, PDA , broadband wireless network and wireless mobile network[7], and U-Trade Hub allows to provide a single window that can deal with all kinds of trading business process without any rupture from market survey to contract, commercial trading, foreign exchange, custom clearance, logistics, and payment, to the trading company by using the high-end IT apparatuses[8].

U-Trade Hub is an integrated system environment to deal with the key factors for providing a single window as the systematic and integrated single business. With the integrated system where various and comprehensive matters have been systematically integrated, including electric trading documents, such as contract, payment, and judgement of responsibility among various trading subjects, the trading company can deal with the business without any limit to time and space.

### **3.2 Status of U-Trade Hub**

In the status of using U-Trade Hub, the number of memberships has been rapidly increased by 33,413 people from 51,122 people in 2011 to 17,709 people in 2010, and this is attributed to the fact that application and issuance of the purchase confirmation is obliged to be dealt with only on-line through U-Trade Hub from 2011. 07.11. In addition, it has been increased to 59,263 companies on Dec., 2012.

## **4 Proposal for System**

Big data can be utilized in the various industrial fields according to collection and analysis of information. McKinsey has introduced effect and examples of utilizing Big Data for each 5 field, such as medical, retail, manufacture, GPS information, and public service, and IBM has increased productivity and efficiency by applying Big Data to the entire industrial fields through campaign.

With utilizing Big Data, the following system model is proposed to solve the problems of the electric trading integration system and reinforce the function as the single window.

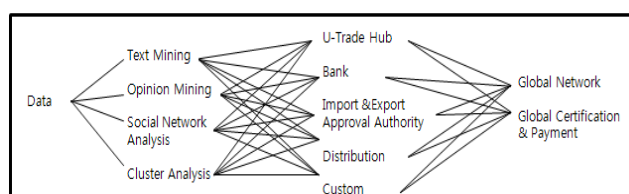


Fig. 2. Single Window System

After analyzing the Big Data related the electric trading and trade to be variously collected through various analysis technique, the professional information is forwarded to each detail system by classifying with information appropriate for each sub-system of U-Trade Hub with arrangement of information through a consistent and standardized rules. Through a series of process, various information is though the collecting, arranging, classifying procedures and systemized. This systematized information is utilized as the detail information for the system integration and service more efficient than in each specialized sub-system. In addition, the range of the system integration can be expanded to worldwide through sharing data with global web site and searching site.

## 5 Conclusions

Development of IT technology and wireless communication technology has caused the flow of the gigantic information data and the situation that analysis and classification of information are more important than production and collection. Development of new Big Data analysis technique will bring innovation in various fields utilizing Big Data, and suggest the way to deal with the vast volume of information that could not be dealt with so far. Big Data is a new paradigm throughout the entire industrial fields.

In this study, the Big Data, represented as non-structured, diversification, fast data generation, and complexity, has been intended to be analyzed and utilized with focus on the part , increase of efficiency of the system and integration of electric trading system.

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