

Chapter 40

Semantic++ Electronic Commerce Architecture and Models in Cloud

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ABSTRACT

Electronic commerce is playing a more and more important role in today's commercial activities. In this chapter, the authors propose a kind of new electronic commerce architecture in the cloud and give two kinds of new electronic commerce models. This chapter opens the discussion of why we need to design a new architecture in the cloud environment. Firstly, the authors have a discussion about the semantic++ computing. After the discussion, they give the architecture that can satisfy the requirements in the cloud. This architecture mainly includes five technologies, which are the massive EC data storage technology in the cloud, the massive EC data processing technology in the cloud, the EC security management technology in the cloud, OLAP technology for EC in the cloud, and active EC technology in the cloud. Then, the authors propose two kinds of semantic++ electronic commerce models based on big data. These two models are the new electronic commerce models. The first model is semantic++ electronic commerce Q/A (Questions/Answers) model and another is the active semantic++ electronic commerce model. These two models are all based on big data. Finally, the authors conclude this chapter and give future work.

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INTRODUCTION

With the rapid development of electronic commerce, the traditional technologies can't satisfy the applications' requirements again. We need to transplant the traditional EC into the cloud environment. And so, we need to construct a kind of new electronic commerce architecture in the cloud environment. This kind of new architecture needs to satisfy massive data's storage, data computing and data's security in cloud so on.

Nowadays, people would like to use the electronic commerce software comfortably. And so some new electronic commerce models will to be appeared, especially in the big data era. In this background, we propose two new electronic commerce models. The first model is a kind of semantic++ electronic commerce Q/A model and another is the active semantic++ electronic commerce model based on big data. More and more people would like to ask questions about the electronic commerce in the internet. For example, which kind of dried milk is the cheapest in the Ebay? And they hope to get a good answer from lots of answers come from the public or electronic commerce web sites in the world. The crowd-sourcing is a typical application of Q/A system. Some companies or enterprises publish their projects through the internet, and lots of public and experts can attend the research for these projects. And then, these companies and enterprises can select some good results from millions of answers. At the same time, lots of consumers want to find products from the electronic commerce web sites according to their requirements, too.

In order to complete these internet applications in the EC (electronic commerce) area, we propose a semantic++ EC Q/A model. From this semantic++ EC Q/A system model, questions publishers can publish their questions through this system, and lots of publics can answer their questions. This system can execute some semantic++ computing through the big data platform and get some semantic knowledge extraction, knowledge analysis, semantic++ results sort and so on.

The semantic++ EC Q/A system model is a kind of passive EC model, EC consumers need to get EC information themselves. With the development of economics, lots of consumers are very busy and they hope to get some EC information automatically. The rule technology is the most important technology to realize this model. In order to realize the active semantic EC model, we will use the rule processing technology to complete this model in this paper. All EC consumers can set their rules in the EC web sites according to their conditions. And when their conditions have been satisfied in some times, the rules that have set will be trigged. And so, the results will be sent to the consumers through emails, telephones and other ways so on.

BACKGROUND

In order to understand the semantic++ electronic commerce architecture and models in cloud better, some related area with our paper will be introduced, which are electronic commerce models, cloud computing, big data, security, semantic computing and rule processing so on.

Electronic commerce is becoming more and more important in the 21St. lots of traditional trade activities have been migrated into the internet. Electronic commerce is playing a more and more important role all over the world. According to the report of electronic commerce research and development (Ali-research, 2011), the e-commerce transactions accounted for a total GDP of China in 2011 is 12.1%. And

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