

## The Design of the Collaborative E-Business Platform

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**Abstract**—At present, the development of E-Business has entered the collaborative E-Business stage. The collaborative E-Business is a complete E-Business, which is based upon collaboration and an effective approach to solve the problems in the enterprise such as “Information Island” and “Resource Island”. The collaborative E-Business is a kind of advanced business management idea and a kind of advanced commerce solution based on the Web, which conforms to the requirement of the Mass Customization. It locates the customers and services at the center, and realizes cooperation and intercommunication between the related people in the whole lifecycle. It is a knowledge, intelligence, and open collaborative business platform. According to the actual development and background of the domestic E-Business, the collaborative E-Business platform and some relative problems are researched in this paper. The system structures of the collaborative E-Business are proposed. Lastly, a prototype example for garment industry and the characteristics of the collaborative E-Business platform is summarized briefly.

**Keywords**—E-Business; platform; design; system structure; collaborative; garment industry

### I. INTRODUCTION

E-Business is a web-based electronic business, which is based on information network technology and E-commerce. With the economic globalization and the rapid development of Internet technology, E-Business has become the center of information exchange and the focus of enterprises competitive. However, many E-Business applications still remain in the initial stage and are just some simple display of goods and electronic trading platforms. It's very difficult for them to effectively integrate the existing enterprise information systems, as well as internal and external business resources, and is difficult to achieve the overall optimization of product value chain. The collaborative E-Business is an advanced E-Business, which can realize enterprise business integration in technology, and realize product value chain optimization in the whole lifecycle.

In this paper, some design problems of the collaborative E-Business platform is researched. The holistic framework, the layer framework, the function structure of the collaborative E-Business platform is proposed. Lastly, a prototype example for garment industry and the

characteristics of the collaborative E-Business platform are summarized briefly.

### II. THE OVERVIEW OF THE COLLABORATIVE E-BUSINESS

The collaborative E-Business is the electronic interactive business process for enterprise inside personnel, enterprise and business buddy, enterprise and customer, which ensures enterprise to make exact policy and run efficiently especially in collaborative manufacturing. The collaborative E-Business is a complete E-Business, namely enterprise interior information integration firstly, then Enterprise Application Integration and interactive collaboration based on Internet. It realizes enterprise business integration in technology, and provides a set of the systems, which are able to realize product value chain optimization in the whole lifecycle

By using Web technology and locating clients at the center, those information systems inner the enterprise are able to be integrated efficiently such as CAX, PDM, CRM, SCM, ERP and so on. And those manufacturers, suppliers, cooperators and clients can be collaborated on, and the integrated collaborative platform for the designing, selling, manufacturing and supervising of products should be constructed. Hereby the information management in the whole lifecycle of the product is realized.

### III. THE SYSTEM STRUCTURE OF THE COLLABORATIVE E-BUSINESS PLATFORM

#### A. The holistic framework of the collaborative E-Business platform

The collaborative E-Business platform contains every step of the administration function during the whole lifecycle of the product, including the collaboration of every branch and every enterprise, and satisfying the requirements of information systems of the enterprise. In the collaborative E-Business platform, One side is the task, that is, the collaborative business enterprise solutions, including collaborative product design, product development, manufacture planning, product management, workflow management, product sell, supply logistic, customer service and so on. The other side is tools, such as enterprise resource planning ERP software, customer relationship management CRM software as well as supply chain management SCM software. With the web-based collaborative E-Business

pattern, they are unified in the collaborative E-Business platform Figure 1 shows the holistic framework of the collaborative E-Business platform.

### B. The layer framework of the collaborative E-Business platform

In view of technique, the collaborative E-Business platform is a group of integrated system platform of enterprise information, and is collaborative applied system based on Web; this system mainly includes three layers. The first layer is presentation layer, this layer provides information to access Web home site for every side in the process of collaborative business, and which includes browsing information, searching and customizing. the second layer is application layer in which the collaborative information exchange between enterprises, enterprise and client ,sellers is realized .It's main function includes collaborative product design、online trade platform、information door、PDM、CRM、ERP、CAx and so on .The third layer is data layer, whose function is to capture , store and keep the information as to manufacturing

data ,designing data , selling data and user data in order that is produced in the process of collaborative business. The layer framework of the collaborative E-Business platform is shown in Fig.2.

### C. The function structure of the collaborative E-Business platform

The collaborative E-Business platform mainly facilitates enterprise to accomplish product data management, enterprise information retrieval, online paying, resource sharing, consumer interaction , collaborative design , enterprise cooperation, business management and so on. The main functions include PDM、CRM、collaborative product design、online trading platform、store management、data statistical and analysis、software interfaces and so on. Figure 3 shows the function structure of the collaborative E-Business platform.

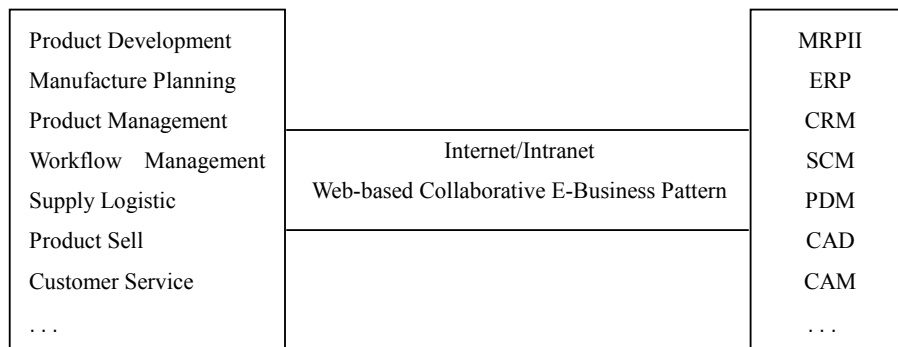


Figure 1. the holistic framework of the collaborative E-Business platform

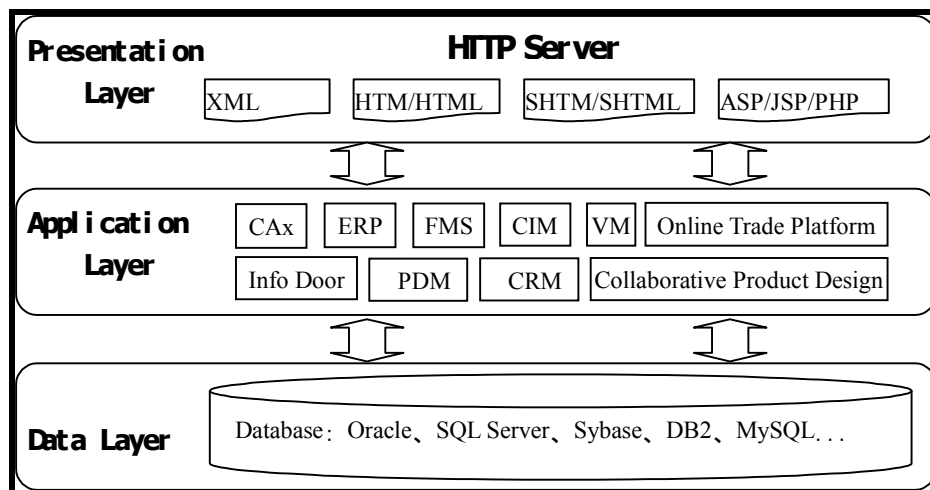


Figure 2. the layer framework of the collaborative E-Business platform








The Collaborative E-Business Platform						
Custom Relation Management	Product Data Management	Online Trade Platform	Collaborative Product Design	Store Management	Data Statistic and Analysis	Software Interfaces
						
Custom Register	Product Input	Product Query	Collaborative Communication	Product in	Customer Statistic and Analysis	CAX
Custom Modify	Product Modify	Order Generate	Collaborative Design	Product out	Sale Statistic and Analysis	CIM
Custom Demand	Product Output	Order Submit	Virtual Model	Stock Scheduling	Market Analysis and Forecast	VM
Expert Management	Product Data Statistic	Online Payment	Design Tools	Stock Query	Management Decision-making	ERP
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Figure 3. the function structure of the collaborative E-Business platform

#### IV. A PROTOTYPE EXAMPLE

Here gives a prototype example of the collaborative E-Business platform for garment industry .The persons who use this system include clients, managers, design experts, distributing dealers, storage managers and so on. Its function includes product data management (PDM) , client relation management (CRM) ,online trade platform, collaborative

product design, stock management, analysis and decision and so on. What's more, in order to coordinate and unify information, business, process, the collaborative E-Business platform usually needs to integrate it's function such as the design and sell platform on line, the enterprise home site and the applied software interface and so on. In fig.4 is shown the system framework of a prototype example of the collaborative E-Business platform.

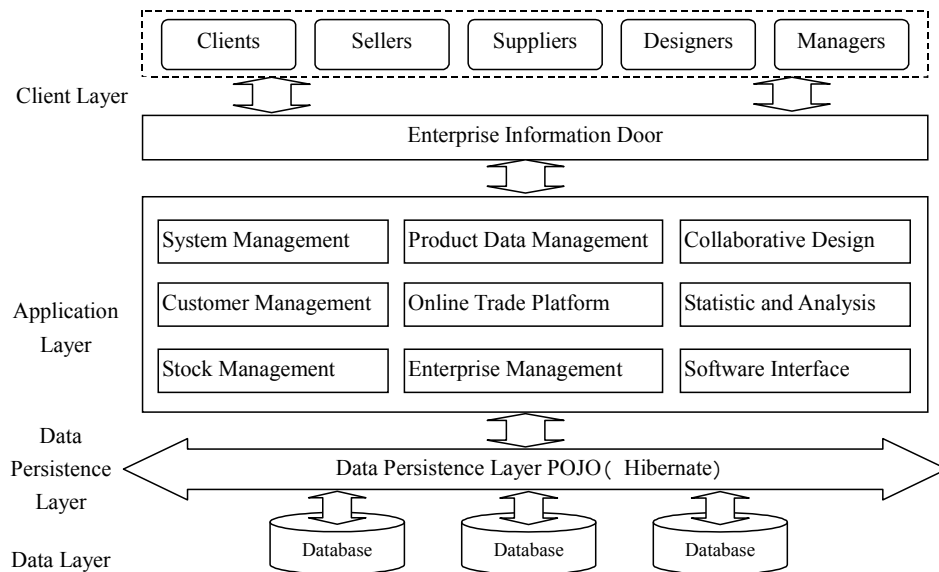


Figure 4. a prototype example of the collaborative E-Business platform for garment industry

## V. CONCLUSION

The collaborative E-Business is an advanced E-Business, which has been fully integrated enterprise knowledge, business processes, operating segments. The collaborative E-Business enable information systems such as CAD/CAM/CAE/CAPP、PDM、CRM、SCM and ERP to be integrated effectively and combining the supplier, the seller, the cooperator and the client, and supervising product lifecycle. It not only solves the problems from the enterprise such as “Information Island” or “Resource Island”, but also provides a platform for supporting the Mass Customization. It is a knowledge, intelligence, and open collaborative business platform.

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