The 3rd Wave of eBusiness: Collaborative Virtual Enterprise

A Paper submitted to:

International Symposium on Government in E-commerce Development
April 23rd – 24th, 2001, Ningbo, China

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Abstract

Virtual Enterprise is a group of independent companies operating in concert within formalized guidelines to achieve mutually aligned business goals. It is a 3rd wave of e-Business revolutions, a new collaborative e-Business model. To successfully transform into the new economy, some strategies have been adopted by industry leaders. These transformational e-business strategies have emerged as the winners by industry leaders tightly integrating what had previously been only loosely linked business and Internet strategies. At the core of these Top Transformational Strategies and influencing each of the others is Ecosystem Virtualization (an equal to collaborative Virtual Enterprise). For developing countries, Ningbo, China as an example, the virtual enterprise business model might be a way to go.

This paper introduces the concept of e-Business and analyzes the revolution path of e-Business. A new collaborative e-Business model – “Virtual Enterprise” is discussed in detail. To help enterprises successfully transform into the new economy, some top strategies are also illustrated in detail. Based on the new business model, a special case study of Ningbo is also discussed at the end of the paper.

Key words: e-Business, new economy, virtual enterprise, transformational strategy, case study, Ningbo, China
I. e-Business Revolution

1.1 What is e-Business

eBusiness refers to all business processes that take place across electronic networks. This includes everything from the selling of goods through the World Wide Web, to bar-coding in supermarkets, to interactive television and a whole host of other emerging technologies. eBusiness integrates Information and Communication Technologies (ICT) with traditional business processes, introducing efficiencies that cut costs and increase profits. Andy Grove, the Intel Chairman, has predicted that:

"In a few years’ time, there will be no Internet companies -- there will just be companies -and all companies that are going to operate in the economics of a few years, in the future, are going to be Internet companies."

The key to successful eBusiness is not to concentrate on the technology in itself but to decide the way forward for your business within this new environment. When you have decided how you want to move your business forward then start to look at the technology solutions.

1.2 How is e-Business Evolved

It is almost universally accepted that we are in the grips of an e-business revolution (see, e.g., Aldrich 1999; Evans and Wurster 1999; Hagel and Armstrong 1997; Schwartz 1999). According to many, we are set to move into e-Business driven ‘hyper growth’, with trade over the Internet reaching trillions of dollars. Growth that is fuelled by established firms conducting more of their business through the digital infrastructure and by the creation of new firms seeking to exploit the potential of the ‘Net’. Electronic business is the subject of increasing popular attention, as is evidenced by its play in the popular media and the fascination of Wall Street investors. Both large investment houses and individual day traders are almost fanatical in their conviction that an economic miracle is underway—having driven the valuation of ‘virtual’ (in more ways than one) firms to the level of an Internet Bubble (Perkins and Perkins, 1999).

The e-Business has evolved by 3 generations (or waves). The first wave is lead by the widely use of ERP systems to improve productivities and EDI for transactions efficiency between enterprises. The emergence of Internet let the industry into the second generation, represented by the web-presence (including using internal web-based productivity tools, and external web-based catalogs) and e-commerce exchanges (B2C or B2B). While this model
greatly improves productivities, and provides certain level of efficiency, it is fundamentally about competition - putting buyers against sellers to get the best price for indirect materials or excess inventories. These e-commerce exchanges aggregate catalogs, facilitate auctions, and bring large numbers of buyers and sellers together via the Internet. This approach creates a degree of price transparency not available off-line, an important benefit, particularly for spot buys where getting a good price is often more important than getting the best service. These early exchanges do provide value, but aren't delivering on the real promise of b2b eCommerce. The real promise comes from a new model based on increased cooperation and collaboration among supply chain partners or members of a particular Online Buying Community. The long-term value of Internet Markets will be reduced costs and accelerated business cycles, benefits shared by all.

Recently, a new model emerged as the 3rd wave of e-Business. This new model – called a Virtual Enterprise – isn't just about faster, cheaper, or more transparent transactions. It's about creating new efficiencies in the way companies interact with their business partners, leading these organizations toward reinvention, new business models and new revenue opportunities. It's about enabling collaboration at every level in the value chain, with all members benefiting from shared business processes and shared information.

**Virtual Enterprise:** a group of independent companies operating in concert within formalized guidelines to achieve mutually aligned business goals – such as increased revenue, lower costs, and more efficient business processes.

A Virtual Enterprise business is a virtual intermediary, leveraging the Internet to create benefits and value for a community of business partners. The Virtual Enterprise creates value by reducing "transaction costs" and spreading the resulting savings and efficiencies among all participants. These benefits are possible because each participant has the ability to interact with multiple business partners, to function seamlessly as both a buyer and seller, to complete business transactions and to manage complex business processes entirely via the Internet.

### 1.3 The Collaborative Virtual Enterprise Model

Within a traditional supply chain business process inefficiencies are a defining problem. The Virtual Enterprise model, in the form of a Supply Chain e-Hub works to overcome these inefficiencies by providing greater visibility and control of supply chain interactions. Connecting supply chain partners via shared Virtual Enterprise software creates process integration, improves forecasting and product planning and provides real-time access to order and shipment status – ultimately reducing manufacturing, distribution and sales costs.

Virtual Enterprise based buying communities are formed specifically to facilitate direct trade in business critical goods, with community participants creating symbiotic relationships that
extend well beyond the buy/sell process. Online Buying Communities frequently support the requirements of buyers within highly distributed markets, where accessing appropriate suppliers can be difficult and time consuming. Ultimately, members benefit from reduced prices that result from aggregation of demand, while suppliers benefit from the concentrated business and the opportunity to link the community into their own Supply Chain e-Hub.

Business models have fundamentally shifted with collaborative e-Business. Business value is no longer determined solely on the basis of tangible assets. Intellectual capital and business partnerships have become just as important. The enterprise centric applications that organizations rely on to manage their internal operations were designed to support inter-departmental information sharing and are configured for enterprise business processes.

In a collaborative Virtual Enterprise environment, information must be shared among many companies; with participants adding, using and updating data, as needed for the many roles they play within a value chain. Enterprise applications, including ERP and eProcurement systems, do not have the infrastructure or flexibility to support hundreds of enterprises working in concert. Setting up connections between supply chain partners doesn't solve this problem. Migrating data from one suite of applications to another isn't the same as sharing information within a common business system. Only a shared, Virtual Enterprise based system is capable of providing a view of every interaction occurring within the value chain.

II. Transformational Strategies

Industrial analysts have identified some top transformational strategies that industry leaders are using to achieve dramatic breakthroughs in shareholder wealth and competitive position to ride the 3rd wave of e-Business revolution. These transformational e-business strategies have emerged as the winners by industry leaders tightly integrating what had previously been only loosely linked business and Internet strategies.

At the core of these Top Transformational Strategies and influencing each of the others is Ecosystem Virtualization (an equal to collaborative Virtual Enterprise). An "ecosystem" is the industry value network that creates, produces, sells, and delivers products or services to an end consumer. "Virtual" refers to the fact that a value network can, by means of Internet-based technologies, act as if it were a unified enterprise-with a single objective and a single set of metrics. "Ecosystem Virtualization" as a Transformational Strategy describes the process whereby enterprises actively lead collaboration within their value networks guided by core competencies.
2.1 Ecosystem Virtualization

Ecosystem Virtualization describes the process whereby enterprises actively lead collaboration within their value networks guided by core competencies. An “ecosystem” is the industry value network that creates, produces, sells, and delivers products or services to an end consumer. “Virtual” refers to the fact that a value network can, by means of Internet-based technologies, act as if it were a unified enterprise—with a single objective and a single set of metrics.

Ecosystem Virtualization demands that firms focus on strategically competitive competencies and customer touch points and then collaborate with value network partners for the balance of the total solution. This is not outsourcing in the traditional sense as the enterprise never loses control of the partnered activities but, instead, collaborates with value network partners to create an extended, virtual enterprise.

Ecosystems that make and execute decisions as if they are a single virtual enterprise can gain fundamental competitive advantage in terms of customer service, market growth, resource investment, and time to market. The power and effectiveness of this central strategy is so profound that it operates as a core theme that is being applied to all of the
other nine e-business strategies. Therefore, it can be thought of not so much as one of the overall ten potential strategies, but rather as the core -unifying all other e-Business strategies.

### 2.2 Create New Business Models

Web-enabled community, comprising a set of portals that represents like-interest portfolios, such as women's healthcare, entertainment, etc. Enabled by the Internet, a virtual MarketSPACE is forming in which buyers and sellers conduct business and serve specific Communities of Interest. These MarketSPACEs, created by emerging information technologies, are a virtual world that coexists with the traditional physical marketplace, but which operates under a very different set of business leverage rules.

Leveraging the strengths of trading partners’ knowledge in a collaborative new product development. Sharing partner capabilities prior to the selection of the solution design will improve the end design value and shrink time to market for new/improved products. This includes the concept of including full product life cycle profitability planning, including supply and service strategies, into the optimized solution design. In the E-conomy, product life cycle not only never reaches maturity but doesn’t aspire to it. When your offering has achieved some success, you should already be launching the next new thing.

Strategy to provide the target customer with "one-stop" shopping and to achieve maximum share of the customer total buying in defined areas of need, including leveraging relationships with trading partners who provide components of the total solution sell that is not directly provided by the enterprise. In the E-conomy, companies sell or "rent" products, services, and knowledge. Companies make or partner with others using the best, most cost-efficient combination of assets, using best in class processes, no matter whose they are; service is a growth opportunity.

### 2.3 Reduce Costs and Improve Services

Collaboration model that provides trading partners planning, information sharing, and business execution through a B2B inter-enterprise model. In the E-conomy the effort is to make it easier and more satisfying for partners to do business with your company.

Self-directed employee services strategies to make it easier and more satisfying for employees to be effective and efficient by reducing the time it takes to carry out their higher value activities and reducing/eliminating non-value-adding activities. Employees use Internet technology to perform functions, rather than hiring personnel.
Customer-centric focus on the actual consumer needs and consumption patterns for products and services drives the e-fulfillment process. In the E-conomy products are "informed." The product itself is a primary interface between the end user, the manufacturer, distributors, and other parties with whom the customer wants to communicate.

### 2.4 Improve Customer Relationships

Maintain a customer for life through a customer-centric model that makes the customer experience easy and rewarding. Adopt strategies designed to optimize profitability over the life cycle of the relationship with the customer, including "firing" customers for whom achieving minimally acceptable levels of profitability proves unfeasible. Customers in the Net economy are becoming not only more empowered but also more granular from a segmentation standpoint. In the E-conomy markets can be individuals, affinity groups, enterprises, and communities of interests (COINs). The challenge is to create the type of products and services that cannot be compared to competitors.

Common look and feel of customer interaction, business model, and corporate infrastructure throughout all global operations are need. The E-conomy demands that you focus across a much broader spectrum of the competitive landscape. Your customers are everywhere as the competition is from anyone anywhere.

Self-Service Customer is an Internet-based, customer self-directed model. In the E-conomy, the effort is to make it easier and more satisfying for customers to do business with your company. Deep understanding of customer needs and ability to integrate all customer touch points are fundamental. Redesigned business processes to improve the speed, quality, and depth of all customer interactions, while reducing the costs of doing business both for company and customers. This transformation strategy changes the nature of the intermediaries. Some disappear while others appear in new niches.

### III. Ningbo Case Study

The e-Business revolution offers great opportunities for the integration of the economies of developing countries and economies in transition into the increasingly networked knowledge-based global economy. If developing countries and economies in transition do not catch up with developments in this area and participate in the phenomenal growth of e-commerce, they will be confined to the fringes of the international economy.
3.1 Ningbo Economy Model

Ningbo, one of top 15 economically powerful cities in China, has developed its unique economical model – “Block Economy”. What block economy is that there are many enterprises in the area that are in the same industry, and fill the supply chain for the industry. The garment industry is one of such examples. This is a very interesting economical phenomenon. Led by several public or large garment enterprises, a group of smaller enterprises supplies related materials in this area, they together have almost quarter of the market share of China.

As China enters WTO, more opportunities and larger markets will be open to China’s garment enterprises, but at the same time, more challenges also, like more extensive competition, more advanced technologies used by the trading partners globally which require more complicated business solutions in the enterprises. If Ningbo enterprises do not catch up to the international new economy, they will miss the great opportunities.

3.2 Virtual Enterprise – the Way to Go

To achieve high competitiveness within a short time period, Ningbo enterprises need to perform transformation into new economy with as little investment as possible. The best way, we think, is to leverage the Virtual Enterprise e-Business model.

Let’s take the garment industry as an example. The garment industry is one of the most unique economical “blocks” in Ningbo. There are hundreds of companies that produce products related to garment. Some of them supply raw materials, some of them produce intermediate products, whole several enterprises manufacture the clothing and each of the enterprises has built a national sales channel for distribution. Those companies have been driven by market demand, and are fairly successful in the past. While it can meet the domestic market demand fairly well, as China enters WTO, they will face a global market with extensive global competition. How to acquire international market information, and how to compete effectively, how grow in the global environment, or even how to survive in the globally competitive market, these are all the questions need to be addressed in a very short time period.

A normal way to achieve efficiency and high competitiveness will be increasing the size of enterprise through capital investment, i.e., by merging or acquisition, so all parts of the value chain of the enterprise would be controlled and effectively respond to the market. But this will cost a large amount of capital to the enterprise, and time consuming. While most of the enterprises in the garment industry in Ningbo do not have the financial power to construct such a powerful super-enterprise.
With the help of emerging new e-Business model – Virtual Enterprise, this becomes possible both financially and in a timely manner. Leading enterprise can build such a Virtual Enterprise by leveraging collaborative e-Business based information systems to virtually link the value chain around itself. Through this innovative business model, the enterprise achieves the goal of economical benefit of scale to meet the global demand, integrated value chain with fast response time to the market changes, while uses very little of capital.

References

Trends—Information

Biography of the Author

Longjun Chen: Founder and Chairman of Cybics, Inc. Cybics is one of leading 3rd generation e-Business software solution companies, and one of the first companies which promote the “Collaborative Virtual Enterprise” software. Mr. Chen worked in Cisco Systems, Inc. as a primary solution architect in the Internet Infrastructure Division and Mobile Wireless Group. He also served as the secretary general of Silicon Valley Chinese Engineers Association. Mr. Chen graduated from North Dakota State University and Xi’an Jiaotong University with multiple computer science degrees.