

# 시스템적 관점에서 접근한 신경제의 특성에 대한 재고찰

## Rethinking the Characteristics of the New Economy: A Systemic View

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### 요 약

1990년대 이래 신경제라는 제목 하에 다양한 경제·사회적 현상들이 관찰되고 논의되어왔다. 문헌에 기록된 대부분의 신경제 현상들은 단편적·일화적으로 묘사되고 있어 신경제의 본질에 대한 논리적이고 체계적인 설명이 부족하다. 본 연구는 시스템 관점에서 신경제 현상의 특성을 분석하였다. 구체적으로 신경제를 하나의 시스템 현상으로 놓고 아래 5가지 시스템적 속성에 대한 답을 구하였다.

- 1) 신경제 시스템의 구성요소는 무엇이며 그것들은 어떻게 상호 연관되어 있는가?
- 2) 신경제 시스템은 기능적으로 어떻게 작동하는가?
- 3) 신경제 시스템에서 생산되는 재화와 서비스는 무엇인가?
- 4) 신경제가 시스템으로서 가지는 가치는 무엇인가?
- 5) 신경제 시스템의 총체적·체계적 특성은 무엇인가?

본 연구는 상기 각 시스템 측면에서 신경제가 가지는 핵심 속성을 도출하고, 이를 종합하여 시스템 관점에서의 신경제 이해를 도모하고 있다. 아울러 신경제의 시스템적 특성이 기업의 전략에 시사하는 바가 무엇인지를 논의하고 앞으로의 연구과제들을 제시하고 있다.

**키워드 :** 신경제 현상, 디지털 경제, 체계적 관점의 신경제, 전자상거래 전략, 신경제 현상에 대한 이해

## I. Introduction

A new economy has been unfolding before us since the 1990's. It appears to operate with different principles and exhibit different behaviors than what we have known before in the traditional economy. The discussions of the new economy, however, do not add up. Most of the observations made in the

literature on the new economy are fragmented, casual, or anecdotal. Consequently, they fail to construct and convey a whole, coherent picture of what the new economy is really about.

As we have seen in the rise and fall of many dot-com companies at the turn of the new millennium, the information technology (IT) driven new economy and its phenomena have brought new busi-

ness opportunities as well as daunting challenges to business organizations due to its unique characteristics. Furthermore, many dot-com companies still seem to struggle to adapt to and survive in this new economy environment. Much of the difficulties they face could attribute to the lack of their understanding of the new economy phenomena. Considering the overall increase in the size of e-commerce over the years, we can assume that the consumer demand for online goods and services still maintains its momentum (Anonymous, 2008). As a result, e-commerce companies need to have a better understanding of the new economy phenomena to adapt more effectively to the new market environment and take advantage of business opportunities in the growing e-commerce market. Therefore, this study attempts to provide e-commerce companies with a better, more systematic understanding of the new economy and new economy phenomena as well as the implications of them in order to help e-commerce companies develop more effective business and firm strategies.

It documents what have been happening in the economy and discusses how to make sense of it all. For this, this study adopted *system perspective* as an overarching frame of reference for analysis. The new economy is framed as a system phenomenon, exhibiting particular systemic characteristics and behavior. The various phenomena observed are interpreted with and integrated in the system analytic framework.

In the following sections, an extensive review of the new economy literature is conducted, and some 30 plus so called new economy phenomena are assembled to be characteristic of the new economy. Next, we present a frame of reference, the system perspective, and use it to identify five generic aspects of a system for organizing the phenomena

together. Its purpose is to put order and structure onto the diverse phenomena, so that a coherent understanding of the new economy is possible. We draw some essential characteristics for each aspect and develop a systemic characterization of the new economy. We conclude in the final section with the implications of the systemic understanding for business and firm strategy and some suggestions for future research.

## 1.1 What's happening?: The New Economy Phenomena

Talks about about what's happening around us and why. Dozens of new books on the new economy come out every week, if not every day, and some of them register quickly on the best sellers list and stay as such. We have reviewed a number of those books and numerous academic and trade articles to assemble a list of phenomena that are happening.<sup>1)</sup> Some of them represent specific developments, while others describe more general trends. However, they all describe a slice of reality we call the new economy. A slice it may be though, for they are mostly anecdotal and fragmented, not compiling to a whole picture of the reality.

Below in <Table 1> is a list of some 30 plus phenomena frequently noted by the authors of the books and articles reviewed, with a brief description of each phenomenon. The phenomena address various

1) The list is assembled largely from books and such semi-academic sources as Harvard Business Review, Sloan Management Review, California Management Review, and McKinsey Quarterly, among others. Many of the ideas presented in them do overlap. Hence, we elected to quote the sources individually, only if the idea is quite specific to the authors. A complete list of bibliography for <Table 1> and <Table 2> is available upon request.

aspects of the economy, such as the mode of functioning of the economic system, the nature of the things exchanged-offerings-in the system, structural

configuration of the system, the sources of value in the system, or the overall quality of the system, among others. The list is not intended to be exhaus-

<Table 1> What's happening: An enumeration

Phenomenon	Description
Global networking	A weaving together of our lives, minds, and artifacts into a global scale network
Partnering	Nobody goes at it alone. Team up with others.
At the speed of thought	Everything digitized. Thoughts and actions occur almost simultaneously. Speed counts most.
Frictionless interaction and coordination	Interaction is almost free so that it is no longer a constraint to business.
Sudden impacts	Changes come so sudden, you could hardly notice it until it is all over you. Think of a Lily pond metaphor.
Winner takes all: the lottery economy	You either win or lose. No draws. It's a cutthroat game after all.
No doors closed	Openness is what counts. Avoid proprietary systems.
The ubiquitous computing	Computing is everywhere.
Positive feedback and increasing returns	The tendency for that which is ahead to get further ahead, for that which loses advantage to lose further advantage.
Get Shorty/Immediacy	Shortened lifecycles.
Bundling of offerings	Bundle enough value into an offering so that customers cannot run away from it.
The experience economy	Own and design their experience, not their products. Be responsible for the total experience of customers, not a fragment of it.
Smart everything	There are chips in every product, making it smart.
Knowledge everything	Every product has a knowledge element in it, which itself can be made a product
Free everything	The initial design is costly. The next copy comes almost free.
Mass customizing and prosumption	Offerings should be tailored one on one for each consumer. A consumer designs his own product.
Unbundling of activities	Disintegration, individualization of Activities in organization.
New economics of information	The traditional trade-off relationship between the richness and reach of information no longer holds.
Markets are everywhere	Business transactions, internal as well as external, will be conducted through markets rather than hierarchies
E-lance economy	Molecularization of activities. A company of one.
Clustering and Blocking	Businesses are conducted in clusters-a geographic concentration of interrelated businesses in a particular field

<Table 1> What's happening: An enumeration(continue)

Phenomenon	Description
Your destiny is mine. Feed the web first	A firm's destiny depends as much on the performance of the ecosystem it belongs to as on its own performance. Hence feed the system (web) first.
Digital community	A new grouping of mankind is emerging, formed on the web, sharing hobbies, interests, ideas, and feelings.
Lock-in of customers	What results as a consequence of positive feedback and increasing returns.
Disintermediation	Middlemen need to move up the value chain or they'll disappear.
Virtuality	Virtuality will become the prime mode of our existence.
No harmony. All flux	Change is a fact of life, evolution the name of the game. Nothing stays the same for long. You are unable to predict the future and unwise to hold onto the present.
Co-evolution	Evolutionary changes in one agent will affect the evolution of others.
Red queen effect	"It takes all the running you can do to keep in the same place." (from Through the Looking Glass)
The power of connectivity	There's Metcalfe's law that the addition of nodes to a network comes arithmetically, but the power of the network increases exponentially.
The connected smartness	When dumb parts are connected, they yield smart behavior.
Chaos and complexity	The new economy is a complex adaptive system.
The living systems dynamics	The new economy is an animated swarm, exhibiting peculiar behaviors of a living system.
The surge of knowledge business	Knowledge is the main source from which we generate value.
Infomediaries	Capturing customer information and serving customers with the information is a critical value generator.
The flow economy	You let it flow. Value comes from flowing, not from stocking.
Value at linking	Value is generated at linking as well as at manufacturing.

tive, nor mutually exclusive. While each phenomenon does depict a particular slice of reality for the new economy, the question still lingers upon us: What to make of them all?

## II. What to Make of Them All?: A Framework for Understanding

In order to make sense out of such a diverse set of phenomena for the new economy, a framework

is needed for understanding-a framework for ordering and structuring the diverse descriptions of the new economy into a coherent whole. Such a framework serves two purposes. On the one hand, it serves an analytic purpose, for breaking down and classifying the various new economy phenomena above. On the other hand, it serves as a synthesizer, integrating the phenomena into a coherent whole.

Since a system perspective has long been used as a conceptual apparatus for dealing with complex phenomena, *system* perspective was adopted as a

framework for understanding the phenomena. We regard the new economy as a system phenomenon and analyze its systemic characteristics and behavior. First, we identify five generic aspects of a system. They are what constitute a system and provide a skeleton for understanding a system. Next, we fill the skeleton by mapping the new economy phenomena discussed in the previous section into corresponding system aspects. Then, we aggregate the various phenomena for the system aspects and draw from them some essential characteristics of the new economy.

## 2.1 Five Generic System Aspects

A system is a set of purposeful entities interacting with one another to achieve some common goals. As a collection of interacting entities, it exhibits synergistic, collective behavior. The entities that constitute the system are themselves systems, composed of lower level entities and possessing all the systemic characteristics. As for function, it receives input from the environment and generates output into the environment. In order to get a full understanding of a system, we need to ask at least the following five questions:

- 1) What are the entities in the system? How are they related to one another in the system?
- 2) How do they function?
- 3) What are the goods produced in the system?
- 4) What is the value of the system and its goods?
- 5) What are the collective properties of the system as a whole?

The first question addresses the *structural* aspect

of the system: it asks about what business entities constitute the new economy, and how they are related to one another. The second question addresses the *functional* aspect of the system, i.e., how the economy as a whole may function and the individual business entities that comprise the economy may operate. The third question asks about the goods and services- the *offerings*, produced by the new economy. The fourth question asks about the *value* of the system, i.e., what justifies the continued existence of the system. The last question asks about the collective characteristics of the system.

## 2.2 A Systemic Understanding of the New Economy

The various new economy phenomena discussed in the previous section describe one or more of the generic system aspects specified above. We have reviewed the phenomena and mapped them into the five system aspects they each pertain to, as shown in <Table 2>. For instance, the clustering, e-lance economy, and unbundling phenomena are mapped into the structural aspect of the system, whereas the bundling and experience economy phenomena into the goods and offerings aspect of the system. Some phenomena are necessarily mapped into multiple aspects.

The aggregation of the phenomena mapping allows us to draw some essential characteristics of the system aspects. Such a characterization is not a mere summarization or reiteration, but a creative reconstruction and recounting of what's happening in the system. What's strived for is capturing the essence, some critical trends, of what's happening. Characterization is only selective, however. Logical consistency, rather than completeness, is strived for in the characterization.

<Table 2> A Categorization of the New Economy Phenomena

System Aspects		Phenomena
Structural aspect	Business Entities	<ul style="list-style-type: none"> <li>◦ e-Lance economy</li> <li>◦ Unbundling: Pure Player</li> <li>◦ Digital community</li> <li>◦ Clusters and Blocking</li> </ul>
	Relationships Among Entities	<ul style="list-style-type: none"> <li>◦ Partnering</li> <li>◦ Co-evolution</li> <li>◦ Your destiny is mine: Business Ecosystem</li> <li>◦ Digital community</li> </ul>
Functional aspect	Transformation	<ul style="list-style-type: none"> <li>◦ At the speed of thought</li> <li>◦ Mass customization and presumption</li> <li>◦ Virtualization</li> <li>◦ Complexification</li> <li>◦ Value Constellation</li> </ul>
	Linking	<ul style="list-style-type: none"> <li>◦ Global networking</li> <li>◦ At the speed of thought</li> <li>◦ Frictionless interaction and coordination</li> <li>◦ Markets everywhere</li> <li>◦ Disintermediation</li> <li>◦ Infomediary</li> <li>◦ Power of connectivity</li> </ul>
System Goods		<ul style="list-style-type: none"> <li>◦ Immediacy: Shortened life cycle</li> <li>◦ Bundling</li> <li>◦ The experience economy</li> <li>◦ Smart everything</li> <li>◦ Knowledge everything</li> <li>◦ Mass customization and prosumption</li> <li>◦ New Economics of information</li> <li>◦ Free Everything: 1st copy costly, 2nd copy free</li> <li>◦ Lock in of customers</li> </ul>
Value		<ul style="list-style-type: none"> <li>◦ Infomediary</li> <li>◦ Value at Linking</li> <li>◦ The surge of knowledge business</li> <li>◦ Flow economy</li> </ul>
Systemic Characteristics		<ul style="list-style-type: none"> <li>◦ Sudden impact</li> <li>◦ Winner takes all</li> <li>◦ No doors closed: Openness</li> <li>◦ Positive feedback and increasing returns</li> <li>◦ Ubiquitous computing</li> <li>◦ No harmony, all flux</li> <li>◦ Virtuality</li> <li>◦ Red queen effect</li> <li>◦ Connected smartness</li> <li>◦ Chaos and complexity</li> <li>◦ Living systems dynamics</li> </ul>

## 2.2.1 Structural Aspect-Business Entities and their Relationships

Two distinct, critical trends in the structural aspects of the new economy are observed in the literature: *deconstruction* and *aggregation*.

### *a : Deconstruction trend in the new economy*

As seen in the e-lance (Malone and Laubacher, 1998) and unbundling phenomena (Hagel III and Singer, 1999), the unit of action in the new economy is being dissembled into finer units. Firms, which used to be the only viable unit of action in the economy, no longer maintain their rigid identity. Their boundaries are being blurred.

Hagel and Singer (1999) assert that most traditional companies actually consist of three distinct businesses-*customer relationship business, product innovation business, and infrastructure business*. They note that the three businesses command different, conflicting culture and economics for performance, and that given those different cultures and economics, bundling of them into a single corporation necessarily forces a *compromise* on the performance of each, resulting in loss of competitiveness. Hence, they prescribe an unbundling of the corporation into firms specializing in each particular business alone. Such so called “pure players” will emerge as a winner, with better economics and culture. For example, in order to enhance competitiveness portal businesses such as *Yahoo!*, *Azaron.com*, and *Daum* 쇼파 닷컴 are increasingly focusing on customer relationship business that is their core competency, while relying on others in providing products to customers. Other examples are *Cars.com* and *CarsDirect.com* that have begun to gain control over customer relationship business in the automotive industry by becoming a vendor-oriented automotive infomediary.

e-Lance economy is what happens when the tip

toward the market mechanism is pushed to its limit (Malone and Laubacher, 1998). In the e-Lance economy, everyone works as a freelance-a company of one, for with such a frictionless market for knowledge and skills, there is no need for firms to be in a hierarchy form. Thus, should you need anyone with any skill, just call out to the market. For example, Manpower Inc., a temporary employment agency operating in 80 countries and territories around the world, provides companies with human resource support on demand from its huge pool of 9 million temporary workers worldwide (Manpower Inc., 2008). e-Lance phenomenon can be attributed mainly to the decreasing coordination costs among business entities, which was made possible because of the advances of information technologies, especially the Internet. In this kind of business environment, the role of large companies may change from a controller of business activities to an architect of the rules, standards, and culture for network organizations (Malone and Laubacher, 1998).

### *b : Aggregation trend in the new economy*

The other, rather contradicting trend in the structure of the new economy, is that of *aggregation*. As seen in clustering (Porter, 1998), blocking, communities, keiretzues, business webs and ecosystems phenomena, we increasingly observe the unit of action getting bigger, more complex, and more aggregated. Such aggregation occurs both on the supplier and consumer sides. Aggregation on the supplier side takes the form of affiliate’s network. Yahoo! Store and ChemConect.com, for example, provide a cyber space where suppliers can get together to form an e-marketplace (Internet mall) in which customers can easily find the products and/or services they look for. This kind of suppliers’ aggregation can help potential customers increase efficiency in searching for

products and services and thus, result in the decrease of transaction costs. Aggregation on the consumer side takes the form of demand aggregation as we see in the Waawaa.com.<sup>2)</sup> We also see aggregation in the intermediary section in the form of navigators and the so-called hub sites (Evans and Wurster, 2000).

What underlies the two seemingly contradicting trends is the drastic reduction in the interaction costs. The reduced interaction cost alters the economics of grouping activities. And such changed economics causes both deconstruction and aggregation. Deconstruction occurs because the reduced interaction costs allow outsourcing of activities that used to be confined within the boundaries of firms. Aggregation, on the other hand, occurs because the reduced interaction costs allow a more novel, creative grouping of activities.

*c : Relationships among business entities in the new economy*

As the business entities change in form and shape through deconstruction and aggregation, so do the relationships among them. The changing nature of relationships among business entities in the new economy can be characterized as *networking* and *cooperation*.

The networking refers to changes in the structure and volume of relationships. Structure-wise, we see the relationships go from the traditional sequential chain structure to a network structure, where everyone is linked to everyone else. Volume-wise, we see more relationships forming among a greater number of actors. The relationships thus are no longer between a limited set of suppliers and consumers in a single sector or industry. On the contrary, they be-

come more complex and diverse, and span multiple firm boundaries and industries. For example, B2B companies such as *ChemConnect* and *ScrapSite* form complex business networks which provide information about products in a given industry and connect a large number of businesses (customers) in a various industries around the world to a large number of suppliers for transaction.

The cooperation, on the other hand, refers to changes in the tone and mode of the relationships. Competition used to be the only motive setting the tone and mode of relationships. Cooperation, however, now becomes an equally important motive of relationships, if not more. As the relationships become competitive as well as cooperative, firms begin to realize they co-habit an ecosystem and thus should co-evolve. As such, cooperation indicates a turning to an ecological view of business, a significant paradigm shift in the epistemology of business (Anderson, 1999). The economic webs provide a wide array of economic habitats for firms to inhabit. However, if such a habitat runs out of resources, the whole species go extinct, no matter how efficiently an individual member of the species may function. In this sense, they are on board in the same boat, singing *your destiny is mine*. An economic web is a cluster of companies that persist on a common resource and architecture to create and deliver value (Hagel III, 1996). One of the most common types of economic webs is a technology web, which forms around a particular technology, say a PC technology. The relationships among firms in the web are complex and fluid, but they were united in their quest to deliver value. For example, in a PC technology web, some companies manufacture microprocessors and semiconductors, others assemble printed circuit boards or CPUs and peripherals, some develop system software or software tools, and others develop specific

2) Waawaa.com is the name of the company which aggregates buyer demands for a better deal with the sellers.



application software, etc.

### 2.2.2 Functional Aspect-Transformation and Linking

How does the new economy system function? We identify the functional characteristics of the new economy in two function domains of the system-*transformation and linking*. Economic activities result either in transforming input to output or in linking the activities together. Together they create value. As noticed in various phenomena of the new economy such as infomediation and e-marketplace, value in the new economy is generated as much in linking as in transforming (Ravichandran and Lertwongsatien, 2005).

As for *transformation*, we identify two distinct trends. The one is the *virtualization* of the activities. By virtualization we mean the value creating activities are conducted virtually by virtual actors. This is evidenced by the prevalence of outsourcing and the emergent virtual corporations (Lin, 2006). Of course, not every activity is outsourced. Strategic sourcing indicates that a firm's core competence cannot and should not be outsourced (Venkatesan, 1992; Cronk and Sharp, 1998). For example, many software companies like Microsoft outsource a significant portion of software development projects to those companies in low-cost countries such as India and Russia, while they maintain their core competence such as software design and project management within. Microsoft and its overseas counterparts form, in a sense, a virtual organization on a project basis and dissolve it upon the completion of the project. Another example could be found in the service industry. Companies can form a virtual organization with *Manpower Inc.* on a project basis since *Manpower Inc.* can provide them with almost any kind of expertise and skills needed for their projects

from its huge pool of 9 million temporary workers in various fields (Manpower Inc., 2008).

Another trend in transformation is that of *complexification*: The value creating mechanisms are becoming increasingly complex, moving away from a traditional sequential chain mode to a more complex form of what Mintzberg calls hubs or webs (Mintzberg and der Heyde, 1999). The hub mode is where various value creating activities are coordinated and integrated at a central point. This can be found in typical consulting companies where consultants with different expertise are mobilized to form a team on a project basis and their value creating activities are coordinated and integrated by team leader. This team will be dissolved upon the completion of the project and another team will be formed probably with a different mix of consultants for the next project.

The web, on the other hand, is a network structure with no such central coordinator. Instead every actor on the web interacts with every other actor in creating value. For example, many community groups on the Internet, such as the *Linux* community, consist of thousands of people with common interests around the world. They interact with one another freely and independently in posting problems, exchanging ideas, and sharing solutions without a coordinating mechanism. Such complexification of transformation cannot be made possible unless backed up by free flowing and sharing of information and knowledge. This is why knowledge management suddenly becomes so important (Cohen, 1998).

As for the *linking* aspect of the system function, we also identify two distinct trends. Linking means establishing and facilitating the input-output relationships between the producer and the consumer. An outstanding trend in linking is that of *disintermediation*. The intermediaries that link producers and con-

sumers are removed in the value chain process and supply chain process and the producers and consumers form direct relationships. For example, with their extensive information about airfare, hotel reservation, rental car, and travel package, *Expedia.com*, *Hotwire.com*, and *Trevelocity.com* link suppliers and consumers directly in selling travel products and services without employing an intermediary. As a result, they are increasingly forcing out the traditional intermediaries (travel agencies) from the supply chain of the travel industry.

Another outstanding trend in linking is that of *infomediation*. In the places vacated by traditional intermediaries, we have a new breed of intermediaries, called *infomediaries*, that link people and business organizations with and through information and knowledge.<sup>3)</sup> For example, with its huge database of more than 75 million job postings in over 50 countries and applicants' resumes, *MonsterWorldwide* connects those looking for a job and recruiters over the Internet (*MonsterWorldwide*, 2008). Thus, companies like *MonsterWorldwide* are likely to supersede the traditional recruiting agencies by passing on information concerning job postings and resume between recruiters and applicants.

The disintermediation and infomediation trends in linking may appear contradictory at first sight. But it has been explained that the roles the infomediaries play are not the same as those of traditional intermediaries (Sarker *et al.*, 1996) in that infomediaries pass on information about physical products and/or services, rather than physical products or services themselves. Also such disintermediation and infomediation call for so called cyberization of business, based on the Internet. Indeed people have been projecting that off-line businesses will collapse and

will be taken over by on-line businesses. The projection has not been realized, however. As we have seen in the cases of *GAP*, *Wal-Mart* and *Barnes and Noble*, a balanced, mutually reinforcing relationships between off-line and on-line businesses are emphasized as winners (Calkins *et al.*, 2000).

### 2.2.3 System Goods-information goods and connectivity goods

The goods produced by the new economy system have two important characteristics. First, most of the goods the system produces are so called *information goods*. Information and knowledge are increasingly turned into products, and the physical goods are increasingly knowledgeized, i.e., the informational content of the products are amplified. The second characteristic of the new economy system goods is the surge of what we term *connectivity goods*. Connectivity goods are those products and services that are based upon the Internet and related technological infrastructures, and that provide linkages between business activities. Such connectivity goods are essential for holding up the complex relationship network structure of the new economy discussed above.

The two characteristics of the new economy system goods correspond to what are happening in transformation and linking functions discussed above. The explosion in information goods indicates that transformation in the new economy is largely informational. The surge in connectivity goods indicates that the relationship structure becomes more complex.

The information and connectivity characteristics of the new economy goods possess several interesting properties. First of all, information goods are content goods: the value of the goods is determined by the quality of information and knowledge that fill the goods. Information goods are also experience

3) Evans and Wurster (2000) call them navigators.

goods: you never know its value until you actually experience it. Such experience, however, does not diminish its value. Hence, it is durable. Information goods are also time and space independent. They flow freely in time and space, as they are non-physical.

Information goods also have a unique cost structure: while the cost of the first copy is high, the cost of the second copy and on is marginal and near zero. Such cost structure is not subject to production capacity constraint, for it is relatively infinitely reproducible. The only constraint for the goods, therefore, is that of market demand. Information goods are also moldable, stimulating a wide variety of creative bundling and packaging.<sup>4)</sup> For example, GettyImage.com offers a variety of digitized, content products such as photos, images, and music (GettyImage, 2008). The initial costs to produce those products are high, but once they are put in a digital format, the costs for subsequent copies of them are very marginal.

The connectivity goods also carry with it some interesting characteristics. First, the connectivity goods are systemic: they cannot function properly stand-alone, but should come together, be coordinated, be compatible, and be configured with goods surrounding it. Standards play a critical role in maintaining such coordination and compatibility. Hence, the goods are highly standards-dependent. Also, as it involves considerable learning cost to switch from one systemic goods to another, the goods produce a lock-in effect. Finally the goods have network externality and positive feedback effects, following the so-called

4) Shapiro & Varian(1999) provide a detailed discussion of the characteristics of the new economy goods. However, Shapiro and Varian treat connectivity not as a system good but as a system aspect.

Metcalfé's law.<sup>5)</sup>

## 2.2.4 System Value-transformation and linking

The value a system generates is what guarantees continued existence and survival of the system. So we ask: What are the values the new economy system generates? Where and how are the value generated? The first question is concerned with the nature of value, and the second with the source of value.

First, as for the source of value, the new economy system generates value in two function domains- transformation and linking. The values generated in the two domains may be termed *Value-at-Making* and *Value-at-Linking*, respectively. These values are largely manifested in the information and connectivity goods as discussed above.

As for the nature of value, the values are of two types: *economics value* and *innovation value*. Economics value changes and enhances the economics of doing something. Productivity, performance, speed, efficiency, etc are the terms describing such economics value. Innovation value, on the other hand, engenders and enables creative, novel ways of doing something (Lepak *et al.*, 2007). Such innovation may come in terms of new business processes, new production methods, new sourcing mechanism, etc., or in terms of new offerings such as novel products and services not imagined before.

The source and nature of the system value, combined, provide four generic types for the new economy. <Table 3> illustrates them. Type I Value changes the economics of making something. Type II

5) Metcalfe's law states that the value of a telecommunications network is proportional to the square of the number of users of the system ( $n^2$ ) (Wikipedia.com, 2008).

Value creates new ways of making something. Type III Value changes the economics of linking activities. Type IV Value creates different modes and methods for linking activities. These value types are generic values. What we observe in the real world are combinations of these generic values. Some specific examples of e-business models and business entities that illustrate each of the four system value types of the new economy are listed in <Table 4>.

<Table 3> New Economy System Value Types

		Source of Value	
		Transformation	Linking
Nature Of Value	Economics	I	III
	Innovation	II	IV

### 2.2.5 Systemic Characteristics-variability and unpredictability

Can we discern some systemic characteristics of the new economy as a whole? We may do so in terms of the form and behavior of the system. In terms of system form, we note *variability in forms*. In terms of the behavior of the system, we note *unpredictability in behavior*. The business entities and their relationships change their form and structure constantly. Some new entities emerge overnight and some good old ones disappear equally abruptly. And their behaviors are emergent and chaotic.

As seen in new economy phenomena (such as virtual organizations, global networking, digital community, and partnering), organizations can be created in a relatively short period of time with various mixes of entities and their forms take diverse configurations. Virtual organizations and teams, for example, can be formed easily by putting together geographically dispersed functional units within the

organization. Teaming up internal functional units with external service providers like *Manpower Inc.* and consulting companies can also create virtual teams or organizations. The primary enabler of what makes those types of organizations or teams possible is the network connectivity among the parties involved that helps them overcome much of the time and space constraints. Those organizations and teams can also be disbanded easily overnight upon the completion of their mission. In the new economy, thoughts and actions occur almost simultaneously and reduction of interaction and coordination costs is a necessary condition for timely adaptation to the ever-changing environment. Given the characteristics of network-based, flexible organization structures that allows less interaction and coordination costs compared to more rigid organizational structures in the old economy, organizations will take more diverse, dynamic forms to respond more effectively to the changes in the environment. As consumers' tastes and demand for products and services are changing in more unpredictable ways in the new economy, organizations must respond to them accordingly. Thus, it could be more difficult to predict the forms organizations will take and the way organizations behavior. As observed in "pure player," mass customization, surge of knowledge business, easy bundling of offerings, and emergence of infomediaries phenomena imply the unpredictable behavior of organizations in the new economy (del Águila-Obra *et al.*, 2007).

Such changes in form and behavior occur intermittently, in what's called a punctuated equilibrium fashion. Thus small incremental changes accumulate to a certain point to trigger major, structural changes (Tushman and Romanelli, 1985). The two characteristics of the system-variability in form and unpredictability in behavior, propose that the new economy

<Table 4> Specific Examples of New Economy System Value Types

Value Type	Nature and Source of Value	Business Model Examples
I: Transformation and Economics	<ul style="list-style-type: none"> <li>◦ Information- and knowl- edge-based products and serv- ices</li> <li>◦ Redefine the distribution chan- nel</li> </ul>	<ul style="list-style-type: none"> <li>◦ Bit vendor model: GettyImage (www.gettyimage.com)</li> <li>◦ Sell images, photos, and music over the Internet</li> <li>◦ Subscription model: Wall Street Journal (www.wsj.com or online.wsj.com)</li> <li>◦ Customized web page for individual subscribers</li> <li>◦ Knowledge networks: CyberScriptsRx (www.cyberscriptsrx.com)</li> <li>◦ Provide full service consultations for: Stress, Anxiety, Insomnia, Pain, Depression, Men's Health, Hormones, Diabetes, and so on</li> </ul>
II: Transformation and Innovation	<ul style="list-style-type: none"> <li>◦ Transform traditional products into digitized products and serv- ices</li> <li>◦ Redefine the distribution process</li> </ul>	<ul style="list-style-type: none"> <li>◦ Subscription model LexisNexis Academic Universe (www.lexisnexis.com) Napster (www.napster.com) Encyclopedia Britannica Online (www.britannica.com)</li> </ul>
III: Linking and Economics	<ul style="list-style-type: none"> <li>◦ Reduce transaction costs and in- crease efficiency in searching for products and services</li> </ul>	<ul style="list-style-type: none"> <li>◦ Market exchange model (B2B): ChemConnect (www.chemconnect.com)</li> <li>◦ Virtual mall model: Yahoo! Store (www.yahoostore.com)</li> <li>◦ Auction broker model: eBay (www.ebay.com)</li> <li>◦ Reverse auction model: Priceline (www.priceline.com)</li> <li>◦ Infomediary model Knowledgestorm (www.knowledgestorm.com)</li> </ul>
IV: Linking and Innovation	<ul style="list-style-type: none"> <li>◦ Redefine the distribution chan- nel of products (information or knowledge) and streamline it by taking advantage of network connectivity, especially the net- work connectivity established by Internet</li> <li>◦ Distribute products completely in digital form over the Internet and facilitate customization of products and services</li> </ul>	<ul style="list-style-type: none"> <li>◦ Bit vendor model: GettyImage (www.gettyimage.com)</li> <li>◦ Subscription model: Wall Street Journal (www.wsj.com or online.wsj.com)</li> <li>◦ Knowledge networks: CyberScriptsRx (www.cyberscriptsrx.com)</li> <li>◦ Infomediary Travelocity (www.travelocity.com) Expedia (www.expedia.com) CarsDirect (www.carsdirect.com)</li> </ul>

is none other than a *complex adaptive system*: a system that is both complex and chaotic, emergent and living, with no harmony but all flux (Arthur *et al.*, 1997; Kelly, 1998).

### III. Summary and Recapitulation

We have identified 14 or so essential character-

istics of the new economy system in <Table 5>. The characteristics are drawn from a complex set of the new economy phenomena, mapped into five generic aspects of a system: the structural aspect of a system, the functional aspect of the system, the goods produced by the system, their value, and the systemic attributes of the system. For each system aspect, we identified some critical trends. The results are summarized in <Table 5>. As for the structural aspect of the new economy, the business entities go through the two altering processes-*deconstruction* and *aggregation*. Their relationships turn into more *networking* and *cooperation*. As for the functional aspect of the new economy, the critical trends are *virtualization* and *complexification* in the transformation of input to output (value creation activities) and *disintermediation* and *infomediation* in the linking of value activities. As for the goods and value of the system, the trends are the surge of *information goods* and *connectivity goods*, which generate value in enhancing *economics* of activity or in enabling *innovation*. Finally, the system as a whole exhibits the characteristics of *variability* and *unpredictability* in its form and behavior, respectively.

We have also identified the following principles concerning the new economy phenomena:

1. Network-based, loosely coupled, and coherent organizational structures and business activities based on core processes or competencies allow organizations to adapt effectively to environmental changes-an effective way of unbundling and rebundling of business activities
  - The traditional perception of business entity does not hold true in the new digital economy. To take advantage of the opportunities derived from global networking as well as partnering and clustering, business organizations tend to maintain flexible organizational structures based on core processes or competencies. This can help them take a variety of forms of organizational structures depending on the changes in the environment and thus, respond to the environmental changes more effectively. In other words, unless business organizations maintain network-based loosely coupled, coherent organizational structure they may not be able to easily mobilize geographically dispersed internal functional units or external “pure players.”

2. Information-and knowledge-rich and connec-

<Table 5> Essential Characteristics of the New Economy System

System Aspects		Trends and Characteristics
Structural Aspect	Business Entities	◦ Deconstruction and Aggregation
	Entity Relationships	◦ Networking and Cooperation
Functional Aspect	Transformation	◦ Virtualization and Complexification
	Linking	◦ Disintermediation and Infomediation
Goods and Offerings		◦ Information Goods and Connectivity Goods
Value		◦ Economics Value and Innovation Value in Transformation and Linking
Systemic Attributes		◦ Variability in Forms and Unpredictability in Behavior

tivity-based (network-based) goods are most desirable in capitalizing on the benefits of global networking

- To take advantage of the network externality effects primarily derived from the Internet and to facilitate free flow of products and services over the network, organizations exert more efforts in knowledgizing and digitizing products and services than before. This phenomenon allows business organizations to pass on information regarding products and services rather than products and services themselves. Therefore, business organizations can streamline the value chain process. This also makes organizations' and individual consumers' search for product and service more efficient and effective. As a result, they can expect to reduce transaction costs as well as interaction and coordination costs. In addition, digitized products and services based on information and knowledge can make mass customization possible. In addition, digitization of products and services can make increasing returns economics possible since the marginal cost of production becomes near zero after the initial production cost. Furthermore, digitizing of products and services can make packaging and bundling of offerings more efficient and effective compared to traditional goods.

3. Decoupling of information and knowledge from its carrier (physical product) and global networking are most effective in innovating business design, making distribution channels and business transactions efficient, and creating new products and services

- Domain knowledge can make information

and knowledge goods possible. These types of goods can be relatively easily customized and thus, make mass customization possible. They can also be distributed efficiently over the Internet and thus, help business organizations innovate distribution channels as well as the value chain process. Furthermore, domain knowledge has made the emergence of infomediaries possible and knowledge-based products and services are expected to amplify their values as the global network such as the Internet expands.

#### IV. Implications for Business and Firm Strategy and Future Research

What are the implications of the systemic characterization and principles of the new economy above for business and firm strategy? To begin with, it calls for a change in how we perceive and comprehend the business reality. We are no longer certain about what business entities may constitute the economy and how they will be related to one another. Nor are we certain about how they will function. It is like all of a sudden, we are transplanted from a calm, placid backyard to an unruly, chaotic wilderness. To survive there, we need a different worldview, different ontology, and epistemology.

We think the most critical implication of the systemic understanding of the new economy for business and firm strategy, however, is what we term the *contextualization* of business. By this we mean that the business and firm strategies of the entities become increasingly dependent upon the context they are embedded in. There are two reasons for this. First, the context of business becomes *live*. It is no longer an inanimate, general, macro level business

*environment* that traditional firms have dealt with in the past. On the contrary, the context of business is live, specific, and at a meso level, with specific form, shapes and structures. It actively interacts with and demands response from the entities embedded in it. It is also emergent and constantly forming. Business webs and ecosystems we have discussed above are good examples of such *live* business contexts.

Now as the context of business becomes live, the business and firm strategy should be contextualized as well. That is, business and firm strategy should be tailored to and tuned with the context it is embedded in. Without such contextualization, the firm is not likely to survive. For example, a business strategy conceived in and tailored for a value chain context is not likely to be effective in a community or marketplace business context.

The contextualization of business, however, needs an elaboration in future research. As the context of business becomes live, we now have a hierarchy of the business environment construct, from a highly general macro level environment to a more specific meso level business context. Research on what will constitute the context of business, the hierarchy of, and relationships among the contexts, and business and firm strategy tailored to and tuned with the context, is needed in the future.

Another important implication of the new economy phenomena for firm and business strategy is what we term the *structurization of adaptive organization* based on core processes and competencies. As business environments are getting increasingly dynamic and complex and consumer demands are getting more diverse, it is extremely difficult for individual organizations, if not impossible, to be excellent in every aspect of business in adapting to the changes of the business environment and in meeting consumer demands. Therefore, organizations must

consider rearranging and maintaining their structure loosely coupled and flexible based on their core competencies in order to develop more creative, innovative business models by effectively mobilizing e-lancers and other resources within and outside organizational boundaries. This strategy could also put organizations in a better position that can help them facilitate the arrangement of virtual organizations, partnering with others, and capitalize on the benefits of global networking.

Each industry has its own unique characteristics and the relative importance of functional units would be different across industries. Thus, research on industry specific strategies for structuring functional units, business design based on sourcing methods, and strategies for arranging virtual organizations, is needed in the future.

Another significant implication of the new economy phenomena for firm and business strategy is what we term the *knowledgization* of and *digitization* of goods and business processes. To fully capitalize on the benefits of global network, business organizations must develop strategies for increasing the degree of knowledgizing and digitizing their goods and business processes. This strategy will allow organizations bundling of offerings and mass customization easier, increasing marginal returns, streamlined flow of goods over the Internet, efficient value chain and value system processes, effective responses to ever shortening product lifecycle, and new knowledge-based goods. The extent of knowledgizability and digitizability of goods and business processes would vary greatly across industries and among organizations even within the same industry. However, by accumulating domain knowledge organizations must exert more efforts in identifying goods and business processes that can be digitized to become a winner in the new economy.



Different kinds of goods and business processes have different degrees of digitizability and knowledgizability. Therefore, research on classification scheme of digitizability and knowledgizability among different goods and business processes, and strategies for digitizing and knowledgizing goods and business processes, is called for in the future.

## V. Conclusion

Most of the observations in the literature on the new economy are fragmented, casual, and anecdotal, not compiling to a whole picture of what the new economy is really about. This study is an attempt at a better, more systematic understanding of the new economy. This study identified and analyzed a wide variety of economic and social phenomena in the *new economy* literature by adopting *system perspective* as an overarching frame of reference for analysis.

Based upon the review and categorization, some essential characterizations are made for the five system aspects of the new economy. In structural aspect, the new economy shows deconstruction and aggregation of functional units within and outside the organization, and networking and cooperation trends among business organization. In functional aspect, virtualization and complexification trends among functional units within and across organizational boundaries, and disintermediation and infomediatio trends in the value systems process have been identified. The distinct characteristics of the new economy goods and offerings are information- and knowledge-rich and connectivity-based. The new economy creates values in goods and offerings by enhancing and innovating production methods and sourcing mechanism as well as by linking economic entities. The new economy phenomena, a system as

a whole, exhibit *variability in forms* and *unpredictability in behavior*.

The findings of this study present some practical implications for business and firm strategy. Business organizations must develop business strategies with contextual issues in mind since the destiny of an organization is strongly tied to that of its business ecosystem. They also consider rearrange of their organizational structure based on core processes and competencies in order to more effectively adapt to the changes in the business environment by mobilizing “pure players” both within and outside the organization. To capitalize on the benefits of global networks and innovate business design, organizations must accumulate domain knowledge and exert more efforts in digitizing their goods and services.

## References

- Anderson, P., “Complexity Theory and Organization Science”, *Organization Science*, Vol.10, No.3, 1999, pp. 216-232.
- Arthur, B., S. Durlauf, and D. Lane, *The Economy as an Evolving Complex System II*, Reading, Massachusetts: Perseus Books, 1997.
- Calkins, J. D., M. J. Farello, and C. S. Shi, “From Retailing to e-Tailing”, *The McKinsey Quarterly*, N1, 2000.
- Cohen, D., “Toward a knowledge context: report on the first annual U. C. Berkeley forum on knowledge and the firm”, *California Management Review*, Vol.40, No.3, 1998, pp. 22-39.
- Cronk, J. and J. Sharp, “A Framework for IS Outsourcing Strategy in Private and Public Sector Contexts”, in L. Willcocks and M. Lacity (eds), *Strategic Sourcing of Information Systems: Perspectives and Practices*, Wiley and Sons, 1998.

- Del Águila-Obra, A. R., A. Padilla-Meléndez, and C. Serarols-Rarrés, "Value creation and new intermediaries on Internet: An exploratory analysis of the online news industry and the web content aggregators", *International Journal of Information Management*, Vol.27, No.3, 2007, pp. 187-199.
- Evans, P. and T. S. Wurster, *Blown to Bits: How the New Economics of Information Transforms Strategy*, Harvard Business School Press, Boston MS, 2000.
- Hagel III, J., "Spider versus Spider", *The McKinsey Quarterly*, 1996, pp. N1.
- Hagel III, J. and M. Singer, "Unbundling the Corporation", *Harvard Business Review*, Vol.77, No. 2, 1999, pp. 133-141.
- Kelly, K., *New Rules for the New Economy: 10 Radical Strategies for a Connected World*, Viking, 1998.
- Lepak, D. V., K. G. Smith, and M. S. Taylor, "Value creation and value capture: A multilevel perspective", *Academy of Management Review*, Vol.32, No.1, 2007, pp. 180-194.
- Lin, H.M., "Interorganizational Collaboration, Social Embeddedness, and Value Creation: A Theoretical Analysis", *International Journal of Management*, Vol.23, No.3, Part 1, Sep. 2006, pp. 548-558.
- Malone, T. and R. J. Laubacher, "The Dawn of the e-Lance Economy", *Harvard Business Review*, Vol.76, No.5, 1998, pp. 144-152.
- Mintzberg, H. and L. V. der Heyde, "Organigraphs: Drawing how companies really work", *Harvard Business Review*, Vol.77, No.5, 1999, pp. 87-94.
- Porter, M. E., "Clusters and the New Economics of Competition", *Harvard Business Review*, Vol. 76, No.6, 1998, pp. 77-90.
- Ravichandran, R. and C. Lertwongsatien, "Effect of information systems resources and capabilities on firm performance: A resource-based perspective", *Journal of Management Information Systems*, Vol.21, No.4, 2005, pp. 237-276.
- Sarker, M. B., B. Butler, and C. Steinfield "Intermediaries and Cybermediaries: A continuing role for mediating players in the electronic marketplace", *JCMC*, Vol.1, No.3, 1996.
- Shapiro, C. and H. R. Varian, *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, 1999.
- Tushman, M. L. and E. Romanelli, "Organizational Evolution: A Metamorphosis Model of Convergence and Reorientation", In B. Staw and L. L. Cummings (ed.), *Research in Organizational Behavior*, 7, Greenwich, CT, 1985.
- Venkatesan, R., "Strategic Sourcing: To Make or Not To Make", *Harvard Business Review*, Vol.70, No.6, 1992, pp. 98-107.
- Anonymous, [http://elibrary.portalsmag.com/detail/RES/992377019\\_869.html](http://elibrary.portalsmag.com/detail/RES/992377019_869.html), May 6, 2008.
- GettyImage, <http://www.gettyimages.com/Home.aspx>, May 12, 2008.
- Manpower Inc., <http://www.manpower.com/about/companyoverview.cfm>, May 5, 2008.
- MonsterWorldwide, [http://corporate.monster.com/About\\_Us/index.html](http://corporate.monster.com/About_Us/index.html), May 12, 2008.
- Wikipedia.com, [http://en.wikipedia.org/wiki/Metcalfe%27s\\_law](http://en.wikipedia.org/wiki/Metcalfe%27s_law), May 12, 2008.

## Rethinking the Characteristics of the New Economy: A Systemic View

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### Abstract

Under the rubric of the new economy, a wide variety of economic and social phenomena have been identified and discussed since the 1990's. Most of the observations in the literature on the new economy are fragmented, casual, and anecdotal, not compiling to a whole picture of what the new economy is really about. Therefore, this study attempts to provide e-commerce companies with a better, more systematic understanding of the new economy and new economy phenomena as well as the implications of them in order to help them develop more effective business strategies.

To provide a better understanding of the new economy phenomena, this article adopts system perspective as an overarching frame of reference for analysis. The systemic characteristics and behavior of the new economy is sought in five generic aspects of a system; 1) what are the entities that comprise the system, and how are they related to one another?; 2) how does the system function?; 3) what are the goods and services (output) that are generated and flow in the system?; 4) what is the value of those goods and services?; and 5) what are the collective, systemic quality and attributes of the system?

Based upon the review and categorization, some essential characterizations are made for the five system aspects of the new economy. Such characterizations are interpreted as collectively enunciating the systemic characteristics and behavior of the new economy. The implications of the systemic understanding of the new economy for business and firm strategy are discussed and some future research is suggested.

**Keywords:** *New Economy Phenomena, Digital Economy, Systemic View of New Economy, E-Commerce Strategy, Understanding New Economy Phenomena*

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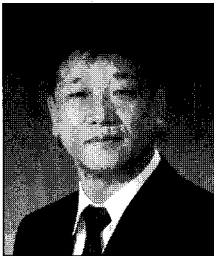
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