



Cambridge Technology Partners

BUILDING THE NEW ECONOMY

# Business Models FOR THE New Economy

This man believed in hierarchical control over his entire value chain. You don't have to.

A Special Edition in the New Economy Series of White Papers from Cambridge Technology Partners

## Foreword:

**Henry Ford once owned a rubber plantation in the Amazon jungle,** the better to control and manage the supply of raw material for his tire factories that supplied his auto assembly lines.

Now that's vertical.

Ford's hierarchical business model yielded exceptional control over the value chain, and for the times, it made good economic sense. Same story at General Motors, where boss Alfred P. Sloan Jr. laid down command-and-control principles that have served as models of hierarchical management to this day. Indeed, the transaction and coordination costs of doing it any other way were unthinkable. But those concepts are a world away from the fluid, market-based organizational interactions that define the sharp edge of the New Economy, and which are enabled by a World Wide Web that allows value to be exchanged in entirely new ways – in e-business ways.

But is e-business a fundamentally different way of doing things, or **is it merely consulting jargon?** If Henry Ford were alive today, would Ford be built on command-and-control? And what about you? Do you believe that your organization will look the same next year as it did two years ago?

Today, every organization is grappling with the implications of a digital strategy. **Most will commit to radical redeployment of assets, skills, and processes without ever fully understanding why** their business models need to change.

This white paper provides that understanding. In this special edition, we take the arguments well beyond the introductory points made in our first white paper in this series – the New Economy Primer – by describing how the Web alters the value-exchange dynamic and reshapes the boundaries of the organization.

We don't propose that one approach will suit every kind of organization, nor will it be applicable in all business situations. But we do invite candid reflection on the new options that the Internet has brought. **Don't dare to assume** that the organizational model that has served you well will carry you to success in the New Economy.

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# Introduction:

## Darwin Would Have Approved

Economists have long held that, as with Adam Smith's "invisible hand," the organization of economic activity and its norms, conventions and social structures are guided by consistent but often hard to discern principles.

As early as 1937, Nobel Prize-winning economist Ronald Coase contended that the dominant economic entities of his day – the mass market and corporate hierarchy – were not somehow divinely preordained. Instead they were the social and organizational consequences of the relatively high transaction and coordination costs necessary to create and exchange value. These entities weren't created overnight. They emerged over time as an efficient response for developing industrialized economies to realize expansion by lowering the cost to exchange value between participating parties.



The implication was simple but profound: **if the cost of exchanging value between discrete entities diminished, the size and shape of the economic entities would also change.**

Today, with the advent of the Internet, we stand on the threshold of an economy where the fundamental processes of value exchange are being transformed. The sheer abundance of information has led to a surfeit of alternatives for consumers and reversed the signaling mechanisms that influence the very nature of supply and demand.

At the same time, transaction and coordination costs are about to vanish, forever reshaping the boundaries of the modern firm. Familiar economic entities such as large corporate hierarchies are becoming increasingly irrelevant as the Internet, not the organization, becomes the most efficient means to conceive, create and exchange value. And true to





Coase's original prediction, the form and structure of economic entities is about to undergo rapid evolution.

While not every segment of the economy will be pulled into this maelstrom immediately, we can now begin to see where the changes will occur. The challenge for each of us is to anticipate how those changes will affect our organizations, and to use them to create lasting competitive advantage in the dawn of the new economy.

### Three Rivals For New-Economy Success

There are three fundamental structures that govern the nature of all economic activity: supply; demand; and the way in which value is exchanged between them. At its most rudimentary level, the entire economy can be viewed as a universe made up of just these three elements: value producing; value consuming; and value exchanging entities.

However, the ways in which each of these elements is constituted, and how each relates to the others, are by no means set in stone. In fact, these entities change their boundaries and behaviors based on a number of different circumstances.

While most of us would readily subscribe to the idea that supply influences demand, we're not nearly as comfortable with the idea that the way in which value is exchanged influences supply, or that the way in which transactions occur can influence demand. Yet the Internet, as a signaling, coordination and value-exchange mechanism, is reshaping the fundamental organization of economic activity along those very lines.

Economists have long debated the underlying principles that give rise to the overall structure of the economy. While there are many different models that attempt to explain the natural organization of economic activity, the Internet has brought three dominant economic organizational forms into prominent and stark relief: hierarchies, networks and markets.

It's well understood that each of these forms becomes a preferred economic structure under certain conditions. Here are some rules of thumb:

- Hierarchies form when a concentration of specialized knowledge or assets is required to produce and market a

For most of the industrialized world, hierarchies make up the dominant economic pattern.

However, the adoption of the Internet, with its ubiquity, transparency and speed, has begun to influence the circumstances that determine how and where new economic forms will be successful.

product - for example how to locate, extract and refine oil.

- Networks of suppliers predominate when demand for a given product or service becomes highly specific and highly uncertain.
- Markets emerge based on the numbers of buyers and suppliers, the cost to exchange value, and the needs of participants to obtain and exploit information.

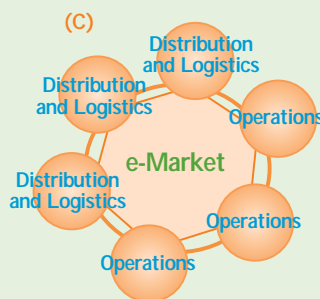
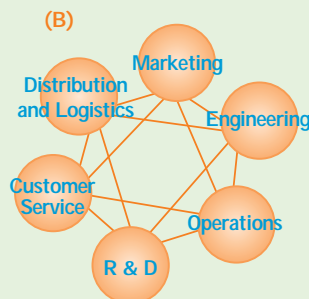
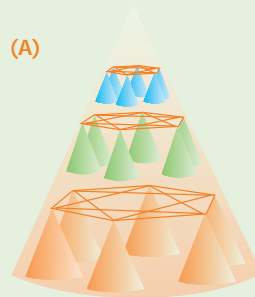
## How Business Model Are Morphing...

The evolution of the organization of economic activity is being driven by a change in environmental circumstances: the rapid adoption of the Internet. Its speed, ubiquity and transparency are propelling the natural selection of organization forms into specialized value-producing and value-exchanging entities.

We are going from a period marked by large hierarchies that were self-contained value-producing and value-exchanging entities whose economies of scope lowered transaction and coordination costs...(figure. A)

...to a period marked by narrowly focused value-creating entities networked together based on well understood boundaries of complementary skills sets...(figure. B)

...to a community of hyper-competitive value-creating entities networked together by specialized value-exchanging entities, or e-markets, serving highly informed and empowered customers.(figure. C)



Since most economies have lengthy histories, most have also built up legacy structures. For most of the industrialized world, hierarchies (and to a lesser extent markets) make up the dominant economic pattern. However, the adoption of the Internet, with its ubiquity, transparency and speed, has begun to influence the circumstances that determine how and where each of these forms will be successful in future.

In the pending evolution of economic activity, the Internet is no less than an extinction-level event, pitting networks, markets and hierarchies against each other in ways that Adam Smith and Charles Darwin could scarcely have imagined.

### Understanding The Opportunities

The challenge then becomes one of understanding what opportunities will emerge due to the changes in organizational structure of economic activity. For the moment, venture capitalists have put their money on the Internet as a first-

rate mechanism for market signaling, customer acquisition and value exchange. Clearly, the technology has already demonstrated that it can have a dramatic influence on market-facing activities such as generating awareness, and promoting loyalty, and encouraging transactions. (See Rethinking Customer Acquisition, the second in this series of New Economy white paper by Cambridge Technology Partners.)

However, the questions remains one of how the Internet will ultimately reshape the rest of economic activity – and whether these initial changes are just the beginning of a much larger and more profound transition to fundamentally new forms of economic structures. ■

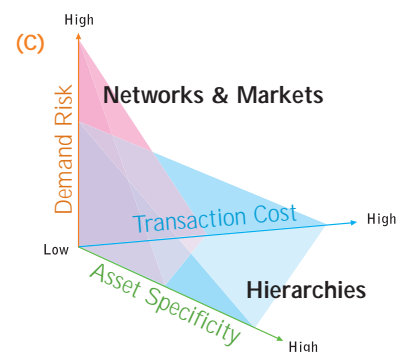
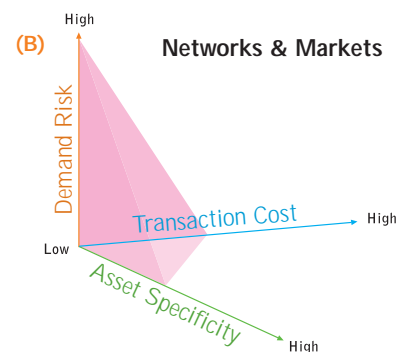
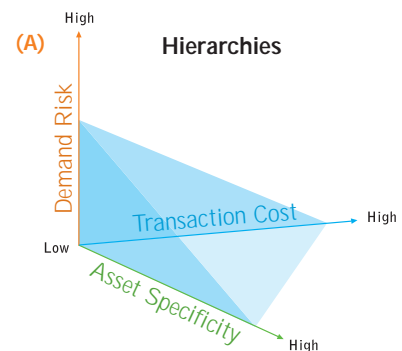
## ... And What Shapes Each Model

The Internet is changing the environmental factors which influence the organization of economic activity. Chief among these are certainty of demand, transaction and coordination costs, and asset and knowledge specificity.

Economists have long held that where demand risk is relatively low and asset specificity is prevalent, hierarchies will become the preferred means of organizing economic activity. (figure. A)

However, where demand risk is relatively high and transaction costs and asset specificity are relatively low, networks and markets will become preferred because under these conditions, they are the most efficiency way to create and exchange value at the lowest degree of business risk. (figure. B)

The only sure thing is that transaction costs are falling fast. In the Internet economy, businesses that don't exhibit high degrees of asset specificity will become primary candidates for aggressive evolution to networks and markets. (figure. C)





# Hierarchies:

## Incumbent Surrounded

**Definition:** A group of persons or things arranged in order of rank, grade, class, etc.

**Attribute:** Hierarchies form when a concentration of specialized knowledge or assets is required to produce and market a product such as how to locate, extract and refine oil.

Industrialized societies have a long and familiar history with the incumbent forms of economic organization: mass markets and corporate hierarchies. This dynamic duo has been both boon and bane to modern society, simultaneously providing unprecedented increases in the standard of living along with bouts of existential angst for the gray-flannelled armies that must live with them. However, in their day, those organizational forms were not only highly efficient, but they were the keys to influencing the primary success factor for industrialized economies: growth.

A critical element in the natural selection of this form of economic scheme was the economies of scale and scope these organizations could achieve by combining numerous competencies into one large organization. In some instances, the ability to deliver a product to market required the manufacturer to invest in

both the means of production as well as the infrastructure to obtain, refine and transport raw material. For instance, at one time Ford not only owned the facilities to produce tires; it owned the rubber plantations that produced the raw materials. Today it owns neither the means nor the materials to produce tires for its cars. At the time, those large organizations were made up of complex, contiguous value chains, spanning numerous business and manufacturing processes. In an era where capital was scarce and communications networks poor, such organizations reduced the number of transactions and the amount of coordination required to produce a competitively priced product. At the same time, they lowered the risk to invested capital by employing it as part of a value chain where demand was almost guaranteed.

The evolution of economic activity into these forms was in many ways a direct

reflection of how information could be shared between value-creating and value-consuming entities. These organizations first appeared when sharing information was difficult and constituted a large but invisible cost of doing business. It was easier and more cost-effective to own a process rather than acquire goods and services from independent third parties. Today, in all but a few instances, the costs required to transact business with independent parties are less than those incurred through the management of the same process as part of a proprietary value chain.

The signaling mechanisms used to influence consumer behavior were equally expensive and just as constrained. For most of this century, mass media were ideally suited to efficiently message and influence large, homogeneous marketplaces. Subsequent generations of signaling mechanisms such as newspapers, radio and television were the preferred way to inform and influence consumer markets that were only beginning to be able to crave and afford the innovations that first made "convenience" a household word. And in the absence of mass markets, large specialized sales forces were deployed to take the message to



industrial buyers nested in the value chains of large, dispersed industries.

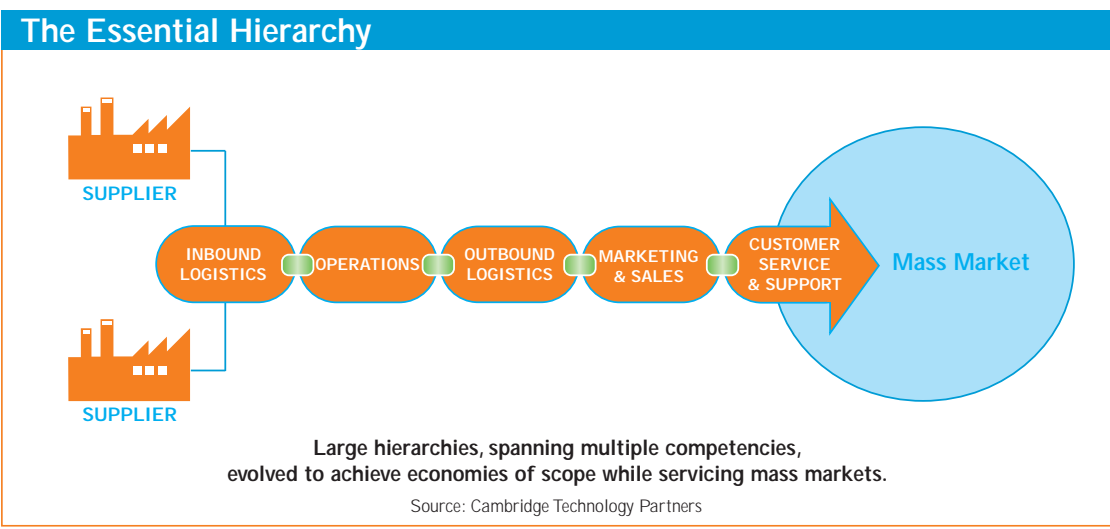
The wide adoption of the Internet has created a new and dynamic signaling mechanism. Often it has actually reversed the signal, from suppliers to markets to markets to suppliers. Employing the Internet, buyers become markets unto themselves, searching suppliers for the consummate offering of price and utility. In those instances, where switching costs are no different from search costs, buyers will be able to change incumbent relationships with suppliers with little more than the click of a button.

It's easy to forget how long it has taken

for communication networks and computers to become widely adopted. Likewise, it's forgivable to assume that large hierarchies might simply vanish at the speed of information. That's not so. There are many industries where specialized knowledge and specialized assets will continue to reinforce the value of large organizational structures and homogeneous markets. Financial markets will also provide incentives to increase the size of firms – even in the face of diminishing returns to scale. In spite of its current infatuation with Internet firms, Wall Street still believes that bigger is better and continues to reward firms based on their size. However, many of today's largest hierar-

Familiar economic entities such as large corporate hierarchies are becoming increasingly irrelevant as the Internet, not the organization, becomes the most efficient means to conceive, create and exchange value.

chies – banks, insurance, education and government, for example – are purely information-based organizations where hierarchical structures have little if any enduring value. It's all but inevitable that these organizations will change.



# Networks:

## Coordinated Challengers

**Definition:** A complex interconnected group or system.

**Attribute:** Networks of suppliers predominate when demand for a given product or service becomes highly specific and highly uncertain.

Only recently have economists turned attention to the formation of networks as a unique and differentiated form of economic organization. Unlike the more familiar forms of economic organization of mass markets and large hierarchies, networks of value-creating entities emerge in direct response to a lack of certainty in demand. Industries such as construction, film and music, biotechnology, fashion and textiles, medicine and semiconductors all exhibit network-like attributes, largely because demand in the markets they serve is far from certain.

There are many parts of the economy where demand for goods and services are nearly always certain. Goods we buy and

Where demand risk can be efficiently shared between numerous specialized entities using the Internet, networks of suppliers will proliferate.

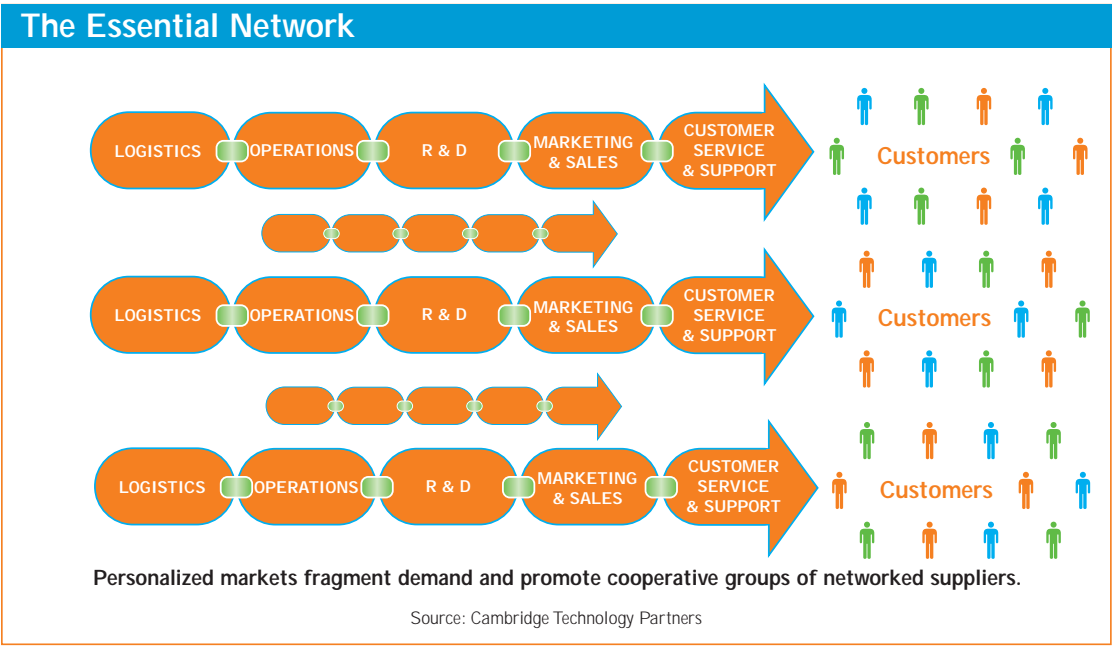
consume everyday – food, gas, electricity, for instance – form the basis of predictable markets that support substantial investment in plant and equipment because of the certainty of the returns that these investments are likely to generate. However, there are a host of goods and services, many of which we also take for granted, which don't behave in this fashion. Many are associated with needs that are occasional, unique, seasonal or discretionary. In most of those instances, reliable and persistent means of supply will not materialize in the face of largely unpredictable demand.

For instance, no-one knows where the next large music trend will come from. Doctors don't join hospitals knowing where the highest frequency of coronaries will occur. And construction firms are challenged to predict where the next large office tower will be erected. The same is true for various types of equipment rental and leasing operations. Consequently, such industries comprise

numerous specialty firms that can quickly assemble all the necessary skills and assets required to meet changing and unpredictable demand. Film crews, doctors, architects, and musicians all have a deep understanding of their roles and the roles of each of the complementary players in their respective industries.

Those industries are made up of relatively smaller, specialized organizations rather than larger hierarchies for one good reason: they're responding to the inherent risk in demand. The ownership of comprehensive skills and capabilities becomes more risky since it is hard to realize a sustained rate of return over all the assets that need to be employed to guarantee the fulfillment of unique and unpredictable demand.

In many ways, the Internet is creating an environment where the networked organization of economic activity becomes increasingly advantageous. First, the Internet has become the consummate medium for personalized marketing as consumers incur little if any costs in their search to optimize price and utility. At the same time, the buyer can signal directly to multiple suppliers an intention to purchase uniquely specified compo-



nents. This causes demand to become highly fragmented and highly specific, and increases the difficulty for any single supplier to own all the required skills and

Unlike the more familiar forms of economic organization of mass markets and large hierarchies, networks of value-creating entities emerge in direct response to a lack of certainty in demand.

assets to satisfy the variety and nuance of personalized demand.

At the same time, the Internet gives smaller suppliers the opportunity to fluidly form partnerships through the aggressive exchange of information. Where demand risk can be efficiently shared between numerous specialized entities using the Internet, networks of suppliers will proliferate. Within the construction industry, Internet firms such as BlueLine Online and Bidcom have emerged to provide comprehensive project management to large, complex con-

struction projects. These start-ups share architectural, engineering and project-related information among all the specialty contractors that make up such projects. Of the \$3.2 trillion expenditures of the US-based construction industry, more than \$500 million is spent on the exchange of architectural and engineering specifications between participating players. The Internet is likely to reduce this figure dramatically, enhancing coordination and facilitating the delivery of large construction projects on time and budget.

# Markets:

## New Rules, New Winners

**Definition:** A gathering of people for buying and selling things.

**Attribute:** Markets emerge based on the numbers of buyers and suppliers, the cost to exchange value, and the needs of participants to obtain and exploit information.

If hierarchies emerge from the need to lower costs, what would happen to the organization of economic activity if value could be fluidly exchanged between participating entities? Put another way, if transaction and coordination costs are factors that influence the size of organizations and the shape of economic activity, what would happen if those factors were dramatically reduced? While the Internet is still a new phenomenon, some things are already clear. From banking to hospitality, insurance to high technology, the Internet has already demonstrated that it can dramatically reduce the cost of exchanging value. And not just by a little – by a lot.

Since the process leading up to the exchange of value – the creation of a transaction – is almost entirely information-based, nearly all kinds of transactions can be effectively and efficiently executed over the Internet. That includes searching, sourcing, negotiating, execut-

ing, financing and settlement. In some instances, such as consumer banking, the costs of completing a transaction have gone from \$1.05 per transaction just a few years ago to under \$0.02 using the Internet. The same is true for coordination costs. Using the Internet, trading partners can peer into each other's operations to better understand the status of issues and the resolution of shared problems.

Recently, numerous Internet-based companies have appeared expressly to facilitate the exchange of value between discrete value-creating entities that exist both upstream and downstream in the value chains of complex industries. Various called e-markets or portals or trading communities, these value-exchange entities help lower the cost of conducting business between value-creating entities by providing transparency to opportunities in the form of rich amounts of information. Some industry analysts

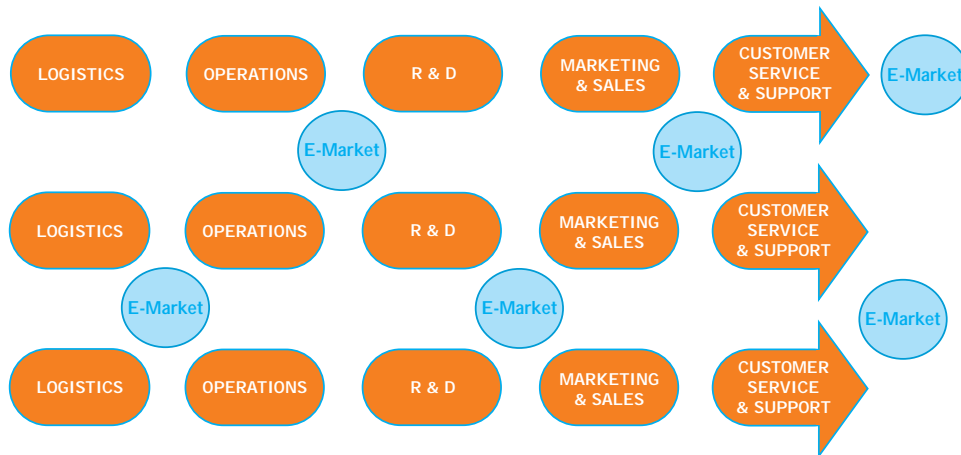
predict that as many as several thousand of these e-markets will materialize before an inevitable consolidation begins. Some e-markets will service consumers. But the majority will facilitate the exchange of goods and services between business trading partners. Marketplaces such as Chemdex are servicing buyers of specialty chemicals. PlasticsNet is servicing extrusion companies, buying plastic resins and raw materials. RateXchange helps public carriers and private companies sell and trade telecommunications capacity. AltraEnergy provides a similar service for the utilities industry.

The economics of exchanging value through an e-market are very compelling. Often where hierarchies would assume a cost of sales of anywhere from 10 to 40 percent of revenues, e-markets will facilitate the same exchange for as little as two percent of the value of the goods or services in question.

Once established, these e-markets will quickly become cost-effective substitutes for large hierarchies. That's because the economics of exchanging value through an e-market are very compelling. Often where hierarchies would assume a cost of sales of anywhere from 10 to 40 percent of revenues, e-markets will facilitate the same exchange for as little as two percent of the value of the goods or services in question. Where once it was necessary to coordinate the activities of multiple

competencies within a fully integrated organizational structure, each competency can now stand on its own, competing with like firms and cooperating with complementary firms as a discrete value-creating entity. Size no longer matters. Value, and how efficiently it can be exchanged, is what does.

## The Essential Market



**Value-exchange mechanisms, a.k.a. e-markets, will become effective substitutes to large hierarchies in the organization of economic activity.**

Source: Cambridge Technology Partners



# Toward The Networked Enterprise: How Tomorrow's Organizations Will Succeed

In industrialized economies, the evolution of economic activity into mass markets and large hierarchical organizations was neither a capitalist plot nor a cosmic accident. It was the natural evolution of an economic system seeking to lower costs and increase participation by the most expedient means then available. The changes brought about by the Internet are no different; only the consequences have changed. The transparency of information over the Internet creates an environment where value can be easily dis-

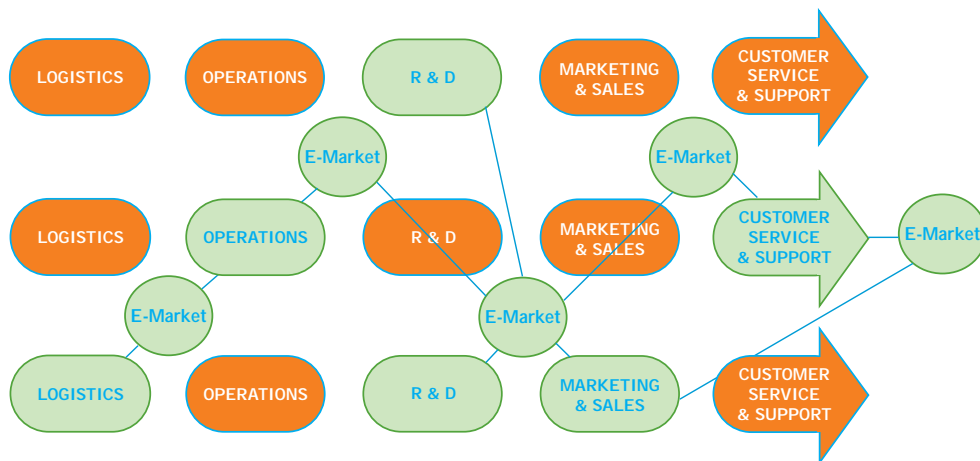
covered, conveyed and exchanged. Since demand will become increasingly specific and personalized, the networked economy will be one inhabited by tightly focused value-creating and value-exchanging entities.

In this environment, the successful firms will be those which can quickly and inexpensively become part of a fluid networked enterprise. They will have to concisely establish their core competencies and value propositions. In many cases, that means they will have to choose

whether they will be a value-creating or a value-exchanging entity. The days where full service means higher prices are over; in the networked economy, the consummate value proposition will always be only a mouse click away.

Finally, those successful networked firms will have to be trusted suppliers and practitioners of their trades. If competence is what gets you into the network, trust is what will keep you there. Lose that and you'll lose everything.

## The Market In Action



**The New Economy will be inhabited by tightly focused value-creating and value-exchanging entities, seamlessly knit together by the Internet.**

Source: Cambridge Technology Partners



# Test Your Model Here:

## The Factors That Will Force Change Fastest

Not every business model will be instantly altered by the changes wrought by the Internet. The longevity of today's business models is an indication of how well they've adapted to their economic environments. (It's not by coincidence that the economy that gave us the automobile also gave us the shopping mall.) However, the attributes that make one business model successful for a given set of circumstances can jeopardize its future when those circumstances begin to change. The challenge for many organizations will be determining the sensitivity of existing business models to the rapidly evolving set of economic circumstances brought about by the adoption of the Internet.

The rate of change will often be dictated by how rapidly an industry's value-exchange mechanisms can evolve over networked environments. In some instances, the nature of how value is exchanged or how business is transacted will change very little. For instance, the sale of goods and services which require a high degree of customization will likely continue to be concluded on a case-by-

case basis between a limited set of well known trading partners. While the network might facilitate the exchange of information between each of the parties involved, those kinds of bilateral transactions will remain unique and relatively complex in how they are negotiated and completed. In others cases, e-markets will become the dominant means of conveying value .

Other environmental factors will have an equally significant influence on the future of successful business models. Not least will be the issues noted above, including the certainty of demand, the degree of asset specialization, or the costs related to complete transactions. Changes in any one of these factors can influence how successful incumbent business models will be in a rapidly changing network environment.

One way to determine which existing business models will most likely be affected by changes to environmental factors would be to assess the degree of sensitivity of the current organization of economic activity for any given industry.

For instance, where asset specificity and transaction costs are relatively high, the chances are good that hierarchies will remain the preferred business model. However, where goods and services are subject to high rates of demand uncertainty and consistently lower transaction costs, networks and markets will emerge as the dominant business model. If your current business model isn't properly positioned against key environmental factors, chances are things are ripe for change (See table on page 16)

A quick scan of industries against these factors reveals some interesting results. By evaluating how each industry rates against a few key environmental factors, a picture begins to emerge of which ones are about to change.

Where oil & gas and pharmaceuticals exhibit low demand uncertainty and high degrees of asset and knowledge specialization, the probability is that traditional hierarchical business models will be slow to change. That's not to suggest that the ways in which consumers engage these organizations might not be influenced by

the Internet, but rather to say their internal business models will not come under undue pressure to change very quickly due to the effects brought about by the Internet.

Insurance, financial services and high tech – all of which have moderate to high rates of demand uncertainty and low asset specificity -- are likely to experience significant pressure to evolve. In industries where large hierarchies currently

exist, they are likely to split apart and become specialized value-creating and value-exchanging entities employing both network- and market-based forms of organizational behavior. Healthcare, which has moderate demand uncertainty and higher transaction costs, is likely to begin a longer evolution to newer forms of business models. Since labor, insurance, regulation and litigation have more to do with healthcare costs than the transparency and speed of information,

the Internet is not likely to have dramatic effects on costs or on the way in which economic activity is organized in the near-term.

### Gauging Industry Sensitivity To Environmental Factors

Environmental Factors	Oil & Gas	Insurance	Financial Services	High Tech	Pharmaceutical	Health Care
Demand Uncertainty	↓	↔	↔	↑	↓	↔
Transaction Costs	↓	↔	↔	↔	↓	↑
Co-ordination Costs	↔	↓	↔	↔	↔	↔
Asset Specificity	↑	↓	↓	↓	↑	↔
Knowledge Specificity	↑	↓	↔	↑	↑	↔

 **High**
 **Medium**
 **Low**

**Industries Differ in their Susceptibility to change due to existing and future business conditions.**

Source: Cambridge Technology Partners

# Conclusion:

## Where To From Here

Ultimately, successful New Economy organizations will be those that can effectively determine how and where they will realize increasing rates of return on the capital they employ. For the moment, given the amount of venture capital flowing into Internet-based business models and the lack of profits accepted by investors, this may seem like a fatuous proposition. Money and profits seem to mean nothing to a .com company.

However, if the time-tested fundamentals of economic structures survive, tolerance for continued losses will also change. At some point, organizations that seek to exploit the New Economy will have to make decisions. Since transaction and coordination costs will be virtually nonexistent, borrowing skills, assets and competencies over the network will be virtually free, for both companies as well as customers. So if borrowing is free, the key consideration will be: what will you own that will create increasing rates of economic return?

Where in the past, returns might have been associated with hierarchically based economies of scope, chances are those opportunities will quickly evaporate. Instead, network-based firms will need to determine how and where scale can be

created both as a discrete as well as a networked entity. Many companies believe that the best opportunity to realize scale is by using the Internet as a customer-acquisition mechanism. That may be true for some organizations, but it won't be prevalent because e-markets are likely to become the dominant value-exchange mechanism. So the question will turn to one of whether the value-creating properties of the firm can realize scale.

economic returns. However, in the New Economy, attempting to own all of them simultaneously will increasingly become a game of diminishing returns. When the network allows competitors to fill the gaps in their offerings at no additional cost, owning all of these competencies only increases risk without necessarily increasing returns.

As the factors that make up the economic environment change under the influ-

### Successful Organizations Of Tomorrow Will Have To Excel In:

- **Building Networked Business Models** Connecting value exchanging entities
- **Focusing on Core Competency** Borrowing skills and assets where required
- **Realizing Sustainable Economies of Scale** On both a discrete and networked basis
- **Forging Trusted Relationships** Between Partners and Customers

Source: Cambridge Technology Partners

In a world populated by value creating and value exchanging entities, often the decision will come down to owning one of three fundamental value propositions. You will either be able to own the customer, own the content that the customer seeks to acquire, or own the infrastructure that allows the content to be produced or the value to be exchanged. Each has a different business model. Each exploits a unique core competence. Each employs a different means of generating

ence of the Internet, we can begin to anticipate how and where they will alter the cohesion and boundaries of the entities that make up the modern economy. We can estimate which industries and business models will likely become threatened and which will likely survive. In the process, we can redefine the way in which our organizations will participate and continue to create value for customers and shareholders alike.



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