

Business Network Transformation: Rethinking Relationships in a Global Economy

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The global economy is reshaping relationships among companies in new and not always comfortable ways. Leveraging unprecedented opportunities in communication and collaboration, companies are gaining competitive advantage through networked business models, tapping into talent across the globe to defend themselves against commoditization and disruptive innovation. Such rapidly changing market dynamics are stressing established companies' investment in rigid "built-to-last" systems and processes. The new era instead calls for fluid, "built-to-adapt" networks in which each company focuses on its differentiation and relies increasingly on its partners, suppliers, and customers to supply the rest.

Such business networks have come to the fore in the past decade or so as the power of customers and consumers has increased relative to the manufacturers and retailers that serve them. These networks enable these companies to deliver faster innovation to customers at lower costs by sharing investment, assets, and ideas. New market opportunities are unlocked by combining the products and services of the business network participants in creative ways and leveraging each other's market access and infrastructure on a global basis. Table 1 shows the nature of transformation that businesses are undergoing today.

Table 1: Business transformation for competitive advantage

Issue	"Built-to-last" global companies	"Built-to-adapt" business networks
Competitive advantage	Efficiency, stability, and reach	Differentiation, adaptability, and speed
Mode of operation	Command and control	Connect and collaborate
Source of innovation	Internal R&D	Co-innovation
Focus of attention	Supply	Demand
Organizing paradigm	Value chain	Alliance

Under the pressure of this ongoing transformation, business leaders are being forced to reexamine long-held assumptions about strategy, structure, systems, and style. Among the questions raised are the following:

- What is the right context in which to view this change in business climate? Is it a cyclical change or a secular one? Is it fad or fate?

This paper is based on field research including interviews conducted with executives in leading companies from over 20 different industries and business networks. The research was conducted between September and December, 2007, by TCG Advisors, an advisory firm based in San Bruno, California, in collaboration with SAP AG.

- Do business network dynamics evolve as markets emerge, scale, mature, and decline, or does one size fit all?
- What core principles or practices can be used as guideposts as we foray out into this new territory?
- What implications do these networked business models have for managing investment in information and communication technologies (ICT) systems?

In our view, the forces at play here are tectonic. For the most part, they will move businesses slowly but inexorably out of their comfort zones. That suggests there is time to plan and make considered moves. But occasionally the business landscape is shaken by quakes of great magnitude, out of which new power structures emerge in remarkably short order—as we have seen in the current century in financial services, telecommunications, and media. Overall, we believe a planned approach is best for most businesses, but we do not think it wise to use planning as an excuse for stalling.

The great disaggregation: A secular change

In the past 30 years or so, sector after sector of the global economy has migrated away from the vertically integrated enterprise toward an increasingly disaggregated model of specialized enterprises interoperating to create end-to-end deliverables. The clearest example of this has been in the computer industry, where in the 1960s and 1970s all the great computer companies—IBM, Hitachi, Fujitsu, ICL, and Siemens, as well as the “BUNCH” (Burroughs, Univac, NCR, Control Data, and Honeywell)—supplied a complete array of hardware, software, and services built atop proprietary and closely held technology. The model was carried over into the first generation of minicomputers—Wang, Digital Equipment Corporation, Data General, Prime, and the like—all proprietary systems, albeit ones increasingly struggling to shoulder the enormous research and development (R&D) expense of going it alone.

Two technologies radically changed this landscape: the relational database and the personal computer. They led a disaggregation of enterprise computing into a host of specialized companies in microprocessors, operating systems, databases, storage, networks, computers, and application software, all linked by a set of standardized interfaces. This, in turn, allowed innovation to evolve independently at each layer, the sum of which vastly exceeded the progress that any one company could have made. The net outcome of all this process is the massive amounts of wealth creation that has taken place across the globe, not to mention the fact that the mobile phone you carry with you outperforms the most

expensive supercomputer available a scant two decades prior. Clearly this is a fundamental change.

At various times, the disaggregation model has played out in many other industries as well, albeit not always quite so dramatically. The vertically integrated film studios of the 1930s and 1940s have long since disaggregated into a collaborative network of producers, directors, writers, actors, artisans, distributors, and agents, all bound by a raft of lawyers (and a market with an insatiable appetite for digital fantasies). The semiconductor industry went “fabless” 20 years ago, separating chip designers from chip producers, while at the same time spinning out specialized roles for wafer suppliers, mask makers, equipment providers, and CAD software vendors. The automotive industry has migrated to a tiered system of suppliers, out-tasking virtually every subsystem that makes up a car except for the engine (and that will be next, given the enormous R&D expenses entailed by hybrid and all-electric drive systems). The aerospace industry is following in similar fashion, and even pharmaceuticals—one of the last bastions of the closely held end-to-end enterprise—has been driven to disaggregate the roles of upstream R&D, now increasingly outsourced, from downstream sales and marketing, still closely held.

Four forces have driven all these acts of disaggregation:

1. *ICT proliferation*, which enables work to be rapidly transferred back and forth at scale between geographically separated specialists;
2. *deregulation*, which leads to the opening up of previously protected markets;
3. *globalization*, which leads to the entry of low-cost competitors into these markets; and
4. *commoditization*, which leads to market expansion and increased consumption but at the same time to heavily challenged profit margins.

We can summarize the impact of these forces in the following single observation: specialization to create sustainable competitive advantage is the force driving business network transformation in the current era.

Such specialization, in turn, raises new challenges and critical questions for companies engaged in these business network transformations:

- How to orchestrate one’s business network partners as “one company” to deliver reliably on business commitments?
- How to manage risk and compliance exposure across the entire business network?

- Who will own the customer relationship, and how to capture value in a distributed ownership?

These are the questions we seek to address in this article.

Business network transformation: An evolutionary model

Business networks arise at two stages in the evolution of a market or a product. In the *emergent stage*, *collaborative business networks* enable companies to explore and develop an emerging opportunity. Such a challenge is highly complex and largely undefined, so the emphasis is on communication, interaction, iteration, fast failure, and faster recovery, all trending toward delivering a complete solution to an end customer. In these networks there is typically a ringleader who has a vision for what is possible and rallies the other parties to pursue it. We call such entities the *orchestrators* because they must lead through influence rather than enforce their will through power. The other members of the network are included not only for their specialized expertise but also for their ability to team well with others in relationships that are not explicitly defined. This in turn implies relationships of trust built on a spirit of joint venturing to create new products and markets, the unifying principle being that the new market will reward all in reasonable terms.

Examples of collaborative business networks in emergent markets abound in the high-tech sector, because each new technology requires communal support if it is to proliferate. Whether it be the developer ecosystem needed to support a software platform, the co-design efforts that unite handset manufacturers with mobile operators, the chip design efforts that go into a new game machine, or the standards efforts that lead to a new network protocol, the requirement is always the same: potential rivals must overcome their natural defensiveness to collaborate toward creating a future market in which they will subsequently compete with one another.

In other sectors, where technologies come and go at a more steadied pace, the driver for next-generation collaborations can be the desire to adapt global products to developing economies, the opportunity to introduce new financial mechanisms such as mobile banking or micro-loans, or the political intent to develop a new industry. Whatever the driver, success depends on an orchestrator with a vision being able to recruit an ecosystem of once-and-future competitors to lay down their arms and work together for a common good.

Those arms will be taken up once more as the market's evolutionary state transitions from emergent to *scaling*. In order for any process or offer to scale, it must be transformed from custom creation to repeatable production. This is true whether the end product be a consumer packaged good or a transcontinental airliner, although the higher the volume of the output, the more

important standardization becomes. Now the network must operate under a new social contract, one which puts a high value on efficiency.

We call these efficiency-focused networks *coordinated business networks*, and they are driven not by personal relationships of trust but rather by transactions specified by contract. As such networks ramp to maturity, their operations become increasingly driven by a *concentrator*, a member of the network who has gained greater bargaining power than the others and who drives the performance of the whole to its own greater benefit. In a sector that is supply-constrained, this will be the resource owner or the manufacturer. In a sector that is demand-constrained, it will be the end customers or consumers, or the sales channel that controls access to them. In either case, the network as a whole has become highly transactional in its relationships and becomes increasingly dependent on information technologies (IT) to manage and monitor its end-to-end operations.

As product and service categories pass through their life cycles, the relative role of the business network oscillates between collaboration and coordination, the former focused on enabling new and emerging markets, the latter on scaling mature ones. At the same time, however, the more complex the offering, the greater the affinity will be to extend the collaborative model indefinitely, and the need to master complexity trumping the need for transactional efficiency. Conversely, the more mass-market the offering, the greater the attraction will be toward the profit-generating coordinated model, and the greater the impatience to exit the collaborative phase that must precede it.

The foregoing distinctions are captured in Table 2.

Table 2: Business networks: Collaborative vs. coordinated

Issue	Collaborative business networks	Coordinated business networks
Phase of maturity	Emerging	Scaling and mature
Best fit	Complex systems	Volume operations
Focus	Relationships	Transactions
Performance	Adaptability	Efficiency
Engagement model	Alliance	Contract

Note that the values of coordinated business networks are essentially identical to those of a traditional vertically integrated enterprise operating in a mature market. In today's outsourcing-oriented economy, however, the lowest transaction costs are many times found *outside* the firm. The goal of participating in a coordinated network is to avail oneself of these economies while meeting or exceeding the reliability of a single end-to-end provider. We are taking a familiar model and simply disaggregating it, letting each company leave behind non-core tasks to

focus on its own core, the goal being for all to generate greater differentiation and therefore higher returns on invested capital.

By contrast, collaborative business networks are driven by a different imperative. They seek to bring about something never before accomplished: either the completion of a program or project that transcends the capabilities of established offerings, or the incubation of a market that requires orchestrating the involvement of many different participants. In both cases, the goal is to tap into sources of funds that are not available to coordinated networks. The prize is gross margins that are much higher, since there are as yet no more efficient alternatives in the market. Over time, however, if the need is sufficiently broad and perennial, the transactional model will find its way into the market, and the balance of power will shift back to the coordinated network.

In light of these interactions, it behooves us all to understand how each network operates, what practices will enable companies to be most successful, and, in particular, what investment in IT and communications systems will yield the most benefit. That is the focus of the rest of this chapter.

Coordinated business networks: Competing in a commoditizing world

Coordinated networks are the norm for virtually all of the consumer sector and much of the enterprise sector as well. The rise of contract manufacturing—be it in retail, consumer electronics, home furnishings, industrial components, or the like—has disaggregated the value chain in industry after industry, creating separate vendor roles for design, sourcing and assembly, transportation and logistics, marketing, retail distribution, and post-sales customer support. The extraordinary success of this model, in turn, has given rise to a second follow-on wave of outsourcing to offload non-core *service processes*, including in-house business processes such as accounts payable, claims processing, benefits administration, and compliance reporting.

The net impact of these changes has been the radical commoditization of an enormous number of work processes. This in turn has destabilized long-standing business models by eliminating the market inefficiencies upon which their traditional value-creating roles depended. The resulting social turmoil has been great. While public policy can, and in our view should, *modulate* the onset of this onslaught of commoditization, no one believes it can *stop* it. And indeed, in the long term its benefits outweigh its pains, for it enables greater and greater value creation from a given level of asset deployment. But what about right now? What can leaders of businesses in higher-cost developed economies do to sustain the margins needed for life in their societies?

The response most ready to hand is to consolidate a large number of competing enterprises into a few major

ones in order to gain bargaining power over the other members in a commoditizing value chain. This leads to a business network structure driven largely by a handful of *concentrators* who do their best to dictate terms to the other participants. The market shares of these companies give them the power to drive pricing discounts and special terms that add extra points of margin to their bottom line. Everyone else in the chain must hustle to keep their place in line, continuously innovating to meet the next “unreasonable” demand from the concentrator, the alternative being to lose out on so much volume they cannot sustain the total overhead of their operation. They have, in effect, become commoditized.

To get out from under this burden of commoditization one must reengineer one’s role in the business network, or, if necessary, reengineer the network itself, in order to get access to more lucrative opportunities. This has been exemplified by the evolution of both the contract manufacturing industry in China and the contract services industry in India. Both began by taking whatever work the developed economies wanted to shed—typically low-margin, highly standardized labor-intensive tasks where the wage rate arbitrage made for a good deal on both ends. Under the pressure of success, both nations’ economies then began to migrate upstream in the value chain, to seek to perform more complex higher-value work, taking non-core but resource-consuming tasks off their outsourcing customers’ plates. There is still considerable more headroom to exploit on this journey, and thus the economies of Asia are booming.

Where does that leave those living and working in Europe, Japan, and the United States? These regions enjoy high-wealth populations with strong traditions of domestic consumption, and developed economy enterprises have a natural customer-intimacy advantage when marketing into their home base. Moreover, many of the latter’s established brands are highly attractive to emerging markets in Asia, Central Europe, Latin America, and Africa. The global supply chain can flow in both directions, in other words, provided developed-economy enterprises are able to clear the productivity hurdles necessary to operate at very different price points.

Toward this end, one of the traditional competitive advantages many developed economy enterprises continue to enjoy by comparison with their developing-economy counterparts is experience and sophistication in the use and deployment of IT systems. To date, developed-economy enterprises’ investment in IT has focused primarily on improving *internal productivity*, but as the consumer becomes more empowered, and suppliers become more distributed, future returns are increasingly going to come from getting better *visibility, control, and process productivity across the business network*. To compete going forward they must radically improve their ability to manage processes end to end, orchestrating not just the upstream supply chains, where considerable progress has been made in the past decade, but also the

downstream demand chains, which even to this day typically operate largely in the dark.

In an era where brand was king and supply was scarce, such downstream opacity mattered little. Customers would wait for what enterprises had. But that is hardly the case in today's consumer-driven world. Fashion and other trend-driven businesses, in particular, demand faster and faster response times to hits, ensuring that stock-outs do not truncate the ability to capitalize on big winners when they come. Detecting these hits—transmitting accurate demand signals with shorter forecasting time frames—requires more extensive use of IT analytics fed by more up-to-date information and integration of processes across a business network. Moreover, to achieve the necessary productivity gains in inventory turns and reduced returns, execution-oriented transaction-processing systems must be reconfigured to act directly upon the insights of these analytics, adjusting commitments in near real time.

Key to the success of this model is the ability to have a *lingua franca* for the business network, an open but common vocabulary that all business network participants share on process and data definitions. Companies operating in coordinated business networks must deploy an end-to-end business process platform and a layer of next-generation applications designed from the ground up as inter-enterprise applications on top of that platform. These “composite applications,” as they are sometimes called, provide visibility, control, and productivity improvements at key junctures in the business network. They focus on the edge, keeping things from falling through the cracks, just as the underlying internal enterprise resource planning (ERP) systems focus on the core, keeping mainstream operations moving.

Investments such as these are incremental to the massive IT upgrades driven by the Year 2000 effect. They tap directly into these existing systems of record—no rip and replace, no rewriting of that which is already written—to extract and re-contextualize the data those systems already hold. They are not disruptive.

Nonetheless, two things are still holding back this much-needed transition to next-generation capability:

1. At the line-of-business level, leaders are taking the limitations of their current IT systems for granted. Instead of driving for next-generation investment to address inter-enterprise issues at the wellhead, they consume their budgets using people and spreadsheets to firefight the downstream problems.
2. At the IT level, architects and systems owners continue to take the enterprise boundary for granted. Instead of embracing the challenges of operating across a global business network, they continue to push internal productivity projects whose return on investment is demonstrable but, sadly, increasingly irrelevant.

To move forward in this area of coordinated business networks, both the line-of-business leaders and the IT function must carve out a new space for inter-enterprise space collaboration and populate it with a new generation of composite applications. But unlike previous times, they must do so in collaboration with the other major players in their network. Collaboration does not come naturally to these networks, and progress is easily stalled. But stalling equates to continued deterioration of profit margins—the advance of commoditization is inexorable, there are no time-outs. So it behooves all such leaders to brush up their understanding of how best to operate in a collaborative business network.

Collaborative business networks: Tapping into new sources of wealth

In contrast to the high-volume orientation of coordinated business networks and their corresponding investment in transaction management, collaborative networks focus on high-complexity challenges that require investing in relationship management. Their focus is wide ranging, from the making of a movie to the development of a next-generation airliner, the initial private offering (IPO) of a new company, the commercialization of a novel therapy, or the industrialization of an entire country. Whether it be the capital markets, the public works sector, industrial manufacturing, the energy industry, enterprise software, or consulting services, the focus is on leveraging a wide range of technologies and expertise to tackle a novel set of challenges, collaboratively creating not only new products or services but also whole new systems and categories that simply did not exist before.

The range of these projects—the risks they entail, the capital they require, and the talent they must access—cannot be encompassed by the efforts of any single enterprise. In effect, the need to operate as a collaborative business network is built into the very structure of the problems these companies must address. And such collaborative networks have been in existence for centuries, typically brokered by a handful of highly respected enterprises and a remarkably small number of well-connected, highly effective individuals. The personal relationships these individuals develop and maintain are the backbone of the collaborative network, creating a fabric of mutual understanding, respect, and trust that enables extraordinary risks to be assessed and absorbed. The challenge is how this model can be reengineered to operate more effectively and efficiently at a global scale.

As we have already noted, the forcing function that drives enterprises to reframe their established practices is the deregulation, globalization, and commoditization of the world economy. As these forces continue to put pressure on the price margins of developed economies, enterprises are forced more and more to push beyond the

boundaries of existing categories to develop new venues for wealth creation.

Consider three areas that are the focus of much reengineering at present:

1. **Research and development:** Traditionally treated as a closely held function, today more and more corporations are sharing R&D efforts across enterprise boundaries, be it the collaborative “connect and develop” R&D practices of a Procter & Gamble and BASF, the shared R&D ecosystem of biotech and the pharmaceutical industry, the joint ventures in the automotive industry to develop hybrid engine technology, or the next-generation military systems development in the defense arena.
2. **New market development:** Inherent in the capitalist economic model is the perennial need and expectation to develop new markets. Whether it is redesigning an existing product to go into a new market (as many consumer packaged goods firms are doing today to tap into the “bottom of the pyramid” opportunities in developing economies), or creating a new customer base for an unprecedented technology (as Apple and others are doing for digital music and media), or spawning an ecosystem of partners to expand demand for an existing platform (as SAP AG and others seek to do in enterprise software), the need everywhere is to collaborate in order to succeed. In the world of complex systems, what markets need is never what any single company can supply.
3. **Business model innovation:** As industries, sectors, and economies continue to mutate and evolve, legacy business models eventually lose ground in the competition to create value. At the same time, new market inefficiencies create opportunities for alternative business models to capitalize on latent demand. Whether it be the trading ecosystem of eBay, the rise of micro-credit in developing economies, the innovative use of mobile phones as pay-per-use business terminals in these same economies, enterprises are continually discovering and deploying novel mechanisms to capitalize on next-generation opportunities.

Given these examples of efforts already under way, what is the real challenge here? Simply put, we need more—*much more*—of this kind of collaborative innovation to fend off the commoditizing forces of globalization. The bottleneck is that the collaborative business networks needed to discover and capitalize on emerging market opportunities take too long to form, are too hard to scale, and are too susceptible to atrophy and decay. The choke point lies at the very heart of the model: its inherent reliance on personal relationships and close

communication to iterate through cycle after cycle of approximation until a viable solution is found. Who has not experienced the joys of this process in a conference room at a whiteboard with a small group of engaged colleagues? Who has not experienced the frustrations of trying to operate that same process on a global scale?

Once again it behooves enterprises in developed economies to better leverage their existing investments in IT infrastructure. In this instance, however, the focus should not be on computing but rather communications systems. The rise of the Internet has led to a global restructuring of communications infrastructure such that all forms of communication—voice, video, data, or mobile—now run (or will do so shortly) over the Internet Protocol. This may be the single greatest technologically led transformation in human history. Not surprisingly, it is taking us all a bit of time to get our heads around it. But the sooner we reorient our thinking, the sooner we can leverage the new media to dramatically rescale our collaborative business networks.

The opportunities to supplement the current infrastructure of telephony and email are manifold. They include Unified Communications, telepresence, Web conferencing, instant messaging, chat, webcams, wikis, portals, dashboards, online workspaces, and social networking. All these technologies extend the reach of collaborative business networks, putting a company’s best and brightest in touch with their peers in other companies and on other continents. Kids are using most of these tools already. Employees have them at home as well. Why do companies persist in making them less productive when they come to work?

Simply put, investing in upgrading communications infrastructure is thus the number one opportunity to improve and scale collaborative business networks in the current era. That said, we must heed the thinking of the American philosopher, Henry David Thoreau, who once observed the following about a communications revolution in his century:

Our inventions are wont to be . . . improved means to an unimproved end. . . . We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate.¹

To yield attractive returns, collaborations must be focused on the critical opportunities that truly matter. That does require some help from computing. Human beings are good at recognizing patterns once they are brought into view, but seeing them in the first place, particularly across a vast range of data, can be an enormous challenge. We are all familiar with the data overload of modern life, but that pales when compared with the data overload of modern businesses or governments, particularly when those data span multiple enterprises within a global network.

At such scale, only IT systems can operate with sufficient scope and precision to address the pattern-detection problem. The good news is that the cost of the required supercomputing has plummeted so fast and so far that now data mining across literally trillions of data records is a practical undertaking for any major enterprise. And the data warehouses and analytic software necessary to ferret out the signals amidst all this noise are also ready to hand. The need now is simply to invest.

But what are we investing in? The answer is *metadata*. And that is something that we are going to have to get a lot smarter about.

The rise of metadata and what it means

Metadata are data about data. They are the material of pattern detection, whether that be in the operations of a supply chain, the management of a data network, the movement of a ticker tape, or the behavior of a set of consumers. In coordinated networks, metadata are critical to maintain the visibility and control needed for process management and optimization. They are fundamentally an operational tool focused on productivity improvement. In collaborative networks, metadata are more of a discovery tool that helps direct future investment, whether that be in R&D, marketing, or mergers and acquisitions. In both cases metadata represent a powerful lens through which businesses can reevaluate their current resource deployment and reengineer their future asset allocation.

However, it is this very power that also makes metadata problematic. The risk of constructing or publishing metadata is that it exposes inefficiencies that can be exploited by others, especially in absence of proper security or relationships of trust. Often in such cases, the party exploited is the one that helped supply the data in the first place. Thus there is widespread fear that sharing metadata is likely to have unintended consequences, as the following examples will illustrate:

- patient sensitivity about insurers getting their personal health data,
- retailers not wanting to report out point-of-sale purchase data to product vendors,
- mobile operators wanting to control access to user location data,
- intelligence agencies classifying their metadata as “Top Secret,”
- algorithmic traders seeking to disguise their operations to evade metadata detection,
- consumers wanting to control access to their purchase histories, and
- Internet users’ desire to periodically delete their browsing histories.

Now no one denies that metadata are needed to create next-generation innovations. The issue is, under what rules of engagement? This is a work in progress, to be sure, but there are some provisional rules emerging from successful collaborations, of which the following are a sample:

- Governance of metadata needs to be explicit and transparent to all parties involved.
- Private use of companies’ own metadata for the purposes of improving their own performance, or those of their partners, has always been and continues to be acceptable. (Arguably that is what the proponents of Sarbanes Oxley—the US federal law of 2002 intended to ensure access to appropriate financial and accounting disclosure information—thought they were about.)
- Public-service uses of metadata are provisionally acceptable provided they are monitored and controlled. This includes fraud detection, traffic management, epidemic disease control, antiterrorist surveillance, and the like.
- Patented metadata are legal but socially concerning, particularly around information on the human genome and comparable global information sources. One can expect legislative controls in this arena at some point in the future.
- Consumer privacy is a deep-seated right, and metadata must not be collected without permission. The gray line here is between opt-in and opt-out methods of securing that permission, with the latter clearly being the high ground.
- Institutionalized sources of metadata are highly valued. This includes financial metadata providers such as Reuters, retail metadata providers such as Niensens and IRI, and World Wide Web metadata providers such as Google. Positioning as a metadata hub is highly desirable but also jealously guarded against, as it confers enormous economic power to the enterprise in question.

One of the most difficult aspects of metadata is that it exposes inefficiencies, a situation in which someone’s ox is all too likely to get gored. This challenge can be overcome to some extent through collaboration toward a common goal as opposed to exploiting the information on a win-lose basis. In coordinated business networks with strong concentrators, however, it is far more common to use metadata to exploit weaker members in the ecosystem to extract greater and greater concessions from them. This results in dysfunctional dynamics that

undermine the effectiveness, efficiency, and ultimately the security and reliability of these networks.

In collaborative networks, a similar selfish behavior also generates a backlash. This was a lesson first learned by innumerable dot-coms whose business plans had them setting up digital fronts to reengineer any number of inefficient supply chains. They were shocked to learn that the members of the current community did not want to collaborate in their own demise. Similarly, pharmaceutical companies resist the deployment of diagnostics that may limit the prescription of their drugs, health-care providers resist being measured by patient outcomes, and school systems resist publicized test results. Why would we think they would not?

Metadata, nonetheless, are far too valuable to neglect simply because their politics and governance are so hard to navigate. We need instead to develop a set of ethics and norms to guide their collection and deployment so that we can use them to continue to drive global economic expansion. We believe that task is best left to industry, but we have no doubt that if industry fails to step up, governments will fill the vacuum. Unfortunately, legislation in areas such as this has typically proven inflexible, obstructive, and riddled with unintended consequences. It would be far better if industry were to take this matter in hand itself, and now.

Conclusion

The ability to operate effectively in business networks, be they coordinated or collaborative, is critical to sustaining competitive advantage in a commoditizing global economy. By focusing on their unique core capabilities, business network participants spend less on duplication and more on innovation, resulting in higher degrees of differentiation, greater customer willingness to pay a premium, and thus higher returns on invested capital. Next-generation ICT systems allow these business networks to operate at global scale, but investment in them has been allowed to lag. As a result, enterprises in the developed economies are falling behind the curve, especially in comparison with their Asian counterparts. By focusing on the specifics of the type of network that is most important to their companies, and in particular on the type of metadata that will most greatly enhance their competitive advantage, business and IT leaders can radically improve these outcomes by making measured incremental investment that augments their existing infrastructure.

Note

- 1 Thoreau 1966 (originally published 1854), chapter 1, p. 67.

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