Learning to Thrive in the Chaos

Of the Global Knowledge Economy

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Abstract

The emergence of the Global Knowledge Economy (GKE) at the beginning of this century is creating many unfamiliar challenges for business leaders, presenting them with grave threats as well as profound opportunities. This paper explains what the GKE is, lays out some of the challenges it engenders, and speculates on how executives can reconfigure their organizations to be successful in this new environment.

The paper also asserts that the evolution of the GKE provides the practice of knowledge management an opportunity to rise again on the business priority list. But in order to succeed, it too will need to adapt and change to the exigencies of the GKE.

Keywords**:** global, knowledge, economy, strategy, benchmark, audit

Introduction: The Problem

There's a new sheriff in the world of business and it's called the global knowledge economy. It's the Wild, Wild West all over again, but now it's wild North, South, and East too.

Three great forces are changing the world of commerce:

1. *Vast improvements in logistics* – and a worldwide relaxation of tariff laws – are allowing goods and services to roam around the globe much more freely than ever before
2. *The decreasing cost of information and collaboration* gives companies the ability to control their operations across the globe and just as importantly, their relations with customers, vendors, partners, and regulators
3. *New, huge, and fearless economies* – built from the get-go to compete globally -- are coming online, bringing billions of new participants into the global knowledge economy and making it, well, truly global

These forces make location almost insignificant: You can now order computer equipment from a phone operator in New Delhi that was designed in Singapore, controlled by software written in Canada, and assembled in the Philippines. If the economics change in a country, global sourcing adjusts with alacrity. It is David Ricardo's principle of comparative advantage on steroids.

Everyone is in the global knowledge economy; it chooses you, not vice versa. *It doesn't matter if you don't directly sell or buy overseas; you are still in it.* Whether your business is in Toledo, Ohio or Toledo, Spain, Athens, Georgia or Athens, Greece – you participate. Bodega owners in rural villages in Mexico can't sell a bag of peanuts without coming up against global commerce: the dropping cost of information allows Frito-Lay to monitor the snack purchases in virtually every city and town (no matter how small or poor) using sophisticated bar coding.

Fig 1. Teotitlán del Valle, Oaxaca Mexico (photo by author). Frito-Lay monitors the sale of its salty snacks in this tiny village, as well as virtually every other village in Mexico.

Knowledge is the secret sauce of the global knowledge economy. It's not that material resources are irrelevant, but that their percentage contribution to value generation continues to drop. It's the knowledge of how to transform oil into valuable products and then to distribute it to the right people at the right price – not the oil itself – that creates the opportunity to gain the highest incremental value. The same goes for agricultural products and manufactured goods. Even capital is increasingly taking a back seat to knowledge as a value-creator: the cost of capital (and derivative products like insurance) continues to drop relative to the knowledge component of goods and services.

The sheriff doesn't post the laws of the global knowledge economy; nonetheless companies that don't obey them are run out of town.   And while the rules of the game may seem inscrutable, the problems that they generate aren't. This litany of challenges – either created or seriously exacerbated by the global knowledge economy – will be familiar to every manager in the world:

- *Low cost competition*: Countries (or companies with revenues that dwarf many national GDPs) -- China, India, Wal-Mart -- are presenting withering price competition in both products and services
- *Customer power:* Margins are becoming increasingly hard to maintain because buyers have more knowledge than they did before and can source from across the globe. (Even consumers – using tools like eBay and priceline.com – are becoming savvy procurement

officers.) As people's access to information increases, the cost of switching to an alternative product or service decreases.

- *Fuzzy boundaries:* The lines between your company's operations and that of your customers, vendors, regulators, and competitors are becoming increasingly blurred. Frequently a "value network" replaces vertical integration. The old hierarchical models of management can't cope with the demands of these new realities.
- *Managing in a world of uncertainty*: Business risk has increased and may now be better described by chaos theory than by more traditional types of risk management strategies. Disruptive technology, terrorism, politics, and even the weather can fundamentally change the business environment.
- *The need to make more decisions more quickly:* Managers need to constantly innovate their product and service offerings to meet changing market conditions, and implement change faster than ever before.

(These challenges were suggested by Thomas Stewart at a meeting of the Working Knowledge group at Babson College in October, 2004).

In this business climate, what is an executive supposed to do? How can these challenges be managed, or even better, how can they be turned into opportunities to gain competitive advantage? This paper will speculate on the answers to these questions, and suggest that further work is needed.

What is the Global Knowledge Economy (GKE)?

What are the characteristics of the GKE? We've had truly global commerce since the beginning of the 16th century. Why are the five challenges just mentioned much more salient today than they would have been to the East India Company of the 17th century or the IBM of the 20th? Is there something new going on?

The answer is yes. Beyond improvements in logistics and the decreasing cost of information and collaboration, the business ecosystem from product development to delivery has been fundamentally altered. Companies are becoming increasingly catholic about where they find their ideas, and where those ideas are realized into products and services. This movement goes far beyond outsourcing, where a company contracts with others to provide non-core functions, often overseas. In this new world the very concept of “overseas” is an anachronism. In the global business ecosystem, leading-edge companies source *all* of their functions across the entire product or service lifecycle to wherever and whoever has the best ideas and capabilities. In this new world, cultural diversity within companies and amongst partners is not treated as an issue to be overcome, but as an opportunity to be exploited. (Holden, 2002)

In the GKE, good ideas and the capacity to realize them can come from anywhere. For this reason, corporate R&D and thought leadership centers are starting to become less effective competitive instruments: HQ is no longer the fount of creation that is then “projected” across the world.

Even across companies, geography is losing its relevance. Being located in the geographic knowledge center for your industry – e.g., Silicon Valley for electronics – is no longer necessary, and can even breed dangerous complacency. How else to explain location-challenged Helsinki-based Nokia’s trouncing of Silicon-Valley-based Motorola? (Doz & Santos & Williamson, 2001, pp. 21-23) Or what of Australia’s Yellow Tail wine becoming the fastest growing wine company in the world over its better located competition in France and California? (Kim and Mauborgne, 2005, pp. 31-32)

In the GKE cares, geography is much less important than before. But it is not an economy that tends to homogenize. On the contrary, it celebrates diversity by selecting the best ideas and capacities from wherever they may arise.

The Key Competitive Success Factors in the GKE

What is a manager to do in this new, wild world, where the laws keep changing, and the consequences of breaking them are so dire? The practice of leading GKE companies suggests that you must do the following:

1. *Know who you are and be sure that your identity transcends national/cultural boundaries*. Having a strong sense of mission – and a well-understood and accepted set of values – is required for an organization to work in the GKE. Paradoxically, for companies to maintain the flexibility and cultural ecumenicism required in the GKE, they have to have a profoundly strong and clear sense of who they are and what they do. Without this shared vision, a GKE company will fall into chaos. Much has been written on this subject (Collins & Porras, 1997; Malone, 2004), but the importance of this principle is only magnified when an organization's relationships with employees, customers, vendors, partners, and regulators stretch across differing geographies, nationalities, and cultures.

2. *Make it safe to connect at every level.* For knowledge management practitioners, these suggestions will most likely seem obvious. Nonetheless, in the GKE economy these knowledge management "hygiene" issues become even more important.

   For an organization to thrive in the GKE there must be trust on both sides of the knowledge equation.

   On the supply side, people must be willing to contribute knowledge. In some organizations knowledge is equated with personal power and for this reason is hoarded. In the GKE, such an attitude is anathema to success. Each employee must understand that his or her position in the organization relies upon creating and sharing valuable knowledge, not upon hoarding it. Today, personal agendas will compromise the success, and even the survival, of the enterprise.

   Everyone within and without the organization must also trust that the knowledge that is being given him is correct. In a world of fuzzy boundaries, trust becomes the coin of the realm. In working with increasing numbers of vendors, partners, potential mergers, and regulators, relevant business reports and financials must become ever more transparent and trustworthy. Even very successful companies are now finding it hard to operate in the GKE because of their lack of transparency. (AIG, the insurance giant, is a case in point: Its stock price is depressed not necessarily because of bad performance but because of the complexity of its business, and the secretiveness of its near-octogenarian CEO Maurice Greenberg.)

Too many organizations forget about the demand side of the knowledge equation. Employees need to feel that their competency won't be doubted if they ask questions and seek out others who have the answers. The most successful companies (McKinsey is one of the most prominent examples) instill in their consultants the need to be knowledge-seekers, and reward those who are fearless in their pursuit.

Another aspect of making connecting safe is knowing how to protect the organization's valuable and unique IP. Clearly defining the boundaries of what is to be shared with the firm's constituencies, and what is to be protected, makes connecting with third parties viable.

Finally, well-defined ethical practices are also part of success in the GKE. Once again, trust is required for connecting. A well-articulated and promulgated code of ethics can help ensure that trust isn't broken with customers, vendors, partners, regulators and non-governmental organizations.

3. *Use the ability to connect to reduce corporate tyranny and increase nimbleness***.** Politburo-styled command and control economies fell once and for all with the Berlin Wall. Similarly, top down and culturally chauvinistic *organizations* are not viable within the GKE. GKE organizations are flat, fast, and reward good ideas irrespective of nationality.

To stay flat and nimble, companies are going to reduce complexity whenever possible, In most industries, the backward- and forward-integrated firm will become passé. With timely information available at significantly lower cost, firms will be able to control what they do not and need not own. Released from managing non-core activities (e.g., shipping and logistics for a pharmaceutical company), they will be able to better serve their customers by focusing on core competence (drug development). (Hagel, 2002; Malone, 2004)

This new focus on core competence, coupled with the ability to provide employees timely and relevant information about customers, vendors, and partners, will allow firms to:

- Reduce the assets they need to own and manage
- Reduce the size of middle management
- Focus more on customer needs and less on operations

All these benefits will increase shareholder value. Even without these benefits, simplifying operations by focusing on core competencies will increase shareholder value. Investors, burned by firms that obfuscated their finances through Byzantine business strategies, will reward companies that have clear value propositions and straightforward strategies.

The principle of making connections faster and at lower cost also applies to the financial interfaces of the organization. In the global knowledge economy many clients, vendors, partners, potential acquisitions, and regulators need to be able to interact with your company quickly and efficiently. Reducing the transaction costs of creating (and unwinding from) business relationships is a critical success factor.

Some organizations, especially in Europe, are becoming quite adept at this. Perhaps the most extreme example is the Prato Textile market, a decentralized group of companies that supply high-quality finished goods to top designers. For companies in the Prato market, *each* deal is provisioned with a completely different set of suppliers from its network. (Malone, 2004)

4. *Solve the hard problem of finding the best knowledge and then turning it into competitive advantage.* Of course, HQ hegemony did have some advantages. Just as some people

in recently democratized countries long for the clarity of the party, some corporate knowledge workers long for the certainty of HQ direction.

Taking responsibility for one's actions can be difficult, especially today, when the amount of information one needs to master is immense and growing. Knowledge workers can easily become overwhelmed.

Effectively sensing and mobilizing knowledge is probably *the* most important thing companies can do in the GKE, and it is probably the hardest. In a world of ideas (literally), how do you find the best ones and then effectively make use of them? These are issues both for product/service development and operations.

On the operations side, innovation around sensing and mobilizing ideas has come from some unexpected sources. If there was one place where you'd expect the hegemony of HQ to rein supreme, it would be in the U.S. Army. Yet even in this bastion of command and control, change has been profound. In the post Cold War world, the new enemy is harder to find, situations change by the minute, and it is up to the platoon leaders on the ground, not battalion commanders in HQ, to make the life and death decisions that decide battles. It became clear that something had to change. According to one commander:

> *The service was encouraging "reactive instead of proactive thought, compliance instead of creativity, and adherence instead of audacity."* (Baum, 2005)

One way to facilitate creativity was to provide more information for decision-makers in the field. Now, most units across the world are now connected to the Army's huge Intranet, where they have access to large stores of knowledge and also have the ability to chat and collaborate in real time. (Knapp, 2005)

Perhaps the most fascinating development to come out of the Army's Intranet wasn't planned by army commanders at all. The Web sites www.companycommand.com and www.platoonleader.com were both created by junior officers in Iraq *without* official Army sanction. On these sites, the junior officers traded critical information like how to detect

Improvised Explosive Devices, the best ways to deal with Iraqi civilians, and how to maintain unit morale. These sites are heavily used, and full of practical advice that could only come from the field. They are an example of how the reduction of corporate tyranny, when coupled with an enabling culture and technology, provide those in the field the ability to both create and benefit from knowledge. (Baum, 2005)

PepsiCo's Frito-Lay division has done an impressive job of tackling global knowledge issues as well. (Byrne, 2005) In Mexico, it now monitors snack purchases in virtually every village (no matter how small or poor) using bar scanners carried by its delivery people. Knowing the evolving eating habits of its Mexican customers has allowed it to capture 81% of the Mexican salty snack market.

In true GKE fashion, Frito-Lay is taking the lessons it has learned from its Mexican managers and replicating them in the rest of Latin America and Asia (where its market share is much smaller.) The Mexican managers (internally called "the Foreign Legion") will travel to these various countries, disseminating what they have learned. In the GKE, the best ideas win, even if they don't come from HQ.

An analogy may help in imagining how GKE companies will use their operations to sense new, important, knowledge. In the not too distant future, much of the agriculture in the developed world will be controlled by smart dust. (Wikipedia, 2004) The smart dust – thousands of tiny networked sensors – will detect dryness, the lack of nutrients, the presence of pests or disease, and will transmit this information either to locally-situated automated devices or to humans for immediate action. Over time, this information will be aggregated across localities, so that as patterns emerge, more global solutions can be applied (e.g., switching to a different variety of seed.)

The employees of a connected organization act in much the same way as smart dust does, transmitting crucial information about customer, vendor and partner relationships to local managers who can then act quickly and decisively to take advantage of opportunities and deal effectively with problems. Just like smart dust, they don't rely on control from the top but rather – based on high-level guidelines – act autonomously. Like smart dust, the information they transmit can be aggregated over time so that patterns can be detected and new, more global, solutions developed. Nonetheless, this analogy isn't completely appropriate. People *aren't* smart dust: they are (properly purposed) powerful intelligent actors with the power to innovate. The power of the networked organization to learn and adapt to near-chaotic situations can be awe inspiring.

In both the Army and Frito-Lay cases, the search for knowledge was focused. In the Army's case, the focus was unit effectiveness (and, staying alive) in Iraq In Frito-Lay's case, the focus was on selling salty snack food to low-income buyers over highly dispersed geographies. Focus is a key concept. Unless the search for knowledge has a focus, a "magnet" that draws the appropriate knowledge to the fore, knowledge sensing is likely to be expensive and ineffective. (Doz & Santos & Williamson, 2001)

This same principle applies – probably to an even greater degree – when the search for knowledge is not about operations but rather about the next big thing: that technology, product, or service idea that could provide your company with significant competitive advantage. (And in a highly competitive world where ideas can come from anywhere the opposite is also true: how do you avoid being blindsided by a new product or service that destroys your competitive advantage?) Since in the GKE the entire world can be an important source of innovation, how do you find that needle of value in a vast and growing haystack?

One group of researchers suggests that there are three different ways to organize external sensing: (Doz & Santos & Williamson, 2001, p. 173)

a. *A global lead customer*. Using a global lead customer to focus sensing activities can make sense when that customer has a need that you may be able to fulfill, but much of the knowledge required to fulfill that need exists within the customer. Especially when the customer knowledge can bring you into substantial new markets, this strategy can have large payoffs. STMicroelectronics, a European semiconductor manufacturer, employed this strategy when it partnered with its customer Seagate to develop a specialized hard drive controller. ST learned a great deal about a field in which it had very little experience, and the sales of these controllers (and offshoot products) have allowed it to turn a money-losing operation into a company with a $50b market value. (Seagate, in return, obtained specialized technology that was more efficient and less expensive than off-the-self solutions offered by Intel.) (Doz & Santos & Williamson, 2001, pp. 14-15)

b. *A global product (or service) platform*. When you have a good idea of how to satisfy a market, using a platform to focus sensing may make sense. This is what Airbus did to satisfy the needs of the European commercial aviation market. Its focus was the concept of building a fleet of planes that would satisfy the needs of carriers like Air France and Lufthansa. It then scoured the world for suppliers who had the knowledge to bring this idea to market, in countries including Germany (metal structures), France (avionics), and Great Britain (wing design). By sourcing across all of Europe, Airbus has learned much faster than it could have possibly done on its own, and has become a formidable competitor across the globe. (Doz & Santos & Williamson, 2001, p. 175)

c. *A global activity*. If you have a strong expertise in satisfying a particular market, you can use a global activity to focus your sensing operations. For instance, Polygram decided to focus its knowledge gathering efforts on finding new musical talent worldwide (often in very obscure places like Iceland and West Africa), and then used its considerable capabilities to package and market music it to its mainstream customers. This has provided Polygram with a great deal of new talent at relatively low cost. (Doz & Santos & Williamson, 2001, p. 179)

These three focus strategies for sensing certainly aren't the only possibilities. For instance, large demographic trends can also provide useful foci for gathering knowledge. The Global Business Network did a study that explored the emergence of youth culture in developing countries, and showed that because the preponderance of people under age 20 would be from non-first world countries, a whole new set of marketing challenges and opportunities would emerge. (Global Business Network, 2003) Youth-oriented companies like Nike, Apple, etc., could use such insights to focus their sensing activities.

Solving the problem of finding the best knowledge in the world, and then acting upon it, will be the key competitive differentiator in the years to come.

5. *Maintain and reinforce the discipline required to connect to the world.* It is tempting to disconnect from a connected world, but this tendency must be resisted at all costs. Communication among geographically dispersed teams must be increased and the norms changed. Information may be ubiquitous, but understanding and comprehension is not. Meetings must proceed slowly enough so that everyone understands what is happening, why, and what their role is. Managers must constantly connect with each other to answer questions and reinforce direction.

   In addition, people must be evaluated on how well they share and communicate. The culture of successful GKE businesses is distinct from traditional practice. It is management's job to reinforce GKE-friendly attitudes like openness to new ideas (whatever their origins), inquisitiveness, and flexibility.

What do companies gain by following these five principles? They will be more successful in the GKE because they will be more:

- *Aware of the environment* (because of mindful sensing, as well as better and faster knowledge flows, connected organizations are better able to anticipate the needs of customers, vendors, partners, and regulators as well detect threats from old and potentially new competitors around the world)
- *Adaptive to change* (because thousands of people are making informed decisions instead of a few)
- *Value generating* (much more of the organization's knowledge is applied to the design of goods and services)
- *Innovative* (they more easily exchange ideas across disciplines, geographies, and cultures)
- *Capable* (able to learn faster than competitors and apply the newly acquired insight into product or service design, production techniques, and marketing or sales planning)
- *Cost-effective* (the cost of running a command and control organization – complicated reporting structures and middle management, loss of motivation, lack of decision making-power to do what it takes to make cost-cutting decisions – is eliminated.)

Compare this list of attributes to the list presented earlier of problems facing all managers in the GKE, and you will see how GKE-optimized organizations are better able to meet today's challenges.

The Global Knowledge Economy Benchmark

As we have seen, competing in the GKE will be very challenging. And while no company is immune, U.S. companies may be more challenged than their counterparts in Europe and Asia. U.S. companies have relied on the massive size of their home market to develop and produce their products and services, without looking across the globe for ideas. This made the provisioning of knowledge relatively easy. This advantage may now become a disadvantage. Companies that started their existence in smaller home markets already have, by necessity, many of the skills required to be successful in the GKE: they know how to provision their knowledge from outside of their borders, and in fact, are making the very notion of borders less and less relevant.

Could benchmarking help companies, no matter where they are located, improve their chances of succeeding in the GKE? Why might current techniques not be adequate for the job?

As has been discussed in numerous forums, current financial audits are not effective in predicting future success. (Lev, 2000) As proxies for success in the GKE, they are completely inadequate. They tend to emphasize physical assets over intellectual ones, which of course is counter to economic trends that make intellectual assets the primary generator of value. Today's financial measures also tend to be more useful for seeing where you've been, as opposed to a predictor of where you are going, since they reflect events that have already occurred.

One popular improvement to relying solely on financial measures is the "balanced scorecard" approach advocated by Robert Kaplan and David Norton. (Kaplan & Norton, 1996) This approach sets up a causal relationship between value creation and improvements in employee skills, process, and customer satisfaction. By setting the right goals around these performance drivers -- rather than by setting strictly financial objectives – they argue that the firm is better able to create value over time.

The "balanced scorecard" was an important advance over purely financial measures. But it is not specific enough to provide guidance to executives on how to thrive in the GKE. One could skillfully use the "balanced scorecard" and still be unsuccessful in the GKE because it does not address the issues around finding and exploiting knowledge globally. Something different is required.

This paper suggests that a new measure is needed. I call this the "Global Knowledge Economy Benchmark." The GKE Benchmark, like other benchmarks, would perform the following functions. It would:

- tell you how you are doing versus your internal goals
- allow you to compare your performance versus competitors
- provide motivation for future actions (by rigorously measuring the firm's capacity to function in the GKE, management can change incentives to promote success)

Most importantly, the GKE Benchmark would be precisely tuned to the exigencies of the GKE.

The benchmark questions would need to be gathered both through qualitatively-oriented surveys as well as through financial measures. To be benchmarkable (to compare results across time and across industry) the answers would need to be numerically coded.

What kind of questions would be useful for such a benchmark? The following list is a *sample* of the types of questions that would be useful. Over time, one could imagine that strong correlations would be observed between specific benchmark questions and performance, which would allow it to be refined by emphasizing certain questions over others.

The Benchmark might be divided into the following sections: culture, customer relations, organization, intellectual property, sensing, operations, financial measures, and measurement. Here are examples from four of the eight categories.

- *How suited is your culture for the GKE?*

Question	Respondent	Scale
What percentage of your top executives are not of the same nationality as HQ?	CFO	Percent
How willing are people to share knowledge in your company? (Overall and by division or department)	Executives, employee sample	1=Very willing… 5=Not willing at all
How well do your managers understand how value is generated in the GKE? People in operations?	Executives, managers	1=Very well… 5=Not well at all

- *How effective is your sensing organization?*

Question	Respondent	Scale
What percentage of your budget is spent on sensing operations?	CFO	Percent
What are your organizing principle(s) for sensing?	Division heads	NA
What percentage of your innovations have come from countries outside of where HQ is located?	Division heads	Percent
How are people in the sensing organization compensated?	HR	NA
Is it clear how ideas provided by the sensing organization operationalized?	Division heads	1=Very clear… 5=Not clear at all
Is there a clear and compelling career path for people in the sensing organization?	HR	1=Very clear and compelling… 5=Neither clear nor compelling

- *How fast and flexible are your partnerships/supplier relationships?*

Question	Respondent	Scale
How long does it take you to form a relationship?	CFO	Days
How long does it take you to unwind from a relationship?	CFO	Days
How many people need to be involved from both sides to consummate a relationship?	CFO	# of people

How much does it cost to form a relationship?	CFO	Cost, broken down into meeting time, legal costs, etc.
How many relationships do you currently have that produce discernible value?	CFO	# of relationships
How many relationships that produce discernible value come from a country outside of HQ?	CFO	# of relationships
How comfortable are you distinguishing between intellectual property that can be shared with others and IP that must not be shared?	Managers	1=Very comfortable… 5=not comfortable at all
With what percentage of your relationships are you doing co-development? Of these relationships, what percentage of them are you learning as much, if not more, than the other party?	CFO	# of relationship

- *How easy is it for you to measure your GKE effectiveness?*

Question	Respondent	Scale
How much does it cost to perform the GKE benchmark (i.e., are the financial measures of GKE value-creation easily obtained or are they buried within operations, or are they not even kept)?	CFO	Dollars/days

Benchmarking needn't be burdensome. A relatively small number of questions like these – questions that aren't being asked by many today – could quickly reveal issues and areas for improvement. The benchmark could be performed annually to provide insight into how company performance was trending.

Using the benchmark to compare your performance against that of your competitors will be more challenging, but by no means impossible.

- Using competitive intelligence is one approach. Talking to suppliers, partners, and employees formally employed by competitors, can provide many valuable data points.

- Business academics can also supply information. For instance, one set of researchers estimated that leading-edge GKE firms were spending from 0.5 percent to 1 percent of corporate revenues on sensing. (Doz, Santos, Williamson, 2001, p. 163) Sponsoring research like this is another way to learn more.
- Finally, firms that use large audit consultancies can ask them to provide this benchmarking data. The larger firms have global reach, and could obtain much of the information required, for some questions at a precise financial level, for others (like the ones relating to culture), at a more heuristic one.

Finding the right information to strategically run your business has never been easy. But not to do so is to fly blind.

Next Steps

The executives of firms across the globe need help. The challenges they face are complex and in many cases have the potential to cause mortal harm. While much has been written about the GKE from the thirty thousand foot level, executives need practical guidance.

I've only touched upon the issues that will affect organizations working in the GKE There is a great deal of research and thinking that still needs to be done on how to best exploit the opportunities. The U.S. in particular – because of the size of its economy – is late to grapple with the implications of the GKE.

One last thought: Over the last few years there has been much gnashing of teeth regarding the future of knowledge management as a practice. Even though these are early days in the understanding the GKE within the knowledge management field, there is a great opportunity for the practice of knowledge management to reassert itself and to become much more tied to value-generating activities. I, and others, are seeing a tentative but unmistakable renaissance in interest in knowledge management. I believe it's because companies are beginning to understand the challenges of the GKE and see knowledge management, however it may be called or understood, as an important component of any response to that challenge. I also believe that that the practice of knowledge management will, itself, have to change to adapt to the requirements of the GKE. But that is the subject for another paper.

References

Anonymous, "Smartdust", Retrieved February 12, 2005 from http://en.wikipedia.org/wiki/Smart_dust

Baum, Dan (2005). "Battle Lessons: What the generals don't know", *The New Yorker*, January 17, 2005.

Byrne, John A. (2000). "Today Mexico. Tomorrow…", *BusinessWeek*, April 10, 2000.

Collins, James C. and Porras, Jerry I. (1997). *Built to Last: Successful Habits of Visionary Companies*. HarperBusiness.

Doz, Yves and Santos, Jose and Williamson, Peter (2001). *From Global to Metanational*. Harvard Business School Press.

Global Business Network (2003). *GenerationNext*. GBN

Hagel, John III (2002). *Out of the Box: Strategies for Achieving Profits Today and Growth Tomorrow Through Web Services*. Harvard Business School Press.

Holden, Nigel J. (2002). *Cross-cultural Management: A Knowledge Management Perspective*. Financial Times Prentice Hall

Kaplan, Robert S. and Norton, David P. (1996). *The Balanced Scorecard: Translating Strategy Into Action*. Harvard Business School Press.

Kim, Chan W. and Mauborgne, Renee (2005). *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Harvard Business School Press.

Knapp, Louise (2001). "Army Intranet: World's Largest", *Wired News*. Retrieved February 12, 2005 from http://www.wired.com/news/technology/0,1282,48183,00.html

Lev, Baruch (2000). "Knowledge and Shareholder Value." Retrieved February 10, 2005 from www.stern.nyu.edu/~b**lev**/knowledge&shareholdervalue.doc

Malone, Thomas W. (2004). *The Future of Work: How the New Order of Business Will Shape Your Organization, Your Management Style, and Your Life.* Harvard Business School Press