

## Keywords

knowledge management, business performance management

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# Creating a Change Management Knowledge Infrastructure

Conventional training programs were designed for predictable, stable environments, not for times of rapid change. Fortunately, the same technological soup that gave rise to much of the current malaise now provides a means for personalized just-in-time knowledge that adapts to change instantly and with minimal demand on the employee's time.

## Aufbau einer Wissensinfrastruktur für Veränderungsprozesse

### Summary

Bisher wurden Trainingsmaßnahmen für vorhersagbare und stabile Umgebungen entwickelt, nicht für Zeiten des rapiden Wandels. Glücklicherweise ist die technologische Suppe, die uns diese gegenwärtige Malaise eingebrockt hat, zugleich auch die Lösung für personalisiertes Just-in-time-Wissen, das sich an den Wandel anpasst und nur einen geringen Zeitaufwand der Mitarbeiter beansprucht.

### Stichworte

Wissensmanagement, Business Performance Management

## 1. Riding the Waves of Change

We're living in challenging times. The corporate world is changing at an ever-increasing pace, so much so that the only constant is change itself. In order to remain competitive, corporate managers must adjust and compensate in real time to succeeding waves of transformation that pound on us from both outside and within.

Change management techniques are constrained to keep up. From technology to global competition to shifting social and cultural realities, individual businesses are facing a turbulent managerial environment in continuous flux with no "steady state" in sight. Conventional training programs, designed for calmer waters and more predictable environments, are inadequate to the task of negotiating these oncoming waves of change. The challenge is to navigate the white-waters of uncertainty with minimal trauma and maximum stability.

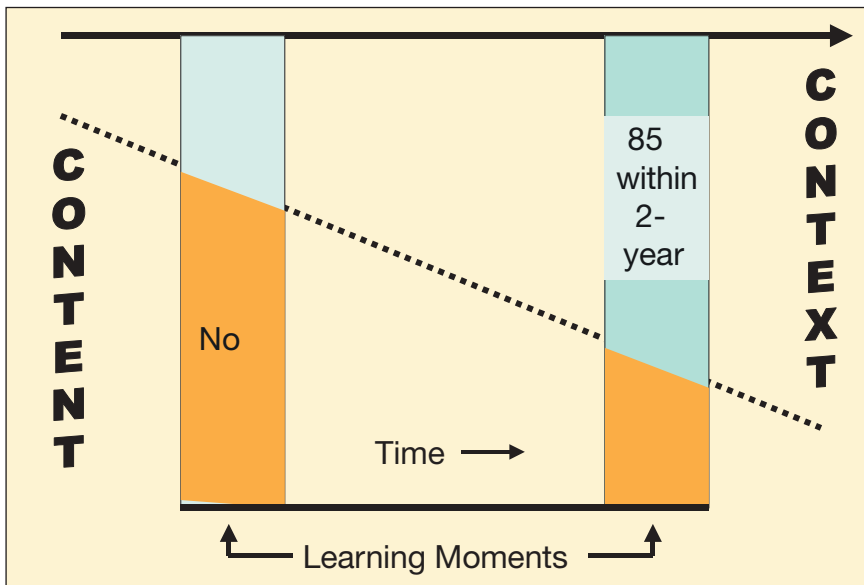
There is an answer to this dilemma, an answer that springs from the very technologi-

cal soup that gave rise to much of the current malaise. For businesses to successfully manage the oncoming waves of change, new technologies are available to assist an organization's managers to gain the new knowledge required to compensate for those waves in a manner that adjusts to change instantly and with minimal demand on the employee's time.

How does it work? Today's corporation is in many ways like an ocean liner encountering changing seas and unpredictable waves. Relatively recent technologies now allow large ships to counteract that condition with stabilizers that instantly react to and compensate for new wave patterns. The ship not only remains on course, but it does so with minimal discomfort for all of those on board. The same can be true for an organization's knowledge management systems.

## 2. Corporate Wisdom

A revolutionary change is already underway in the form of the increasing convergence of human resources, knowledge management, performance support, and learning techno-



**Abbildung 1: Research from our Corporate Partners: 85% of Harvard Business School Publishing's top eLearning customers 4Ppredict that within 2-5 years context will be more important than content.**

logy. When the product of this new convergence of knowledge and technology is infused with corporate vision and strategy, the result is "corporate wisdom," a state whereby the corporation is constantly harnessing all of the knowledge resources at its disposal – human, digital, inside, and outside – and making available just what is needed just when it is needed just to those who need it. Corporate wisdom flows from coherence, a state of orderliness that allows energy to flow without friction or resistance. Coherent behaviors – wherein all publics of an organization share a common vision – enable organizations to manage change with minimal friction through the creation of personalized performance support systems that mark a revolutionary turning point in the long history of education.

One of the features of building corporate wisdom using e-learning is a move from mission alignment to mission coherence throughout the organization. In the present time we may think of the internal dissemination of corporate vision as a light bulb, radiating photons randomly in all directions. There is little focus to such a process. The "sharing" of vision is mandated, imposed from above, and all too often the attempt to influence behavior breaks down as it cascades through the organization. It isn't assimilated, and as a result the stability of a coherent vision is often lacking, creating much stress in times of change.

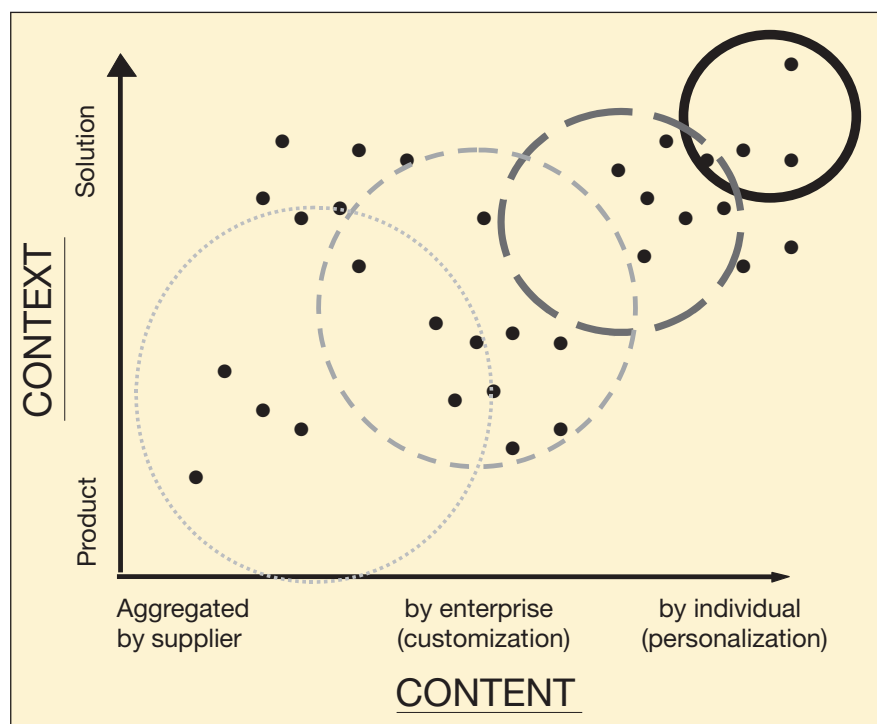
Contrast this scattered illumination to that of a laser. A very small laser pointer the size of a penlight produces a concentrated beam

of light thousands of times more powerful than the incandescent light bulb, because of the principle of coherence. Laser light is coherent light, the result of "macroscopic wave function." That means that all the photons in the laser are stimulated to line up and oscillate in an identical wave pattern, marching to the same drummer. We can say the photons are exhibiting the highest values of "teamwork."

In an organization, significant advantage flows to both the knowledge worker and the organization as a whole when a common vision and strategy is shared and "owned." Such orderliness is available only when the vision is acquired and metabolized from within. Today, knowledge management technologies are capable of embedding key elements of corporate vision and strategy into personalized knowledge management systems in the same way that vitamins are infused into corn flakes. We may not realize that the vitamins are there, but we benefit from their presence. It is now possible to design a personalized performance support learning system such that with each bite of knowledge, the vision and strategy of the organization are internalized and metabolized.

### 3. From Human Capital to Business Performance

In an organization, when all elements of the enterprise function in harmony around a common vision and strategy, inspired teamwork and integrated behavior at an intuitive, fundamental level will be the result. The power of the new performance support technologies is just beginning to be understood. As it evolves, the traditional academic model is being replaced. Today, and in the foreseeable future, context trumps content. We



**Abbildung 2: Skate to where the puck will be: The market is evolving and will favor content and technology providers that supply components of personalized solutions to enterprise customers, allowing them to integrate inside and outside content along with human and digital resources.**

### Content:

- Teacher
- Knowledge
- Epistemology

### Process:

- Teaching
- Technology
- Pedagogy

## Essentials of Learning

### Learner:

- Capacity to know
- Synthesis
- Ontology

**Abbildung 3: The learner – long ignored by education – will emerge as the driver of the process.**

are witnessing the emergence of a new and powerful just-in-time performance support model that promises to increase productivity by several orders of magnitude, the next logical step for the application of technology in learning, but a step that promises a giant leap ahead for organizations that understand the potential of the new knowledge management paradigm.

That paradigm reveals the interconnectedness of the learning and knowledge resources of an organization on the one hand and its business and HR management resources on the other. Already some organizations are beginning to link their HR systems with their learning software, and new enterprise-wide patterns begin to emerge. Data mining becomes possible at levels previously not possible, and automation of knowledge acquisition and redeployment is just around the corner. While the focus of the current time is on Human Capital Management, that focus is increasingly expanding to the more robust model of Business Performance Management. By aligning its knowledge resources, human resources and business resources through a common taxonomy, the enterprise acquires a level of coherence and agility heretofore unimaginable.

This new model of business performance management will do for the field of learning what the Industrial Revolution did for manufacturing. Companies whose leadership is awake to this dawning capability will be able to capitalize on a rare "Gutenberg moment" in human history to gain a competitive edge through intelligent deployment of

enlightened knowledge management solutions.

### **4. Extracting innovation from invention**

One of history's great lessons is that who ever controls the principal assets of the new age wins. Thus the landowners gained control in the Agricultural Age; those who owned the machines became the big winners of the Industrial Age; and software barons have become the frontrunners of the Information Age. In the current age the principal asset is knowledge. Those companies that develop the best systems to capture and focus the universe of internal and external knowledge resources in support of individual and enterprise performance will emerge the big winners.

Sometimes there is confusion as we move from one paradigm to another, and in that ambiguity the artifacts and metaphors of the old age can be mistakenly applied to the new one. The "horse-less carriage," for example, had nothing to do with a horse, but it provided a familiar framework to understand the automobile. In so-doing, however, that characterization greatly understated the potential of the new invention, which was capable of doing far more than a horse. By describing the new system (the automobile) in the context of the old system (the horse) its perceived utility was limited.

For example, it was not until delivery companies freed themselves from that kind of thinking that they were able to greatly expand their established delivery routes, which had been prescribed in an earlier time

to accommodate the limitations of the horse. Once hauling companies realized that a truck could run a lot longer and farther without stopping to rest or take water, they expanded their routes and the true value of the truck began to hit the company's bottom line.

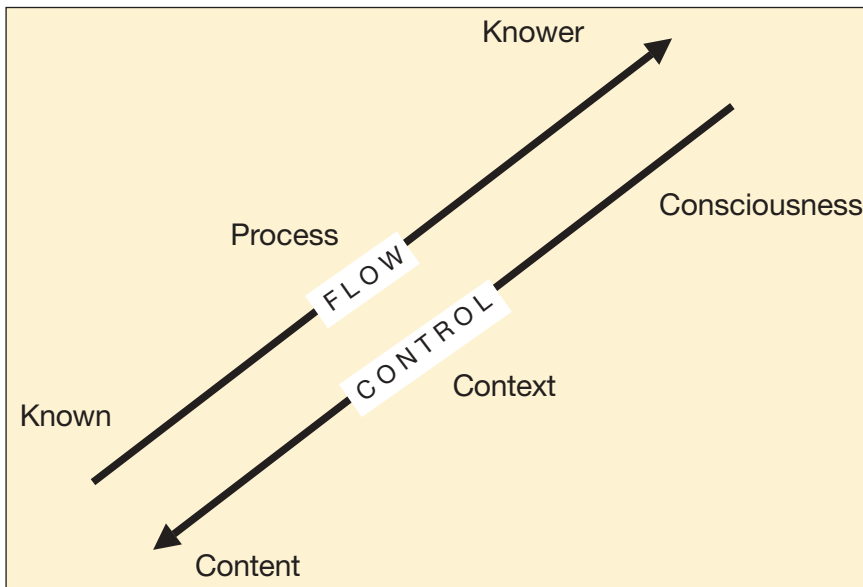
### **5. Breaking out of "Prisonware"**

As long as we remain prisoners of the previous paradigm we will simply not see the innovation available within the invention. In many cases traditional classroom-based courses have been shoveled onto the web and called "online learning." Knowledge workers are busy and rarely have the time to take traditional linear courses that "imprison" the learner in mandated, time-consuming pathways through the content. These courses may be thought of as "prisonware," since they arrest the learner's performance on the job for significant periods of time while he or she is attempting to gain the knowledge they require. Such labyrinthine courses may be useful in university programs where people have the time to devote to learning, but they are of questionable value as performance support tools in today's fast-paced workplace.

The online learning field today has been struggling to squeeze both courses and classrooms into the computer, adopting the academic model online. The university's metrics and rules of engagement have been carried over to the Internet. Like the horseless carriage of a century ago, the lexicon of today's eLearning is embedded in the previous paradigm: we call our enterprise performance support centers "corporate universities." They are not universities.

The sustainable model of eLearning for corporations is not a linear extension of the previous age. Like all revolutionary changes, the new technologies – properly deployed – render the previous model obsolete. The old model is left behind in favor of a newer and more agile one that works far better. There is no room in the workplace for the hundreds of years-old supplier-centric academic model.

The sustainable model of online learning requires re-centering our attention on the consumer of knowledge, on the individual learner or so-called knowledge worker. In the emerging model, the user is king, and context rules! A winning model will focus on personalized employee-driven learning to help knowledge workers decrease time to



**Abbildung 4: Turning the control over to the learner: The flow of content is from the SME (Subject Matter Expert – the “known”) to the learner, but the control of that flow will be context-driven by the learner. Water may originate in the reservoir, but when the user turns on the faucet that’s where the real action is. That’s where it gets used! The user decides how, how much, where and when.**

performance and increase productivity. The new model turns the controls over to the learner. While traditional universities may for the foreseeable future cling tenaciously to the productivity measures embedded in their roots, the learning metrics of the past have little value in a contemporary business environment. They are as useful as are the measurements of the post office when applied to the world of e-mail.

## 6. Real-time performance support—“just enough, just what I need”

“I’m in trouble,” she thought as she left the VP’s office. He was certainly nice about handing her this unexpected assignment at the last minute, but in the end the only thing that would matter is how well she handled it. A negotiation with an important software supplier was two days away. She had already written a briefing paper for her boss outlining the technology issues. She knew those well. No sweat. But now, she learned, her boss was called out of town she would be at the table, negotiating on behalf of her company. And while she knew the technology well, she knew nothing about the principles of negotiation.

Back at her desk she clicked on “preferences” and her company’s “knowledge map” – their competency taxonomy – immediately appeared. She selected “Negotiation,” and instantly her personal profile was updated.

When she closed the selection screen, new learning content on “negotiation” was already in “the well” – the portion of her screen where active documents appeared. Next, she searched on “negotiation” and selected “5-minute options.” Each of the links served up would be selected based on what she already knew and would lead to highly-targeted modules taking no more than five minutes to learn.

As she browsed through the initial selections, she drilled-down on some and rejected others. As she did that, the underlying learning engine made changes in her profile reflecting her choices, fine-tuning the scope of her knowledge needs. Within a few minutes, new selections were pushed to her desktop, much more targeted to her specific objectives. Of the tens of thousands of learning objects available on her company’s intranet and on the web on the general subject of “negotiation,” powerful personal knowledge filters were employed in the background to provide exactly what she needed. Thirty minutes later her phone rang. It was a friend wanting to confirm their lunch date. “Give me just a couple of minutes,” she replied. There remained one important unfinished bit of business. She clicked on the “collaborate” button and selected “mentors.” A list of in-house experts appeared, sorted according to the same competency taxonomy that had earlier presented digital content. Under “negotiation” she clicked on

the first name and sent a brief message asking for an afternoon phone conference to help her prepare for the negotiation. Before she hit the “send” button she clicked on the privacy button and selected the “share my knowledge map” option, so her new mentor could see what she had already examined. By the time they spoke that afternoon, her new mentor would understand her task, her background, and which learning materials she had already seen. She logged off and headed off for lunch feeling a lot more confident than she had 45 minutes earlier.

## 7. Just in Time, Just for Me

Here is a new way of presenting knowledge and information to busy professionals, a method that has nothing to do with the old academic model of “courses” and “grades” and everything to do with a new system of knowledge management that supports knowledge workers’ individual needs.

It relies on a powerful partnership that links the robust search engines, personal profile filters, a knowledge map or taxonomy, an index of indices to databases, and inference and collaborative technologies together with the existing knowledge of the worker. Instead of assembling disparate learners in the same room at a common time and force-feeding information as though each has identical prior knowledge, learning styles and knowledge needs, this new system of learning starts with the premise that everyone has different prior knowledge and different needs and therefore optimal learning – high-performance learning – requires a much more personalized and productive solution.

The new system is based on the notion that, taken collectively, the time of the learners is more important and less available than the time of the subject matter expert. Rather than building a structure around the provider, the new paradigm builds a support system around the learner.

It is only a shift in focus, a shift in emphasis... but it is a shift that is sufficient to turn the entire learning industry on its side, to reset everything we have done in the past to zero. The shift marks the beginning of a new age in learning and knowledge management, an age that can see an increase in learning productivity that parallels the 5000-percent productivity increase of the industrial revolution over cottage industries. The entire field of learning is standing at the door of a “Gutenberg Moment.”

<i>Dimension</i>	"Traditional" eLearning	Sustainable Model
<i>Content:</i>	SKILLS, FORMAL	CONCEPTUAL, INFORMAL
<i>Basic unit:</i>	COURSE	JUST ENOUGH
<i>Process:</i>	READ & LISTEN	INTERACT
<i>Schedule:</i>	ONLINE CLASSES	JUST IN TIME, JUST FOR ME
<i>Dimensions set by:</i>	FACULTY, UNIVERSITY	THE LEARNER
<i>Media:</i>	STATIC, HTML	DYNAMIC, XML
<i>Location:</i>	FIXED POINT	ANYWHERE
<i>Length:</i>	SPECIFIC START & END	ONGOING
<i>Credential:</i>	CERTIFICATE	COMPETENCY MAP
<i>Interactivity:</i>	INDIVIDUAL	COLLABORATIVE
<i>Delivery:</i>	INTERNET SERVER	LMS-CDS+ENTERPRISE SOFTWARE
<i>Drivers:</i>	CURRICULUM	BUSINESS EVENT
<i>Push:</i>	REQUESTED	DYNAMIC, INFERRED
<i>Outcomes, metrics:</i>	CONTENT-BASED	PERFORMANCE BASED
<i>Client:</i>	KNOWLEDGE WORKER	KNOWLEDGE WARRIOR

**Abbildung 5: The Enterprise eLearning Ecosystem**

Despite the technological sophistication of the 21st century, at our core we all remain hunters and gatherers, relentlessly hunting for information and gathering bits of knowledge. Researchers have found that we spend a high percentage of our time – some estimate it at 11 percent – just seeking out the information we need to do our jobs. What knowledge workers need is not just a way of accessing data, but of filtering data so the information they receive is exactly the information they require, when they need it. Beyond the histrionics of the dot.com marketplace that took its toll on a number of early eLearning pioneers is the longer-term reality: competitiveness means using technology to do more with less. On-the-job performance-based learning is no longer optional; indeed, it is becoming the new currency of both recruitment and retention. Corporate spending on technology-enabled learning is on the rise.

But there is also much confusion and uncertainty as the traditional model of teaching slowly yields to a new learning model. This transition has not yet extracted the innovation from the invention, as elements of the old (teaching) paradigm are used to attempt to jump-start the new (learning) one. It doesn't work well, and it creates confusion.

For the first time in history, the individual learner is poised both logically and technologically to take charge of the learning process. Instead of the faculty and training departments deciding what knowledge is to be

imparted, the learners themselves are emerging as the packagers and organizers of their own knowledge requirements. They are not starting from zero; that's why we call them knowledge workers. Utilizing a new generation of performance support systems, employees will select or even be pushed what they need to know as the need arises. They are the best judge of how much additional depth they require and how much time they need to spend on a given knowledge topic to accomplish the business task at hand.

For corporate universities and training departments, a unique opportunity now exists to empower the knowledge warrior that lurks within every knowledge worker. While HR managers struggle to navigate the whitewater of change to steer a transitional path from "just-in-case" courses to "just-in-time" strategic support, a new fusion model for personalized employee-driven learning has begun to emerge.

Five integrated components—networks, databases, computers, search and inference engines, and people (other learners, mentors, coaches) united through a common taxonomy or competency map, jointly create the new solution that reinforces the corporate knowledge worker's ability to not only survive, but to win more often.

Consistent with this evolutionary model, Harvard Business School Publishing's eLearning programs have been following a defined trajectory toward smaller, more gra-

nular performance support tools and programs. Developed in partnership with some of the best companies in the world, and using top content experts in the management field, HBSP serves the day to day performance support needs of 2-million managers worldwide.

Right now few if any organizations have the entire solution in place to provide the full value of personalized learning. However, HBSP has embedded important elements of the new model in the content of our programs for busy managers. These programs are designed to be very short (usually less than 10 minutes per section) and highly targeted on a need of the moment. HBSP also helps customers integrate these programs in their business performance management environment.

## 8. Conclusion

Learning is on a natural evolutionary path. Once understood, the path is predictable, and it will drive the vision, strategy and deployment for acquisition and distribution of knowledge. We're on the threshold of the next stage of evolution in learning. Those who can see it will be able to harness its power.

There is little doubt that those organizations that focus on increasing coherence and reducing time to task through these new online solutions will be seen as the next decade's most successful business organizations.

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Jonathon David Levy is vice-president for Online Learning Programs at Harvard Business School Publishing Corporation. A philosopher and futurist who walks the talk, his professional credentials include leadership positions as an educator, technologist, and entrepreneur. Jonathon was assistant dean and founding director of the Office of Distance Learning at Cornell University, where he won three international awards for visionary leadership and outstanding achievement. A champion of the evolution of knowledge management as a key tool for competitiveness and profitability, he has assisted corporations, governments, and universities throughout the world and is frequent speaker at international business and educational conferences. White papers may be downloaded from his personal web page at <http://www.people.cornell.edu/pages/jl63/> 300 North Beacon Street, Watertown, MA 02472 USA  
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