Extreme Competition

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Latest book:
Extreme Competition: Innovation and the Great 21st Century Business Reformation,
Meghan-Kiffer Press.
www.mkpress.com

On the Road to Tacit Interaction Support

According to scientist and philosopher Michael Polanyi, "We know more than we can tell." Tacit knowledge involves habits and culture that we do not recognize in ourselves. In a business, it's embedded in work teams, and is hard to identify, and even harder to value. Tacit knowledge is know-how, versus know-what and know-why, involving personal experience that cannot be written down or codified. For example, knowing how to ride a bicycle cannot be learned from simply reading a book. Tacit knowledge is the essence of the innovation process. Tacit knowledge is difficult to transfer to others because the knowledge holders are unaware of, or unable to communicate, what they know, making tacit knowledge a strategic source of competitive advantage. This means that people with tacit knowledge must interact with one another, which, in turn, means developing the capabilities to support tacit interactions.

The Need for Tacit Tools

With just 15% or so of the U.S. workforce involved in manufacturing or in extracting raw materials, the bulk of today's service-oriented workforce is involved in interactions.
The management consulting firm, McKinsey & Company, describes tacit interactions as "new territory" requiring new technologies for support. In "The next revolution in interactions," McKinsey researchers write, "Companies will have to think differently about the way they prioritize their investments in technology. On the whole, such investments are now intended largely to boost the performance of transformational activities – manufacturing, construction, and so on – or of transactional ones. Companies invest far less to support tacit tasks. So they must shift more of their IT dollars to tacit tools, even while they still try to get whatever additional (though declining) improvements can be had, in particular, from streamlining transactions."

In the real-time age of globalization, the process-managed enterprise will dominate by implementing radically new means of support for tacit interactions. Winning companies will deploy innovative information technology tools to manage human-driven processes, capture information deeply personal to each participant, and help them use this information both individually and collaboratively. With a new breed of software – the Human Interaction Management System – smart companies will be able to optimize the human-driven processes that are, in the end, their jobs – and the next source of competitive advantage. Human Interaction Management can permit companies to establish a fundamentally human integration (versus machine integration) with their customers, employees, and trading partners.

How It Fits Together in a Value Stack

As shown in the figure below, production and transaction management systems are as important as ever to bring about *transactional efficiency* in modern companies. Service-oriented architecture (SOA) brings great *software development efficiency* to IT. As implemented today, workflow and integration style BPM has mainly brought efficiency to IT as well. As Paul Harmon reported in his March, 2008 *BP Trends* advisory, "Most BPMS products, to date, are, in fact, being applied to workflow or EAI projects that could have been done in 2000. They are done by IT, and IT manages them." On the other hand, the true value potential of BPM is *to execute on*

business strategy with great agility by giving the capability to business people to directly manage their business processes. Companies climbing the BPM maturity ladder are now on that path. Atop the value stack, human interaction management systems promise to support the most valued prize in business, *innovation*, a prize that falls squarely in the domain of humans and their tacit interactions.

Figure caveat: This figure is not a "technology stack," it's a business value stack enabled by the technologies shown. Legacy systems don't require SOA. SOA doesn't require BPM. BPM doesn't require SOA. HIM requires neither BPM nor SOA, and is generally orthogonal to them. These facts don't mean that these business-supporting technologies cannot coalesce into a business support system that's greater than its parts.

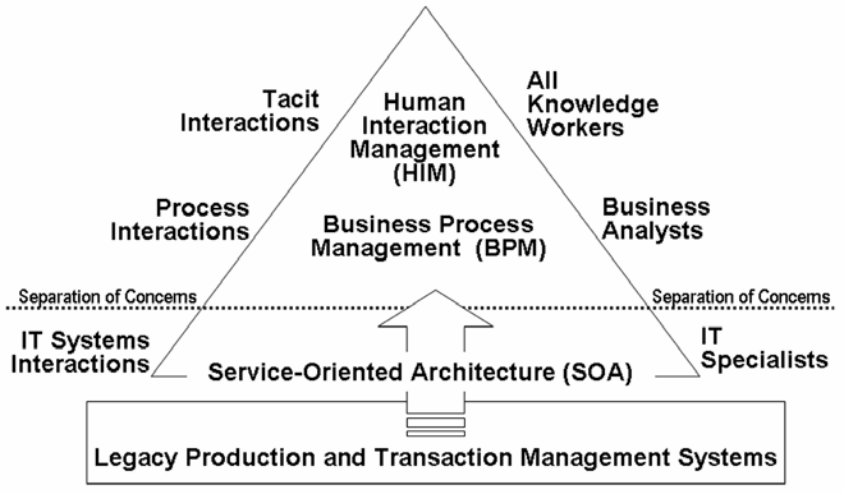

Figure 1. The Business/Technology Value Stack

Production and transaction processing systems will continue to be refined and further developed, and over time will likely be rearchitected from the ground up, using the principles of software as a service. But what makes SOA the hottest item in IT these days is that it offers an opportunity for freeing processes embedded in existing monolithic enterprise systems so that they can be loosely coupled, bundled, and rebundled for higher business purposes (think of it as EAI, *the next generation*). SOA is a great step forward in the race for efficiency in IT. The race began in the 1960s with the advent of object-oriented programming, and, later on, component-based software, and, finally, Web services that transform those components as "software as a service," native to the Internet. The IT industry is so enamored with SOA that from the perspective of many, it is the end unto itself. To others, it's simply Simula (the first object-oriented programming language) over IP (Internet protocol), the latest step in the evolution of object-orientation.

SOA, however, remains in the realm of software, not business. What's really needed is a capability for business analysts to increasingly take control and manage their own business processes with IT playing a supporting rather than dominating role – just as they are not dependent on IT for numerical calculations with their spreadsheets. That's where the "separation of concerns" comes in. Although we are talking about the complete business/technology value stack, differing perspectives, tools, and methods are needed for the people whose roles are shown on the right side of the figure. For example, the business analyst should be able to focus all his or her attention on business processes, without having to delve into the interworkings of the SOA software. That's where the BPM, the BPMS, and process-oriented architecture (POA) come in.

As we move up the value stack to BPM and the concerns of the business analyst, it becomes clear that process conception, analysis, and development represent a different set of artifacts and constructs than those found in software development. In his landmark book, *Business Process*

Management: A Rigorous Approach, Martyn Ould explains, "Simply extending our information-based methods simply won't work – they don't have the necessary concepts at their heart. We're moving from the Information Age to the Process Age. We need purpose-built methods for working with processes to replace our methods for working with information." Processes need an architecture and a paradigm of their own (POA), not a software-oriented paradigm. So, one can think of SOA as an underlying *technical operating system* for the Process-Oriented Architecture and the BPMS.

But what about support for collaborative, human-driven work processes, processes that involve innovation, depend on tacit interaction, and are dynamically shaped by the participants? Just as business processes need an architecture of their own to model business process interactions, tacit interactions also need a paradigm of their own – and these human interactions are the most daunting of all processes. Most of today's BPM solutions can take care of 80% of the predetermined system-to-system scenarios with predefined workflow and inter-application transaction management. Such capabilities are needed to help a company put its "house in order." However, when you consider *collaborative* activities and the fact that, as Xerox's former Chief Scientist, John Seely Brown, explains, "processes don't do work, people do," there's no doubt that what's now needed isn't more and more software for animating computers; it's software for animating *tacit interactions*, where work teams may be scattered across the globe. While interwoven with production and transactional processes, human-driven processes span your suppliers, your suppliers' suppliers, your employees, your R&D labs, your customers and your customers' customers, forming the DNA of a complete, customer-driven value delivery system. Human interaction management requires fusing traditional collaboration and information tools (e.g., groupware, document management, knowledge management, and workflow) and extending them with a complete theory of tacit interactions if we are to build systems that can support the way people actually work, versus treating them as cogs in an information machine.

To take on human interaction management demands drawing on principles from the computer science of speech acts and conversations for action, autopoiesis, and other principles drawn from cognitive theory, psychology, learning theory, biomimicry and social systems theory. In short, a complete theory of how humans actually work must underpin human interaction management. In *Human Interactions: The Heart and Soul of Business Process Management,* Keith Harrison-Broninski writes, "We must find a way of thinking about human-driven processes that allows controlled management of change – something that is innate in all interaction work, as human-driven work processes evolve continuously throughout their lifetime."

So there you have it, an enterprise architecture separated into three areas of concern – computer systems, business processes, and tacit interactions – each with its own architecture and paradigm, yet woven together to form the "New IT" that's needed to compete in the 21st century. As in all good architecture, the system as a whole can be viewed from each stakeholder's perspective: the IT Specialist, the Business Analyst, and the Knowledge Worker. Along with his or her unique perspective, each stakeholder requires an appropriate set of tools, artifacts, and renderings to interact with the overall system of systems.

A company won't be adopting the New IT because it is interesting or novel, it will adopt the New IT because it must. What's driving the New IT isn't technology; it's the reality of a changed world of fast-paced total global competition. There's no denying that fact, just as there is no denying that a company must connect and collaborate in order to pursue its future.