



Extreme Competition

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Innovation's Child



Thousands of years ago, the first man discovered how to make fire. He was probably burned at the stake he had taught his brothers to light. He was considered an evildoer who had dealt with a demon mankind dreaded. But thereafter men had fire to keep them warm, to cook their food, to light their caves. He had left them a gift they had not conceived and he had lifted darkness off the earth. Centuries later, the first man invented the wheel. He was probably torn on the rack he had taught his brothers to build. He was considered a transgressor who ventured into forbidden territory. But thereafter, men could travel past any horizon. He had left them a gift they had not conceived and he had opened the roads of the world.

—*The Fountainhead*.

What's New About New?

A dictionary definition of innovation is “introducing something new.” But these days, with the rise of the buzzword “innovation” in the business literature, you’d be led to think that innovation itself is something *new*. Here we go again with yet another hype curve, the Innovation Hype Curve.

Why all the newfound interest in innovation? In short, *globalization*. Executives fear their companies becoming *commoditized* as a result of *total global competition*, and they desperately seek new ways of distinguishing their products and services so they can continue to earn healthy margins. Innovation is such a pressing topic these days that over 3,000 books on various aspects of the subject have been published since 2000. Indeed, business leaders

have no shortage of often self-appointed gurus ready to advise them about this new, new thing called innovation. But wait, innovation isn't new at all. We all know of singular moments of innovation that changed the course of civilization. Think the 1600s and Sir Isaac Newton, the apple tree and *gravity*. With regard to "business innovation," think the 1920s and Joseph Schumpeter's *creative destruction*, where sparks of radical innovation by entrepreneurs topple incumbents and drive long-term economic growth.

So what's new about new? It turns out to be all about *context*. In my book, *Extreme Competition*, I describe six kinds of business innovation. There are so many kinds of innovation that a company must rethink which kinds of innovation are now perhaps more critical than others in today's competitive context. Though in no way intended to be exhaustive, let's explore some of the most relevant dimensions of business innovation in the early 21st century:

- Globalization and the Commoditization of Knowledge
- Open Innovation
- Customer-Driven Innovation (VOC redux)
- The Emerging Science of Innovation

Globalization and the Commoditization of Knowledge

In their new book, *The World is Flat?*, Ronald Aronica and Mtetwa Ramdoo proclaim, "Globalization is the greatest reorganization of the world since the Industrial Revolution." Andy Grove, co-founder of Intel, summarized what that means in terms of competitive advantage, "Although mainstream economic thought holds that America's history of creativity and entrepreneurialism will allow it to adapt to the rise of such emerging economies as India and China, I think that is so much wishful thinking. Globalization will not only finish off what's left of American manufacturing, but will turn so-called knowledge workers – what was supposed to be America's competitive advantage – into just another global commodity."

What's especially noteworthy is that necessity is the mother of invention. Watch for innovation in emerging markets, from the bottom of the pyramid, to create *blowback* in developed markets. When innovations happen in China and India, such as the \$100 PC or the \$10,000 luxury car, or the breakthrough in affordable solar power, the innovators will take their babies global. Caveat competitors worldwide.

China's President Hu Jintao declared 2006 as the "Year of Innovation," and the government is exhorting companies to transform China by focusing on the lab as well as the factory. To make that happen, Beijing has pledged to boost funding to \$115 billion a year for the next decade, raising R&D spending from 1% to 2.5% of GDP by 2020. With the commoditization of knowledge, and Chindia (China and India) turning out many times more science and technology graduates than America, what can companies do to cling to their competitive advantage? For starters, let's take a peek at the concept of open innovation, before moving on to the crux of 21st century innovation, customer-driven innovation.

Open Innovation

The brave new world of widely distributed knowledge has led to the business proposition of "open innovation." No longer can companies win the innovation arms race from the inside-out (internal R&D). They should, instead, buy or license innovations (e.g., patents, processes, inventions, etc.) from external knowledge sources, turning the table to outside-in innovation. In turn, internal inventions should be considered for taking outside the company through licensing, joint ventures, spin-offs, and the like. Procter & Gamble, the poster child for open innovation, is determined to move to the position where half of its ongoing stream of innovation comes from outside the company. P&G's "Connect and Develop" is powered by yet2.com, a global online marketplace designed to assist companies that want to sell, license, or leverage intellectual property. Similar offerings are available through NineSigma, InnoCentive, and FellowForce.



Figure 1 Sampling of Yet2.com Customers

Some companies have established “listening posts” in order to access a tremendous amount of tacit knowledge that could have a significant impact on innovation inside their companies. For instance, BMW established several listening posts in the United States and in Japan. A listening post is usually defined as a decentralized R&D operation with various means for knowledge sourcing. On the other hand, the listening function is not necessarily restricted to R&D outposts. All organizational units, such as operations and local sales, have the potential to be the eyes and ears of a company.

And then there’s IBM’s Global Innovation Jams. In 2006, IBM issued an online brainstorming invitation to its 350,000 employees worldwide, and its clients and business partners. IBM was seeking the wisdom of crowds. The company exposed its emerging technologies, from supercomputing to avatars. IBM managers then used automation to winnow the 37,000 ideas they received down to 300 well-defined ideas. Finally, more than 50 employees spent a week at IBM’s Watson Research Center in New York further combining and trimming these top ideas down to 30. And now the company is spending \$100 million to develop the ideas that came from the Jam.



Figure 2 IBM's Innovation Jam

Don't confuse open innovation with open source, free software. Open innovation is all about the money to be made. In short, in today's wired world, knowledge can be transferred so easily that it seems impossible for companies to stop it. Instead they must learn to harness this powerful new source of innovation. 3M's Geoffrey Nickelson once described the critical point, "Research is the transformation of money into knowledge. Innovation is the transformation of knowledge into money." Open innovation changes the game of where ideas come from; they are no longer the exclusive property of internal R&D, marketing, and product development organizations. In the 21st century wired world, smart companies are going to Chindia and beyond in search of breakthrough innovations.

Customer-Driven Innovation (VOC redux)

In 2001, the late Peter Drucker gave us a hint about the next critical source of innovation, "Whoever has the information has the power. Power is thus shifting to the customer, be it another business or the ultimate consumer. Specifically, that means the supplier, e.g., the manufacturer, will cease to be a seller and instead become a buyer for the customer."¹ If you consider that innovation is a team sport, and that the most important players are your customers, then innovation requires new, robust forms of collaboration with your customers. After all, inventions and other forms of innovation, such as process and business model innovations, are in the eye of the beholder, in the eyes of your customers. Back office process improvements may save you money, but you cannot save your way to market leadership. It's your customer-facing processes that are visible and count the most. And that's where business intelligence and driving conversations with your customers come in.

Chicago Strategy Associates summarizes the importance of the customer in driving innovation, "Great entrepreneurs launch their businesses based on *customer insights*. In many cases they are frustrated customers. For example, a building contractor takes a family driving trip in the early 1950s and is outraged by the conditions and prices of accommodations in tourist cottages. Thus began Holiday Inn. Two lovers at Stanford grow frustrated with their email systems' inability to communicate. They seize upon a product developed by a kindred spirit in the Department of Medicine, leading eventually to commercialization of something called a router and a company named Cisco."

The Industrial Age was about mass production. Innovation was R&D-driven, from the inside-out. It was about supply-push. The Customer Age is about mass customization. Innovation must now be

driven from the outside-in. It's now about demand-pull. It is about turning a company, and its entire value chain, over to the command and control of customers. This new reality demands a shift in our thinking about innovation. Winning companies will be so close to their customers, they will be able to anticipate their needs, even before their customers do, and then turn to open innovation to find compelling value to meet those needs. That, in turn, as pointed out by Drucker, means becoming a buyer for your customers. That means "business mashups" where your company joins forces with suppliers, sometimes even your competitors, to expand your product and services offerings, blurring industry boundaries.

Because your customers are your only true asset in the new world of low-cost suppliers, your business model will likely need to be expanded so that you can fulfill as many of your customers' needs as possible. For example, the Virgin Group has established over 200 companies to meet ever more needs of its customer base. The group entered into a *coopetition* agreement with Sprint, and became the 10th largest cell phone provider in the U.S. over a short, 18-month period. Wal-Mart is getting into banking and opening health clinics in its stores. Industry boundaries will continue to blur as smart companies strive to play an increasing role in meeting *all* they can of their customers' needs. This approach is indeed a major growth strategy in a world of declining margins and commoditization. What business are you in? It had better be the *customer business!*

Now the question is, how do you get ever closer to your customers? One approach near and dear to BPM professionals everywhere is business intelligence. Another is the Voice of the Customer (VOC) redux. It means that now is the time to harness new means for giving your customers a voice. Back in the '90s, the voice of the customer was all the rage in business circles. It is a process discipline, a way for companies to gather customer insight to drive product and service requirements. Techniques include focus groups, individual interviews, contextual inquiry, ethnographic techniques, etc. Each technique involves a series of structured, in-depth interviews that focus on the customers' experiences with current products or alternatives within the category under consideration. Needs statements are then extracted, organized into a more usable hierarchy, and then prioritized by the customers. Sounds logical enough.

But VOC got lost amidst the dot-com boom, abundant cheap-labor/supply resources from Asia, and emerging markets as globalization reached a fever pitch. Somewhere along the way, pulling out all the stops to delight the existing customer base got lost. But today, VOC is again moving front and center.

Even so, customers often do not know, or cannot communicate effectively, their actual needs and requirements. Because of this, businesses need to find more creative methods of understanding customer requirements. That's why BPM companies are now emphasizing business intelligence everywhere and integrating Web 2.0 communications technologies into their offerings. That's why leading companies are creating blogs and Wikis, placing their avatars in Second Life and taking their businesses to MySpace.

But you won't want to just open up these new Web 2.0 channels of communication and turn up the volume. You'll want to have business intelligence embedded throughout your process management systems, and forge *meaningful collaborations* using human interaction management systems (HIMS) to tame the chaos and noise inherent in Web 2.0 technologies. After all, the needed collaborations with customers are not one-off market research endeavors; they are ongoing dialogues over the lifetime of each customer.

Today's customers want it all, not just the buying transaction. Whether it is buying a PC, spare-parts, engineering services, or life insurance, customers want complete care throughout the consumption life cycle – from discovery all the way through support after the sale or contract. Today, customers demand the best deal, the best service, and solution-centered support that can only be optimized by true customer collaboration. Competing for the future is about the total customer experience, and human interaction management is the key to that experience.

Not only do companies need new means for listening to, and collaborating with, customers, they also need to act on the information thus derived. To do this, they must hone the innovation process itself using the emerging science of innovation if they want to deliver ever more compelling value to their customers.

Emerging Science of Innovation

Innovation does happen. It's just that today it seems almost totally haphazard. With a dismal ROI on most innovation initiatives, executives treat the innovation buzzword with caution and tight wallets. Doblin's Larry Keeley describes the recent state of business innovation, "Since innovation fails about 96% of the time, it seems self-evident that the field has advanced to about the same state as medicine when leeches, liniments, and mystery potions were the sophisticated treatments of the day."

Leading companies are taking the unsystematic approach to business innovation and turning it into a repeatable, managed business processes (think Innovation Process Management or IPM). IPM can be compared to the rise of the total quality movement in the 1980s, where leaders such as Toyota taught the lesson of quality-or-else. It turns out that quality is all about *process*. Ditto for innovation.

Some companies have already implemented systematic approaches to innovation process management. GE calls it CENCOR (calibrate, explore, create, organize, and realize). The Mayo Clinic calls it SPARC (see, plan, act, refine, communicate). The renowned design firm, Doblin, uses an Innovation Landscape™ diagnostic method to show 10 types of innovation and reveal that the most sophisticated innovation strategies combine these in thoughtful ways. They permit a view over time that allows basic innovation patterns to leap out. Landscapes are especially useful if you want to build a good innovation system. They can help identify the right type, number, and rate of innovations to help shape a customer-driven innovation strategy.

What about Six Sigma? Is it at odds with innovation, as reported in *Business Week* in a June 2007 issue, "3M's Innovation Crisis: How Six Sigma Almost Smothered Its Idea Culture"? The contrary position is that, by making execution regarding a new idea more predictable, Six Sigma can help to mitigate risk, going hand-in-hand with innovation management. Countless great products have fallen flat not because of design issues, but because of the failure to hit the window in the market for introducing the product, or simply the inability to supply the product reliably.

Consider the usefulness of applying Design for Six Sigma (DFSS) to the innovation process itself. DFSS seeks to avoid process problems by using systems engineering techniques at the outset. These techniques include tools and processes to predict, model, and simulate the product delivery system to ensure customer satisfaction with the proposed solution. Also keep in mind that innovation isn't a big-bang event; it's a lifecycle that starts with an idea and continues until the product or service is ultimately phased out, which could be years after the initial idea. Thus the Six Sigma method, DMAIC (Define – Measure – Analyze – Improve – Control), complements innovation with incremental improvements throughout the lifecycle. It's the difference between hitting home runs versus singles and doubles in baseball.

Innovation isn't just about some star in the R&D suite delivering a radical breakthrough, a home run, every now and then. What's wrong with hitting singles and doubles with regularity? Isn't it time that we stopped just talking about out-of-the-park innovation and got serious about developing the *capability* required to manage the complete innovation lifecycle? In his new book, *The Greatest Innovation Since the Assembly Line*, Michael Hugos explains, "The agile enterprise is an enterprise that has learned how to make profit by many small adjustments [singles and doubles] and some occasional big wins [home runs]. Soon enough those companies that cannot earn profits from constant small adjustments will hardly be profitable at all. The effect of a

thousand small adjustments in the operating processes of a company, as business conditions change day-to-day and month-to-month. is analogous to the effect of compound interest. An agile organization constantly makes many small adjustments to better respond to its changing environment and in doing so it reduces costs and increases revenues every day. No one adjustment by itself may be all that significant, but the cumulative effect over time is enormous.”

But when it comes to home runs, or harvesting really big ideas, progressive companies are approaching innovation as a rigorous method of *problem solving*. One such approach is TRIZ (pronounced treez), a Russian acronym for “Teoriya Resheniya Izobretatelskikh Zadatch,” or theory of inventive problem solving, and centers on the contradictions among two or more elements. It was developed by Genrich Altshuller and his colleagues starting in 1946. TRIZ, in contrast to techniques such as brainstorming, which is centered on random idea generation, aims to create an algorithmic approach to the invention of new systems and the refinement of old systems. TRIZ is sometimes used in conjunction with DFSS. To learn much more about TRIZ, search the term at BPTrends and you’ll find a complete series of insightful articles written by CSC’s Howard Smith.

TRIZ, developed in the 1940s, bears witness that the emerging science of innovation isn’t as much the emergence of new tools, methods, and techniques, but, instead, the selection of the *appropriate* tools, methods, and techniques for tackling the haphazardness of the innovation process. A number of interesting mind-mapping and idea management methods are now available in software (including Web 2.0 offerings) that can help build a systematic innovation capability.

The need for a disciplined approach to innovation has been recognized by a number of universities that are blending their industrial design schools (D-schools) with their MBA programs (see “The MBA is Dead, Long Live the MBI,” BPTrends column, Dec., 2006: <http://tinyurl.com/2rmn2a>). Grad schools will one day teach an entire curriculum around managing innovation. In short, it’s time to make innovation a managed business process. It’s time to develop an innovation maturity model (IMM), for innovation is no longer an episodic event, it’s a journey.

Shift Happens

This column summarized and condensed just a few key innovation issues companies face as they position themselves for total global competition, stressing the need for systematic innovation processes. Forget the old idea that innovation simply means product innovation. Innovation has been around since the harnessing of fire by early man. A new generation of innovation in the material world began when Sir Isaac Newton watched the apple fall from the tree. Yet another new generation of business innovation began when Joseph Schumpeter observed and described capitalism’s power of creative destruction.

Today, innovation’s child is *customer-driven process innovation*, the kind that can transform business models and strategies in the brave new world of total global competition – the kind of process innovation that can transform innovation itself, the kind of innovation that touches, and is driven by, your customers. It’s about new ways of entering new market channels, creating new value-adding services and new ways of anticipating unarticulated customer demands. You simply can’t do these things without process innovation that enables process collaboration across the globe.

It’s about climbing on the shoulders of others, which is exactly what the self-effacing inventor of the automatic electronic digital computer, Dr. John Vincent Atanasoff, described to me in 1981.² Atanasoff said that he didn’t really invent the digital computer in 1941; he just climbed on the shoulders of others. Then John Mauchly (remember the ENIAC?) read Atanasoff’s manuscript and climbed on his shoulders, and the rest is history. Of course, it was Bill Gates who ultimately transformed this digital knowledge into real money – that’s “business innovation.”

Oh my, with China, India, and the former Soviet Union opening up to capitalism, today we all have so many shoulders to climb on. Let the 21st century innovation games begin.



Dr. John Vincent Atanasoff (left), 1981

To start the process innovation conversation in your company, go to

www.mkpress.com/ShiftBPT.html

¹ Drucker, Peter, "Survey: The Near Future," The Economist, November 2, 2001.

² I've mentioned my visit with Dr. Atanasoff in 1981, to give us a reference to how much the world has changed in such a short time, in just part of one person's lifetime, with the advent of the electronic digital computer. While the transition from hunter-gatherers to the Agricultural Age took 3,000 years, the Industrial Age took just 300 years. The first computer ever sold didn't happen until I was six years old. So in the span of my life so far, we all have experienced the most significant rates of change – ever. And now that rate of change is *exponential*, and "process innovation" is its engine.