



Extreme Competition

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A 21st Century Business Lexicon

lex-i-con [lek-si-kon, -kuh n] the vocabulary of a particular language, field, social class, person, etc.

Do you speak the language of business?

Sure, we all know that the top vocabulary words for business are *land, labor* and *capital*.

At least that's been the case since the Industrial Revolution.

But now, in the 21st century, there's a new lexicon for business.

(Note: the **page numbers** at the end of each citation are your guideposts to explore further, as explained at the end of the Column.)

Affective Computing

Affective computing relates to, arises from, or deliberately influences emotions. Just as we have become overwhelmed with the cold, hard facts being served up as Big Data, now it seems there's a whole other realm that must be taken into account. *How do you feel about that? Can your database management system handle emotional data? Can your business intelligence system comprehend and, in some cases, feel emotions?* While developments in the field of affective computing remain largely in the lab, an associated field of endeavor is *opinion mining* and *sentiment analysis*. An important part of our information-gathering endeavors has always been to find out what other people think. With the growing availability and popularity of opinion-rich resources such as online review sites and personal blogs, new opportunities and challenges arise as people now can, and do, actively use information technologies to seek out and understand the opinions of others. Opinion mining and sentiment analysis deal with the computational treatment of opinion, sentiment, and subjectivity in text, and is a direct response to the surge of interest in new social networks that deal directly with opinions as first-class objects. In short, we are mining the Web for *feelings*, not *facts*. (p. 149)

Argumentation Systems

Argumentation systems involve identifying arguments and counterarguments relevant to an issue. Argumentation theory is the interdisciplinary study of how conclusions can be reached through logical reasoning; that is, claims based, soundly or not, on premises. It includes the arts and sciences of civil debate, dialogue, conversation, and persuasion. It studies rules of inference, logic, and procedural rules in both artificial and real world settings. Argumentation includes debate and negotiation which are concerned with reaching mutually acceptable conclusions. It also encompasses eristic dialog, the branch of social debate in which victory over an opponent is the primary goal. This art and science is often the means by which people protect their beliefs or self-interests in rational dialogue, in common parlance, and during the process of arguing. (p.158) see Deliberatorium

Augmented Reality

Whereas *virtual reality* is about taking people into virtual digital worlds, Augmented Reality (AR) is about bringing the digital world into the real world where people actually live. Augmented reality is a live, real-time, direct or indirect, view of a real-world environment whose elements are augmented by computer-generated input such as sound, video, graphics or GPS data. As a result, the technology functions by enhancing one's current perception of reality. By contrast, virtual reality replaces the real world with a simulated one. (p. 72)

Big Data

In short, big data is the biggest thing to happen in business since the Internet. Let's be clear, Big Data is *not* simply dealing with lots of data! So what is Big Data? *New meaning from new sources*. Big Data is finding new meaning from new data sources. New meaning that was never practical to find before—because of scale, data format, distribution of data in many locations, the fact that no one thought of looking before, etc. Sources from Lego store purchase patterns to iPhone GPS information. From automobile traffic patterns to Internet data traffic patterns. From weather patterns to earthquakes. From tech support response times to medication response times. It is *easily* as much a new mindset as new technology. Again, *new meaning from new sources*. “Big data—large pools of data that can be captured, communicated, aggregated, stored, and analyzed—is now part of every sector and function of the global economy. Like other essential factors of production such as hard assets and human capital, it is increasingly the case that much of modern economic activity, innovation, and growth simply couldn't take place without big data.”—McKinsey Global Institute, “*Big data: The Next Frontier for Innovation, Competition, and Productivity*,” June 2011. (p. 205)

Bioteams

Bioteaming offers a vision of what successful teaming experiences look like in the interconnected world of the 21st century. “Biomimicry” is a design movement that helps companies look to the natural world to help design physical things (e.g. green cars). The pioneering work of Janine Benyus, biologist-cum-evangelist, is the driving force behind the movement. In her writings she detailed how companies could study nonpolluting, energy-efficient manufacturing technologies that have evolved in the natural world over billions of years. Now enter Ken Thompson, the former CIO with Reuters, who over the past ten years has taken the field of biomimicry from innovation related to physical things on to the realm of social structures. Thompson takes ideas from nature about how groups perform and operate, and applies them to enhance how humans can work together in groups and high-performance teams. Thompson's “bioteaming” is about designing and implementing organizational teams that operate on the basis of the communication principles that underpin nature's most successful groups. Spot the common theme: the wobble dance of honeybees, the pheromone trails of ants, the one-way information bursts of migrating geese. (p. 232)

Business Agility

No it's not some slogan; it's actually based in mathematics. During the early 1960s, Air Force pilot trainer, John Boyd, together with Thomas Christie, a civilian mathematician, created the Energy-Maneuverability theory of aerial combat. E-M theory is a mathematical equation that calculated an aircraft's ability to change direction, altitude or speed under specified conditions, and allowed systematic comparison between different aircraft for the first time. Then he focused on something even grander, a unifying theory of this thing we call *agility*. Boyd's key agility concept was that of the *decision cycle* or OODA Loop (Observe, Orient, Decide, Act), the process by which either an individual or an organization reacts to an event in real-time, or at least in time enough to make a difference. (p. 96)

Business Architecture

Get your house in order. Without going into the technical details, companies must embrace a new “business architecture” enabled by cloud computing: a Cloud-Oriented Business Architecture (COBA) rooted in the agility of OODA and the foundation of business agility embodied in Boyd's energy maneuverability analysis. There are six new pillars organizations will need to place atop their current foundation in order to have the structures needed in the Cloud Economy: Social

Networks, Demand-Supply Chain Business Networks, Distributed Business Rules Management, Next-Generation Analytics, Capability Management, and Innovation Management. (p. 278)

Business Innovation in the Cloud

Over 100 years ago, Thomas Edison said, “*Genius is 1% inspiration and 99% perspiration.*” Ideas are easy; but execution is all, and that’s where the Cloud comes in. The Cloud makes all of the technologies, knowledge, and capabilities we have been discussing “instantly” available to everyone—and the most innovative will apply them rapidly. Because we live in an age of hyper-connectivity driving an unprecedented global economy, where and how we conduct business is of prime importance. That “where” is in the Cloud, and the “how” is multi-company, socially-driven, business process management, for BPM is how works gets done. (p. 86)

Capitalism 2.0

“In short, industrialism is over.” —Paul Hawken. *Capitalism 2.0* is discussed and debated around the globe. Do corporations exist solely to maximize their bottom lines? Is *value creation* very different from *profitability* as we measure it today? Almost simultaneous deterioration of major sectors of the economy suggests that something is amiss. Bailed-out auto makers lost their ability to listen to markets and make things people wanted; print media has lost its relevancy as a market maker for advertising; financial institutions created opaque, incomprehensible and unsustainable markets; and sanctioned monopolies (telecom, electric, water) have fought any attempt to open their markets, even though opening their markets and becoming better middlemen is their opportunity. Do speculators make too much and creators not enough? Is all this because Capitalism 1.0 is built on an obsolete set of ideals that will be superseded by Capitalism 2.0? (p. 18)

Cloud Brokers

Mastering cloud computing technologies, integrative client technologies (e.g., HTML5), and the ability to integrate and broker multiple clouds, in a phrase, isn’t easy. Add to this list, new laws and regulations at the national and state level and the extension of existing rules are creating a significant pain point for companies. In the same way that companies gave up doing their own payrolls because they couldn’t afford the number of accountants and lawyers necessary to keep up with all the rules, data in general is about to enter into the same environment. This creates a huge opportunity for advising, implementing, and taking over this function by Cloud Brokers. This is a real opportunity for a new breed of IT services companies, Cloud Brokers, in the areas of information governance, security, compliance, and risk management. (p. 250)

Cloud Computing

There’s no such thing. It’s not a new technology; it’s not a new architecture; it’s not a new methodology, though it leverages better implementations of the technologies, methodologies and architectures of the past. But the Cloud *is* a new economic delivery model that enables new business models and processes supporting rapid-fire business innovation. If anything, it’s what the Internet was intended to be when designed in the 1960s: an endless network of computers made up of networks of computers. Without getting technical, cloud computing provides organizations and individuals alike

with one shared computer, one shared information base, and a collective intelligence.

The Cloud is a business game-changer for companies large and small. It matters not if your company is you, a sole proprietor, or a huge multinational corporation. In the past, IT was about productivity. In the Cloud it’s about collaboration, a shared information base, and collective intelligence (the wisdom of crowds, social networking and crowd sourcing). (p. 23)

Cognitive Computer

This new computing unit, or core, is analogous to the brain. It has *neurons*, or digital processors that compute information. It has *synapses* which are the foundation of learning and memory. And it has axons, or data pathways that connect the tissue of the computer.

These new chips won’t be programmed in the traditional way. Cognitive computers are expected to learn through experiences, find correlations, create hypotheses, remember, and learn from the

outcomes. They mimic the brain's "structural and synaptic plasticity." The processing is distributed and parallel, not centralized and serial. This advancement of the Cognitive Computer on a Chip will recreate the very foundation of how computation happens—and what the very term, *computing*, actually means. Likewise, the opportunity to transform these capabilities into innovations (products, services, business processes and business models) challenges our current imagination. It also highlights again the importance of the Cloud. While capabilities like this will be expensive to individually acquire, they can become part of the Cloud and available to all at equal cost that can be mapped directly to generated value, once again leveling the playing field for creating innovations. (p. 57)

Collective Intelligence

The "collective intelligence" of members and stakeholders in an organization are not completely harvested by the decision makers even in cases of paramount importance. In fact, in such cases this lack of total harvest can make the difference between a success or a disaster. Social media technologies (e.g. email, web forums, chat rooms, blogs, wikis, and idea forums) have the potential to address this critical gap. Such tools have enabled diverse communities to weigh in on topics they care about at unprecedented scale, in turn leading to remarkably powerful emergent phenomena. While the social media have enabled an explosion in how much communities can weigh in on topics they care about, they often create more *heat* than *light* when applied to complex, controversial problems. (p.158) see also Deliberatorium

Deliberatorium

Collecting or harvesting a key fraction of collective intelligence or wisdom of a community from among a veritable glut of information requires enormous effort. The Deliberatorium, an argumentation system developed at the MIT Center for Collective Intelligence, is an advanced software system designed to transcend these limitations and realize the enormous potential social media has for enabling better organizational decision-making. Members of a community are guided to make their contributions in the form of a *deliberation map*, a tree-structured network of posts each representing a single *issue* (question to be answered), *idea* (possible answer for a question), or *argument* (pro or con for an idea or other argument). (p. 160)

End of Management

Not all innovations are created by advances in technology. And if an invention affects our lives by having economic value it becomes a business innovation. For example the biggest business innovation in the last 100 years wasn't a new gadget—it was "management." Sometimes inventions that come in the form of ideas are so significant that we actually forget they were invented at one point in time. "*While 'modern' management is one of humankind's most important inventions, it is now a mature technology that must be reinvented for a new age.*"—The Management Innovation eXchange. Industrial Age command-and-control leadership gives way to connect-and-collaborate, where every member of a business team is a "leader." In the Cloud, leaders don't give commands, they transmit information, trusting the team members' competencies, and gaining accountability through the invisible hand of transparency. True leadership is about cooperation, not control. Pioneering companies are embracing the end of traditional management and the rise of self-organized and adaptive Bioteams (see Bioteams) that are based on nature's best designs. No, this isn't science fiction; it's the future of organizations getting stuff done. It's about unleashing human potential in our organizations. It's also about passion. (p. 222)

Energy Maneuverability

see Business Agility

Fractal Company

Just as it takes fractal geometry to model a shoreline or a cloud in the sky, it takes fractal architecture to model the innovative business in the Cloud. Fractal companies can be described by specific internal features of the fractals. The first feature is self-organization that implies freedom for the fractals in organizing and executing tasks. They may choose their own methods

of problem solving including self-optimization that takes care of process improvements. The second feature is dynamics where the fractals can adapt to influences from the environment without any formal hindrance of organization structure.

The third feature is self-similarity interpreted as similarity of goals among the fractals to conform to the objectives in each unit. In addition to the above characteristics, there is a need for the factory fractals to function as a coherent whole. This is achieved through a process of participation and coordination among the fractals, supported by an inheritance mechanism to ensure consistency of the goals. Fractals are structured bottom-up, building fractals of a higher order. Units at a higher level assume only those responsibilities in the process that cannot be fulfilled in the lower order fractals. This principle guarantees teamwork among the fractals and also forces distribution of power and ability in order to coordinate the actions of the individual fractals and put in place mechanisms that permit self-organization and dynamic restructuring. (p. 269)

Hollywood Model

The incoming workforce is composed of digital natives and bring with them a whole new wave of change that requires reassessment of traditional supervision, control, and work structures. They require information anywhere, anytime, and on any device. They also require 7x24x365 access as described in the new work force below. Work is not only mobile in the sense that it follows our workers around, work is also rapidly moving beyond corporate boundaries. More companies are pursuing the “Hollywood” business model. Back in the day, movie companies in Hollywood owned the studios, the actors and even the channels of distribution. Not so today. Each new blockbuster movie is the equivalent of an IPO. Everything is a *project*. At the end of each project the players are disbanded. The key is to focus on where the company can best create value and outsource everything else to others, because those others are focused on where they can best create value and therefore will likely do the job better, faster and cheaper than you could. This provides dynamic scale and responsiveness while quarantining costs and keeping them variable. All the world is a *project* under the Hollywood model. Or as process pioneer Tom Davenport’s millennial son calls it, the “Gig Economy.” (p. 43)

Human Interaction Management

You don’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. The way humans interact among themselves to get work done, especially in the world of business innovation, is far different from integration-centric BPM or the predefined notion of workflow, even with complex nesting and chaining logic built in. These are primarily notions of system-to-human (S-2-H) systems, where people are treated as cogs in an assembly line, dynamic as it may be, shoving tasks from station to station. If technology is to be used to support human interactions for innovation, collaboration can no longer be *implicit*. It must be *explicit* if it is to be brought under management control, not the Web 2.0 mob Lanier writes about. For this to happen, 5 basic principles are needed: *Connection visibility*, *Structured messaging*, *Support for knowledge work*, *Supportive rather than prescriptive activity management*, and *Processes that change processes*. Human interaction management requires a major shift from “information processing” to “commitment processing,” where participants negotiate and commit to next steps. The process itself is *emergent*, not predefined. (p. 197)

Innovation Economy

In the Innovation Economy, smart companies will choose to do the work of business innovation in the Cloud just as they would choose an airliner to travel from coast to coast instead of horses and covered wagons. The globalization of white-collar work is the new trend beyond sending blue-collar jobs to Asia and beyond. Even much of the so-called “knowledge economy,” once thought of as the last bastion of America’s economic might, has been digitized and beamed to China, India, Russia and beyond. In short, knowledge work is being digitized, globalized and commoditized. So, what’s left for companies wanting to avoid commodity purgatory? Welcome to

the Innovation Economy. Innovate or die. But wait. Nearly 96% of all innovation attempts fail to beat targets for return on investment, leading to talk of “innovation frustration” in the corner offices. Indeed, is it time to innovate innovation itself—as a systematic, repeatable business process. What is a business process? It’s how work gets done, which leads us back to *Do the Work*, that is, do the *work* of innovation. (p. 26)

Intercloud

There won’t be one Cloud computer, but rather the Intercloud made up of multiple, interoperating Cloud resources and services—just as there is not a single Internet computer, but a network of networks of computers. Interoperating clouds will become the backbone or “business operating systems” of business ecosystems that are used to co-create value with customers (prosumers) and business networks of suppliers. As this environment develops, we are starting to see what some are calling the “pervasive Cloud,” or as Kevin Kelly calls it, “the One.” One part of the pervasive Cloud is that these very capable, generally mobile devices “integrate” across multiple cloud offerings, giving the illusion of a single, pervasive Cloud. Many smart phone apps do this today, for example. This integration will take place at two levels: one at the actual device, the other behind the scenes via cloud brokers and integration tools and services—the Intercloud.

(p. 164, 248)

Internet of Things

Driven by “The Internet of Things (IOT),” in the era of “Big Data,” billions of devices connect to the Web and create a continuous stream of data on the actions, locations, and conditions of everything from livestock to people—does your pet have a chip yet? According to Cisco, the number of devices connected to the Web exceeded the number of people connected in 2008. A near invisible network of radio frequency identification tags (RFID) is being deployed on almost every type of consumer item or industrial part. These tiny, traceable chips, which can be scanned wirelessly, are being produced in their billions and are capable of being connected to the internet in an instant. This so-called “Ambient intelligence” promises to create a global network of physical objects every bit as pervasive and ubiquitous as the World Wide Web itself. In short, data have swept into every industry and business function and are now an important factor of production, alongside labor and capital. Charles L. Mauro, Founder of MauroNewMedia recently concluded that “the social life of devices” will be just as important as the social life of those who use them. By this he means that how devices behave in the new universe of hyper-connectedness will determine success from both a business and personal perspective. (p. 206)

IT Services

In the beginning, way back when this newfangled thing called a computer entered the enterprise, life was kind of simple and “data processing” basically involved computer programming. But as the uses of computers grew in both breadth and depth within the enterprise, things quickly became complicated. 1959 marks the year when companies looked outside to tame the growing complexity of enterprise computing. That was the year that what is now today a major “systems integrator,” Computer Sciences Corporation (CSC), was founded. A systems integrator is a company that specializes in bringing together component subsystems into a whole and ensuring that those subsystems function together. Today, CSC employs about 93,000 people in 90 countries and ranks among the largest outsourcing companies in the world and has been a Fortune 500 company since 1995. But CSC isn’t the only IT services player in the game: IBM Global Services (426,751 employees in 2010), Dell Services (formerly Perot Systems), HP Enterprise Services (formerly EDS), Logica, Accenture, BearingPoint, Capgemini, Deloitte Consulting, HCL Technologies, Infosys Technologies, Siemens IT Solutions and Services, Tata Consultancy Services, and Wipro. You might consider these firms as a source of “timesharing” of technological and engineering talents that individual companies could ill afford. To see how the IT services providers will develop in the Cloud era, we must first work backwards from the end state—the “consumerization” of IT. Vizio has announced it will be delivering an Android phone and tablet; LG and Samsung already support HTML5, and have apps available on their televisions; and you can’t sit in a plane and not see iPads everywhere (sometimes even running virtual desktops over the plane’s WiFi). A key for any company’s IT services providers is how to

support, manage, and deliver value to these diverse devices. The other part of this issue is that we now have multiple devices per person. Thus IT services have to move from supporting, managing, and delivering value to a *device*, and start delivering it to an *entity*, while maintaining context across time, location, and devices. This is a real opportunity for a new breed of IT services companies, Cloud Brokers, in the areas of information governance, security, compliance, and risk management. (p. 247) see also Cloud Brokers

Listening Posts

Because social networks are “where they are talking about your company, your products and your services,” step one in the brave new world of social constructionism is listening to what people are saying about you. Traditional focus groups, surveys, and market research studies won’t cut it in today’s connected world. Today, we need to be actively listening all of the time to our customers, influencers, competitors, and communities of people that can impact our businesses. *Listening* is a critical part of the OBSERVE and ORIENT cycle of OODA for innovation and the real-time FORESIGHT component of the Innovation Architecture. Social media have established a constant flow, actually a torrent, of conversations. So if you want to have the very best *analytics* possible, then you first have to have the means to *listen* to the flood of chatter and jabber. Emotions have a major impact on essential cognitive processes; neurological evidence indicates they are not a luxury. Emotions play a necessary role not only in human creativity and intelligence, but also in rational human thinking and decision-making. Thus, one fundamental aspect of “listening” is that it isn’t just about cold data, it’s about observing emotions. The latest scientific findings indicate that emotions play an essential role in decision making, perception, learning, and more—that is, they influence the very mechanisms of rational, cognitive thinking. Thus, the affective domain is needed to balance the cognitive domain throughout the entire OODA cycle. Listening to social networks must go beyond *like* or *dislike*, to assess the full range of frustration, stress, and mood indirectly, through natural interaction and conversation. (p. 147, 149)

Multi-Agent Systems

In addition to genetic algorithms, other forms of “artificial intelligence” will be needed to make sense and take action in the world of Big Data: Personal software agents acting on our behalf, autonomous intelligent objects, multi-agent systems, ontologies for semantic mediation, and Bayesian inference techniques. (p. 214)

OODA Loops

see Business Agility

Open Innovation

The brave new world of widely distributed knowledge in the Cloud 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. Leading companies are turning to Social Networks to tap new sources of business intelligence and creativity that can lead to innovation. Don’t confuse open innovation with open source, free software. Open innovation is all about the money to be made. Open innovation models stress the importance of using a broad range of knowledge sources for a firm’s innovation and invention activities, including customers, rivals, academics, and firms in unrelated industries while simultaneously using creative methods to exploit a firm’s intellectual property (IP). (p. 127)

Open Leadership

Transparency, authenticity, openness. According to former Forrester analyst, Charlene Li, management innovation, “... is about giving up control yet staying in command... it’s about inspiring not controlling.” In an interview with professor Gary Hamel, Li summarized her views on the transformation from command-and-control management, “There’s always been this tug of war in leadership between having power centered in one person versus the power of responsibility going out to the people in the field who actually get the work done. So how do you go back and

forth between this command-and-control kind of philosophy, especially for first-time leaders? They really come in and say, 'I'm going to micromanage everything, command everything.' Yet, more mature leaders, the people who have experience, realize very quickly that 'I have to let go of control.' In fact, I don't really control anything. I lead because I have credibility, because I have faith, I have relationships. So what if you started leadership from that premise, that is not about control, but giving it up, being more open about the information you share and how you make decisions? (p. 225)

Persona Management Systems

Persona Management Systems (PMS) are replete with background, history, supporting details, and cyber presences that are technically, culturally and geographically consistent. It also provides for secure virtual private networks that randomize the operator's Internet Protocol (IP) address, making it impossible to detect that it's a single person orchestrating all the posts. The software also provides static IP address management for each persona, making it appear as though each sockpuppet (fake person) was consistently accessing from the same computer each time. Further, the software uses methods to anonymously establish virtual servers with private hosting firms in specific geographic locations.

This allows a server's *geosite* to be integrated with its social media profiles, effectively gaming geolocation services. So here we are, social networks, listening posts and persona management systems. A sockpuppet is a false online identity used for purposes of deception within an online community. Through the false identity a community member speaks while pretending to be a different person, like a ventriloquist manipulating a hand puppet. Using sockpuppets, trolls and drones, the user can infiltrate social media to conduct psychological cyber warfare by creating the illusion of consensus. And consensus is a powerful persuader. What has more effect, one person saying that BP wasn't at fault for the Gulf oil spill? Or 500 people or sockpuppets saying it? For many people, the number can make all the difference. Companies will go to great lengths to master the art of Manufacturing Consent and managing not just back-office processes or enterprise processes or inter-enterprise processes, but now on to managing community-facing "listening-post processes" and "sockpuppet persona processes." (p. 153)

Predictive Analytics

The term "business intelligence (BI)" was coined way back in 1958 and companies have relied on BI ever since. But most of the results of BI only show *what has happened*, not *what's most likely to happen next*. That's where predictive analytics come in. Predictive analytics is an area of BI that deals with extracting information from data and using it to *predict* future trends and behavior patterns. The core of predictive analytics relies on capturing relationships between explanatory variables and the predicted variables from past occurrences, and exploiting it to predict future outcomes. While traditional BI can tell us where we've been, predictive analytics can tell us where we are likely to be going so that more rapid and insightful decisions can be made. (p. 145, 210)

Process Innovation

The business processes that were once tightly confined within a single, vertically integrated company are blown to bits by the Internet and now stretch across multiple companies. These days, over 20 companies make up a typical value chain. Reassembling the business process bits from multiple companies into a coherent infrastructure is the centerpiece of 21st century business architecture. Think value webs, not value chains. The result is a web of any-to-any connections that can drive supply chains, demand chains, and even the business processes that represent the core competencies of an enterprise. To successfully compete on the battlefields of 21st-century business, companies must reinvent their processes and culture in order to sustain innovative solutions. In the age of *extreme* total global competition, companies must transform their end-to-end business processes, their entire value chains, including their social infrastructures to create ongoing innovation advantages. (p. 164)

Sentiment Analysis

Sentiment analysis or opinion mining refers to the application of natural language processing, computational linguistics, and text analytics to identify and extract subjective information in source

materials with the aim to determine the attitude of a writer or the overall contextual polarity with respect to some topic. (p. 150) see Affective Computing

Services Avatars

Using the term some pundits have adopted, products are becoming *Service Avatars*, delivering services that used to be rendered by humans, if at all. Then there's that thing we used to call a telephone. You bought one and it let you talk to others. But now the same "product" is smart. Smart phones can still be used to *talk*, but the real offering of a smart phone is all manner of services they provide. Beyond the obvious smart phone, just about all companies are becoming software companies, embedding digital services into their products. Nike+ is a chip with heels. The shoe sensor's accelerometer measures the amount of time a runner's foot is on the ground, which is inversely proportional to speed. Transmitting at 2.4 GHz, the sensor sends data to a receiver that's attached to an iPod. After the workout, the iPod is synced to a computer running iTunes. Users can access their run history at Nike-Plus.com, browse through a graph that shows all their activity, and then drill down to details about each workout. (p. 241)

Services Innovation

Forward-looking companies are turning their focus to the emerging field of Services Sciences, an interdisciplinary approach to the study, design, and implementation of services systems made up of people and technology to create and deliver value.

Irving Wladawsky-Berger, Chairman Emeritus of the IBM Academy of Technology, prefers to think of cloud computing as offering all kinds of *Services-as-a-Service*: consumer services, business services, government services, health-care services, and so on. As advanced societies have transitioned from agricultural to manufacturing economies, the current transformation is to a service economy. The services sector makes up 70 to 80% of GDP in advanced economies. The best way to define the services sector is to understand what it is *not*. It's not agriculture or manufacturing or construction, the *shrinking* sectors. In the U.S., agriculture accounts for only 1.4% of the gross domestic product and less than 2% of employment. Meanwhile, 4.3% of firms fall into the manufacturing sector, accounting for 12.5% of employment. In the UK, agriculture accounts for around 1.5% of employment, manufacturing for around 10%, and services for over 80%. In short, up to about 75% of wealth in industrialized countries is created *not* by growing food or making things, but by performing services: teaching, designing, delivering health care, banking, retailing, consulting, delivering IT services and so on.

The link between science and agriculture and manufacturing is now a given and was ushered in over the last 200 years with the advent of the Industrial Age. But what about the link between science and services? The information technology to drive innovation in services have really only been around since the Web came on the scene in the mid-1990s. Unlike products, services are often designed or modified as they are delivered; they are co-created with customers; and service providers must often respond in real time to customer desires and preferences. Services are contextual—where, when and how they are delivered can make a big difference. They may require specialized knowledge or skills. The value of a service comes through the interactions: it's not the end product that matters, so much as the experience. (p. 234)

Social Networks

With the advent of easy-to-use "Consumer IT" or Web 2.0 usage of the Internet, social networks are changing the ways we live, learn, collaborate, work, consume and play. These huge changes in society also disrupt the way we design and manage our organizations and our value chains. Social networks have major consequences for business, even to the point of what it means to be a business, for it's no longer inside-out supply push, it's outside-in demand pull. The customer is no longer king; the customer is now a dictator, and social networks are where customers get the information they need to make purchasing decisions. Your fancy Web site is the *last* place customers go. Furthermore, inside your company, business units are increasingly turning to Cloud service providers to obtain the resources they need to get work done, collaborate, and maintain relationships with customers. With credit card in hand, those resources are delivered to business units on demand, and often internal IT is the *last* place business units go for these resources. (p. 127)

Strong Ties

Strong ties represent the people you are closest to – coworkers, nuclear family, friends, supply-chain partners and so on. Weak ties are connections to people that you may occasionally come across – a friend's friend or online communities that share special interests outside of your ordinary interests. Strong social ties are good for exerting power, but because they contain a lot of redundant information they are almost useless for gaining fresh information, new perspectives and insights – the raw materials for innovation. In contrast, weak ties contain much less redundant information and are often more important for gaining fresh information, connecting new dots and thinking outside your own box. Open innovation, casting a wide net, crowd sourcing, and collective intelligence all play a vital role in the OO part of our OODA loops (see Business Agility). But what about the Decide and Act parts? Is there a need for “closed innovation?” There a need to shift gears from weak ties for gaining insight to strong ties for actually doing the work of implementing an innovation. (p. 135, 194)

Surface Computing

So, is it time to close the patent office? After all we now have smart phones and intelligent tablets. What else do we need to invent? For a start, it's likely that just about everything may become an intelligent user interface with advances in “surface computing”: multi-touch computers, tabletop computers, window computers and the “work wall.” All these devices, including the human body will be a window into “the One” (coined by Kevin Kelly), the intelligent World Wide Web. (p. 59)

TRIZ

To put teeth into his approach of business innovation as problem solving, CSC's Howard Smith goes way beyond the many techniques and methods most often associated with innovation, “But if you thought you had heard about all the best-practice acronyms and trends out there, think again. To the current plethora of strategies for adaptation and survival is now added something that may be a way of thinking, a set of tools, a methodology, a process, a theory or even possibly a deep science, but which may be gradually shaping up as ‘the next big thing.’ It's called TRIZ, pronounced ‘trees’ and is an acronym for the Russian words that translate as ‘The Theory of Inventive Problem Solving.’ Its systematic approach to innovation is the antithesis of unreliable, hit and miss, trial and error, psychological means of lateral thinking. Its scientific, repeatable, procedural and algorithmic processes surprise all who first encounter them. Who uses TRIZ these days? Ford, Daimler-Chrysler, Johnson & Johnson, Boeing, NASA, Hewlett Packard, Motorola, General Electric, Xerox, IBM, LG, Samsung, Procter and Gamble and Kodak. (p. 115)

Unified Communications

Unified Communications or UC is the integration of all of the communication connections and devices into a single cohesive environment. It presents a consistent service to all devices from a cost-effective centralized resource. Even though it's technically inaccurate, comparisons have been made to this being a kind of virtualization for communication devices. However, in the context of optimizing resources, there are similarities. Unified Messaging or UM is concerned with creating a *common interface, or experience for users* to hide the differences between various services running on different devices at different locations. One of the fundamental goals of UM is to ensure that any messaging service, such as voice, email, or instant messaging can be used from any device, regardless of format or location, fixed or mobile. (p. 248)

Weak Ties

“The strength of weak ties” is the term coined in 1973 by Mark Granovetter in what many now regard as a seminal work defining “social” collaboration. Strong ties represent the people you are closest to – coworkers, nuclear family, friends, supply-chain partners and so on. Weak ties are connections to people that you may occasionally come across – a friend's friend or online communities that share special interests outside of your ordinary interests. Granovetter argues that strong social ties are good for exerting power, but because they contain a lot of redundant information they are almost useless for gaining fresh information, new perspectives and insights – the raw materials for innovation. In contrast, weak ties contain much less redundant information

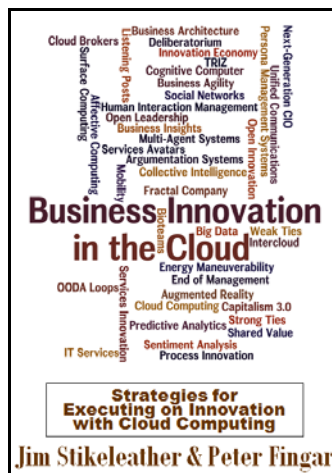
and are often more important for gaining fresh information, connecting new dots and thinking outside your own box. (p. 135)

Workforce Mobility

In addition to the technologies that are connecting the entire population of the planet, *work mobility* is also a reflection of socio-economic changes in the workforce. Profound demographic changes are occurring in the workplace. The Millennials (1977-1997) are so-called “Digital Natives.” They are technologically savvy, hyper-connected and mobile. They communicate by using blogs, social networks, wikis and video sharing. They bring a different perspective to work. Their family, friends, and coworkers are constantly in touch, and straddle the fence of “*Weisure Time*,” the blurred line between work and leisure. According to this new work force, work is that brief period during the day where they have to use old, out of step, productivity interfering technology. The new workforce expects constant availability because they intermix work, home, play (and sleep) intermittently during the entire 24 hour day. Google, Amazon and Facebook, for the most part, has instilled in them an expectation of *good enough* to get the job done and impatience for waiting for *perfect*, and they have no tolerance for digital failure or systems that cannot work the way they do. (p. 43)

Want to Learn More?

If you want to learn more and gain additional context, the above terms are discussed more fully at the [page numbers](#) cited above from the book, *Business Innovation in the Cloud*.



<http://www.mkpress.com/BIC>

And if you want to explore further, go here, roll over the terms and open a given term.



<http://tinyurl.com/bfskmmmt>

So, do you speak the language of 21st century business? If so, I bet you can add to the above list and I hope you'll do so by going to the BPTrends Discussion Group on LinkedIn. And if you are an epistemologist questioning what knowledge is, how it is acquired, and the possible extent to which a given subject such as "business" can be known in the future, we'd like to hear from you, too.

BPTrends LinkedIn Discussion Group

We created a BPTrends Discussion Group on LinkedIn to allow our members, readers and friends to freely exchange ideas on a wide variety of BPM related topics. We encourage you to initiate a new discussion on this publication, or on other BPM related topics of interest to you, or to contribute to existing discussions. Go to LinkedIn and join the [BPTrends Discussion Group](#).