Extreme Competition Peter Fingar

3 + 1: All Is Changed, Changed Utterly

Remember the good ole days of business process management? You know, your organization bought a BPMS and streamlined its processes. Technology, however, marches on. Three technologies must be tapped to take BPM to a new level:

1. Smart Process Apps.

George Colony, the chairman and CEO of Forrester Research, ignited a minor firestorm at the 2011 LeWeb conference in which he argued that the "Web Internet" is dead, and being replaced by the "App Internet" — with mobile and smartphone apps that leverage the Cloud or other services rather than the open Web. Hmm? You don't fully buy that either, right?

"The Apple App Store has thousands of business apps that are barely used. The main reason? *They lack a process layer.* They do not interact well with existing information and processes."
-- Craig Le Clair, Forrester Research.

Now, enter the Smart Process App, tethered to the *process* layer. Forrester Research introduced the term "Smart Process Apps" in September, 2012. Let's start with Forrester's Craig Le Clair's description of SPAs, "They float above, but interact, where needed with core business systems. They are lighter, easier to change, assume mobile, and use big data, analytics and human collaboration to predict events and drive actions. And unlike mobile apps, *they integrate and leverage core business systems.*"

The Smart Process App is not just another platform shift. It will profoundly change how people live and work, and how companies operate.

Learn more:
BPTrends Column: *Smarter* Smart Process Apps
http://tinyurl.com/ncfaq7v

http://tinyurl.com/nknb2fu
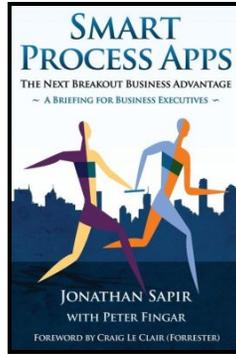
2. Gamification.

Gamification is the use of game thinking and game mechanics in non-game contexts to engage users in solving problems. Gamification is used in applications and processes to improve user engagement, return on investment, data quality, timeliness, and learning. While some people dismiss gamification as a fad, neuroscientists are discovering more and more about the ways in which humans react to such interactive design elements. They say such elements can cause feel-good chemical reactions, alter human response to stimuli—increasing reaction times, for instance—and can improve learning, participation and motivation.

Learn more:
BPTrends column: Playing the BPM Gamification Game
http://goo.gl/EHkH7K
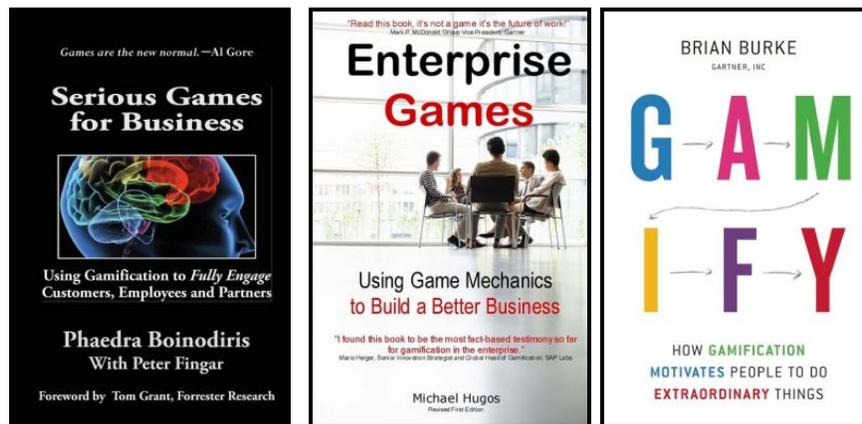
What's all this got to do with BPM? Simply put, accelerated learning and process improvement and innovation. *Gamification:* The ultimate in interactive and dynamic business direction would be combining human resources, machine resources, multiple roles, multiple organizational units, and multiple partners in social interactions in a massively multiple online (MMO) gaming fashion to reach desired outcomes in either a "training simulator" mode or in an actionable real-time mode. Watch the following examples:

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http://bit.ly/Qcsgzl

INNOV8 2.0 BPM Gameplay: Well over 1,000 schools worldwide
are using *INNOV8* to teach the basics of BPM.

http://bit.ly/OWw8TF

SCM Globe: Supply Chain Simulation and Design

## 3. Big Data Analytics and Complex Event Processing.

The IT analyst firm, Gartner, provides a description of big data, "Big data refers to the volume, variety and velocity of structured and unstructured data pouring through networks into processors and storage devices, along with the conversion of such data into business advice for enterprises." These elements can be broken down into three distinct categories: volume, variety and velocity.

▪   *Volume* (terabytes, petabytes and eventually exabytes): The increasing amount of business data—created by both humans and machines—is putting a major hit on IT systems, which are struggling to store, secure and make accessible all that information for future use.

▪   *Variety*: Big data is also about the increasing number of data types that need to be handled differently from simple email, data logs and credit card records. These include sensor- and other machine-gathered data for scientific studies, health care records, financial data and rich media: photos, graphic presentations, music, audio and video.

▪   *Velocity*: It's about the speed at which this data moves from endpoints into processing and storage.

90% of the world data was created in the last 2 years. 80% of the world data today is *unstructured*. Facebook tweets, doctor's notes, clinical trial results, research journals, call center notes -- things machines don't understand today. Big data is used to describe the exponential growth and availability of data, both

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structured and unstructured. And big data may be as important to business – and society – as the Internet has become. Why? More data may lead to more accurate analyses. More accurate analyses may lead to more confident decision making. And better decisions can mean greater operational efficiencies, cost reductions and reduced risk. Check out Thomas Davenport's work on predictive and prescriptive analytics:
http://www.tomdavenport.com
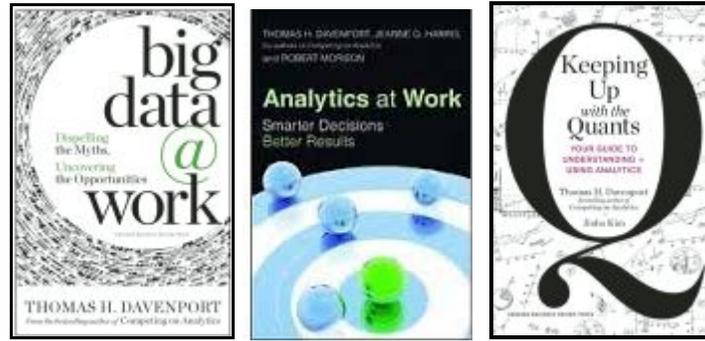
The "data" in big data doesn't just mean numbers and facts, it's also about *events*. Complex event processing, or CEP, is event processing that combines data from multiple sources to infer events or patterns that suggest more complicated circumstances. The goal of complex event processing is to identify meaningful events (such as opportunities or threats) and respond to them as quickly as possible. These events may be happening across the various layers of an organization as sales leads, orders or customer service calls. Or, they may be news items,[4] text messages, social media posts, stock market feeds, traffic reports, weather reports, or other kinds of data. An event may also be defined as a "change of state," when a measurement exceeds a predefined threshold of time, temperature, or other value. Analysts suggest that CEP will give organizations a new way to analyze patterns in real-time, and help the business side communicate better with IT and service departments.
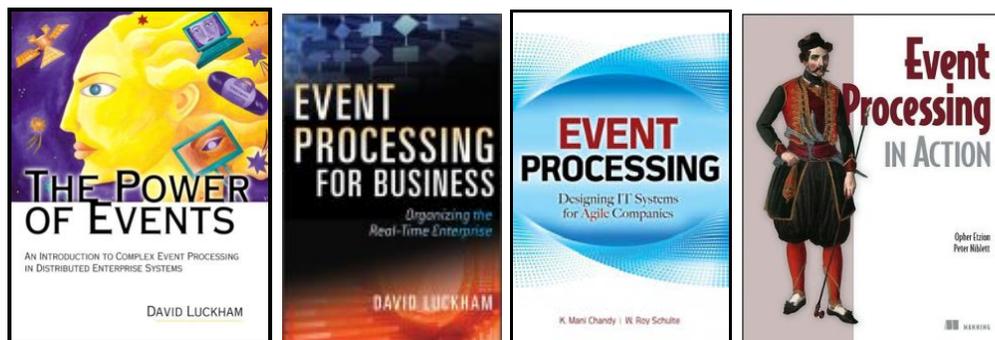
Learn more:
BPTrends column:
Consider Big Data as the Most Important Thing for Business since the Internet
http://tinyurl.com/odcyfqy

+ 1: Cognitive Computing

This is the BIG **1**.
Cognitive computing takes computing concepts to a whole new level. Cognitive computing systems learn and interact naturally with people to extend what either humans or machines could do on their own. They help human experts make better decisions by penetrating the complexity of Big Data.

IBM's Watson winning Jeopardy!, Google's recent $500 million acquisition of DeepMind, and Facebook's recent hiring of NYU professor Yann LeCun, a respected pioneer in artificial intelligence (AI), has a lot of people talking about *deep learning*. While artificial intelligence has been around for years (John McCarthy, coined the term in 1955), "deep learning" is cutting-edge AI that represents an evolution over primitive neural networks. A key distinction between traditional machine learning and deep learning is the amount of supervision and human intervention the AI system requires. Traditional machine learning techniques, including classic neural networks, need to be supervised by humans so they can learn. Deep learning is an approach to have the system learn on its own, without human intervention. It may sound like science fiction and rather far-fetched, but success has already been achieved in certain areas using deep learning, such as image processing (Facebook's DeepFace) and voice recognition (IBM's Watson, Apple's Siri).

J.C.R. Licklider, in his 1960 article, "Man-Computer Symbiosis" wrote: "The hope is that in not too many years human brains and computing machines will be coupled together very tightly, and the resulting partnership will think as no human brain has ever thought and process data in a way not approached by the information-handling machines we know today. In the anticipated symbiotic partnership, men will set the goals, formulate the hypotheses, determine the criteria, and perform the evaluations. Computing machines will do the routinizable work that must be done to prepare the way for *insights* and *decisions* in technical and scientific thinking. Preliminary analyses indicate that the symbiotic partnership will perform intellectual operations much more effectively than man alone can perform them."

Cognitive computing systems get better over time as they build knowledge and learn a domain - its language and terminology, its processes and its preferred methods of interacting. Unlike expert systems of the past which required rules to be hard coded into a system by a human expert, cognitive computers can process natural language and unstructured data and learn by experience, much in the same way humans do. While they'll have deep domain expertise, instead of replacing human experts, cognitive computers will act as a decision support system and help them make better decisions based on the best available data, whether in healthcare, finance or customer service.

Book under development. See resources links at

http://www.mkpress.com/COO

3 + 1

As BPTrends' Paul Harmon blogged in January, "A major transition is shaping up that will change BPM in radical ways that are hard to imagine. For someone like me, who was active in expert systems development in the Eighties, this is a rerun of the promise of artificial intelligence, with much enhanced capabilities. The CEO of IBM has been quoted as saying that 'Cognitive computing is the future of IBM.' Clearly we are about to witness another major advance in what we expect from computers."

The first 3 BPM facets outlined above are already being affected by cognitive computing:
All is changed, changed utterly!

PETER FINGAR

Peter Fingar, independent analyst, internationally acclaimed author, management advisor, former college professor and CIO, has been providing leadership at the intersection of business and technology for over 40 years. Peter is widely known for helping to launch business process management (BPM) with his book, *Business Process Management: The Third Wave.* He has taught graduate and undergraduate computing studies in the U.S. and abroad, and held management, technical, consulting and advisory positions with GTE Data Services, American Software and Computer Services, Saudi Aramco, EC Cubed (for clients including GE TPN, American Express, Master Card and GE Capital), Noor Advanced Technologies, the University of Tampa, the Technical Resource Connection division of Perot Systems and IBM Global Services. He is a sought-after keynote speaker and his latest of 15 books include *Business Process Management: The Next Wave,* which is about the use of distributed intelligence in business and *Smart Process Apps: The Next Breakout Business Advantage*. http://www.peterfingar.com peter@peterfingar.com