Extreme Competition Peter Fingar

Smarter Smart Process Apps

When the Internet was at an early stage, retailers were afraid to embrace it … until they got Amazoned! Now, the rise of the Smart Process App is not just another platform shift. It will profoundly change how people live and work, and how companies operate.

It seems that the "Web Internet" (hyperlinked documents and pages) is not immune to the process of *creative destruction* being wrought by the "App Internet," where powerful, smart mobile devices (PCs, smartphones, tablets) run local Apps that seamlessly take advantage of resources in the Cloud.

But wait. What is the difference between a closed, walled-off garden App Internet versus an open Web Internet where the browser has a plug-in? You know, what if your browser has downloaded Adobe Reader, Flash Player, Java, QuickTime, RealPlayer, Shockwave, and Windows Media Player? Is that a Web-App Internet? Well there's a lot of debate since the terms App Internet versus Web Internet have been introduced, but it's mostly about definitions. To explore, go to http://tinyurl.com/d2c3s4z

The main idea is that stuff executes both on the Internet (the Cloud) and the local client, usually via a powerful Mobile device (the ipad2 has more compute power than the big mainframes of the 1990s!).

The "Web Internet" is giving way to the "APP Internet"?

If you have a smartphone or tablet, or know a teenager that does, I need not explain Apps to you. Okay, we are all familiar with Apps in the consumer world. But what impact will the App Internet have on the business world and, specifically, the world of *business processes?*

In short, the impact will be **huge!**

> "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.

Smart Process Apps

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.*"

> **Smart.** SPAs are designed to address the needs of knowledge workers; the "smart" in smart process applications. By definition, knowledge workers need to apply their "smarts" to get their work done. Any tool (including predictive and prescriptive analytics) that is to meet their needs must be capable of incorporating their knowledge throughout the execution of the solution they build.
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> **Process.** SPAs address the fact that traditional *straight-through transaction-oriented* business process management (BPM) is ill suited to the needs of the knowledge worker. The focus of a SPA is on people, not systems; collaboration, not automation

– yet SPAs must leverage the power of the BPM system, especially the *intelligent* BPMS.

Applications. SPAs are not the traditional large, inert, static, monolithic, developer-centric applications that solve a general problem. SPAs recognize that with the advent of *mobile* the very nature of applications is changing. These applications are small, dynamic, user-driven slices of single-purpose functionality highly customized to the needs of users at the time and place they need them.

Let's drill down on the critical SPA layer, the *Process* component.

Process

When Forrester Research introduced the term of Smart Process Apps (SPAs), it described them as a new category of software applications that focused on collaborative business activities and processes, which have largely been left untouched by earlier generations of applications that focused on automating transactional processes.

In a transactional process app, the end goal is as little human involvement as possible. The ideal is a fully automated process. People may of course initiate the transaction (such as a purchase) or be a recipient of the results of a transaction system. They may also be involved in handling exceptions, though the goal there is to minimize that over time. Examples would be applications for core human resource management, eCommerce, sales force automation, invoice automation and procurement, core financial management, and the like.

In a smart process app, people are an inherent and desired part of the process or activity. The end goal is to make people more effective and productive participants in a business process, not to reduce or eliminate their involvement. These human-based processes or activities range from relatively simple cases involving one to three people in handling and resolving an issue, to service delivery situations involving similar numbers of people handling less predictable and structured service problems, to some or many people working on a project over time, to many people working on a complex operation in unstructured conditions. Software to improve this range of human-based activities or processes is what we include in smart process apps.

But wait. The notion of human-based processes that are tethered to core business systems has been around ever since Keith Harrison-Broninski wrote the seminal book, *Human Interactions,* in 2005! The book is based on the human interaction management system his team built years earlier, HumanEdj. In the messy real world of business, people communicate, research, think, consult, negotiate and ultimately commit to the next steps that are unknowable at the outset.

As new commitments are made, the process continues, often involving new participants playing new roles as the process expands. The participants usually cross organization and company boundaries: functional departments, customers, regulatory agencies, suppliers, suppliers' suppliers, design firms, market research firms, channel partners, and so on. Unlike the internal "command and control" within a single company, one company cannot command another company to do this or that. Further, each participant operates using its own time clock. The parties must negotiate and commit to next steps, and track the many agreements made along the way. Such human collaboration shifts the requirements for IT support from

"information processing" where data are tracked, to "commitment processing" where agreements are tracked.

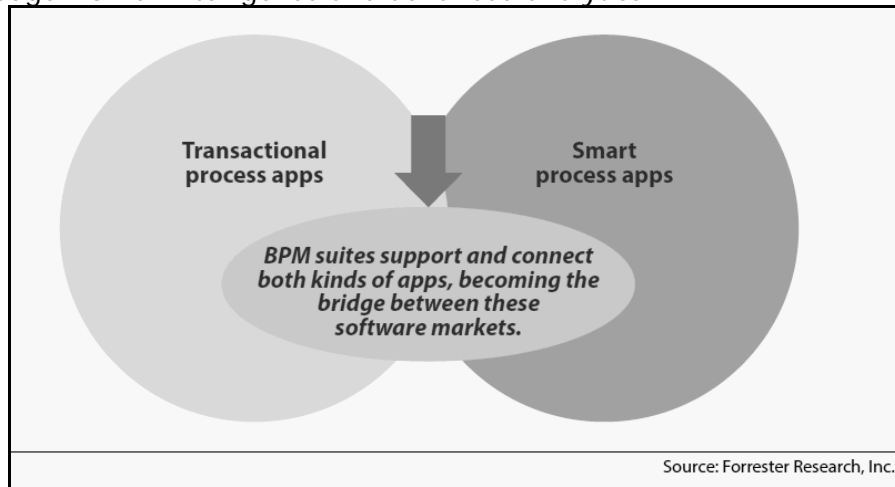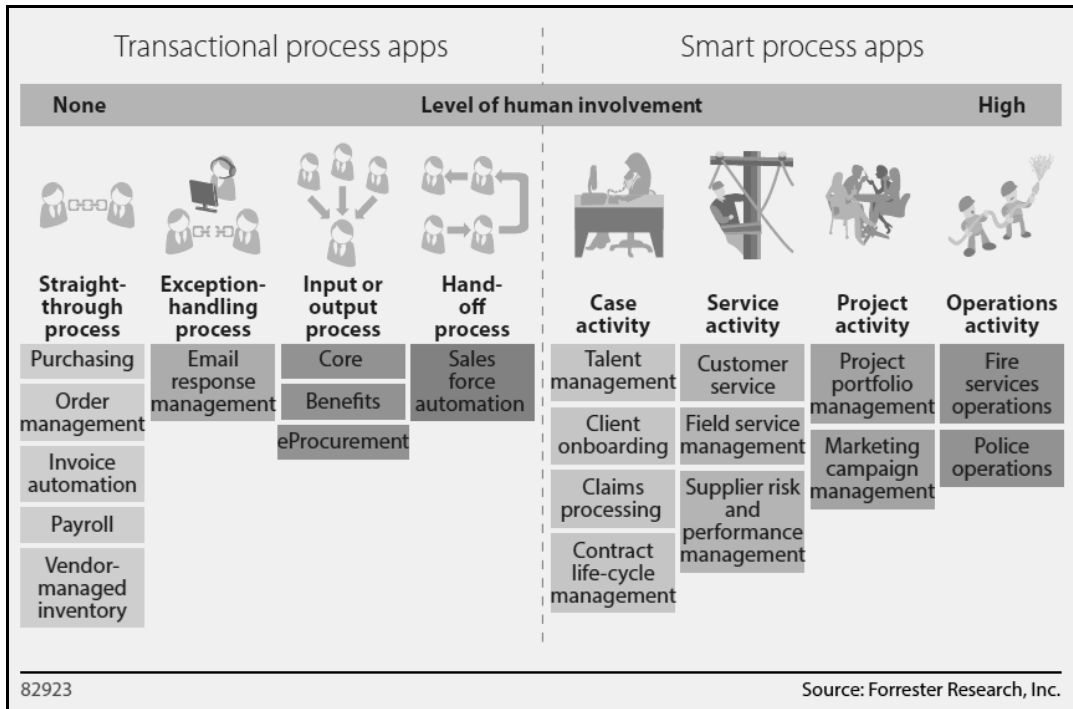**http://www.mkpress.com/hi/**   **http://humanedj.com/**
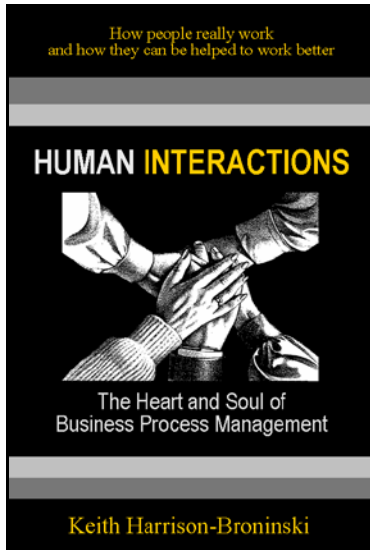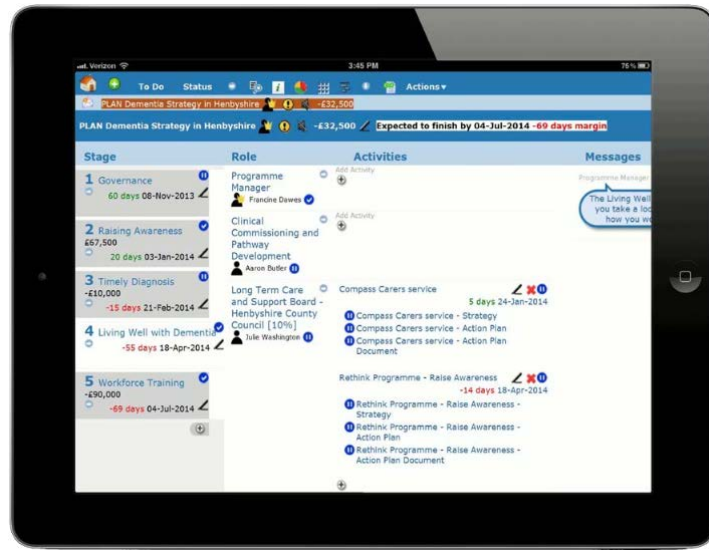
So here we have the essence of SPAs years and years before Forrester coined the term. Humanedj just might be considered as the first horizontal SPA for light-weight human-interaction applications that also harness the *process layer*. To add some context, let's look at the evolution of BPM since the 2002 seminal book, *Business Process Management: The Third Wave* introduced the BPMS. As shown in the Forrester diagram below the BPMS has been extended to include SOA, MDM, ACM, Social, intelligence (Gartner's iBPMS), and now on to Smart Processes with advanced Analytics. The iBPMS represents the next evolution of BPM-enabling capabilities. By incorporating more analytics, and other technologies such as deep complex event processing (CEP), social media and mobile devices into process orchestration, process participants have better real-time situation awareness and can tailor their response most appropriately to emerging business threats and opportunities. Technology marches on.
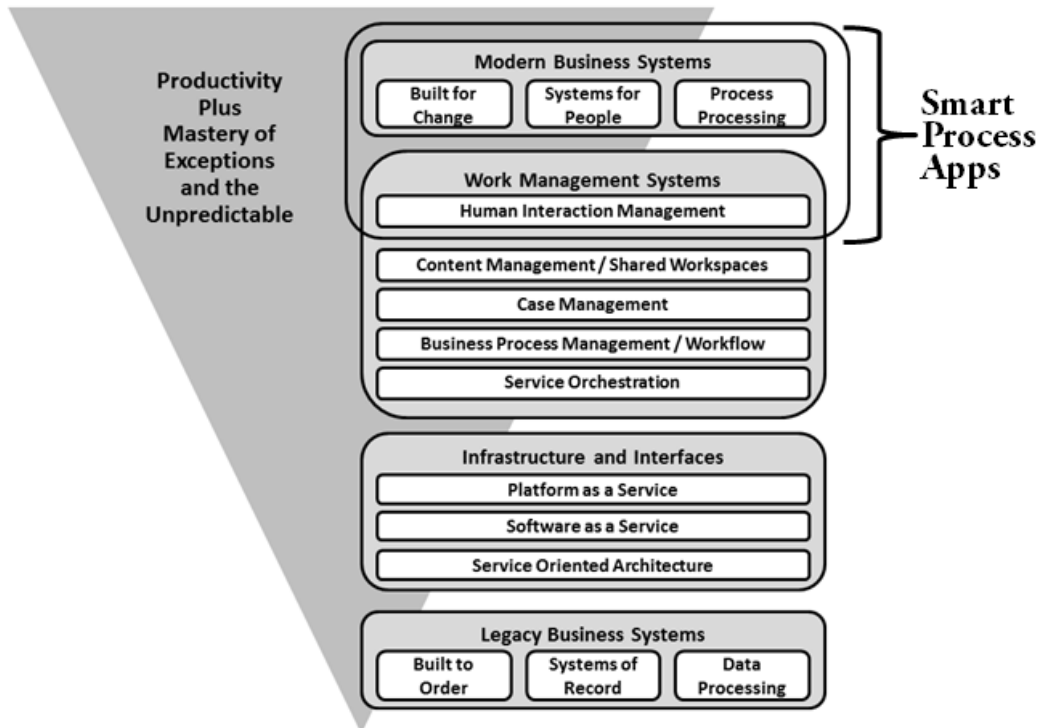
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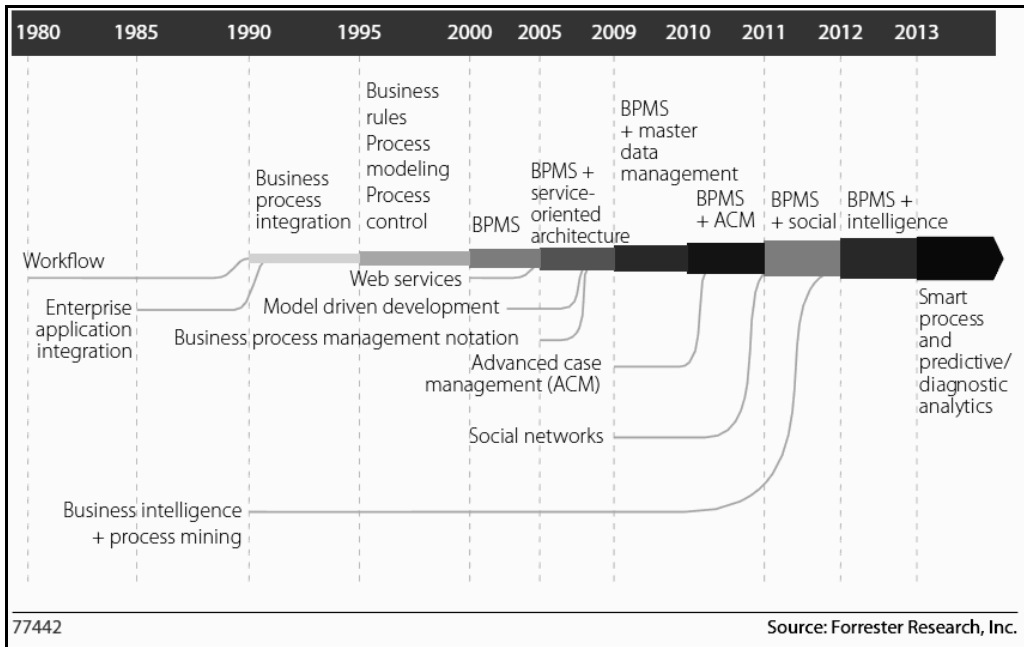
BPM Suites underpin and bridge the gap between structured transactional processes and Smart Process Apps. SPAs don't supersede the BPMS, they depend on it to bring in knowledge worker intelligence and advanced analytics.

Source: Forrester Research, Inc.

Transactional process apps | Smart process apps

Transactional process apps				Smart process apps			
None		Level of human involvement					**High**
Straight-through process	**Exception-handling process**	**Input or output process**	**Hand-off process**	**Case activity**	**Service activity**	**Project activity**	**Operations activity**
Purchasing	Email response management	Core	Sales force automation	Talent management	Customer service	Project portfolio management	Fire services operations
Order management		Benefits		Client onboarding	Field service management	Marketing campaign management	Police operations
Invoice automation		eProcurement		Claims processing	Supplier risk and performance management		
Payroll				Contract life-cycle management			
Vendor-managed inventory							

82923   Source: Forrester Research, Inc.

In short, with SPAs we are talking about a new IT stack.

***Smarter* Smart Process Apps**

What has happened since Forrester introduced the concept of SPAs in September, 2012? It's all about that *process layer* that SPAs depend on to get a whole lot smarter. And indeed the

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process layer must become a whole lot smarter via *distributed intelligence*.

Again technology marches on. We have crossed the threshold from the iBPMS to agent-oriented BPM (aoBPM). As *social, mobile, big data, predictive analytics, the Internet of Things,* and *cloud computing* are baked into more and more business processes, they will rapidly reshape how business gets done today and tomorrow. Companies are struggling to come to grips with the nexus of these forces that equals *complexity* of an unprecedented scale.

Business Process Management (BPM) has successfully delivered benefits well over a decade and continues to do so, but as process scopes expand to meet the nexus of forces, BPM needs to be enhanced and extended in order to harness the complexity. The idea of having all the intelligence centrally managed and delivered is a challenging, if not impossible, outcome. The seminal book, *Business Process Management: The Next Wave, Harnessing Complexity with Intelligent Agents*, provides insights and outlines strategies for transforming current BPM approaches and technologies by harnessing *distributed intelligence* in the form of *intelligent agent technology*.

http://www.mkpress.com/aoBPM   http://www.mkpress.com/spa

Distributed Intelligence via Multi-Agent Systems
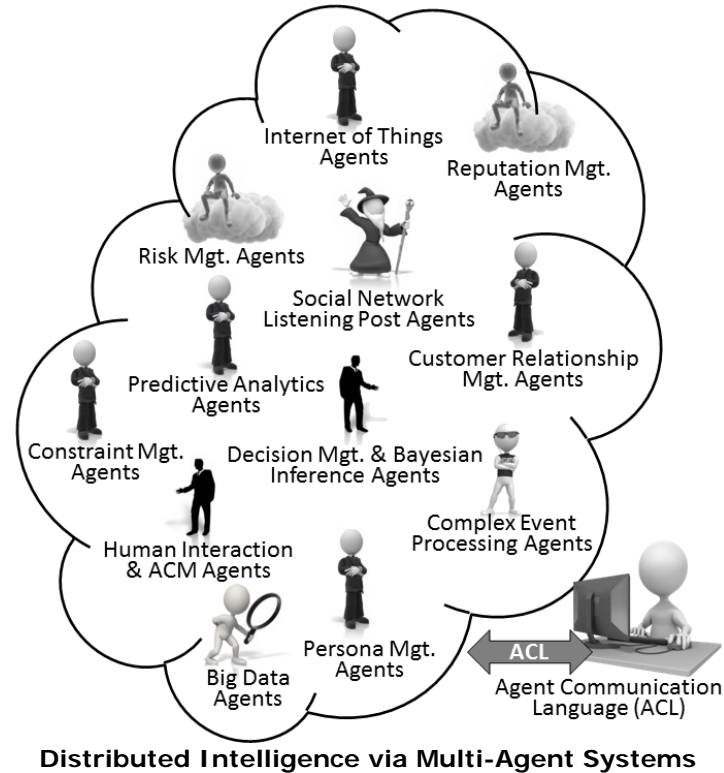
Organizations need to deploy innovative agent-based business processes to stay competitive in a rapidly changing world. Agent-oriented BPM (aoBPM) will allow BPM to take on all of what is expected of it as organizations accelerate growth and connect better with their customers, while providing greater agility and near real-time responses. It's about your organization's journey with what BPM has grown up to be for the future; and the future is now --it's just not evenly distributed!

As process innovation luminary, Thomas H. Davenport (Distinguished Professor of IT and Management, Babson College; Co-Founder and Research Director, International Institute for Analytics; and Research Fellow at the MIT Center for Digital Business) writes in the foreword, "We need to connect the dots among BPM, knowledge management, and analytics, especially in a world in which mobile and social technologies have transformed how people work and live. The authors argue that *intelligent agent technology* is now needed to manage the new complexities going forward.

"Agent technology holds great potential. It embeds and distributes smart decision-making into the core of business processes, and allows the efficiency, flexibility, and customization that customers want from organizations today. I believe the authors are setting the stage for the next wave of BPM, a wave that you cannot afford to miss. Go forth and learn to surf it!"

In his recent book, *Enterprise Analytics,* Davenport, one of the worlds foremost big data analytics experts, introduces "Analytics Apps" for business users. According to Davenport, "This environment is simple to use, and allows business users to easily find the data and produce the queries and reports they need to make specific decisions. Because of their simplicity and small size, these apps should accelerate the cycle of insights-to-decisions-to-

action for many managers and organizations. This is the newest analytical environment."

Written decades ago, 1991 to be precise, we may now consider SPAs to be our *software creatures doing our own business* as described by Yale professor, David Gelernter…

*Someday soon you will look into a computer screen and see reality. Some part of your world—the town you live in, the company you work for, your school system, the city hospital, or a picture that sketches the state of an entire far-flung corporation at this second --will hang there in a sharp color image, abstract but recognizable, moving subtly in a thousand places. This Mirror World you are looking at is fed by a steady rush of new data pouring in through cables. **It is infiltrated by your own software creatures, doing your own business.***
—David Gelernter, Department of Computer Science, Yale University, *Mirror Worlds: or the Day Software Puts the Universe in a Shoebox,* Oxford University Press, 1991.

Let's revisit the opening of this Column. "When the Internet was at an early stage, retailers were afraid to embrace it … until they got Amazoned! Now, the rise of the Smart Process App is not just another platform shift. It will profoundly change how people live and work, and how companies operate."

Carpe diem.

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Note: This Column is adapted from the two just released books: *Business Process Management: The Next Wave, Harnessing Complexity with Intelligent* Agents *(http://www.mkpress.com/aoBPM)* and *Smart Process Apps: The Next Breakout Business Advantage (http://www.mkpress/spa).*

Peter Fingar, industry analyst, 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 is a sought-after keynote speaker and his latest of 14 books are about the use of distributed intelligence and SPAs in business --in the Cloud. http://www.peterfingar.com