WHITE PAPER

BPM and IoT: The Signal of True Disruption

The Internet of Things is getting ready to disrupt business, but there is one way to corral it: by using business process management solutions. Find out here how the two merge.

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The Internet of Things (IoT) has been threatening to disrupt business for a long time. IoT, or as it's sometimes known as the Internet of Everything (IoE), is the phenomena of placing physical devices on the Internet by networking them through a series of sensors. IoT is often defined as an ever-growing network of physical objects that use IP addresses for internet connectivity. More specifically, IoT is the communication that occurs between these objects and other Internet-enabled devices and systems. The most emblematic example of IoT's disruptive capabilities is in retail and consumer sectors where networking home devices such as lights, home alarm systems, thermostats and other appliances has moved from a luxury item to a commonly desired feature.

Within the last couple of years, IoT has slowly started to penetrate other markets as businesses and organizations have started contemplating the value that combining IoT within business process management (BPM) programs could bring to an organization. This integration brings analytics, social and mobile capabilities into current processes and the applications that can lead to much desired agility with regard to critical business decisions. Businesses can achieve higher levels of flexibility, efficiency, and responsiveness, and this merger of technologies can help organizations better support evolving business requirements with robust process modeling tools, standards, and best practices.

Other benefits of merging IoT and BPM include:

- Faster access to information from any device or environment with a people-centric and customer-centric focus
- Improved consumer feedback that lead to better process lifecycles, from design and deployment to analysis and governance
- Accelerated solution deployment, streamlined operations, and continuous process improvements

The end state of this merger translates to more revenue saved and more revenue earned.

According to Janelle Hill, vice president and distinguished Garter analyst, *"Tomorrow's business operations will integrate real-time intelligence, (which) will require a new approach using IBO* ***(Intelligent***

Business Operations) *— a style of work in which real-time analytic and decision management technologies are integrated into the transaction-executing and book-keeping operational activities that run a business."*

The article continues to discuss that in order for IBO to occur, the market needs to evolve toward the next generation of business process management suites, called intelligent business process management suites (iBPMSs). The evolution of IoT and BPM into intelligent Business Process Management, or iBPMS, depicts the early-stage maturity of IoT as it starts transforming businesses. By adding analytics into operational processes, companies are empowered to make better and faster decisions. This evolution to iBPMS eliminates the former clear line that existed between analytical work and transactional work.

The iBPMS drive is already visible in several companies working within sectors like manufacturing.

"The impact of integrating real-time analytics with business operations is immediately apparent to business people because it changes the way they do their jobs," continued Ms. Hill.

The iBPMS drive is already visible in several companies working within sectors like manufacturing, where IoT on delivery or dispatched vehicles provides gas consumption estimates that help reduce waste. In healthcare, the integration of IoT is increasing at a rapid rate. By integrating medical devices with software, IoT is reducing the downtime of a medical device by allowing medical professionals to remotely monitor, support and troubleshoot those devices.

According to a recent Forbes article, some companies are seeing a 50 percent reduction in mean time required to repair connected devices. One company cited in the article reduced service costs by $2,000 per issue simply by remotely troubleshooting defective components.

In many ways, the healthcare industry has been an early adopter of IoT. However, the major benefits they experience from the use of IoT and BPM are not limited to their industry, but rather applicable to multiple sectors. Remotely troubleshooting devices for example can create major cost savings in industries with remote physical devices. When linked with a BPM solution to measure the cost savings and downtime, remotely troubleshooting physical devices can help minimize costs in

sectors like manufacturing, utilities and oil and gas. Utilities and oil and gas, specifically, are filled with physical assets on a global footprint that elevate overhead costs and carry the potential of escalating downtime and skewing utilization rates.

Utilization and decreased downtime of essential equipment are two other factors that have led to a quicker adoption of IoT and within healthcare. When paired with BPM, IoT can also produce greater agility in industries dependent on proper inventory levels. In manufacturing, for example, IoT-enabled floor weights in a warehouse can detect a certain loss of weight as materials are used, which in turn signal the supply chain manager to order more materials. IoT in this scenario can more closely connect inventory to customer demand, and allow companies to further collect and analyze data to produce more tangible forecasts on goods and services needed to produce items for sale.

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Despite all the innovations and agilities that the merger of BPM and IoT can produce, one aspect that is necessary before the IoT and BPM merger can evolve from just producing iBPMS to disrupting every aspect of the way business is conducted is integration with common off-the-shelf collaboration technology.

The challenge stopping iBPMS from completely transforming business operations is the need for real-time communication and collaboration. The IoT value chain has several steps that require communication efforts. IoT devices and the data that interfaces from these devices has to incorporate with BPM software. The results have to be analyzed and communicated to decision makers in near-real-time to be effective. If a considerable lag exists between the time it takes for IoT to collect the data, the time it takes for BPM to process and submit the data, and the time it takes for analysts to compile and translate the data before leaders receive the final product, the agility and empowering effects of iBPMS become diluted and less effective.

Too many steps can also open the door to issues bottlenecks that could diminish the effects of proper IoT and BPM interaction, as well. For iBPMS to become truly effective it has to evolve to integrate with an accessibly hosted collaborative solution that allow engineers, analysts

and managers access the data and the data's interpretation in real-time. Only then can the iBPMS with centrally accessible communication create organizationally transformative data. Another key technology to integrate within the IoT and BPM transformative chain is the need at some point for Big Data analytics.

IoT devices send out a lot of data. BPM analytics adds more size and depth on that data. It's just a matter of time before the data gets so large and diverse that extrapolating actionable results requires the incorporation of Big Data analytics.

In the oil and gas industry, IoT and BPM enabled geophones in remote locations in the Pacific Ocean, Australia, Alaska and Gulf of Mexico integrate.

If collaboration and eventually Big Data represent the engine that drives the value of the iBPMS, how would this evolution look like in an industry?

In the oil and gas industry, IoT and BPM enabled geophones in remote locations in the Pacific Ocean, Australia, Alaska and Gulf of Mexico integrate and send seismic and financial data to social media engines or organizational collaboration tools like SharePoint. Connected to BPM on the backend, these processes can help businesses make more informed financial decisions on prospective future wells. The seismic data provides geoscientists with faster information around prospective reserves. Connecting IoT to Social Media or SharePoint means that geoscientists can collaborate from around the world to make potential decisions while management teams can access the data for risk assessment and potential Health, Safety and Environment purposes from the comfort of their corporate headquarters.

Finally, a Big Data backend scales the capabilities for the sensors to produce and provide near huge datasets that can be sifted and queried for actionable results.

Connected devices are now prevalent in several sectors, from consumer to manufacturing to logistics, with many of the interactions being between machines, not between people and machines. But this union of two great technologies is only in the beginning stages.

20th Century American business pioneer, Orison Swett Marden, once said that the golden rule for every business person is to put yourself in

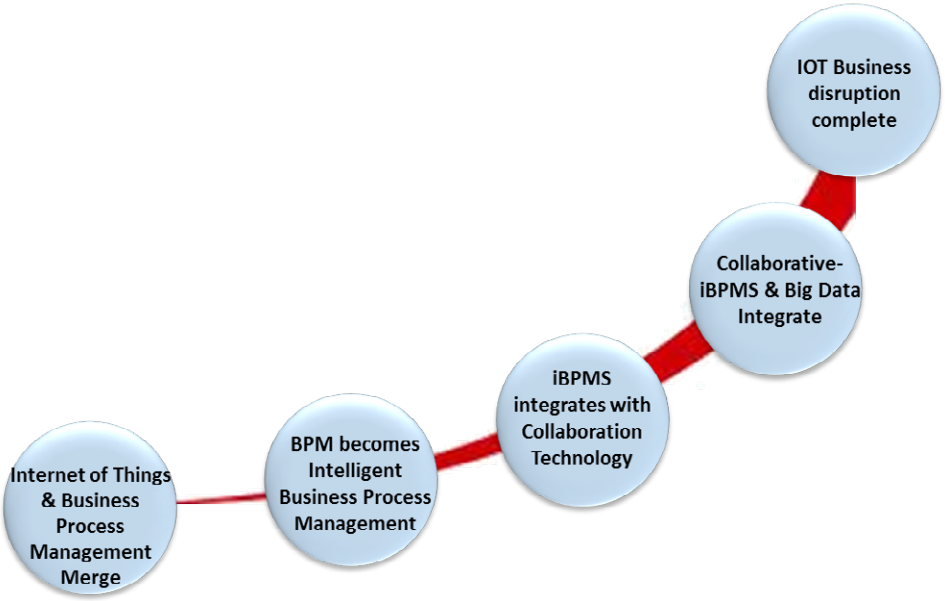

Figure 1 *There are four phases to IoT and BPM integration that lead to a full disruption in business.*

With IoT and BPM's inevitable merger with other technologies like Social Media, the result will be a future capability that will add automation to the understanding of the customer.

your customer's place. With IoT and BPM's inevitable merger with other technologies like Social Media, and collaboration technology like SharePoint, the result will be a future capability that will add automation to the understanding of the customer, which will make the IoT and BPM merger truly disruptive. ■

Carlos Soto began his career as a writer for the Washington Post Company covering consumer and corporate technology. In 2001, Carlos won the "Best Technology Story of the Year" award by the Post-Newsweek Tech Media Group for his analysis and coverage of biometric technology and its disruptive nature on the corporate environment. This award was followed three years later by two awards from the Association of Business Publications Editors. After completing his MBA at Rice University, Carlos was accepted into the three-year executive leadership program within the Global Technology and Operations world at Bank of America. Within his tenure in this program, Carlos managed the development and roll-out of cutting edge integrated customer services and tools, including future generation ATMs and ecommerce applications. Most recently, Carlos has spent the last two years running the sourcing and marketing departments for a virtual business process firm.