



**Intellyx**™



Whitepaper

# Process and Performance Mining in the Digital Era

**Jason Bloomberg**

President, Intellyx

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## What Can Your Business Processes Tell You?

As enterprises' view of business processes evolve from static, rote sequences of tasks to a dynamic, customer-focused context, so too do the business process management (BPM) platforms that help such organizations manage and automate those processes.

As companies progress with their digital transformation initiatives, taking a customer-focused view of business processes becomes mission critical – and thus, ensuring the performance of those processes is now of paramount importance.



However, traditional business activity mining (BAM) and process mining techniques that seek to discern patterns from application event logs fall short of delivering on the real-time performance insights that organizations require to manage such processes.

To address this challenge, **Bonitasoft** offers process performance mining within its BPM platform – giving organizations the ability to gain the real-time visibility into process performance they require to ensure processes meet their business goals.

Furthermore, via the use of machine learning, Bonitasoft can also make predictions about potential process issues before they occur, thus enabling enterprises to establish feedback loops that empower them to continually optimize their business processes.



## The Challenge of Process Visibility

Ever since Frederick Winslow Taylor penned his seminal *Principles of Scientific Management* in 1911, the notion of a business process has been one of a rigid sequence of tasks. In fact, Taylor's most important innovation was separating the roles of managers and workers: managers defined the tasks that made up the processes, and the workers' role was to execute them.

What a difference a century makes.

Today, rigid sequences of tasks are more the exception than the norm, as customer interactions combined with modern management practices require dynamic processes with greater empowerment of the employees executing them.



In addition, the inexorable progress of automation has transformed nearly every process in most organizations. Where automation in Taylor's day involved the operation of automated machinery like looms and other factory equipment, today automation provides both the context for executing processes as well as increasing levels of artificial intelligence (AI) that augments or replaces some human decision making in the course of executing business processes.

In the 1990s and 2000s, business process management (BPM) platforms entered the market, providing process modeling, management, and automation capabilities for a range of different types of business processes. While this first generation of BPM tooling provided an important set of capabilities to enterprises, today they fall short of modern requirements in two fundamental ways.

First, this early generation BPM tools as a rule don't deal well with dynamic processes. In fact, this limitation gave rise to a separate product category, case management, that sought to provide support for inherently dynamic processes as a result of end-user interaction (say, for example, people calling into a call center).



Even with the addition of case management to the mix, however, these aging platforms nevertheless fall short in dealing with situations where the process logic itself is subject to regular change.

The second limitation of the last decade's BPM tools: insufficient visibility into the behavior of running processes – especially in dynamic situations.

The 'management' part of BPM, you see, took place largely before the fact, as process analysts hammered out the specifics of the process logic.

Today, in contrast, organizations need visibility into the *real-time* performance of running processes – both to ensure they are meeting the needs of customers and other end-users, but also to establish critical feedback loops that can drive continuous improvement of the organization's business processes.

## **BPM and Business Activity Monitoring: A Poor Fit**

Organizations that implemented first-generation BPM tools had limited ways to obtain visibility into the operation of their business – a broad requirement that led to the development of business activity monitoring (BAM) software.

The goal of BAM was to gather sufficient relevant data for the running of the organization, process that information to extract insights into key performance indicators (KPIs) for the business, and then display the resulting insights on dashboards that executives and others could use to manage their businesses.

However, BAM faced many challenges: integration complexity that limited the ability to collect the right information, scalability challenges, and difficulties in interpreting the information in the dashboards.

Furthermore, the BPM tools of the day didn't help matters, leaving IT organizations with few alternatives other than to look at the log files from various pieces of software – an approach the industry called *process mining*.

Initially, organizations used process mining to discover processes using existing logs. Eventually, they were able to use this information to help ensure running processes conformed to business needs.



The source information for process mining depended on inconsistent, incomplete log files. In fact, there is a common term in modern parlance for such event information: *data exhaust*.



As with the exhaust from a vehicle, data exhaust is essentially a waste product whose eventual usefulness is not apparent at the time an application generates its log file.

In addition, data mining the plethora of log files that a complex process might generate is a difficult task, especially when the business wants the results in real-time. As a result, the event streams that process mining typically generated provided limited, out of date insights into running processes.

Furthermore, such process mining generally fell short when the requirement was to manage the performance of such processes. If some type of issue arose with a running process, say that it stalled at a particular step, process mining the digital exhaust from such a process wouldn't give the business the information it would need to resolve such a stalled process in a timely manner.

## **Bonitasoft: Intelligent Process and Performance Mining**

The next-generation BPM tools of today show a marked improvement over the ones from a decade ago. And it's a good thing too, as the black and white division between the people who create and execute processes à la Frederick Winslow Taylor are long gone.

Instead, these modern tools are now part of the burgeoning low-code movement, as they empower developers as well as process analysts and other business users to have greater control over the behavior of the processes, even as they execute them.

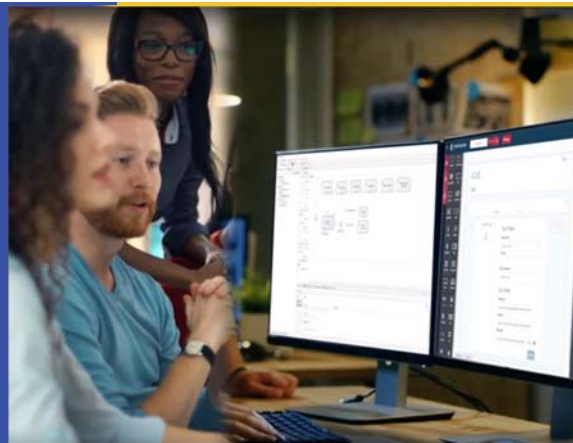
This broad empowerment, in turn, is an essential enabler of enterprise digital transformation, as customer preferences and behavior increasingly influence the business processes at the various organizations customers do business with.



As a result, managing the performance of such processes in real-time is more important than ever – and not something you'd want to leave either to complex, difficult to use BAM or process mining the data exhaust from running processes.

One modern BPM vendor, Bonitasoft, addresses this problem by bringing the process mining into the BPM environment itself.

With Bonitasoft, instead of squeezing insights out of the data exhaust of log files, the platform provides real-time insights into process performance – going beyond process mining to *performance mining*.



By implementing performance mining directly in the BPM platform, Bonitasoft can gain insights into performance issues like transient process bottlenecks, overloaded resources, or frequently skipped activities. Furthermore, the platform can reveal such issues as they happen, so that organizations can take immediate action to mitigate the problems at hand.

Reacting to problems as they occur, however, is only part of the challenge. Bonitasoft is also able to close the feedback loop with machine learning (a type of AI) that can predict delays and deviations before they take place, based upon information about previous behavior.

The result is the ability to intelligently optimize processes in real-time – even though modern processes are generally customer-focused and variable. Remember, business processes involve both automation and people – and people don't always behave as expected.

This combination of intelligent optimization and predictive capabilities also enables organizations to predict issues based upon particular business goals – for example, what process issues might cause delays in meeting a business deadline.



## The Intellyx Take

*Customer focused. Real-time. Intelligent.* These words characterize how we expect software to behave in the digital era. For too long, however, business processes – and BPM generally – have fallen short.

Bonitasoft represents a rethink of this equation. Such next-generation BPM is human-focused in ways that earlier platforms couldn't hope to accomplish.

As a low-code platform, Bonitasoft empowers people in a variety of roles to take greater control over the processes in the organization. Via in-platform performance mining, Bonitasoft helps those organizations take control over their running processes in real-time, in spite of their customer-focused, dynamic nature.

And perhaps most importantly of all, Bonitasoft's machine learning-driven process mining discerns patterns behind the scenes in existing process execution behavior in order to apply those patterns to ongoing process executions, predicting issues and efficiencies before they can adversely impact customers.

True, there are now many next-generation BPM vendors in the market that have shifted their platforms to low-code. Many of those vendors are adding machine learning to their platforms as well.

However, Bonitasoft's ability to conduct performance mining in real-time, coupled with its ability to predict process issues before they happen, positions the company to stand alone among next-generation BPM vendors as they compete with one another in the digital era.



## About the Author: Jason Bloomberg

**Jason Bloomberg** is a leading IT industry analyst, Forbes contributor, keynote speaker, and globally recognized expert on multiple disruptive trends in enterprise technology and digital transformation.

He is founder and president of Digital Transformation analyst firm Intellyx. He is ranked #5 on Analytica's list of top Digital Transformation influencers for 2018 and #15 on Jax's list of top DevOps influencers for 2017, the only person to appear on both lists.



Mr. Bloomberg is the author or coauthor of four books, including *The Agile Architecture Revolution* (Wiley, 2013).

## About Bonitasoft

**Bonitasoft** helps innovative companies worldwide deliver better digital user experiences for customers and employees. The extensible and open Bonita application platform unleashes the full potential of multidisciplinary development teams to create Living Apps: enterprise-grade applications that connect tailored user interfaces with reliable back-office operations and business processes, with the capability for continuous improvement to keep ahead of changes in business and technology.

With more than 1,000 customers in 75 countries, and its ecosystem of more than 130,000 members, Bonitasoft is the largest provider of open-source Business Process Management, low-code and digital transformation software worldwide.

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