The Modernization of Process Improvement

How process mining simplifies process improvement in the modern era

BY WES FLORES

INTRODUCTION:

For as long as businesses have existed, they have sought to create more value through process improvement activities. These activities can range from quality enhancements to cost reductions, to even overhauling the customer experience. Although process improvement practices are not new to business, key questions remain around their efficacy:

→ *Have these historical practices enabled business leaders to drive a project's priority when faced with perceived higher priority programs?*

→ *Have these practices empowered decision-makers to drive tangible and meaningful results in their business' bottom line?*

→ *If business value was realized, was it achieved through an expensive and time-consuming process?*

In this article, I will address these questions through the lens of historical roadblocks for process improvement initiatives. In addition, I will look at how more modern data-driven process improvement approaches like process intelligence can increase program success. Specific topics explored include:

▪ *How process intelligence brings new insights into old challenges*

▪ *The application of process improvement to a real-world business challenge*

▪ *The evolution of process improvement practices*

▪ *Key benefits of modern process improvement activities*

▪ *Key considerations for investments in process mining technology*

WHAT IS PROCESS INTELLIGENCE?

To understand "process intelligence", it is important to first understand process mining. **Process mining** is the analysis of a multi-step process to help understand its lineage. For example, you would use process mining if you want to track how an event moved from step 1 to step 15, regardless of whether there were issues in specific steps along the way. **Process intelligence** leverages *data-driven process mining* to provide deeper insights into the process, with the goal of revealing opportunities, removing waste, and improving quality.

The benefits of process intelligence may seem clear-cut, but how do we know it will drive tangible value realization? In my 25 years of experience working with businesses, I have seen an extremely broad need for process optimization across business types and business functions. Businesses, regardless of how small or large they may be, all have underlying processes that are often very complex, intertwined, and ripe for improvement. *Figure 1* shows just a few functions where process intelligence practices can be leveraged to drive business value.

Figure 1: Applications for Process Intelligence

→ **Supply Chain**

→ **Audit and Compliance**

→ **Customer Experience**

→ **Service CRM**

→ **Call Center Management**

→ **Closed Loop Marketing**

→ **Process Re-engineering**

→ **Productivity Management**

→ **Revenue Assurance**

→ **Order Pipeline Management**

→ **Cash Flow Management**

All of these business functions have one thing in common: a core process. While these core processes may seem simple and well established, process intelligence uncovers deeper insights and helps us understand previously unknown nuances. Later in this article we will explore just how much deeper these insights go and how modern technologies play a role, but it is important to first highlight that insights alone provide little value unless they are used to drive true optimization. Below are high level examples of the results of process optimization using these insights. Each of these examples alone can be game changer for any business, and when combined they represent the chance for transformative change.

Business Outcomes from Process Optimization:

▪ Lower Costs

▪ Simplified Operations

▪ Improved Customer Experience

▪ Enhanced Process Consistency

▪ Improved Resource Productivity

▪ Reduced Risk

▪ Superior Quality

▪ Brand Protection

▪ Improved Planning

A PROCESS INTELLIGENCE USE CASE

An example of process intelligence put to use can be drawn from my time supporting a Fortune 50 telecommunications company, where we measured the results of key strategic products very closely. One key metric we monitored on a daily basis was "Net New Customers" across each of our key products. Great importance was placed on this single metric as it had the ability to influence multiple other metrics and even the company's stock price. As a result, it was of critical importance for us to fully understand the reason behind any fluctuations. Often, deriving this understanding was not simple.

Multiple different metrics, such as order cancellations and sales, had the potential to influence "Net New Customers," and it was difficult to pinpoint which factor(s) were to blame. Even with a small army of resources to break down and analyze the data, findings were often limited to high-level theories or hypotheses. When a true root cause of an issue was identified, it was frequently too late to effect real-time change.

To address this constant challenge, we spent years on a project geared toward developing a solution. Our end solution was designed to take the data across all of our systems and link them together to build a true end-to-end view of all orders and sub-steps of each order. Some of the benefits of this solution included:

- **Easier and more effective process mining** as a result of having all of the data collected and pre-integrated

- **Better understanding of the complete process lifecycle** through a holistic view of all process steps, not just individuals' views of sections of the lifecycle

- **Enhanced data-driven predictions for impacts** as a result of no longer relying on deductive reasoning but on hard data around the process

- **Ability to identify and prioritize effective marketing campaigns** instead of spending all of our time understanding why numbers did not go as planned

- **Ability to build the use case for future customer experience** investments as the value of those programs could be measured up against actual returns instead of just frustrations related to existing practices

The impact of our process management tool built higher trust in information and in the teams supporting the processes.

HISTORY OF PROCESS IMPROVEMENT

Process improvement methodologies have been driving business value as a critical business discipline as far back as the early 20th century. Process improvement concepts developed over

time include Total Quality Management, Continuous Improvement, ISO9000, Lean and Six Sigma. Along the way, more tools, such as Statistical Process Control (SPC), were used within these practices to support a more data-centered approach. These tools were attempts to use data over more instinct-based analysis rooted in personal experience and gut-based decision-making. With additional data-driven advancements brought along by artificial intelligence and machine learning the evolution of process improvement continues to develop.

Throughout process improvement practices you will encounter four main themes: process, people, customer and data. Different methodologies typically focus on one theme more than another, creating value and impact differences between each of them. Over time, the evolution of these practices led to the development of Lean Six Sigma, which I have seen as a framework that brings these themes to focus in a single framework. Lean Six Sigma also addresses some of the historical challenges of process improvement, including balancing using tools vs. methodology, and data vs. gut decision-making.

In today's modern era of technology advancements, modern process improvement practices have increased the effectiveness, quality, and speed of process improvement and process optimization. Let us review how these results are achieved.

THE KEY STEPS: PLANNING, ANALYSIS, AND ADOPTION

Though innumerable business processes and programs can benefit from process improvement activities, process intelligence in particular can be used to increase the success of specific strategic programs that have traditionally low success rates such as:

- Robotic Process Automation (RPA)

- Business Process Management (BPM)

- Digital & Business Transformation

Research shows that these programs have a higher than normal failure rate due to their complexity. My

experience has shown that some of the contributing factors for these failures lie in rushed or missed steps in the project process. Specifically, many projects under-emphasize the "planning and analysis" and "adoption" phases, which we will explore more below.

Planning & Analysis

I recall from one of my favorite childhood cartoons, "G.I. Joe," that every episode ended with the tagline, "knowing is half the battle." No quote could be more relevant to a business transformation program. The planning and analysis stages of these programs often fail as a result of not having a holistic picture of the problem and the "root causes" that face the initiative. By tackling this challenge with modern data science and a data-driven approach, we can identify and focus on the true underlying issues vs. focusing on what the team may view as the issue. At the end of the day, the primary goal of a process improvement project is to effectively improve the process in a lasting, customer-centric and revolutionary way, and taking the time upfront to understand the problem at hand is critical to enabling this. Process intelligence provides an effective vehicle to gain more practical knowledge to drive a solid design and set user expectations.

Adoption & Change Management

In addition to emphasizing the planning and analysis phases of a process improvement project, another step that is critical to success is ensuring the adoption of your improved process through sound change management principles. To use another television reference, the idea that was coined from the Field of Dreams: "Build it and they will come," is often applied to new solutions. Although I think this can work in some cases, in reality not focusing on change management often leads to poor reception of a new process. In order for a project to be successful you must gain the passionate support of the groups and individuals impacted by the new process. Building and executing a change management plan, including articulating a clear case for change, can be the critical factor that determines the success or failure of your process improvement project.

THE KEY BENEFITS: THE QUALITY, TIME, & COST PARADIGM

Let us now dive into what every leader is focused on: the outcomes. The ideal outcome for any project is that it achieves high-quality results, is implemented fast, and is low cost (*Figure 2*). Yet we know that the quality, time, and cost paradigm dictates that we rarely get all three. When considering that process optimization projects tend to have issues with all three of these categories, it is easy to see why leaders are accepting impacts related to these challenges. The assumed risks of time and cost alone are enough to stop these projects before they even get started. Fortunately, modern process intelligence techniques and technologies can break down these historic roadblocks, which we will detail more below.

Figure 2: The Ideal Project Outcome
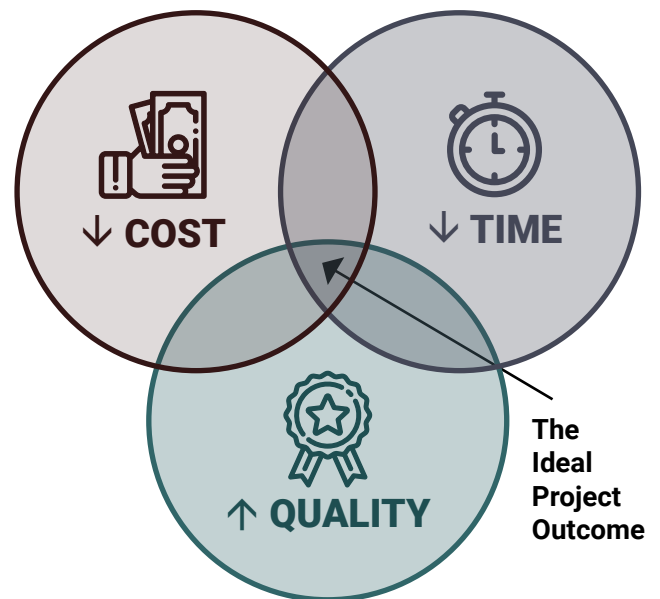
Modern practices in process mining can often simultaneously reduce cost while improving quality even in a fraction of the time. These are some of the key ways this multi-fold business value is realized:

- *Meaningful insights faster and with much lower cost.* When investing in optimization projects, costs can soar with tasks such as process re-engineering and customer journey maps. Data programs are often plagued with data

quality issues and lack of integration causing high IT costs for access to key information. All of this also adds many months to the upfront planning stages of these programs. Significant cost and time are decreased through simplified access to insights through modern process mining.

- ▪ *Clearer upfront understanding of the project's return on investment (ROI).* Upfront process intelligence can ensure you have the ROI needed to justify larger program costs. It also increases the accuracy of your ROI formula by providing a clearer picture of your needs and challenges. For example, by realizing that you have unneeded steps, you can more accurately predict the cost savings of removing those steps from your process. Without an exhaustive process mining view, it is often difficult to know the impacts of proposed changes.

- ▪ *Proper design the first time around, cutting downstream costs.* By leveraging upfront process intelligence practices, you can drive higher success of your project and avoid costly rework or re-engineering. A practical example of this can be seen in Robotic Process Automation (RPA) projects. These projects often fail or are required to be re-engineered after a production release due to unanticipated anomalies showing up.

- ▪ *Long-lasting, effective solutions that treat the cause of the problem, not just the "symptoms."* Improvements in the process intelligence practices and leveraging artificial intelligence can mean identification of more than just the "symptom" related issues and helps you identify the root cause. With deeper insights into your processes, your solutions are more likely to cure the actual problem instead of serving as a temporary bandaid.

- ▪ *Enhanced change management and user adoption outcomes.* Meaningful process improvements that enhance the quality of

existing processes make the process of change management easier. Users will want to use a new process that makes their jobs easier and results in better outcomes. If something actually works, people are more likely to use it. You also know the value of the program much earlier which is key for early buy in from the user community.

- ▪ *Better strategic planning.* Trusted, high-quality process improvement insights can be a true game changer when it comes to the ability of a business to build and grow their strategic plan. Fast access to meaningful insights gives you the tools to lead in the market. When insights are achieved faster and lower cost, businesses are more likely to use these solutions across their enterprise, multiplying the value across the value chain of each business significantly.

- ▪ *Faster project execution.* Process mining technologies along with maturing best practices have changed the game of project execution, redefining the definition of a project's "long pole in the tent." The long pole in the tent for projects are often determining what are the right problems to solve, process re-engineering, customer journey maps, and business rule design. When these are known much earlier in the lifecycle with higher accuracy, the quality of the project is improved on top of the cost and timeline reductions.

- ▪ *Ability to make quick changes and maintain competitive edge.* With businesses across industries adapting at a faster rate of change than ever before, if you are not changing to meet with the times, you will be left behind. These tools add breath to your dealing with new trends or unplanned events such as COVID. These tools allow you to stay "optimized" over time, not just one project at a time.

Your strategic programs are improved from design to adoption enabling long term value realization and reducing the likelihood of unforeseen costs.

INVESTING IN THE RIGHT TOOLS

My background in data mining and large-scale data solutions across industries has exposed me to the good, the bad, and the ugly when it comes to implementing process improvement and process intelligence projects. One of the key factors that can cause a project to fail is not having the right technologies. It is safe to say that not all process mining tools are made equal. As with most software solutions, the primary competitors in this market all provide a minimum set of functionality, but there are key differences among their offerings. Below are a few key considerations to look for when evaluating modern process mining tools:

- Ability to analyze process flows using custom metrics (e.g., to facilitate quality-, time-, and cost-based analyses)

- Seamless integration with business intelligence (BI) tools

- Ability to support drill-downs on complex hierarchies within the process map

- Ease of use for all types of users, from leadership, to frontline staff, to data analysts

- Advanced visualization tools that go beyond the typical process flow views (e.g., for added dimensionality, improved correlation analysis, and process anomaly identification)

- Extensive databases supported for data sources (e.g. not just XML and messages)

CONCLUSION

In summary, by utilizing modernized process optimization methodologies and AI-driven data mining, your process improvement initiatives may have a reason to move to the top of your strategic project lists. With the advancements in process intelligence, the barrier of entry for new projects is significantly lower. Now, it may be a higher risk to not attempt your next process improvement initiative.

ABOUT THE AUTHOR

Wes is a recognized business transformation and solutions leader, speaker, blog writer, and business management consultant with 25 years of experience across the end-to-end information technology ecosystem with deep expertise in the data and analytics field. He has a proven track record in, and a passion for, setting up high-performance teams and implementing world-class information management platforms. He has acted in IT leadership roles as CTO to supporting CIO's success through driving mature and lasting IT strategies.

He has both individual and team industry awards beginning with Information Management Magazine's - TOP 25 Information Managers and Computer World BI & Analytics Perspective's - Best Practices in BI and Analytics for leading a multi-year corporate wide business intelligence program for a fortune 15 company. He is a co-founder of Simatree, a leader in IT, data, and analytics which was recently recognized as a Top 10 Analytics consulting company. You can follow much of his work at www.simatree1.com.