

Process Mining Can Support Business Operations in Driving Resilient Growth

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Initiatives: [Digital Future](#); [Digital Products and Services](#)

Business operations requires visibility, adaptability and accountability in the face of change. Enterprise architecture/technology innovation leaders should use process-mining techniques and tools to continuously deliver new capabilities for business and IT operations and to drive resilient growth.

Overview

Impacts

- In a time of continuously changing business conditions, organizations are facing severe economic pressures to confront broken internal processes and ways of working, as well as changing external interactions with clients, partners and supply chains.
- Even at the task or personal level, work must be rebalanced. People are collaborating in very different ways, and so-called “shadow” ways of working are being reinvented, creating a need for information systems to adapt to changing patterns and newly composed capabilities.
- In reaction to a disruptive environment, internal operations and external interactions are being reconstructed, inducing new political and cultural barriers that require clear accountability.

Recommendations

Enterprise architecture and technology innovation leaders looking to support business operations resilience should apply process mining to:

- Create visibility and understanding of their internal operations and external interactions. By discovering exceptions and shadow operations, process mining identifies opportunities for process adaptation and improvement initiatives, and validates or audits whether actual operations conform with defined operations.
- Support ongoing adaptability. By closing the sense-model-adapt loop, process mining will show the actual business outcome and aligned stakeholder value after the implemented actions; moreover, it reveals new opportunities, enabling continuous adaptation.
- Support accountability and reduce the political and cultural barriers caused by change or reconstruction of operations. Provide insights to all participants in the operations and actively engage workers, using process mining to eliminate cross-functional responsibility gaps, leverage the creative power of all and create a performance dialogue.

Introduction

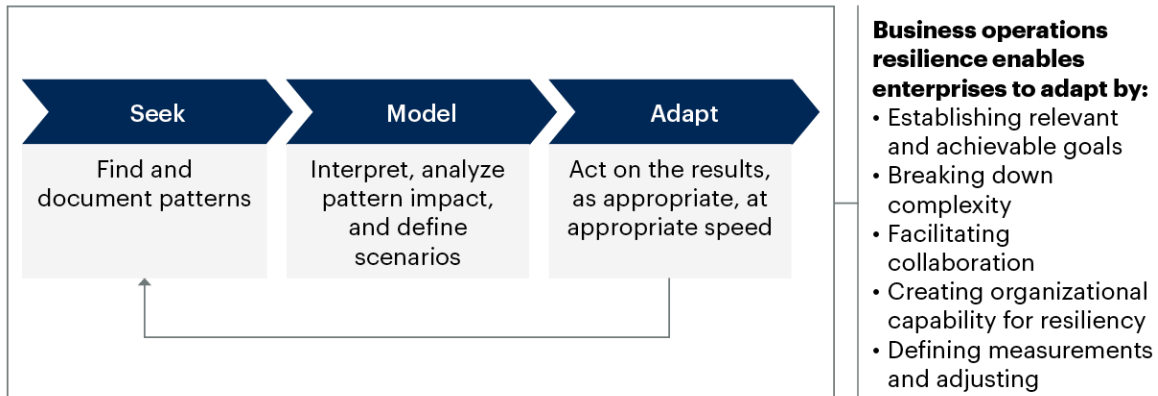
Business Operations Resilience

Business operations resilience is a set of techniques that allows people, processes and information systems to adapt to changing patterns. It is the ability to alter business operations in the face of changing business conditions.

Business operations resilient enterprises (see Figure 1) have the organizational competencies to ramp up or slow down operations in ways that provide a competitive edge and enable quick and local process modification. In the new normal, this will enable your organization to survive and navigate out of crises successfully.

Figure 1: Business Operations Resilience

Business Operations Resilience



Source: Gartner
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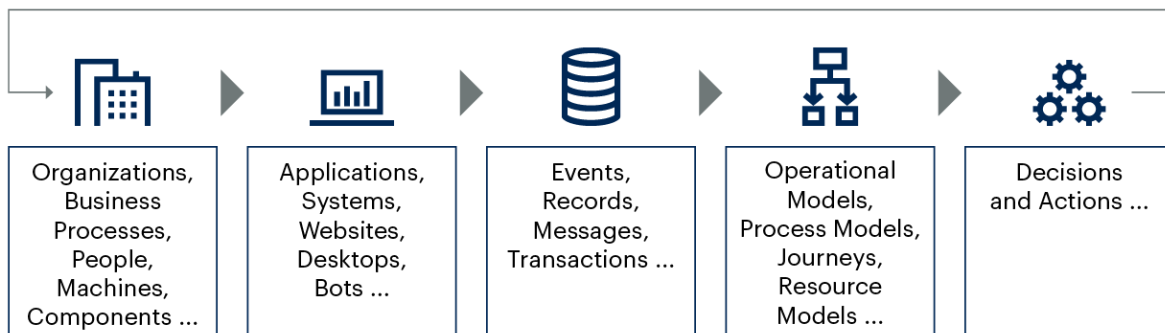
Gartner

Process Mining

Process mining (see Figure 2) discovers, monitors and improves actual processes (that is, not assumed processes) by extracting knowledge from events, traces, messages left by applications, systems and technology. Many business operations and tasks performed by people, machines and devices are supported by applications, systems and technology that leave events, traces and messages to mine.

Figure 2: Process Mining

Process Mining



Source: Gartner
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The marriage between process mining and business operations resilience has three major characteristics: visibility, adaptability and accountability.

Impacts and Recommendations

Organizations Must Confront Broken Processes, External Client and Partner Interactions and Supply Chains

Even in noncrisis times, business operations resilience is a competitive advantage. For example, a manufacturing plant becomes more flexible when its skilled workers can quickly reconfigure the production line to accommodate order changes, and employees are trained on multiple machines. The plant may also employ part-time resources, enabling it to reduce or add resources, as needed, and get products to market faster than its competitors. Employing techniques such as Kaizen (i.e., continuous process improvement) and creating more global (as opposed to siloed) processes will support an operationally resilient ecosystem (see [Operational Resilience: Adapting for Competitive Advantage Using a Pattern-Based Strategy](#)).

Process mining provides visibility and understanding on actual business operations and processes by applying a set of algorithms to events, resulting in highly adaptable, maintainable and validated process models. In discovering exceptions and shadow operations, this technique delivers insight into where to adapt and improve operations, and how to attain targeted business outcomes.

The starting point for any process-mining task is an event log. Each event in such a log refers to an activity (a well-defined step in some process) and is related to a particular case (a process instance). The events belonging to a case are ordered and can be seen as one run of the process. The sequence of activities executed for a case is called a trace. Process mining then applies algorithms to discover the actual process and its exceptions, then collects these processes in models. Based on the outcomes, decisions can be made, and actions can be taken to optimize, adapt, change, automate or reconfigure the work practices.

Process mining also tracks customers and their interactions, as well as their touchpoints with the organization as the main object, rather than an order, an invoice, a request or any unit of work. This can be viewed as customer journey mining, which opens up an entire new field of insights. Furthermore, in combining these alignments of external customer insights to internal operational insights, process mining is able to connect lagging customers' indicators to leading operational indicators. This helps organizations identify the operations that can affect the experience for a specific customer-offering segment.

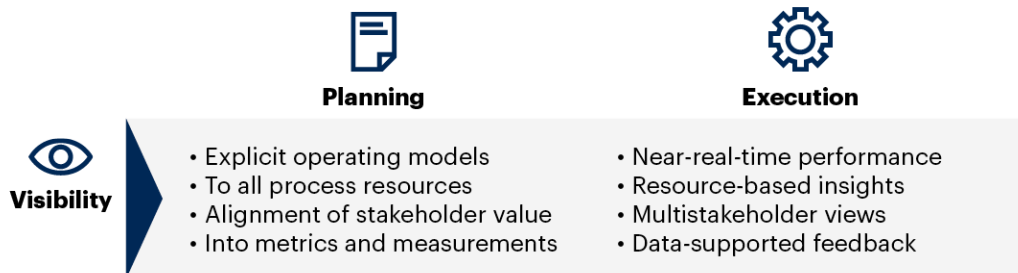
Beyond basic discovery, process mining validates or audits whether actual operations are in conformance with defined operations. Most organizations have internally defined standard operating procedures, policies, work instructions or best practices, which are sometimes baked into enterprise applications, such as ERP and CRM. In practice, many of these predefined operations are complemented by shadow operations. Process mining helps validate or audit whether actual operations conform to these defined operations.

In the planning mode, process mining provides explicit operations models and connects any resource that is of interest. Resources can be people, things, money, assets, systems, applications, information, algorithms or even capabilities.

In the execution mode, process mining provides feedback on the performance of the value realization, a root cause insight on any of the deployed resources, and many different role-based perspectives on the total process or operations model (see Figure 3).

Figure 3: Business Operations Resilience and Process-Mining Visibility

Business Operations Resilience and Process Mining Visibility



Source: Gartner
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Two examples include:

- An integrated healthcare provider in the U.S. used process mining to unify external databases, listing approved suppliers with its own internal databases to empower procurement officers to act decisively and with clearer direction. This has resulted in more than 5,000 additional sourcing points for essential frontline products, such as masks, gloves and ventilators. This same provider also leveraged process mining to create heatmaps of especially affected areas to better understand and anticipate areas in which supply was likely to surge, thus ensuring that servicing areas in critical need were prioritized appropriately.

- A major oil and gas company applied process mining to achieve better visibility in its internationally centralized invoice reconciliation process. After six weeks, the company discovered some major inefficiencies and approved? faster availability of cash for the entire group. This reduced the overall operating working capital locked up in this reconciliation by €1.2 million.

(More examples can be found on the official website of the [Process Mining Conference](#).)

With New Forms of Collaboration, Shadow Work Is Being Reinvented, and Information System Patterns Are Changing

A key element of process mining is enabling situational awareness. Creating the situational context supports perceiving what is happening, understanding what has been perceived and using what is understood to think ahead. Once the mining and adaptation or optimization initiative has been started, and the outcomes and measurements have been defined, it is important to know the current situation and the progress toward the business objectives. This situational awareness makes your organization's monitoring and guiding system dynamic and "closes the loop." It is also essential to realize that the objectives and the desired business outcomes will evolve and change.

Process mining acts as a monitoring component for any initiative, such as business cost optimization. Therefore, it gives the latest update on how the initiative is faring toward the outlined objectives at any moment in time. Furthermore, if patterns are known and understood, one could change the objectives and directly show the possible impact of the suggested change or new initiative.

In the planning mode, process mining not only provides situational awareness on the total value realization of the initiative, but also delivers the capabilities to perform a kind of what-if analysis based on scenarios.

In execution mode, this reflects the plan to change to a mentality that can drive a continuous improvement and innovation cycle. It actually closes the loop of strategy to execution and continual adaptation of this strategy based on outcomes (see Figure 4).

Figure 4: Business Operations Resilience and Process-Mining Adaptability

Business Operations Resilience and Process Mining Adaptability



Source: Gartner
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Some examples include:

- An electronics manufacturer that provides necessary components to crucial, lifesaving machines experienced a surge in demand and a strain on supply. To cope, the company set up an early warning system that predicts late deliveries in real time to ensure on-time delivery to its customers and strengthens the robustness of the supply chain.

By leveraging process-mining, real-time capabilities, the company is able to react instantly to specific confirmation date changes from suppliers of specific materials. With customers that produce ventilators and medical equipment, it's essential that the company keeps goods flowing. They are able to prioritize these key customers and other healthcare providers, and proactively determine which critical materials and product hierarchies are most affected.

- A retail bank uses the adaptability of the mined and understood operations model to do a scenario analysis and prioritization on possible promotion campaigns on several product/market combinations. This has enabled the bank to save considerable investments by dropping campaigns that require additional resource reconfigurations.

Reconstruction of Internal Operations and External Interactions Is Inducing Political and Cultural Barriers Requiring Accountability

Culture is key to change initiatives, because operational effectiveness and efficiency result from many decisions that are made every day by many people. Cultures are enacted by the organization by putting data in the hands of people who make decisions, by applying policies, identifying best practices, and measuring and rewarding the right decisions. Process mining delivers a mechanism that aligns all operations with the same company objectives, makes policies visible and actionable, and guides people on how to collaborate. It allows for setting out actions, decisions and discussions, based on the accurate operations and process models, making accountability clear.

This is accompanied by following best practices:

- Involve and educate everybody on the objectives of the performance dialogue. Because of the visibility across functions of responsibilities and related measurements, people should commence a dialogue that is more relevant than the simple functional measurements, usually pushed down along the company hierarchy (“performance monolog”).
- Introduce coaches and mentors to help stakeholders understand their contributions to the business operations and ensure collaboration (sometimes referred to as performance coaches).
- Create different dashboards for the different roles in the organization as guiding vehicles and not “beauty contests.”

Used in combination with a more holistic enterprise operating model, process mining acts as a decision and governance-facilitating component for any business change initiative. It can be used as well in the planning cycle of these initiatives, as in the execution stage (see [Infographic: Grow Business Through Modular Redesign of the Enterprise Operating Model](#) and [Market Guide for Technologies Supporting a DTO](#)).

In the planning mode, the enterprise operating model that puts the process-mining results in an interconnected model offers a clear overview on which business leaders own certain operations and how responsibilities are interrelated over different roles. The direct consequence is that responsibilities that fall between the cracks – so-called cross-functional responsibility gaps – are eliminated. Furthermore, because of the many indicators and indicator trees leading to business outcomes, a direct visual between metrics that are related often cannot be made. In this case, the enterprise operating model component connects these indicators, serving as a higher-level orchestration of these indicators. For example, connecting an SLA indicator for a certain product can be linked to a certain activity in delivering a service. Connecting a client indicator, such as a customer excellence rate, for this service to this activity is part of the process of delivering the service. Ultimately, this activity will connect both measurements.

In the execution mode (see Figure 5), the operating model provides the capabilities to everybody to register decisions and actions. Fundamental during execution is the performance dialogue. Because of the visibility across functions of responsibilities and related measurements, people should begin a dialogue that is more relevant than the simple functional measurements usually pushed down along the company hierarchy (performance monolog).

Figure 5: Business Operations Resilience and Process-Mining Accountability

Business Operations Resilience and Process Mining Accountability



Source: Gartner
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An Example: A large global manufacturing company applied process mining to several end-to-end operations by using process mining. In one of these end-to-end business operations, the company has optimized its customer services by engaging all participants in the order to cash (O2C) operations to increase the level of digitalization. The employee community involved used an already-available, internal social platform – fundamental in driving change and results from bottom up. Today, improvements include a 24% higher automation rate and an 11% reduction in rework that translates into more than 10 million fewer manual activities per year.

Document Revision History

[How Process Mining Can Support Operational Resilience in Times of a Crisis - 30 April 2020](#)

Recommended by the Author

Some documents may not be available as part of your current Gartner subscription.

[Operational Resilience: Adapting for Competitive Advantage Using a Pattern-Based Strategy](#)

[Market Guide for Process Mining](#)

[Market Guide for Technologies Supporting a DTO](#)

[Infographic: Grow Business Through Modular Redesign of the Enterprise Operating Model](#)

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