CELOSPHERE 23 ✕ ■ Fraunhofer FIT

RESEARCH AND RECOMMENDATIONS FOR COES

Exploring the Interplay of Process Mining and Generative AI

A joint study and report by
celonis & Fraunhofer FIT

celonis

RESEARCH AND RECOMMENDATIONS FOR COES

Exploring the Interplay of Process Mining and Generative AI

Authors and participating organizations

Dr. Lars Reinkemeyer[1], Prof. Dr. Maximilian Röglinger[2], Prof. Dr. Wolfgang Kratsch[2], Lukas Fabri[2], Sebastian Schmid[2], Jakob Wittmann[2]

[1] Celonis SE
 Customer Transformation Advisory
 Theresienstraße 6, 80333 Munich

**[2] Fraunhofer Institute for Applied Information
  Technology FIT**
 Center for Process Intelligence
 Branch Business & Information Systems Engineering
 Wittelsbacher Ring 10
 95444 Bayreuth

Abstract

Generative AI is rapidly emerging as a revolutionary technology with the potential to transform and disrupt entire industries and our everyday lives. However, its full extent and impact on various sectors remain largely unknown, as the technology is still in its infancy and has not yet progressed to large-scale corporate use. Process Mining, on the other hand, has evolved throughout the last two decades and allows for a unique, end-to-end, data-driven perspective on business processes, which raises the question of how the interplay of both technologies can unleash unknown potentials in the future. Specifically, we have zoomed into organizational aspects to assess how Process Mining Centers of Excellence (CoEs) should prepare to accelerate the usage of Generative AI.

To answer this question, this collaborative research conducted by Celonis and Fraunhofer FIT delves deep into the dynamics of Process Mining and Generative AI. Interviews with 14 Process Mining thought leaders from industry and academia were carried out to gain a better understanding of the future that lies ahead for Centers of Excellence.

Our research reveals that Process Mining and Generative AI enter a powerful synergy. Process Mining can provide a comprehensive Process Intelligence layer which is crucial to enable Generative AI to go beyond hallucinations towards reliable results. On the other hand Generative AI will democratize the usage of Process Mining and make it available for a much wider group of business users. To fully leverage the potential of this synergy, Centers of Excellence should take action in particular on two levels:

1

On a technology-level
by establishing a Process Intelligence layer including data availability / quality / privacy / security.

2

On a governance-level
by establishing the right value proposition, operating model, roles & responsibilities as well as community leadership.

Table of Contents

Management summary

Seemingly overnight, Generative AI (GenAI) has swept across the globe, captivating minds and industries alike with its unparalleled creative potential and transformative impact. As GenAI technology continues to evolve, we find ourselves on the brink of an extraordinary era where artificial intelligence fuels innovation, disrupts traditional paradigms, and unlocks a world of boundless possibilities. Nevertheless, GenAI is in its infancy, and the full extent of its future impact on industries remains to be seen. Naturally, this leads to the question: what does all the excitement surrounding GenAI mean to Process Mining? And more specifically: How should Process Mining Centers of Excellence (CoEs) prepare to make the most of GenAI?

" What is GenAI?

Generative AI describes algorithms that can be used to create novel and coherent data instances across various modalities like code, images, and text.

McKinsey (2023), Celonis (2023)

This study dives deep into the intricate interplay of Process Mining and GenAI. In collaboration with Fraunhofer FIT, Celonis conducted research including an interview study to explore the expectations of those immersed with Process Mining on a daily basis. In total, we conducted interviews with 14 Process Mining thought leaders from the CeloCoE community and academia, investigating three questions:

Why

**do Process Mining and GenAI
enhance each other?**

GenAI has the potential to democratize highly
sophisticated Process Mining use cases to an
unprecedented number of business users. At the same
time, GenAI requires an end-to-end business perspective
to truly have an impact at the corporate level. Hence,
Process Mining becomes a foundational technology for
GenAI, providing process intelligence based on actual,
transactional event logs and thus as a reliable data
backbone which allows GenAI to provide meaningful
business process insights for action.

What

**Process Mining capabilities
does GenAI enable?**

GenAI augments existing Process Mining functionalities
and introduces novel capabilities, enabling substantial
benefits along the Data-Insight-Action-Value chain.
Affordances such as streamlined data preparation,
democratized process improvement opportunities,
and smart process automation will significantly reduce
manual effort, increase customer and employee
satisfaction, and accelerate time-to-value.

How

**should CoEs prepare to make
the most of GenAI?**

Realizing the potential of GenAI does not come for free. Instead, it requires deliberate investments, with Process Mining CoEs playing a pivotal role. To harness GenAI's benefits, CoEs should expand their value proposition, curate a comprehensive and high-quality Process Intelligence layer, empower and enable a diverse community, and actively partake in the organization's GenAI transformation journey.

GenAI has the potential to revolutionize entire industries. Process Mining can help GenAI achieve its breakthrough on the enterprise level by providing an end-to-end perspective on the business. With CoEs as the central accelerator for transformation, companies can unlock the multi-trillion-dollar potential of both Process Mining and GenAI while effectively navigating this transformative wave. This research aims to offer a glimpse of the future, providing organizations with insights on how to harness the potential of both these powerful tools and chart a course toward a future prosperous in opportunities.

Dr. Lars Reinkemeyer
VP, Customer Transformation Advisory, Celonis
Editor of "Process Mining in Action", Springer Press, 2020
l.reinkemeyer@celonis.de

Prof. Dr. Maximilian Röglinger
Deputy Director of Fraunhofer FIT
Chair of Information Systems and Business Process Management at the University of Bayreuth
maximilian.roeglinger@fit.fraunhofer.de

Study design and approach

To explore the transformative potentials and challenges at the intersection of GenAI and Process Mining, Celonis teamed up with Fraunhofer FIT, the leading institute for applied research in Europe, helping drive innovation and digital transformation. With the joint aim of exploring the interplay of both technologies, this research was designed to target three overarching inquiries:

1   **Why** do Process Mining and GenAI enhance each other?

2   **What** Process Mining capabilities does GenAI enable?

3   **How** should CoEs prepare to make the most of GenAI?

To address these inquiries comprehensively, we designed an interview study involving 14 participants from both practice and academia. We interviewed global Process Mining leaders from the CeloCoE community, spanning diverse industries, operational sizes, and geographical reach. This ensured a holistic perspective, capturing the nuances of different business contexts. Additionally, we expanded the scope of our research by engaging with our academic network and conducting interviews with thought leaders in the field of GenAI and Process Mining. We decided on in-depth, semi-structured interviews that lasted 30 – 50 minutes and addressed a wealth of different topics at the intersection of GenAI and Process Mining.

As scientific groundwork, we employed a multifaceted approach that involved an extensive review of existing research and the integration of our own contributions in the field. Firstly, we systematically scanned both grey and white literature, analyzing a wide array of relevant publications to ensure that our study was firmly grounded in the existing body of work. Secondly, we incorporated our own research as well as the work conducted at the Fraunhofer Center for Process Intelligence, enriching our research with the institute's unique perspective at the interface of science and practice.

Through this exhaustive approach, our research attained a well-rounded understanding of how the interplay between GenAI and Process Mining holds potential in both practical business settings and the forefront of academic innovation. With our results, we aspire to present a narrative that illuminates the future evolution of Process Mining and GenAI while equipping CoEs with guidance on how to capitalize on this technology.

Key messages from the study

1

Why do Process Mining and GenAI enhance each other?

1. GenAI fundamentally changes the way we work at an unprecedented pace, increasing productivity, satisfaction, and creativity.

2. Process Mining is a prerequisite to the successful adoption of GenAI incorporate environments, as it provides a comprehensive Process Intelligence layer that acts as a reliable data backbone.

2

What Process Mining capabilities does GenAI enable?

3. GenAI enhances existing and enables new Process Mining capabilities along the data-insight-action-value chain, reducing manual effort and time-to-value.

4. GenAI-supported Process Mining capabilities streamline data preparation, democratize process improvement opportunities, and facilitate smart process automation.

3

How should CoEs prepare to make the most of GenAI?

5. Realizing the potential of GenAI does not come for free. It requires deliberate investments, with Process Mining CoEs playing an instrumental role.

6. CoEs should expand their scope and value proposition, curate a comprehensive and high-quality Process Intelligence layer, empower and enable a diverse community, and take an active role in the organization's GenAI-backed transformation.

Why do Process Mining and GenAI enhance each other?

GenAI's capabilities have taken the world by storm and will take every company and Process Mining by storm. I think it's making the world a better place, allowing us to think more creatively and more innovatively.

Steve Carpenter, Merck

GenAI changes everything and is developing rapidly - we are only at the beginning

GenAI has the potential to change entire industries by revolutionizing the way businesses operate and approach challenges. At the same time, GenAI is being adopted rapidly. Within five days, ChatGPT recorded over one million users, a milestone that took Twitter/X two years to achieve – and we are only at the beginning.

5 days

until ChatGPT counted 1 million users*
It took Twitter/X two years to do the same

*Statista, 2023

> What I found exciting is GenAI's steep adoption curve being so different from any historical technology. It is just something super beautiful and simple to use.
>
> Chris Knapik, PepsiCo

celonis

GenAI enables highly advanced use cases with huge business value

The combination of GenAI with Process Mining is not just mutually beneficial – it is revolutionary. GenAI provides CoEs with the means to transition from descriptive use cases over predictive and prescriptive to autonomous process mining use cases. Future applications might encompass autonomous decisions and self-managed execution within processes. Thereby, GenAI will make decisions on behalf of the user, such as foreseeing and addressing material shortages in real-time. Furthermore, GenAI enables interactive analyses on the fly, recommends process enhancements, and gives insights into root causes for process deviations – a new era of Process Mining.


GenAI will be an essential capability in the future and will play an important role in key processes and customer interactions.

Durga Yeluri, Pfizer

Process Intelligence is the link between Process Mining and GenAI

GenAI's successful integration into a corporate environment requires a profound understanding of the business and its unique context. To unleash its full potential, GenAI relies on an end-to-end process data foundation that represents the business it operates within. When Process Mining provides a comprehensive Process Intelligence layer as a reliable backbone, it fuels GenAI with the precise end-to-end business information it needs.

Process Mining

Process Intelligence
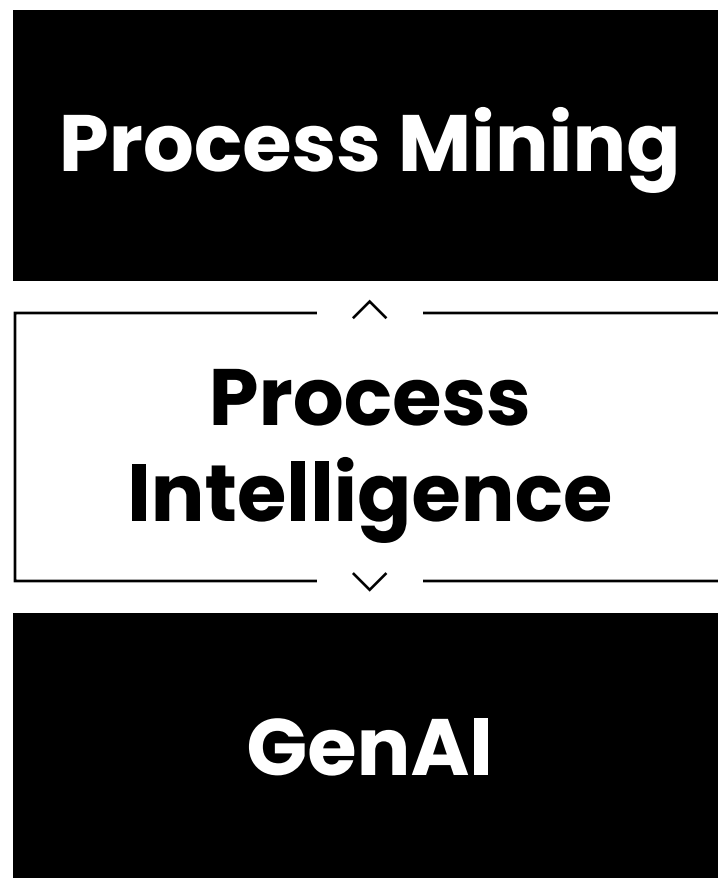
GenAI

At the same time, GenAI offers Process Mining the democratization of its insights, making them accessible to a broader audience transcending business units and hierarchical levels. Furthermore, GenAI will augment existing and enable entirely novel Process Mining capabilities. The result? A harmonious relationship where both technologies empower each other, amplifying their strengths.

There is just a natural synergy between both. With Process Mining being a true foundational baseline technology of GenAI, we will ride a wave into enterprise-wide relevancy.

Chris Knapik, PepsiCo

CoEs are key for unlocking the multi-trillion-dollar potential of Process Mining and GenAI

GenAI's successful integration into a corporate environment requires a profound understanding of the business and its unique context. To unleash its full potential, GenAI relies on an end-to-end process data foundation that represents the business it operates within. When Process Mining provides a comprehensive Process Intelligence layer as a reliable backbone, it fuels GenAI with the precise end-to-end business information it needs.

CoE

Customers with a CoE: 8.8x more likely to report positive ROI *Celonis 2022*

Gen AI

GenAI impact: $2.6 to $4.4 trillion annually *Celonis 2022*

Process Mining

Process Mining can leverage potential of double digits trillions annually *George 2023, Et edge insights*

Imagine launching a rocket into space. Two critical elements are required for a successful journey beyond the atmosphere: the right fuel and an effective control center. In the business world, GenAI and Process Mining act as powerful rocket fuel, potentially propelling organizations into new heights of efficiency, satisfaction, and innovation. Thereby, the CoE serves as the control center, guiding and ensuring the trajectory is safe and optimized.

"What is a Center of Excellence (CoE)?

A CoE is a team that has been mandated to provide leadership, best practices, technical deployment, support, and training for Process Mining. This study refers to CoEs as dedicated accelerators for process excellence and transformation.

Reinkemeyer et al. (2022)
Accelerating Business Transformation with a Process Mining Center of Excellence (CoE)

GenAI anxd Process Mining: The rocket fuel

The promise held by GenAI and Process Mining is undeniably vast. GenAI, with its potential to generate an annual impact of $2.6 to $4.4 trillion (McKinsey 2023), is the booster propelling organizations forward. Meanwhile, Process Mining, possessing the potential to unlock double digits of trillions annually (George 2023), is the primary propulsion, ensuring that the rocket has the power to reach its desired destination.

CoEs: The control centers guiding the journey

Every rocket requires direction. The more powerful the rocket, the more direction is needed. This is where Process Mining CoEs come into play. CoEs are instrumental in harnessing and directing the joint power of GenAI and Process Mining. Their influence is profound – organizations equipped with a CoE are 8.8 times more likely to report a positive ROI on Process Mining, as shown in our last study (Reinkemeyer et al. 2022). Like an experienced control center that keeps a rocket on track, CoEs ensure that companies realize the full potential of their technology investments, ensuring a journey that is not only groundbreaking but also safe.

The synergy: from launch to uncharted territories

When GenAI and Process Mining can synergize under the guidance of a CoE, businesses are not just taking a small step; they are making a giant leap. This combination assures a transformative trajectory, charting courses into uncharted territories.

What Process Mining capabilities does GenAI enable?

> GenAI will undoubtedly advance the capabilities of existing process mining techniques. However, they must be carefully designed with an organization's processes in mind and deployed to address actual bottlenecks.
>
> Eugene Wu, Columbia University

GenAI affords substantial benefits along the Data-Insight-Action-Value chain

Process mining is a data-driven technology, which is why the implementation of every use case starts with data collection. During this phase, process data is systematically gathered from various sources, such as transaction systems, to provide a comprehensive view of the processes under examination. This data forms the foundation for the subsequent insight phase, where the collected data is meticulously analyzed for process improvement opportunities. With these insights in hand, organizations can move to the action phase, where real-life measures are implemented to optimize process flows. With the implementation of these improvements, organizations can enter the value phase. Here, the focus shifts towards realizing tangible business value. This phase may involve a value-driven evaluation of each use case, allowing organizations to monitor, track, and sustain the benefits and value outcomes over time, ensuring that the enhancements made are not just one-time effects but contribute to ongoing operational excellence.
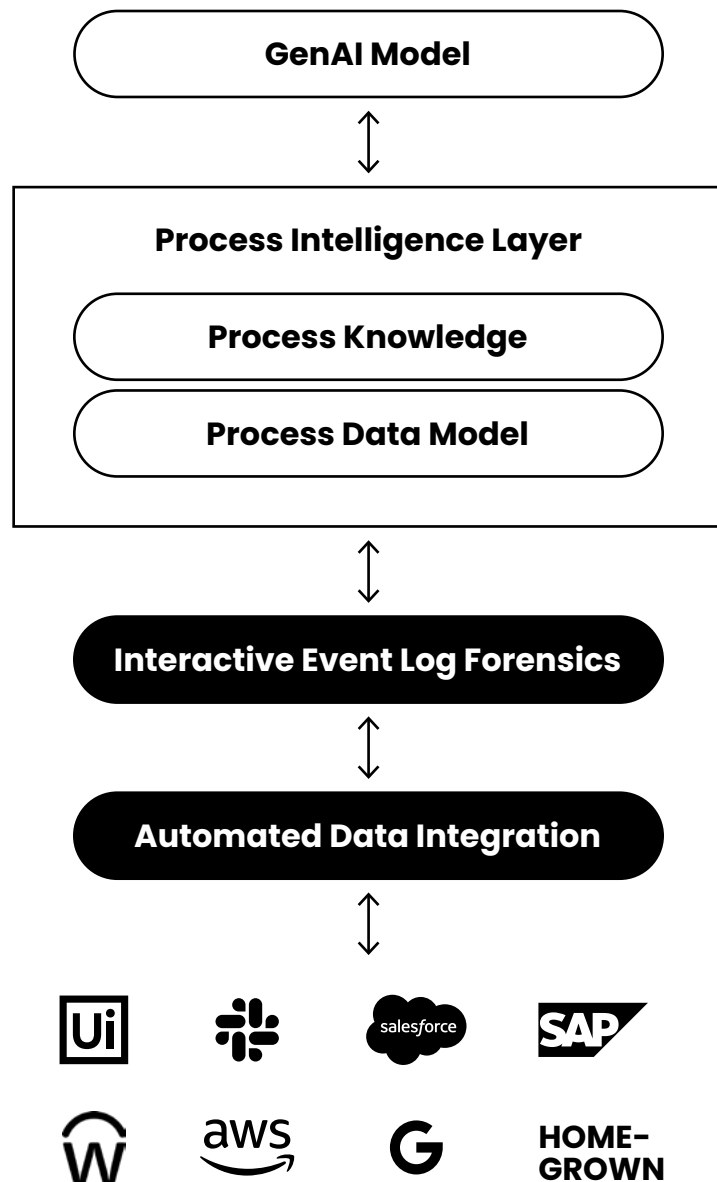
Data

Insight

Action

Value

As we conclude the journey along this chain, it is worth contemplating the future that lies ahead. Undoubtedly, GenAI has the potential to augment current capabilities and forge entirely new ones within the Data-Insight-Action-Value chain. In the following, we will delve into select examples that provide a glimpse into the exciting future that lies ahead for Process Mining.

From Data to Insight: Facilitating a high-quality Process Intelligence layer

When implementing Process Mining use cases, up to 80% of current efforts are typically expended on data preparation (van der Aalst 2022). GenAI will dramatically reduce this effort, freeing resources for value-adding activities. Imagine a future where data preparation happens on the fly and the challenges of inaccurate and low-quality event logs are a distant memory: GenAI has the potential to make this vision a reality, with Process Mining and its Process Intelligence layer paving the way.

Enhancing process data quality with Interactive Event Log Forensics

Interactive Event Log Forensics is a GenAI-enabled Process Mining capability that will enable the automatic detection, understanding, and repair of data quality issues in event logs by combining GenAI with human domain knowledge. The result? Seamless mitigation of missing data, reduction in noise and outliers, standardized activity labels, aligned event timestamps, and removed duplicates – characteristics that are essential for a high-quality Process Intelligence layer (Fischer et al. 2022).

Unlocking broader data horizons with Automated Data Integration

Automated Data Integration enables the creation of a comprehensive Process Intelligence layer by harmonizing data from all kinds of sources. Current Process Mining applications rely heavily on structured business data, primarily drawn from corporate information systems (e.g., ERP, CRM, CAQ, MES), often distributed across numerous databases, necessitating manual extraction driven by domain knowledge. GenAI has the potential to automatically build process mining data models context-sensitively across various data sources. Next to structured data, highly relevant parts of real-world processes remain currently unused because they either do not leave any traces in today's information systems or can only be utilized at great expense. GenAI can fill these blind spots by allowing the automatic transformation of unstructured data (e.g., video, sensor, geospatial, customer feedback) in a process-centric format (Kratsch et al. 2022). As a result, GenAI simplifies the entire data extraction process, reducing dependency on domain expertise and manual labor.

"

Normally, extracting knowledge is rather labor-intensive and not easily scalable. However, transformer-based language models provide the opportunity to automate parts of such processes.

Piller, van der Aalst and Nitsch (2022)

From Insight to Action: GenAI democratizes process improvement

"

I think a big potential of GenAI is to offer a naturalistic interaction by chatting rather than clicking to get insights. In many cases, process models will even disappear in the background.

GenAI serves as an easy-to-use conversational partner that crafts user-specific content. It possesses a versatile skillset, ranging from detailed conversations to task automation and command execution. Thereby, GenAI's greatest strength lies in its natural language interface, enabling everyone to interact with data intuitively. The output can be personalized to any level of expertise and considers the specific process context. The result: GenAI paves the way for democratized process insights, empowering individuals at all levels of the organization to make data-driven and process-centric decisions.

"

Automated analytics can make process mining easier to use and scalable across the organization. The goal is to enable a seamless generation of tailored insights and recommendations that drive business value. In a similar vein, several parties want AI to help users identify big improvement levers and support better process execution."

Reinkemeyer and Davenport (2023)

From Insight to Action: an exemplary conversation

[Process-specific question]
I have noticed an unusually high number of customer complaints in the order-to-cash process. What is going on?

[Process-specific answer]
We are currently facing delayed deliveries and customers are waiting unusually long for their products. This is due to the fact that there are strikingly few delivery receipts from supplier X. Analysis of communication indicates that this issue arises from a staffing shortage on the supplier's end.

[Targeted instruction for problem-solving]
We have to be ready to deliver again by the end of the week. Please provide some suggestions. Customer satisfaction is key - additional costs can be borne up to 5%.

[Suggested solutions to the problem]
It seems that supplier Y still has stock that could be delivered within 3 days. Also, 20% storage capacity is available in another warehouse, which could be shifted to this location within 2 days.

[Command]
Please order from supplier Y and come back to me to re-evaluate in a week.

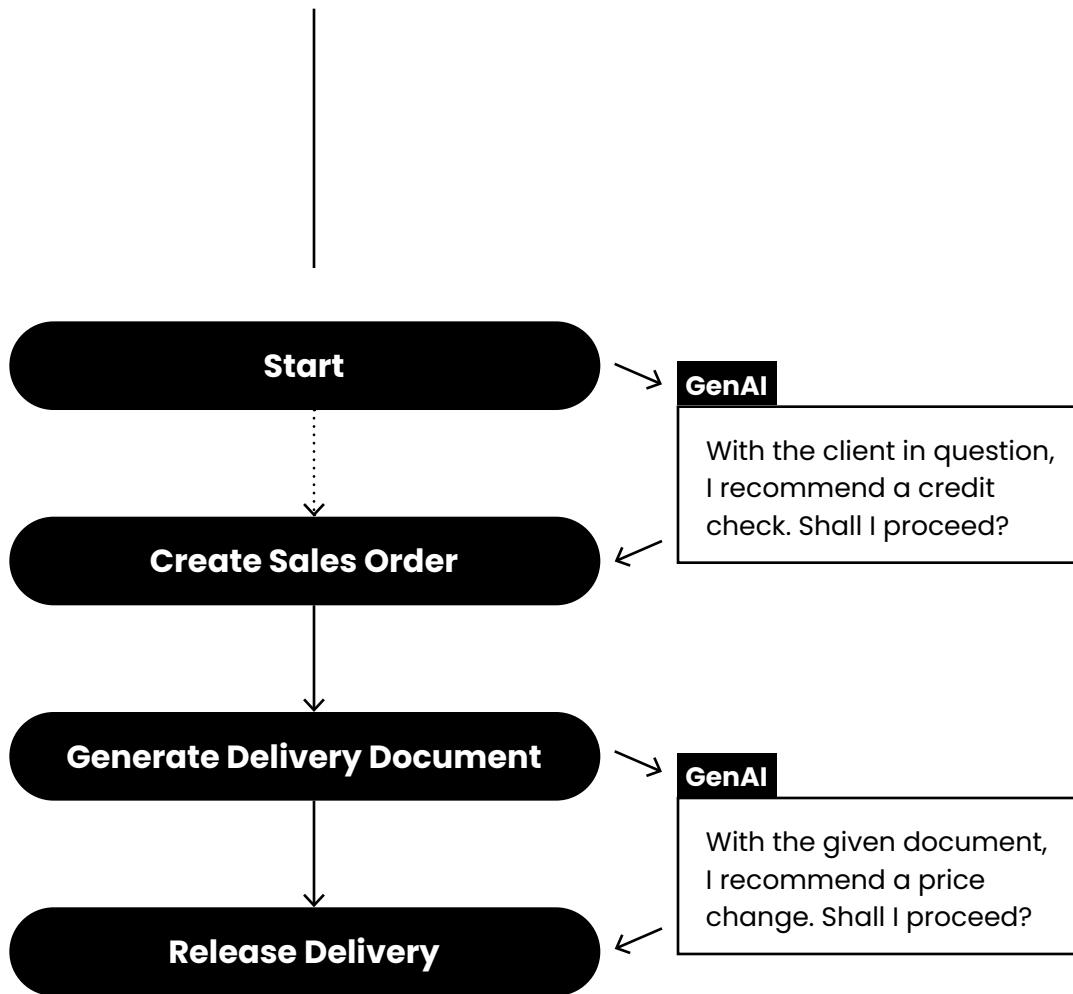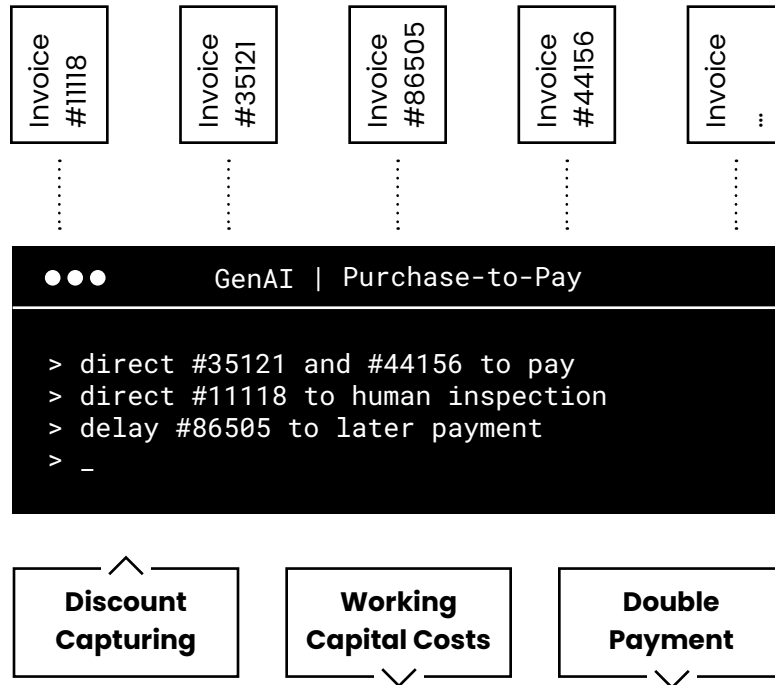**[Execution]**
I placed order #81514 and will contact you next week.

From Action to Value: Assisted process improvement and smart process automation boost time-to-value

In the future, organizations will choose between two distinct roles of GenAI: either as a co-pilot or as an independent agent in the driver's seat.

GenAI as a Co-Pilot ensures that human judgment is not sidelined while automation is leveraged. From initializing sales orders to generating delivery documents, GenAI provides insightful recommendations while seeking human validation before proceeding.

Start

GenAI

With the client in question, I recommend a credit check. Shall I proceed?

Create Sales Order

Generate Delivery Document

GenAI

With the given document, I recommend a price change. Shall I proceed?

Release Delivery

```
Invoice      Invoice      Invoice      Invoice      Invoice
#11118       #35121       #86505       #44156       ...
```

```
●●●            GenAI | Purchase-to-Pay

> direct #35121 and #44156 to pay
> direct #11118 to human inspection
> delay #86505 to later payment
> _
```

| Discount Capturing | Working Capital Costs | Double Payment |

In contrast, *GenAI in the Driver's Seat* showcases a future where GenAI navigates processes independently. In this scenario, GenAI takes on the role of an independent agent within any process, effectively identifying areas of improvement. Considering the example of a purchase-to-pay process, GenAI will excel in tasks such as capturing discounts, preventing double payments, and optimizing working capital costs. As a result, GenAI integrates seamlessly into the workflow, making independent decisions, streamlining operations, and ultimately improving the efficiency of the entire process landscape.

How should CoEs prepare to make the most of GenAI?

> **"**
>
> Everyone is excited about the technology and believes it can make many things better in the future. However, there are still many question marks that need to be addressed by CoEs first.

As we have envisioned how GenAI will shape the future of Process Mining, the emerging synergy between these technologies has become increasingly apparent. Their future teems with opportunities, as Process Mining provides a comprehensive Process Intelligence layer to GenAI, while GenAI introduces a new realm of capabilities to Process Mining. However, like any transformative technology, GenAI also presents its fair share of challenges and uncertainties that must be addressed. At this stage, the pivotal role of the CoE comes into focus. CoEs will serve as the accelerators, ensuring that this newfound potential is harnessed skillfully, securely, and in alignment with business objectives.

Process Intelligence

&

CoE Governance

Last year's CoE study illustrates the gravity of this evolution, emphasizing the importance of leadership, technical deployment, and enterprise-wide training that CoEs are entrusted with (Reinkemeyer et al. 2022). CoE leaders should, therefore, start to prepare today to leverage the capabilities of GenAI for Process Mining and beyond. But how? In our research, we identified two key areas where CoE leaders should take immediate action.

How should CoEs prepare to make the most of GenAI?

At the heart of GenAI's potential lies the Process Intelligence layer - a single source of truth for end-to-end business process data, enabled by Process Mining. In turn, GenAI democratizes Process Mining by augmenting existing and enabling new capabilities. For CoEs to harness GenAI's full potential, it is imperative to invest in a robust Process Intelligence layer, ensuring data quality, availability, privacy, and security. In doing so, CoEs can create a pivotal foundation and data backbone for GenAI, becoming indispensable in the organization's transformative journey.

Data Quality - Garbage In, Garbage Out
It is an age-old axiom in the tech world: "Garbage In, Garbage Out". The advances in GenAI, remarkable as they are, do not negate this fundamental principle. The precision, reliability, and capabilities of GenAI are directly proportional to the quality of data it is fed. While approximations might be tolerated in private settings, corporate use demands accurate and reliable outputs. Thus, CoEs stand at a pivotal juncture where they need to prioritize and champion process data quality to ensure wide-scale adoption by business users.

CoEs have a bigger responsibility when it comes to process data quality because users of GenAI will assume that the data is correct

Matthieu Leviste, Saint-Gobain

Ensuring high process data quality is not a one-time endeavor but an ongoing commitment. It involves establishing meticulous data cleansing, standardizing, and validation processes. CoEs must also continuously monitor data pipelines, keeping an eye out for discrepancies, anomalies, or any shifts that might affect quality. Integrating state-of-the-art data validation tools or facilitating periodic data quality audits are other ways through which CoEs can ensure that GenAI is always operating on a Process Intelligence layer of highest quality. No matter how it's done, the objective remains clear: CoEs must equip the Process Intelligence layer with reliable process knowledge and data models to enable GenAI's effective functioning. Otherwise, conclusions drawn from GenAI applications will be incorrect, reducing or even destroying business value.

Data Availability - The prerequisite for an end-to-end business perspective

For GenAI to thrive in corporate environments, it needs to deeply understand and mirror the unique intricacies of the business it serves. It is not about amassing vast amounts of data; it is about obtaining a rich, nuanced, end-to-end perspective that truly represents the organization. Central to this understanding is the Process Intelligence layer. When sculpted meticulously through CoEs, it serves as a dynamic blueprint of the business, laying the foundation for GenAI's effective deployment.

While ERP systems have traditionally been the cornerstone of business data, the dynamics of modern processes demand the Process Intelligence layer to become a more diversified data pool. In this light, CoEs must actively explore and integrate data from non-traditional sources. This can range from customer feedback systems, social media interactions, and video data to inter-departmental communication channels. CoEs should look out for technologies and methodologies that can extract process insights from structured as well as unstructured data sources, such as emails, documents, and multimedia content. Machine learning, natural language processing tools, and GenAI itself can be particularly effective in this realm.

Data Privacy - Upholding ethical and secure use

With its profound capabilities to dig deep into datasets, GenAI also raises the stakes in ensuring data privacy. For organizations aiming to build a healthy relationship with GenAI, robust data privacy frameworks aren't just a regulatory mandate, they're a trust-building exercise with all stakeholders in the organization.

CoEs stand at the forefront of ensuring data privacy, addressing ethical concerns, and meeting compliance standards. CoEs recognizing this responsibility must fulfill a twofold objective: ensuring data is available for innovation and insights, yet safeguarding personal rights. This involves adopting advanced access control mechanisms, periodic reviews of user privileges, and integrating contemporary security paradigms like Zero Trust architectures. This way, CoEs ensure process data remains the exclusive realm of those with genuine requisites. The same applies when CoEs enrich the Process Intelligence layer with novel data sources: regulatory compliance, data privacy, and protection of sensitive data is paramount to reinforce trust and pave a promising path for GenAI and Process Mining.

Data Security - Safeguard process data with highest protection standards

With GenAI tapping into the Process Intelligence layer, data security emerges as a non-negotiable pillar. It is not just about preserving confidential information; it is about upholding the integrity of process insights and warding off unauthorized access or potential data breaches. Such incidents, beyond immediate operational disruptions, carry the risk of significant financial losses and can tarnish an organization's reputation.promising path for GenAI and Process Mining.

For GenAI applications to remain robust and trustworthy, they must never become a vector for unauthorized data access within the Process Intelligence layer. It's here that CoEs take a pivotal role. As the guardians of process data, CoEs need to ensure that the Process Intelligence layer remains uncompromised and continues to serve as a reliable foundation for GenAI's transformative potential. They are not only tasked with upholding data security standards but also ensuring that these standards evolve in line with emerging threats and technological advancements. This is not the sole responsibility of the CoE, but instead must be done in cooperation with the information security unit, data owners, and data stewards.

"

As a CoE Lead, I must discuss possible security and governance issues when using GenAI.

CoE Governance in the era of GenAI

The arrival of GenAI in the corporate landscape signifies a transformative shift that can reshape how organizations perceive and interact with their processes. This transformation necessitates a paradigm shift in governance, requiring CoEs to recalibrate and rethink their strategies. CoE governance in this context is about understanding and adapting to the unique requirements and opportunities GenAI offers to stay ahead of the curve and prepare for its transformative power. To do so, CoEs should further develop their governance structures by ensuring community leadership, a suitable operating model, developing new roles and responsibilities, and refining their value proposition.

Community Leadership - CoEs as architects of community success

The democratization of Process Mining means that it is no longer limited to process analysts. Suddenly, process insights are available to people at all levels of the organization, effectively growing the Process Mining community at unprecedented pace. This is a potentially promising development that can accelerate the adoption of Process mining - if it is effectively enabled and led by CoEs.

"

It is about democratizing access, bringing it closer to business reality. Imagine a department manager in a store asking, 'What is the probability of successfully delivering the goods we sell in the next month?' GenAI can provide the answer.

CoE Leader @ global retail company

Given their vast expertise, CoEs naturally emerge as leaders for this new community. By sharing knowledge and best practices, CoEs can help to manage change more effectively within the organization and foster cross-functional collaboration. In addition, their role as process experts empowers business units in their use of process data and insights, thus contributing to sustainable community development. As such, CoEs will have to empower and excite the entire organization and thus a much more diverse and larger community of users. To master this challenge, CoEs must prepare to take an active role in promoting the use of GenAI and its many applications.

Operating Model - The CoE of the future will be hybrid

CoEs will be responsible for curating a high-quality and secure Process Intelligence layer, while also leading an expanding Process Mining community. However, this is not a journey they can undertake alone - GenAI is set to change the way CoEs collaborate with other business units. Therefore, CoEs must start to collaborate even more closely with business units and other GenAI stakeholders (e.g., AI CoE, security office, transformation office). To address the growing and diverse needs of the expanding user base in Process Mining, embracing a hybrid setup becomes imperative for CoEs. This setup enables accommodating diverse needs, fostering flexibility, leveraging domain expertise, and optimizing resource allocations. Especially with a rapidly evolving phenomenon like GenAI, each business unit benefits from the freedom to incorporate their individual requirements into the application of GenAI, and the flexibility to quickly address changing needs. Furthermore, the domain expertise of individual units combined in a close collaboration with the CoE ensures that GenAI is fine-tuned to each process-specific context.

Hybrid setup

■ CoE

☐ Function/Business Unit
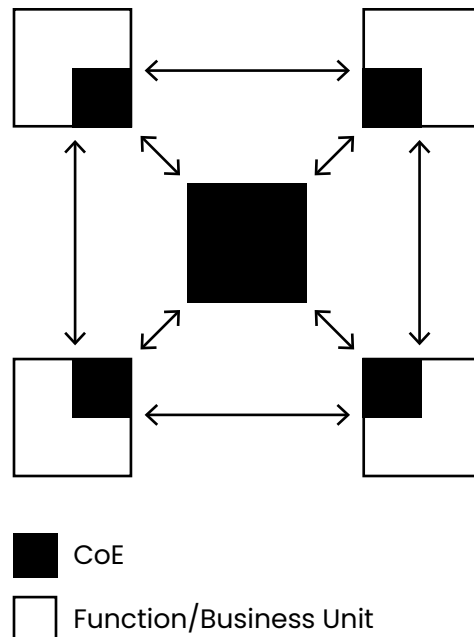
Roles and Responsibilities – Preparing for GenAI's requirements

To become an active player in the organization's GenAI journey, delineating clear roles and responsibilities within CoEs is paramount. As the integration of GenAI reshapes business operations, the traditional roles within CoEs need to be revisited and potentially recalibrated. It's crucial to identify who will oversee the quality and security of the Process Intelligence layer, who will liaise with IT and other business units, and who will manage the continuous updates and training required as GenAI advances. Moreover, as GenAI introduces new capabilities, there might be a need to introduce entirely new roles dedicated to exploring its potential, ensuring its ethical deployment, supporting GenAI specific prompt generation, and training other team members.

However, it's imperative to recognize that there's no one-size-fits-all recipe for success. Each CoE, with its unique organizational dynamics and requirements, must carve its own path and determine the roles and responsibilities that best align with its goals. Establishing these responsibilities early on will provide a solid foundation for CoEs to proactively ensure that Process Mining profits from GenAI.

> I think the CoE, with its unique skillset and the associated mentality, is in a really good starting position to drive GenAI adoption in the company.
>
> Chris Knapik, PepsiCo

Value Proposition - Elevating the CoE's offering

With the many potentials of GenAI in sight, CoEs must prepare to expand their value proposition. Traditionally, CoEs are anchored in offering data or transparency as a service. However, that might just not be enough to excel with GenAI: To fully leverage its potential, CoEs should embrace Transformation as a Service as their future value proposition and work on building an appropriate skill set.

Transformation
as a Service

Transparency
as a Service
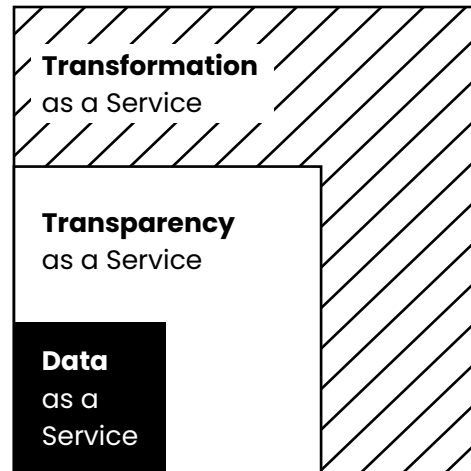
Data
as a
Service

To meet the requirements of Transformation as a Service, CoEs should leverage existing skills like data engineering, data analysis, change management, or evangelism marketing. However, CoEs must also work on cultivating a novel skillset. From learning prompt engineering and task automation to mastering data protection and fostering GenAI literacy, CoEs must adapt to the new business environment GenAI will create

Wrapping it all up: The CoE of the future

As GenAI continues its upward trajectory, CoEs must be agile, proactive, and strategic. Ensuring data integrity, maintaining ethical standards, engaging with business units, and continuously refining their value proposition, CoEs are crucial to unlocking the boundless potential of GenAI and Process Mining. The journey ahead is transformative, and CoEs are the trusted navigators guiding businesses through this brave new world.

The five most important to-dos for CoE leaders

Navigating the merger of Process Mining and GenAI can be a complex yet rewarding venture. As we peer into the future, many opportunities present themselves. However, the road ahead calls for a strategic approach. As CoE leaders, you stand at the forefront of a transformative shift. Here are our top five recommendations to guide your journey:

1 **Envision** the impact of GenAI on your organization and decide which role you would like to play in its GenAI transformation.

2 **Embrace** GenAI-supported Process Mining capabilities as an opportunity to excite a broader user community.

3 **Engage** with key GenAI stakeholders from all over the organization to harvest the mutual benefits of Process Mining and GenAI.

4 **Ensure** a comprehensive and high-quality Process Intelligence layer as a reliable data backbone to fuel GenAI.

5 **Expand** your CoE's value proposition and invest in developing appropriate skills within your team.

References

Celonis (2022):
"Introducing CeloCoE, a champion's league for process mining, execution management and value acceleration"

read online

Celonis (2022):
"Beyond"

read online

Fischer, Dominik Andreas; Goel, Kanika; Andrews, Robert; van Dun, Christopher; Wynn, Moe T.; Röglinger, Maximilian (2022):

"Towards Interactive Event Log Forensics: Detecting and Quantifying Timestamp Imperfections"

read online

George, Anitha Scaria (2023):

"Process mining enables companies to boost overall performance"

read online

Kratsch, Wolfgang; König, Fabian; Röglinger, Maximilian (2022):

"Shedding light on blind spots – Developing a reference architecture to leverage video data for process mining"

read online

McKinsey (2023):

"The economic potential of generative AI: The next productivity frontier"

read online

Piller, Frank Thomas; Nitsch, Verena; van der Aalst, Wil (2022):

"Hybrid Intelligence in Next Generation Manufacturing: An Outlook on New Forms of Collaboration Between Human and Algorithmic Decision-Makers in the Factory of the Future"

read online

Reinkemeyer, Lars; Davenport, Tom (2023):

"Transform Business Operations with Process Mining"

read online

Reinkemeyer, Lars; Grindemann, Philipp; Egli, Vanessa; Röglinger, Maximilian; Marcus, Laura; Fabri, Lukas (2022):

"Accelerating Business Transformation with Process Mining Centers of Excellence (CoEs)"

read online

---

van der Aalst, Wil (2022):

"Process Mining: A 360 Degree Overview"

read online