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# **The Innovator's Flight Plan to AI:**

A Tech Leader's Guide  
to Process Innovation



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# Introduction: the role of AI in innovation

As an emerging technology, AI is naturally associated with innovation. Many organizations are using AI to develop new products and business models, and to improve their business processes.

In the 2022 AI Momentum Survey<sup>1</sup>, **56%** of worldwide executives reported “increased innovation” as a current benefit of their AI deployments. Dr. Iain Brown, Head of Data Science at SAS UK&I, says that “we can expect to see even more innovation, at a larger scale, and with bigger results.” The survey findings bear out this prediction, with “increased innovation” as the most frequently cited expected future benefit at **43%**.

But it’s important to recognize that AI in and of itself doesn’t innovate. Instead, **AI enables the innovators** – people who are creating flight plans for their organizations. In the same way that a pilot using instruments can fly to more destinations and in more inclement conditions than a pilot relying solely on visuals, AI enables a wider range of innovation by handling information and tasks in new and more powerful ways.

<sup>1</sup> AI Acceleration and the Future of Innovation: 2022 AI Momentum Survey Report, SAS, Accenture and Intel with Forbes Insights, 2022.

# Process innovation, here we come: why AI is a great way to fly

When developing your innovative flight plan, *process innovation* presents as perhaps the most covert type of innovation. It tends to be less vaunted, because it isn't about changing where you're going; it's about changing how you get there.

Process innovation addresses the "how" of an organization. **How is the work completed? How is a product or service delivered? How do customers experience or engage with it?** Methodologies such as Lean, Six Sigma and Kanban have emerged to support organizations in adopting new ways of working, new skills

and capabilities, and new tools and technologies to reimagine the steps taken to accomplish a defined outcome.

In this way, process innovation is foundational to both *product innovation* and *business model innovation*, which dictate the "why" or the objectives of the organization. Whether it's a product innovation like a feature change or a business model innovation like a new sales channel, these developments are only as good as the processes that support them.

Leaders who feel overwhelmed by the myriad opportunities for AI and unsure how to bring it all together can begin by looking at process innovation. It's an excellent place for organizations to start with AI, because it can present fewer barriers in terms of skills, culture and change management - but can still yield significant impact.

Every organization has incumbent processes with some legacy weight or cost embedded in them. These processes could be in customer service, fraud detection, finance, IT management or quality assurance.

In fact, almost every function in every area of an organization could be a candidate for some type of process innovation.

### **Expedite**

How can we do things faster or more efficiently?

### **Eliminate**

Can steps or waste be reduced? Can dependencies or redundancies be cut back?

### **Explore**

Can the information available be expanded or reframed to help with decision-making?

## ***What's the relationship between process innovation literacy and AI literacy?***

Ready for takeoff with AI innovation? Process innovation literacy is the place to start. Learn how to identify the problems to solve. What could be done differently? What issues could be addressed, avoided or eliminated? Process innovation requires curiosity and a willingness to question and learn.

Then move to AI literacy, learning how to identify which problems can be solved with AI and what type of AI will solve them. Understand what, where and how AI can be deployed, as well as its limitations and boundaries, so your organization can apply AI when it's the best tool for the job.

When considering process innovation, internal improvements (like increased automation and operational efficiency) may come to mind.

Process innovation is often thought of as invisible, taking place in the back office. However, process innovation can generate improvements in user experience that both customers and employees will notice, and that contribute to engagement and retention. It can help businesses build resilience and adapt to rapid change. It can also generate better insights that lead to improved decision-making.

AI enables process innovation in two ways:

1. By providing the capabilities to reinvent how work gets done: visualizing, analyzing and presenting data in ways that weren't possible before.
2. By identifying areas of interest or potential improvement. AI can point you in the right direction, highlighting unusual data that needs more investigation and orienting you to different ways of thinking.

## ***The value of composite AI***

Processes aren't individual disjointed actions: They're logical sequences of actions and steps. So, there's no single AI or analytics technique to rule them all. Instead, there's a range of AI tools and techniques that can be applied to process innovation. Multiple techniques are often used in sequence to accomplish and support a process.

For example, working with the process of predictive maintenance, you might use four different AI techniques:

1. **Analytics** to **identify trends and patterns.**
2. **Predictive analytics** to **identify and predict issues** that might emerge.
3. **Optimization techniques** to **decide what should be fixed** by whom, and in what sequence.
4. **Reporting** to **track the process.**

In other words, you're applying a portfolio of tools to enable process innovation, so it's important to understand and invest in applying them holistically.

# A scenic tour of processes enabled by AI

With so many opportunities for process innovation across industries and organizations, the examples of AI-enablement are myriad. Here's a brief but exciting look at a few of the cutting-edge developments that are now within reach.

## Health care resource optimization

Hospitals and health departments have operational and health-related data that can be used to predict future resource demands. Using this data, they can plan to have staff, facilities and supplies in place to handle patient needs. Without AI, these projections may not be timely or reliable, and they are not as responsive because they are often made based on a single set of assumptions.

Scenario modeling is an excellent application of AI innovation, because the model development is guided by the data available and adapts to new inputs over time. These models can generate predictions based on large, complex data sets, adjusting in response to changing conditions and information.

Cleveland Clinic and SAS collaborated to produce **publicly available predictive models** to help health systems respond to the COVID-19 pandemic.

Hospitals can use these models to optimize resources, understand cost and quantify the need for supplies such as beds, ventilators and personal protective equipment.

The models project worst-case, best-case and most-likely scenarios that factor in the impact of policies such as masking and social distancing on disease spread.

## Accelerating medical research

Clinical trial data, electronic health records, claims data and adverse event reports are only snapshots of patients at random points in time.

To better understand the most effective therapies for certain medical conditions or to detect drug safety signals, health researchers turn to data collected in the real world during patient visits to health care systems. These vast data sets are often unstructured and heterogenous, requiring significant data manipulation before revealing the critical insights within.

AI can significantly improve the efficiency of organizing associated data sets for analysis, allowing researchers to focus on improving health outcomes.

The University of Alberta has launched a health data management and analysis platform, the Data Analytics Research Core (DARC), that increases research capacity. Researchers can access a robust platform for advanced analytics and secure data storage.

One example of how DARC is accelerating health research is in studies of children with sudden neurologic symptoms. Researchers are developing an algorithm that would help cut down on the number of CT scans required for diagnosis by at least **30%**, which would reduce patient exposure to radiation.





## Improving productivity in manufacturing

Factories have an abundance of data that captures everything from raw material usage to supply chain dynamics to camera imagery from production lines.

Advanced analytics can help increase productivity by identifying opportunities to fine-tune the balance between speed and quality.

Pulp and paper manufacturer **Georgia-Pacific** uses AI and machine learning to optimize production.

The company was able to increase overall equipment efficiency during the pandemic by **10%**, getting more toilet paper and cleaning supplies into stores.

Data volumes have grown by five times in recent years, but they are able to maximize profitability by analyzing that data and determining how to operate better.

## *Applying process innovation to AI*

The delivery of AI and analytics is itself a product or service, whether presented as a dashboard, model or micro service. AI models and systems have development life-cycle processes that are opportunities for improvement.

Platforms like SAS Viya represent process innovation in the development of AI models and applications. Data scientists and others without deep technical coding knowledge can make use of these new capabilities, developing and delivering AI and analytics tools more quickly and easily.

ModelOps is a specific process innovation that makes it easier to deploy, monitor and maintain AI models and analytics. One massive online gaming platform uses ModelOps to roll out and manage hundreds of thousands of models every second for online players. The platform's ability to innovate on product enablement has had a significant impact on the gaming experience.

## Conclusion: the rewards of process innovation

Organizations of all sizes have been challenged in the last few years to adapt to extreme swings in social, market, environmental and economic conditions. They are looking for ways to stay focused on their mission amid accelerating change - delivering products and services that customers want, creating meaningful work and experiences for employees, and doing it all in ways that are responsible, sustainable and value-added.

Leaders look to AI to help them navigate these stormy skies. Because so much transaction takes place in the digital space, the volume, intensity and variety of data available are overwhelming. It's difficult to effectively gather insight and distinguish the signal from the noise.

AI can identify hidden patterns, outliers and connections, surfacing opportunities for innovation.

Right now, leaders have a chance to reinvent how they do things by taking a greenfield approach. If your organization were starting from scratch with the data and technology you have today, would you do this process the same way? Would you do this process at all, or would it be irrelevant?

Remember that not all innovation has to be breakthrough or disruptive to add value. Sustaining innovation is also important, whether that's extending the life of a product, reducing labor or streamlining workflows.

Innovation is rarely one marathon flight - instead, it's a series of thousands of small hops, each impactful, that add up to a great distance.

To explore more opportunities for AI and innovation, visit

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