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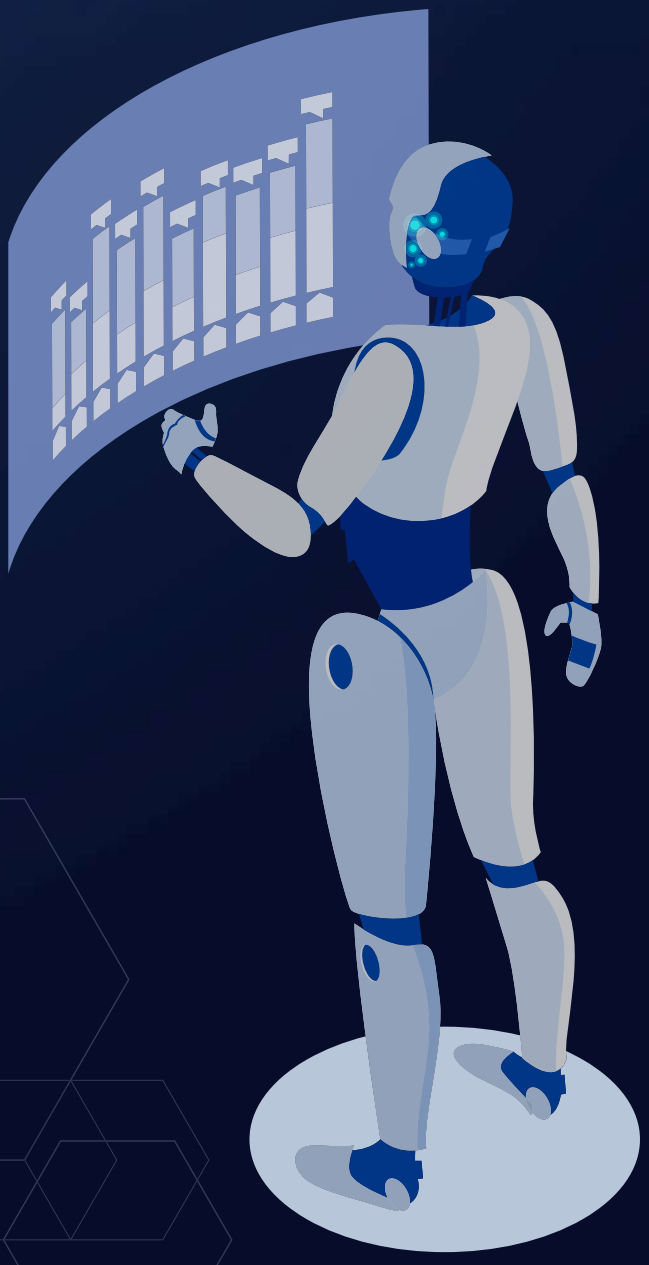
WHITE PAPER

An Executive's Guide to Operationalizing AI



March 1, 2024

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Executive Summary

Organizations are on the edge of leveraging AI like never before, and the success of these efforts will be essential to staying competitive. AI will be one of the most historical leaps in the use of technology we are likely to witness in the coming decades.

The potential to increase productivity and reshape jobs is almost a given, but some daring organizations will reshape their industries with AI. At the same time, businesses must stay agile to react to and intercept and adapt changing business conditions in any number of shifting contexts to remain on a long-term success track that almost always includes profitability.

That's why nearly 80% of organizations have budgeted a reasonable sum, and 63% are increasing their budget for AI experimentation and implementation this year. There is a lot of money and effort at risk here, so picking the best place to operationalize AI is essential.

AI is typically aimed at traditional/everyday processes. Still, organizations are also looking at more game-changing impacts related to new products where innovative business models can be trialed with processes and data. AI also aims at emerging business change that shows new opportunities and threats. It's not just pure automation and optimization, though there continue to be benefit pools there.

Processes are often the basis of organizational actions that cross internal and external boundaries. These processes often employ resources that could benefit from AI's assistance, especially where knowledge, decision-making, and agile optimization based on changing or emerging goals are required.

One of the best places to implement AI practically and successfully is in **external or internal processes**, including front and back-office processes used in every day and game-changing modes.

Examples include staying in touch with customer sentiment during interactions with your organization, the state of your supply chain, prioritizing limited supplies, or internal processes that must be tuned to stay operationally optimized while responding to change. Processes that take intelligent and agile action are often the first place unusual events and patterns are sensed, requiring tactical adjustments and pointing to potential strategy changes. Processes are a great place to start with AI, whether in mining current or past results, sensing behavior shifts that point to new opportunities or threats, making better decisions, or assisting scarce resources while optimizing outcomes.

> AI can safely start inside the context of a process while sitting outside the process, watching and guiding results in either static or emergent processes/cases.

Organizations must consider how best to leverage AI with processes inside or outside a process. Traditionally, processes are flow-directed, and AI services the tasks or resources of the process. Still, there are significant benefits to leveraging AI in a goal-directed process where AI responds to sensed change outside a process, managing the process's shape, sequence, and resources for organizational outcomes within governance constraints.

Flow-directed

is a traditional process that is easy and straightforward but doesn't allow organizations to easily observe and adjust to the many changes now facing organizations at the business and technical levels. AI is an assistant in this case.

Goal-directed

is where AI is the watcher and controller of the process for easy adaptation, where the process dynamically responds to change based on outcome or governance needs. It is much like a shape-shifting, swarming drone show where each drone positions itself to support a new image. It requires the process solution to support a more sophisticated tiered composable architecture represented deeper in this writing.

Understanding these two significant approaches is essential before entering the experimentation phase or deciding to institutionalize more AI and process activity. Keep in mind that these two approaches should be intermixed in many cases. While AI promises and has delivered significant benefits, particularly in automation and people assistance, it is vital to manage the risks involved with any new and emergent technology.

Some proven approaches allow organizations to experiment and implement new technologies while gleaning solid benefits that can be optimized over time. The two major phases are experimentation and institutionalizing.

- **Experimentation** aims to manage risk while gleaning benefits, growing institutional learning, establishing skill sets, and creating additional pathways to benefits.

- **Institutionalization** seeks to expand an organization's skill base, extend better/best practices, and create an organizational strength to leverage in the battle for AI advantage.

Savvy organizations will repeat this experimentation/institutionalization cycle continuously.

Experimentation:
Getting to Early Benefits While Learning

The AI efforts must be led by the business with the able assistance of the CIO. The idea of critical business needs matches the various types of AI technologies, as many types of AI technology tributaries exist. Getting businesses involved early will be the key to picking the exemplary efforts and keeping them on point over time, ideally with low-code approaches that enable business professionals to adapt the processes or guide/train any AI models themselves.

1. **Identifying Clear Objectives**

Organizations must define clear goals and objectives that they want to achieve with AI. It could be improving efficiency, enhancing customer experiences, or optimizing processes. It means that essential processes and critical points or resources can be identified for adding more intelligence with AI.

2. **Focus on Low-hanging Fruit**

Identify processes or decisions in processes where AI can bring immediate, tangible benefits with lower complexity. It could be the simple automation of repetitive tasks, improving process analysis, or enhancing customer support or interactions through AI assistance and oversight with more global guidance/extenders.

3. Educate, Train, and Communicate with Involvement

All changes and introductions of newer technologies require a certain level of training and communication to be successful. It would be essential to educate many about workforce readiness as AI grows in usage. Focused training must also be provided for the core team of developers and operators. Communication of lessons learned and successes will be critical in institutionalizing AI over time.

4. Assemble/Groom Process and Data Resources

Critical processes often span technological systems and platforms, even if they don't span organizational boundaries. Usually, this includes legacy components and data sources that may need some adjustments or enhancements. There may be a need to expand data sources or include new systems components as feeders into the AI trial.

5. Implement Pilot AI Projects with Targeted Processes

Start with small, manageable pilot projects to test the feasibility and effectiveness of AI in your specific context. It allows you to learn to iterate and demonstrate quick wins to stakeholders. It will often require dynamic composability and real-time change support.

6. Monitor, Iterate, and Expand Successes

Implement monitoring mechanisms to track the performance of AI in the context of your chosen processes and systems components; regularly review the results, gather feedback, and iterate on your AI solutions to continuously improve and adapt to changing needs. Real-time monitoring, decisions, and corrective actions can aid these efforts.

7. Measure Benefits and Communicate Success and Learnings

Establish key performance indicators to measure the return on investment of your AI initiatives. Continuously collect feedback and assess the performance of AI systems/components. Iteratively improves models and processes based on input and evolving business needs.

8. Audit for Compliance and Ethics Issues

The AI efforts should be sampled and audited to ensure compliance is not at risk and ethical issues are considered. These include bias, transparency, privacy, security, job displacement, and environmental and social impacts.

9. Stay Informed on AI Trends and Alternative AI Approaches

Organizations need to keep up with the latest developments and trends in AI. It is because AI is multi-faceted and a moving target that can't be ignored. The new knowledge can help you identify new opportunities and technologies/AI tributaries that might further enhance your AI and digital initiatives.

10. Increase the Impact of AI on Processes and Resources

The implementation of success is never done, plus processes aggregate many tasks and the resources that support those tasks. There are numerous opportunities to add AI to each task and resource in and around core external journeys and internal processes. Eventually, AI will also surround and manage those processes as real-time speed becomes table stakes, acting as a sentinel, manager, or goal-driven component broker with sensible compliance boundaries.

Institutionalizing AI After Initial Successes

After the experimental phase of operationalizing AI, organizations will need to invest in additional efforts to take advantage of AI while incrementally institutionalizing AI fully. Depending on the use cases chosen, this investment could include capital expenditures for software and services and budgeted internal efforts. Understanding where selected use cases play in AI's overall maturity and direction is essential.

Refer to Figure 1 AI in Context. Savvy organizations will not only focus on use cases that provide benefits in the short term but also consider the use cases in an overall AI architecture and direction that matches AI maturity.

This writing encourages using AI within business processes or customer journeys. Still, AI can be used in isolation of processes as bots/agents acting independently as solo automation or monitoring. The sweet spot of AI today is at the business level in internal or external processes, but AI can be used in the technical infrastructure or the B2B levels.

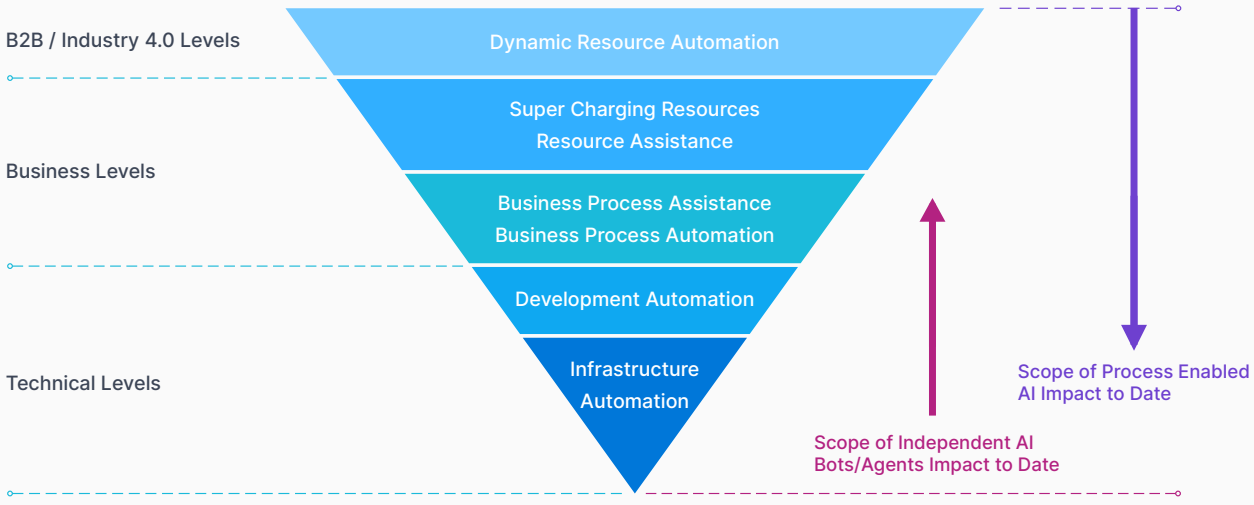

Figure 1. AI in Context

1. Identify Critical Use Cases That Would Benefit From AI

AI shows promise for critical business end-to-end and functional business processes. Enumerated below are some AI-themed processes that bear consideration, but the opportunities are pretty abundant and not limited to these examples:

- **Customer Service and Engagement** can benefit from AI-driven chatbots that handle routine customer inquiries, providing instant responses and freeing human resources for more complex tasks. AI can personalize recommendations, content, and experiences based on AI analyzing customer data and history. AI can leverage sentiment analysis and assists human resources for better customer experiences.

- **Supply Chain Management** can benefit from improved demand forecasting. AI can analyze historical data and market trends to predict future demand, thus aiding in inventory management and supply chain optimization. AI can optimize routes, schedules, and resource allocation in logistics, thus leading to reduced costs and improving efficiency.

- **HR and Talent Management** can benefit from streamlining the recruitment process by automating resuming screening, identifying suitable candidates, and even conducting initial interviews. AI can analyze employee feedback, sentiment, and behavior to enhance HR practices and improve employee satisfaction.

- **Financial Processes** can benefit by detecting fraud with AI analyzing financial transactions in real-time, preventing losses. AI can assist in budgeting, financial analysis, and forecasting by providing more accurate insights for decision-making.

- **Decision Support** can be supercharged with AI systems providing insights and recommendations to support decision-makers, especially in complex scenarios involving a large amount of data. The shorter the time to decision and action, the more AI can assist. AI can analyze data to identify risks and help businesses develop mitigation strategies.

- **Warehouse Automation** can be assisted by AI-powered robots and autonomous vehicles to pick, pack, and sort inventory. This automation improves the speed and accuracy of order fulfillment while reducing labor costs.

- **Customer Retention** can be assisted by predicting churn by analyzing customer behavior and engagement patterns. Businesses can then take proactive measures, such as targeted promotions or personalized communications, to retain customers.

- **Dynamic Pricing** can benefit from AI algorithms analyzing market conditions, demand, and other factors to adjust Pricing dynamically. It can result in personalized pricing models that offer discounts or promotions tailored to individual customer behaviors.

- **Conversational Marketing** can be assisted by facilitated conversational marketing leveraging chatbots and message platforms, enabling businesses to engage prospects in real-time to guide them through the sales funnel.
- **Vendor Relationship Management** can leverage AI to evaluate and manage vendor/supplier performance by analyzing various data points, including delivery times, quality metrics, and pricing. It enables better decision-making in vendor/supplier selection and collaboration.

While the above examples are frequently attempted uses of various types of AI, often they are not taken in the context of an overall process, and AI is added tactically to gain incrementally. It proceeds until the management teams realize the overall benefit is more significant when considering a comprehensive or end-to-end process. In that vein, savvy organizations start with an overall key/core process crucial to attaining strategic or tactical goals consistent with corporate plans for the year and instrument them with AI, sometimes in an incremental fashion. It is more of a top-down business-driven approach than a bottom-up, proving the AI technology approach.

See Figure 2 for an Operational AI Architecture aimed at operational AI benefits driven by business outcomes while supporting ripple through change. Strategic goals and governance guardrails supported by tactical and operational goals drive the outcomes at the process level. The process level, in turn, can leverage systems and application components that draw on data and content for operational advantage. Data and content will also play a role in mining process behavior for operational improvements. AI can play roles at all levels, inside or outside, as single AI components or swarming groups cooperating with each other. Ideally, AI can watch for opportunities for change and adjustment parallel to operational execution.

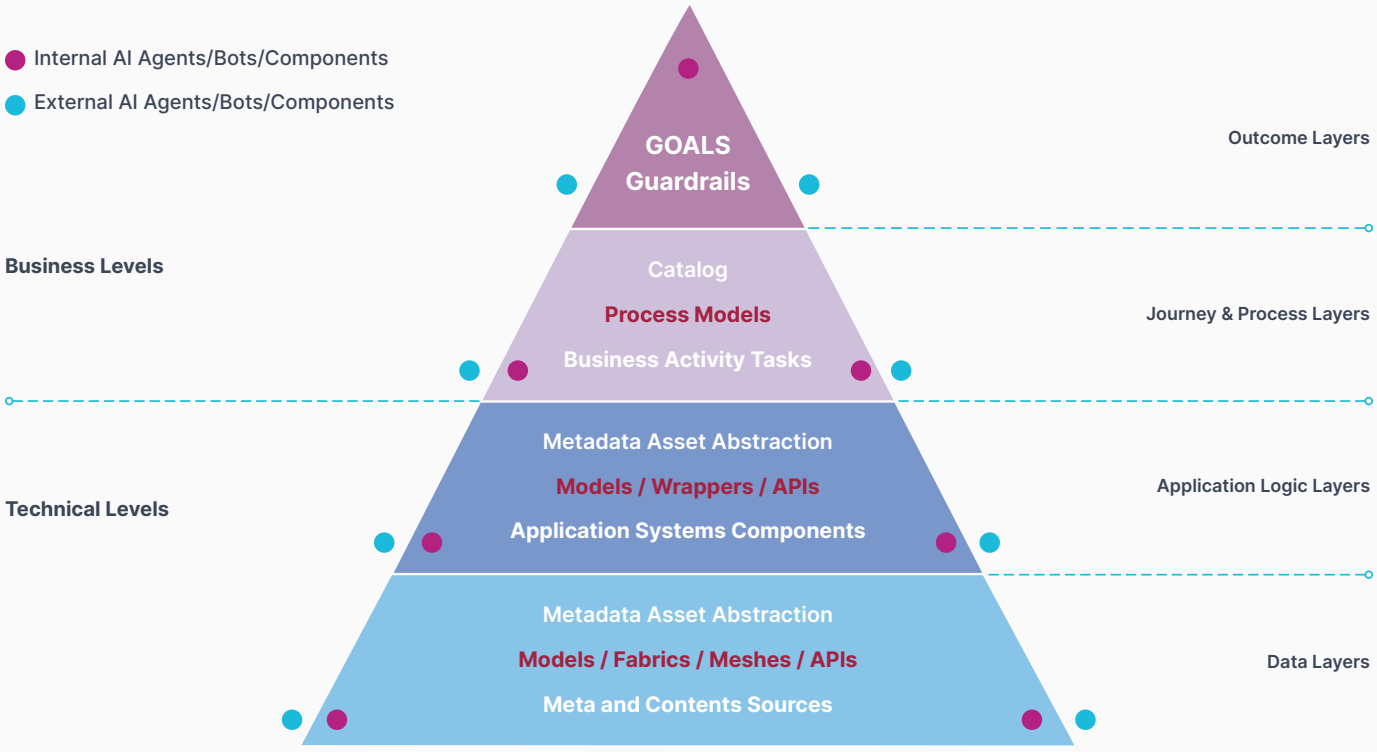

Figure 2. Operational AI Architecture

Keep in mind that processes are more outcome-oriented than data-driven approaches. A mixture of both is often employed. It is more of an outcome-oriented or goal-driven approach enabled by data-supported processes instead of a data-driven approach with perfect data that has been popular for the last decade. Business agility and ripple-through change effects are also factored in these efforts rather than the data limiting what is possible. However, data must be groomed to get better results over time.

2. Select AI Models and Approaches to Match Business Outcomes (examples)

Once a scope or a series of scopes is selected, it is crucial to identify where AI can make a difference. It means matching the many kinds of AI approaches to the opportunities chosen by the business in the selected processes. Many tributaries of AI technology approaches can be used alone or in combination with others. Please see this blog post for the 20 kinds of known AI types *https://jimsinur.blogspot.com/2023/11/ai-tributaries-types-for-2024.html*. Keep in mind that organizations will likely use algorithms in conjunction with the AI set they select.

For instance, for an outward-facing customer journey or experience, organizations would likely match more intelligent chatbots that leverage natural language models with or without translation with emotion analytics for sentiment analysis and loyalty prediction.

An underwriting process might provide machine or deep learnings from health risk models to help junior underwriters leverage the wisdom of a doctor to approve a potential insured at a fair rate based on risk. The same knowledge or wisdom assistance approach could be used for claims and payout situations.

An organization might desire to bolster its infrastructure with better security and ransomware leveraging cognitive cybersecurity, sensing AI, machine learning, goals, and constraints to identify threats and act on them in real time.

A manufacturing organization might want to monitor and adjust by tapping into real-time measures to adapt its production line, leveraging digital twins, edge AI, sensing AI, and multiple forms of robotics to make inflight changes leveraging forms of self-generation AI. In addition, manufacturing organizations can benefit from generative AI in designing optimal production floors and automated production lines.

A marketing organization might want to leverage Generative AI to create artwork for its commercials or videos matched to selected music representing its themes.

The examples could continue, but matching the AI combinations you select to your business opportunities and solutions is essential. Keep in mind that the AI domain and your business goals and solutions are changing and emergernt.

3. Integrate with Existing Processes and Systems

Like it or not, end-to-end processes can be complex and may be linked to rigid and brittle legacy homegrown or purchased systems, all with their control languages and interfaces that ripple downstream. The business agility offered by AI can get stuck in the mud of complex and convoluted subprocesses and systems. With the end goal that citizen developers combined with AI can determine the changes necessary to keep up with changing goals and governance constraints in existing IT stacks, past automation, and integrations. In the past these efforts can be overwhelming and slow. The old approach is coordinating experts through projects to make the appropriate changes. New approaches allow codeless cross-platform buffering and composability for speedier ripple through change.

The holistic digital business platform is an emergent composer, controller, and adjuster to emergent business change. Seamless business integration to support change is the key.

4. Model Training and Data Improvements

Some AI approaches, such as machine learning and some deep learning, require the models to be retrained. Often, they use historical data to learn patterns so that they can make decisions or make predictions. These models need to be fine-tuned over time to improve their business performance and ensure they can generalize well to new data sources selected. These new sources will be determined by data quality efforts and the need of the overall business needs represented in processes or emergent business conditions and scenario planning efforts. The process can drive these efforts' needs or the data needs. Remember that data is rarely perfect, and processes can almost always be improved and automated in new ways. Keep in mind that outcome-driven should guide the data discovery needs.

5. Enhance Scalability, Security, and Compliance

Design AI solutions to be scalable, allowing them to handle increased workloads and larger datasets as your organization grows and changes with business conditions and compliance needs. Organizations will have to increase security measures on the AI models, processes, and data as these become competitive advantages when used with enabled agile business change. This is particularly true for emergent processes.

6. Foster an AI Culture Through Education and Training

Provide training to business users and stakeholders to ensure they know how to interact with AI systems effectively while fostering a culture of AI adoptions within the organization and partner organizations that are linked to your organization's success. Continuously measure AI success and learn to communicate with the organization.

7. Focus on Agility Driven Continuous Improvement within Ethical Boundaries

Continuously measure AI success and learn to communicate with the organization. It requires collecting feedback and constantly assessing the AI systems and impacted processes. Iteratively improve processes and models based on input and evolving business needs. It is essential to consider the ethical implications of AI-powered applications and processes, including fairness, transparency, and bias mitigation.

AI Supercharged Processes and Process Resources

While organizations can use AI in isolated spots in their automation efforts, the collection of benefits usually occurs around business desired outcomes (Goals) enabled by processes. Processes are rich in AI opportunities in terms of automation and optimizations.

See Figure 3, Journey to Smarter Processes. In addition, the resources that service a process's tasks can benefit from the application of AI, extending the abilities and skills of those resources. In a business-driven leverage of AI, it is hard to beat processes. In a technology-driven leverage of AI, it doesn't make as much of a difference, as most organizations are just testing the value and challenges of AI.

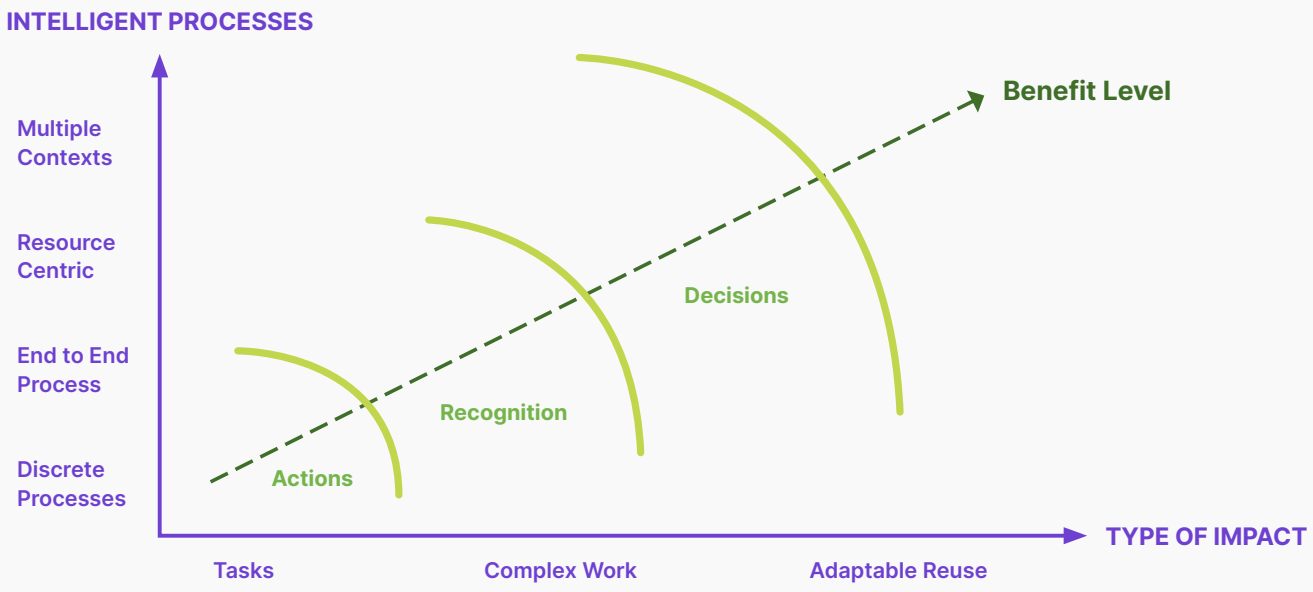

Figure 3. Journey to Smarter Processes

Applying AI and algorithms to AI certainly will make them smarter. Most organizations will start with making the actions or tasks of a process and the resources that take the action. Automation will be a crucial theme of this early AI application phase. Savvy organizations will try to impact end-to-end processes to capture maximum benefits even if it takes on more complexity or risk because executives know this is a race to AI leverage. Over time, organizations will deploy AI in multiple directions and various processes. Let's show where AI can make a difference in processes and the journey to more innovative processes.

1. Automation with Cognition (sensing, deciding, acting, and adjusting)

Processes often do more than automate actions. They are often the first place where new events or patterns appear. They may be exceptions that must be dealt with, or they could be the first pattern of unexpected business trends and scenarios. It could be a shift in the behavior of constituents and partners or a more significant change in the business environment. It could lead to changes in decisioning criteria and actions with new velocities of speed. There are more decisions in processes than appear on the surface. These decisions and criteria might need tuning.

2. Incremental Knowledge, Insights, and Analytics (prescriptive and predictive)

As processes execute on process instances, new behaviors, and cases can lead to new insights at the operational level in real time or after the fact. Often, the effectiveness of process-based decisions is mined after the fact, leading to better reactions or predictions of behavior. Additionally, knowledge can be spread to the human resources servicing a process or a process snippet(portion of a process), gleaning more benefits.

3. Constituent Personalization and Engagement (Customer, Employee, Partner, Vendor, Stakeholder)

Good processes or constituent journeys can be made richer by understanding a particular constituent's behaviors and emergent needs. The processes that support those journeys can be customized to the individual or organization based on behavior in either voice, video, or data. Applying the knowledge of who you serve and their goals can be essential to competitive advantage.

4. Measure, Monitor, and Predict Adaptations (Sentiment, scope changes and visualizations)

Other vital roles for AI and algorithms are monitoring process results and predicting outcomes and potential adjustments. It can be accomplished through immersive visualization and notifications. These can be projected for ripple through adjustments at higher speeds than the average pace.

5. Extend Impacts (operational, tactical, or strategic)

Processes are a vital input to a management cockpit that mirrors operations, tactics, and strategy, and projects ripple through changes. AI and algorithms can detect and suggest operational automation and optimization, along with tactical goal and guard rail adjustments. Alternative strategy scenarios and associated decision/process changes can be inventoried for sensing and implementing changes.

6. Global Views (New or existing contexts)

AI global sentinels can watch adjacent competitors, markets, and expected and unexpected business scenarios. The sentinels can exist at the edge, in the cloud, or in intercepting threats and scenarios. These watchers can evolve into AI directors for decisions and processes.

7. Compliance and Governance (transparency, regulatory, and ethics)

Setting up processes to ensure regulatory compliance while staying transparent and ethical is a tricky balance that AI, goals, and guardrails can assist. Adapting emergent change will be where AI shines.

Net; Net:

As you can infer from the detail in this paper, processes are essential for safely operationalizing AI while incrementally growing the benefits and effects of AI now and in the foreseeable future. My advice is to start with process-driven AI to augment the traditional data-driven AI that has been successful.

Searching data for opportunities is good, but goal-driven processes that link to business goals ensure a more direct contribution to the bottom line and the goals of an organization while staying congruent with its values.

> While data is critical, a dynamic process powered by AI is the closest to executive success.

The emphasis on goal-directed approaches coupled with governance boundaries (constraints) is one of the most important ways to keep AI on point. The importance of goal management will increase over time. See my writing on goal cycles here: *https://jimsinur.blogspot.com/2022/04/key-technologies-supporting-goals.html*.

Since processes are more closely connected to goals and point to the required data sources to attain current and emerging goals, pure data-driven approaches are likely to drive costs high as all data could be significant with little goal guidance.

AgilePoint is the organization that sponsored and paid for this paper, but there was no pressure to write anything but my thoughts. Every provider/vendor has its strengths in delivering AI. I have a particular leaning toward the business-driven application of AI within the context of processes.

Eventually, AI will be the driver of those processes as AI grows from within a process as a support for both processes and the managed resources to the outside of the processes, monitoring initially and then dynamically composing and executing said processes to results.

AgilePoint has a combination of critical capabilities that will support the AI migration from the inside of processes to outside processes while coordinating change effectively. What I particularly like about AgilePoint's key features applied to AI-driven processes are listed below.

1. **Low Code Delivered by Business Professionals:**

   Businesses can specify, create, or change processes easily thus speeding up business benefits.

2. **Dynamic Composability Including Legacy Components & Packages:**

   Businesses can compose, with the help of IT in complex situations, the processes components and supporting resources.

3. **Immediate Ripple Through Change Management Enablement:**

   Changes can be described and implemented faster by business. In some cases, immediately. In other cases, slower especially when IT needs to alter legacy components.

4. **Real-Time Monitoring, Decisioning and Action:**

   Businesses can monitor processes or critical portions of core processes in real-time for downstream analysis or data mining.

5. **Agile AI Extenders Acting as Global Guidance:**

   Business or process-focused sentinels can point out emergent conditions that need attention and take actions in support of dynamic goal-led processes.

About the Author: Jim Sinur

Jim is uniquely positioned to analyze the third boom of AI as he has deep experience with traditional systems, early model-driven systems, and the second boom of AI-delivering systems in production today. His long tenure at Gartner has given him wide-ranging interactions with real-world customers and vendors.

Jim has created an AI writing agenda for the hot AI boom and has delivered a future view of AI, including the eras expected in this latest hot AI boom. AI provides substantial benefits as it moves forward in the automation landscape, but that scratches the surface. Jim's definition of AI clearly progresses, as does his visual depiction of AI's coming attractions. See *https://jimsinur.blogspot.com/2023/09/preview-ofai-coming-to-you.html*.

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Northwestern Mutual

- Data Administrator
- Financial & Annuity Apps
- Smart underwriter Workbench

American Express

- Director of World Wide Technologies
- Service Establishment Apps
- Model Driven and Data Architectures
- Trader Workbench
- Customer Workbench

Gartner

- Research VP & Distinguished Analyst
- Created first Hype Cycle and Maturity Model, which have become a hallmark of Gartner analysis
- Helped Build the Business Process Management Unit
- Early RPA and Low Code Coverage
- Thought Leadership Award

Flueresque

- Blogger & Forbes Contributor
- Data Decisioning Column
- Author & Digital Consultant
- Succesful Digital Artist & Song Producer
- Created Digital Business Platform
- Customer Journey Coverage
- BMI, AI & RPA Coverage
- WFMC Manheim Award

AI Definition:

"AI is the leverage of software and machines to add perception/intelligence to individuals, customer/constituent experiences, processes/tasks and devices to optimize balanced outcomes by interpreting patterns of interest, making highly informed decisions with speed, and taking appropriate proactive or reactive actions considering wide and deep implications all within the context of changing conditions and governance guardrails."