AI IN THE INFORMATION-RICH ENTERPRISE

A GUIDE TO OPTIMIZING ASSETS FOR VALUE GENERATION

SITUATION ANALYSIS

Artificial Intelligence is the hottest topic of discussion for virtually every organization performing long-term strategic planning. Further, it's a topic that spans the organization from operating units to marketing to IT. While "discriminative" AI, such as image recognition, has been delivering real value to organizations for several years, the excitement about generative AI's potential to drive productivity is finding increasing interest across organizations of all types and sizes.

Unfortunately, many new AI projects fail, especially when they are not aligned to a specific business purpose. In fact, some reports show that new AI projects fail at shocking rates—83% to 92%. While Moor Insights & Strategy (MI&S) believes these numbers are likely too high, the firm does recognize a significant failure rate for AI projects. Sometimes the failures are technical, and sometimes they stem from a lack of skill among an organization's personnel. Many failures, however, come from insufficient or inaccurate data.

Data is the foundation of AI, especially the data that is derived from raw information embodied in physical and digital assets across the organization. While many organizations take a "more is better" approach to the information that feeds AI, data quantity does not help without being matched to data quality.

This brief, sponsored by Iron Mountain, discusses the evolution of AI and how new AI use cases rely on structured and unstructured data originating from both digital and physical assets. It also explores how adopting a universal information and data strategy that begins with managing physical and digital assets helps the enterprise drive meaningful outcomes.

THE VALUE OF AI IN THE ENTERPRISE

For organizations that have harnessed the power of AI for specific use cases, the technology has delivered measurable value. That value is most often realized through streamlining processes or automating them. An example of streamlining could be an assembly line that runs more efficiently while decreasing the rate of manufacturing

defects. An example of automation would be an online customer-service chatbot that can resolve many customer inquiries and issues automatically.

Global management consulting firm McKinsey conducts an annual study tracking the use of AI in the enterprise. In its latest findings, the study shows that roughly 50% of organizations deployed AI in 2022, with, on average, 3.8 use cases per organization (up from 1.9 in 2018). The top three use cases are:

- **Robotic process automation (RPA) —** The automation of discrete tasks in the larger process automation workflow, such as a bot tasked with monitoring inventory supplies and replenishing them automatically.
- **AI-based computer vision —** The use of AI to derive meaningful insights from images through object detection, facial recognition, contextual understanding, and the like. Computer vision has broad utility, including in autonomous vehicles, retail, security, agriculture, and augmented and virtual reality (AR and VR).
- **Natural language understanding/processing (NLU/NLP) —** The comprehension, interpretation, and interaction between machines and people using human languages. This use of AI shows up in everyday tools such as chatbots, search engines, and language translation tools.

FIGURE 1: AI DELIVERS VALUE IN THE ENTERPRISE
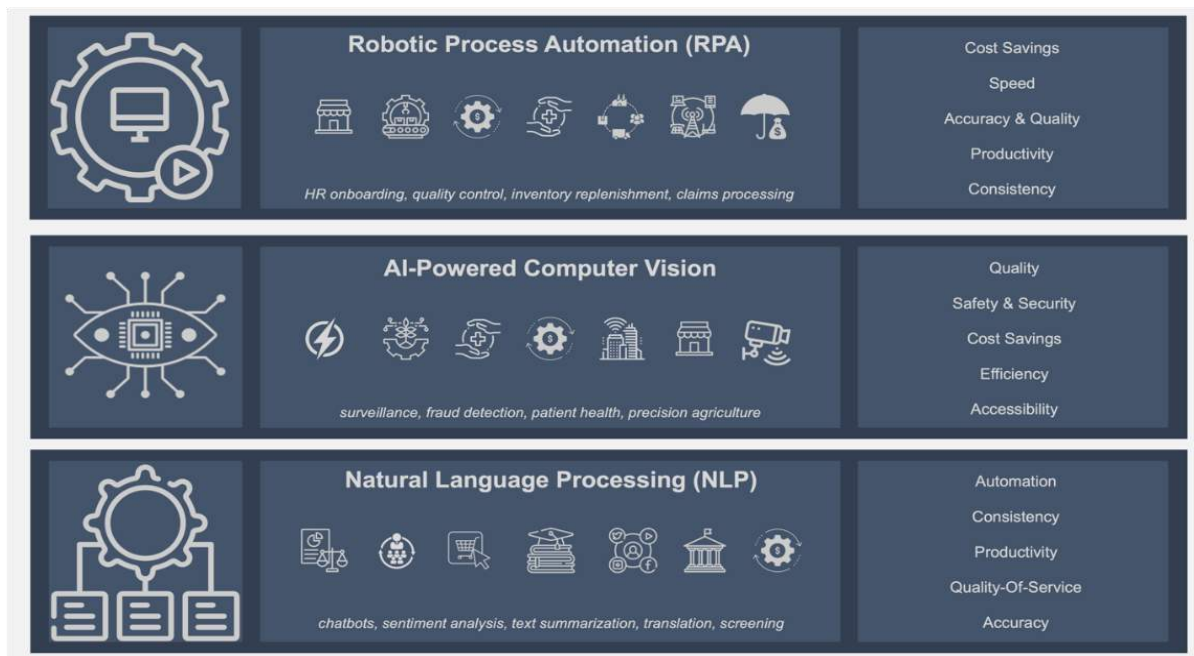
AI has delivered value across many industries.
Source: Moor Insights & Strategy

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The study also revealed the value realized by organizations that have successfully deployed AI across several functions, such as service operations, manufacturing, risk, and supply chain. Across eight discrete functions, an average of 32% of respondents recognized operational cost savings, while 63% could directly attribute an increase in revenue to AI.

These results suggest why investments in AI continue to increase. According to Goldman Sachs, investments in AI technology reached $92 billion in 2022; that number is expected to approach $200 billion by 2025.

FROM AUTOMATION TO PROBLEM-SOLVING

While traditional discriminative AI has primarily been used to create insights and drive operational efficiencies, generative AI (GAI) assists in solving a different set of complex challenges that organizations face. Whereas discriminative AI delivers value primarily by making processes more efficient, GAI holds great promise for the front end of the innovation cycle by aiding researchers, engineers, and data scientists. Consider these real-world examples of GAI delivering value:

- In the life sciences, GAI can speed up the process of drug discovery by using generative adversarial networks (GANs) and variational autoencoders (VAEs) to produce new molecular structures for testing and validation. While it is difficult to quantify the exact value of AI in the drug discovery process because its use is so new, it is no exaggeration to expect years to be shaved from the process of drug discovery and trials.
- Using GAI assists scientists in tackling the challenges of climate change. From modeling and simulation to improved predictions of extreme weather events to climate change visualization and impact assessments, GAI is helping scientists better understand, plan for, and articulate the impacts of—and best responses to—rising global temperatures.
- Automobile insurers can use GAI to tailor policies for the individual. In the past, insurers would use actuarial tables to determine rates based on demographic variables, but now insurance providers can deliver far more personalized policies based on the individual and not merely the demographic group to which they belong. Further, GAI can be used to generate a personalized explanation of the custom policy, complete with graphics and text that better resonate with the individual policy holder.

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Yes, GAI can solve certain challenges in a fraction of the time. Discovery processes that previously took months to complete can now be finished in hours or days. Questions that have perplexed scientists for years are now being answered. And services designed for the masses can now be tailored for the individual.

However, GAI and its models are only as good as the data upon which they rely. And that's where the human factor comes into play.

DON'T DISCOUNT THE HUMAN FACTOR

Besides streamlining processes and automating them, a third area where MI&S sees AI driving real value is delivering immersive experiences in both the physical world and the metaverse, where employees, partners, and customers engage with and consume products and services.

AR and VR are key technology areas where the physical and digital realms interconnect. While this space may seem nascent, MI&S sees AR and VR finding rapid adoption across multiple industries. More to the point for this paper, AI is already enhancing users' experiences in AR and VR. For instance, retail outlets are beginning to deploy "magic mirrors" where shoppers can evaluate suggested outfits in colors and sizes that are recommended based on the customer's size, complexion, and shape. Shoppers can even see images of themselves wearing these products.

In the metaverse, MI&S sees two primary use cases for AR and VR. The first of these is consumer engagement, which is especially significant in entertainment. For example, MI&S has seen considerable VR-based engagement in gaming platforms such as Epic (which makes Fortnite) and Roblox. The latter platform provides a venue for both user-created games and those created by Roblox. The platform is so popular that it attracts roughly 214 million gamers per month. This has caught the attention of merchandisers such as Nike, which created its own store (Nikeland) in this metaverse, generating over 26 million visits (along with significant revenue).

The second use case, digital twin technology, shows the value that AR and VR can bring to the enterprise. By using digital twins of real-world environments, engineers, field technicians, plant managers, and other professionals can work with simulations of buildings, equipment, and so on to plan for the successful installation and operation of physical infrastructure. The ability to digitally build according to a plan enables workers to root out potential pitfalls and challenges before they ever begin physical implementation. Digital twins can also enable operators to better understand the

performance of machines and equipment in production, including wind turbines, drilling platforms, and IT infrastructure.

This application of AI is also instructive because it uses both digital and physical assets as sources of raw information to feed the AI data pipeline.

THE AI REVOLUTION IS, IN FACT, AN EVOLUTION

While the excitement around GAI beginning late in 2022 started what seems like an AI revolution, the market has in fact experienced an evolution that has accelerated in recent years. As both the rate of usage and the level of utility of AI increase across the enterprise, so too will its applicability, and the three distinct deployment models described here will undoubtedly expand.

For an analogy, consider the evolution of the mobile phone. These devices evolved from large, heavy machines that weren't especially mobile because of a lack of cell towers—a fact which limited use and adoption. As utility improved over time with more cell towers and smaller phones, so did adoption. This adoption fed further investment from technology vendors and communications service providers. Today, each of the roughly 7.3 billion people who use mobile phones has more computational power in their pocket than the most powerful computers from 50 years ago, and they can easily reach other mobile users around the world.

MI&S believes the potential for AI is even bigger than the impact of mobile phones. Because of this, enterprises must implement a comprehensive information and data strategy to guide operational tactics for collecting, managing, and optimizing information from both physical and digital assets for use with AI. This is a critical first step to successfully harnessing the potential of AI today and tomorrow.

THE INFORMATION – DATA – INTELLIGENCE CONUNDRUM

AI has enormous potential to improve how we live, work, explore, discover, consume, and play. In this era of AI, every *thing* is a source of information—or information itself. This applies equally to valves on an oil rig that communicate flow rates to control rooms, sensors on vehicles that generate driver data for insurance companies, or wearable devices that help healthcare professionals monitor patients' health conditions from afar.

Literally everything is a potential source of information—information that can be collected, stored, and transformed into data. That data is then used to feed AI training models for generative AI, machine learning, and deep learning that provide the basis for

inference. Inference, in turn, delivers the intelligence and automation that organizations and consumers want from AI.

Whether talking about discriminative or generative AI, it is crucial to understand that the intelligence delivered from AI all begins with data in its rawest form—information, whether it is natively digital or a physical asset that has been digitized.

For mature organizations, information sources seem limitless. Information can be derived from documents and other physical media that deliver context and relevance, such as contracts, ledgers, x-ray and MRI films, health records, court proceedings, summaries and judgments in case law, audio recordings, film, artwork, and more.

The critical question for an organization in the throes of developing a comprehensive AI strategy is this: How does one determine the value of information and what it might bring to a comprehensive AI strategy? Beyond that, what does an ideal organization-wide process for managing information look like?

DEVELOPING A DATA STRATEGY FOR AI

Enterprise-wide information comes in many formats with varying levels of structure and, in some cases, integrity. When dealing with digitally generated information, the journey to data can sometimes be seamless. In other cases, such as with scanned documents or photographs, intermediate steps are required to transform information into data that can feed an AI model.

Data in today's organizations creates substantial challenges because of its volume and its complexity. That is why a critical first step in developing an AI strategy that addresses current and future uses is to clarify an AI *data* strategy that considers how to meet the needs of the diverse applications of AI across the enterprise. This inevitability means that IT organizations must implement an enterprise-wide strategy that includes the storage, use, sharing, and archiving of data.

How does an IT organization create an environment where data is clean, cataloged, secure, and available organization-wide for AI use? And how does IT create such an environment tailored with appropriate access and security based on location, user, or application?
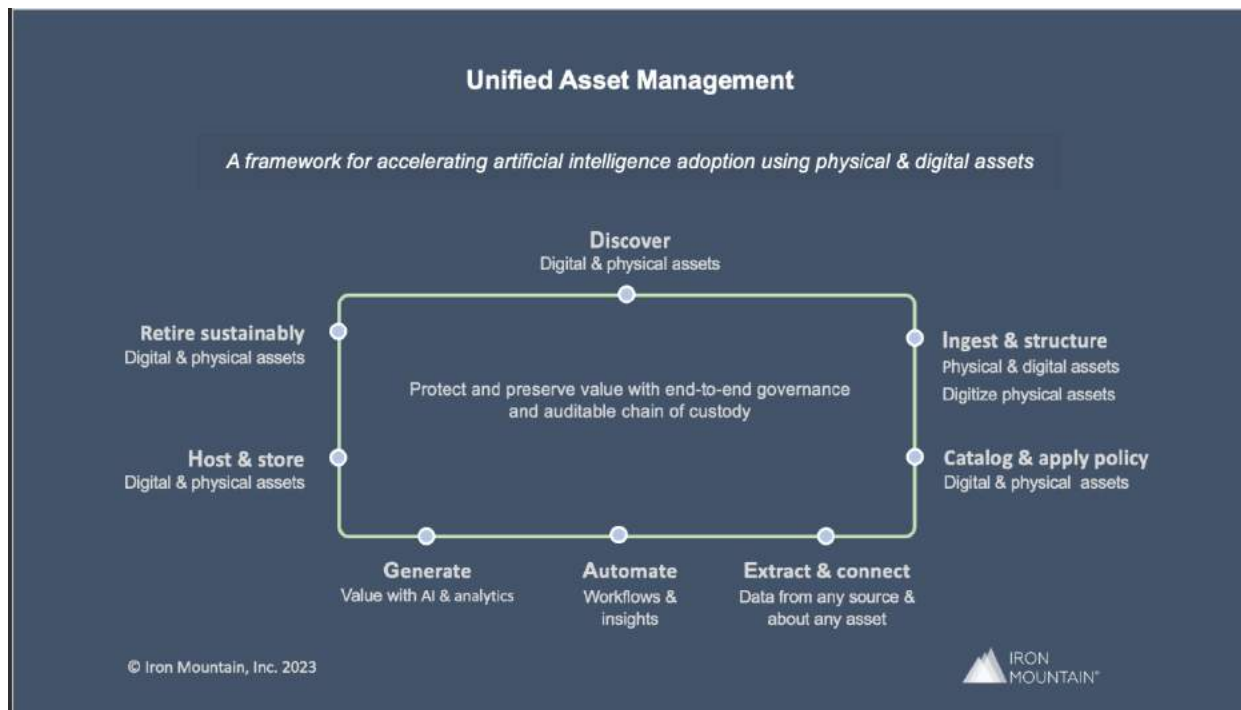
MI&S believes a comprehensive data strategy for AI begins with unified asset management.

UNIFIED ASSET MANAGEMENT IS FOUNDATIONAL TO SUCCESSFUL AI

Developing a comprehensive AI strategy begins with a consistent approach to managing sources of information that can be used to generate, source, and store data. This can be a greater operational challenge because physical assets such as documents, images, audio recordings, and the like are typically handled by records retention teams or others not involved in implementing AI.

MI&S has found that, while IT has experience in managing data that originates in the digital sphere, managing information across the enterprise is a different story. The need to coordinate activity across multiple functions is even greater when we balance the requirements of strong governance, compliance, and security. In the end, most organizations need help identifying, managing, protecting, and optimizing the relevant, valuable, and accurate information that is extracted from physical assets that reside across the enterprise.

FIGURE 2: UNIFIED ASSET MANAGEMENT IN THE ENTERPRISE

Unified Asset Management

A framework for accelerating artificial intelligence adoption using physical & digital assets

Discover
Digital & physical assets

Retire sustainably
Digital & physical assets

Ingest & structure
Physical & digital assets
Digitize physical assets

Protect and preserve value with end-to-end governance and auditable chain of custody

Host & store
Digital & physical assets

Catalog & apply policy
Digital & physical assets

Generate
Value with AI & analytics

Automate
Workflows & insights

Extract & connect
Data from any source & about any asset

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IRON MOUNTAIN®

Unified Asset Management spans the information lifecycle.
Source: Iron Mountain

Enterprises must prepare themselves for a sizeable undertaking if they want to make the most of their physical asset estate as potential fuel for AI. This extends to

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determining what and how to digitize, how to properly tag and catalog assets, and how to enrich and import unstructured data into the AI pipeline. In many cases, this is an undertaking that requires technology and skills that do not exist in the organization.

Given these gaps, and how important this process is for supporting emerging AI use cases, MI&S recommends that enterprises partner with a third party that has both depth and breadth of experience in information lifecycle management. This third party should have performed many of these projects for organizations across different industries, sizes, and geographies. It should also understand the nuances of processes and regulatory requirements as they apply from one company to the next.

In all parts of this process—storage, digitization, optimization, responsible asset disposition, recycling—the right partner can substantially ease the burden on enterprise IT, records management, and other functions. This enables the in-house professionals in these areas to focus on the activities where they can add the most value. Not just incidentally, the operational freedom these partners enable can lead to both direct and indirect cost savings.

Further, the right partner will work with the client organization to establish best practices and processes for governing and managing physical and digital assets across their entire lifecycle. The resulting program will bring together technology, people, process, and practice to enhance overall organizational capability.

SUMMARY

While many say the AI era is now upon us, the truth is that the AI era has been upon us for a while. Today, we are experiencing an acceleration of AI that is driven by increasingly consumable technology combined with an explosion of available data to fuel it. More than that, this is happening in an increasingly competitive market where efficiency, accuracy, and time to value—all of which can be improved by AI—are critical for long-term success.

MI&S has seen the impact AI can deliver through automation. Whether on a factory floor that achieves increased productivity and lower defect rates, or in security systems that can scan tens of thousands of participants and objects at a festival to detect threats, discriminative AI has proven that it can deliver real value.

Meanwhile, GAI—or the promise of GAI—has driven AI hype to a new level. MI&S believes this hype will, in turn, accelerate AI adoption across the enterprise, uncovering novel uses that will further accelerate the innovation cycle.

It is critical to understand that the automation, intelligence, and discoveries enabled by AI are only as good as the data that feeds that AI model—data that is accurate, rich, and relevant. While *"More data is good"* is a directionally true statement for training an AI model, the most important thing is to have more *relevant* data. Indeed, data that is less relevant and noisy can cause problems by leading to random and out-of-context results known as AI hallucinations.

MI&S believes IT organizations that prioritize AI as a key enabler of success must take four critical early steps:

- Establish an information lifecycle strategy that considers how data is collected, stored, cataloged, and governed for use across the enterprise.
- Establish a unified asset management strategy that determines how to create data from every relevant asset that may have value for the organization's AI strategy. This must address both physical and digital assets, as well as best practices for managing these assets across their lifecycle.
- Work with a well-established partner to perform the actual data capture, metadata extraction, and enrichment of physical assets.
- Implement a strategic plan for securing physical and digital assets. While cybersecurity is a priority for many IT organizations, MI&S has found that many security teams overlook these physical assets that hide in plain view.

While there are many vendors with which an IT organization can engage, very few can demonstrate a long and proven track record in the information lifecycle management space—meaning the storage, archiving, and recycling of physical and digital assets. Fewer still can demonstrate these capabilities globally at scale while also providing digitization, data enrichment, metadata creation, workflow automation, and insights.

Finding such a vendor and establishing a strong partnership with it is the first step to successfully deploying AI in the information-rich environment.

For additional information about how enterprises can generate more value from their physical and digital assets in an AI-centric world, see Optimize Your Digital Future with a Unified Asset Strategy.

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