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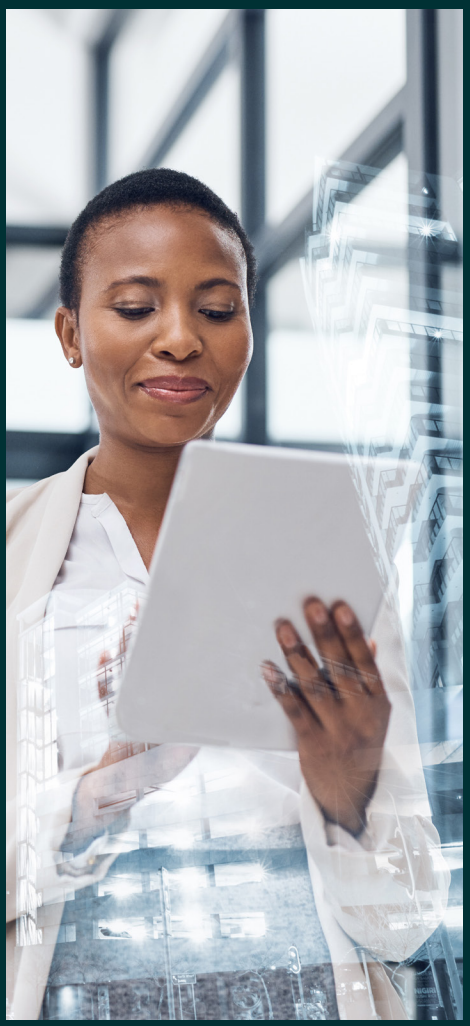
Data readiness for AI

A practical guide for preparing your data, regardless of your starting point



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The foundation of reshaping your business with artificial intelligence (AI) is built upon a fundamental element – data.

The quality of data opens the gateway to AI's full potential, transforming your organization by automating processes and informing decision-making. It sparks product and service innovation while revealing opportunities to save significant time and money.

To ensure the success of AI models, your data must be accurate, diverse, accessible, rich, actionable and high quality. Miss the mark on data quality, and you risk bias creeping into your models or losing efficiency and accuracy.

Is your data ready for AI? Explore this guide to assess your organization's level of data readiness. You'll find four key stages – evolving, developing, proficient or advanced – and the steps you can take at each stage to propel your initiatives. Harness your data's potential and realize the full transformative benefits of AI.

Getting started

Adopting the right mindset

Before plunging into these data readiness steps, consider the powerful combination of data and AI. The AI and data connection is undeniable. Without data, AI can't detect patterns and relationships that help it achieve its ultimate potential. Data is used to train your AI models. Via visualization capabilities, AI can generate insights that are easy to understand and act on.

AI tools and technologies are more accessible than ever to organizations of all sizes. This makes it the perfect time to commit to getting your data AI-ready. Doing so requires a data mindset that aligns your AI initiatives with your business objectives.

Data rules to thrive by:

- ✓ Treasure your data – it's one of your most important assets!
- ✓ A data-driven culture and mindset can accelerate your data readiness journey
- ✓ Your data contains a multitude of business-enhancing insights
- ✓ Giving employees self-service access to data can result in huge payoffs
- ✓ Your AI success will only be as good as your data quality

Data readiness level one

Emerging: Introducing data fundamentals

Organizations in the earliest stage of data readiness are at level one – emerging. You likely store your data in data warehouses. As you move into elastic computing and the cloud, your focus will evolve to make sense of and optimize your unstructured data and infuse it across applications. You are probably driven by your eagerness to benefit from all that AI has to offer this shift. At this stage, you should primarily focus on fundamental steps to advance your data strategy.

Five steps for emerging data organizations

1. **Define objectives:**
Start by pinpointing the business challenges that, when resolved, add the most value. Prioritize these high-impact use cases and set clear, achievable goals for your AI projects.

2. **Collect data:**
The first step in optimizing your data is compiling a comprehensive inventory. This means gathering all available data in a central repository. This process might be ad hoc at this stage, focusing on assembling the data from various sources before organizing it.

3. **Clean data:**
As you gather your data, you'll likely discover data that's outdated, inaccurate or otherwise flawed, reducing its overall usefulness. Data cleaning enables you to repair or remove problematic data, whether incomplete, inaccurate, corrupt, duplicated or improperly formatted. Remember that data cleansing is not always a standard procedure and may vary depending on the issues encountered.

4. **Store and manage data:**
Once cleaned, your data becomes valuable to many people across your organization. Implement straightforward methods for data storage so it's accessible to employees. Establishing effective data management practices is also key to maintaining the integrity and usefulness of this data.

5. **Train team members:**
Maintaining the quality of your data hinges on having a well-trained team. Educate your employees in advanced data management practices beyond basic data preparation skills. A true data-driven culture empowers everyone in the organization to learn data analytics skills.

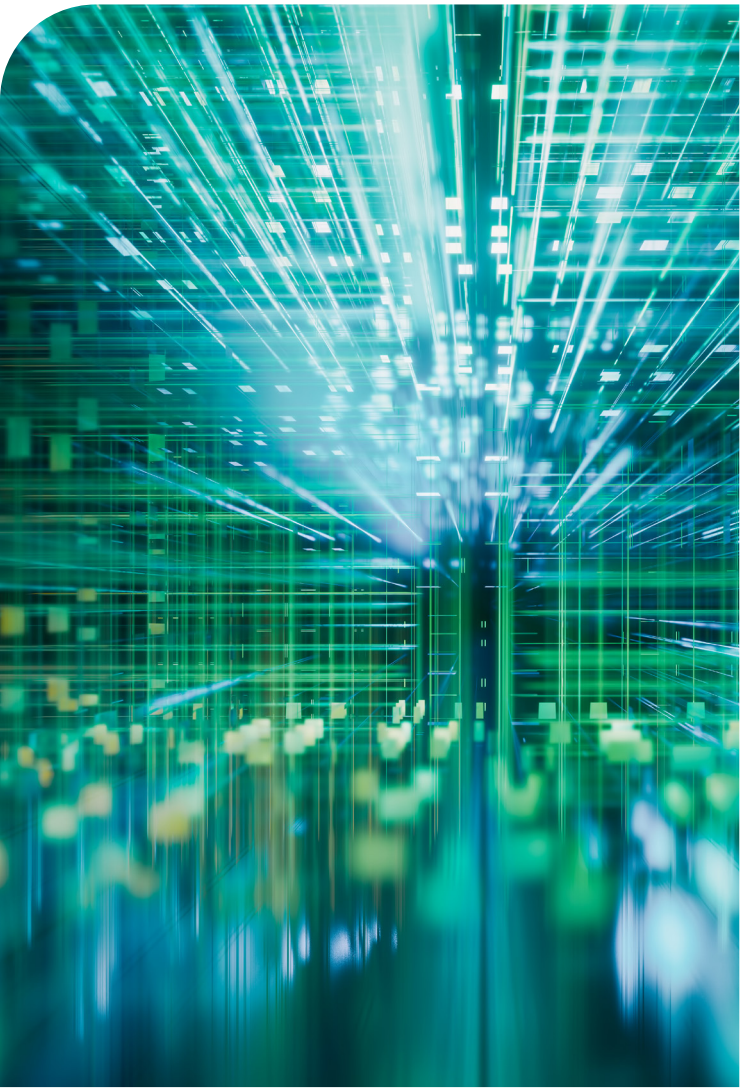
What if you lack in-house talent?

The talent shortage and strained resources can challenge your efforts toward data readiness, even with training. A technology partner like Unisys can help you on your journey by guiding you with our data science expertise.

Data readiness level two

Developing: Setting up your data to deliver insights

After satisfying the fundamentals and adopting good data hygiene practices, organizations move to level two –developing. You'll have a much better grasp of data preparation but still have room for growth. At this stage, you must take the next critical steps to advance your AI strategy by further preparing your data for optimal use by AI.



Five steps for emerging data organizations

1. **Integrate data:**
Data comes from a variety of sources, including internal business systems, public datasets and third-party sources. Integrating all your data from disparate sources increases the value of the insights extracted.

2. **Transform data:**
Basic data transformation techniques can prepare your data for future stages. These techniques include organizing data, converting data formats and structures, and mapping and translation.

3. **Select features:**
This stage offers a good opportunity to identify the relevant features you require from data solutions.

4. **Explore data:**
To extract insights from your data, lay a foundation with a basic exploratory analysis. This gives you deep knowledge of raw datasets and an understanding of your data structure.

5. **Partition data:**
Data splitting is a machine learning feature that separates data into two subsets for training and testing. At this stage, you may not completely optimize your data.

How can you extract insights from your data?

The Unisys Data Analytics solution helps you turn your data into business insights with data analysis using statistical models, machine learning algorithms and AI technologies, and robust, intuitive visualization tools and reporting.

Data readiness level three

Proficient: Maturing your data practices

Proficient organizations have made incredible strides in data readiness. If your organization is in this category, it is striving to advance beyond data warehouses and data lakes to something even better. After all, AI models require structured and unstructured data – and plenty of both – to be successful. You recognize the need to take steps to keep your data secure and scalable.

Five steps for emerging data organizations

1. **Establish data governance:**
Well-defined data governance policies are critical to comply with the myriad of data privacy regulations around the world. Automating this process makes it easier to comply with these regulations.

2. **Scale your data infrastructure:**
Migrating data from legacy systems to cloud-native databases vastly increases your data handling capacity and improves performance. This migration is essential for scaling up your infrastructure, ensuring it can efficiently manage and process larger volumes of data.

3. **Improve collaboration and communication:**
Making the most of your data takes effective teamwork across departments, which means reliable collaboration and communication technology. Knock down silos that keep people divided and encourage employees to base decisions on data.

4. **Monitor and update continuously:**
Regular data monitoring alerts you to any duplications and inaccuracies. This proactive approach allows for timely updates and early detection of issues and helps to maintain the quality of your data.

5. **Implement a data lakehouse:**
Data lakehouses combine the best features of data lakes and data warehouses to store hybrid data. To improve your organization's data management and analysis, begin incorporating a data lakehouse. This involves structuring a scalable storage solution that allows for both big data storage and sophisticated analytics.

How do you migrate and modernize your data?

The Unisys Data Migration and Modernization solution enables you to scale resources on demand, simplifying IT management and making it easier to keep up with business demands.

Data readiness level four

Advanced: Finessing your data approach

Organizations at the advanced stage actively employ best practices and cutting-edge approaches to data preparation. Those in this category, which is especially common among B2C businesses such as financial services, have built a strong data foundation. At this stage, you should offer continuous learning and advanced training in data practices to your team and consistently seek ways to enhance data quality.

Five steps for emerging data organizations

1. **Boost data quality:**
To feed AI with high-quality data, implement comprehensive standardization across all datasets and assess data quality in a more detailed way than previous assessment efforts.

2. **Implement advanced data procedures:**
These measures include establishing robust benchmarking and baseline models, implementing innovative techniques to manage imbalanced datasets, using refined data augmentation methods and introducing sophisticated feature engineering practices. At this stage, you should also implement a fully automated and efficient data pipeline so data moves through your organization smoothly.

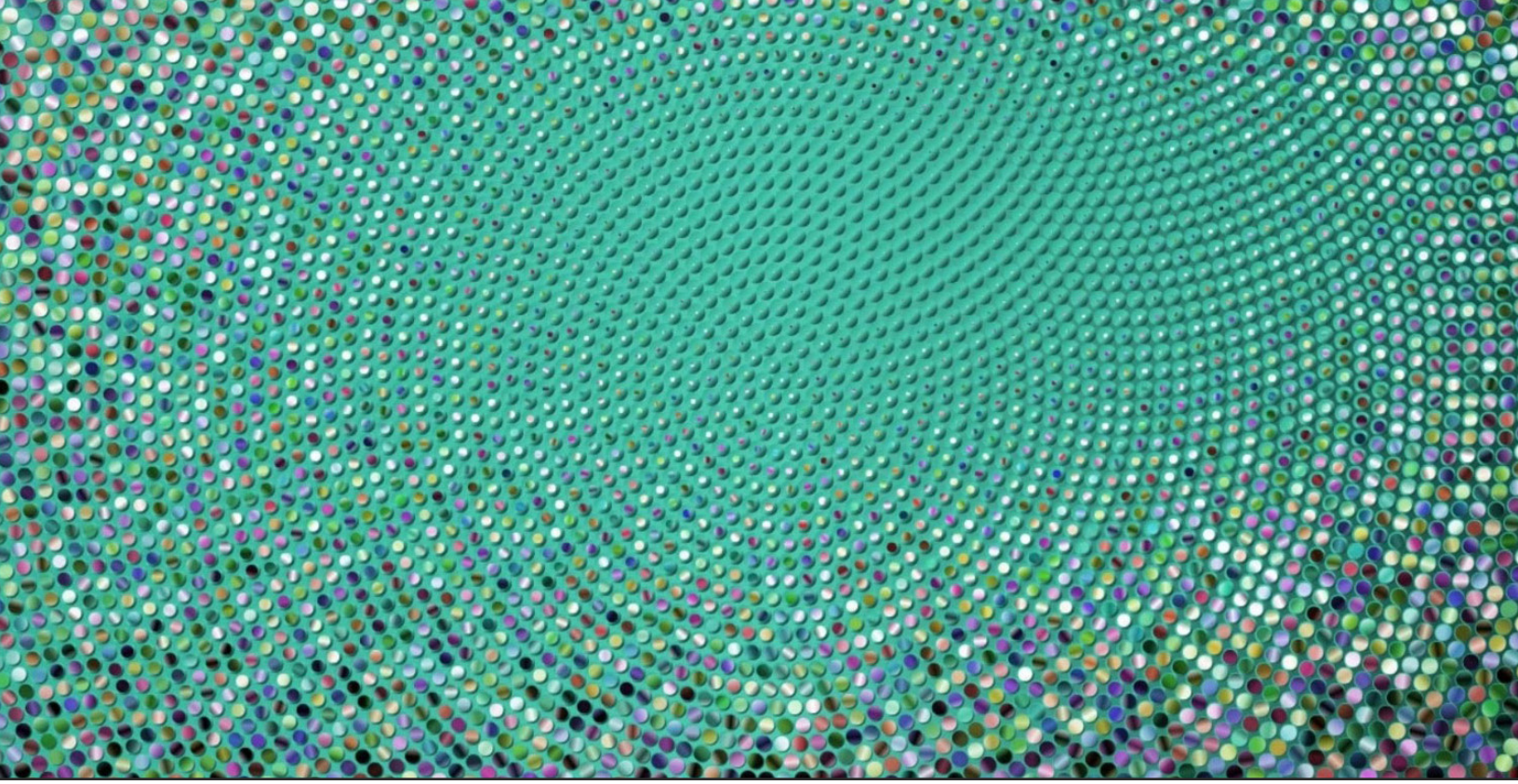
3. **Tighten data security:**
Robust security protocols are critical to protect data privacy and confidentiality and ensure you comply with industry and regulatory standards like HIPAA, PCI and GDPR. These strong cloud security measures should include policies, controls, procedures and technologies to protect your cloud-based systems, data and infrastructure.

4. **Document and manage metadata:**
Your data has data. Metadata management involves evaluating, updating and storing it while comprehensive documentation tracks it all.

5. **Govern and evolve your data lakehouse:**
Establish robust governance frameworks to strengthen data lakehouse performance further. These should be tailored to the data lakehouse, ensuring quality, compliance and efficient use of this architecture. Be ready to continuously adapt and optimize the data lakehouse to meet emerging data needs and technological advancements.

How do you manage your data?

The Unisys Modern Data Engineering solution offers cost-effective and scalable data management when using cloud platforms like AWS, Google Cloud and Azure.



What's next?

Advance your data strategy with Unisys

Your future success with AI depends on an effective data strategy. Regardless of where you are on your data journey, Unisys can be your strategic partner, offering specialized expertise and technology solutions. Trust us to evaluate your data landscape, assess your stage of readiness and ensure that you're gaining valuable insights from your data.

Learn more about how Unisys can help advance your data and analytics strategy and approach to AI.

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