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The AI journey from concept to delivering benefits

Developing and deploying artificial intelligence (AI) solutions absorbs an increasing share of companies' budgets and resources. AI operations translate these capital and human investments into practical advantages. They accomplish outcomes that greatly benefit companies and the people they serve.

In AI operations, professionals in various industries and organizations rely on AI solutions to help people make decisions and act at the right time to keep processes moving. Use cases for AI operations typically depend on software applications, networking technology and data storage. What's more, users in almost every AI operations scenario rely on powerful workstations to do their jobs. This infographic provides an overview of AI development, deployment and operations, highlighting common use cases where workstations are essential.

AI development: Addressing business issues

Large portions of AI development involve strategizing, identifying data sources and preparing data for processing.

- Approximately 80% of AI effort is spent on data acquisition, cleansing and staging.
- Data scientists and developers work with organizational data to create, revise and train AI solution models.
- Development can take place on workstations, servers or cloud resources.
- Then comes the AI deployment phase.

AI deployment: Enabling inference

Deployment puts the resulting AI services on servers, in the cloud or on workstations.

- AI specialists implement trained and tested models that derive inferences from data.
- Companies often develop a proof-of-concept prototype before scaling up for production use.
- Relying on edge services and IoT data streams, AI services garner the lion's share of attention and visibility.

AI operations: Creating value

In AI operations, professionals spanning wide ranges of industries and markets rely on AI capabilities to support many use cases.

- Interactions between human operators and AI solutions are essential to reap the benefits of AI.
- Many professional roles benefit from AI inferences.
- Solutions providers face a large, sometimes overlooked growth opportunity in AI operations.
- **AI operations can achieve dramatic results — for instance:**
  - Saving the lives of workers and medical patients.
  - Improving quality, speed and outcomes of medical care.
  - Enabling prompt, smart decisions and actions by transcending the limits of human attention.

Why are workstations a good fit for AI operations?

Computer workstations are present in almost every scenario of AI operations. What makes them great resources for users and organizations?

- Provide easy-to-use interface for digitally literate professionals.
- Offer computing power to run trained inference models interacting with other applications.
- Can be fixed or mobile to suite many usage scenarios.
- Support evolving usage with reliability and versatility.
- Can connect with vast ranges of peripherals, data storage systems and specialty hardware.
- Simplify updating and managing from central administrator consoles.

High-impact use cases for AI operations

AI solutions running on workstations prove their value in many different usage scenarios. The samples below highlight typical, widely adopted use cases among hundreds of similar ones.

Radiology

- **Users:** radiologists and medical specialists.
- **Challenge:** need to review large numbers of medical images, often with only seconds to spend on each.
- **Advantages:**
  - Bring attention to details that need closer evaluation.
  - Allow operators to step in when they can truly make a difference.
  - Avoid operator burnout and delayed responses to patients' needs.

Telehealth

- **Users:** intake staff, doctors, nurses, emergency personnel.
- **Challenge:** ensure the productivity of telehealth consultations and consider all important information.
- **Advantages:**
  - Enhance diagnostic accuracy.
  - Have productive, focused patient conversations.
  - Accelerate and improve the effectiveness of triage.

Public safety

- **Users:** security professionals, facilities managers, first responders.
- **Challenge:** address potential issues quickly and assume greater responsibility in keeping workers and the public safe and healthy.
- **Advantages:**
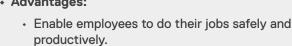 - Respond faster and more accurately to risk situations.
  - Broaden the mission of safety teams.
  - Strengthen security without adding staff.

Manufacturing operations

- **Users:** production managers, maintenance managers.
- **Challenge:** keep complex production processes and machinery running safely and meet quality and volume targets.
- **Advantages:**
  - Ensure consistent output quality.
  - Manage industrial assets for best performance.
  - Proactively eliminate unscheduled equipment downtime.
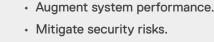 - Maintain safe working conditions.

Utilities

- **Users:** service managers, line managers.
- **Challenge:** maintain worker safety and meet service-level commitments.
- **Advantages:**
  - Enable employees to do their jobs safely and productively.
  - Ensure uninterrupted services.
  - Keep equipment and facilities anywhere in optimal working condition.

AIOps

- **Users:** development leads, IT managers, cybersecurity specialists.
- **Challenge:** ensure optimal performance and integrity of applications, services and systems.
- **Advantages:**
  - Improve service availability and stability.
  - Augment system performance.
  - Mitigate security risks.

Next steps

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