GROW ENTERPRISE AI MATURITY FOR BOTTOM-LINE IMPACT

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Last year, MIT CISR introduced a four-stage enterprise AI maturity framework to help leaders identify how to create value from AI (artificial intelligence) technology. The bottom line was that enterprises in the first two stages of AI maturity had financial performance below industry average, while enterprises in stages 3 and 4 had financial performance well above industry average.[1]

A new MIT CISR survey[2] has found that enterprises today are making significant progress in their AI maturity. The research showed that the greatest financial impact is achieved in progressing from stage 2, where enterprises build pilots and capabilities, to stage 3, where enterprises develop scaled AI ways of working (see the figure).

We conducted the new survey during a period marked by the widespread adoption of generative AI and experimentation with agentic AI. While companies have been using machine learning AI for years, newer forms of AI technologies could offer fresh and potentially highly valuable ways of doing work. But there is no proven playbook for how to mature a company's use of AI.

In this briefing we describe how enterprises mature from piloting AI to scaling it, illustrated by case studies of the Guardian Life Insurance Company of America and Italgas Group.

ENTERPRISES FACE FOUR CHALLENGES TO MOVE FROM PILOTS TO SCALING

In stage 2 of AI maturity, enterprises establish AI capabilities such as business case development and testing, process simplification and automation, and employee experimentation. In stage 3, enterprises build on these capabilities to scale AI across the business and embed AI use.

Based on our interviews with senior executives on their AI initiatives,[3] we identified four challenges enterprises need to focus on to move from stage 2 to stage 3 of enterprise AI maturity:

1. **Strategy:** aligning AI investments with strategic goals and offering measurable, scalable value
2. **Systems:** architecting modular, interoperable platforms and data ecosystems to enable enterprise-wide intelligence
3. **Synchronization:** creating AI-ready people, roles, and teams while redesigning work around AI capabilities
4. **Stewardship:** embedding and monitoring compliant, human-centered, and transparent AI practices by design

The following case vignettes demonstrate how Guardian and Italgas are navigating these four challenges as they move their enterprises from stage 2 to stage 3 enterprise AI maturity.

GUARDIAN BUILDS CAPABILITIES FOR SCALING AI

The Guardian Life Insurance Company of America (Guardian)[4] had 2024 revenues of $14.5 billion and operating income of $2.4 billion.[5] Guardian provides workplace benefits and holistic planning solutions for individuals, including life and disability insurance, annuities, and wealth management.

After becoming CEO in 2020, Andrew McMahon began leading a digital business transformation to redefine and modernize Guardian, using data and AI to deepen customer engagement and automate manual processes. Guardian's AI efforts focus on three areas: improving the customer experience, driving efficiency and reduction in operating expenses, and improving employee productivity.

1 See P. Weill, S. L. Woerner, and I. M. Sebastian, "Building Enterprise AI Maturity," MIT CISR Research Briefing, Vol. XXIV, No. 12, December 2024, https://cisr.mit.edu/publication/2024_1201_EnterpriseAIMaturityModel_WeillWoernerSebastian. The original MIT CISR Enterprise AI Maturity Model drew on survey results from 2022 and interviews with senior executives at nine enterprises.

2 MIT CISR 2025 Real-Time Business Survey (N=152).

3 Nineteen interviews with executives in eleven enterprises from 2024 to 2025.

4 The Guardian case vignette is based on multiple interviews with three company executives from 2024–2025.

5 The Guardian Life Insurance Company of America, 2024 Annual Report, March 31, 2025, https://assets.ctfassets.net/gau1nv66ynug/1Uxs1zl3vg8h89etJjv8jk/bac7fcdca525f9660a62ad54099231c1/The-Guardian-2024-Annual-web.pdf.

Guardian is actively navigating the four challenges while building its enterprise-wide AI capabilities.

Strategy

Guardian assigned accountability for AI strategy to its Data and AI team, empowering the team to select and prioritize the highest value AI opportunities. The team developed a value-tracking framework with three phases: (1) developing hypotheses with business leaders, (2) testing solutions and building business cases, and (3) creating plans to scale solutions. Using this framework has helped Guardian to focus on higher-impact initiatives, such as piloting an automation of the request for proposal (RFP) and quoting process in its employee benefits business. This key process, which originally generated a proposal in five to seven days, takes just twenty-four hours. Guardian will move the project from pilot to scale in 2026.

Systems

To scale AI, Guardian first had to upgrade core systems on legacy mainframes and consolidate fragmented enterprise data. Chief Digital and Technology Officer Steve Rullo implemented a new operating model for technology around products and platforms that accelerates delivery of new platform capabilities and modernizes the data architecture. Small cross-functional teams have end-to-end accountability by product, and internal platforms are being designed with microservices and API architecture to scale reuse and efficiency across the enterprise. The operating model and architecture modernization have moved beyond early pilots to scaled adoption across the enterprise.

Synchronization

A key success factor for Guardian has been reskilling the enterprise's people and teams to support its AI initiatives. Chief Strategy Officer Mike Prestileo focuses on solving business problems, not AI problems, which requires end-to-end thinkers with both subject matter and business expertise. In the short-term, Guardian has pulled people from their regular roles to have them focus on AI use cases and transformation. For the longer-term, Guardian is exploring training as well as business and technical rotations to build the diversity and skills the enterprise needs as it moves along on its AI journey.

Stewardship

Finally, Guardian has had to ensure that its AI initiatives comply with risk, legal, and regulatory requirements in its high-risk and highly regulated environment. The Data and AI team codified potential risk, legal, and compliance barriers and their mitigations. The team implemented a regular governance process with the risk, legal, and compliance teams to evaluate all use cases regarding data privacy, customer, operational, regulatory, and cyber risk. In addition, Guardian created two tracks for architectural review: a formal architecture review board; and a fast-track review board that includes technical risk compliance, data privacy, and cybersecurity representatives who can either approve a new solution for proposed use cases or leverage an existing solution.

ITALGAS MATURES ITS ENTERPRISE AI

Italgas Group (Italgas),[6] Europe's largest natural gas distributor, serves 12.9 million customers across Italy and Greece. In 2024 it reported €1.78 billion in adjusted revenues and €506.6 million in net profit across four businesses: gas distribution, water management, energy efficiency, and IT services.[7]

AI is playing a strategic role in Italgas's ongoing digital transformation. The enterprise is using AI to monitor and manage infrastructure in real time, improve operational efficiency, and increase security and reliability.[8]

Italgas is tackling the four challenges to accelerate its AI maturity.

Strategy

Italgas strategically prioritizes AI initiatives that enable its vision to lead gas distribution in Europe and modernize national infrastructure. For example, WorkOnSite, a predictive AI solution used for remote management of construction sites, has accelerated project completion by 40 percent, reduced inspections by 80 percent, and improved safety. And the DANA remote network control system leverages generative AI for smart search, document classification, and certificate tracking. Italgas's Digital Factory, its enterprise innovation unit, prioritizes and executes AI initiatives with close involvement of the executive team. In 2024, eighteen cross-functional teams delivered MVPs in four-month sprints, each sponsored by a C-level executive.

Systems

Asset and process digitization are two pillars of Italgas's digital transformation. Since 2017, Italgas has built a robust, enterprise-wide, cloud-based platform capability that includes an Internet of Things (IoT) platform with more than seven million smart meters, a data platform managing over 300TB

6 The authors conducted four interviews with five Italgas executives in 2024.

7 Italgas S.p.A., Integrated Annual Report 2024, March 10, 2025, p. 10, https://www.italgas.it/wp-content/uploads/sites/2/2025/03/Italgas-Integrated-Annual-Report-2024.pdf.

8 Italgas S.p.A., Integrated Annual Report 2024.

of data, an AI capability with twenty-three models, and a self-service business intelligence capability that enables business users to independently perform data extraction and analysis and create dashboards. These modular components are used by both Italgas's Digital Factory—an innovation hub the enterprise launched in 2018—and its business units. Rather than centralizing analytics, Italgas embedded business translators (people who support adoption) in each unit.

Synchronization

The third pillar in Italgas's transformation is building an agile, AI-ready workforce. Since launching the Digital Factory, Italgas has engaged over 1,000 employees in innovation initiatives. Staffing these teams required trade-offs to balance experience and maintain operational continuity. To promote workforce development, in 2022 Italgas launched an internal reskilling initiative, an effort co-led by CEO Paolo Gallo and Human Resources and supported by Italgas Academy, the enterprise's comprehensive training initiative. In 2024 the academy delivered over 30,000 training hours focused on AI and data to support the digital transformation. A new performance system maps 95 percent of employees to the enterprise's new digital leadership model by skills and behaviors, enabling more targeted development.

Stewardship

To guide the responsible adoption of AI, Italgas introduced new leadership roles and governance. In September 2024, the chief human resources officer role was redefined as the chief people, innovation, and transformation officer (CPITO) to lead the shift toward AI-enabled ways of working. A new AI director, reporting jointly to the CPITO and CIO, and a dedicated group AI office oversee AI integration across all business processes, including how AI models are trained, tested, and monitored.[9] They also align Digital Factory planning with strategic goals, balancing automation and opportunity. For example, while AI-driven work scheduling improves operational efficiency, commercializing WorkOnSite as software-as-a-service through Bludigit, an Italgas Group company that offers solutions to accelerate digital transformation,[10] drives top-line growth and creates new career opportunities. In 2024, Bludigit generated €3 million in revenue with over 50 percent margin.

SCALING AI HELPS ENTERPRISES CAPTURE BOTTOM-LINE VALUE

We have demonstrated that to get above-industry-average financial performance, enterprises need to move from AI pilots (stage 2 in our enterprise AI maturity framework) to scaling AI (stage 3 in the framework). And there are four challenges to overcome while making the transition. This transition is a major organizational change and will likely encounter both human resistance and technological complexity. Therefore, it will take a united top leadership team— particularly the CEO, the CIO, chief strategy officer, and the head of human resources—to drive the change. Without a dedicated team approach, companies are destined to stay in the pilot stage. Now is the time for executive teams to align, commit, and lead the charge toward enterprise-scale AI by developing a playbook for strategy, systems, synchronization, and stewardship.

9 "Risk Management: Emerging Risks," Italgas S.p.A., last updated April 18, 2025, https://www.italgas.it/en/investors/governance/internal-control-compliance/risk-management/.

10 "Bludigit," Italgas S.p.A., last updated May 13, 2025, https://www.italgas.it/en/about-us/group-companies/group-companies/bludigit/.

Figure: Four Stages of Enterprise AI Maturity, 2022–2025

AI Stage Attributes	Stage 1: Experiment and Prepare	Stage 2: Build Pilots and Capabilities	Stage 3: Develop AI Ways of Working	Stage 4: Become AI Future Ready
Percentage of Responding Enterprises, 2022	28%	34%	31%	7%
Percentage of Responding Enterprises, 2025	13%	23%	46%	18%
Focus	Exploration and education	Business cases and pilots	Scaling platforms and changing work	Continuous innovation and new revenue streams
Growth 2025	**-26.5 pp**	**-6.8 pp**	**+4.7 pp**	**+13.9 pp**
Profit 2025	**-15.1 pp**	**-1.4 pp**	**+0.8 pp**	**+9.9 pp**

Source: MIT CISR 2022 Future Ready Survey (N=721) and MIT CISR 2025 Real-Time Business Survey (N=152), plus interviews in 2024–2025 with twenty executives in nine enterprises. Respondents were grouped into four stages using a measure of Total AI Effectiveness, the equally weighted combination of three measures: effectiveness of AI to (i) improve operations, (ii) improve customer experience, and (iii) support and develop ecosystems. On a 0–100% scale of Total AI Effectiveness, Stage 1 AI Capability=0–49%, Stage 2=50–74%, Stage 3=75–99%, Stage 4=100%. Measures of growth and profit are from 2024, calculated as percentage points (pp) above/below industry average.

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MIT CISR helps executives meet the challenge of leading increasingly digital and data-driven organizations. We provide insights on how organizations effectively realize value from approaches such as digital business transformation, data monetization, business ecosystems, and the digital workplace. Founded in 1974 and grounded in MIT's tradition of combining academic knowledge and practical purpose, we work directly with digital leaders, executives, and boards to develop our insights. Our consortium forms a global community that comprises more than seventy five organizations.

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