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NEXT-GEN INDUSTRY:

A Prize in Scalable AI and Manufacturing Innovation

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About the Milken Institute

The Milken Institute is a nonprofit, nonpartisan think tank focused on accelerating measurable progress on the path to a meaningful life. With a focus on financial, physical, mental, and environmental health, we bring together the best ideas and innovative resourcing to develop blueprints for tackling some of our most critical global issues through the lens of what's pressing now and what's coming next.

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Milken Institute Strategic Philanthropy advances the strategic deployment of philanthropic capital to create a better, more equitable world. We tackle persistent societal challenges by giving philanthropists insights, tools, and strategies to take big risks and test bold ideas.

Disclaimer

While many organizations and philanthropic endeavors are referenced as examples in this publication, their inclusion does not imply endorsement.

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The Milken-Motsepe Innovation Prize Program

The Milken-Motsepe Innovation Prize Program consists of a series of multiyear, multimillion-dollar global innovation competitions and awards to advance technological solutions in order to accelerate the development and scaling of technology-driven solutions that are tested in and built for African marketplaces.

It is a partnership between the Milken Institute and the Motsepe Foundation. Each prize cycle focuses on a high-impact challenge area and offers a total of $2 million in annual non-dilutive capital for winning companies, as well as wraparound services for participants. The previous prizes were AgriTech (2023), Green Energy (2024), and FinTech (2025).

Each prize has its own structure, criteria, and expert judging panel. The program has intentionally evolved from an incentive competition model that catalyzed breakthrough solutions to innovation awards that accelerate companies already demonstrating market traction and readiness to scale in Africa and beyond.

Earlier prizes in AgriTech and Green Energy were among those awarded in incentive competitions. These competitions sought to stimulate new approaches, unlock technical feasibility, and prove what was possible in sectors facing long-standing structural constraints. The Prizes in Fintech and Artificial Intelligence (AI) and Manufacturing are structured as innovation prize awards, focused squarely on execution and ability to scale.

By shifting from incentive competitions to innovation awards, the Milken-Motsepe Prize Program positions capital, credibility, and convening power behind companies that are ready to move from proven performance to widespread adoption, particularly in markets where scale can drive inclusive economic growth. The program aims to fill the “missing middle” in business investment across emerging markets, preparing businesses for larger partnerships and opportunities to scale.

The prize model was selected as a rigorous way to crowdsource innovative ideas; identify credible entrepreneurs; and apply capital, visibility, and the Milken Institute network to accelerate adoption. The Milken-Motsepe Prize Program has also attracted an online community of over 12,000 people from 136 countries who receive curated resources and opportunities via a monthly newsletter. We have seen a 31-fold return on prize money in follow-on investments to date. The program exists because the partnership made it possible to take a long-term view. By pairing the Milken Institute’s analytical rigor, prize design capability, and global network with the Motsepe Foundation’s deep regional leadership and insight, the partnership advances proven innovations for scalable impact that strengthens inclusive economic growth.

The Design Process

The prize design process begins with an aspirational future state grounded in evidence and shaped by rigorous research. It maps signals and macro trends across technology, capital flows, policy, market dynamics, workforce shifts, and regional contexts within a defined sector or problem area. Through rigorous research, stakeholder engagement, expert interviews, and structured analysis, the process identifies gaps between where the system is headed and where it must go to achieve more equitable, efficient, and resilient outcomes.

From there, the design process examines where capital is constrained or insufficiently deployed, and it considers how targeted catalytic funding, visibility, and network activation can unlock solutions with both economic return and social benefit. The resulting design reflects specific inflection points where innovation, capital, and coordination can accelerate measurable impact. This framing makes clear that the prize is not simply rewarding good ideas. It is intentionally positioned at the intersection of major trends and engineered to move markets toward a more inclusive and high-performing future.

African Manufacturing Landscape

The Importance of Manufacturing

By 2050, Africa will hold one-quarter of the world's population[1] and command roughly $16 trillion in combined business and consumer spending.[2] Yet, in 2024, the manufacturing sector claimed only 10 percent[3] of continental gross domestic product (GDP) and 2 percent of global manufacturing value added.[4] A stronger manufacturing sector is the bridge between Africa's rapid growth in demand and its long-term prosperity. If production does not expand, much of that $16 trillion market will be met through imports, and more value will be created elsewhere. Increasing manufacturing's share of GDP and global output would turn population and spending growth into local jobs, export earnings, and greater resilience when external shocks hit.

To match population growth with employment, the continent must create 18 million jobs per year through 2035.[5] The urgent need for job growth positions the manufacturing sector as a critical lever, with the potential to expand and diversify the industrial base. Each new manufacturing job in Africa supports roughly 8 to 20 additional jobs across the broader economy, from logistics and supply chains to services, maintenance, and local commerce.[6] Manufacturing serves as an essential growth engine by attracting investment and driving GDP and job growth needed for lasting economic resilience.

Sector Insights and Value-Chain Dynamics

Today, Africa's manufacturing base, while still modest, shows encouraging gains, with local infrastructure improvements and signs of sector diversification. Between 2015 and 2023, Africa's factory output climbed from about $170 billion to nearly $235 billion, an increase of almost 40 percent, due to a steady 3–4 percent growth each year.[7] Recent sector trajectories show two realities: Expansion into higher-value activities is possible, but progress can stall when capabilities, coordination, or market access break down.

One example of this expanding manufacturing base is agro-processing, which accounts for up to 30 percent of manufacturing employment in some African countries.[8] Agro-processing encompasses the value-added steps after harvest that turn raw crops and livestock into food products and industrial ingredients. Agro-industrial systems demonstrate that food and beverage processing is consistently one of Africa's largest formal manufacturing employers and a key on-ramp for women and youth into wage work.

Regional standouts also exist in other sectors, such as the automotive industry in Morocco. Morocco's automotive sector became the region's largest car producer when exports climbed from $8.3 billion in 2021 to $15 billion in 2025.[9] Growth was supported by targeted industrial policy, skills training, and export infrastructure, including connectivity to Europe.[10] These conditions helped attract companies to expand their manufacturing footprints in Morocco and deepen local supplier networks, accelerating investment.

Africa's manufacturing standouts demonstrate how end-to-end supply chain capabilities enable firms to capture greater value locally while strengthening their position in global trade.

Examples from other sectors show the fragility of industry gains when policy shifts and global headwinds converge. Ethiopia's recent decline of its once-touted textile sector underscores this point. Exports from textile parks collapsed from about $175 million in 2021[11] to $120 million in 2023,[12] after African Growth and Opportunity Act (AGOA) privileges were revoked, casting uncertainty on the sector's future.[13] AGOA was suspended over human-rights concerns tied to the Tigray conflict. Before the AGOA suspension, nearly half of Ethiopia's exports to the US had entered duty-free, with the US as the main market for Ethiopian-made apparel.[14] AGOA's suspension removed a key sourcing flexibility that let Ethiopian plants use global fabrics while still shipping duty-free.[15]

Such changes do not diminish the role of innovation. In sectors where competitiveness is tightly linked to trade preferences and sourcing rules, shocks can quickly reshape and reorder supply chains. From a sector standpoint, this reinforces the importance of capabilities that strengthen resilience across the value chain, including speed to compliance and the ability to sustain performance as conditions evolve.

In cocoa, limited downstream processing and weak coordination across sourcing, processing, and market access limit how much value is captured locally. Roughly three-quarters of global cocoa bean production is in West African countries; Côte d'Ivoire and Ghana accounted for 44 percent and 16 percent of global production in 2020, respectively.[16] Notably, unprocessed cocoa continues to dominate exports, accounting for roughly three-quarters of Africa's total cocoa shipments.[17] At the same time, Africa is a net importer of chocolate and cocoa preparations.[18]

Exporting beans and importing finished chocolate means most of the profit is captured after the beans leave Africa. Profit is concentrated in processing, branding, and retail, so farmers capture only a small share of a chocolate bar's value. Many import markets keep raw beans duty-free but apply higher tariffs and stricter rules to processed cocoa and chocolate, which incentivizes firms to export beans rather than invest in local processing. The path forward is to expand downstream capacity to produce and market more finished cocoa products in Africa.

Taken together, these sectors demonstrate how Africa's manufacturing growth is neither linear nor guaranteed. New capacity often introduces new challenges. Scaling production increases dependence on reliable infrastructure, compliant inputs, and predictable routes to market. The most durable gains come when expansion is matched with capability-building, diversified market access, and stronger upstream and downstream linkages. With stable policy environments and patient capital, current challenges can be converted into scalable advantages that increase resilience and broaden prosperity.

Industry 4.0 Adoption

As Africa's manufacturing base steadily expands, Industry 4.0 technologies, including AI, offer a new opportunity to strengthen productivity and move more quickly up the industrial value chain. Industry 4.0 blends digital, physical, and biological technologies across factories and supply chains. These tools operate in layers, starting with sensing and control on the shop floor, followed by AI-driven software that turns production data into actionable decisions and applications that improve quality and visibility.[19]

In practice, becoming an Industry 4.0 factory means outfitting machines with sensors and connectivity; adding automated or collaborative robots to improve safety or throughput; and running software that continuously monitors, analyzes, and optimizes the factory's operations in real time. Yet technology alone is not enough. Sustained adoption depends on reliable power and connectivity, as well as practical

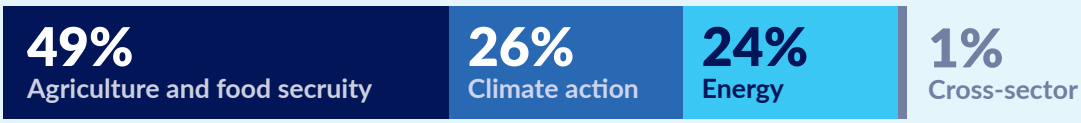
training that helps operators and managers use and maintain these systems effectively. When digital tools are paired with stable infrastructure and a skilled workforce, factories are better positioned to adopt new technologies and translate them into lasting productivity gains.

A recent United Nations (UN) Industrial Development Organization survey of African manufacturers found that 12 percent had introduced digital technology, just slightly behind 14 percent of manufacturers globally.[20] These figures place Africa close to the global baseline for core digital systems, even if cutting-edge capabilities are still more concentrated elsewhere. The dominant headwinds are structural and well documented: unreliable power, patchy broadband connectivity, high capital costs, limited access to high-quality data, and a persistent AI and digital skills gap.[21] These constraints do more than slow incremental upgrades; they limit firms' ability to adopt and scale advanced manufacturing technologies, keeping many value chains in a technological holding pattern rather than enabling sustained productivity gains and deeper industrial integration.

Questions about feasibility are common among experts interviewed, but proof comes from real operations where AI is cutting waste and downtime. Twiga Foods, for example, uses digital demand planning to pool orders from thousands of small retailers, then coordinates harvest, aggregation, cold-chain transport, and rapid supplier payments. By using data to better match supply with demand, the company has significantly reduced postharvest losses compared with traditional distribution channels.[22] Twiga Foods' AI-driven demand forecasting reduced typical postharvest losses in Kenya from 30 percent to 4 percent. This kind of deployment illustrates why early use cases for digital tools often focus on reliability and waste reduction: When systems are designed to work within local infrastructure realities, performance improves and efficiency gains become durable.

These examples show why Industry 4.0 technologies can be a strong fit for many African manufacturers facing persistent operational challenges. In markets where margins are tight and disruptions are common, tools that improve forecasting, reduce waste, and predict equipment failures address immediate operational needs. The World Bank estimates that by 2030, over 230 million jobs in sub-Saharan Africa will require digital skills, many of which will demand intermediate to advanced competencies in fields like data analytics and cybersecurity.[23] Meeting that demand requires pairing investment in reliable power with growth capital for solution providers and systems integrators, along with training that advances workers from basic digital use to plant-level analytics. This holistic approach can empower a whole new generation of tech-savvy workers.

Figure 1 | Allocation of AI Use Cases by Sector: Kenya, Nigeria, and South Africa



Source: GSMA (2024)[24]

Africa's Digital Manufacturing Revolution

Africa is increasingly positioned to accelerate digital manufacturing as policy, finance, and trade frameworks begin to align. Policy tailwinds are finally converging behind African manufacturing. Since 2018, the count of African nations with official AI or digital-industry strategies has grown from 0 to 17, with others in process.[25] The African Development Bank has a portfolio of initiatives supporting Africa's digital transformation and industrialization, including skills partnerships and digital finance programs, alongside billion-dollar-scale financing for infrastructure and value chain development.[26]

In parallel, the African Continental Free Trade Area (AfCFTA) Digital Trade Protocol is establishing continent-wide standards for data flows, e-signatures, and cybersecurity. [27] AfCFTA is the African Union's flagship market integration project, with the goal of creating a single continental market for goods and services. Launched in 2018, its core aim is to reduce tariffs and nontariff barriers so intra-African trade can expand and value chains can form across borders. The Digital Trade Protocol cuts compliance costs. Add in over 220 special economic and industrial parks present in 47 of Africa's 54 countries and, taken together, these shifts suggest that digital transformation in African manufacturing is moving toward a more coordinated, continent-wide effort to build competitive and connected ecosystems.[28]

Leapfrogging Potential

Africa's advantage is built on its younger industrial base, with recently upgraded plants that will let factories jump straight to edge-based AI that is low cost, low energy, and high impact. In practice, edge-based AI runs directly on shop-floor devices with limited internet and keeps data stored locally. This lowers operating costs and keeps systems resilient during power or network gaps.

Leapfrogging here is practical, not rhetorical. An effective approach uses small models on modest hardware with on-device inference. Analytics are designed offline first so they continue operating during gaps.[29] Companies deploy modular sensor kits with mobile-native interfaces to be productive on day one. These features address real operating constraints while unlocking gains in uptime, quality, and energy use.

To turn momentum into scale, firms will need reliable power, basic digital standards, and partners that can integrate these tools throughout the value chain. Do that, and practical AI will spread in the very markets where demand is set to surge, with roughly two billion consumers in the coming decades.

Opportunity Gap

Persistent Productivity Challenges

Persistent productivity shortfalls, from low value added per worker to costly unplanned downtime, undermine African manufacturing's global competitiveness and jeopardize the continent's capacity for growth. Value added per worker is a vital gauge of national competitiveness, showing how effectively a workforce turns raw inputs into economic value—ultimately driving productivity gains and higher wages, attracting investment, and increasing resilience. African factories generate $7,608 of value added per worker, versus $30,292 in East Asia and the Pacific in 2023, reflecting gaps in uptime, quality, and supply chain reliability.[30]

Material waste poses an additional challenge. For example, the Ethiopian agriculture sector's postharvest losses total 15–45 percent, threatening food security and economic growth. This is a result of the chain from farm to market being long and fragile. Smallholder plots are scattered, cold storage is scarce, and roads and transport are slow.[31] Waste isn't limited to agriculture; in Ethiopia's garment sector, fabric scraps make up about 28.6 percent of all cut-and-sew waste.[32]

Different sectors are experiencing the same challenges—namely, gaps in storage, logistics, and quality control. Without decisive productivity gains and infrastructure improvements, the continent will struggle to absorb a labor force that must create 18 million jobs annually through 2035. In every plausible growth path, industrial efficiency is the floor. AI that cuts idle time and scrap ultimately raises value added per worker and compounds into economy-wide growth.

Lack of Electricity

Lack of reliable electricity is not only an operational inconvenience; it is a structural constraint on industrial growth. A 2025 World Bank survey found that sub-Saharan African manufacturers experience about 14 hours of power outages each month.[33] That is nearly two lost shifts, even before counting restart time. These interruptions disrupt production schedules, damage sensitive equipment, and increase scrap rates in continuous-process industries.

Beyond lost hours, the financial impact is measurable. Firms report losing about 5 percent of the value of total annual sales to electrical outages, reflecting idle labor, missed delivery deadlines, and lower production.[34] To mitigate these disruptions, many firms rely on diesel generators, which raise operating costs significantly. In some countries, generator use accounts for a substantial share of total electricity consumption in the industrial sector, diverting capital that could otherwise be deployed toward automation, process upgrades, or workforce training.[35]

Over time, persistent energy risk compounds into a competitiveness gap. Higher operating costs translate into higher final prices or thinner margins. Uncertainty about uptime discourages firms from investing in advanced machinery that depends on stable power and precise digital controls. For Industry 4.0 technologies, where sensors, robotics, and data systems require consistent electricity and connectivity, unreliable power becomes a binding constraint on adoption. Reliable energy infrastructure is a prerequisite for scaling advanced manufacturing systems.

Solving for Electricity Access: The Milken-Motsepe Prize in Green Energy

The Milken-Motsepe Innovation Prize in Green Energy centers on the role of reliable electricity as a basic enabler of economic activity, from small enterprises to larger commercial operations. The prize was designed to identify and award clean energy solutions that perform under real operating conditions, recognizing that energy reliability is not only critical for household access but also a prerequisite for sustained economic activity and opportunity. Read more details about the prize design and underlying research.

Specific Bottlenecks AI Can Address

As shown in Table 1, AI offers targeted relief for many of these constraints to growth with concrete near-term gains. AI in manufacturing identifies maintenance bottlenecks to prevent unexpected downtime, uses computer-vision inspection to ensure consistent product quality, and employs demand forecasting to avoid stockouts. It can also dynamically schedule production to maximize limited machinery[36] and reduce scheduled repairs and maintenance costs by up to 12 percent and 30 percent, respectively.[37] Additionally, computer-vision quality inspection achieves 99 percent defect-detection accuracy at line speeds, compared with 85 percent for manual checks.[38] In light industry, such as the manufacturing of electronics and machinery, energy savings of 8 percent could be achieved by 2035.[39]

AI supports broader economic growth by increasing uptime, which raises output from existing assets. Having fewer defects opens doors to stricter export markets. More accurate forecasts and routes cut spoilage and working-capital strain for small- and medium-sized enterprises (SMEs) upstream. When these tools are the default, firms follow the clearest signal of the decade: AI-driven productivity that drives resilient, export-ready growth.

Table 1 | AI in Manufacturing Features and Applications

AI feature	What it does	Typical data inputs	Outcomes
Predictive maintenance	Predicts equipment failures before they happen	Vibration, temperature, current draw, oil analysis, maintenance logs	Less unplanned downtime, fewer emergency repairs, longer asset life, more stable schedules
Quality inspection	Finds defects using cameras instead of (or alongside) humans	Images/video, defect labels, measurement specs	Higher yield, fewer returns, more consistent quality, faster inspection without fatigue
Process optimization	Tunes process settings to hit quality and cost targets	Sensor readings, machine settings, output quality metrics	Less scrap, lower energy use, improved throughput, reduced variability
Demand forecasting	Predicts future demand so you build the right amount	Orders, sales history, promotions, macro signals	Reduced stockouts, less excess inventory, smoother production planning
Inventory optimization	Sets smarter reorder points and safety stock	Usage history, lead times, part criticality	Lower working capital, fewer stockouts, less rush shipping
Energy optimization	Reduces energy cost while maintaining output	Utility meters, machine cycles, tariffs, ambient conditions	Lower bills, reduced emissions, better compliance reporting
Worker safety analytics	Detects hazards and unsafe conditions sooner	Video (optional), wearables, incident reports, proximity sensors	Fewer incidents, stronger safety culture, better near-miss learning
Digital twin/ simulation + AI	Tests changes virtually before doing them in real life	Computer-aided design, sensor data, cycle times, throughput constraints	Faster commissioning, fewer expensive mistakes, better capital expenditure decisions

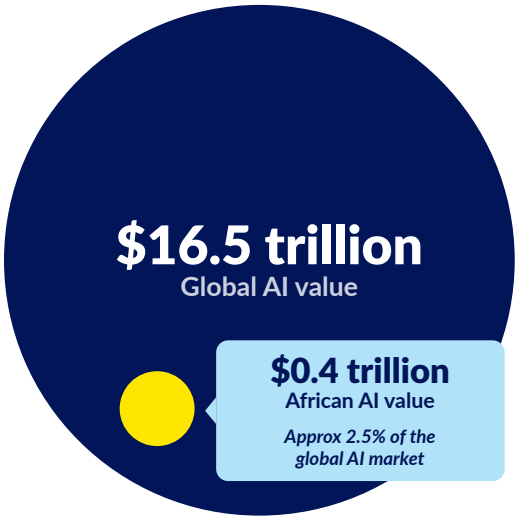
Source: Milken Institute (2026)

Quantifying the Opportunity

Across Africa, AI is projected to raise cumulative GDP by roughly $2.9 trillion by 2030,[40] while PwC pegs the global value at $15.7 trillion.[41] Capturing AI's projected upside would give Africa the resources to close critical infrastructure shortfalls—upgrading roads, power networks, and digital connectivity—and sharpen its export edge by modernizing factories and logistics.

Evidence shows that AI-driven predictive maintenance, quality control, and demand planning can sharply reduce downtime and waste rates. This strengthens the case for more rapid adoption as exporters face data-intensive rules like the EU Carbon Border Adjustment Mechanism (CBAM). For exporters, CBAM means plant-level monitoring, reporting, and verification of emissions, because if you do not supply data, the EU uses high default values that raise costs.[42] Also, the US Food Safety Modernization Act (FSMA) traceability rule requires "critical tracking event" records and key data elements for foods on the Food and Drug Administration's Food Traceability List.[43]

Figure 2 | Estimated Annual Value of the AI Market in Africa Relative to the Global Market



Source: AI4D Africa (2024)[44]

AI matters because it automates both jobs: emissions accounting for CBAM and end-to-end lot traceability for FSMA, so factories can p rove how a product was made and moved and at what carbon intensity. As rules tighten, audit-ready data on carbon and product history become nonnegotiable. AI enables manufacturers to meet these compliance requirements to maintain access to and unlock new markets.

Why the Market Hasn't Delivered

Despite clear return on investment (ROI), AI adoption remains limited due to system-level frictions. Global AI vendors seldom tailor products for power-constrained, data-scarce environments, and their cloud-heavy models assume always-on connectivity and rich historical datasets. Absent this guaranteed connectivity and historical data, localized datasets gain greater importance, yet local start-ups often lack "living laboratories" to validate prototypes or develop the datasets necessary to train models. A living laboratory is a real factory or line where new tools are tested during normal work. Such partnerships between a plant, tech providers, and often a university allow innovators to collect data, tweak the setup, and measure results in real time.[45]

Capital for factory technologies, while growing, is thin. Most venture capital (VC) still goes to finance. In 2024, finance drew 59 percent of VC dollars, while VC exits (when returns are achieved) across Africa totaled only 138 from 2019 to 2024, which keeps investors cautious on longer-payback bets.[46]

As a result, many industrial start-ups struggle to prove their technology on real production lines and build the datasets buyers expect. The result is an innovation gap: Manufacturers need practical AI in plants, and builders need places and time to prove it, but the bridge between them is not yet in place. Filling that bridge with more deployments is how AI scales from single factories to market-wide gains.

Framing the Prize Challenge

The Milken-Motsepe Prize in AI and Manufacturing is built to close the gap between manufacturers that need AI and innovators that need deployment pathways. Designed for established businesses ready to scale, it channels attention and capital by aligning incentives across innovators and validating real-world results. The prize functions as a vehicle that carries proven tools into broad, supply chain-wide impact. The prize answers today's needs while preparing for tomorrow. It supports solutions that deliver now and can scale to meet the needs of what's next.

The four judging pillars mirror that foresight logic. **Commercial viability** tests whether a solution can scale, with credible payback and customer traction today, as well as options to grow as markets shift. **Operational economics** focuses on line-level outcomes that matter in every scenario: higher uptime, fewer defects, better energy use, and faster time to value. **Technological integration** looks for edge or hybrid builds that keep working through weak power and patchy connectivity, with data practices that support traceability and emissions reporting as regulations tighten. **Market scalability** in Africa asks whether a team can localize, train, and expand across countries and tiers of suppliers, not just in a single flagship plant. Together, these pillars create a bridge from short-term wins to longer-term strategic resilience.

Prize Design and Operations

The Milken-Motsepe Prize in AI and Manufacturing prize architecture is grounded in a clear theory of change: By surfacing and accelerating AI-driven solutions that address real bottlenecks in manufacturing ecosystems, the prize can reduce friction across supply chains, improve productivity, and expand economic opportunity. The judging framework evaluates applicants on innovation, usability, scalability, and their ability to deliver impact in low-resource settings. The process draws on future forecasting and trend sensing to map what a resilient future will require, and it uses a human-centered design approach with cross-industry experts and local manufacturers, so solutions reflect real needs and can adapt as conditions change.

The Milken-Motsepe Prize in AI and Manufacturing judging criteria are built to reflect the real-world requirements of scaling AI in manufacturing in emerging markets. Submissions are evaluated across the four key pillars: commercial viability, operational economics, technological integration, and market scalability in Africa—each with defined subcategories and scoring rubrics aligned to deployment realities. Scoring is standardized on a quantitative scale, with clear weighting across each metric. These criteria ensure that the prize rewards not just ingenuity but also execution, sustainability, and alignment with market demands.

A unique feature of the Milken-Motsepe Prize in AI and Manufacturing is its attention to contextual relevance. Teams are not expected to meet global benchmarks in a vacuum, but rather to demonstrate that their solutions are viable in low-resource, distributed, or informally structured environments. Viability is demonstrated through real-world evidence, showing reliable performance and adoption by operators under these constraints, rather than lab results alone.

The evaluation is reinforced by a tiered review with technical screenings and regional perspectives on market realities and operating conditions, while an independent judging panel makes the final determinations. Judges from industry, technology, and investment backgrounds convene to calibrate scores in review meetings, weigh trade-offs, and build consensus. They have shipped products at scale, secured supply chains, and met safety and data rules. Investor members add a view on capital efficiency and path to profitability. This process tests not only technical merit but practical fit and potential to scale, ensuring that winners are ready for scaling their business, validated by leaders across industry. For more information on our esteemed judging panel, see **Appendix B**.

Prize Criteria

SUBMISSIONS FACE A 100-POINT FRAMEWORK ACROSS FOUR KEY CATEGORIES:

Commercial Viability 25 pts

Evaluates whether a company will operate effectively by confirming it addresses a validated, high-value manufacturing pain point and demonstrates a credible path to sustainable revenue and profitability.

Operational Economics 25 pts

Evaluates whether the solution can be deployed cost-effectively at scale, delivering measurable value with minimal resource intensity and demonstrating practical feasibility across diverse manufacturing settings.

Technological Integration 25 pts

Evaluates whether AI is the solution's core, production-ready engine, demonstrated by sound engineering, deployability, and deep integration in real manufacturing environments, rather than a superficial add-on.

Market Scalability in Africa 25 pts

Evaluates whether a solution can expand across Africa and similar frontier markets by operating reliably in infrastructure-variable settings and adapting to diverse regional, regulatory, and cultural contexts.

CRITERIA 1

Commercial Viability

The commercial viability rubric tracks the signals that a company can grow and endure. It covers revenue growth, quality of earnings, customer retention, go-to-market execution, capital efficiency, funding sources, and governance. Judges review year-over-year revenue, signed contracts, churn and expansion rates, and the strength of channel partners. They then evaluate these indicators against plausible scenarios for demand and market conditions. Teams that show clear market fit and strong commercial health move on to later stages of the prize.

CRITERIA 2

Operational Economics

The operational economics rubric looks for signals that an innovation delivers results efficiently today and can sustain those results tomorrow. It tracks cost per deployment, time to value, measurable efficiency gains, waste reduction, and client ROI. Judges review verifiable data on implementation costs, time to impact, and process improvements, with specific attention to cuts in downtime, energy use, and material loss. This rubric examines whether the team has clear decision points, a path to repeatable installs, and unit economics that improve with scale. Entries that show fast payback, durable savings, and a plan to operate under real-world constraints score highest.

CRITERIA 3

Technological Integration

The technological integration rubric looks for signals that AI and Fourth Industrial Revolution (4IR) technology are the engine of the product, not an add-on. Judges review the mix of proprietary and third-party models, evaluation methods, accuracy, and latency at line speed. This rubric also incentivizes hybrid designs that can run in the cloud and at the edge when power or connectivity is unreliable. Responsible data practice matters: Judges look for permissioned access, encryption, and feedback loops that learn from operator input without exposing sensitive data. This rubric examines whether this system can be deployed at multiple sites with repeatable installs and a simple path to updates. Solutions that demonstrate AI actively drives optimization, automation, and decision-making, rather than simply reporting metrics, score highest.

CRITERIA 4

Market Scalability

Market scalability in Africa looks ahead with workforce expansion as a core outcome. The goal is broad-based growth by taking a proven solution from one site to many while generating skilled jobs and advancing local capabilities. Judges look for leading indicators: geographic spread in current deployments; localization readiness, including language and interface adaptation; sector versatility; and measurable workforce development across operators, technicians, and maintenance teams. They review evidence of repeatable installs, structured training pipelines, partnerships with local institutions, and pricing models that work for SMEs as well as large plants. Entries that demonstrate present traction, job creation potential, and a clear, staged road map for scaling across diverse African manufacturing ecosystems will score highest.

Prize Design Impact Goals

The Milken-Motsepe Prize in AI and Manufacturing is designed to catalyze economic transformation by scaling breakthrough solutions that leverage AI to solve entrenched manufacturing challenges. Grounded in Africa's urgent development needs and global innovation momentum, the prize seeks to unlock technologies that drive both productivity and equity across the manufacturing value chain. It places strong emphasis on localization and job creation—recognizing the manufacturing sector as a proven multiplier of employment and poverty reduction.

To spark inclusive growth, Africa must supercharge its factories with scalable tech solutions that harness its growing population. The Milken-Motsepe Prize in AI and Manufacturing zeroes in on this opportunity, framing a bold challenge that advances both the UN Sustainable Development Goals (SDGs) and the AfCFTA trade agreement. The SDGs are 17 shared goals adopted by all UN member states in 2015 as a road map to 2030. They cover widely recognized priorities, such as ending poverty, improving health and education, protecting water and ecosystems, expanding access to energy, and building resilient economies. They serve as a common guide that helps governments, companies, and researchers discuss the same problems and measure progress using the same targets.

For this prize, several SDGs are directly relevant. This effort advances SDG 8 on decent work, SDG 9 on industry and innovation, and SDG 10 on reduced inequalities, while aligning with AfCFTA's goal of an integrated industrial zone without internal barriers.[47] Success will be measured not only in the scaling of promising businesses but also in the number of jobs created and the diffusion of Industry 4.0 tools across the continent. The prize catalyzes capital, turning cutting-edge technology into widespread economic opportunity.

The manufacturing sector accounts for roughly 13 percent of Africa's carbon footprint, largely due to energy-inefficient equipment and diesel backup generators.[48] By rewarding AI tools that shrink waste, optimize energy use, and improve efficiency, the prize advances SDG 12 for responsible consumption and SDG 13 for climate action. These climate-smart innovations also act as a buffer for factories against volatile energy prices, strengthening local resilience against supply-chain shocks. Ultimately, the prize translates economic growth and efficiency gains into climate impact and resilience.

Operations and Scaling Impact

Figure 3 | Competition Structure and Phases Timeline

Source: Milken Institute (2026)

Unrestricted Capital, Real-World Exposure

The Milken-Motsepe Prize in AI and Manufacturing is designed to offer more than just capital; it delivers visibility, validation, and capability-building. At every stage, teams gain access to resources that position them for long-term success, including media exposure, educational opportunities, mentorship, and exclusive convenings.

In total, $2 million in cash awards will be distributed across semifinalist, finalist, and grand prize tiers. Ten semifinalists each received $50,000 in September 2025, paired with tuition-free access to an eCornell executive education certificate. They also received travel and visibility support for the Milken Institute Middle East and Africa Summit. Following the high-stakes live pitch at the Milken Institute Middle East and Africa Summit, each finalist was awarded an additional $30,000 in prize funding. The grand prize winner will receive $1 million, with a runner-up prize of $250,000 and a $100,000 prize for the best 4IR innovation.

All awards are unrestricted and non-dilutive, so teams keep their equity and can direct funds to hiring, deployments, or scaling operations—wherever it matters most. The structure is designed to spread resources across several high-potential companies rather than concentrating everything on a single winner. It strengthens the pipeline, speeds real-world pilots, and reduces the risk that a promising technology stalls for lack of capital. The dedicated 4IR award keeps the portfolio future-focused by prioritizing AI, the Internet of Things (IoT), and advanced analytics—capabilities that will shape competitive manufacturing over the next decade.

Networks, Training, and Market Access

Beyond funding, participating teams benefit from the Milken Institute's global network of investors, advisers, and policymakers. Through speaking opportunities and promotional support, teams gain brand visibility and investor readiness.

The eCornell partnership adds long-term professional value by building internal team capacity to navigate business growth and market entry. Because coursework is available to anyone at the firm, competing teams build shared capabilities at no cost, while the credential strengthens credibility with investors and customers. In addition to certificates teams can use externally to communicate their success, the Milken-Motsepe Innovation Prize Program also maintains a partnership with CRA Admired Leadership, offering teams personalized relationship management support and storytelling coaching.

Teams benefit from speaking opportunities at the Milken Institute Middle East and Africa Summit, plus curated media exposure through Milken Institute channels. These platforms position innovators in front of policy shapers and capital allocators, shortening the path from pilot to deployment. Complimentary event passes and travel stipends lower participation barriers, particularly for first-time founders.

Together, these wraparound supports transform a one-off prize into a springboard for sustained growth.

From Winners to a Learning Community

The vision for the prize's impact extends beyond a single winner to a cohort of trailblazers. Semifinalist and finalist cohorts will form a learning community that shares data, stories, and best practices. This collective-impact model ensures that insights ripple outward to more SMEs and innovators across the globe.

Success will be measured by both near-term and long-term indicators. In the short term, key metrics include the number of high-potential applicants, pilot deployments, and improvements in production efficiency or cost reduction. Longer-term success will be assessed through the growth of participating ventures, follow-on investments, regional replication of solutions, and integration of prize-supported innovations into larger value chains. For participating teams, the value is lasting—with capital, credentials, and connections that accelerate growth long after the prize is awarded.

Conclusion

The Milken-Motsepe Prize in AI and Manufacturing is designed to boost one of the most powerful economic levers: industrial productivity. By harnessing the transformative potential of AI and focusing on the practical needs of African manufacturers, the prize seeks to spark scalable innovations that drive efficiency, reduce waste, and create meaningful jobs across the continent. Grounded in principles of human-centered design and future foresight thinking, the prize encourages companies that can deliver measurable operational gains and unlock inclusive economic growth.

This prize goes beyond recognition and aims to build momentum for long-term systems change. By identifying and supporting companies already advancing AI-powered manufacturing solutions, the prize accelerates the deployment of innovations that can reshape production systems from the ground up. The ripple effects include stronger industrial supply chains, higher job multipliers, increased investor confidence, and a more resilient manufacturing base—essential ingredients for shared prosperity and economic diversification.

Collaboration across sectors is crucial to achieving long-term systems change. Investors, technology firms, governments, and industry partners are invited to cocreate future prizes that can amplify the reach and relevance of transformative technologies. Prizes can close infrastructure and skill gaps, boost regional manufacturing competitiveness, and help ensure the 4IR delivers benefits across geographies and income levels.

Through sustained partnership and applied research, prizes can harness AI not just as a tool for efficiency but also as a driver of equity, economic resilience, and real-world opportunity.

Appendix A:

Ten Semifinalists for the Milken-Motsepe Innovation Prize Program in AI and Manufacturing

BleagLee

Team Lead: Juveline Ngum Ngwa

Based in Cameroon, BleagLee is a waste management and recycling company that uses AI and specialized software to rapidly identify, collect, and transform plastic, agricultural, and electronic waste into high-value inputs like engineered recycled polymers, 3D printing filaments, and bio-based carbon materials.

DataProphet

Team Lead: Ridwaan Seedat

Based in South Africa, DataProphet is an industrial intelligence technology and advisory company providing production intelligence solutions for machine builders and manufacturers.

Digitech Oasis Limited

Team Lead: Ayan Mohamed

Based in the UK, Digitech Oasis is an award-winning AI and robotics company developing robotic systems and industrial automation platforms to modernize warehouse and fulfillment operations across industries.

Freshpack Technologies

Team Lead: Editha Mshiu

Based in Tanzania, Freshpack Technologies is a cold-storage solution company pioneering AI-powered cooling innovation to reduce food waste for Africa's informal markets.

GreenBDG Africa

Team Lead: Songo Didiza

Based in South Africa, Green Building Design Group Africa (GreenBDG Africa) is a tech-enabled advisory firm offering climate-smart infrastructure solutions and energy optimization strategies for real estate and manufacturing clusters.

INDOS

Team Lead: Ahmed Nounou

Based in Egypt, INDOS is an industrial digitization company transforming labor-intensive manufacturing floors into AI-powered, data-driven environments to boost productivity and drive quality in real time.

Spiro

Team Lead: Kaushik Burman

Based in the United Arab Emirates, SPIRO provides accessible and affordable mobility solutions through manufacturing innovative, eco-friendly electric transportation.

Thola Inc.

Team Lead: Nneile Nkholise

Based in the United States, Thola is an AI-powered software platform that provides real-time energy monitoring; forecasting; and environmental, social, and governance performance insights to help industrial facilities become insurable, resilient, and grid conscious.

Torchit

Team Lead: Hunny Bhagchandani

Based in India, Torchit is a social-tech enterprise that designs and manufactures affordable, AI-powered assistive technologies to empower persons with disabilities with mobility, literacy, and digital independence.

Toto Safi Limited

Team Lead: Faith Waraga

Based in Rwanda, Toto Safi is an AI-enabled circular textile manufacturing platform, enabling women-led tailoring cooperatives to produce reusable hygiene products such as diapers and period pants at scale.

Appendix B:

Judging Panel for the Milken-Motsepe Prize in AI and Manufacturing

GUY DIEDRICH

Senior Vice President and Global Innovation Officer, Cisco

Guy Diedrich is a senior vice president and global innovation officer at Cisco, where he is responsible for its Digital Impact Office. In this role, Diedrich collaborates closely with government and industry leaders around the world to drive mass-scale digitization and skilling initiatives that help increase GDP, create millions of next-generation jobs, and develop sustainable innovation ecosystems around the world. Diedrich continues to grow and evolve the programs into new markets, building trust with government, industry, and academic stakeholders along the way.

Diedrich is also a member of the Board of Directors of the Cisco Foundation, which supports nonprofits and nongovernmental organizations with grants, technology donations, and expertise to help solve global challenges in communities around the world.

Prior to his current role at Cisco Systems, Diedrich was a vice chancellor at the Texas A&M University System, where he was responsible for research, commercialization, federal government relations, state government relations, and strategic initiatives. Before joining Texas A&M, Diedrich served as president and chief executive officer (CEO) of GRA Inc., a software development and consulting company that he co-founded and grew from a start-up to a firm employing more than 130 professionals. The company was sold to a publicly traded technology company.

Diedrich holds a Bachelor of Science degree from Texas A&M University, a master's degree from the University of Cambridge (King's College), and a doctorate from Swansea University, where he studied the economics of trust in organizations. Diedrich is a published author in cost accounting and medical psychology and has worked extensively throughout Europe, the Americas, Asia, and the Middle East for more than two decades.

KWEILIN ELLINGRUD

McKinsey Global Institute Director and Senior Partner, McKinsey & Company

Kweilin Ellingrud is a director of the McKinsey Global Institute and leads diversity and inclusion for McKinsey globally. She is the coauthor of *The Broken Rung* (published March 2025 by Harvard Business Review Press) to help women navigate their careers. She is a leader in McKinsey's Operations practice and has broad experience redesigning operating models to increase operational efficiency and effectiveness through generative AI, process redesign, digital, and analytics. Since joining McKinsey 26 years ago, she has worked with dozens of clients across industries.

Ellingrud is a frequent speaker at global conferences and a contributing columnist for *Forbes*. She previously worked full-time for two years at a Boston nonprofit, helping women entrepreneurs start and grow their businesses through microfinance. Growing up, Ellingrud spent a number of years in China, Ecuador, France, and Japan, living with local families and learning the local languages.

JOHN KAMARA

AI and Digital Transformation Leader

John Kamara is a globally recognized AI and data transformation leader and entrepreneur, driving AI adoption, architecture design, and commercialization across Africa. As founder and CEO of the Artificial Intelligence Centre of Excellence (AICE) Africa, he pioneers AI-driven solutions powering digital transformation in key sectors and has supported over 150 C-level executives and organizations in their AI transformation journeys. He has also been impactful in providing AI technical training since 2020 for over 1,500 young engineers across Africa. He is the founder of Adanian Labs, a venture studio launched in 2020 that has supported over 40 start-ups across South Africa, Kenya, Nigeria, Tanzania, and Zambia.

A serial innovator, Kamara founded AfyaRekod, an AI-powered health data platform revolutionizing patient-driven health care. His expertise spans FinTech, agritech, IoT, and blockchain, and he has worked with leading tech firms, including Google, Digicel, and BMC Software.

Through AICE, he has delivered AI solutions in climate, agriculture, and health. Kamara's mission is to democratize AI in Africa, shaping an inclusive, AI-powered digital economy.

FRANCINE KATSOUDAS

Executive Vice President and Chief People, Policy & Purpose Officer, Cisco

As executive vice president and chief People, Policy & Purpose officer at Cisco, Francine Katsoudas brings together people and technology to drive positive impact for the company and global communities. Her work advances Cisco's Purpose to "Power an Inclusive Future for All," and her leadership on critical policy and social issues has forged strategic public-private partnerships addressing some of the world's most pressing concerns.

In her role at Cisco, Katsoudas leads a global team spanning People & Communities; Sustainability, Social Impact & Inclusion; Government Affairs & Policy; Workplace Resources; and Cisco's Digital Impact Office—all on a mission to put Cisco's Purpose into practice while driving growth for Cisco's business, people, and communities. During her 29 years at the company, Katsoudas has led large-scale organizational transformations, cultivated new generations of leaders, and stewarded Cisco's renowned employee-first conscious culture.

Katsoudas has supported underrepresented groups since her youth, and today she focuses her advocacy on women's leadership, homeless youth, and narrowing the digital divide. Katsoudas is also Cisco's executive country sponsor for Mexico, Poland, South Africa, and India. She has been recognized on the *Forbes* and Know Your Value 50 Over 50 list, honoring female leaders and entrepreneurs who are breaking new ground. She currently serves on the Board of Directors for ADP and is the chair for Global Citizen. A graduate of the University of California, Berkeley, Katsoudas lives in the Bay Area with her husband and two children.

CHRISTINA SHIM

Chief Sustainability Officer, IBM

Christina Shim is the chief sustainability officer for IBM. She leads the use of AI and hybrid cloud technologies to accelerate progress toward sustainability and environmental stewardship across IBM's operations, supply chain, products, and services. Shim previously served as the global head of IBM Sustainability Software, a multibillion-dollar business that harnesses the power of AI, IoT, hybrid cloud, and more to provide clients with enterprise applications and industry solutions that help translate sustainability ambition into action. She is also on IBM's Responsible Technology Board.

Prior to IBM, Christina was managing director for Palladium International and spent time at several top-tier management consulting firms in New York, London, Singapore, and Washington, DC. She serves as an independent director for 1-800-Flowers.com, a NASDAQ-listed company, and has served as mentor, advisor, or board member at various venture funds, FinTech and climate tech start-ups, accelerators, and nonprofits, and to Princeton University and Columbia University. She has been recognized as one of *Fortune's* Most Powerful Women Next Gen for her work on climate change and has been quoted in media outlets including Reuters, Politico, *Forbes*, *International Business Times*, Bloomberg, and *Fortune*, among others.

MEG WHITMAN

Former US Ambassador to Kenya

Meg Whitman was confirmed in a unanimous vote by the US Senate as the 18th US ambassador to Kenya on July 14, 2022. In Kenya, she focused on accelerating economic growth and development, forged new conservation initiatives, supported good governance and democratic principles, and oversaw significant humanitarian assistance. She returned home in December 2024 with the change in US administration. Whitman has significant experience leading business organizations, from start-ups to large multinational companies in Silicon Valley. She has served as the president and CEO of Hewlett Packard Enterprise and the Hewlett-Packard Company, both multinational information technology companies. She also served as president and CEO of eBay Inc., an online marketplace and digital payments company. Whitman has been a member of numerous corporate boards of directors, including those of Procter & Gamble, General Motors, and Dropbox, and she recently joined the board of CoreWeave, Inc.

Committed to equality in education and protection of the environment, Whitman has been national board chair of Teach for America and a member of the Board of Trustees of The Nature Conservancy. Whitman is married to Griffith Harsh, a neurosurgeon. They have two grown sons and three grandchildren. Whitman holds a Master of Business Administration from Harvard Business School and a bachelor's degree in economics from Princeton University (class of 1977).

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Terry Mulligan is a director on the Environmental and Social Innovation team at Milken Institute Strategic Philanthropy, overseeing the Environment and Sustainability portfolio and managing the design and operations of the prizes program. Mulligan brings over 15 years of experience in social impact philanthropy, large-scale incentive prize development, and strategic planning. With a robust background in global initiatives, he scaled and comanaged the top-rated hotel in Tanzania's Kilimanjaro region, established an international health organization's first African branch to provide health care to underserved rural communities, managed community-based infrastructure development projects in Africa and South America, and served as the inaugural first-grade teacher and co-administrator of a school built for orphaned and disadvantaged children in Tanzania.

He then joined the XPRIZE Foundation, where he led the design and fundraising of large-scale global competitions that brought together entrepreneurs, researchers, programmers, designers, engineers, and philanthropists to develop new technology solutions to solve global challenges. His work involved overseeing prize competition development, leading discussions during sponsor negotiations, and managing research teams across all domains of XPRIZE's work. Mulligan's contributions significantly enhanced XPRIZE's capacity to develop and market prize competitions addressing global challenges, from climate and energy to health and biodiversity conservation.

Mulligan holds a Master of Business Administration from Georgetown University and a bachelor's degree in elementary education from the University of Missouri. He has been recognized for public speaking, serving as the master of ceremonies at XPRIZE Visioneering events and leading workshops at the UN Climate Change Conference and Aspen Ideas: Climate. Mulligan is based in Washington, DC.

Emily Musil, PhD, is managing director at Milken Institute Strategic Philanthropy, where she leads the Environmental and Social Innovation portfolio. An expert in future-focused, high-impact engagement and programming, Musil and her team create strategies for expansive and effective giving, designing and operating programs that use a range of philanthropic tools focused on innovation and impact. Under her leadership, she has built the Milken Institute Prize Program and developed wide-ranging programming, including the mobilization and support of hundreds of entrepreneurs working on FinTech in emerging economies, as well as cross-sector workshops to design new solutions to create thriving communities in the United States.

Musil spent over a decade in academia as a college professor of history and international studies. She then joined the XPRIZE Foundation, where she led the education and human equity domain, overseeing initiatives and large-scale innovation competitions aimed at discovering and testing new technological solutions to global challenges. She is particularly passionate about exploring the ethics of our rapidly advancing technologies.

She has a doctorate and a master's degree from the University of California, Los Angeles and graduated with honors from Drew University. She won a Fulbright-Hays Program research fellowship and conducted in-depth research in more than a dozen countries across three continents. Musil has served on the Organisation for Economic Co-operation and Development's Senior Advisory Group for Blended Finance and the Advisory Board for CompTIA's Center for Technology & Workforce Solutions. She currently serves on the Board of Trustees for Drew University.

Adoma Addo is a senior associate on the Environmental and Social Innovation team at Milken Institute Strategic Philanthropy. With her passion for innovation and sustainable development in emerging markets, she supports work on the Institute's innovation prizes. Prior to her current role, Addo led research into alternative economics, just transition, reuse law, and environmental health in the US with the Center for Biological Diversity, and she piloted women's reproductive and menstrual health programs with the UN Population Fund Ghana country office.

She is published in *EcoWatch*, *Nonprofit Quarterly*, *Resource Recycling*, and the *Journal of Population and Sustainability* and has spoken at conferences such as the National Zero Waste Conference and the Northeast Recycling Conference. She holds a bachelor's degree in environmental studies and global health from Yale University.


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