

AIGW ENTERPRISE WORKFORCE TRANSITION DEEP DIVE

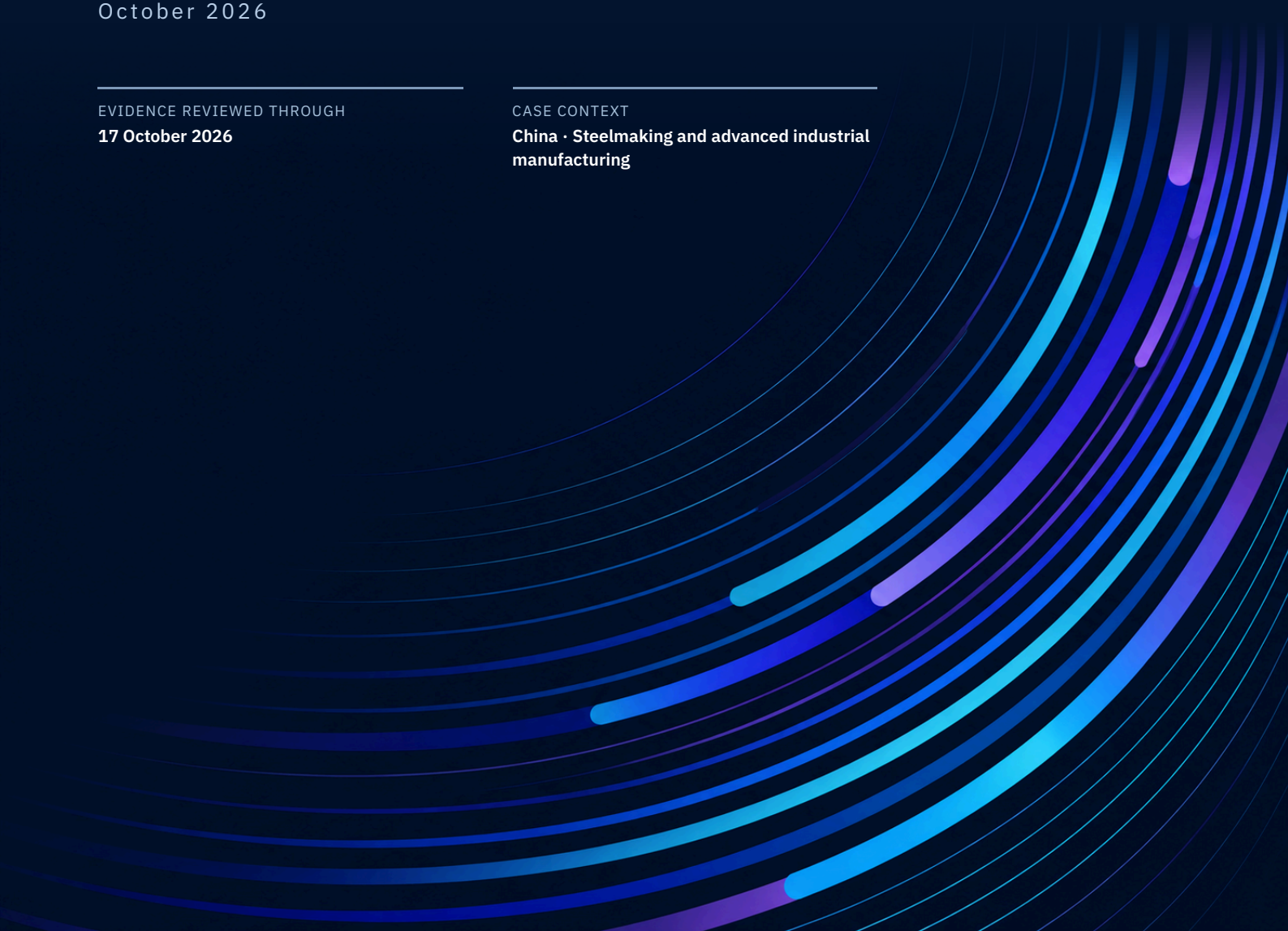
From the Shop Floor to the Control Room

Liuzhou Steel Group and the Uneven Workforce
Transition from Industrial Automation to AI

October 2026

EVIDENCE REVIEWED THROUGH
17 October 2026

CASE CONTEXT
China · Steelmaking and advanced industrial
manufacturing



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Executive Snapshot

In August 2026, a journalist visiting the hot-rolling operations of **Guangxi Liuzhou Iron and Steel Group** in Liuzhou spoke with an operator, **Li Jialin**, whose working day had moved from a high, hot equipment position to a control room on the ground. He now monitored production and confirmed operations at key points. Another employee, rolling foreman **Yang Jin**, described centralized monitoring and intelligent surface inspection capable of flagging flaws in steel that human inspectors had previously relied on their own eyes to spot. The interviews offer unusually concrete evidence of how the content and location of industrial work can change as digital and AI systems enter production. [LG01](#)

Yet a second observation changes how the story must be told. A separate **2024** field account already described sophisticated control rooms, machine vision and automated lifting at Liugang's **Fangchenggang** base. Its cold-rolling operator **Ling Zhongping** had progressed over seven years from an auxiliary frontline role to the main control position. The group had been implementing 5G and remote-operation projects since at least 2020, years before it launched its **Xuantie steel-industry large model on 31 March 2026**.

[LG04](#)[LG02](#)[LG03](#)

The sequence matters. The emergence of an AI model does not mean that every move out of the furnace area was caused by that model. Industrial automation was already changing work; subsequent machine vision, predictive optimisation and model coordination add further capabilities on top of that installed base.

Other work units reveal sharper workforce and technical changes. At Fangchenggang, reporting on a

multi-year automated molten-iron logistics system describes a transport operation moving from **more than 70 people on rotating duties** toward a control-room monitoring and maintenance requirement of **roughly ten**. Former locomotive drivers are described as moving into monitoring. At the same site, a heavy-duty roller-handling crane progressed from on-site handling to 5G remote control and then machine-vision-assisted autonomous lifting. Both are substantial transitions, but neither permits a claim that AI laid off 60 workers or that the newly released industrial model caused the entire change. [LG02](#)

The case also has a less visible dimension: **workers learning to build digital applications**. Before Xuantie's release, Liugang reported low-code capability-building at its cold-rolling facility, hundreds of custom applications and a wider programme of digital training. An April 2026 investigation subsequently reported thousands of employee-built AI assistants. These measures document implementation effort and new ways of doing work; they do not measure proficiency, promotions or long-term earnings. [LG05](#)[LG02](#)

AIGW interpretation: Liugang reveals industrial AI as a *layered workforce transition*. The institutional challenge is to coordinate three changes: physical tasks shifting toward connected machinery; experienced operators shifting toward monitoring and exception handling; and domain expertise being encoded into machine vision, optimisation routines and locally built applications. The public record demonstrates several pieces of that process, while leaving major questions about worker authority, career progression and the disposition of displaced tasks unanswered.

CASE PROFILE

At a Glance

FIGURE 01

Evidence synthesis

Liugang: observed and unresolved

Dimension	Evidence-backed assessment
Organization	Guangxi Liuzhou Iron and Steel Group (柳钢集团), with multiple separately identified sites ^[3]
Jurisdiction and sector	China; steelmaking and advanced industrial manufacturing ^[9]
Sites studied	Liuzhou hot-rolling plant; Fangchenggang molten-iron transport, cold rolling, refining and plate production ^{[1] [2]}
AI/technology forms	Earlier automation, 5G control, machine vision, industrial robotics, predictive/process optimisation, Xuantie industrial model and employee-built tools ^{[2] [3] [4]}
Observed workforce transitions	On-site execution → control-room monitoring; drivers → automated-transport supervision; manual inspection/parameter work → system-assisted verification and optimisation ^{[1] [2]}
Workforce response evidence	Attributable reductions in one work unit's on-duty staffing requirement; individual moves to monitoring; broader redeployment and headcount outcomes unknown ^[2]
Capability formation	Local low-code development, digital upskilling initiatives and employee-built assistants, with no verified population-level mastery measure ^{[2] [5]}
Human decision rights	Monitoring and some confirmation described; override, halt, escalation and final authority remain insufficiently documented ^{[1] [2]}
Main evidence risk	The same enterprise's technology and workforce changes happened across different plants and different years; strong causal claims must not merge them ^{[1] [2]}

Source: AIGW synthesis of the cited original sources.

Note: Sites, technologies, dates and staffing requirements are distinct; the public record does not establish layoffs.

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1. Why a steelmaker is a useful workforce case

Steelmaking presents a particularly demanding test of industrial AI. Physical movement, heat, rolling forces and metallurgical changes occur continuously. A missed measurement or badly timed intervention can affect output quality, equipment condition, energy consumption or worker safety. Decisions that appear routine to an experienced operator often depend on years of sensory and procedural knowledge. [LG02](#)

This means that task substitution in a steelworks is not equivalent to generating a text draft. A computer-vision system may identify a surface defect, but a production organization still needs reliable sensors, timely communication, safety interlocks, verified operating parameters and people who can respond when a model is wrong or an unexpected condition occurs. Where an automated crane moves heavy loads, *authority* is a material safety problem, not a metaphor.

For Liugang, the operating pressure sits within a steel industry seeking to raise product quality and improve the efficiency of existing capacity. The April 2026 investigation places the group's automation drive against softer industry demand, product-mix changes and the need to cut waste and energy costs. These structural conditions help explain *why* the organization invests in intelligent production. They are not measured evidence that any single AI application improved worker outcomes. [LG02](#)

The group's initiatives also spread across sites and tasks. The Liuzhou facility observed by China Youth Daily in August 2026 must not be confused with the Fangchenggang workflows detailed in April. Within Fangchenggang, molten-iron locomotives, cold-rolling cranes, steel refining and plate-nesting optimisation are distinct transition episodes. A company-level report may compare them; a record about one work unit must not pretend they are one process.

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2. The sequence: remote control preceded the new industrial model

A useful analysis begins before 2026.

2020–2024: connectivity, remote handling and local machine vision. An April 2026 investigation traces the transformation of Fangchenggang iron transport back to 2020, describing improvements in location tracking, insulated transport and ultimately driverless locomotive movement. Cold-rolling roller handling also moved first to 5G remote operation in 2020 and later toward visual autonomy. A 2024 Liuzhou Daily account already documents the Fangchenggang integrated control center, machine-vision weld checks, automated lifting systems, and a control-room role that had evolved over several years. An undated GSMA platform case also describes earlier 5G-assisted work, but its vendor-facing impact claims are not treated as independent experimental validation. [LG02LG04LG08](#)

2025: skills, systems and enterprise capability. In March 2025, Liugang publicly described management and staff training, data-governance priorities and a commitment to encourage broader AI use. A July report documents cold-rolling teams developing applications using low-code tools and a recurring Friday technical exchange. These programmes existed before Xuantie's public release. [LG06LG05](#)

March–April 2026: orchestration and model integration. Liugang, Huawei and China Mobile Guangxi announced the Xuantie steel-industry model on 31 March, with company and partner statements published on 1 April. Descriptions refer to an industry-model foundation adapted for specific steel workflows, with smaller models and optimisation logic applied to manufacturing operations. The April field investigation names LF refining optimisation and intelligent plate nesting as deployed applications at Fangchenggang. Xuantie's launch should be understood as the company's attempt to coordinate existing and new industrial AI capabilities, not as the birthday of automated manufacturing at Liugang. [LG03LG07LG02](#)

August–September 2026: the worker-level view. China Youth Daily interviewed Liuzhou hot-rolling employees about work now performed from centralized platforms, including machine-supported monitoring and defect detection. This is valuable current evidence of changed practice. The story does not provide a plant-wide before-and-after HR ledger or establish which technical milestone drove each physical relocation. [LG01](#)

This chronology is not a side detail. It is the research safeguard that stops a plausible AI narrative from becoming a false causal history.

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3. Liuzhou hot rolling: from direct sensing to monitored operations

The most human account comes from the Liuzhou hot-rolling site. Operator **Li Jialin** recalls having to climb to an elevated position near extremely hot equipment to observe production. In the 2026 visit he works at ground level in a control room, watching processes and confirming operations at important steps. Rolling foreman **Yang Jin** contrasts former reliance on walking, visual inspection and practical experience with the use of a centralized monitoring platform and intelligent surface-inspection system. Reported examples of detected defects include small scratches and iron-oxide scale. [LG01](#)

The work has at least three components. First, some physical exposure to heat has been reduced for the named operator. Second, information that workers previously collected through repeated visual checks becomes available through connected sensors and inspection equipment. Third, people remain responsible for monitoring and confirmation rather than being absent from the process altogether.

What changed: The practical setting and some tasks for identified operators. **What is still**

uncertain: The precise decision rights attached to confirmation, the frequency of exceptional interventions, the skills assessment required for the new station, and how much of the change followed from pre-existing remote systems rather than the 2026 Xuantie integration.

The same report cites an unmanned overhead transport system moving a maximum of 21 slabs per hour with one vehicle and 30 with two coordinated vehicles on a specified short route. These are *reported local equipment throughput figures*. They do not measure the total rolling plant's productivity and should not be combined arithmetically with workforce counts from the other Fangchenggang base. [LG01](#)

The temptation is to say that the AI model 'replaced the hot-rolling worker'. The field testimony indicates something more specific and more interesting: the worker's role remains, but its sensory demands, physical location and interaction with equipment have changed. Whether the new role represents better career prospects or more fragile dependence on algorithmic systems is not answered by the source.

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4. Fangchenggang iron logistics: a measurable operating-model contraction

The Fangchenggang story offers the clearest evidence of a change in **staffing requirements**, but also one of the greatest risks of misreporting.

Before its staged transformation, the two-kilometre transport route from blast furnace to converter relied on locomotive drivers, shunters and dispatch staff communicating by radio and working near high-temperature molten iron. The April investigation quotes transport manager **Liao Liuqiang** describing more than 70 people rotating through transport duties. Locomotive team leader **Mo Keyi** describes successive steps: real-time location tracking, insulating lids that reduced cooling, and locomotives fitted with automation and an intelligent dispatch system that updates routing plans. [LG02](#)

The same reporting says ten locomotives were equipped for driverless movement, and former drivers moved to the central control room to monitor the operation. The reported monitoring/maintenance requirement fell to roughly ten people. Operational measures were also reported: daily ladle turnover from approximately 3.5 to 4.5 and estimated annual savings of roughly RMB35 million. These figures are attributable claims by company interviewees rather than independently audited outcomes. [LG02](#)

This is a material work redesign. Driving, radio dispatch and manual on-site handling are partly replaced by connected transport and autonomous execution; central operators oversee the system. The chronology, however, matters. Work began in 2020, combining physical equipment changes, information systems and autonomy. Xuantie was launched much later.

AIGW therefore treats the reported 'more than 70 to approximately ten' comparison as **an operating-unit staffing-requirement claim**, not a dismissal record. It does not reveal which individuals were retrained, transferred, retained on other shifts, retired or left the firm. It does not distinguish fully standardised HR headcount from shift positions, and it cannot be taken as a count of AI-caused layoffs.

For policymakers and workforce leaders, precisely this evidence gap matters. A factory may change its labour demand substantially even when the public record contains no formal layoff announcement. Yet responsible analysis must not fill that gap with an invented story about what happened to the remaining people.

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5. Machine vision: from remote crane operation to autonomous lifting

The cold-rolling crane offers a stronger test of AI's **incremental contribution** than the broad 'smart factory' label.

The April 2026 field report describes a heavy-duty gantry machine moving rolling equipment. Earlier, a handling operation required several workers close to the machinery. In 2020, remote operation using 5G shifted that interaction away from the immediate lifting area. But remote control still required close human attention. The later technical phase added binocular vision and AI algorithms so the equipment could recognize and capture the target with greater autonomy. [LG02](#)

Su Hui, a technical specialist at the cold-rolling facility, reported that the resulting system improved successful captures from around 85% to 99.5% and reduced personnel costs associated with that work position by about 83%. These are

source-attributed outcome figures, not independently verified measures, and their time windows and calculation bases are not fully disclosed. [LG02](#)

The two technology stages are not interchangeable. Remote operation relocates the worker's hands and eyes; machine vision can change the need for continuous manual guidance. That suggests a shift from constant control toward exception response and technical verification. The public material, however, does not specify exactly how many workers now supervise the machine or their contractual and occupational outcomes.

A 2024 report already described the plant's automated roller-lifting and machine-vision systems. That earlier evidence means the present system should not be treated as a fresh 2026 introduction. [LG04](#)

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6. Steelmaking and plate planning: codifying expert judgments

Other Fangchenggang applications change cognitive as well as physical tasks.

In LF steel refining, a human operator traditionally uses composition tests and process experience to decide the timing and level of alloy additions and gas treatment. The April investigation describes a combined system of metallurgical formulas, predictive AI and optimisation algorithms that estimates temperature and composition changes and recommends process parameters. The company reported two minutes saved in refining and roughly RMB2 less alloy cost per ton. It also described dozens of models supporting distinct steelmaking steps. [LG02](#)

In plate production, engineers previously matched customer contracts to billets and cutting plans using systems and experienced judgment. For a large set of contracts, the report describes a model-supported optimiser that can generate a nesting arrangement in minutes. Model technical supervisor **Chen Peizhi** reported that more than 90% of contracts could be matched automatically

and that yield had improved by over one percentage point. [LG02](#)

These episodes illustrate the move from tacit process rules to machine-readable calculation and optimisation. They can free specialists from some repetitive search and arithmetic. But the source does not document whether particular refiners or planning engineers changed job titles, how they check exceptional recommendations, or who is authorised to overrule a model-generated plan. The appropriate primary finding is **deployed workflow redesign**, with a possible shift in human capability demand—not verified personnel redeployment.

Xuantie's platform architecture is relevant here insofar as it links industry-specific data and model components. It does not mean every algorithm originated as a general-purpose language model. Physical-process formulas, computer vision, mathematical optimisation and foundation models play different roles in the system. [LG03](#)[LG07](#)[LG13](#)

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7. A second transition pathway: workers as local application builders

Liugang's workforce transformation is not limited to taking people out of dangerous areas. It is also creating infrastructure for **staff to design digital tools from the knowledge of their own jobs**.

A July 2025 report describes the group's cold-rolling facility certifying D-level and higher employees in a low-code application-development system and establishing teams that had reportedly built more than 500 custom applications. These covered practical needs across production, maintenance and quality activities. The same source describes a recurring technical exchange and reports more than 10,000 participations in digital/AI training since 2023. [LG05](#)

These facts must be interpreted carefully. An application developed with low-code tooling is not automatically an AI agent. A training attendance is not a unique employee or a demonstrated proficiency assessment. The value of the report is that it records **an organisational learning mechanism** beyond a technology launch.

By April 2026, the Economic Observer investigation reported a company count of **2,082 employee-built AI assistants**, alongside an example of a sales-centre employee without a conventional IT-development background creating a quotation assistant using enterprise knowledge. That figure belongs to a later reporting moment and a different application category from the 2025 '500 custom apps'. The two numbers should neither be summed nor read as a growth rate for the same denominator. [LG02](#)

The emerging implementation model combines central infrastructure and local expertise. Corporate and partner teams supply platforms, cloud capacity, integration and some technical support; business employees identify repeated problems and may translate internal practice into usable applications. The institutional risk is whether those applications are approved, secure, maintained, audited and handed on when their builders change roles. Public sources provide far less detail on that governance layer than on the headline counts.

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8. Human authority: a worker in the control room is not the final decision-maker by definition

The move from direct operation to monitoring often appears to increase the importance of human judgment. That is plausible but not automatic.

In hot rolling, operators are reported as monitoring and confirming important steps. In iron transport, former drivers supervise automated locomotives. In refining and plate nesting, predictive or optimisation outputs shape production decisions. In each system, at least four different rights could matter: visibility into a model recommendation, permission to alter parameters, authority to stop or override automatic execution, and accountability when an autonomous process causes loss or injury. [LG01LG02](#)

The source base does not provide a complete operational authority matrix: limits on automatic

locomotive action; named approval and veto roles for machine vision crane lifting; fallback controls during sensor failure; incident investigation procedures; or the training standard for emergency intervention. 'Human in the loop' would be too imprecise a finding.

These gaps are especially consequential in a steelworks. A system may reduce exposure to heat and heavy lifting while simultaneously making effective emergency action dependent on fewer, more technically trained staff. The relevant governance questions are therefore not simply whether humans remain employed, but **which humans can see, contest, interrupt and take responsibility for machine action.**

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9. Workforce flows and the limits of the reported gains

Across the case, public evidence provides different kinds of measurement at different levels:

FIGURE 02

Evidence synthesis

Reported measures and their limits

Domain	Reported evidence	What the figure cannot establish
Logistics labour demand	>70 earlier rotating transport-duty workers versus approximately ten monitoring/maintenance posts	Net layoffs, whether counts are equivalent shifts/FTEs, destinations of all prior staff ^[2]
Cold-rolling handling	Reported 85%→99.5% successful target capture; approximately 83% personnel-cost reduction for one post	Independently audited performance, pay effects or number of displaced workers ^[2]
Iron transport throughput	Ladle turnover ~3.5→4.5 daily; claimed ~RMB35m annual value	Isolated AI causality, plant-wide productivity or worker compensation ^[2]
LF refining and plate nesting	Two minutes less refining; RMB2/ton alloy-cost gain; >90% contract matching	Refiner or engineer job changes, long-term safety or quality metrics ^[2]
Capability development	>500 custom apps; >10,000 training participations; later 2,082 AI assistants	Unique qualified workers, promotions, effectiveness, adoption intensity ^{[2] [5]}

Source: AIGW synthesis of the cited original sources.

Note: These are different operating units and measures, not a harmonized jobs or causality series.

Every figure above is a **reported operational or programme measure**, not a harmonized dataset. Numbers from different plants, years and units should not be aggregated into one 'AI jobs replaced' estimate. [LG02LG05](#)

Worker welfare may plausibly benefit when dangerous physical tasks are removed, but long-term benefits depend on more than reduced exposure. The publicly accessible sources do not

establish wage progression, grade changes, access to further learning, stability of the new monitoring posts or the circumstances of workers whose old tasks disappeared.

This is the measurement problem: technology can document what a machine does in exceptional detail while leaving the subsequent worker transition almost invisible.

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10. What China-side implementation reveals

Liugang illustrates several features of contemporary Chinese industrial AI implementation. First, it treats steelmaking as a **specific process-engineering problem**: temperatures, physical material flows, defects, energy, quality and delivery constraints. Technical solutions are therefore combinations of industrial connectivity, sensing, machine vision, physics-based modelling and numerical optimisation—not just conversational agents. [LG02LG03](#)

Second, the company works through an **enterprise-and-partner delivery model**. Liugang's own transformation and technology organisations work with Huawei and China Mobile on network, computing and industrial model capabilities. That helps bridge model research and installation in an existing plant, but also creates questions about maintenance responsibilities, validation and the long-term capacity of company employees to own systems built with vendors. [LG03LG07](#)

Third, this takes place inside a **layered policy environment**. The State Council's 2025 opinion on implementing AI+ identifies industrial applications, skill formation and human–AI collaboration as national directions. The MIIT-led, eight-department *AI+ Manufacturing Implementation Opinions*, issued in December 2025 and published in January 2026, lay out a sector-oriented action plan including industrial applications, infrastructure, safety and talent.

Guangxi's *AI+ Manufacturing Action Plan (2025–2027)* adds provincial emphasis on industrial use cases and regional AI integration. [LG09LG11LG12](#)

Those instruments are policy and implementation context. They are **not evidence that every reported Liugang project was legally required, financed by a particular grant or caused by a specific central directive**. Nor should policy targets—numbers of future agents, factories, applications or deployment coverage—be presented as achievements already verified at the enterprise.

Fourth, local implementation and outward-facing industrial cooperation intersect. Liugang and partners describe a Guangxi pathway of integrating capabilities researched in other Chinese technology centers and potentially applying systems in ASEAN markets. That is a stated development strategy; the available evidence does not establish that the specific worker-transition model has been independently deployed and validated across ASEAN steel plants. [LG03LG10](#)

This is a more nuanced account of China's industrial AI than either 'the government is driving everything' or 'workers are simply replaced by robots'. A public-policy environment, enterprise cost pressures, supplier ecosystems, physical plant upgrades and local worker knowledge all help shape the transition. Their precise independent contributions remain to be measured.

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11. An architecture of industrial transition

The Liugang evidence is best understood as a set of partially connected workforce-architecture domains rather than a single adoption metric.

Task and workflow architecture. Physical handling, manual observation, inspection and optimisation are selectively transferred into sensors, automation and models. Their timing differs across departments and years. [LG01LG02LG04](#)

Role architecture. Specific workers perform monitoring and confirmation instead of some field-level actions; drivers move to control-room supervision. That supports observed changes in work, not a blanket claim that their formal occupations changed. [LG01LG02](#)

Capability architecture. Industrial domain knowledge remains necessary to specify reliable process rules and respond to exceptions. The organisation has invested in staff training and locally produced applications; observed proficiency and career benefits have not been measured across the workforce. [LG05LG06](#)

Authority architecture. The public record gives pieces of monitoring, but too little information about permissions to approve, override or stop equipment action. This is not a minor

documentation gap: it determines whether supervision is meaningful in safety-critical processes.

Workforce flows. One transport work unit shows a substantial reported decline in staffing requirements, while the employment destinations of the broader previous team remain unresolved. Worker outcomes should be followed across reskilling, redeployment, attrition, loss of role and wage change rather than inferred from equipment or headcount totals. [LG02](#)

Measurement architecture. Liugang's operating indicators make some machine-side improvements visible. Comparable worker-side denominators and independently verified safety, skill and career measurements are less available. The result is a partial account of transition quality rather than a complete workforce impact assessment.

The key analytical distinction is between a **machine becoming capable of an action** and an **institution rebuilding work around that capability**. The former can occur in a laboratory or one workflow. The latter requires role assignments, authority, skills, procedures, contingency plans and credible worker pathways.

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12. Implications for enterprise leaders and policymakers

For chief operating officers: Stage and measure transitions by work unit. Record what changed with connectivity or automation, what changed later with AI perception or optimisation, and what the human work required at each stage. A model-launch milestone is a poor substitute for an operating baseline.

For HR and workforce leaders: Maintain a workforce-flow record alongside plant efficiency measures. When a logistics operation needs ten monitoring posts rather than more than 70 rotating transport roles, the first question is not how to announce the savings; it is how prior workers moved, which skills qualified them for new posts, and what happened to their pay, safety and advancement. The public case does not answer these questions.

For technology and safety leaders: Document action-level permission. For every industrial AI use, identify the scope of automated execution, thresholds for escalation, manual takeover procedures, downtime and fault response,

accountable owners, and the qualifications required of supervising operators. Treat a person's presence in a control room as evidence of involvement, not proof of full authority.

For policymakers: Evaluate AI transitions with more than deployment counts and demonstration projects. Industrial investment can reduce exposure to hazardous work and improve performance, but those benefits should be measured separately from the quality of employment transitions. Public programmes that promote industrial agents or worker AI training could also require transparent tracking of who receives training, who changes work units and whether new roles create sustainable progression.

For researchers: Preserve technology chronology and site identity. Liuzhou hot rolling in August and Fangchenggang logistics in April offer complementary observations, not interchangeable datapoints. The 2024 source is unusually useful precisely because it constrains what can credibly be credited to a 2026 model.

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13. Evidence boundaries and methods

This is a qualitative, purposively selected institutional case. It is neither an audited workplace experiment nor a representative sample of Chinese steelworkers. Its principal operational evidence comes from attributable field journalism, some reporting of statements and performance measures by company personnel, earlier independent local coverage and first-party/partner disclosures. Official policies are used solely for jurisdictional context.

Established: The organization operated control centers and intelligent equipment before 2026; introduced/announced further steel-model capabilities in March 2026; reported particular deployed industrial applications; and supplied worker-level examples of monitoring, changed operating roles and staff-built tools.

[LG01LG02LG03LG04LG05](#)

Not established: That Xuantie caused every worker to leave a dangerous position; that 60 transport workers were laid off; the formal HR status of those who changed duties; whether monitoring operators have full override rights; a verified

causal share of AI in reported cost savings; company-wide wages, job creation, injury reduction, career progression or employee wellbeing.

Source dependence: China Youth Daily's first-hand September account and Economic Observer's April interviews are distinct reporting visits. Their commercial reprints and their quotes from management should not be counted as separate independent trials of industrial productivity. Company and vendor model releases are used to verify launch and design intent; they cannot independently corroborate their own success statistics.

The proper conclusion is neither that industrial AI is displacing a fixed number of steelworkers nor that it is unambiguously improving all workers' careers. **Liugang demonstrates a real, layered shift in the work that employees perform while exposing how little public evidence connects industrial productivity gains to the durable outcomes of those employees.**

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