



# Chapter 6

## Decoding New Quality Productive Forces: Who Are the “Purple-Collar” Workers?

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Since the inclusion of “accelerating the development of new-quality productive forces” in the Chinese Government Work Report in March 2024, the concept has taken root nationwide over the past year, becoming a widely recognized “buzzword.” On January 3, 2025, the launch event for the Employment Trends Report on Applied Talents for New-Quality Productive Forces, themed “New Quality, New Talent,” was successfully held at Renmin University of China. As the country's first report on applied talents for new-quality productive forces, it systematically reviews this emerging talent group and provides a blueprint for manufacturing enterprises to navigate the global technological revolution and industrial transformation in terms of talent recruitment, cultivation, and retention.

As the cornerstone of China's real economy, the manufacturing sector's role in developing of new-quality productive forces is vital. The acceleration of such development calls for talents whose abilities meet contemporary demands. In particular, applied talents who can skillfully handle new-quality production materials, adapt to new-quality production relations, and work in alignment with new-quality productive forces are now key to achieving industrial breakthroughs.

Among them, “purple-collar” talents are emerging as vanguards driving manufacturing transformation. Positioned between traditional “blue-collar” and “white-collar” workers, purple-collar professionals—such as team leaders, technicians, and quality inspectors in smart manufacturing—combine advanced operational skills with innovation capabilities and problem-solving expertise, playing pivotal roles in fields like intelligent manufacturing and driving industrial change.

In high-tech emerging industries, demand for purple-collar talents has grown markedly, highlighting the driving effect of new-quality productive forces. In terms of quantitative demand, China's national demand for purple-collar workforce was about 25 million in 2022; with ongoing industrial upgrades and the boom in intelligent manufacturing, this demand is projected to exceed 31 million by 2035, accounting for nearly one-quarter of total manufacturing labor demand. Regarding educational requirements, the share of positions calling for a high school diploma or below is declining; demand for vocational college graduates remains stable, while demand for bachelor's degrees and above is rising significantly—from 28% in 2022 to an

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20. Reference: [https://tech.china.com/article/20250106/012025\\_1626190.html](https://tech.china.com/article/20250106/012025_1626190.html)

expected 57% by 2035, doubling its share.

Purple-collar professionals are innovators at the production frontlines, advantaged in the AI-empowered era, and evolvers amid automation and digitalization waves. They typically share four characteristics: operating primarily in frontline production environments, exhibiting strong innovation and learning capacities, enjoying broad career growth prospects, and earning relatively high incomes and social status. Technicians and team leaders epitomize this group; their specialized skills and management experience—coupled with opportunities created by smart manufacturing—make them more likely than frontline laborers to remain in the industry. Clear advancement pathways in technical and managerial tracks further enhance their upward mobility.

With humanoid robots and other emerging technologies entering factories, the human-machine era has arrived. As hybrid talents with both management-innovation and technical-operation capabilities, Purple-collar workers demonstrate robust resilience and resistance to displacement by automation. Roles like team leaders and technicians—involving management, R&D, and complex problem-solving—are less susceptible to automation than routine operational jobs. Meanwhile, deepening AI

integration reinforces their strategic value in intelligent systems.

The report also outlines a purple-collar competency model composed of six core factors: operational efficiency drive, new-quality technology adaption, innovative learning agility, multi-technology integration, interpersonal communication influence, and core value leadership. This model provides clear career-development guidance for individuals and strategic direction for enterprises' talent recruitment, training, and development.

As early as the beginning of 2021, Lenovo Group launched its talent development program—the “Purple-Collar Project,” aiming to cultivate high-skilled, multi-disciplinary talents suited to the new digital-intelligent development stage of smart manufacturing. It is the industry's first initiative by a full-element “device-edge-cloud-network-intelligence” enterprise to develop multi-level, composite new-IT high-skilled talents. The project integrates in-house training, supply-chain talent collaboration, and university-enterprise cooperation. Through dual pathways of university-enterprise cooperation and in-house cultivation, the Purple-Collar Project comprehensively nurtures composite high-skilled purple-collar professionals from both the supply and demand sides.



Figure 7: “Purple-collar Talents” Cultivated by Lenovo Group<sup>21</sup>

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21. Image source: <https://finance.ifeng.com/c/8T8EeWYmMml>