

Industry 4.0: 2022's Rising Manufacturing Trend

Smarter
technology
for all

Lenovo

intel

vPRO

Built for Business

Powered by Intel vPro® platform



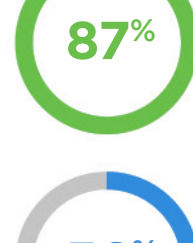
Windows 11

Windows 11 Pro is designed for hybrid work

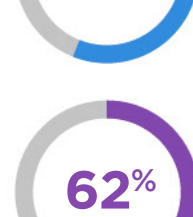
SMART MANUFACTURING IS PICKING UP

Industry 4.0 has been heralded as the future of manufacturing — where computers and machinery are interconnected and communicate productively without human intervention. With the rise of the Internet of Things (IoT) and Artificial Intelligence (AI), and rapid advancements in hardware, the smart factory is quickly becoming a reality.

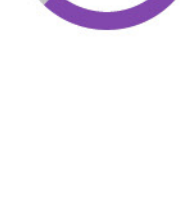
At this cusp of change, Lenovo solutions powered by **Intel vPro® Platform** and **Windows 11 Pro**, such as the ThinkPad, ThinkBook, ThinkCentre, and ThinkStation series, can enable manufacturers to gain a competitive edge through business-boosting technologies that deliver greater performance, manageability and security.



of manufacturers say **Virtual Reality (VR)** will be mainstream in their organization within 3 years¹



of organizations have adopted **IoT** in the US alone²



of enterprises use **AI** in at least one function³



of businesses will establish **digital twins** in the next year⁴

INDUSTRY 4.0 DELIVERS

By 2022, the Industry 4.0 market will be worth **\$152.31 billion** with heavy investments being made in these technologies⁵.



Artificial Intelligence



Augmented Reality (AR), VR, Digital Twins



3D Printing



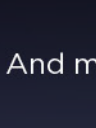
Cybersecurity



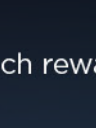
Internet of Things



Cloud Computing



Big Data Analytics



Industrial Robotics

And manufacturers are expected to reap rich rewards by making the shift to Industry 4.0

40%⁶

reduction in reactive maintenance through digital twins (Reported by GE)

Up to **20%**³

cost reduction witnessed by manufacturers that adopted AI

26%⁹

reduction in breakdowns thanks to Big Data analytics

50%⁷

of manufacturers found that 3D printing capabilities resolved supply chain issues

15%¹⁰

reduction in conversion costs through Industrial Robotics

30%¹¹

increase in productivity from Industrial IoT sensors

2 years¹²

return on investment with Industry 4.0 efforts

85%⁷

reduction in training time for troubleshooting by deploying AR and VR

2022 IS SHAPING THE ASSEMBLY LINE

Industry 4.0 technologies are applied at every stage of the product lifecycle — from resource planning, the manufacturing floor, even until warehouse management.

Big Data Analytics

Connecting enterprise data, project lifecycle management, and enterprise resource planning (ERP), Big Data Analytics can be extended to unify and improve manufacturing, strategy, and fulfillment functions.

- Advanced analytics for demand planning, scheduling, and order management
- Predictive analytics for Computerized Numerical Control (CNC) optimization
- Root-cause analyses, business planning, targeted Industry 4.0 deployment

AR & VR

Augmented and Virtual Reality tech simulate real and theoretical situations to better inform staff training, development, business planning, and production.

- Augmented Reality glasses aid in troubleshooting machines and reduce training times
- Digital twins visualize ongoing processes in real-time and supplement digital war-room dashboards
- Accurate digital creation of POC (Proof of Concept) or MVP (Minimum Viable Product) prototypes for experimental functionality

Industrial Robotics

At scale, businesses can exponentially reduce costs while increasing productivity for high-volume operations.

- Consistent and higher manufacturing quality through precise and reliable processes
- Reduced cycle times maximize productivity and throughput
- Increased safety and fewer injury risks with real-time monitoring

Internet of Things

By connecting devices and processing, and analyzing data over the internet, businesses can quickly leverage real-time data from IoT devices to optimize operations.

- Accurate predictive maintenance and production quality control
- Smart metering to optimize resource consumption, yield, quality, and throughput
- Dynamic security and safety monitoring in manufacturing facilities

Artificial Intelligence

When used in conjunction with IoT tech, AI enables smarter automation of time and labor intensive tasks while greatly improving Big Data analytics.

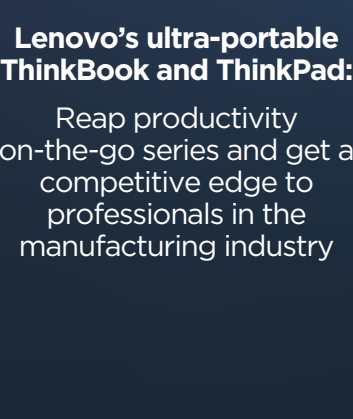
- Autonomous Guided Vehicles (AGVs) can manage pickup systems and inventory inspection
- Track and analyze core data points like overall equipment effectiveness (OEE), production rate, or scrap rate
- Machine Learning algorithms help optimize the entire supply chain and production workflow and unlock new streamlined processes

HARNESS THE FULL BENEFITS OF INDUSTRY 4.0

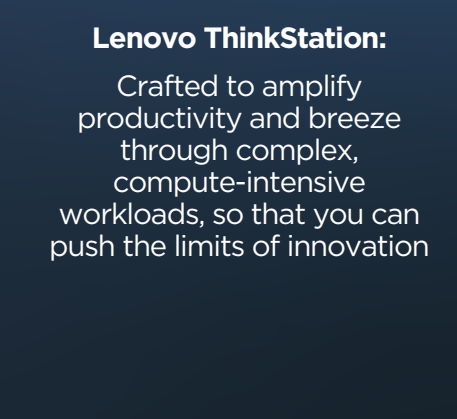
Empower your future-ready manufacturing workforce with Lenovo's smarter devices, solutions, and services powered by the built for business **Intel vPro® platform** and **Windows 11 Pro**. From mobility to analytics to collaboration and communications, Lenovo end-to-end suite of Outcome-Based Solutions can help manufacturers transform their workflows to be more efficient and future-ready.



Lenovo ThinkCentre:
Combining top-notch performance, practical expandability, and enterprise-grade security to power your manufacturing workflows



Lenovo's ultra-portable ThinkBook and ThinkPad:
Reap productivity on-the-go securely and get a competitive edge to professionals in the manufacturing industry



Lenovo ThinkStation:
Crafted to amplify productivity and breeze through complex, compute-intensive workloads, so that you can push the limits of innovation

THE FINISHED PRODUCT

Beyond operational level savings and productivity growth, Industry 4.0 is also driving long-term business goals for manufacturers in preparation for a consumer-centric market¹⁴.

Business Agility



via real-time data to create a supply chain that meets real-time demands

Continuity and Resilience



through intelligent monitoring and advanced maintenance

Sustainability



through more efficient resource usage and opportunities for remanufacturing and recycling

While Industry 4.0 is still in its infancy, we are seeing exponential growth when technologies are applied in tandem — and it's only a matter of time until the rest of the manufacturing world catches up.

Keen to learn more about how Lenovo can enable Industry 4.0 for your business?

Learn more at techtoday.lenovo.com

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