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ENVIRONMENTAL AFFAIRS

Smart Manufacturing: Different Countries, Different Approaches

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Smart manufacturing is the future.

Information governance is critical to smart manufacturing.

The country that sets global norms for information governance will give its domestic manufacturers a competitive advantage.



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Leading Manufacturing Countries by Rank

Country	Value Added	Value Added per Capita	R&D Spending
USA	2	4	2
Germany	4	1	4
China	1	10	1



Different

Different Approaches to Governance

China: A Managed Approach

Top-down performance standards

Policies and practices to ensure Chinese firms become global leaders

Individual rights subservient to national goals

Examples: Made in China 2025, AI policy, cybersecurity law



Germany: A Coordinated Approach

Active role for government

Significant input from all stakeholders

Examples: Industrie 4.0, EU General Data Protection Regulation, EU Network Information Security Directive



USA: A Market-Driven Approach

Preference for private-sector leadership

Reluctance to impose mandates

Examples: Manufacturing USA, NIST cybersecurity framework, AI executive order



**Approaches Won't
Change, but Strategies Will**

US Efforts to Lead in Governance

Manufacturing USA institutes (some standards work, cyber work underway)

Trade Policy (e.g., USMCA reflects US preferences for governance)

NIST privacy framework under development

DoD addressing cyber risks within the defense industrial base

Executive Order on AI (Section 6 on regulatory coordination and standards)



But US Could Do More

1. Leverage its power as a customer of manufactured goods (e.g., DoD and the industrial defense base).
2. Reauthorize and expand Manufacturing USA program (greater emphasis on information governance).
3. Improve interagency coordination and leadership (seek recommendations from the National Research Council).



Take Away Messages

Smart manufacturing is the future of US manufacturing.

Information governance is critical to smart manufacturing.

The country that sets global norms for information governance will give its domestic manufacturers a competitive advantage.



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For further reading:

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