

Under the patronage of **HRH Prince Khalid Al-Faisal**  
Advisor to the Custodian of the Two Holy Mosques & Governor of Makkah Region



المؤتمر الدولي الثاني والعشرون لإدارة الأصول والمرافق والصيانة  
The 22<sup>nd</sup> International Asset, Facility & Maintenance  
Management Conference

**Digitization - Excellence - Sustainability**

# Robotics and AI: Shaping the future of Construction

**26-28 January 2025**

The Ritz-Carlton Jeddah, Kingdom of Saudi Arabia

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# Intro

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## Technological Advancements throughout the years

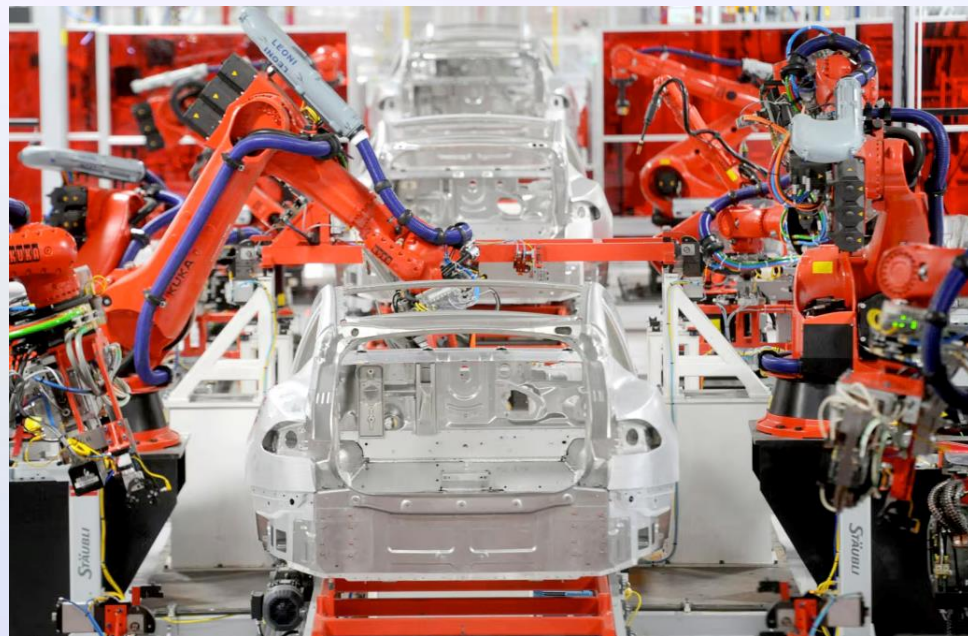
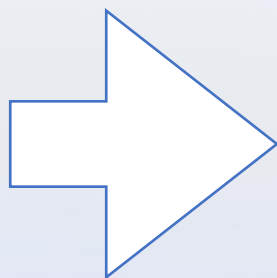


### Manufacturing

**Automation & Robotics:** Boosted efficiency with advanced robots and cobots.

**3D Printing:** Enabled rapid prototyping and customized production.

**Smart Manufacturing:** IoT and data analytics optimize processes and reduce downtime.



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## Technological Advancements throughout the years

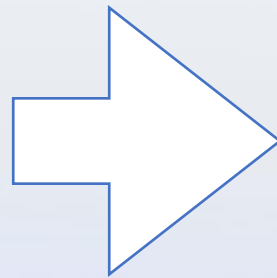


### Energy

**Efficient Solar Technology:** Breakthroughs in photovoltaic cell efficiency and cost reduction, making solar power more accessible.

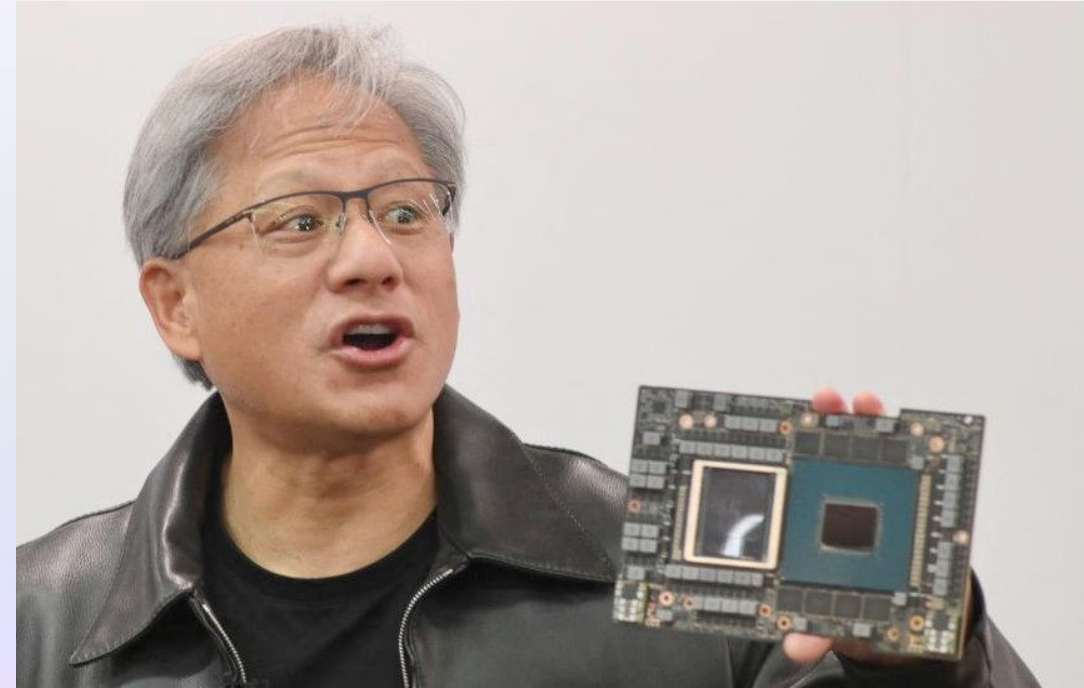
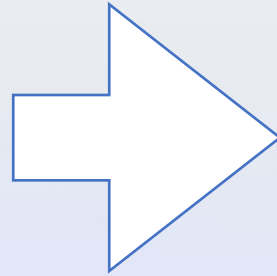
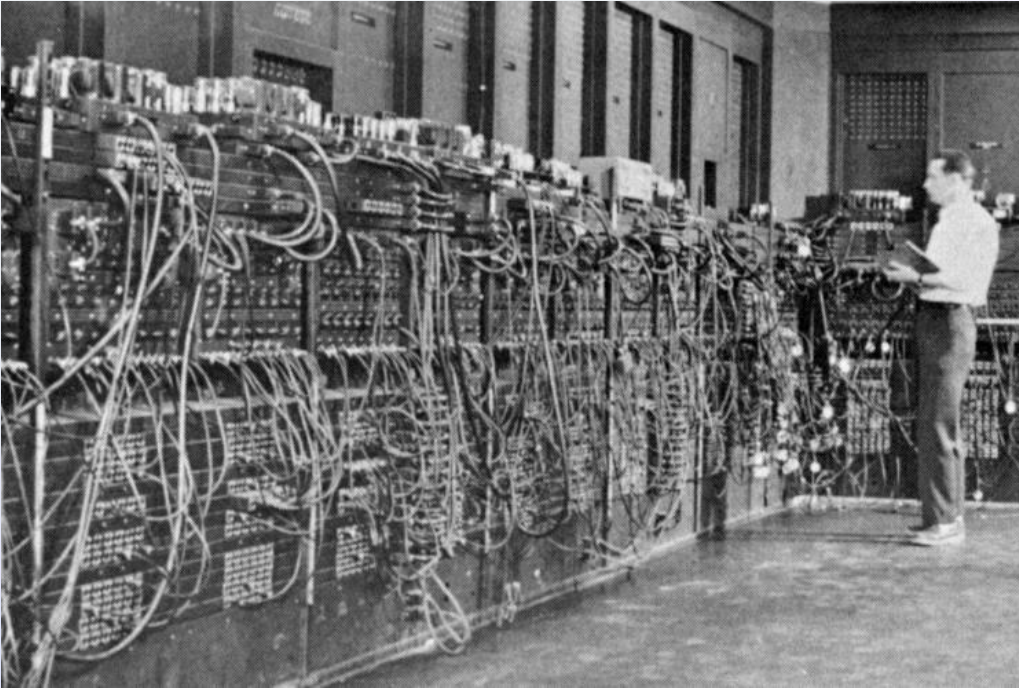
**Advanced Wind Turbines:** Larger, more efficient turbines with improved materials and designs, increasing energy output.

**Energy Storage:** Significant advancements in battery technology, enabling better storage and integration of renewable energy into grids.



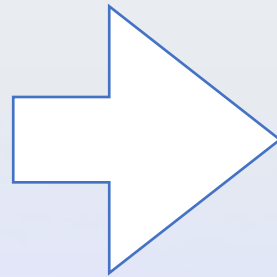
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## Computing..



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**Space..**



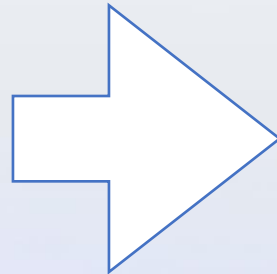
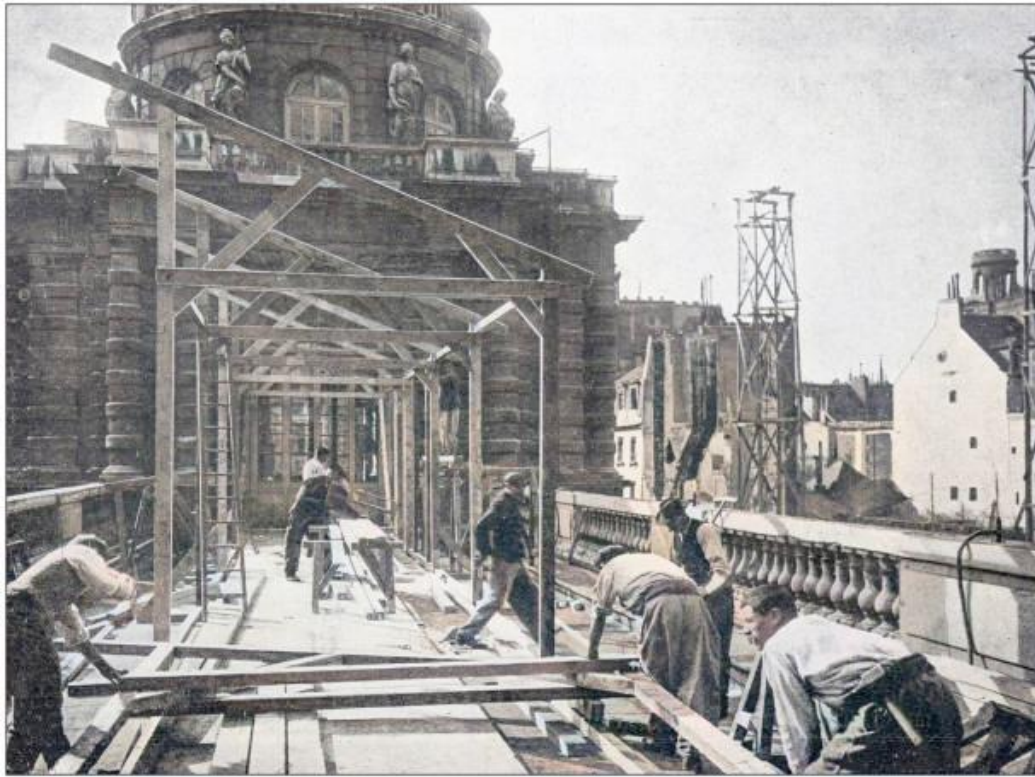
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**And yet...**

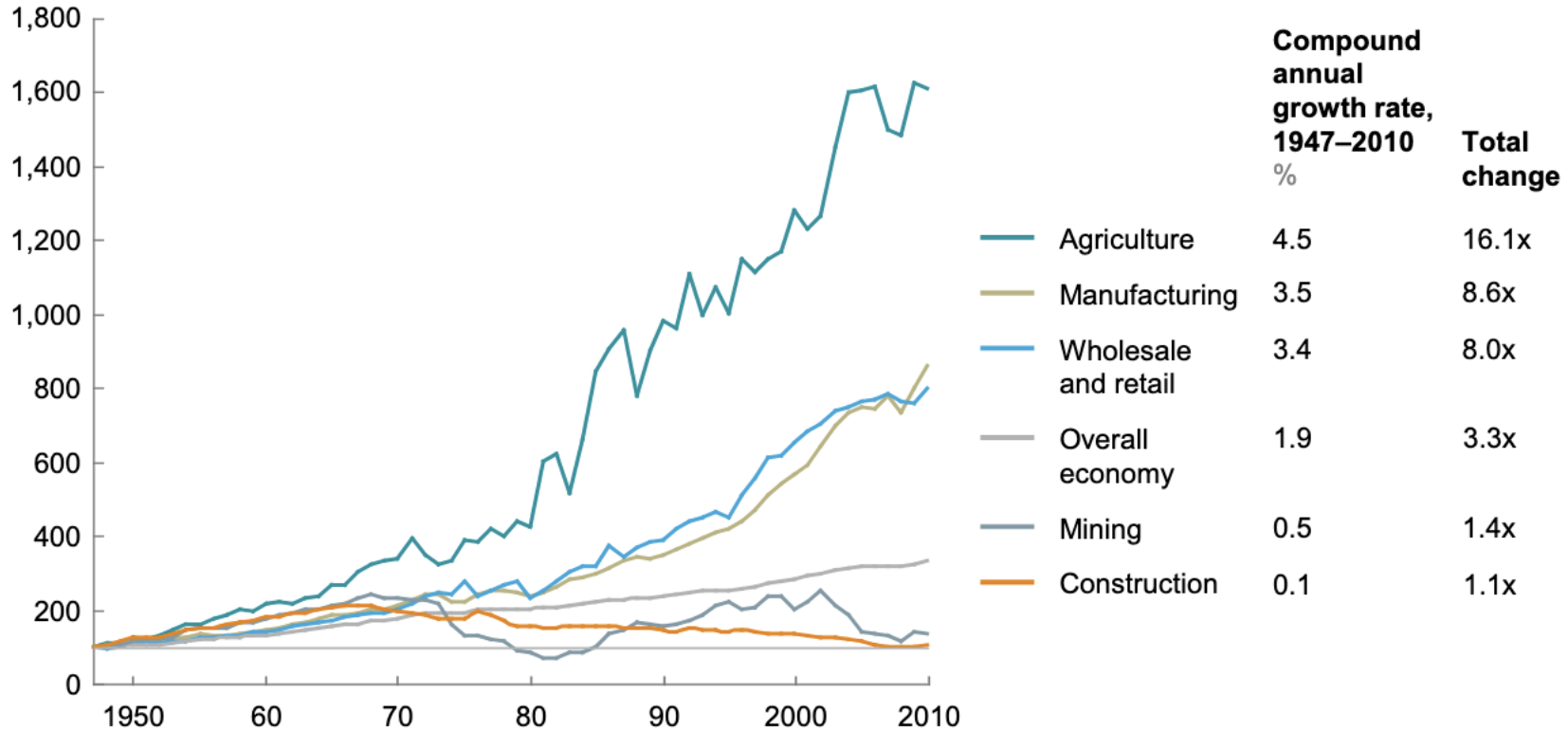
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### Gross value added per hour worked, constant prices

Index: 100 = 1947



\*McKinsey Global Institute. (2017). Reinventing Construction: A Route to Higher Productivity.

## Status Quo Problems



**Manual labor  
shortage**



**Safety risks**



**Inconsistency and  
inefficient work**

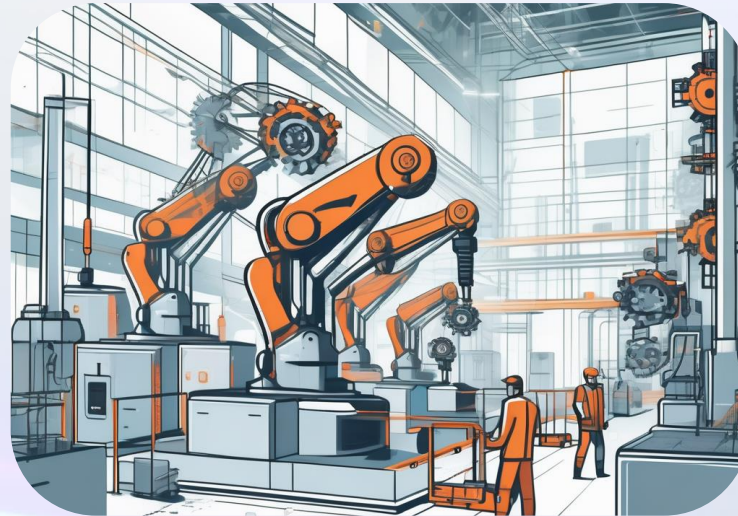


**Environmental  
risks**

## Benefits of Automation



**Cost Reduction**



**Faster Operations**



**Improved Safety**

## Example use Cases

**Jaibot from Hilti**



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## Example use Cases

**Spot from Boston Dynamics**



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## Example use Cases

**Apellix from AkzoNobel**





## **Conclusion**

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**THANK YOU!**

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