



**INTERNATIONAL OPERATIONS & MAINTENANCE CONFERENCE  
IN THE ARAB COUNTRIES**

**UNDER THE THEME**

**"MANAGING MAINTENANCE WITHIN INDUSTRY 4.0"  
CONICIDE WITH THE 16<sup>TH</sup> ARAB MAINTENANCE EXHIBITION**

## **INDUSTRY 4.0 & MAINENANCE ACCOPLISHMENT**

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A large, stylized graphic of the number "4.0" in white, set against a dark teal background. The background also features a faint image of a person in a blue uniform working on machinery.

# 4.0





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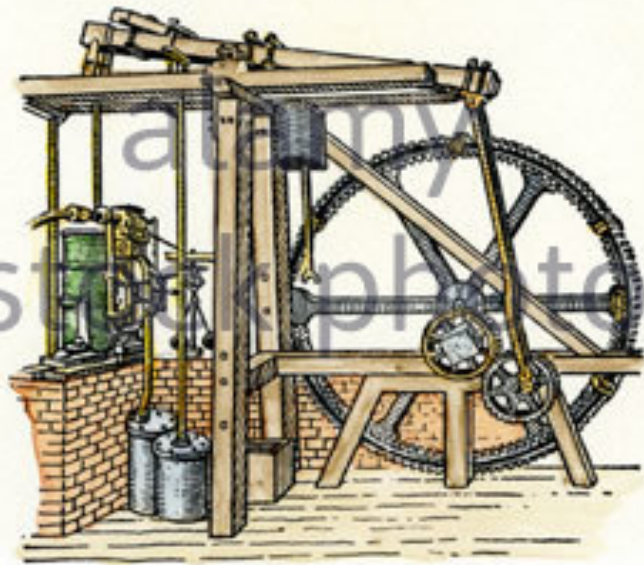
## Introduction to Industry 4.0

- ◎ According to Wikipedia, Industry 4.0 is a name for the current trend of Automation and Data exchange in manufacturing technologies
- ◎ The term Industry 4.0 was first publicly introduced in 2011 as “Industrie 4.0” to enhance German competitiveness
- ◎ It was adopted as the High Tech Strategy for 2020 by the German Federal Government

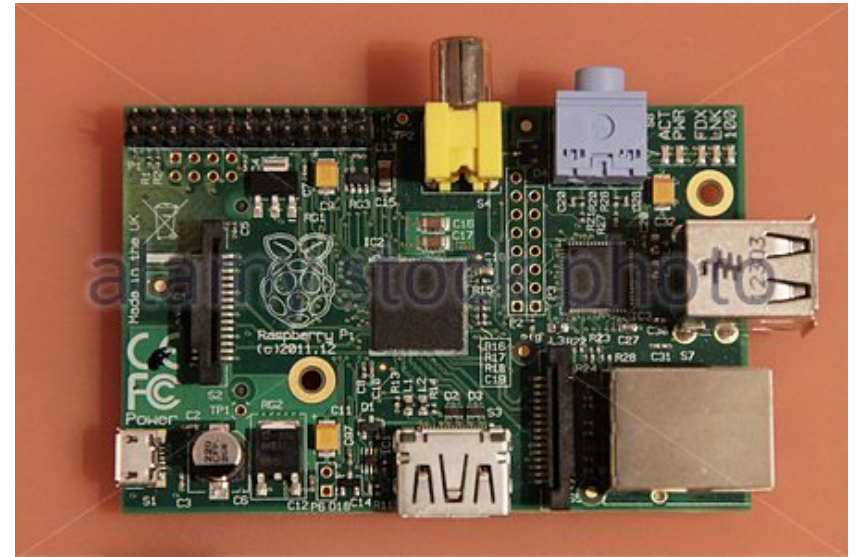


## Industrial Revolutions

- ◎ The industrial revolution in Britain came at the end of the 18<sup>th</sup> century (1760-1840), the use of steam-powered engines
- ◎ The second one dates between 1870 and 1914 , invention of the synthetic dye & introduction of mass production
- ◎ The third industrial revolution is dated between 1950 and 1970, the Digital Revolution



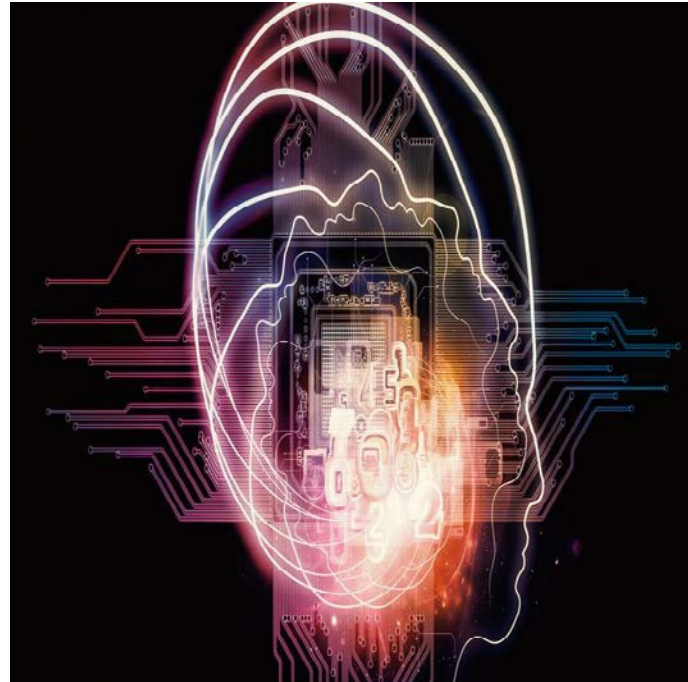
WATT'S STEAM-ENGINE  
[www.alamy.com](http://www.alamy.com) - AE5Y27



[www.alamy.com](http://www.alamy.com) - DB35PH

Text

## Maintenance Requirement & Development



- Attend to Breakdowns
- Uninterrupted Production
- Maintenance Planning
- Preventive V Predictive
- **Interoperability:** Machines, devices, sensors and people that connect and communicate with one another

4.0



## Industry 4.0 Components

- The rapid changes in the information and communication technologies (ICT) have broken the boundaries between virtual reality and the real world
- Machines can communicate with each other, called the Internet of Things (IoT) and with people, called the Internet of People (IoP)
- Creation of what is being called a cyber-physical production system (CPPS)

## Maintenance Accomplishment

- ⦿ Machines which can predict failures and trigger maintenance processes autonomously
- ⦿ Self-organized logistics which react to unexpected changes in production
- ⦿ Industry 4.0 has shown to possess much superior elements in real time maintenance management
- ⦿ Industry 4.0 solutions enable manufacturers to implement preventive maintenance in a **targeted manner**







## Risks Associated With Technology

### Storage of huge amount of data

IT Security, Exchanging data via the Internet and cloud-based storage exposes IT structures to outside attacks.

There is a risk that the data can be stolen, interactions can be disturbed and entire system structures paralyzed or industrial espionage can be conducted



**Thank You**  
**For your patience**