

# Industry 4.0 Market & Technologies – 2018-2023

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## Abstracts

Industry 4.0 is here to stay, there is no doubt about that. The "Industry 4.0 Market & Technologies – 2018-2023" report forecasts that the global Industry 4.0 market\*\* will reach \$214B by 2023, 30% larger than the projected 2023 Cybersecurity market size (Figure 1).

Why Buy This Report?

No Risk. We Provide a Money-Back Guarantee\* – with our money-back guarantee, you can find out for yourself how valuable the report is for your business – an unprecedented offer in the market research industry.

This report is the most comprehensive review of this market available today. It is based on thousands of sources as shown below

HSRC research methodology was based on the following research activities:

31 Industry 4.0 round table focus groups with 87 leading industry executives from 17 countries

79 face-to-face interviews with industry 4.0 executives

Meta-research based on >4000 industry respondents in 27 countries and over 2000 companies

Review of 477 reports and papers

49 Industry 4.0 vendors research



Cross-check of 188 submarkets via 5 bottom-up research vectors (Figure 2)

The Industry 4.0 transformation will change long-held dynamics in commerce and global economic balance of power.

In the next decades, businesses will establish global networks that incorporate their machinery, warehousing systems and production facilities in the shape of cyber-physical systems. In the manufacturing environment, these cyber-physical systems comprise smart machines, storage systems and production facilities capable of autonomously exchanging information, triggering actions and controlling each other independently. On the one hand, these changes add to the traditional business pressure on manufacturers, but on the other hand they offer unprecedented opportunities to optimize the production and manufacturing processes.

Industry 4.0 facilitates fundamental improvements in the industrial processes involved in manufacturing, engineering, material purchasing and usage, supply chain and life cycle management, predictive maintenance and real-time management overview. The smart factories that have already appeared across most industries employ a completely novel approach to production. Smart products are uniquely identifiable, they can be located at all times, know their own history, current status and alternative routes to achieving their target state. The embedded manufacturing systems are vertically networked with business processes within factories and enterprises and horizontally connected to dispersed value networks that can be managed in real time from the moment an order is placed right through to outbound logistics. In addition, they both enable and require end-to-end engineering across the entire value chain.

Industry 4.0 holds immense potential. Smart factories allow individual customer requirements to be met, meaning that even one-off items can be manufactured profitably. In Industry 4.0, dynamic business and engineering processes enable last-minute changes to production and deliver the ability to respond flexibly to disruptions and failures on behalf of suppliers.

End-to-end transparency is provided over the manufacturing process, facilitating optimized decision-making. Industry 4.0 will also result in new ways of creating value and novel business models. It will provide start-ups and SMEs with the opportunity to develop and provide downstream services.



The Industry 4.0 competition is not only about technology or offering the best products; it is also, and in particular, about the companies that collect the appropriate data, combine it to provide the best digital services, and in addition, utilize it for their own benefit. Those who know what the customer wants, and can forecast consumer demand, will provide the information to develop an "unfair" competitive advantage.

The major winners might be those that control "Industry 4.0 Platforms", software layers that syndicate various devices, information and services, on top of which other firms can build their own offerings.

The Industry 4.0 "market race" is led by the global tech giants (Figure 3) that invest billions of dollars in Industry 4.0 products R&D, M&A, commercialization and internal use.

The transformation of the economy being brought about by Industry 4.0 means that business processes such as supply, manufacturing, maintenance, delivery and customer service will all be connected via the Industrial IoT systems. These extremely flexible value networks will require new forms of collaboration between companies, both nationally and globally.

To maintain their industrial base and create new jobs, governments across the globe invest billions of dollars in Industry 4.0 projects and R&D, and provide subsidies and tax incentives for Industry 4.0 investors.

On the one hand, governments and private sectors of countries with high labor costs (e.g., EU countries and the U.S.) invest in Industry 4.0 to increase their industrial sector, which has been taken over by low labor cost countries (Figure 4); and on the other hand, low labor costs industries and their governments (e.g., China, India and Cambodia) react to this trend by also investing in Industry 4.0.

HSRC forecasts that the market will undergo a major transformation in 2018-2023 via the following drivers:

Fast growing market, expected to reach \$1 trillion by the early 2030s

Global competition in the manufacturing sector is becoming fiercer and fiercer

Unprecedented opportunities to optimize production processes



Governments and the private sector of high labor costs economies invest in Industry 4.0 to increase their industrial base taken by low labor cost countries

The private sector and governments of low labor costs economies invest in Industry 4.0 to maintain their industrial base taken by high labor cost countries Industry 4.0 investments

Government-funded Industry 4.0 projects, R&D, subsidies and tax incentives

Industry 4.0 offers start-ups and SMEs the opportunity to develop and provide downstream services

Industry 4.0 dynamic business and engineering processes enable last-minute changes to production and deliver the ability to respond flexibly to disruptions and failures on behalf of suppliers and customers

End-to-end transparency provided over the manufacturing process, facilitating optimized decision-making

Industry 4.0 provides the link to the consumer, and can forecast consumer demand

The report is aimed at:

Industry 4.0 Products Vendors

Industry 4.0 Systems Integrators

**Government Industry Agencies** 

Startups and R&D Managers

Manufacturing Companies, SME included

The report has been explicitly customized for the industry and government decisionmakers, to enable them to identify business opportunities, emerging technologies, market trends and risks, as well as to benchmark business plans.



Questions answered in this 640-page 4-volume market report include:

What was the 188 "Industry 4.0" submarkets size and what were the trends during 2016 & 2017?

What is the 2018-2023 forecast for each of the 188 submarkets?

Which industries and technologies provide attractive business opportunities?

What drives the Industry 4.0 managers to purchase solutions and services?

What are the technology & services trends?

What are the market SWOT (Strengths, Weaknesses, Opportunities and Threats)?

With 640 pages, 120 tables and 150 figures, this 4-volume report covers 10 industries, 10 technologies, 4 revenue sources, 5 regional and 22 national markets, offering for each of them 2016-2017 estimates and 2018-2023 forecasts and analyses.

Why Buy This Report?

A. This is the most comprehensive information source of the global Industry 4.0 market and technologies available today

B. Market data is analyzed via 5 key perspectives:

With a highly fragmented Industry 4.0 market we address the "money trail" via the following 5 bottom-up market size vectors:

By Industries:

Aerospace I4.0

Defense I4.0

Agriculture I4.0

Industry 4.0 Market & Technologies – 2018-2023



Food I4.0

Automotive I4.0

Chemical I4.0

Electronic Hardware I4.0

Electrical Hardware I4.0

Energy, Power I4.0

Oil & Gas 14.0

Machine Industry I4.0

Pharmaceutical I4.0

Biotechnology I4.0

Semiconductors I4.0

Other I4.0 Industries

By Industry 4.0 Technologies:

Additive Manufacturing- 3D Printing

Advanced Human Machine Interface

Artificial Intelligence

Industrial Robots

**Big Data & Analytics** 

Cybersecurity & Cloud Computing



Horizontal and Vertical System Integration

Industrial IoT (IIoT)

Sensors

Simulation

Virtual Reality & Augmented Reality

**Predictive Maintenance** 

By 4 Revenue Sources:

**Product Sales** 

System Installation, Integration & Commissioning

Aftersales Maintenance, Upgrades & Spare Parts

Consulting, Planning & Training

By 5 Regions:

North America

Latin America

Europe

Middle East and Africa

Asia-Pacific

By 22 Countries:



U.S.

Canada

Mexico

Brazil

**Rest of LATAM** 

UK

Germany

France

Italy

Spain

Scandinavia

Rest of Europe

Turkey

Israel

GCC

South Africa

Rest of MEA

India

China

Japan



South Korea

Rest of APAC

C. Detailed market analysis framework is provided:

Market drivers & inhibitors

**Business opportunities** 

SWOT analysis

Barriers to new entry, supplier power, buyer power and competitive rivalry

Business environment

2016-2023 market segmented by 188 submarkets

More than 1000 references and links to Industry 4.0 data sources & publications

D. The report includes the following appendices:

Appendix A: Industry 4.0 Smart Maintenance

Appendix B: How to Convert an Industry 2.0 or Industry 3.0 Business to Industry 4.0

Appendix C: Abbreviations

Appendix D: Terminology

Appendix E: Research Sources & Bibliography

E. Industry 4.0 market report addresses 13 technologies:



Additive Manufacturing- 3D Printing

Advanced Human Machine Interface

Artificial Intelligence

Industrial Robots

Big Data & Analytics

Cybersecurity

**Cloud Computing** 

Horizontal and Vertical System Integration

Industrial IoT (IIoT)

Sensors

Simulation

Virtual Reality

Augmented Reality

F. The report presents extensive information on 49 leading companies (including companies profile, Industry 4.0 activities & products, and recent events), namely:

3D Systems ABB Ltd. Advantech Aibrain Alphabet



#### Arcadia Data

Arm Ltd.

**Beijer Electronics** 

Bosch

Cisco

CyberX

Dassault Systèmes

DENSO

EOS

ExOne

**General Electric** 

Honeywell

Hewlett Packard

Huawei

IBM

Intel

Intelligent Automation

Interset Software

Kuka



Magic Leap

Microsoft

Mitsubishi Electric

NEC

NGRAIN

Oculus VR

Oracle

QUALCOMM

**Rethink Robotics** 

**Rockwell Automation** 

Samsung

SAP

Sensory

Siemens

SIGFOX

Splunk

Sri International

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**Texas Instruments** 

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## Contents

28



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