

Industry 4.0 sector

Accelerating the transformation of Dubai industry to Industry 4.0

Launching an initiative for recognition of the Top 50 Digitized industries in Dubai

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Digitization of Industry & Trade in Dubai

Accelerating the transformation of Dubai industry to Industry
4.0

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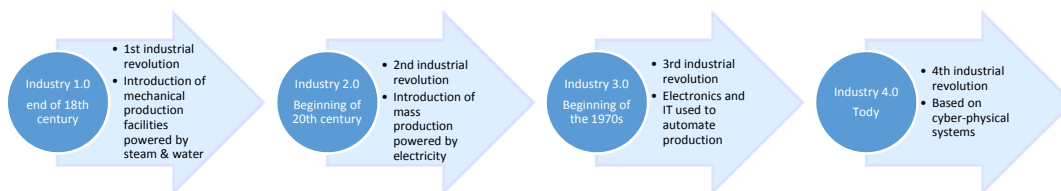
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Industry 4.0- the fourth industrial revolution

.Industry 1.0 brought about the first production using steam and water power, industry 2.0 introduced electricity as a power for industrialization , industry 3.0 used digital computers and now and until 2030 industry 4.0 aims at digitalization all the value chain, beyond 2030 the world will evolve towards a complete digital ecosystem that encompasses the integration of research, production, marketing, and sales in a fully integrated digital system

Fig (1) The Evolution of Industry



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Digitalization of industry and trade in Dubai

Industrial production is one of the main pillars of Dubai economy. Approximately 10% of GDP is generated by the manufacturing sector as of 2015, ranking the 4th contributing sector to the GDP.

With Dubai having a trade openness index exceeding 300 % (measured by total trade/GDP) digitization of industry plays a crucial role for the future competitiveness and growth of Dubai trade and economy. Without extensive use of Industry 4.0 and an innovation-friendly environment, industrial production is likely to face severe competitive in the world market due to the global advent of industry 4.0 revolution putting the sustainable growth of Dubai manufacturing sector at risk. PwC, Mackinsey Global Institute and Vontobel Investment Banking among other workers have done extensive work to assess the readiness of global industries to industry 4.0. Overall, the studies revealed, that Industry 4.0 (The Fourth Industrial Revolution) will lead to clear productivity gains and higher profit margins.

According to PwC by 2020 European industrial companies will invest 140 Billion Euro annually in industrial Internet applications which will turn out an 18% increase in efficiency while digitization of product and services portfolio will generate approximately 110 billion Euro additional revenue per year.

Digitization in Trade

To compete effectively in the global market and grow market shares, it is now becoming increasingly important to adopt digitally enabled supply chain ecosystem. This digitized system was found to gear up efficiency in communication and collaboration among all components and stakeholders of the value chain and boost flexibility in end customer demand changes and real time responses on planning and execution

Level of digitization in Dubai manufacturing

The Middle East is capturing just a fraction of its digital potential—revealing the significant opportunities of digitization initiatives. UAE has the highest Captured digital potential of 16.4%ⁱⁱⁱ, the average for Europe and USA are 15.2 and 18% respectively while Middle East average is 8.4%

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The pharmaceutical, food processing, electric and electronic and ICT are activities in Dubai which are considered to be implementing higher digitalization in their processes.

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Fig (2) Digitized Integrated Supply Chain Ecosystem



Industry 4.0 Associations

Industry 4.0 associations are coming up globally as one of the effective tools to promote the transition to industry 4.0

Two typical examples are in Austria and Germany

In order to support businesses of all sizes and to promote Industry 4.0, the Association Industry 4.0 Austria launched a joint initiative with the aim of promoting the nation-wide roll-out of an „Industry 4.0-Readiness-Check“ for companies, which was developed by the „Mechatronic Cluster Upper Austria“ and the University of initiative aiming at increasing digitization in industry, and the linkage of development, production and sales, both nationally and globally, involving and enabling all of the relevant stakeholders to communicate.

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Industry 4.0 Transition models

Mackinsey Global Institute (MGI) employed a simple model for assessing digitalization of USA industry based on 3 broad categories namely **Digital assets**, **Digital usage** and **Digital workers** with 27 sub-indicators. **Digital usage** and **Digital workers** were found to make the most crucial difference for increase of efficiency

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The connotation of these terms are as below:

Digital assets: Computers, servers, networks and software

Digital usage: Usage in the form of transactions, customer and suppliers interactions together with internal processes using digitization

Digital workers: The degree to which digital tools are put in the hands of employees to ramp up productivity

Austria Federation for Industry 4.0 adopted a more elaborate model to assess industry readiness for industry 4.0 based on six main criteria and 18 sub-criteria, essentially it follows the same concept of the model by PwC

Fig (3) Austrian Federation of Industry 4.0 Industry 4.0 Readiness for Businesses

Strategy & Organization	Smart Factory	Smart Operations	Smart Products	Data-driven services	Employees digitization
<ul style="list-style-type: none">• Strategy• Investment• Innovation management	<ul style="list-style-type: none">• Digital modelling• Equipment infrastructure• Data usage• IT systems	<ul style="list-style-type: none">• Cloud usage• IT security• Autonomus processes• Information sharing	<ul style="list-style-type: none">• ICT add-on functionalities• Data analytics in usage phase	<ul style="list-style-type: none">• Data driven services• Share of revenues• Share of data needs	<ul style="list-style-type: none">• Employees using digitized processes• Expenditure on employee training in digitization

Dubai Industrial Strategy and Industry 4.0

DIS focuses on 6 sectors which have high potential to transform to industry 4.0 with training education and R&D as major enablers for transformation akin to the model of industry 4.0 Readiness

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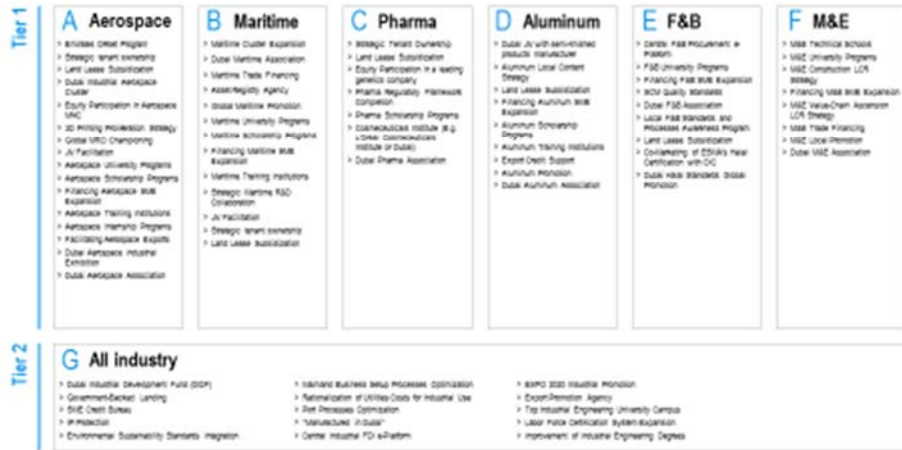
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Fig (4) DIS Target Sectors and enablers

> 75 enablers identified and clustered under two tiers: Sub-sector specific and industry agnostic

Overview of identified initiatives



How we can accelerate the transformation of Dubai industry to Industry 4.0 in the future? Top 50 Digitized industries Initiative

It is proposed to launch an initiative for the recognition of the top **50 digitized industries that are ready for industry 4.0** in the years up to 2030

Rationale: Dubai is a world trade hub, It has achieved a high **Trade Openness Index exceeding 300%**. It needs to prepare itself and embrace the future industry 4.0 to sustain future industrial production, trade and economic growth.

Objective: To promote the transformation of Dubai industry and trade to the future 4.0 industry ecosystem

Participants: Industries from the target DIS industries and others

Criteria: An adapted Industry 4.0 Readiness international models akin of the German or Austrian but with the objective of recognition of business performance towards industry 4.0

And including one more of digitization in value chain

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ⁱ Mackenzi