

Study of the strategic plans of national industries migration to the industry 4.0

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Abstract

The concept of industry 4.0 was coined in Germany and is used to designate a new industrial production model, which is based on the development of technologies such as internet of things (IoT), additive manufacture or 3D manufacture, big data analytics and advanced robotics. Efforts have been spent in many countries to increase technological development, which makes viable the realization of the concept of industry 4.0 in the manufacturing units. This research aims to present the analyses of the Brazilian scenario on this issue, what has been done in the national scenario in favor of the industry 4.0 and the main concerns about migration process in order to realize the possibilities of the Brazilian industries being competitive in the global scenario.

Key words:

Industry 4.0, technology, competitiveness.

Introduction

The term "industry 4.0" came to light in 2011, during the Hannover Fair, in Germany, and alludes to the Fourth Industrial Revolution. Through investment in intelligent factories, it is possible to detect and repair faster production failures, the production increases and has more quality, and everything can be controlled remotely and in real time.

There are several initiatives in the global scenario in favor of the development of the industry 4.0 in itself or of the implementation of technologies related to it. Examples are: Plattform Industrie 4.0 (Germany), Made in China 2025, Internet Plus (China), Basque Industry 4.0 (Spain), *Programa Indústria 4.0* (Portugal), Advanced Manufacturing Partnership (USA), High Value Manufacturing Catapult (United Kingdom), Robot Revolution Initiative and Industrial Value Chain Initiative (Japan).

This research focuses on identifying and analyzing the Brazilian initiatives for technological development aiming at the implementation of the industry 4.0 in the country.

Results and Discussion

❖ Part 1: Analyzing the national scenario

A research of own authorship, which was realized between May and July 2018 and had 48 interviewees, all of them professionals who work with industry 4.0., showed that in Brazil several efforts have been spent in favor of the industry 4.0: 85,4% of the interviewees said they knew at least one government initiative and 95,8% at least one private initiative. Yet, when asked if they believe that Brazil is technologically prepared for the industry 4.0, 60,42% of the interviewees answered that the country is poorly prepared and 31,25% that the country is not prepared, indicative that in Brazil technological barriers have to be overcome for consolidation of the industry 4.0 yet.

Another research, this time from the *Projeto Indústria 2027*, pointed out that only 1,6% from the 759 which took part in the research use technologies of the digital generation 4.0 and that this percentual might rise to 21,8% in 2027.

❖ Part 2: Identifying companies initiatives

Many companies, such as Siemens, Bosch, Volkswagen, Mercedes-Benz, Fiat and Renault have already invested in technologies of the industry 4.0 and modernized their factories.

❖ Part 3: Identifying other plans and initiatives

With regard to the national plans and initiatives to boost the technological development and the industry 4.0, can be mentioned: *Plano Nacional de Internet das Coisas*, *Agenda Brasileira para a Indústria 4.0*, *Programa Rumo à Indústria 4.0* and *Finep IoT*, for example. In the late 2017 was promoted the event *1º Congresso Brasileiro para a Indústria 4.0* and in July 2018 the government launched the portal Hub i4.0 in order to disseminate information about industry 4.0 and promote discussions about the issue.

Conclusions

- ✓ It is noticed that there is an increase in the number of events and discussions about industry 4.0 in Brazil, especially from 2017.
- ✓ Several initiatives and plans have been launched and lots of companies have begun to invest in technologies of the industry 4.0, being the automotive sector one of the most advanced.
- ✓ The results of current researches indicate that all this is only the beginning of the process of migration to industry 4.0 and much more need to be done so that industry 4.0 becomes a reality one day in the manufacture units which are distributed throughout Brazil.

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SCHWAB, Klaus. *A Quarta Revolução Industrial*. 1.ed. São Paulo: Edipro, 2016