



NEWSLETTER #8 – DECEMBER 2022

–INDUSTRY 4.0–

Industry 4.0 refers to “**smart**” and **connected industrial systems** designed to sense, predict, and interact with the physical world that support production in real time.

The vision of Industry 4.0 is built in **combining a number of technological innovations** including AI, Big Data and analytics, autonomous robots, simulation, system integration, IoT, additive manufacturing, and augmented reality.

The World Economic Forum estimates that the **implementation of Industry 4.0 technologies** will lead to an increase in production line availability of **5 to 15%** while creating opportunities for energy economics and sustainability.

In spite of such incentives, a **large majority of organizations** are struggling to capture the **full potential of Industry 4.0** transformations due to **challenges** in the vertical or horizontal integration of these systems.

In the articles reviewed below, the authors **discuss the opportunities** and **pitfalls of current projects** in this area, the drivers and added value of Industry 4.0 technologies in addressing various production and distribution challenges.

They conclude that the future success of Industry 4.0 will depend upon developing a long-term commitment to digital manufacturing, seating a strategic and value-driven approach to smart manufacturing, formalizing a proposition for an end to end value chain, and promoting investments and facilitating financing for the deployment of the associated technologies.

We would like to remind you that our website is available at the following address: [Muse™: Listen to your muse.](#)

Don't hesitate to leave us a comment, to share our newsletter with others.

Enjoy reading!

- [Industry 4.0 and the fourth industrial revolution explained—I Scoop](#)

This lengthy overview of the benefits and challenges of Industry 4.0 suggests that the vision represents a new stage in the organization and control of commerce and industry.

The authors argue that to understand history, current state and future of Industry 4.0, it is essential to see the full value chain which includes suppliers and the origins of the materials and components needed for various forms of smart manufacturing, the end-to-end digital supply chain and the final destination of all manufacturing/production.

The article explores two key integration in the Industry 4.0 model: vertical integration of all the systems in the traditional automation pyramid, and the horizontal integration of information flows of product development, production, logistics, and distribution in an end-to-end value chain.

- [What is 'Industry 4.0' and what will it mean for developing countries? – World Economic Forum](#)

In this WEF article, Shamika Sirimanne addresses several questions concerning the nature and impact of Industry 4.0.

The author argues governments should foster the adoption of Industry 4.0 by raising the awareness of the private sector, promoting investments and facilitating financing for the deployment of Industry 4.0.

In her conclusion, she underlines the critical role of international collaboration: sharing knowledge and research, help design policies and implementing initiatives, fostering innovation, promoting technology transfer and setting legal frameworks and standards.

- [Capturing the true value of Industry 4.0 – McKinsey & Company](#)

Ewelina Gregolinska and her colleagues argue in this McKinsey contribution that a large majority of organizations are struggling to capture the full potential of their Industry 4.0 transformation efforts or deliver a satisfactory return on investment.

The article explores some of the common pitfalls associated with digital transformations and how a more strategic and value-driven approach could help.

They suggest **seven “golden” principles** for helping organizations get the best out of such investments; Industry 4.0: communicate well and often, be specific, segment and syndicates, formalize the value at stake, develop a three- to five-year vision for the network, design a digital-manufacturing road map, and secure leadership buy-in.

- [Industry 4.0 – A glimpse](#) – [Elsevier](#) / [Science Direct](#)

In their article published in Procedia Manufacturing, Saurabh Vaidya et al. provide an overview of Industry 4.0 and define nine pillars of Industry 4.0 (Big Data and analytics, autonomous robots, simulation, system integration, IoT, cybersecurity, the cloud, additive manufacturing, and augmented reality) with their applications to identify the challenges and issues of implementation.

They conclude that Industry 4.0 will give birth to new research streams around transparent and organized supply chains, industrial management, and optimized maintenance scheduling.

- [What AI can teach us about human bias in decision-making? How to Ensure the Artificial Intelligence You Are Designing is Fit for its Purpose](#) – [Medium](#) / [Towards AI](#) / [Masheika Allgood](#).

In this article in two parts, the author explains the best practices for designing a responsible AI with the different **stakeholders**:

- The customer;
- The developers;
- The product manager (PM) and/or DevRel.

- [Part 1](#)

In the first part, the author, with a concrete case and detailed diagrams, explains the communication cycle of AI development and especially the role and relationship of the different stakeholders.

- [Part 2](#)

In part 2, the author focuses on the development of a successful AI. As well as the role of the product manager (PM) and his ability to meet the needs of the customer.

To achieve this, the PM must determine which tool to implement. To answer this question, the PM must ask his client questions such as "Is AI the right tool?", "What kind of data did you use to diagnose this problem?"

- [The Challenges of Algorithmic Management and Its Regulation](#) – [European Scientist](#)

More and more companies are using algorithms in their organizations. This use of algorithms is referred to as "algorithmic management." While the use of algorithms can improve the cooperation between customers and employees.

Its use does not have only advantages and it raises questions about the neutrality and transparency of algorithms. But also to know how it is possible to regulate and control these algorithms.

- [Why 'the future of AI is the future of work' – MIT Sloan School of Management](#)

In 2018, then MIT President R. Reif, set up a task force under the leadership of E. Reynolds and the assistance of D. Autor and D. Mindell.

This working group had a double mission. **First**, it had to examine the influence of technologies and innovations on workers. **Secondly**, they are to make recommendations on training, innovation or improving the quality of jobs.

The aim of this report is to guide the government, companies and educational institutions to better understand the arrival of artificial intelligence on the labor market.

The result of this working group is available in the book "[The Work of the Future Building Better Jobs in an Age of Intelligent Machines](#)" (E. Reynolds, D. Autor and D. Mindell, 2022) published by [The MIT Press](#).

- [When the algorithm is your boss – LEN.IA / Tribune](#)

The article shows how the American e-commerce giant Amazon manages its warehouse staff (**handlers** and **deliverers**) in the **US** and **UK** with algorithms.

The article relates cases of employees fired or managed by algorithms.

In a second step, the article highlights the difficulty of these employees to assert their rights before the legal system.

- [How does information about AI regulation affect managers' choices? – The Brookings Institution](#)

In this Brookings Institute contribution, Mariano-Florentino Cuéllar, et al. explore whether organizations embrace measures of the self-regulation of AI and how decisions of policymakers or courts affect the use of AI systems.

Based on an online survey, the contribution sums up their observations of how managers have changed their perceptions of the importance of various AI-related ethical issues and their intent to adopt AI technologies.

Their findings imply that AI regulation slows innovation through potentially lowering adoption, but at the same time it improves consumer welfare through increased safety and heightened attention to issues including bias and discrimination.

Social Network

 **Business Blog and Website**

<https://listentoyourmuse.com/>

 **LinkedIn**

<https://www.linkedin.com/company/ia-muses>

 **LinkedIn Group**

<https://www.linkedin.com/groups/12627306/>

 **newsletter**

<https://www.linkedin.com/newsletters/muse-newsletter-6984537877409865728/>

 **Mastodon**

https://mastodon.world/@AlexandreMartin_AI_Muse

 **Twitter**

https://twitter.com/musetm_grenoble

 **Bluesky**

<https://bsky.app/profile/muse-tm.bsky.social>