



When Lean meets Industry 4.0

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Ορισμοί: Lean

Lean manufacturing is a **methodology** that focuses on minimizing waste within manufacturing systems while simultaneously maximizing productivity.

<https://searcherp.techtarget.com/definition/lean-production>

Lean manufacturing or lean production, often simply "**lean**", is a **systematic method** for waste minimization within a manufacturing system without sacrificing productivity, which can cause problems.

https://en.wikipedia.org/wiki/Lean_manufacturing

"Lean is a Business **philosophy** that continuously shortens the time between customer order and shipment by eliminating anything that increases the cost of production and time of delivery to customers."

Eaton Corporation

Lean production is a systematic **manufacturing method** used for eliminating waste within the manufacturing system. It takes into account the waste generated from uneven workloads and overburden and then reduces them in order to increase value and reduce costs

<https://www.techopedia.com/definition/14441/lean-production>

"Lean Manufacturing is an **operational strategy** oriented toward achieving the shortest possible cycle time by eliminating waste."

Rockford Consulting

"the **philosophy** of continually reducing waste in all areas and in all forms; an English phrase coined to summarize Japanese manufacturing techniques (specifically, the Toyota Production System)."

Beyond Lean

"A **Strategy**, which strives to embed a culture of continuous improvement, whereby everyone seeks to identify and eliminate waste, enabling the business to deliver customer expectations at minimal cost and lead time."

<https://www.educational-business-articles.com/lean-manufacturing-definition/>

A **production system** which is steeped in the philosophy of "the complete elimination of all waste" imbuing all aspects of production in pursuit of the most efficient methods.

https://www.toyota-global.com/company/vision_philosophy/toyota_production_system/

Ορισμοί: Industry 4.0

We're in the midst of a significant **transformation** regarding the way we produce products thanks to the digitization of manufacturing. This transition is so compelling that it is being called **Industry 4.0** to represent the fourth revolution that has occurred in manufacturing.
<https://www.forbes.com/sites/bernardmarr/2018/09/02/what-is-industry-4-0-heres-a-super-easy-explanation-for-anyone/#220abe729788>

Industry 4.0 is a name given to the **current trend of automation and data exchange** in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. **Industry 4.0** is commonly referred to as the fourth **industrial** revolution.
https://en.wikipedia.org/wiki/Industry_4.0

Industry 4.0 is the **cyber-physical transformation** of manufacturing. The name is inspired by Germany's Industrie 4.0, a government initiative to promote connected manufacturing and a digital convergence between industry, businesses and other processes.
<https://searcherp.techtarget.com/definition/Industry-40>

Industry 4.0 is the **evolution to cyber-physical systems**, representing the fourth industrial revolution on the road to an end-to-end value chain with Industrial IoT and decentralized intelligence in manufacturing, production, logistics and the industry.
<https://www.i-scoop.eu/industry-4-0/>

Industry 4.0 is a term often used to refer to the **developmental process** in the management of manufacturing and chain production. The term also refers to the fourth industrial revolution.
<https://www.cleverism.com/industry-4-0/>

We define Industry 4.0 as the **next phase in the digitization** of the manufacturing sector, driven by four disruptions: the astonishing rise in data volumes, computational power, and connectivity; the emergence of analytics and business-intelligence capabilities; new forms of HMI; and improvements in transferring digital instructions to the physical world, such as advanced robotics and 3-D printing.
<https://www.mckinsey.com/business-functions/operations/our-insights/manufacturings-next-act>

The Fourth Industrial Revolution, commonly known as Industry 4.0, appears to be **changing the way businesses function** and, by extension, the stakes by which they are forced to compete. Organizations must decide how and where to invest in these new technologies and identify which ones might best meet their needs. Without a full understanding of the changes and opportunities Industry 4.0 brings, companies risk losing ground.
<https://www2.deloitte.com/insights/us/en/focus/industry-4-0/overview.html>

The **rise of new digital industrial technology**, known as Industry 4.0, is a transformation that makes it possible to gather and analyze data across machines, enabling faster, more flexible, and more efficient processes to produce higher-quality goods at reduced costs.
<https://www.bcg.com/en-gr/capabilities/operations/embracing-industry-4-0-rediscovering-growth.aspx>

Ορισμοί: Lean - Industry 4.0

Απουσία κοινά αποδεκτού ορισμού

Διαφορετική ερμηνεία του όρου

Στόχος η Λειτουργική Αριστεία

Lean

Εξάλειψη απωλειών (Waste),
Συνεχής Βελτίωση, JiT, Jidoka

Σύστημα, Μέθοδος, Φιλοσοφία,
Στρατηγική

Industry 4.0

Cyber-physical, Digitalization,
Connectivity, Information,
Decentralized, Big Data, HMI

Revolution, Trend,
Transformation, Process

Lean - Industry 4.0: ομοιότητες

Απαιτούν σημαντική προσπάθεια και πλήρη ευθυγράμμιση όλων για την ορθή εφαρμογή τους

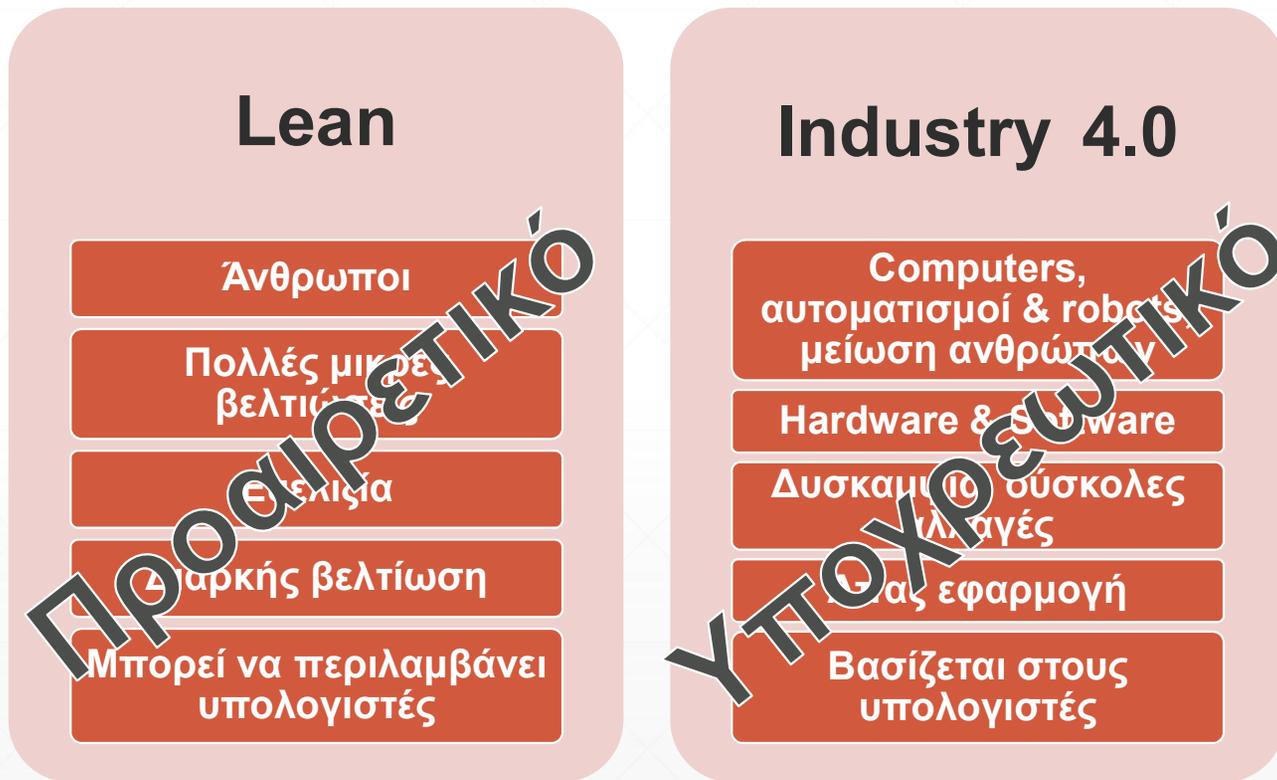
Δεν μπορούν να γίνουν εργολαβικά

Απαιτούν λεπτομερή και πλήρη σχεδιασμό

Αποτυγχάνουν ελλείψει καλού σχεδιασμού

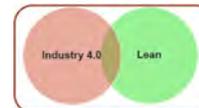
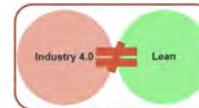
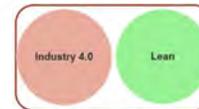
Η επιτυχής εφαρμογή τους μπορεί να επιφέρει θεαματικά αποτελέσματα

Lean - Industry 4.0: διαφορές



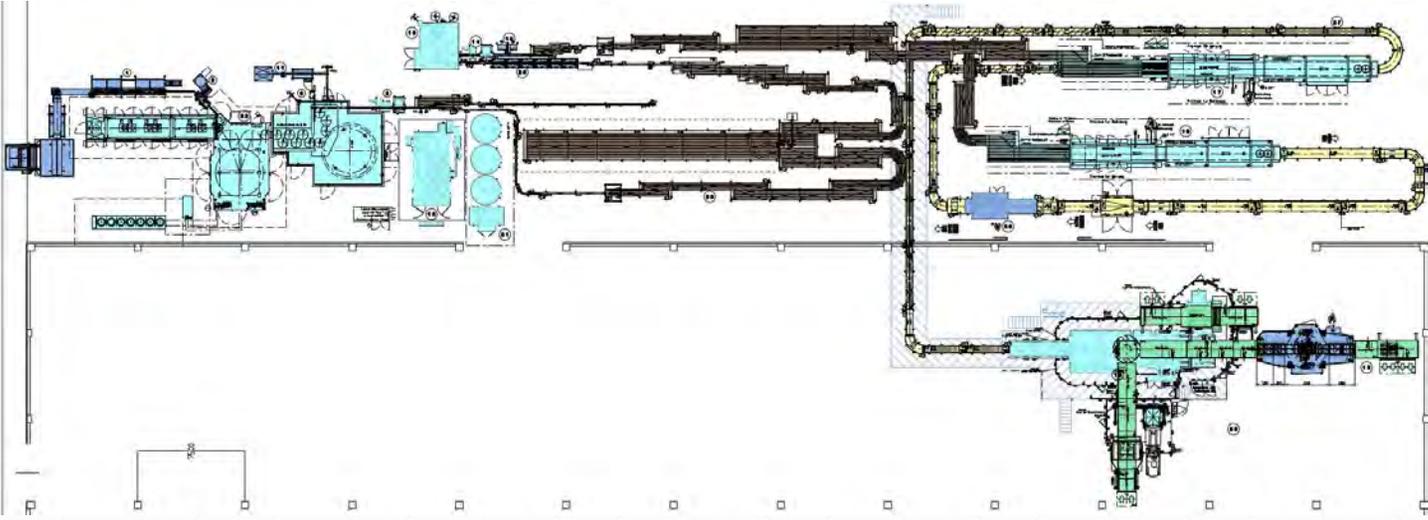
Σχέση μεταξύ Lean & Industry 4.0

1. Lean & Industry 4.0 είναι εντελώς ξεχωριστά
2. Lean & Industry 4.0 είναι αντικρουόμενα
3. Lean & Industry 4.0 επικαλύπτονται
4. Lean περιλαμβάνεται στο Industry 4.0
5. Industry 4.0 περιλαμβάνεται στο Lean
6. Lean & Industry 4.0 ταυτίζονται

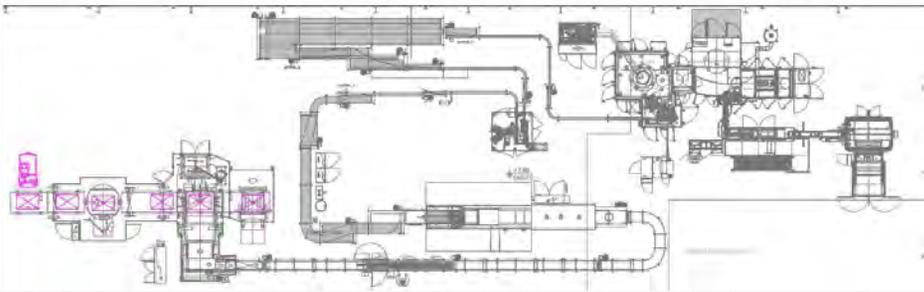


Lean & Industry 4.0

Towards seamless manufacturing operations:
Solving some of your biggest pain points



76.800 bph
€€€€€€



14,400 bph
€€€€€€

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Connectivity

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Information



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Ευχαριστώ

Ερωτήσεις?

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