

GRABCAD

A PLAIN AND SANE INDUSTRY 4.0 PRIMER:

WHAT IT IS AND WHY YOU SHOULD CARE

WHAT IS INDUSTRY 4.0

We're in a pivotal time where we use the advances we've made in the Internet Age to pursue digitization: connecting virtual and physical worlds to change the way that humans, machines, and systems interact. The term Industry 4.0 refers to digital technology innovations that create intelligent networks to work autonomously, reducing the burden of everyday operations, and shifting focus to increasing productivity, efficiency, and creativity.

DATA POINTS: WHY DIGITIZATION NEEDS OF EARLY ADOPTERS:



INDUSTRY 4.0 KEY TERMS

- Customer Experience
- Human/Machine Interface
- Digitization
- Internet of Things
- Big Data Analytics
- Cloud Computing
- Smart Production
- 3D Printing/Hybrid Manufacturing
- Custom/Semi-custom products

GLOSSARY

INTERNET OF THINGS

The connectivity of everyday objects with ability to send and receive data. IoT embeds sensors and machines in our lives to understand and gather data, creating endless opportunities that have far greater impacts than previous industrial revolutions.

BIG DATA ANALYTICS

Systems and processes that analyze vast amounts of information to provide insight into industry patterns, areas of risk and growth, and to streamline the supply chain. The material world is processed virtually and patterns are detected autonomously.

SMART PRODUCTION

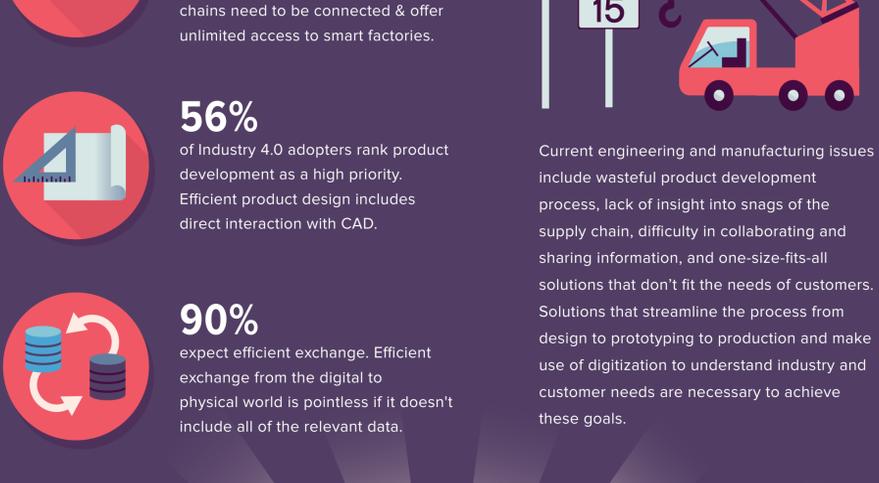
An Industry 4.0 factory will be self-aware and can predict component faults, inefficient material usage, and condition monitoring. Since the production process is smarter, management will have more transparency into the supply chain.

3D/HYBRID MANUFACTURING

Physical objects are "printed" from raw materials via additive, or 3D printing, a process that can transform industrial manufacturing and produce innovations in fields such as healthcare, consumer products, and research.

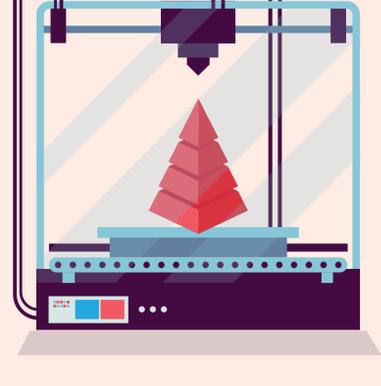
CURRENT INDUSTRY PROBLEMS

PRIORITIES OF EARLY ADOPTERS:



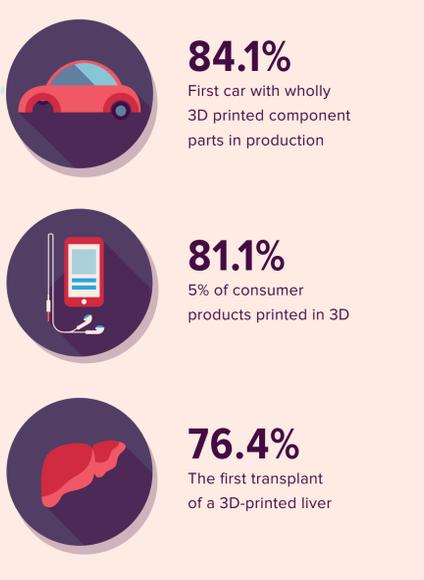
Current engineering and manufacturing issues include wasteful product development process, lack of insight into snags of the supply chain, difficulty in collaborating and sharing information, and one-size-fits-all solutions that don't fit the needs of customers. Solutions that streamline the process from design to prototyping to production and make use of digitization to understand industry and customer needs are necessary to achieve these goals.

GRABCAD IS THE SOLUTION



Widespread usage of 3D printing will dramatically decrease production costs of daily products while creating possibilities of customization that better understand the needs of customers. GrabCAD Print prioritizes making the 3D printing process more accessible and easy to use, bringing Industry 4.0 solutions to the forefront of the engineering and manufacturing industries.

EXPECTED TO OCCUR BY 2025:



EFFICIENT PRODUCT DESIGN

Simulated tray and slice previews of models can work out design and engineering problems before they go into production. Design becomes self-aware and reacts to both human and machine feedback.

CLOUD-BASED SHARING

GrabCAD Print's cloud-based platform monitors printer operations, optimizing material, and resource allocation. Sharing and file management will connect people in any location to speed up advances and allow for greater collaboration. Cloud-based sharing is critical to any connected factory. GrabCAD enables a connected factory.

CUSTOMER EXPERIENCE

Efficiencies created by Industry 4.0 make the supply chain smarter. Manufacturers can focus more on the customer experience by tailoring their products and business models rather than troubleshooting the production process. Additionally, companies are building business models around custom parts. Transitioning easily from digital to physical removes common existing barriers.



CONCLUSION

Industry 4.0 advances in software and sensors further the possibilities of 3D printing; customization and specification will become standard. By integrating solutions that can streamline the production process, we can achieve a new model of the industry, advancing towards innovation, ideas, sharing, and accessibility.

SOURCES

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