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Trends in Industry 4.0

Porsche Consulting presents, how digitization will change the business world.



Futurologists, economists, and entrepreneurs all agree: digitization will change the business world more rapidly and comprehensively than did the Industrial Revolution 150 years ago. Major new developments are expected to take place by 2020 that will affect the underlying structures of industry as such and extend far beyond the current circle of “digital players.”

Highly flexible newcomers – often from other sectors – are putting the dynamic developments in information technology to use in sophisticated ways and leaving established competitors behind. Until very recently, top-brand companies that make high-grade industrial hardware could still rely on sufficient demand. But by tomorrow, they may no longer hold the key to customer access. That key is now in the hands of owners of digital platforms that automatically connect demand with supply. For the “old economy,” it is now of crucial importance not to succumb to inertia but rather to see the opportunities that lie in combining their experience and tradition with the new digital possibilities.

Revolution

Next-Shoring

There is an ever greater demand for individual products. At the same time, costs are being lowered due to greater levels of automation and new technologies such as 3D printing. This is bringing production back from low-wage countries to sales markets in proximity to their customers. This trend is combining technical and local knowledge, and its shorter paths are increasing speeds and causing less damage to the environment.

Co-Creation and the Concierge Principle

Companies can connect with their customers over the entire life cycle of their products. This lets them understand their customers' needs better and address them via a “concierge principle.” For example, customers participate in product creation processes (co-creation) or individualize their products by means of co-customizing options. During the ownership phase, customer usage data gives companies valuable information on how to offer additional services in targeted ways. As a result, today's transactions between companies and customers are turning into ongoing interactions—which benefit both sides.

Capacity Exchanges

Digital marketplaces are enabling every company to locate suppliers for individual jobs, to relieve their peak capacity periods, and to offer their own capacities during low periods. An approach known as "farming," for example, gives industry a new business model for decentralizing production and letting its machinery work on a flexible basis for different clients. Other services such as design and logistics can also be booked when a company's own resources are exhausted.

Evolution

Intelligent Order Processing

Digital orders automatically arrange for their own fulfillment in an interconnected system of manufacturers, suppliers, and service providers. While customers are still configuring their orders, the system compares all relevant internal and external resources for design, supply, production, and assembly, and immediately provides a delivery date. Each order "pulls" the requisite designer, the right storage space, and the available machine tools, and also books its own transportation to the customer's location.

Autonomous Control Loops

Data alone does not improve the products and processes at industrial companies. But it can produce quantum leaps in quality and enhance costs and reliability if the many sensors and meters feed their product-, process-, and plant-specific information into company-wide systems. Processes can thereby be seamlessly monitored, and controlled and improved in targeted ways, which significantly raises efficiency and quality. Defects and corrections at one aluminum casting company were recently reduced by 80 percent. For maximum speed, closed control loops need to run systems autonomously and initiate fully automatic actions.

Logistics Robots

Models in which humans and robots work side by side without the safety barriers of the past are changing approaches to logistics. People will no longer be the ones fetching the materials to ship to production sites. Instead, robots will bring the items to the dispatchers, or even deliver them directly to the assembly locations. Amazon has already reversed the "people go to products" principle. Its warehouses now have shelving units that move automatically to the employees, who then just have to remove the products they need for packaging.

Info

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