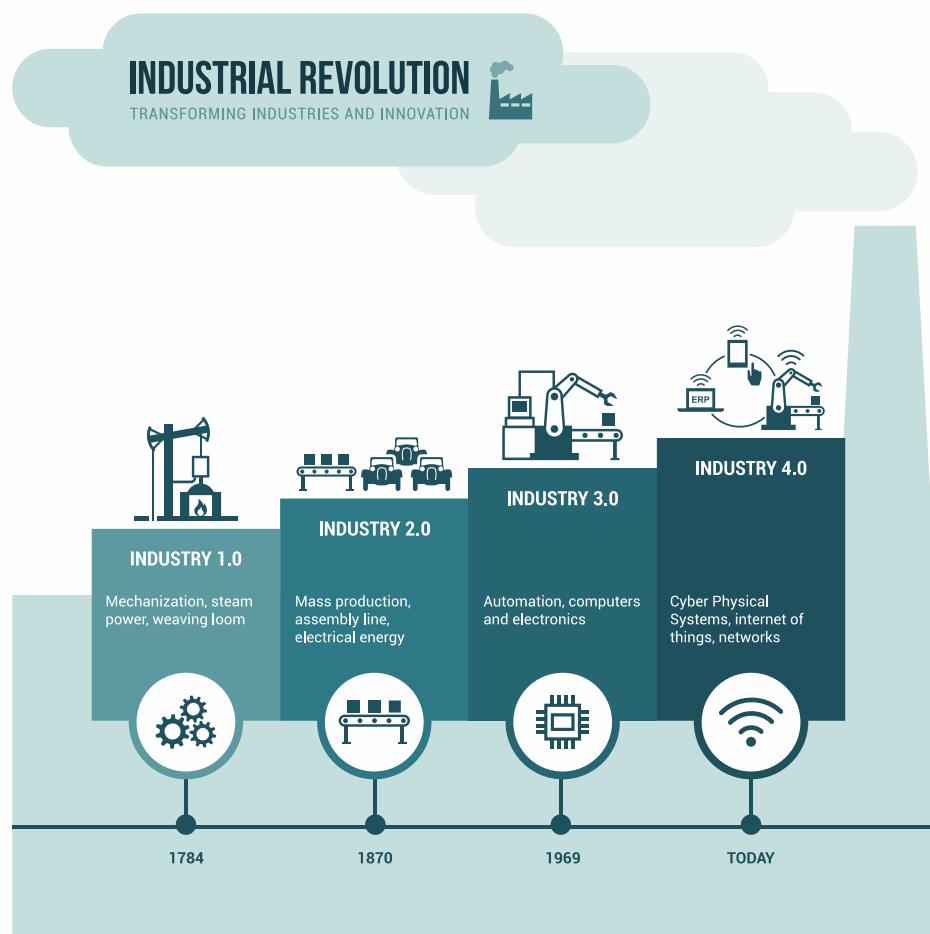


Industry 4.0 – Boosting Your Companies' Performance

01/11/2020 - Yannick Schilly, President & CEO – ALTIX Consulting Inc.



Since the early 1900s, factories and manufacturing have been evolving at a fast pace, spurred by Ford and Taylor embracing the science of industrial engineering. Every technology developed, process improved, machines and intelligence introduced—whether hardware or software—have furthered one goal: Creating better quality products, manufacturing them faster, and producing them at a lower cost.

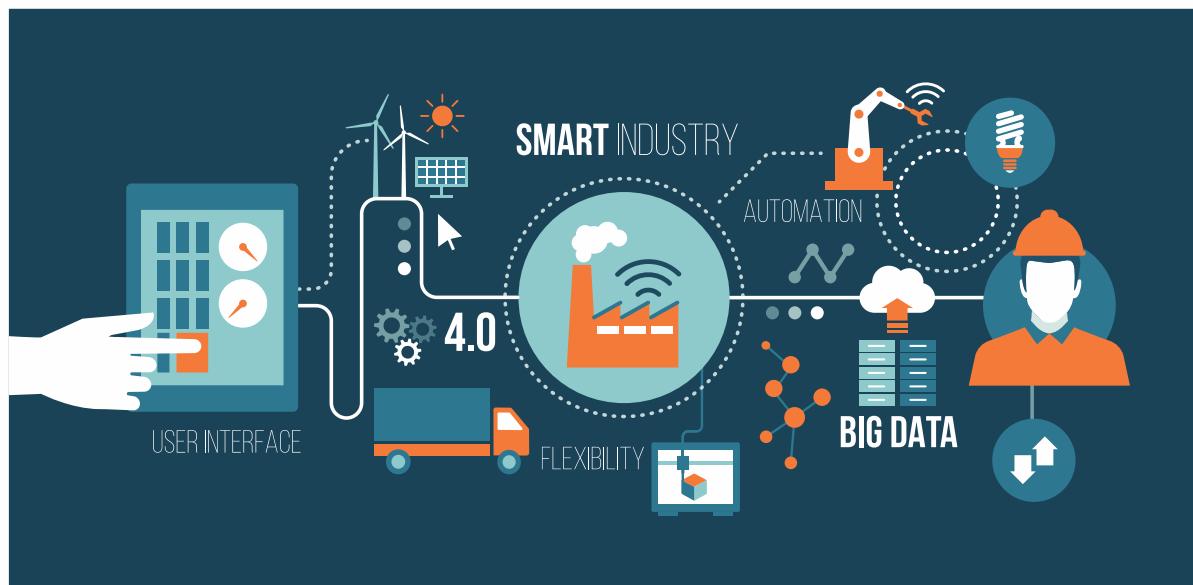
Only this **clarity of focus** helps manufacturing and industrial companies remain competitive and ensure their prosperity.

Trends in the industry

The manufacturing industry went through multiple stages, called industrial revolutions. The first industrial revolution was led by the steam engine, which brought power and mechanization to the industry and enabled the production of steel, textiles, and the heavy materials necessary for the construction of roads, railroads and trains.

The railroad and the telegraph led to the second industrial revolution, which brought the electricity and the modern production line to the factory. The third industrial revolution, which occurred in the second half of the 20th century, was marked by computers, automation, electronics and robotics entering production plants.

The fourth industrial revolution will be a much faster transformation, fueled by globalization, modern information systems and global connectivity, and mobility of people, goods, and capital. "I4.0" is considered to be the "age of data" and will include the adoption of cyber-physical systems, including connected, smart, integrated, self-learning and self-regulating systems.



Why digitalization matters?

Technology is impacting every dimension of the enterprise and its ecosystem, regardless of its location, size or industry. Technology also impacts every individual in the company, from the operator to the CEO. Digitalization has enabled a new, real-time and data-driven business decision environment, which has created a variety of benefits, including increased competitiveness.

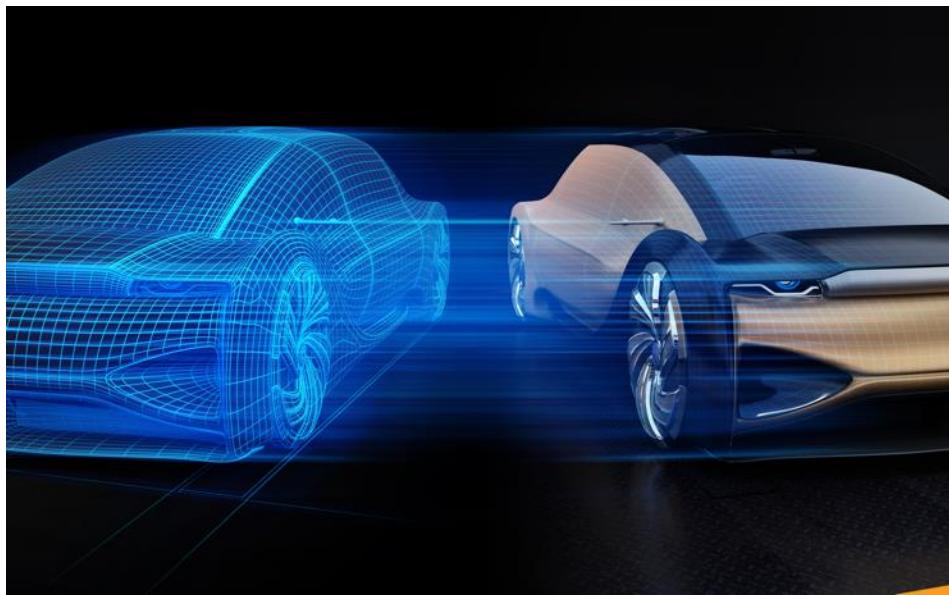
This data-driven environment boosts productivity, performance and speed while reducing costs across all business functions, and ultimately to the customer.

Every corporate function is challenged by developing the new:

- Strategy 4.0
- Finance 4.0
- HR 4.0
- R&D 4.0
- Sales and marketing 4.0
- Supply chain 4.0
- Manufacturing 4.0
- Logistics 4.0

Digitalization has not only impacted products, processes and technologies, but also employees, skills and methods. A digital transformation brings a lot of change and requires change management agility.

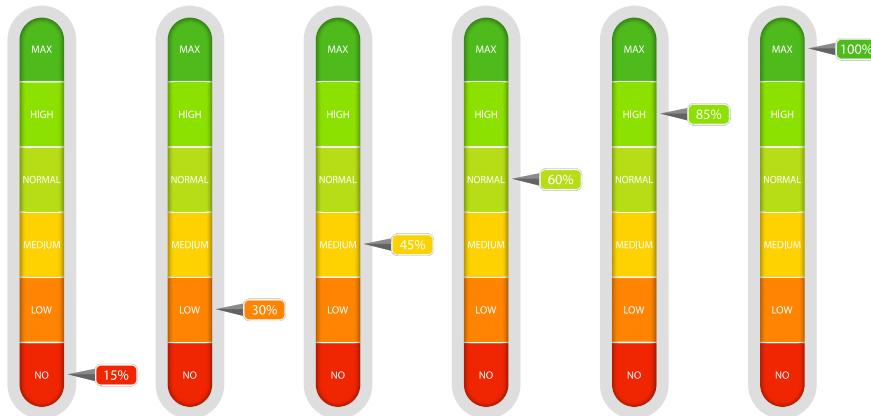
While the need to further the modernization and evolution of your company is a top priority, to do this, you must understand the logical building blocks of a new engineering and architecture. With good planning and design—for example, utilizing “digital twins” to test simulations before making expensive changes—you can avoid spending millions of dollars with little or no return on investment.



Assessing the maturity level and status quo of your company

I4.0 won't happen on its own; it requires equipment 4.0, materials 4.0, processes 4.0, and people 4.0. Like in real life, a logical sequence of events is necessary for individuals and organizations to progress. Before obtaining a PhD, a student must obtain a bachelor and a master's degree.

Organizations and companies should respect this philosophy and perform step-by-step advancements before attacking a digital transformation towards I4.0 and Industrial Internet of Things (IIOT). Human and organizational intelligence comes before artificial intelligence, not the other way around. Do not start I4.0 initiatives if your lean management maturity level is low, as failure could have devastating impacts on your company.



Challenges

There are numerous challenges around I4.0, as it is a complex topic impacting every aspect of the business, from business modeling, product life cycle management, E-commerce, to manufacturing and supply chain. Decision makers, owners, and business leaders will face a multitude of questions, including:

- What's all the buzz and hype with I4.0?
- What are the essential elements of the discussion?
- Where should I start?
- How do I start?
- What is the best strategy and approach to follow?
- When is evolution (incremental steps) right, or revolution (leap) required?
- Isolated pilots or holistic roadmaps and architectures?
- What works and what doesn't?
- What will it cost, and what ROI should I expect?
- Who should I partner with?
- How can I build a compelling business case?

The bad news is that there is no silver bullet. The good news is that you are not alone. Proven methods and approaches can deliver great results with high probabilities of success, providing you are surrounded by the right people and partners.

Roadblock and hurdles

Companies embarking on an I4.0 journey will face multiple and diverse constraints. In our practice, we see many different root causes that can create hurdles, roadblocks, and make it difficult for companies to start. Learning to identify and resolve those constraints will allow you to make progress before your main competitor leaves you in the dust. A short list of hurdles includes:

- Political nature and leadership consensus (governance, strategy and direction)
- Financial nature (financial constraints, business modeling, proper ROI calculation)
- Technical nature (product design, product life cycle, production and automation design, industrial engineering)
- Process nature (project approach, organization and sequencing)
- Human nature (skills, experience, seniority of internal or external resources, culture and change)

Transformation is complex and painful, but if you want to play in the top league, there is no way around it.



Summary and conclusions

Staying ahead of the game in modern industrial environments requires any industrial champion to play the game with advanced skills and mastery. Most companies need to implement a modernization and evolution strategy. However, business leaders must take the time and allocate resources for research and analysis before developing and implementing a strategy. Invest in an assessment before embarking on a complex transformation with substantial

logistical and financial commitments. A best practice project would include, in addition to an early diagnosis and assessment:

- Developing a roadmap and a holistic architecture
- Starting with small pilots within the defined framework
- Measuring success with clearly defined KPIs
- Building your I4.0 strategy on solid foundations
- Maintaining your commitment to your mastery of lean management as a critical base for your investment in complex and advanced technologies
- Sharpening the skills of the leadership team, making sure you have a prepared team before investing in a large-scale program

As in Formula 1, You need to make sure you have a qualified pilot and team before investing in the latest car technologies. Champions are not born. They are trained!

At times, you and your team will need the guidance and expertise from experienced professionals. Altix' team of seasoned industry executives will bring you the expertise, and the tools of methods of industry leaders to help you boost your company's performance.

ABOUT YANNICK SCHILLY:

For the past 25 years, Yannick has successfully developed and executed complex global expansion strategies throughout Germany, China and the U.S. for a German based global Mittelstand company renowned for its advanced manufacturing operations. He possesses a profound and unique knowledge of global and international business, industrial best practices and excellence in advanced manufacturing, industrial engineering, logistics and multi-national supply chain management. In his most recent role as Chief Operating Officer, Yannick established and managed regional production and logistic centers in China and North America for a leading German based, international industrial technology company.

ABOUT ALTIX:

Altix is the middle-market international industrial champions' management consulting partner, providing business strategy, technology and innovation, and operational excellence support, in the world of advanced manufacturing and international supply chain. www.altixconsulting.com