KEYS OF INDUSTRIAL SUCCESS

2017 Edition INDUSTRY OF THE FUTURE SHOUCASES



Founding member of



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Bruno Grandjean, President Alliance Industrie du Futur

INTRODUCTION

The Industry of the Future Alliance (IFA) gathers and connects the skills and energies of professional organizations, scientific and academic actors, business financing organizations, businesses and local authorities. Its ambition is to help the digital transformation of the industrial network, especially SMEs and midcaps.

To reach this goal, IFA has put in place a process of auditing and labeling companies that have succeeded in their transformation, in order to share their experiences and inspire the leaders of companies undertaking their own digital transformation.

This study analyzes the Industry of the Future showcases' transformations. It shows that successful transformations are generally the result of a combination of multidisciplinary initiatives within a global coherence. These well-coordinated initiatives have been engineered to reinforce each other and generate value avalanches for the company's ecosystem.

I would especially to thank François Bichet (TECH IN France - Dassault Systèmes) and Yannick Leprêtre (Symop - Fives) of their commitment within The Industry of the Future Alliance, as pilots of the working group "Showcase Industry of the Future". Their involvement, through their analyzes and the methodology put in place, allows then to light these inspiring French industrials.

This edition captures this alchemy on a sample of 13 of the 35 showcases labeled in 2016-2017, it highlights the French industrial competitiveness within a global context.

Let's continue together this great industrial adventure!



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METHODOLOGY

These emblematic transformations have been described through influence diagrams, which visually highlight how sequences of initiatives can generate value avalanches.



Even if each strategy is fully unique, invariants shared by these transformations are emerging. These invariants represent the universal keys to understand the mechanisms of success. In the following pages, these invariants are gathered in three index tables, which allow the reader to compose easily the dynamics of his own industrial transformation.

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Baud Industries is a family group founded in 1978 with 500 employees and 100 million turnover.

The factory in Vougy, Haute Savoie, specializes in bar turning, high precision machining of metal parts. Baud Industries addresses several sectors such as automotive, connectivity, home automation, watchmaking and devices.

► LABELED PROJECT

High-precision machining must meet a major challenge: offer increasingly complex and precise parts while keeping prices as low as possible. To meet this challenge Baud Industries has built an intelligent machining cell that self-corrects in real time. The cell also embeds a digital twin to achieve virtual pre-series without immobilizing the machine.

EMBLEMATIC LESSON

 More information

Digital twin and smart aggregation on production measurements to minimize process variations, increase machining precision and boost Overall Equipment Effectiveness.

MESSAGE FROM THE TRANSFORMATION LEADER

« This project has capitalized on a lot of knowledge, it will be duplicated on other machines, both technologically and in its philosophy.»

> Renald BAUD, General Manager renald.baud@baud-industries.com

INFLUENCE DIAGRAM









Within the Bouygues Construction branch, the Bouygues Construction Matériel subsidiary provides equipment used on construction sites. The Chilly Mazarin site located in Essonne, employs more than 200 people, one of their missions is the maintenance of 300 tower cranes.

Viibe is a startup that provides professionals with a remote maintenance service via a web application. This service allows a multifunctional relationship between the field operator and experts.

LABELED PROJECT

Tower cranes represent a critical asset on the construction site, their continuous availability is a key issue for Bouygues Constructions Matériel. BCM has been able to respond to this challenge by integrating Viibe's innovative solution, which allows to return control on maintenance to the operator in a simple and fast way. The way this startup solution has been collaboratively implemented within a large group is exemplary.

EMBLEMATIC LESSON

Collaboration between large group and a startup for an extremely simple tele maintenance of critical assets.

► LMESSAGE FROM THE TRANSFORMATION LEADER

 \ll Human benefits are a clear sense of closeness, and satisfaction from the team. \gg

Jérôme MINIER,BIM & Innovation BCM branch j.minier@bouygues-construction.com

 More information



« We are very attentive to operators' feedbacks so that we can propose robust and ad-hoc solutions. »

> Marc PREMPAIN, Co-Founder Viibe marc@viibe.com

► INFLUENCE DIAGRAM





DΔGOMΔ

► CONTEXT

Dagoma is a startup based in Roubaix, it produces and markets allpurpose 3D printers, as well as accessories (eg: filament) and software solutions.

It also manages a database of 3D printable items on its site.

► LABELED PROJECT

To make 3D printers affordable for the general public, Dagoma came up with the idea of making their 3D printers printable themselves. By distributing the plans of its printers in open-innovation, Dagoma also allows its users to take part in their innovation, improvement.

These two breakthrough innovations enable Dagoma to offer products at a competitive price, while simplifying its use through cloud-based applications for ease of use.

EMBLEMATIC LESSON

3D printers that self-produce and are distributed under open innovation.

MESSAGE FROM THE TRANSFORMATION LEADER

« Within the company, values are very strong: Creativity, Audacity, Sharing, Passion, Respect. Everyone is encouraged to undertake, learn, make decisions and test any idea that goes in the direction and vision of Dagoma.».

> Xavier FALAISE, Project Manager xavier@dagoma.fr



 More information



► INFLUENCE DIAGRAM





Illustrative videos





•faurecia



► CONTEXT

Faurecia is a global automotive supplier that develops, manufactures and markets seats, interior systems (dashboards, door panels, decorative elements and acoustic modules ...), emission control technologies (exhausts).

The Faurecia site, in Caligny, (in the Normandy countryside, on the periphery of Flers) manufactures mechanisms for car seats.

► LABELED PROJECT

The Caligny site was built in 2008. It emerged from a group of 3 Faurecia factories. In the context of the economic crisis of 2008, Caligny, supported by the group, was able to redress the balance, and regain profitability. In order to anchor its production in Normandy, the site has launched the "Caligny inside" project. This project is composed of 3 topics: employees, enterprise network, and digital transformation.

EMBLEMATIC LESSON

Creation of an open regional network of partners. Competitiveness through continuous improvement and digital solutions.

► MESSAGE FROM THE TRANSFORMATION LEADER

« The 'Industry of the Future' label rewards the efforts made by all employees. This award highlights the innovative positioning and future orientation of our site and we are very proud to be one of the 40 most modern industrial sites in France ».

Olivier ZANUSSO, Plant GM olivier.zanusso@faurecia.com





► INFLUENCE DIAGRAM



R&D Big Data Organization Train Ecosystem Digital Business Model







Founded in 1543, the Sougland Foundries will be 475 years old in 2018. This PMI is one of the oldest French, European and World Industrial Enterprises. More than 1500 cast iron or steel parts are referenced in many sectors of activity (shipbuilding, iron and steel, incineration, railway ...). It has an internal R & D department and combines three skills: foundry, machining and mechanical welding for a global and integrated production.

LABELED PROJECT

The Sougland Foundries have capitalized on their unique know-how and a strong customer culture to ensure the transformation of a traditional company into a new business model and the new economy. With an evolution of its value chain, it now proposes 'à la carte' Manufacturing as a Service solutions to customers-partners. Its expertise and integrated resources, combined with its foundry experience, guarantee a complete mastering from design to production and beyond.

EMBLEMATIC LESSON

Offer value by compartments to maximize the client-company value. Innovation and knowledge capitalization to master alloys and processes and differentiate through related services.

► MESSAGE FROM THE TRANSFORMATION LEADER

« Having evolved a very old industrial company towards the industry of the future is a proof that, with a voluntarist project carried out in an integrated way and within an adaptive system, any industrial company can transform itself and fully incorporate the new technologies of the XXI century. »

> Yves NOIROT, General Manager direction.sougland@orange.fr

 More information



INFLUENCE DIAGRAM





Gravotech is an medium size company of 920 people, headquartered in Lyon, with 3 production sites and 85% of its sales turnover in exports. World leader in laser and mechanical cutting, engraving, scratching and permanent marking solutions for the customization, signage and traceability markets.

LABELED PROJECT

By digitizing the product lifecycle through a platform linking together customers, sales networks and corporate services, Gravotech has managed to make the Group's teams more autonomous and reactive, allowing them to refocus on more value-added tasks. Lhe platform has also helped to improve the Group's sales performance and increase the level of customer service to the customers.

EMBLEMATIC LESSON

 More information

Overall project of complete modernization, and digitization of product lifecycle that lead to a very strong organizational transformation inside the Group.

MESSAGE FROM THE TRANSFORMATION LEADER

«Our Support Center platform is at the center of our Showcase for Industry of the Future label. This platform has also become for us a real "Digital Showcase" of our know-how allowing quick access to the right information, at the right time, simply and quickly, as we wanted at the beginning of the project. »

> Sabri MOURAD, Innovation Director sabri.mourad@gravotech.com











LATÉCOÈRE



► CONTEXT

As a global "tier 1" partner of the world's leading aircraft manufacturers (Airbus, Embraer, Dassault, Boeing, Bombardier and Mitsubishi), Latécoère operates in all segments of the aerospace industry (commercial, regional, business and military aircraft), with two fields of activity: Aerostructures and Interconnection Systems.

LABELED PROJECT

To meet the challenges of the aeronautics sector Latécoère made the choice to invest 25 to 30 M Euros in a new factory in Montredon. Latecoere integrates in this digital and automated factory the production of basic parts, which it was previously delegated to "best cost" countries. The project involves a complete digital overhaul of the industrial organization, working methods and information systems. As such, an industrial partnership has been set up with Dassault Systèmes and Visiativ to provide digital continuity throughout the project phases.

EMBLEMATIC LESSON

100% virtualization of the design and of the execution system in order to optimize a new, 100% automated factory, which is targeted at relocating large series.

► MESSAGE FROM THE TRANSFORMATION LEADER

« The digital model of the Montredon plant allows all the actors of the project to interact and collaborate in order to design, simulate, operate and optimize the industrial operations. »

> Serge BERENGER, Innovation Director serge.berenger@latecoere.fr







Simulation Added value Supervision Digital twin Automated Make or Buy Digitalization





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Magafor is recognized as one of the world's leading manufacturers of centering drills and precision cutting tools, with more than 1,200 references. To this success, it has to associate its 160 employees who, for more than 80 years, put their know-how and their creativity every day at the service of the customers.

LABELED PROJECT

Magafor has been labeled for its investment in its production site of Bussy-Saint-Georges, a leading technological showcase, thanks to new production techniques, automation and robotization to allow the production of large series and the effects scale; all while relying on a network of national distributors and international to best meet the customer's needs wherever they are. Linked to this investment and the construction of the new site of production, Magafor trains its teams and recruits new talent.

► EMBLEMATIC LESSON

Family group, become world leader, thanks to its strategy of commercialization of niche cutting tools, manufactured in France and sold in 60 countries.

► MESSAGE FROM THE TRANSFORMATION LEADER

« I am proud that Magafor is part of the French industrial fabric. This distinction is the reward of a whole team contributes to the revitalization of the image of the industry. Our ability to innovate helps to be world leader on our market. »

> Daniel MATTHEY, General Manager d.matthey@magafor.com





magaio

► INFLUENCE DIAGRAM



Relocation of production



Illustrative video



The Nantes site, the only French industrial site of the Vaillant Group, is both a production site and an R&D center, installed for more than 50 years in the city. In the factory, 520 employees design and manufacture an average of 1,300 products per day, mainly gas condensing wall boilers, as well as other innovative products using renewable energies (aerothermal heat pumps, solar thermal panels). These high energy performance products are marketed in particular under the Saunier Duval brand.

LABELED PROJECT

In the heart of the city of Nantes, the French site Saunier Duval has demonstrated its industrial competitiveness regarding production sites outside Western Europe.

This result has been achieved by digitizing production data and using it in real time to ensure a higher level of product quality and value-added optimization.

EMBLEMATIC LESSON

Quality, traceability, flexibility and ergonomy thanks to deployment of IOT.

► MESSAGE FROM THE TRANSFORMATION LEADER

« Thanks to new technology introduction, we now adapt operations to the Human and not the other way around. »

> Eric YVAIN, General Manager eric.yvain@vaillant-group.com







► INFLUENCE DIAGRAM







SAVRéso, a company of 20 employees, specializes in outsourcing, commissioning and maintenance of industrial machinery for professionals. SAVRéso relies on a network of technicians working on the end-customer's sites to guarantee the availability and proper installation of equipment such as automated handling trucks.

OptimData is a startup that connects equipment to analyze usage. The uses, transmitted to a community of performance, make it possible to communicate on the good practices of use of this equipment and thus to optimize its performances.

► LABELED PROJECT

The collaboration with OptimData has enabled SavRéso to sustain the profitability of automated truck management companies. By Instrumenting and analyzing the uses of these trolleys, they were able to unite users and technicians around a common goal of performance, thus benefiting all stakeholders.

EMBLEMATIC LESSON

The equipment are seen as actors of a social network so that the operators take care of it, thus allowing the emergence of New Economy business models (sharing economy).

► MESSAGE FROM THE TRANSFORMATION LEADER

« The important thing when running such a network is to unite the community around a common goal towards performance. To achieve this result, we must federate around the equipment use, through coaching and awareness. »

> Alexis LAMY, SAVRéso Engineer alexis.lamy@sav-reso.com

 More information



Laurent COUILLARD, OptimData CEO laurent.couillard@optimdata.eu

► INFLUENCE DIAGRAM



Powered by OptimData

Connected application:

Need&Use

Industry of the Future Showcases · 29



Sunna Design, created in 2011, employs 45 people and can produce up to 100,000 solar street lights per year. The start-up exports most of its production, mainly to emerging countries in Africa and South America. "The original idea was to build a factory that could be easily duplicated abroad. Both in terms of equipment and skills, "explains Thomas Samuel, the founder of Sunna Design.

► LABELED PROJECT

Faced with the high variability of its offer Sunna Design implemented digital tools to support and train operators to operate on multiple stations. Production has also been fully modularized, including software for production scenarios, and hardware that allowing each station to adapt itself to the type of product manufactured. Thanks to this project Sunna Design has increased its production capacity tenfold.

EMBLEMATIC LESSON

Modularity of products and production processes, which are dynamically configured, and supported through augmented reality.

MESSAGE FROM THE TRANSFORMATION LEADER

« The technology of our products being particularly innovative it seemed obvious to us to respect this DNA and thus create a pilot line with such innovative processes to meet market demand. »

> Raphaël BAILLOT, R.D.I. Director raphael@sunna-design.fr















Velum International is a SME located in Alsace in Bischoffsheim, specialized in the manufacturing of customized lighting solutions. It addresses various customers, such as merchants, industries, communities or the hotel industry.

Velum also diversifies by offering consultancy to diagnose the lighting of its customers, identify the weak points and propose adapted solutions.

► LABELED PROJECT

Several points in the VELUM approach drew the attention of the jury during the labeling process, such as the great flexibility of production that allows the company to offer 145,000 references, full digitization of production enabling customized offer to their client, human-centered approach and a transformation of the supply chain by sharing powder coating equipment with local industries

EMBLEMATIC LESSON

More

information

Modularity of products and production processes, which are dynamically configured, and supported through augmented reality.

► MESSAGE FROM THE TRANSFORMATION LEADER

« We exchanged daily with employees, to pick good ideas in the right places. When we understand that wealth comes from our employees we have already taken a big step. »

Anne VETTER-TIFRIT, CEO anne.vetter@velum.biz









Created in march 2016, XYT is a start-up of the new economy located in Bretigny-sur-Orge. The new digital firm manufactures modular electric vehicles optimized for the last kilometers (urban logistics, individual mobility and soon passenger transport). The particularity of these vehicles lies in their modular, customizable and evolving character. XYT has a fleet of 80 vehicles currently operating on the roads and a good order book by 2021.

► LABELED PROJECT

XYT has proposed an innovative business model concept, called "vehicleas-a-platform", where the co-creation process of vehicles is highly customer-centric, also adopting a disruptive industrial strategy by focusing on decentralized certified assembly in local workshops. The vehicle becomes a space of value creation with modular layouts that can be customized easily and endlessly throughout the life of the vehicle.

► EMBLEMATIC LESSON

Factory inside garages thanks to disruptive modularity.

► MESSAGE FROM THE TRANSFORMATION LEADER

« We consider the car as a platform on which our partners can come and integrate different modules of leisure, work or learning. »

Simon MENCARELLI, CEO s@xyt.fr



SIMON





► INFLUENCE DIAGRAM

