

GEORGES RASSEL

CEO Paul Wurth & Member of FEDIL's Board of Directors

Digital transformation has become an increasingly important challenge for companies in all sectors. Do you have an "Industry 4.0" roadmap and which concrete projects do you have in this field?

With the ever-faster and ever-increasing integration of digital data and functionalities, the vision of intelligent, self-learning steelworks is no longer just a distant dream. The global trend towards digitalisation is offering Paul Wurth the opportunity to expand their product range with individual solutions developed jointly with the customer, thereby adding value.

Apart from expanding our digital skills, a large part of our efforts has recently been devoted to setting up the platform infrastructure as the backbone of our digital solutions. Paul Wurth's Xpert Cloud has been set up and applications such as AIXpert and RulesXpert are ready to be introduced to the market. These applications are promoted by our digital team at this year's Hannover Messe. DATAxpert solutions do not only address our traditional customers in steelmaking but are meant to support process engineers and plant operators of very diverse industrial sectors in optimising their processes.

We are working intensively on developing connected products, giving our equipment intelligence by means of embed-

ded systems with sensors and the use of AI and mobile dashboard displays. Smart equipment is already in operation at customers' facilities.

In terms of connected processes, we are deploying and further developing our high-performance range of Xpert operator guidance systems for blast furnaces as well as coke and sinter plants to optimise customers' processes. Paul Wurth is also offering new-generation connected services that can, for example, be paid for based on the "performance as a service" principle. By integrating real-time monitoring systems, we are already able to put into practice the concept of smart maintenance for equipment and plants.

In addition to setting up digital interfaces, which simplify the daily information exchange with the customer, state-of-the-art technologies in augmented & virtual reality are opening up new, virtual remote communication opportunities in services, in commissioning, and in training.

Furthermore, in the field of construction and infrastructure projects, Paul Wurth Geprolux is already offering its customers digital solutions as a service package. These may include consultancy regarding Building Information Modelling (BIM), virtual tours for spatial planning in a 3D environment, or intelligent models for energy master planning.

Interview





In 2016, your company has launched its own incubator called "Paul Wurth InCub", focussing on the industrial and technological sector "InduTech". What's the reason behind this choice and what is the added value of this new structure within the Paul Wurth Group?

We have launched our business incubation programme "Paul Wurth InCub" in 2016 as part of our mission to promote innovation inside as well as outside the company.

There are now fourteen start-up members of Paul Wurth InCub, which are active in a number of different technological fields (robotics, 3D printing, Internet of Things, space mining, sensors, virtual reality, machine learning, etc.). In addition to these permanent members, numerous contacts have been made with the world of start-ups and plenty of ideas and technologies for industrial applications were identified. As a result of its considerable experience, Paul Wurth is able to make great use of its expertise in both, the development and the launch of these innovative products on the market. As part of this, in open innovation, there are regularly project calls for technical solutions. For example, in 2018, ideas and projects in building supervision, plant inspection, filter processes, nanotechnologies/anti-fouling systems, and tracking systems could be identified together with experts.

Paul Wurth InCub has quickly become an integral part of the Luxembourg start-up ecosystem. In September 2018, Paul Wurth InCub gained a strong partner in Luxembourg's industrial association FEDIL, in order to jointly promote #InduTech projects in Luxembourg. Thanks to Paul Wurth's technological expertise and FEDIL's network of industrial players, stronger synergies should be created between Luxembourg's economy and innovative start-ups in industrial technologies.

Furthermore, this interaction with young, motivated entrepreneurs is having a very stimulating effect on our own employees.

Paul Wurth is a global supplier and technological leader in the steel industry, which is heavily affected by the EU climate policy aiming at reducing carbon emissions. When do you think the production of steel will reach zero emission and how is Paul Wurth preparing for these challenges with its clients?

Our core market, the steel sector, is currently facing major policy challenges, particularly in terms of energy and climate. The iron and steel industry is among the biggest industrial emitters of greenhouse gases, accounting for up to 7% of global CO₂ emissions. Under the Paris Climate Agreement to combat global warming, steelworks owners and operators must take drastic measures to meet the targets for the future reduction of CO₂ emissions. One such scenario is hydrogen-based iron ore reduction, which replaces the fossil fuel carbon with green hydrogen in the reduction process. The challenge here, however, is to produce renewable hydrogen economically on an industrial scale.

Some of the large European steelmakers, such as Salzgitter, thyssenkrupp or Tata Steel, have already integrated carbon-neutral steelmaking in their vision. The target for the technological transition to hydrogen-based steel production and green steel would be 2050 and beyond. In order to support our customers on this ambitious journey, Paul Wurth took a minority shareholding in the German cleantech company Sunfire GmbH in December 2018, which is developing its own high-temperature electrolyser to produce valuable hydrogen from water with renewable energy. By cooperating as a technology partner, we gain access to a team of hydrogen specialists and to a promising technology with good development potential for the steel industry. The partnership is also opening up new markets for us in terms of diversification, as there is potential in many other industry sectors, in particular heavy goods transport by road, sea, and air, to replace fossil fuels with synthetic fuels. Given the possibility of being able to store synthetic fuels in a non-continuous production, they are nowadays generally considered a prerequisite for implementing the energy transition. In these sectors, using batteries will not be the solution.

But before steelmaking customers decide to opt for a complete change of technology, solutions to save CO₂ at existing plants are needed. Currently, we are focussing on the development of a wide range of technologies designed to gradually reduce CO₂ emissions in the classic blast furnace process. The primary aim of these solutions is to achieve the efficient metallurgical use of process off-gases generated by steel plants, replacing a part of the carbon used presently in the blast furnace and thereby saving CO₂.

In practice, what are the impacts of the energy transformation and digitalisation on a technological company like Paul Wurth? What is the economic potential? Is industry in Europe competitive enough to use this potential to its advantage?

It is a fact that industry in general and steel industry in particular are facing tremendous challenges with regard to climate policy and technological change in light of global digitalisation.

In the same way Paul Wurth has been shaping traditional hot metal production technology for decades, we are committed to accompany our customers through this transformation. Therefore, virtually all our R&D efforts are devoted to environmental and digital topics.

The technological shift towards CO₂-neutral steel production will be very costly for our clients and subject to significant uncertainties, not least from a political and regulatory point of view. Especially for the European steel industry there is a real risk of losing competitiveness in the global market. Therefore, all development steps have to create a sensitive

balance between ambitious environmental targets and economic conditions. From our point of view as a technology provider, we need to win over industrial partners to help us test the technical and economic feasibility of all these developments.

As for our digital solutions, we are convinced that Paul Wurth is in a rather unique position, combining 150 years of knowledge in mechanical equipment design with proven process expertise and digital skills. We deeply know the processes for which we offer optimisation solutions. In addition, we can count on the close cooperation with our mother company SMS Group when formulating uniform concepts and creating new business models. One challenge remaining, however, will be to attract highly educated digital engineers, willing to join the steel industry.

Finally, Paul Wurth's strategy in regards to green steel as well as industry 4.0 is fully in line with the Luxembourg Government's initiatives defined in the frame of the "Third industrial revolution" and focusing on the challenges regarding energy, mobility, industry, or circular economy, amongst others.

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