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REPORT

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FOCUS ENGINEERING AND TECHNOLOGY
SEIZING TOMORROW’S OPPORTUNITIES
The Chief Technology Officers of the Group Divisions Voith Hydro, Voith Paper, and Voith Turbo discussing the issues that will sustainably shape the future of Voith: Dr. Norbert Riedel, Frank Opletal, and Dr. Jerry Mackel (left to right).

MASTHEAD

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DEAR VOITHIANS,

A passion for technology, unrestrained inventiveness, and the will to achieve perfection – these are the characteristics that lie at the heart of Voith’s success. So in this edition of the Voith Report we are focusing on the subjects of engineering and technologies, and particularly the goals set by each of the Group Divisions in this respect. This is what the Chief Technology Officers of Voith Hydro, Voith Paper, and Voith Turbo discuss in an interview.

In the Insight section, we have also a story about meeting technical challenges: Voith Engineering Services have been working on the development of a tramway for a public transport network in Taiwan. But so far it only exists in the minds of its planners.

In Voith 150+ we look at the progress being made by the Group-wide success program, including the implementation of the Shared Services at HR, Accounting, and Purchasing – Christian Nykiel, Head of Global Business Services, brings us up to date in an interview. The On Site section takes a look at the day-to-day work of a Voith Hydro Site Manager in Brazil, while the Milestones section profiles the development of the QualiFlex press sleeve technology invented by Voith for use with paper machines.

The magazine is rounded off with a declaration of love: Mert Özenç from Voith Turbo in Ankara explains why people who choose to live in the Turkish capital never want to leave.

My team and I hope you will enjoy this edition of the Voith Report.

Yours,

Lars A. Rosumek
Senior Vice President Corporate Communications
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ITALY It is now 100 years old, the “Alessandro Volta” hydropower generating station in Castel Madama, Italy. It first came on line in 1915 and is still producing electricity today. The plant is now due for a refurbishment – a job for Voith Hydro. Operators ACEA S.p.A. have awarded Voith Hydro the contract to supply the equipment for two power generating units of 4.5 and 2.7 megawatts respectively. This includes Francis spiral turbines, generators, the respective governors, automation systems, and balance of plant.

Voith has also been awarded the contract for the modernization of two further hydropower generating stations in Italy that were both commissioned in the early part of the last century and have been reliable producers of electricity ever since. The three projects have a total contract value of approximately €16 million and are due to be completed by the end of 2016. The modernization projects will safeguard the supply of 13 megawatts of renewable energy to the Italian grid for many decades to come.

The lion’s share will be produced by the two power plants that Voith Hydro is modernizing for BKW Italia S.p.A.: the Pompegnino plant in the Province of Brescia and the Pont St. Martin plant in the Province of Aosta. At the Pompegnino plant, Voith will overhaul the two 1.1 megawatt vertical Kaplan turbines, the first of which was installed in 1927. The hydropower specialists will also supply new generators, hydraulic governors, the automation, and electrical balance of plant.

At the Pont St. Martin power station, Voith will replace the four horizontal Francis turbines that have been generating 2.5 megawatts of electricity since 1932 with one new vertical seven-bladed Kaplan turbine with 3 megawatts output and one horizontal Francis turbine with an output of 600 kilowatts. In addition to the turbines, Voith will also supply generators, hydraulic governors, the automation, and electrical balance of plant. //
PROSPECTIVE PARTNERS

HANOVER A summit for the opening: the Indo-German Business Summit was held on the first day of this year’s Hannover Messe trade fair, organized by the Asia-Pacific Committee of German Business (APA), the Indian industrial association CII, and the Hannover Messe itself. The event was attended by representatives from industry and politics, including German Chancellor Dr. Angela Merkel, Indian Prime Minister Narendra Modi, a delegation of 400 companies from India, and Voith CEO Hubert Lienhard in his capacity as Chairman of the APA.

Mr. Lienhard considers this summit to be an important signal for both countries to work more closely together economically. The APA Chairman said, “The German economy is ready. When India grows, we will grow with with them, and we will invest. But the preconditions have to be right. India and its government have to convince the world that it is really possible now to grow in a sustainable way.”

There is no doubt that the Indian economy is booming. The Asian Development Bank (ADB) expects India to have a growth rate of 7.8 percent in 2015, rising to 8.2 percent the following year. The government is also introducing radical economic reforms, a move which has been welcomed by the APA. These reforms include expansion of the infrastructure, cutting of red tape, removal of tariff barriers, and elimination of corruption. //

SMALL COUNTRY, GREAT PERFORMANCE

VIANDEN Voith has been awarded the contract to modernize four motor generators at the Vianden pumped storage power plant in Luxemburg. The project covers the design, construction, delivery, and installation of four rotors for the horizontal pumped storage units. The aim of the work is to ensure the ongoing safe and stable operation of the plant’s very versatile machinery.

The plant is located on the border to Germany. It feeds directly into the German grid, so it can be used as a flexible power storage facility to help regulate the grid as part of the country’s energy transition.

Vianden is one of the largest pumped storage power plants in Europe. It originally came on line in 1964 and following two expansions now has a generator capacity of 1,495 megavolt amperes, a turbine capacity of 1,290 megawatts, and a total installed pump capacity of 1,045 megawatts.//
Voith Turbo’s entry into the market for propulsion systems for fast vessels has been a great success. During its sea trials, the first vessel propelled by the new Voith Linear Jet propulsion system exceeded the expectations of the ship’s owners, Welsh company Turbine Transfers Ltd., by far. The 21-meter-long service catamaran fitted with two Voith Linear Jets successfully completed several test runs off the Isle of Wight on the south coast of England at the end of 2014, reaching a top speed of over 30 knots – much faster than expected. A nearly identical sister ship achieved only 26.5 knots using a waterjet propulsion system.

The Voith Linear Jet combines the benefits of traditional propellers with the advantages offered by conventional waterjet systems. This combination makes the low-maintenance propulsion system the ideal solution for ships with mixed operating profiles and speeds up to 40 knots, including fast ferries, yachts, service vessels for the offshore industry, and coastguard patrol boats.

The catamaran that was tested recently will be used to transport service technicians to offshore wind farms and provide a stable platform when landing and disembarking at the wind turbines. //
GREAT IDEAS

APPLETON Don Carpenter, Application Engineer at Voith Paper in Appleton, USA, has been awarded the Jasper Mardon Memorial Prize by the Technical Association of the Pulp & Paper Industry (TAPPI) in North America. This recognizes the year’s best article in the field of papermaking technology. Don’s paper addressed how to approach safety and quality issues relating to the tail threading process in paper making. He was awarded the prize at PaperCon in Atlanta at the end of April. PaperCon is the largest paper technology exhibition in the world.

He has been an Application Engineer with Voith Paper for more than 20 years and has had responsibilities on projects involving rebuilds of press sections, dryer sections, reels, and winders, as well as capital projects for various equipment, including complete machines. //

WELCOME ABOARD

SEOUL An honor for Voith: At the end of March, Martin Wawra, President Asia Pacific of the Voith Turbo Division Rail, had the honor of being the only foreign guest to attend a test run of the South Korean high-speed train KTX II. Voith is supplying gear boxes, front-end modules, automatic couplers, and tripod shafts for 22 new ten-carriage trains. The event was held to mark the inauguration of the new KTX II Honan Line, which has linked the South Korean capital of Seoul with the southwest of the country since April 2. The train took just one hour – including two stops – to cover the 180 kilometers between Osong and Sonjung during the test run. The quiet and the comfort on board of the train was impressive, despite the fact that the train was travelling at speeds of up to 305 kilometers per hour. //
Everything under control: A Voith employee in the Volvo factory in Zhangjiakou.

**EXCELLENCE IS REWARDED**

**SHANGHAI** Volvo has entrusted Voith Industrial Services with a new task in Shanghai: Until November this year, the service provider will be responsible for equipment installation on the motor block and cylinder head production line at the vehicle manufacturer’s engine factory in Zhangjiakou, China.

This new contract expands and strengthens the existing cooperation between Voith and Volvo in China. The partnership began in August 2012 with individual contracts for technical facility management at Volvo’s production facility in Chengdu. In October 2014 Voith also took over responsibility for maintenance at the factory in Daqing. Last year Voith was awarded the Volvo Quality Excellence Award – a fitting reward for the quality of the services provided by the Voith staff on site. //

**NEW CONTRACTS IN POLAND**

**ZIELONA GÓRA/BOLECHOWO** Voith Industrial Services has been awarded two new contracts in Poland. The first contract was awarded by Lumel S.A., Poland’s largest producer of precision die-cast components and measurement and control instruments for industrial automation. Since April 1, 20 Voith employees have been looking after production maintenance at the factory in Zielona Góra. The contract is initially due to run for four years. Solaris Bus & Coach, Poland’s leading manufacturer of city buses, has signed a contract to employ Voith’s services for the next three years. Eleven employees now work at the company’s main factory in Bolechowo, where they are responsible for technical facility management, parts of the factory’s production facility management and tool management. //

**MA’ANSHAN** High paper quality, low energy consumption: Those are the essential benefits of the stock preparation lines that Voith has commissioned at the paper manufacturer Anhui Shanying Paper Industry in Ma’anshan, China. The aim of the modernization was to reduce the energy consumption of the production lines, while producing paper of a higher quality. Both lines work with the unique Voith technology for handling build-ups of paper sludge and rejects such as plastic or metal parts. This leads to lower energy consumption and higher efficiency. The performance of the stock preparation lines for the PM 5 and PM 6 has exceeded the operator’s expectations, and the efforts of Voith and Shanying Paper are certainly paying off. The company is one of China’s largest producers of corrugated paper, board, and folding boxes. //

**CLEAN PERFORMANCE**
VOITHIANS FOR NEPAL

HEIDENHEIM/DHADING BESI After the severe earthquake that struck Nepal on April 25, many Voith employees in Germany have been participating in a fundraising campaign under the slogan “Voithians for Nepal.”

The employees either paid a voluntary surcharge on their lunch in the canteen or donated blankets. Also a benefit concert was organized, and at a soccer match of the second-league team 1. FC Heidenheim, donations were collected and fan memorabilia were auctioned.

Many supporters worked hard to ensure that the donated materials and supplies would arrive safely in the Dhanding district northeast of Kathmandu. They included the Voith apprentices, who helped to sort and load the surgical dressings and blankets for transportation.

“We were able to help the local people in Nepal and provide them hope,” said Voith employee Herwig Jantschik, who helps all employees with problems in his role as Head of Social Management at Voith in Heidenheim. In his free time he also does voluntary work in aid of a children’s village in Nepal. Pawan Dhakal, Sales & Marketing Manager at Voith Hydro in Heidenheim travelled to the disaster area together with Herwig Jantschik’s wife, Petra Pachner, in order to ensure that the donated supplies reached the people who most needed them. //
Hubert Lienhard, President and CEO of Voith GmbH, gives us his take on the first half of the fiscal year.

Mr. Lienhard, ten months of the current 2014/15 fiscal year are behind us. How is the Group doing at the moment? How is business going? At the half-year mark we could see that the situation at Voith has stabilized. Unfortunately, we are still lacking momentum from our markets, and the overall development is restrained. Despite this, we have managed to increase sales in the first six months. Orders received were lower than the previous year at the half-year mark. Especially satisfying: our operative earnings are much improved compared to the previous year. That shows one thing above all: the restructuring and improvement programs introduced under Voith 150+ are beginning to take hold and have an impact.

But Voith is in the red? It is true that net income was negative after the first six months. That was planned, however, and we had also announced it would be so. The reason for this is that the costs for the entire restructuring measures under Voith 150+ and at Voith Paper are being included in the balance sheet this year. We have always said that we would like to undertake the necessary reduction fairly and with sound judgment. That costs money, and we are seeing that now in the balance sheet.

But importantly, operationally, i.e. in day-to-day business, we are very much in the black. Once again, we are earning more money operationally than in the previous year. That is important. We are on the right path, but still have a way to go.

Are we moving on? What can we expect over the coming months? Externally, we need to continue stabilizing the development over the coming months. Sales revenue is slightly up. We should exploit this trend and do everything we can to boost business still further. Our markets remain complex. But because of that, as the market leader, which we are in many of our industries, we must go to our customers now and fight for every order. Internally, our initiatives are beginning to take effect. We will continue with this work at full steam. With Voith 150+ the Excellence Program has now reached the crucial phase of implementation. We will work hard to execute all projects within the scope of Group restructuring according to the plan. The quicker we move forward, the sooner we will see an impact on our balance sheet. Some things have already helped us a lot in the first six months.

You defined the strategic approach to Industrie 4.0 at the Regional Meetings 2015. How are we doing with that, and what are the next steps? We are working on that theme. The management has regular meetings in which the sole item on the agenda is Voith’s route into the digital age. It is not just speed that plays a role here, but in particular care as well. I see us here as a company standing at the start of a path. There are now promising initiatives and projects in all Group Divisions. We are scrutinizing all of these very carefully, getting reports from those responsible. At the same time we are considering how
we will progress with the Internet of Things. There are plans and considerations that will be substantiated and then implemented over the coming months.

**There are a lot of changes underway in the Voith Group at the moment. You yourself say that we are all currently facing the biggest changes Voith has seen in the last 30 years. What do you say to employees who feel that we have taken on too much at once?**

It is completely clear to me that the Group restructuring introduced under Voith 150+ is an enormous feat. I know that a great deal is currently being asked of Voith’s employees. But I am 100 percent convinced that we are doing the right thing at the right time. Our objective now is to implement the measures in a concentrated, focused, and above all rapid manner. Every step brings us closer to success, and our objective is already in our sights in many areas. Further effort is required in others, but I know that together we will achieve what we have undertaken: we will put Voith back on a profitable growth track. The results of the last few months show that the measures are beginning to take effect.

I am proud of our team, who have taken all this on and helped to shape the many changes. //

**2014/15 half-yearly figures**
*(changes compared to the adjusted results of the previous year)*

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<th>Sales (+5%)</th>
<th>Orders received (−13%)</th>
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<td>2.7 in € millions</td>
<td>2.4 in € millions</td>
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<th>Profit from operations (+12%)</th>
<th>Employees (−1%)</th>
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<td>137 in € millions</td>
<td>38,907</td>
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Voith has stood for the development of new engineering techniques and technologies since its origins. The company is continuing this tradition: In future Voith will refocus strongly on its roots in technology, materials science, and engineering and become a shaper of the digital industrial production of the future.
The fourth industrial revolution is presenting Voith with new tasks and challenges when it comes to refining existing technologies. The Chief Technology Officers of the Group Divisions Voith Hydro, Voith Paper, and Voith Turbo explain how Voith is meeting the challenges of digitalization with the adoption of its market models and what role Research and Development play in this. Dr. Norbert Riedel (VH), Frank Opletal (VP), and Dr. Jerry Mackel (VT) in an interview.

What role do you think engineering and technology play for the company?
Dr. Norbert Riedel (NR): Voith is an engineering company with more than 140 years of tradition. Again and again, we have managed to carve out a competitive advantage through technical advances and exploited this in practice. Dr. Jerry Mackel (JM): It may sound sentimental, but for me engineering and technology are the soul of Voith. Frank Opletal (FO): Well, I can only agree: that’s where our roots lie, which are still extremely important for us. We can offer our customers added value through efficient engineering and, thus, a competitive edge.

Where do you see the biggest technological potentials for the future in your Group Division?
FO: Because we work in very traditional markets with extremely mature technology, we have to re-think and use the trend for digitalization to our advantage. Specifically, we are working on intelligent solutions for the future, in which the components of a machine or a system are linked in successive sequence, and therefore increase efficiency and productivity: we call it Papermaking 4.0. With Papermaking 4.0 we are focusing on solutions and processes that deliver clear added value to our customers, thereby helping to make the paper industry competitive and ready for the future.
NR: Our customers’ product is electricity; the demand is ever increasing – around the world almost everyone has a cell phone, a fridge, a computer. Thus, our customers’ demand will continue to rise in future. Ideally, they will meet this demand with hydropower plants, which produce power from renewable, climate-friendly energy.
JM: As a supplier of components and sub-systems we have to have a high understanding of applications and be familiar with our customers’ processes. That’s why Industrie 4.0 is so significant for us, as it provides the interfaces to link up with the customer.

What are the focuses in your Group Divisions?
JM: At Voith Turbo we have been working for a relatively long time on enhancing the intelligence of our products using sensors, diagnostics, and telemetry. Take DIWA SmartNet, for example: the system regularly transmits operating and maintenance data from bus transmissions to a central OPRA server via mobile technology. This evaluates the data and reports maintenance intervals. By the way, the OPRA software platform is also used for fleet management of rail vehicles and by operators like Deutsche Bahn. Another example is the work we’re doing on Big Data solutions, in order to facilitate automatic evaluation of the large data volumes that arise on test runs and when
operating variable-speed and turbo transmissions, and to enable our customers to implement condition-based servicing strategies.

If I can put it like this: for Voith Turbo, Industrie 4.0 does not mean that we’re developing a completely new business model. It’s more that we are reinforcing our core products. An example: hardly any cars are sold nowadays without air conditioning. It will be a similar thing with us: in future we will only be selling products that have extensive sensors, including diagnostics, that can link up with our customers’ 4.0 environment. In terms of portfolio development, we must take a broader approach with technology and deal more intensively than before with mechatronics or electrical drives, for example.

FO: We would like to make Voith Paper more customer oriented, and, as already indicated, we see the biggest technological potentials in Papermaking 4.0. Accordingly, we are taking an overarching approach to the issue of Research and Development and combining the research departments of all three Voith Paper Divisions. We have also established a Business Unit under the leadership of Matthew Watts. Under the motto “Big Steel meets Big Data” we can upgrade our existing paper manufacturing concepts. The aim is to focus on our customers’ core added value. We see a major potential here in greater linking and networking of machines, products, and services. We have learnt previously from pilot installations and already developed several very successful products from our customers’ perspective. Our concepts are designed so as to be adaptable for the machines and components our customers already have installed, the “installed base.”

“We have to create the right conditions for Industrie 4.0, by ensuring we have the right software know-how in place at an early stage.”

Frank Opletal, Chief Technology Officer, Voith Paper

You are also talking to customers about this then?

FO: We went to the public in March and thus approached our customers, too. There is a strategy, and we have
defined a timetable with milestones. We are working under intense pressure to develop the portfolio. We originally considered a modular approach for the installed base, but the new machine business will certainly be developed in parallel to it.

**What are the biggest potentials at Voith Hydro?**

NR: Although hydropower technology has been around for 100 years, there is scope for further development. That takes a bit of explaining. Hydropower plants used to be designed for continuous operation; with regular repair and maintenance these machines run for 40 to 80 years. In recent times especially, operating requirements have changed: a hydropower plant has to yield a nominal load far more frequently within a few minutes in order to feed energy into the grid, or it must be possible to shut it down. We now have the opportunity to provide customers with other packages, generating an additional added value. Industrie 4.0 offers huge potential here. We are working on refinements to our existing monitoring and diagnostic systems so that machines will only be serviced when they need to be and to fit in with the customer’s operating concept. We already have online connections to individual power plants and are in talks with other customers who are interested in this too. Another focus is the networking of our products and manufacturing, so that we always know precisely where and in what state parts currently are. This will be a major advantage, particularly in terms of effective control of our often remote construction sites.

**To what extent is hydropower affected by the other renewable energies?**

NR: Renewable energies have an enormous influence, especially on pumped storage power plants. These were originally built to drain power during the night from base load power plants; the water was drained at peak loads through the day and the energy produced was fed back into the grid. As reliable stores, pumped storage power plants play an important role in the Energy Transition as they can deliver lacking energy at any time of the day within 90 seconds, say if a wind park has to be switched off because of overload, for example. Or water can be pumped into the upper pool during solar peaks, so that the energy can be utilized at a later time rather than just being wasted to no purpose. Otherwise you have to regulate the system after a certain limit is reached. With intelligent pumped storage power plants in contrast, you can use this energy and deliver a balanced mix. We see additional potential at Voith Hydro in materials research, which is always progressing. FO: Related to this, I can say that material research also plays an important role at Voith Paper, alongside the

“Although hydropower technology has been around for 100 years, there is scope for further development.”

*Dr. Norbert Riedel, Chief Technology Officer, Voith Hydro*
issue we’ve discussed of Papermaking 4.0. We also have other Research and Development focuses, which we are building on with the new developments.

What is the process for new developments?
NR: At Voith Hydro we basically have two development processes running in parallel: there is development in the project and then there are developments that concern innovations. To explain: for us each project is actually a prototype, as head, water volume, etc. always differ. Innovations that are being developed because, say, a new material has become available in the market are more difficult to place on the market. A new product that we are installing in a hydropower plant for the first time is also a risk from the customer’s perspective. A project has to run smoothly for our customers – there cannot be a disruption. For this reason, new products are subjected to a so-called stage-gate process. This is a clearly structured, standardized, and optimized process for the development of innovations and products. We only launch these on the market in small stages to build confidence.

How many employees at Voith Hydro are working on innovations?
NR: Around 150 people work at the Brunnenmühle in Heidenheim, many of whom are graduated engineers and scientists. Special tasks are bundled and handled here, and we serve the global market. Then there are also small units serving local markets in the USA, India, China, and Sweden, for example.

How is Research and Development set up at Voith Turbo?
JM: The Central Technical Department is currently being reorganized to tackle the new challenges. Previously, technical developments were primarily driven by our Business Units. We must work together more closely in future in Research and Development in order to collectively expand our expertise and exploit new technologies in control engineering, mechatronics, or electrical drives. The “new” Central Technical Department will play a greater role here. Another starting point is to make ourselves more global and bring engineering centers closer to our customers, such as the planned engineering Center in Houston, or our centers in Hyderabad and in Minhang, which we want to expand rigorously. The front offices, that is the colleagues who have contact with customers, will play a greater role in the innovation process, because they especially can provide valuable feedback on what customers want and need. We must take greater heed of our customers’ value expectations and value perceptions when it comes to innovations: is this a product that someone would want to buy? Does it represent added value?
NR: There’s also the fact that every market and every region is different. That’s why it’s important to have genuine engineering expertise locally. We want to be a partner to our customers and talk to them on an equal footing, with a very precise understanding of their needs and requirements. For this reason, Voith Hydro has developed a training program which trains the engineers locally so that they understand and master Voith technology. Thanks to close relationships with these engineers, we find out in turn what customers in the local markets actually want. And sometimes we can also apply this knowledge lucratively in other markets.
JM: At Voith Turbo we are on a good course in this area, but there is still potential for development. We have a unit in Innovation Management that is called Future Radar. This searches the market for new trends and technologies and finds out which partners we could collaborate with. As at Voith Hydro, we have determined that we can only be successful if our employees are familiar with our customers’ local conditions and markets.
FO: At Voith Paper we have long had strong roots in the regions, as this has always been the only way for us to serve the local markets.

Could you explain the process of technology development at Voith Paper to us?
FO: For us the process has three areas: on the one hand we develop on a design-driven basis in Product Management in the Business Line Projects. In the second area, the development groups of the three Business Lines develop the products desired by
the market in a comparably short cycle following a structured stage-gate process, which we have expanded into an integrated product life cycle management system by means of our in-house Product Management School. The New Business & Research Department works in a more focussed way on future-oriented innovations: this department works on new business models, production methods, materials, and simulations. The team has more creative freedom and must think in all directions in order to be able to refine our technologies long-term so that we can offer our customers a genuine added value. We call that “Blue Sky,” a kind of think tank in which we give consideration to all scenarios on a specific theme, regardless of whether these seem absurd or not at first glance. We then channel and sort these ideas to decide which we will develop. Due to greater digitalization we will be expanding the Simulation Department in particular and conversely will have fewer pilot test operations.

**Are there also parallel research fields in the Group Divisions, and does an exchange occur here?**

NR: There are certainly common research fields, staying with the simulation mentioned by Frank Opletal, or more precisely flow simulation. This occurs in all three Group Divisions: on paper machines in the headbox, at Voith...
“We must take greater heed of our customers’ value expectations and value perceptions when it comes to innovations.”

Dr. Jerry Mackel, Chief Technology Officer, Voith Turbo

Turbo with ship propulsion, and for us flows play a major role in all areas. As these areas of application differ greatly in their detail – in medium or pressure, for example – the difference is too great to conduct research on them jointly. Nonetheless, it has been standard practice for years that colleagues from congruent research fields like simulation swap their experiences regularly via Best Practices.

JM: I see this as one of Voith’s major strengths. When we approach it in the right way, fruitful synergies can arise between the Group Divisions. We just have to dare to think outside the box – the actual difficulty lies in recognizing where the edge of the box is.

What is your perspective on the future?

JM: I believe there are no limits on the further development of technologies. Voith leads when it comes to engineering and technology, but the competition is not standing still either. Voith must work intensively in light of global competition to be more customer-oriented and consistently pursue its path toward the age of a digitalized industry.

NR: We know that we offer great products. Our goal is to optimize the way we handle projects alongside this engineering.

FO: I can only fully endorse both answers. In the first place, we have to create the right conditions for Industrie 4.0 by ensuring we have the right software know-how in place at an early stage and bringing programmers on board, for example. We are in competition with other companies who are and are becoming active in this field. //
Voith Engineering Services is developing a new tram for Taiwan. But at the moment the routing, tracks, and energy supply for the line only exist as an idea, which presents the designers with something of a challenge.

Designing a tram is nothing new for Voith Engineering Services. The Competence Center for Rail Vehicle Development in Chemnitz has already developed a number of rail vehicles for the European and Asian markets in recent years, and the company is one of the market leaders.

However, this latest project is something else: a tram for Taiwan’s biggest city, New Taipei City – and the whole of the infrastructure for the line still has to be created. “At the moment there are no tracks, bridges or depot facilities, and all the media and energy supplies still have to be put in place,” says Frank Salzwedel, Executive Vice President Rail at Voith Engineering Services in Chemnitz.

The tram is being specially designed to meet the needs of the local market. The lanes of the eight-kilometer-long “Green Mountain Line” will link the center of New Taipei City with the township of Danhai in three years’ time. The Taiwan Rolling Stock Company (TRSC) is responsible for supplying the trams and has commissioned Voith to carry out the design work.

The plan is to have five-section, low-floor trams that can travel in both directions and are 34.5 meters long. But a solution to a particularly tricky problem will also need to be found, as Frank Salzwedel explains: “The trams need to be able to travel across intersections where it would be very complex to install overhead wires. So they need to be equipped with an energy storage system that will allow them to cover relatively long sections of line without access to an external electricity supply. To realize the energy storage system, the overall weight will have to be as low as possible.” New Taipei City can also be very hot and humid, something that has been taken into consideration when designing the trams’ air-conditioning systems.

And these are just some of the challenges facing the designers working on this project. Overall, Voith’s engineering experts will be responsible for the concept and design of the trams and look after prototyping, commissioning, maintenance, and safety issues. They will also assist TRSC with production and factory planning, design fixtures for welding assemblies, and integrate system components. At the moment, the team is working on the design concept for the trams and selecting component suppliers. In accordance with the project plan, the first prototype should be ready at the end of 2016, with large-scale production planned for 2017. The first of the “Green Mountain Line” trams should be in operation in 2018. //
How satisfied are the customers with the products and services offered by Voith Turbo? And how can the company become even better? These are the questions the Group Division asked its business partners as part of a customer satisfaction survey.

**A clear focus** on our customers is one of the key aspects of Voith’s corporate strategy. Since 1996, Voith Turbo has regularly carried out customer satisfaction surveys in order to gain a better understanding of their customers’ particular needs and challenges and to assess their satisfaction with Voith’s products and services. In 2014, some 800 customers from all Divisions and regions provided the company with detailed information in one-hour interview sessions.

“In parallel to these interviews, we also asked our colleagues for their own impressions,” reports Dr. Jerry Mackel, who accompanied the study at Voith Turbo and is now supporting the Business Units in their efforts to turn the findings into concrete actions. “This allowed us not only to discover what values our customers consider to be really important but also to compare how others see us with how we view ourselves.”

One important fact: The vast majority of the customers rate the quality and value of Voith products as very high. Clients also appreciate the independence of the regional sales organizations, which has steadily increased over the years, along with their proximity to the customers themselves. This has particularly helped to reduce response times on technical issues. “Our customers have confirmed that we are moving in the right direction with our new organization. Furthermore, they also pointed out some areas for improvement and provided us with useful suggestions on how to optimize our cooperation,” says Dr. Mackel.

Voith Turbo has been carrying out regular customer satisfaction surveys since 1996. In 2014, some 800 customers from all Divisions and regions took part in the survey.

“Our goal now is to develop a genuine culture of customer orientation at Voith. For example, we would like to understand our customers’ supply chains in a lot more detail in order to dovetail them more effectively into our own processes. This will allow us to provide tailor-made delivery times for our customers, which is a significant competitive advantage.”

Whether it is praise or criticism, feedback has overall an important role to play in helping the company to fine-tune the way it does business and make measurable improvements in specific areas. After the customer satisfaction survey had been analyzed and evaluated, all Voith Turbo Operating Units and sales organizations attended Division-wide workshops in the first half of 2015 in order to present their individual strategies for optimizing performance. Each unit could select the actions that they felt would be most appropriate and effective for them from a list of pre-determined measures. “Many companies carry out customer surveys but then fail to make the necessary improvements. Despite all the different customer structures and organizations, we were able to get every unit on board by allowing them to define their own solutions,” explains Dr. Mackel. “Our customers were very open with us and saw the survey as an opportunity to develop our business relationship with them. We want to make sure that we repay their trust by making genuine improvements. At the end of the day, the success and satisfaction of our customers is our top priority.”

To find out whether the measures introduced have been successful, Voith Turbo will once again be holding detailed discussions with its customers over the coming year. //
DEEP-DIVE-MEETINGS CONCLUDED

At the Regional Meetings 2015 around 1,300 managers were informed about the current status of and the next steps for the Group-wide success program Voith 150+. In five Deep-Dive-Meetings in April and May, the local management in the regions was provided with location-specific information on the new structures and processes of the Voith 150+ initiative Excellence@Voith.

The module leaders for the new organizational models (Target Operating Models/TOMs) for the administrative functions of HR, Accounting, Controlling, IT, Purchasing, Marketing, Corporate Functions, and General Services traveled to the Voith regions in April and May to explain the new organizational structures and processes to the local managers and engage in dialogue with them. They started with two meetings in Heidenheim for Germany and the EMEA region, followed by São Paulo, Brazil, for South America, York, USA, for North America, and finally Kunshan, China, for Asia.

The meetings were used to reintroduce the concepts that the module leaders had devised over the previous months in collaboration with representatives of the Group Divisions. In doing so, they not only explained the future process flows and responsibilities, but also described the path each region will follow for each module to get from the current status quo to the new organizational structure. This also included a discussion of the basic conditions and actions required for successful realization. Questions were answered, such as “How must our current organization change to ensure successful implementation of the TOMs?” or “How can we reduce our requirements and needs – and, thus, our complexity?”

The regional management took the opportunity of the Deep-Dive-Meetings to scrutinize the individual TOMs and gain an understanding of their functionality for their region and their Operating Unit. This meant the responsible managers could get a specific idea of how cooperation and interfaces in the administrative areas will look in future and what impact these changes will have on their local organization.

Indeed, the focus of the meetings was clearly on the specific form of the future organizational structure in the regions.

The termination of the meetings marked the start of the implementation phase in the respective region: timetables and implementation measures were agreed and communicated to the employees in the relevant administrative areas in the following weeks.

The implementation of the TOMs is now taking place at two levels: at the regional level and at the level of the Group Divisions of Voith Hydro, Voith Paper, Voith Turbo, and Voith Others. Voith Others already covers central departments and in future will also include the Shared Services, which is to be organized in future as “Voith Global Business Services” (GBS), Centers of Competence (CoC), and the Business Partner structures. The implementation measures will be further consolidated and advanced through greater integration of the two levels – regions and Group Divisions – in the project.

It is now time for the operational phase of the implementation: processes have to be changed or completely renewed. The set-up of “Voith Global Business Services” is particularly crucial for the successful implementation of the new processes. The GBS are the most visible example of a modified process landscape: the type of change that these foster will be effected on a smaller scale in each module. These continual small and major changes will be the biggest challenge for the Voith organization over the coming months. The overarching goal of the restructuring: to make the Group as a whole faster, more efficient, and more competitive. //
Voith Global Business Services, Center of Competence, and Business Partner – description and examples from the modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Voith Global Business Services (GBS)</th>
<th>Center of Competence (CoC)</th>
<th>Business Partner (BP)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processes/activities</strong></td>
<td>Standardized activities that occur repeatedly in comparable form</td>
<td>Individual themes that require specific expertise; response to basic issues; definition of global standards for Voith</td>
<td>Aspects that lie outside the GBS activities; contact person for the functional area on specific and local themes</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>One GBS for each region, conducting transactions from HR, Accounting, and Purchasing for all Group Divisions</td>
<td>At Group level; teams assembled in one location</td>
<td>Decentralized: in a regional, divisional, or local structure, depending on the module</td>
</tr>
<tr>
<td><strong>Objective</strong></td>
<td>Standardize, streamline, and automate processes across all Group Divisions; increase process quality and reduce process costs</td>
<td>Bundle expertise from Group Divisions centrally and make available to all areas; often indirectly via the Business Partner structure</td>
<td>Customer-oriented support for specific issues</td>
</tr>
<tr>
<td><strong>HR</strong></td>
<td>Payroll accounting, master data maintenance, time management, organization of training courses</td>
<td>Employee development, Compensation &amp; Benefits (compensation, supplementary benefits, deployment, general issues), HR information, and service management</td>
<td>BP Division: for global divisional HR themes; BP Region: one personnel manager for each region, Group-wide; BP Local: local personnel support, partial Group-wide</td>
</tr>
<tr>
<td><strong>Purchasing</strong></td>
<td>Material group management and operational purchasing of Non-Production Material (not part of Voith end products, e.g. IT, logistics, machines, and facilities, services)</td>
<td>Material group management for production material on a Group, Group Division, and regional level; designing processes and strategies, and bundling support functions</td>
<td>Divisional Strategic Purchasing Manager (DSP) directs purchasing in the Group Divisions with support from the Head of Corporate Product Groups</td>
</tr>
<tr>
<td><strong>Accounting</strong></td>
<td>General ledger and balance sheet with asset accounting, accounts receivable, and payable accounting, incl. auditing and master data maintenance in the OU systems</td>
<td>Consolidated Group accounting (specification of Group accounting guidelines), consolidation (creation of the consolidated financial statement)</td>
<td>The departments of the OUs have named points of contact in GBS Accounting</td>
</tr>
<tr>
<td><strong>Controlling</strong></td>
<td></td>
<td>Group Controlling, Tax Department, Treasury, Reporting Factory</td>
<td>Decentralized controllers for OUs or product areas (e.g. product cost controlling, financial planning, specific analyses)</td>
</tr>
<tr>
<td><strong>IT</strong></td>
<td>Five regional IT Service Centers (Voith IT Solutions North America, South America, China, India, Europe)</td>
<td></td>
<td>Customer contact for needs and projects; the Business Partner suggests process and IT solutions</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>One regional Service Center for support functions (planned)</td>
<td>Global CoCs for Corporate and Global Market Communications; four regional CoCs for all communication tasks in the regions</td>
<td>Global Business Partner and regional contact persons for market communication in the markets of VP, VH, VT</td>
</tr>
<tr>
<td><strong>Corporate Functions</strong></td>
<td>Legal, Strategy, Internal Audit, Health, Safety &amp; Environment (global HSE standards, tools, certifications)</td>
<td></td>
<td>HSE regional: occupational safety, health and environmental protection; safeguard company officer functions; point of contact for authorities, insurance companies, etc.; hazardous substance management</td>
</tr>
<tr>
<td><strong>General Services</strong></td>
<td></td>
<td></td>
<td>Regional and local: managing demand and sources of supply (Smart Sourcing, Outsourcing, Reduce Comfort)</td>
</tr>
</tbody>
</table>
STEP BY STEP: IMPLEMENTATION OF THE VOITH GLOBAL BUSINESS SERVICES

March 2015 marked the start signal of the implementation for the Service Centers planned under Voith 150+ in the four regions of Asia, North America, South America, and EMEA (Europe, Middle East, Africa). As a part of the initiative Excellence@Voith, administrative tasks from HR, Accounting, and Purchasing are being bundled Group-wide at one location in each region, standardized, automated whenever possible, and organizationally brought together under “Voith Global Business Services” (GBS). In this interview, Christian Nykiel, Head of Global Business Services, talks about the planned implementation stages and challenges for its realization.

Mr. Nykiel, you have been appointed to realize the idea of the regional GBS. How is implementation being organized and what tasks are you undertaking to achieve it?

Christian Nykiel: We are taking employees in the four regions at the locations Heidenheim (for EMEA), Kunshan (Asia), São Paulo (South America), and York (North America), in part from existing structures, and bringing them together in the newly created Voith Global Business Services. These are organized in a matrix. There is a disciplinary manager at each of these locations for each region who will be responsible for labor law, business issues, and relationship management with regard to the regional customers.

In addition, there will also be a global functional manager, the Global Process Owner (GPO), for each of the three areas HR, Purchasing, and Accounting. As regards substance, the three GPOs must globally manage their area beyond the regional GBS; they are already working on its implementation at the moment. My role is to coordinate the developments in the different regions and areas and bring these into harmony in order to push implementation forward on an integrated basis.

So implementation has already begun. What are the envisaged steps for this?

Together with the GPOs, I am working on developing a Service Catalogue for...
The EMEA region – a listing of all activities and processes per department, which will be taken on by the GBS in future. The defined processes will then be transferred as identically as possible to the three other regional organizations, although there may be differences between the regions due to the differing legislation, for example. We are outlining all previous flows in so-called Activity Maps and identifying the interfaces to the future GBS. This ensures that all current processes will also be taken into account in future and that no query will be lost due to a missing point of contact. Close cooperation with the individual departments of the Operating Units is essential for this.

The Operating Units will have to buy services in future from the GBS. What form will this take?

So-called Service Level Agreements will be devised for each process from the Service Catalogues. These lay out contractual agreements between the GBS and the internal customer and contain all information on the service, i.e. who does what when at what quality and for what price. These parameters will be recorded in the form of measurable targets, enabling us to track performance and identify potentials for improvement where applicable. These Service Level Agreements are the basis of every order.

How far has implementation already progressed?

The Deep-Dive-Meetings in spring 2015 marked the start of the implementation process. We are now at different stages in the regions. In EMEA, for example, the development of the Service Catalogue for Accounting is already well advanced. We have also been looking for suitable office space for the GBS in the regions in parallel to this. Ideally, all departments should be housed in one building to reinforce the new identity and cohesion in particular. In South America the HR department has already moved into its final home. The location for all other functions has been identified and is currently being prepared. We have also found a solution for North America and are currently working on its implementation. In China, Global Business Services will soon begin its work – the addition, everyone will need to concentrate more on the service focus concept. The philosophy of the GBS will be to deliver reasonable quality at the lowest possible price.

What will be expected of the employees in the regions?

A further challenge lies in the initial phase if processes are not yet running smoothly. We are relying here on the cooperation and understanding of all participants. The Operating Units, too, will need to alter their processes and make organizational adjustments. This will only happen if there is trust in the functional capability of the GBS and adequate performance is delivered.

What milestones are planned for the future?

September 30, 2016, has been set as the target date for GBS. The Service Level Agreements must be in place by then, and the regional organizations must have taken up their work. After two to three years a customer satisfaction analysis and an external benchmark are planned. The aim is to identify improvement potentials in order to optimize our cost efficiency and our market orientation. Overall I can say: to make Voith into a leaner and more efficient company, we have set off on the right path with GBS. Important progress has already been made in its implementation thanks to excellent and constructive cooperation with the regions. Indeed, we can only realize the new structures successfully with the cooperation of all involved. //

“We are relying on the constructive cooperation with the Operating Units.”
Mr. Begemann, the term Industrie 4.0 is on everyone’s lips, but what is actually meant by it?
Industrie 4.0 refers to the fourth industrial revolution and represents the global transformation of production processes and of products and services into intelligent, partially autonomous units communicating with one another in real time. These are networked with one another in systems.

What will that look like and what makes it different from the third industrial revolution?
Today it is simpler and more cost-effective to use high-performance sensors and processors. This means complex, essentially intelligent decisions can be made quickly and directly where the event occurs. The tooling machine, for example, automatically requests equipment for the next task or orders a special lathe tool in the tool store. Or a rail transmission being used by a customer detects necessary maintenance work and automatically informs the service team about essential servicing work and the parts required. For our manufacturing, Industrie 4.0 means that we can manufacture small batch sizes and small series more efficiently and more quickly.

Additional potentials arise when several systems are combined with one another in a further step – so-called systems of systems. An example: today the blade of a wind turbine can be programmed so that the system produces either the maximum or the required output based on wind measurements. In future, wind turbines arranged in sequence will also communicate with one another and optimize their

The five steps to Industrie 4.0 using the example of a DIWA automatic transmission with SmartNet:
Networking with other systems (steps 4 and 5) creates new fields of application and value-added models.
blade settings, enabling a wind park’s maximum total output to be exceeded.

**Will Industrie 4.0 have a major impact on how we work?**
Naturally, we will continue to develop and build sophisticated machines and facilities in the future. These will be equipped with extensive sensors, making them intelligent, and will be linked to other systems, such as the DIWA SmartNet of Voith Turbo. Integrating the necessary technologies, however, requires diverse new skills. So we have to coordinate the development cycles of software and machines and accomplish the intensified work in networks with external partners. The good news is that we can significantly increase our added value even further by linking the new systems with our products. The opportunities to do so are excellent, as Voith has broad industry and technology expertise.

**How is Voith going about implementing Industrie 4.0?**
The Group strategy is currently being developed. The first step is about learning and defining the opportunities that Voith sees in Industrie 4.0 – not everything is relevant to us. Then in the second step, we will define the strategic guidelines of what Industrie 4.0 is for Voith and what it is not, where we will invest and where we will not. The third step concerns the development of new business models and the continuation and beginning of new projects.

It seems that other firms are further on and already have a developed strategy that they are pursuing. Where does Voith stand in comparison?
There definitely are some that are already intensively marketing the first 4.0 applications. We, too, have some very interesting initial 4.0 projects and even products in use as well. The extensive data volumes recorded on these products are being evaluated, servicing work is being performed where needed, and, together with valuable feedback, these products are being presented to our customers on platforms developed by Voith. We will continue to follow this path resolutely and swiftly over the next few years. //
Board, packaging paper, corrugated board? No problem! The Voith VariFlex can handle just about any paper grade.
A GENUINE ALL-ROUNDER

The Voith VariFlex offers top performance with a wide range of different paper types. How valuable the retrofitting of this technology can be has recently been demonstrated at two paper mills in France and Turkey.

From heavy board to light-weight newsprint and corrugated medium: The fully automated VariFlex winding system from Voith can handle just about every type of paper. The system is based on two-drum winder technology, and different covers for the winder drums are tailored to the respective paper grades. This helps to make the winder suitable for a wide range of applications.

The all-round benefits of the VariFlex were highlighted once again when two very different types of paper mills had the VariFlex winder system retrofitted as part of a recent upgrade.

Spotlight on Izmit, the city by the Sea of Marmara – here the Turkish paper producer Kartonsan produces multi-ply board in the basis weight range of 200 to 450 grams per square meter. In 2014 they installed a new Voith VariFlex with a working width of 3.7 meters in their BM 2 board machine. Because Voith also provided the drive units for the winder and the various different components work in harmony, there were only three weeks between commissioning and signing off by the customer.

A paper manufacturer in France also recently opted to install a VariFlex winder. The company produces corrugating medium in the basis weight range of 70 to 150 grams per square meter and has an annual production capacity of 330,000 metric tons per year. The Voith VariFlex has a working width of seven meters and was supplied and installed along with a parent roll magazine, a pulper, the roll transport system, and the drive units.

Before the upgrade, the paper mill had been operating two older winders, which was having a negative impact on the company’s competitiveness. The aim, therefore, was to install state-of-the-art technology in order to reduce operating costs and improve the mill’s productivity, both of which were achieved with the new winder. Thanks to the solution provided by Voith, it was also possible to bring occupational safety up to the latest standards. //
For twelve years in a row, the automotive giant Fiat has sold more vehicles in Brazil than any other company. Since 1976, a significant number of these vehicles have been produced at its Betim plant in the central Brazilian state of Minas Gerais. Some 30,000 people work in the 700,000-square-meter production facility, producing 800,000 cars per year across a range of 70 different models.

Voith Industrial Services began working with this renowned manufacturer earlier this year and is now responsible for the two paint shops at the Betim factory. Because of the enormous size of the plant, Voith now has a 400-strong team of management and specialist staff on site. Since May 380 of them are responsible for the technical cleaning of the existing paint shop, with a contract that runs for four years, while the remaining 20 employees have been carrying out cleaning work on a new paint shop – due to be finished in the next ten months – since the beginning of March.

In late 2014, Voith Industrial Services was specifically invited by Fiat to participate in the two tenders for cleaning the existing paint shop and the new paint shop that is currently being built. The vehicle manufacturer was looking for a top-quality service provider that specializes in these kinds of services. By awarding the contracts to Voith Industrial Services, Fiat has chosen to work with one of the global leaders in paint shop cleaning services. In Brazil alone, 2,400 Voith employees are currently providing major manufacturers such as Volvo, BMW, Honda, Hyundai, Ford, and Mercedes-Benz with a wide range of services, including production maintenance, technical cleaning, facility services, internal logistics, automation, energy management, and tool making. Indeed, there are few jobs that Voith’s experts can’t handle!

The team is also hoping to win two additional contracts, as Voith has also tendered for the maintenance contract for the paint robots at the Betim plant and for the waste management contract at the new Fiat plant in Goiana, which opened in 2014. //
FAMILY RELATIONSHIPS

Eric Junior is Site Manager at the Brazilian Água Vermelha hydropower plant – and the work of this Voith Hydro engineer demonstrates the importance of personal commitment and technical expertise for successful projects.

It is 6 a.m. in the morning and, as usual at this time, Eric Junior is sitting at home having breakfast with his wife Andreia and their son Gabriel. It’s a nice routine for the Brazilian and his family. More precisely, it’s a nice routine for his number one family, because once breakfast is over, Junior goes off to spend time with his second family. He may not be related to them, but he still feels they are very much his responsibility: his Voith Hydro team.

Eric Junior is the Site Manager at the Água Vermelha hydropower plant near the Brazilian city of Fernandópolis. The long-serving Voith employee heads up a team of on-site engineers that work on hydropower projects. There are currently more than 170 employees and suppliers working here in the areas of planning, quality, occupational safety, site management, and technical services. They are responsible for the modernization of generators and turbines, as well as the various mechanical and electrical ancillary facilities. The Água Vermelha plant is on the Rio Grande, which forms the border between the two federal states of São Paulo and Minas Gerais. The power station has been in operation since 1978, and its six generators have a total capacity of 1,396 megawatts.

Eric’s number one family is happy about his current job: “Life here is great, the people are very helpful and polite,” says Andreia Junior, who, along with son Gabriel and dog Max, accompanies her husband on every job he does for Voith.

But it hasn’t always been easy. The family has repeatedly had to adjust to different people and climates in Brazil, a vast, multicultural country of 200 million inhabitants covering 8.5 million square kilometers. As a Voith Site Manager, the engineer has to be both a role model and a person his employees trust. “The people in the on-site team should never be afraid to give me their feedback. There is always somebody who wants to discuss something with me or who has a question – and I’m always willing to listen.”

However, his colleagues in Fernandópolis were not always willing to speak to him so freely. “When I first started, there were some who obviously thought: ‘How can such a young person, with so few gray hairs, be taking up a coordination role?’” he laughs. Now, he has a few more gray hairs, but he also enjoys the trust of his team. “Trust lies at the heart of relationships with colleagues – and customers. When we are working on site we are very focused on our project goals and on guaranteeing the reliability that Voith stands for. We identify exactly what our customers need and how we can improve our performance, whether it’s speedier construction processes or solutions to render operation and maintenance easier.”

In the evenings, Eric says goodbye to his second family on site and returns home. The personal interaction that he has with his team is very important to him: “We need to operate as a team if we are to meet the customer’s expectations while ensuring that the project is as profitable as possible for Voith.” No sooner has the site manager said this than a colleague stops by to talk to him. Eric Junior’s advice is being sought once again. //
Staff members of the newly established Division Voith Africa Power, Oil & Gas (1) are very familiar with the specific requirements of the African markets. The proof of which are contracts such as the supply of components for coal-fired power plants in South Africa and oil production facilities in the Atlantic off the coast of Angola (2). Control center of the Division: the headquarters of Voith Africa Power, Oil & Gas in Johannesburg (3).
FROM THE MEDITERRANEAN TO THE CAPE

Close to our customers: Voith Turbo’s recently established Voith Africa Power, Oil & Gas Division services customers in the growing African market.

Regionalization is a key element of Voith’s company strategy. As a result, Voith is in a position to offer its customers services that are perfectly tailored to their needs and to particular market conditions, along with short lead times.

Africa is currently one of the world’s most promising markets – also for Voith. Thanks to the huge mineral reserves that lie beneath its soil and in its oceans, over recent years the continent has begun to blossom into a prosperous and important region. Voith Turbo has responded to this by setting up the Voith Africa Power, Oil & Gas (POG) Division. This Division focuses primarily on customers in the gas and energy sectors around the globe. It offers them a full range of aftermarket services, including maintenance, repairs, and upgrades, and provides support for new projects.

In this way, Voith is building on its excellent reputation, as it is already well-established in Africa. Derain Pillay, Vice President of Voith Africa POG, explains the company’s strategy: “The foundation lies in Voith’s proven technology and expertise. Based on that, our experts provide customers with local support when selecting and commissioning components for their specific applications. We also provide maintenance contracts in order to increase the availability of the equipment, while reducing downtime and unnecessary costs.”

The fact that the local Voith colleagues understand the regional conditions is a critical factor. Operating conditions are challenging for man and machine alike because of Africa’s unique climate and terrain. But Voith Africa POG is ready for both. It supplies critical spares and skilled service engineers to tackle breakdowns or upgrades upon request.

The concept is gaining in popularity. Since Voith Africa POG was set up with its headquarters at the Voith Turbo office in Witfield near Johannesburg, the Division has enjoyed significant growth, according to Derain Pillay. Its success is based on the substantial investment that has been made in staff and staff training. Pillay adds: “Voith prides itself on the reliability, advanced engineering, and longevity of its products – and it has also convinced others about its quality. As a result, we are currently in the process of signing reputable agents and distributors to ensure we cover the entire region.”

Pillay highlights the fact that the Africa POG Division also has unlimited access to Voith’s pool of global resources and expertise. “If a complex challenge arises that the local team can’t handle, we call in an international expert to resolve it.”

According to Pillay, the key markets for Voith’s growth in Africa are Angola, Algeria, Kenya, and Nigeria. The company is currently supplying a large amount of equipment to power stations, oil facilities, and special vessels in Kenya and Angola. All newer-generation power stations in South Africa rely on Voith’s high-speed rotating components to operate. More recently, the Africa POG Division was commissioned to custom design a total of 36 Vorecon variable speed planetary gears for use in two coal-fired power plants run by a South African energy company. When selecting the technology for these two new power plants, the customer was looking for reliability, efficiency, and longevity. The customer is delighted with the first three Vorecons, which have been running in one of the two coal-fired power plants since March. //
As part of our series on the basic technologies behind Voith’s products we would like to take a look at the press sleeve: The QualiFlex press sleeve plays a major role in dewatering during the paper manufacturing process.

One good idea generally leads to another! In 1984 Voith launched the world’s first closed shoe press for paper machines, taking dewatering during the paper manufacturing process to a whole new level. This particular invention was accompanied by the development of a technology that was vital for the success of the shoe press: the press sleeve. Over the last thirty years, Voith has continued to work on optimizing the design of the press sleeve, which is marketed under the name “QualiFlex.”

Christoph Kögel, QualiFlex Product Manager at Voith Paper, explains how it works: “It is the press sleeve that makes the shoe press into a closed system. It is drawn over the shoe press roll, which effectively seals it so that, for example, no hydraulic oil can leak out, and yet it’s flexible enough to follow the concave-convex deflection through the nip. However, what is more important is the contribution that the press sleeve makes to the machine’s dewatering capacity. This is down to the various grooves, discontinuous grooves, and void volume patterns that are incorporated into the sleeve’s surface, depending on the type of paper and machine.”

The choice of surface structure is important to the success of the process, along with the stability of these structures under high loads, the use of wear-resistant materials, and a high reliability. Only when all these criteria have been met a sleeve reliably can help a production facility achieve optimum performance throughout its entire service life.

Voith’s first press sleeves were based on a fabric structure that was treated on both sides with polyurethane, or PU for short. But this process has certain disadvantages because heavy use in a paper machine may cause the different layers to pull apart, which, in a worst case scenario, could damage the whole of the press section.

For this reason, Voith made significant changes to its manufacturing process in 1989. Liquid PU is poured onto a metal cylinder, ensuring that when it hardened the surface would maintain its structure, whatever its area of application. This new process ensured precisely reproducible quality and operational safety. In 2001 a new generation of PU with significantly improved characteristics was introduced, which not only improved the reliability of the press sleeve, but also helped to reduce operating costs. Today, the QualiFlex portfolio includes press sleeves for pulp, tissue, board, packaging paper, and graphic paper. Since the beginning of the year, paper manufacturers can also choose between the Crest and Crown product lines – basically a choice between the extremely reliable all-rounder and the high-performance premium version. Christoph Kögel explains the rationale behind this approach: “Optimum performance is achieved with a product that is tailored to the specific needs of a particular application. It’s like with car tires – you can’t use standard tires on a racetrack, you need slicks, and if it rains you need wet-weather tires.”
Voith Turbo presented a range of successful technologies for a range of applications and industries at the 2015 Hannover Messe trade fair. Their mutual heart? The servo pump.

Hannover Messe is the world’s largest industrial technology trade fair: In spring each year companies come together from all over the world to present the highlights of their product portfolios.

When it comes to power transmission and fluid power, one of the top products on display was definitely the variable speed servo pump from the specialists at Voith Turbo H+L Hydraulic in Rutesheim, Germany. Servo pumps are used to control pressure or volume flow in hydraulic applications. They precisely convert electrical energy into the hydraulic energy that is required in a particular system at any given time. The classic use of valves for control purposes is either no longer or only partly required. Voith makes variable speed pumps extremely easy to use. The customer simply supplies the cycle data for the machine or system and then receives a customized pump system that is ready for use, with all the necessary pressures and volume flows already pre-defined.

The technology has been designed for use in plastics processing, pressure die casting, and tooling machines, as well as presses that are subject to widely fluctuating load cycles. This is when the servo pumps really come into their own: “The Voith servo pump adjusts volume flows and motor speeds to the current power input. This can create savings of up to 70 percent compared to conventional systems, which tend to work continuously at a high level, even when only a fraction of that performance is necessary,” says Harald Branz, Head of Sales at Voith Turbo H + L Hydraulic. The pumps have been a huge success. “The servo pump is used all over the world, for example in injection molding machines. This is an area where we have the leading technology and a significant share of the market,” continues Branz.

Overall operating costs for a hydraulic system can be reduced by up to 35 percent using the servo pump. And because it operates in such a flexible way, it can improve productivity by up to 50 percent.

These benefits are offered by the CLDP (Closed Loop Differential Pump) servo drive for mechanical engineering applications and the SelCon linear actuator for the precise control of turbines, as both of these Voith products use the servo pump as a drive system. In addition to saving energy, the pumps also allow a number of operational parameters such as pressure, acceleration, and temperature to be measured, controlled, and transmitted. Furthermore, the hydraulic system is also able to analyze efficiency as a part of condition monitoring. In this way, the servo pump provides the perfect conditions for integrating plant and machinery as part of Industrie 4.0 //
Mert Özenç of Voith Turbo Ankara feels comfortable in his home town.

In his free time, Mert Özenç, Head of the Division Rail at Voith Turbo Turkey, runs half-marathons in best times for charity. But he gives us a more leisurely tour of his home town of Ankara.

Merhaba!” we say in Turkish – and I’d like to welcome you to Ankara, our capital city and my home. It’s a city that is worth getting to know. Although Ankara tends to be overshadowed by Istanbul, it is in fact a wonderful place for visitors. This has always been the case. It was first settled back in the Bronze Ages, and later the Romans prized ancient Anncyra as a major center of trade, culture, and art. Under the Ottoman Empire the city was on the route of the trading caravans as they headed east.

In the 19th century, Ankara became less important, but it was revived after Mustafa Kemal Atatürk, the founder of the Turkish Republic, made it the country’s capital. Over the past decades, Ankara has blossomed into a modern city of some 5 million people with a vibrant nightlife and some incredible sights, both historical and new.

One of these is Anıtkabir, Atatürk’s mausoleum, where visitors can view the statesman’s personal possessions. It also contains the War of Independence Museum. Another fascinating place to visit is Ankara’s Citadel, a fortification built by the Hittites on a 978-meter-high hill above the city. It was still in use until the Ottoman Empire. The Kocatepe Mosque is a more recent construction. Built in 1987, it is a landmark that can be seen from almost all over the city. If you feel like mixing with the locals, then head for Tunali Hilmi Cadde, the main shopping street in the heart of Kavaklidere. You’ll see street vendors selling sesame bagels and caycıs carrying Turkish tea across the street and into the shops.

You could also spend many hours browsing through the huge shopping malls.

In my free time, I personally prefer to meet my friends in a bar, read, spend time with my family, or do some sport. I love running half-marathons. I try to take part in races all over the world in order to raise money for charity. And of course I like to try and improve my personal best, so I train a lot. My training run takes me round Lake Eymir, but it’s also a nice path for taking a stroll.

If you find you’ve worked up an appetite, Ankara is full of great restaurants. You should try some real Turkish food. It brings together influences from the Ottoman Empire, the Balkans, the Middle East, and the Mediterranean...
and in this way is typical of Turkey’s cultural diversity. Healthy dishes using olive oil from the west and south, delicious kebabs and baklava from the east, fresh fish from the sea, mouth-watering pide from the north – it’s impossible to describe all these amazing dishes, you just have to try them!

Afterwards, why not sit on the terrace sipping a Turkish coffee and reliving all the events of your day? Then you’re really part of Ankara. But be careful: once you start to feel at home here, it’s hard to leave! //

Our facility

Voith Turbo’s Turkish branch in Ankara has 17 employees and handles all Divisions. We are part of the Eastern Europe region, and our market share is growing rapidly every year. I worked as an aerospace engineer before joining Voith in 2009. The move was a big challenge for me, but it was also one of the best decisions I have ever made. I began with Voith as a Service Manager, and later took on responsibility for Sales. Today I am Head of the Division Rail at Voith Turbo in Turkey.