Matchmaking specialist suppliers with manufacturers for sustainable process improvement

Nicole Buschmeier, KPNB Komponenten+Partner

INTRODUCTION:

For eleven years now, KPNB has been bringing together paper and board producers with suppliers of leading technology and precise mechanical engineering and manufacturing. We see ourselves nowadays as a networker to support manufacturers with advice and assistance in order to ensure future development with fewer and fewer staff. We are not traditional salespeople but are always on the lookout for the best solution for our customers.

Our aim is always to find innovative and working solutions for paper and board manufacturers in order to optimise their production processes and making it more sustainable by saving resources like energy, raw materials, additives, time and money.

The company was founded in December 2012 and originally worked in various industrial sectors the main market being Germany, Austria, Switzerland and the Netherlands. Among the first companies represented from 2013 were GW Fasertechnik and its sister companies Hellenbrand Maschinenbau from the Palatinate, as well as Unterweser Papiertechnik from Bremen.

In 2014, the focus shifted to the paper and board industry and the promotion of small and medium-sized companies primarily from Germany and Finland with over 20 years of experience and know-how in the industry. Since 2019, the KPNB-net-work has repeatedly included innovative companies that are at home in other industries, whose inventions and developments find useful applications in the paper and board industry.

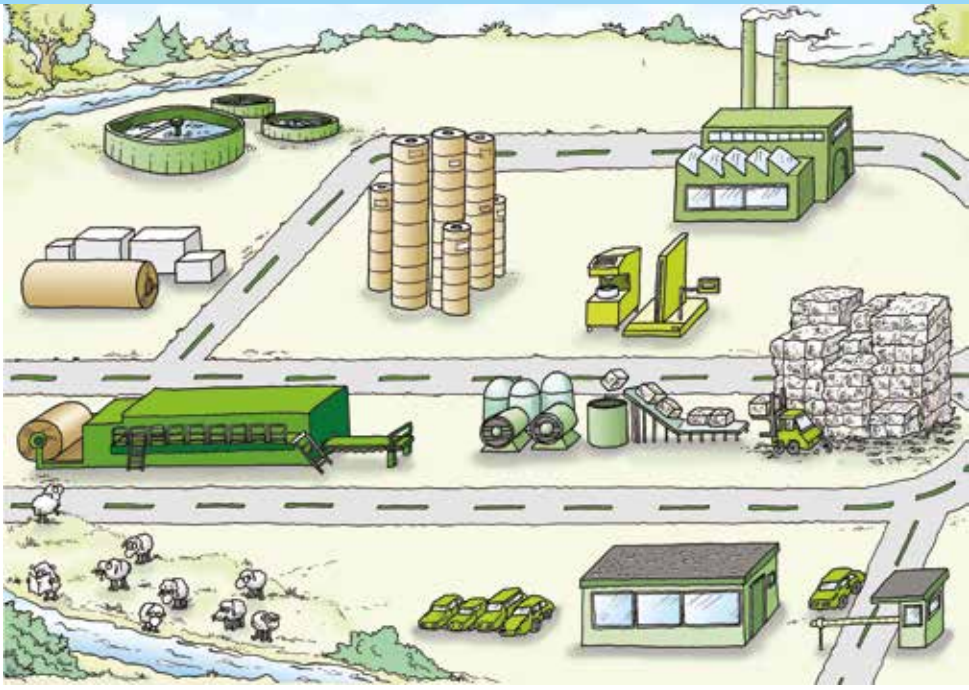

Figure 1: KPNB comic paper mill.

All process areas of the production process are served because customer needs and process optimisation in terms of efficiency and sustainability are the priority.

Help instead of selling.

An open ear for customers, patience and constant networking are part of KPNB's recipe for success:

From 2015 onwards, the collaboration with **Tasowheel** from Finland - the market leader in the area of cross profile control systems and, since 2022 also with quality control systems in the portfolio - opened new and different doors.

Since 2018, KPNB has also been working with **Lanex** from the Czech Republic, one of the three world market leaders in technical yarns and crucial here: paper carrier ropes, accessories and pulper ropes.

In 2020, another Finnish company, **Pixact**, joined the KPNB-net-work. A company providing exceptional high-speed camera monitoring systems for the real-time suspension analysis in production processes. Individualised analyses and operator displays are the rule for Pixact projects.

Optimism is a key factor in the KPNB business

Keep going, be patient and don't run away, if something gets difficult or even goes wrong. – Although after 11 years the latter can be counted on one hand. And since the German paper industry is small, word gets around about good and bad behaviour and delivery.

Advertising is another key factor and after 11 years it is a confirmation for the owner Nicole Buschmeier that she has done a lot of things right when people say at trade fairs and symposia – "who doesn't know Nicole?" - or the company's colors and advertising. KPNB can be found at all important events in the **DACH region.**

The nice thing is that the majority of the KPNB-net-work consists of specialised companies that are small or medium-sized and therefore respond flexibly to customer concerns. Difficult challenges and special solutions and the associated innovations are more standard than exception. KPNB doesn't offer the impossible, but is always looking, if there aren't new, different approaches to provide solutions. And it often helps to look at the processes as a career changer, coming from international politics and language studies to the industry. - And, above all, it is an asset not to be dependent on one or a few companies.

Figure 2: Johannes Holubec.

With Johannes Holubec as a freelancer, nothing and yet a lot changes, because as a former employee of a paper factory with concrete practical experience in waste paper stock processing, R&D projects and product market launches, he adds a further perspective into the way KPNB works.

Focus on customer benefits

KPNB takes customer needs and benefits into account. KPNB operates largely independently and does not have to sell X instead of Y to earn 2 euros more. The goal is to help the customer build and maintain a long-term, positive business relationship. The customer must have benefits and advantages from the offer so that the next time they have a request, their first thought is: "I'll call KPNB now! They are so well connected! They probably know someone who can help me!"

KPNB is often approached by companies at trade fairs who are looking for official representatives or want loose support on the **DACH market**. "We take a close look at whether the company, the products and the way of working fit in with the KPNB philosophy," says Nicole Buschmeier, owner of KPNB.

It is interesting that KPNB is one of the youngest companies in the paper industry and is being approached even though there are more experienced sales representatives in Germany. Maybe KPNB is doing something different and right?!

While the main business takes place in Germany and neighboring countries, KPNB maintains contact with other regions worldwide where the markets are important for its partners. Language skills are a big advantage and also the fact that Nicole Buschmeier has taught languages. Being able to chat and work in Spanish with clients in Spain, Argentina or Mexico is a plus. English is almost always possible and, in addition, it helps to know how difficult it is for some people to learn a foreign language. This is how you understand each other even if the technical terminology is sometimes missing.

What is the best confirmation for Nicole Buschmeier is that customers contact her because they trust her to have a solution to their problems or the right partners for their projects.

The following are just a few examples of successfully connecting the right suppliers to paper and board producers.

Lanex: Unplanned shutdowns due to necessary changes of paper carrier ropes?

When using paper carrier ropes the paper and board producers are looking for longest possible lifetimes to reduce effort and time needed for changing and splicing ropes. The worst case is when the ropes wear and rip during production. To reach the longest lifetimes for all different sections in paper or board machines Lanex develops new ropes and has tried and tested ropes on stock. There are large differences for ropes in „easy" operating conditions and ropes used for example in coating or drying sections with coating colour and high temperatures.

If you have not invested time to test some new or simply other ropes, maybe you are missing out on a simple tool for improvement in your production process. We had two cases, where a simple test made a huge difference and the paper and board production team happier! And happy customers are the best!

Paper production and paper carrier ropes in the coating section:

Life time of ropes was more than doubled from 8-14 days to 28 days.

Operating conditions

Basis weight: up to approximately 200 gsm

Machine speed: up to approximately 1.000 m/min

Application section: Coating and Drying Sections

Surrounding Temperatures: maximum 100 °C

Customer tested Lanex Technoline DUO ropes and after the first trial qualified them as standard rope for this specific paper machine and section.

In general, Lanex ropes are extremely flexible and wear resistant due to special impregnation(s) and thermo fixation(s). These serve to minimise rope stretching and make the ropes more resistant to chemicals and unfavourable surroundings.

Board production and paper carrier ropes in the coating section. Smurfit Kappa Herzberg Solid Board changed all paper carrier ropes after a few weeks of testing to Lanex ropes. In all sections of the board machine the life times of the ropes was longer than the previously used types. The chosen rope Lanex Doubleline DUO (Duo = with core) is extremely is extremely friction resistant and reduced the number of required rope changes significantly.

Lanex manufactures high-quality paper carrier ropes from their own R&D department. In other industries, even lives depend on Lanex ropes:

Lanex supplies, for example, mountain rescue services, the military, the German SEK and similar professional groups. For this reason, quality checks and safety tests are a standard and always carried out.

Pixact: Real-Time Stock Monitoring and Analysis to Optimise the Bleaching Process

In the summer of 2020, a specialty paper producer of security papers was looking for a system for detecting dirt particles in their stock preparation before and after bleaching. The aim was to, among other things, reduce broke production and optimise the use of bleach.

A member of the technical purchasing staff called Nicole Buschmeier: "Our production wants a system that monitors dirt particles already in the stock preparation – in the suspension – online. I thought, you might know a company that can supply that."

With some research and checking the right places KPNB was able to deliver the perfect provider of a stock monitoring system, namely Pixact from Tampere. By chance a neighbour to the already KPNB-net-work-partner Tasowheel.

Pixact products combine online process microscopy with advanced real-time image analysis techniques to provide highly detailed information on various suspension properties.

The technology is able to analyse the properties of both the dispersed phase (such as particle size, shape and colour) and the suspension (speed, turbidity, homogeneity and colour).

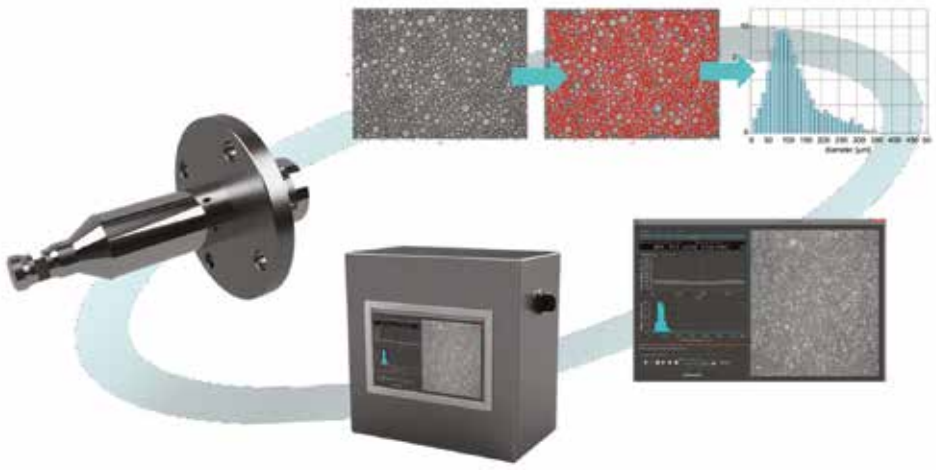

Figure 3: Display of Pixact software – Installed System.

The measurement software

- Displays a live, microscope-quality view of the process suspension
- Displays real-time measurement data and time trends of the selected parameters
- Communicates with the factory DCS to transfer measurement data and other information.
- Has camera monitoring (temperature)

After a short time and a test installation during the ongoing process, the customer was convinced and purchased two stock monitoring systems.

The questions asked before trying the test installations were all answered positively:

- Can the measurement reproduce the laboratory values from stock preparation?
- Does the measurement detect problems at the PM at an early stage?
- Can early detection with automated optimisation be based on this?

A few months after the purchase and installation of the two systems the customer told us that with the help of the real-time monitoring in the stock preparation the mill achieved:

- Waste/Broke reduction
- Optimisation of bleaching chemicals
- Optimisation of energy use
- Raw material evaluation/supplier check
- Claim reduction

Next possible steps are an optimisation of the stock preparation and the paper machine.

Tasowheel: Increase production reliability and minimise losses:

Modernisation of the slice lip CD control at Swiss Quality Paper AG

Paper production began at the Balsthal production site in Switzerland as early as 1883. The factory has belonged to the Indian Soin family since 2009 and is part of the internationally active Saber Group. Swiss Quality Paper AG focuses on the production of special papers for raw paper for adhesive tapes, cigarette filter papers and hygiene products.

The PM3, built in 1987 with a headbox rebuilt in 1996, has a width of 308 cm. It runs at a machine speed of 300 to 900 m/min. Production is 23,000 tons per year.

Grammages are between 20 and 100 g/m2 for the production of raw/backing papers for adhesive tapes in various colors and shades, fine paper for cigarette filters and hygiene papers. The adjustment gears for the aperture, which were now 20 years old in 2017, were increasingly failing, resulting in undesirable production losses in the 5-digit range. When looking for a solution, Swiss Quality Paper turned to Nicole Buschmeier / KPNB as the responsible representative of Tasowheel in the area. The first conversation between the C&I specialists from Swiss Quality Paper and Tasowheel took place in July 2017 at the Zellcheming Expo in Frankfurt.

After exchanging details and an overview of the possible and most sensible scope of delivery, increasingly frequent production downtimes made it clear that there was a rising need for action. During an on-site discussion at the paper factory on October 3rd, 2017, the fastest possible installation date was determined: Christmas 2017.

During the 2017/2018 Christmas shutdown, the entire slice lip actuators at the PM were replaced and a new actuator control server was installed. This new equipment was integrated into the existing quality control system.

The commissioning, scheduled for January 9, 2018, was successful and the goals – above all production safety – were achieved. The collaboration with Tasowheel as the original manufacturer of the actuators also offers Swiss Quality Paper security in the procurement of spare parts and overhaul of the drives. The production management expected that the investment would pay for itself within 12 months.

Figure 4: Swiss Quality Paper Headbox PM3.

How does this work? Helping the customer?

You keep in touch – with or without orders. You have to be in touch with your customer at the right time and know who can help – or find some one who can help. And you never know the right time until it is knocking at your door:

Ecofario: High-G-Technology for Fibre Loss Reduction

At the end of 2021 a customer called KPNB to find a solution to a very different process challenge: The specialty paper mill had introduced new raw material to produce a special paper including a high content of "grass" fibres. The stock preparation was essentially not changed, as the previous grades of paper still had to be produced. The issue was that the new fibres are, of course, different and fibre loss was high with almost 90% fibre content in the reject stock that was analysed in the laboratory.

How to reduce fibre loss from a new raw material? Sometimes new raw material can be processed with existing equipment and other times it calls for new equipment. In this case the solution was a cleaner with High-G technology from the only three year old Bavarian company Ecofario, just founded in 2018. Nicole Buschmeier from KPNB established the direct contact between the R&D manager of the paper mill and the co-founder of Ecofario Dr. Sebastian Porkert.

What happened then? The problem was clear, but how to convince a customer without references, when your company is brand new? You built a pilot plant. Ecofario worked absolutely professionally and delivered a plug and play system to the paper mill. It was installed on a rack and bolted to the wall in order to be "out of the way" of the operating staff.

Figure 5: Ecofario-Pilot-Installation-2022.

Anaergia Technologies: Fine Reject Separation – the Maintenance-Friendly Separator FSP-A

In 2017, delivering Christmas presents to a paper mill producing 100% from recycled paper was a lucky incident: After the installation of a new cleaner plant in the stock preparation for fine screening, the existing separation equipment for the reject sludge was no longer delivering a satisfying dry content. The sludge could not be dewatered well enough for the transport by the disposing company.

KPNB acts as representative of Anaergia Technologies in the paper industry in the DACH region. Within six weeks the company supplied a stainless steel separator FSP-A. The machine was easily started up and immediately provided a solid dry content above 50 %. The customer's production team was extremely happy to get rid of the sludge and to not worry about the disposal any longer.

Figure 6: Anaergia fine reject before and after.

In addition, what mattered to the maintenance staff was the user-friendly design of the separator. Inspection of screw and screens is very simple and quickly done due to the separated press and separating section on a double hinge. The life-time of the screens was in this case also exceptionally long with more than 14 months. Of course, that varies from application to application.

Figure 7: Anaergia Separator FSPA-opened head section.

"Who doesn't know Nicole?" - or the company's colors and advertising. KPNB can be found at all important events in the DACH region.

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