



Press Release

Interview with Dr. Lindl

"Being fit for the future means running a sustainable business"

1. In which areas do you anticipate significant developments for the future with regard to fan technology? What form will these take?

Our aim is to continue increasing the power density of our motors whilst maintaining the high efficiency levels of up to 90%. That will certainly be in keeping with our GreenTech development philosophy. The phrase so aptly coined by Gerhard Sturm on founding the company in 1963 is still our guiding principle today: "Every new product we develop must be economically and ecologically superior to its predecessor." Even though our motors already attain extremely high efficiency levels, new geometries and materials will create scope for yet more improvement in the coming years, particularly in terms of aerodynamics.

2. What potential exists specifically in relation to aeroacoustics and aerodynamics?

The main thing to bear in mind here is the installation situation in different customer devices. It is only possible to obtain optimum results with a profound understanding of how a fan will operate when fitted. From the point of view of noise and efficiency, the impeller offers the greatest potential for development.

3. Moving on to the topic of Industry 4.0: ebm-papst makes products which are compatible with Industry 4.0. What advantage is this to customers?

Fans are the essential driving force behind all building services. The building control system coordinates operation of the heating, air conditioning and ventilation units. For this purpose, all the components have to communicate with one another and form a network for the exchange of information. In concrete terms this means that the interface does not just receive information, but also actively transmits data such as the operating status, running time, fault and emergency operation messages to other components in the system to trigger a reaction. This leads to considerably lower operating and maintenance costs, to the financial advantage of our customers. We employ Industry 4.0 processes at our own manufacturing facilities as well to optimise the production flow and logistics. Since 2009 we have, for example, been regarded as a showcase for SAP ME, a software module which controls the productivity of machinery and systems and helps to shorten processing times.

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4. At around 6% of the Group turnover, the level of investment in research and development continues to remain well above the average for the branch. What are the main priorities?

Our strategic aim is technology leadership. In addition to highly qualified scientists and engineers, we invest heavily in simulation tools and measurement and test laboratories. We have also put a lot of effort into developing our R&D facilities in China and the USA - with the corresponding financial outlay. At present we are planning to set up a research institute for electric drives at the Künzelsau campus of Heilbronn University.

5. Simulation tools have become an integral feature of modern development work. Which simulation tools are used at ebm-papst?

We employ a variety of simulation tools in the fields of aerodynamics, motor technology and electronics. This enables us to not only shorten development times but also to discover technological potential which would otherwise not come to light. Examples include: Finite element simulation for calculating the static and dynamic mechanical properties of the housing and motor. CFD simulation (computational fluid dynamics) for determining the aerodynamic properties of impellers. The RadiCal, a centrifugal fan for a wide range of ventilation and air conditioning applications such as switching cabinet coolers, duct fans, domestic ventilation units and heat pumps, was our first "synthetically" developed product, in other words it was created without conventional prototype optimisation. Concepts for control electronics are developed with the help of functional and thermal simulation. Motors are designed using tools to simulate static and dynamic electromagnetism.

6. Around 40 % of ebm-papst's turnover comes from products developed in the last four years. How does ebm-papst handle the constantly mounting pressure to innovate?

By increasing our rate of innovation, firstly with the aid of the simulation tools described above and secondly by working closely together with universities and colleges. With these two approaches we are able to try out various ideas for new products and innovations in shorter periods of time. And research results can be converted into real products more quickly. At the same time it is a way of acquiring new personnel for our research and development activities. By erecting proprietary rights barriers for existing products we also manage to effectively put a brake on the fast follower strategies of our competitors, even if we cannot put a complete stop to them. To sum up: The ideal recipe is to always stay on the offensive and keep the proverbial one step ahead.

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7. Customer involvement in development work. How do customers benefit from this?

Medium term planning requires familiarity with the market to be able to anticipate future customer requirements with a view to working together on the development of innovative solutions for the industry to remain both competitive and fit for the future. This is why we cooperate closely with our customers when developing new products to achieve the best possible results.

8. Competitive and fit for the future: What exactly does that mean?

Being competitive means attaining a high level of profitable market acceptance in the coming years through the development of products with technical and economic features representing unique selling propositions. This involves organising development and production processes along stringent lines. Being fit for the future on the other hand is more of a long-term strategy requiring creativity and access to the latest research findings. It is however essential to be competitive now in order to be fit for the future and have the resources to engage in research. To put it in a nutshell: Being fit for the future means running a sustainable business.

Interview with Dr. Bruno Lindl, Managing Director Research and Development ebm-papst Group

About ebm-papst

The ebm-papst Group is the world's leading manufacturer of fans and motors. Since it was founded, the technology company has continuously set global market standards. Developments have ranged from electronically controlled EC fans, through aerodynamic improvements of fan blades, and on to the resource-conserving selection of materials, with bio-materials being just one option.

In fiscal year 2014/2015, the company achieved a turnover of nearly €1.6 billion. Throughout the world, ebm-papst employs around 12,000 people at 18 production sites (including in Germany, China and the USA) and in 57 sales offices. Fans and motors from the global market leader can be found in many industries, including ventilation, air conditioning and refrigeration, household appliances, heating, IT and telecommunications, as well as automotive and commercial vehicles.

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