“Think in business models, work in partnerships”

Interaktiv: Professor Bauernhansl, the “Germany’s top 50” (Deutschland Top50) survey recently conducted by consultancy firm Accenture revealed that a quarter of companies intend to enter into partnerships with research institutes as a response to digitization. That is good news for you, I presume?

Bauernhansl: It’s both good and bad news. The good news is that more partnerships will be agreed overall; however, the bad news is that this will involve just a quarter of companies. This is because partnerships will be of paramount importance within the framework of digitization. This applies not only to research institutes like ourselves, but more generally to other service providers also. “Coopetition” is the key word here – a portmanteau of cooperation and competition. Given that the focus is increasingly placed on benefits for customers, the time is right to cooperate with our competitors. Not all companies will be well-placed to tackle the challenges presented by digitization on their own. This is something which companies should bear in mind moving forward.

Interaktiv: In your opinion, just how difficult will it be to convince the somewhat conservative medium-sized companies in Baden-Württemberg to cooperate with each other?

Bauernhansl: I believe that there is already a strong culture of cooperation in Baden-Württemberg. This is not just limited to medium-sized enterprises, but applies to their partnerships with large corporate groups and research institutes as well. Our objective should be to further expand and maintain this over the coming months and years. I also believe that the Alliance Industrie 4.0 Baden-Württemberg can and will make a contribution to this effort. Meanwhile, the network can offer others the chance to initiate the right partnerships.

Interaktiv: What research and industrial projects are currently on the table for Fraunhofer IPA in relation to Industrie 4.0?

Bauernhansl: We had already started to confront the concept of Industrie 4.0 before the term even came into existence. There are some current research projects to which I would like to draw your attention. For example, with ARENA2036 we have successfully managed to bring a research campus to Stuttgart for the next 15 years. Its goal will be to redefine automotive production. Involved in this are partners from industry such as Daimler, Bosch, BIAS, Kuka and Bär. They are joined by research partners including the University of Stuttgart, Fraunhofer, DLR and the Institute of Textile Technology and Process Engineering Denkendorf. The future of automotive manufacturing is brought into the era of Industrie 4.0 at a research factory covering some 8,000 m². This is an exceptional USP for our facility. As is our development in the field of cloud-based IT for manufacturing companies; Virtual Fort Knox. We established this platform in 2015 and it is now available to medium-sized enterprises. Our activities in the field of robotics are also worthy of mention. We managed to outsource a robot’s capacities via cloud technology and in doing so we successfully constructed innovative robotic architectures. In this way, it could be said that we are pioneers in a field in which Google is currently conducting intense research.

Interaktiv: The services offered as part of Industrie 4.0 should be adapted to the maturity level of a respective company. How do you identify which companies are still operating at the level of Industrie 3.0?

Bauernhansl: In my view, many companies have already begun to focus on Industrie 4.0 quite intensively. Those which are still working with 3.0 will subsequently catch up as “fast followers”. In general, it is important to bear in mind the various framework conditions, skills and markets of the respective company. There is no crib sheet for this. You simply have to look closely at the applications and scenarios that make most sense for a company. And once you have identified the most apt, attention turns to implementation. The use-case approach, which sometimes becomes a business-case approach, is perfect for this. We currently offer single day workshops as a particular service, but also believe that projects conducted over longer time frames can also be effective. A good example of this is our Application Center Industrie 4.0 in which companies can implement their technologies in the overall context of a networked factory.
Customer benefits should always be the focus

Interaktiv: That can’t be easy …

Baumehansl: Correct. But it is important to focus on it … The key question which everybody must ask is: How do I ensure that my business remains close to the customers, so that no third party can slip in and render my services a commodity or even a niche product? It’s a question which the audience grapples with intensively. Other questions include: What must I do, how and when must I do it and what are my competitors doing? The issue of data security is also a high priority.

Interaktiv: Staying on the subject of data security, you have spoken about how Germany can become the “Switzerland of data”. What exactly do you mean by this?

Baumehansl: This phrase means that we recognize the importance of data protection and give it a high priority on account of our legal framework and culture. However, it also means that we are in the position to build up a great deal of trust from around the world in this field. On the technology side we don’t have any particular competitive edge over the Americans. But the trust which the Americans have lost owing to a number of incidents over the past few years has actually transferred to us. And we should use this trust to offer security in communications and data storage as a global service. I also view this as an excellent opportunity to develop competitive advantages, both from a German and a European perspective.

Interaktiv: The Americans are not standing still. Key word: “Industrial Internet Consortium”. Are you skeptical about this or more relaxed?

Baumehansl: I am not worried. One side of it is to communicate effectively, but the other is actually offering solutions and bringing innovations to market. And up until now, this has happened pretty infrequently. The Consortium’s marketing department is really promoting the concept of a “test bed” for various applications. But when you dig deeper, you realize that the test bed concept operated in Europe with partners such as Bosch is the most successful. So that reassures me quite a bit.

Interaktiv: And what are Asian companies doing?

Baumehansl: Japanese and Korean companies have in particular made great progress and are asking all the right questions. This also reveals that the whole subject has become an international phenomenon and that it is not just Germany tackling the issue head on. Conversely, the Chinese are yet to grasp the systemic approach required in Industrie 4.0.

Interaktiv: A longer article was recently published in the business journal “Brand eins” which focused on Google and the subject of failure. The gist of it was that Google consistently follows a policy of trial and error. This has resulted in more flops than outsiders looking in may expect. Should we really fear Google and the like?

Baumehansl: Fear is an exaggeration. I respect them more than I fear them. Google has so much development potential. It takes advantage of this and in doing so spends more on R&D than the entire German engineering industry. Google is also not afraid to fail. No result or even a bad result is still a result of sorts. Google uses this experience to become ever better, maintains a clear focus on technology and operates a two-pronged approach. First, the company performs well in the areas of big data and communications, they are leaders online, draw conclusions from this and make profit. And second, it uses this profit to develop new business models and innovative technology.

Interaktiv: That’s impressive …

Baumehansl: To name another example: WhatsApp. The company was bought for USD 19bn by Facebook but by this point had yet to turn a profit or generate significant revenue. The answer why is quite simple: Because there were 450 million customers. In the meantime this figure has risen to more than 600 million, which accounts for the company’s value.

The question for German industry to answer is: How does the degree of interconnectivity and digitization influence the value of my company?

Interaktiv: Sounds daunting …

Baumehansl: All companies offer what they know they can do well. After all, technology is now available right across the globe. This means that the companies with the smartest business models will be the most successful. Of course, we can learn so much from the Americans. All in all, it’s about adapting and using partnerships to develop and protect business models.

Interaktiv: There is still a lot of work to be done to convince businesses in Baden-Württemberg. And so we come to the final question. What are your plans and aims in your role with the Alliance Industrie 4.0 Baden-Württemberg?

Baumehansl: First: to consistently place customer benefits in the foreground. Second: to not focus on giving existing business models a digital makeover, but rather to encourage innovative ways of thinking and to not be afraid of shaking things up in the world of business. And finally: to work together. This means, operating platforms, developing technologies and accumulating experiences together. The Alliance creates a basis and provides a breeding ground for exchanges. It is the first port of call for questions on the subjects of further development and our value added. »