

Framtidsakademien meets Timo Pekkarinen, VTT:

“We like to break boundaries at VTT”

What is happening in the world of research in Finland? The members of Framtidsakademien met Timo Pekkarinen, Vice President, Business Solutions, Forest Industry at VTT Technical Research Centre of Finland, to answer this question and find out the details about the research centre's visions.

Central research in the Finnish forestry industry is currently carried out by the state-owned VTT Technical Research Centre of Finland. The research center generates annual sales of EUR 300 M and has about 3,000 employees, of which 2,000 are researchers. VTT's research activities encompass many different industries. Forestry-related research accounts for between 10 and 15 percent of VTT's non-profit operations, which also include today the research segment of KCL, the former Finnish research institute. A third of these operations are financed by the Finnish government, and

a third from EU funds awarded by Tekes, the Finnish Funding Agency for Technology and Innovation. The final third is contracted research whereby individual companies enter into partnerships and finance an agreed research project.

VTT also has international operations with units in e.g in Brazil, the US and South Korea for different research topics.

You are part of an enormous organization...

“Our size helps us ‘think outside the box’ – the best ideas are conceived in collaboration with different industries,” says Timo Pekkarinen. “New materials based on fiber raw materials are a good example. In this

field, we will be able to produce new, light-weight, sustainable materials for the automotive industry.”

What do you believe to be the greatest challenge for a research institute in its efforts to serve as a bridge between research, implementation and commercialization?

“It certainly is a challenge, but the best way is to work together with the industrial sector. When we embark on such work, we always base our activities on a special project that is, of course, highly confidential. For example, we have worked on separate projects in the development of nanocellulose with both Stora Enso and UPM, as well as in the Forest

Bengt Joensson, Domsjö, in action at the meeting, together with Maria Dotszky, Metso, and Timo Pekkarinen, VTT.





What happens in the world of research in Finland? Timo Pekkarinen, Vice President, Business Solutions, Forest Industry at VTT Technical Research Centre of Finland, came to meet the Academy and gave the answer.

Cluster where members are often competitors. We can treat all results with the strictest confidence.”

Does VTT come up with the ideas in such partnerships or do they come from the companies?

“Both the companies and VTT can take the initiative to come up with an idea. The decision-making process for a research project is often longer if we have suggested it since the project first has to be approved by the company’s management. Naturally, for contracted research we take pains to specify exactly who owns the results. We avoid working for two competitors in the same project. A good example is the nanocellulose

projects where two separate research teams worked on the same type of research for two different companies. The results of the research are confidential, and the customers can be assured that this is the case.”

Is it relevant for VTT to have control of many patents?

“Our patents arise if the research results are successful and are often available for sale. Compared with our US colleagues, for example, our patents are at the reasonable price level”

There is of course a tendency to allocate resources to fields that are already very well known – and do the same types of things. How do

you initiate projects that break these boundaries, that are brand new in your Forest Cluster, which comprises the Finnish forestry industry?

“We are able to analyze the processing chain and if we can see that a customer has special needs it may be very valuable to fully develop a project further down the value chain. But there are indeed companies that do not appreciate researchers moving further down the value chain.”

So you involve decision-makers further down the value chain in these projects? Do the customers of the forestry companies and customers’ customers participate in the project?

“Yes, we will involve them if necessary.”



“Products need to be adapted to market demand,” said Anna Holmberg of Arizona Chemicals.

A major difference is your financial situation and that fact that you are owned by the state.

“The positive aspect of state financing is that we can develop our own operations and continuously improve. We make a strict distinction between state funds and the revenue from our contract-based projects and EU funds. Since we are state-owned we are also independent. We do, of course, plan our work ourselves and then present our results.”

Is there any debate in Finland about whether it is right to invest government funds in your operations?

“Our operations will be partly financed by state funds as long as we achieve favorable results and Finnish companies are successful thanks to our research.”

How do you measure your efficiency?

“We are subject to different surveys and are measured in many different ways. For example, the number of articles published in scientific journals. But our results are the main proof of how successful our operations are.”

What percentage of your projects is commercialized?

“That is hard to say since our customers have no obligation to report on the products that they advance on.”

Is the number of contract customers increasing – that should be a sign that you are doing a good job...

“Yes the number of contract customers is increasing. We do not publish the exact numbers in an annual report since many projects are strictly confidential.”

Do funds for your own investments derive from the state?

“It varies. If a special investment is needed for a contract customer, the investment is made using the funds of that specific project. The equipment can then be used in other projects.”

What types of exciting projects are currently under way in Finland?

“Several small-scale projects are under way. One of the most exciting is our own internal project that deals with biomaterials. I can also mention an interesting development in insulating materials, based on pulp fiber, but which at the moment is only manufactured at our pilot machine in Jyväskylä. We are also conducting a great project aimed at improving previously existing industrial processes. Many developments are also in progress in the area of bioenergy, for example, where we have worked together with Stora Enso and Neste to produce biodiesel.

“We like to think outside industry boundaries and break these boundaries down. If the various research results can benefit other industries, we make sure to capitalize on them. Every industry needs new applications – and brand new industries can even be formed from such research. We have the resources to work together across boundaries at VTT, since we can bring in researchers from different industries at the center. That’s a real strength and we have actually established a system to help researchers think ‘outside the box.’”

What is the strongest driving force for your customers?

“It’s simply a matter of demand – the development of products demanded by the market. If the assignment is about solving a problem then it is often already too late. For most of our customers, it involves the strategic development of the company to keep up with changes. Stora Enso’s investments are good examples, as are Metsä Group’s with an increasing focus on packaging. Scandinavian developments are more efficient than those in North American.”

But how much is real change – and how much is only PR rhetoric?

“I believe that genuine signs of major changes can be seen in forestry companies’ operations. The next development we are expecting is the

suppliers of new processes which the industry is highly dependent on – and which also governs industry developments.”

“But the trend is that companies are no longer investing as much in research as previously,” comments Stefan Svensson MoRe Research. “The result of this for us as a research company is that it is we cannot even find the expertise to discuss the company’s development with.

“Nowadays, companies reserve about 0.7 percent of their sales for research and development and are not as willing to take risks in the same way as 20 years ago,” comments Peter Wällberg, BIM Kemi. “Accordingly, the responsibility for development is shifted onto the suppliers.”

“It is a major risk for development in the industry,” says Timo Pekkarinen. “First and foremost, companies’ R&D departments need a sufficient level of expertise.”

“I have a background in the chemical industry, where we saw the same tendencies 20 years ago. Extensive cutbacks were made at companies’ research departments,” says Bengt Joensson of Domsjö. “However, the suppliers who then receive the development responsibility sell the same equipment to anyone in the world who wants to buy it. That’s exactly what happened in the chemical industry and today only very limited bulk product manufacturing remains in Europe. The only thing left in Europe is exclusive production of specialist products. The phenomenon will be just as severe in our industry – and it’s already started. We will also see suppliers relocating their production.”

“We need to increase the value of our products,” adds Timo Pekkarinen.

“Products that need to be adapted to market demand,” says Anna Holmberg of Arizona Chemicals. “Someone has to be prepared to pay for the products.” ■

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