



The Value of Knowledge

in the Business World

Summary

VA Report 2008:5



vetenskap & allmänhet

A study into how the business world views knowledge

Vetenskap & Allmänhet (Public & Science), VA, has studied the attitudes of the business world towards research, researchers and collaborating with researchers. Six important sectors within the manufacturing and service industries were selected for the study: the wood and paper industry, food and pharmaceuticals industry, engineering companies (manufacturing of motor vehicles, electrical appliances, electronics and computers), consulting firms (technology and organisation consultants), tourism (travel services, hotels and passenger transportation) and the retail trade.

The study consists of five parts:

1. **Telephone interviews with just over 600 business leaders** from companies with at least 20 employees within the selected sector groups. The majority of those interviewed were managing director or chief executive officer of the company.
2. **Reflections** on the interview results by five prominent figures from business and academia: *Monica Lindstedt*, founder and Chairman of Hemfrid; *Michele Micheletti*, Professor of Political Science at Karlstad University; *Björn O. Nilsson*, President of the Royal Swedish Academy of Engineering Sciences, IVA; *Niklas Prager*, CEO of Pfizer Sweden and *Göran Sandberg*, Vice-Chancellor of Umeå University.
3. **Analysis of a selection of trade journals** from the six sectors, with a focus on the research-related content: *Nordisk Papperstidning*, *Livsmedel i Fokus*, *Läkemedelsvärlden*, *Chef*, *Elektroniktidningen*, *The Vehicle Component*, *Market Magasin*, *Turist och Restauratören*.
4. **Survey** of the general public's attitudes to research carried out within companies. Telephone interviews with a national sample of Swedes age 16 year and up.
5. **Literature survey** within the area and analysis of relevant **industry statistics**.

This report summarises the most important results and conclusions of the study. A full account of the results, methods and selections is provided in VA report 2008:4, **Kunskapssynen i Näringslivet (How the business world views knowledge)** in Swedish only. The report may be cited with VA as the source.

Vetenskap & Allmänhet (Public & Science), VA, is a Swedish association aimed at promoting dialogue and openness between the public – especially the young – and researchers. It endeavours to stimulate new forms of dialogue in unconventional areas about concrete issues that concern people. Members are numerous organisations, public authorities, companies and individuals. All of VA's studies are available at www.v-a.se

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VA Report 2008:5

ISSN: 1653-6843

ISBN: 978-91-85585-48-9 (in print)

urn:nbn:se:vetenskapochallmanhet-2008-5-eng (pdf)

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Knowledge leads to competitiveness!

Business leaders have a very positive view of academic research and researchers. They have great confidence in researchers and have a more positive opinion of developments in science and technology than the general public.

Three out of four of those interviewed stated that knowledge based on research results is important for the future of their company. Seven out of ten believe that collaborating with a university can make their company more competitive. Responses differ, however, between sectors. Executives of manufacturing companies feel to a great extent that research-based knowledge is important for their company's future, while business leaders in tourism and retail have a less positive attitude. They believe to a far lesser extent that working with academia can improve the competitiveness of their companies. Pharmaceutical companies believe to a great extent that research-based knowledge is very important or crucial for their business, but since the food companies far outnumber pharmaceutical companies, food companies dominate the average result in that group.

The size of a company is an important parameter. Small companies (20–50 employees) believe that collaboration increases the company's competitiveness to a lesser extent than larger companies.

Figure 1: Percentage of respondents who believe that knowledge based on research results is important for the future of their company.

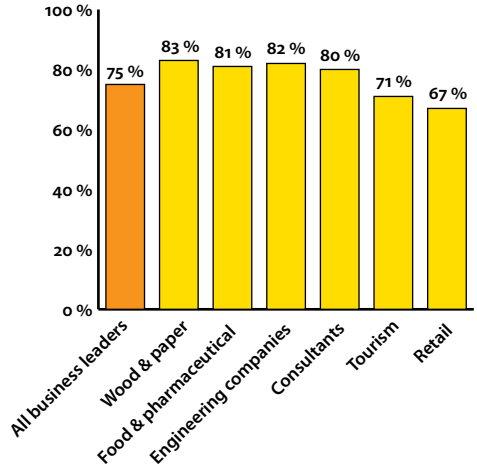
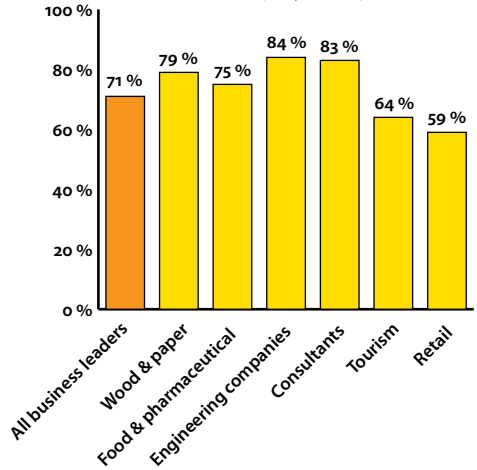


Figure 2: Percentage of respondents who believe that collaboration with academia can increase their company's competitiveness.



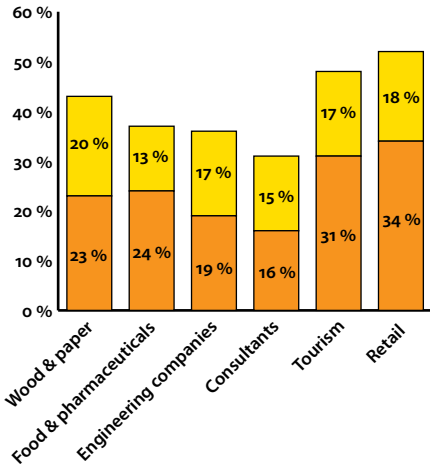
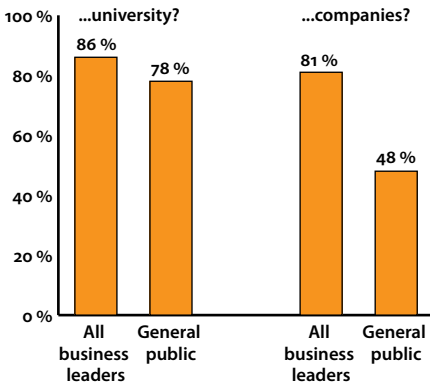
- ▶ I believe that there is a strong desire for knowledge in the business world. There is a great consensus that Sweden needs to be and to remain a knowledge nation. **Björn O. Nilsson**, IVA
- ▶ There is an international trend whereby the need for new knowledge has become hardware, including within the public sector. The knowledge society is here. **Göran Sandberg**, Umeå University

This isn't the place for researchers!

Business leaders have a lot of confidence in researchers – both those working in academia and those working for Swedish companies. The level of confidence among the general public is lower, particularly in terms of trust in industry researchers.

One out of four business leaders believe that researchers should only be involved in research that leads to useful results. This view is more prevalent amongst leaders of large companies. For comparison, almost half of the general public hold this opinion.

Figure 3: Percentage with a high or very high level of confidence in researchers in...



Despite a high level of confidence in university researchers in general, half of all business leaders believe that people with postgraduate research degrees are too specialised to be suitable for their company. This opinion was strongest amongst business leaders in the retail and tourism sector.

One out of four believes that people with postgraduate research degrees are not sufficiently practical for their company. Engineering and wood & paper companies are least likely to have this attitude, and also find it the most difficult to recruit people with postgraduate research degrees. Across all sectors, three out of ten business leaders who have employees with postgraduate research degrees feel that it is difficult to employ such individuals.

Figure 4: "People with postgraduate research degrees are too specialised to work for our company."



▶ The best partnerships are based on identifying the needs of an organisation. It is also important for it to be stimulating for the employees to participate in the process – the actual journey is of great value to the company. **Niklas Prager**, CEO of Pfizer Sweden

Increase the flow of knowledge!

There is clearly potential for an increase in the flow of knowledge between academia and the business world, particularly in the case of service companies and small businesses. A clear majority say that research-based knowledge and collaboration with universities are important for their business. Not nearly as many, however, actually make use of research results or collaborate with the academic world. Two out of five of those who believe research-based knowledge to be very important for their business have not made use of any research results that could have an impact on the future of their business. Half of them do not collaborate with universities.

Four out of ten companies have, over the past year, used research results that could be of significance for their company. Most of these state that the research used was in the field of engineering or natural sciences. Research results from the social sciences are of more interest for leaders of service companies than for leaders of industrial enterprises.

Four out of ten collaborate with universities or research institutes for the purpose of developing their businesses, but there are significant differences between the sectors. The size of a company is also an important parameter.

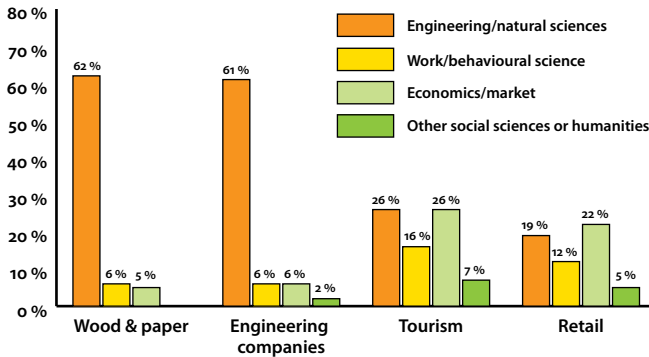


Figure 5: Areas within which business leaders in different sectors have made use of research results over the past year.

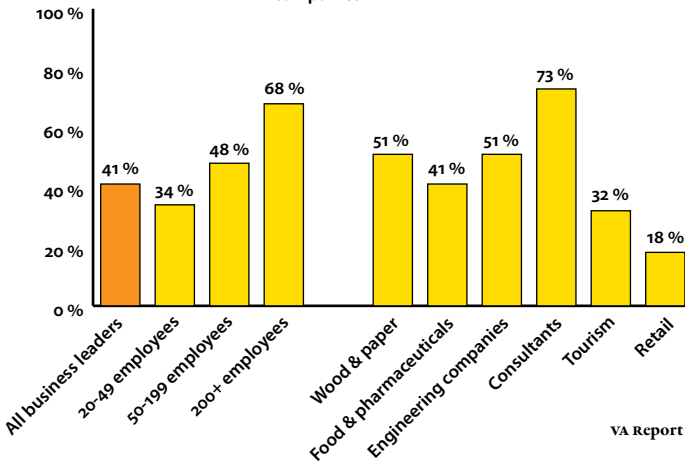


Figure 6: Percentage working with universities or institutes for the purpose of developing their company's business.

Tear down the barriers!

Tangible cultural differences cause communication problems between companies and the academic world. The two parties often seem to talk at cross-purposes and many complain about academia's inability to understand business conditions and the way in which a company works. Many of the business leaders express in open responses the desire for the initiative to come from the other side, while some do not see the benefit of research collaboration at all.

Need is a key word. If there is a need for research knowledge, if collaboration within a company is initiated, or if researchers discover something useful, business leaders are interested. Many also say they would welcome more collaboration if only they had the time and money.

There is a clear link between a company's knowledge exchange and collaboration

▶ To generalise, we are often in more of a hurry than the academic world. They work with fairly long study cycles while we want to see results fast. That is a breeding ground for misunderstanding and differing expectations.

Niklas Prager, CEO of Pfizer Sweden

▶ In my experience the walls between industry and academia are quite high. **Monica Lindstedt**, Chairman of Hemfrid

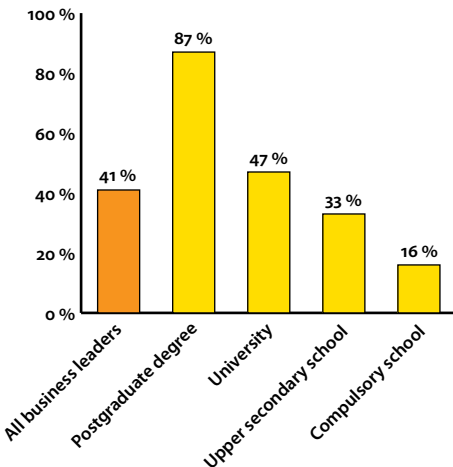
▶ In the case of the big corporations, the gap between them and academia is incomprehensible. They have both the finances and the muscles to steer academia in the direction they want. The smaller companies, on the other hand, lack tradition and experience; these companies and researchers don't speak the same language. **Göran Sandberg**, Vice-Chancellor of Umeå University

with academia and the level of education of the company's executives.

Educational background is not a factor, however, when it comes to using research results to make a company more "eco-friendly." Four out of ten say that they have used such results, particularly service companies. The climate issue therefore seems to inspire a broader cross-section of businesses to use research findings.

There is an interest, a desire and a need for new knowledge and collaboration with universities in most companies interviewed. However due to communication problems, ignorance about "the other world" and lack of tradition, there is not as much exchange as there could be. Communication barriers need to be torn down to increase the flow of knowledge. A better dialogue and greater mobility of people would increase understanding and knowledge, this in turn would facilitate communication and collaboration.

Figure 7: Percentage of business leaders with different educational backgrounds that have made use of research results in the past year.



Services – a new market!

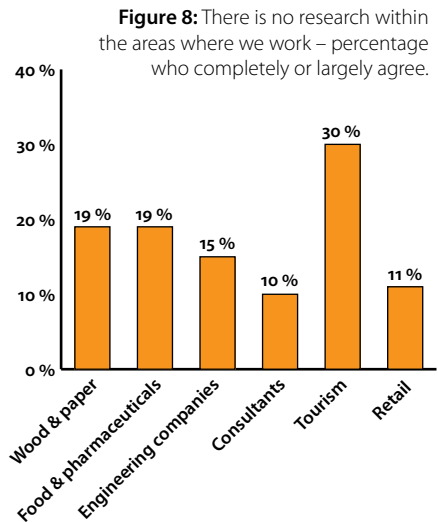
The Swedish economy has evolved. Its primary focus has changed from manufacturing to the service industries, and with this change there are new needs and patterns of behaviour. There is therefore the potential for research and researchers to establish new relationships and projects. However few companies within the tourism and retail sectors have employees with postgraduate degrees and these companies are less likely to make direct contact with researchers. Instead it is more common for the university department responsible for industrial contacts to help initiate a partnership.

A significant percentage of the business leaders interviewed did not think research was being conducted within their field. This opinion was particularly strongly held in the tourism sector, but also by a surprisingly high number of business leaders within the manufacturing industry.

There are significant differences between different sectors, both in terms of attitudes and behaviour. The traditional industrial companies and consulting firms have positive attitudes to research-based knowledge and are also involved in many collaborative projects. The service industries, tourism and retail, see research knowledge as less important and are

not engaged in as much collaboration with academia. However, they have more often made use of research results that can make their companies more “eco-friendly.”

Contact between service companies and the academic world can give researchers new ideas for areas where there is a need for research. The social sciences do not have the strong tradition of relationships with the business world enjoyed by medicine, engineering and natural sciences, but the needs exist – especially in the service producing sectors.



- ▶ We have developed an advanced, logistical production system because there was no existing system we could use. **Monica Lindstedt**, Chairman of Hemfrid
- ▶ I can see that certain companies don't think we have anything to offer them and that we perhaps present our knowledge in the wrong way. But why are some business leaders resistant to knowledge? Within the tourism sector we have ecotourism, trafficking, tsunamis and climate change to deal with. And retail companies should be interested in consumption problems and mini-loans. **Michele Micheletti**, Professor of Political Science

Open up channels for knowledge!

Knowledge finds different channels into companies. Most respondents who claim to learn about research results say that they do so by reading research articles or participating in scientific conferences. But almost as many cite information from trade associations as their source. The way companies gain scientific knowledge varies between disciplines. Social science knowledge seldom enters companies through already-established partnerships, unlike engineering and natural sciences.

Employees seem to be relatively important channels for findings within medicine and pharmaceuticals, which is probably related to a high level of education among the employees. Business leaders who have postgraduate degrees themselves usually cite direct contacts with researchers as the source of their information.

Trade associations communicate with their member companies in a variety of ways. One way is through trade journals.

▶ A www.search.se for research would be helpful, listing all Swedish – perhaps even international – research within certain areas.
Monica Lindstedt, Chairman of Hemfrid

An analysis of a selection of trade journals shows that they contain a lot of material about research and development (R&D). Overall, a third of the content can be classed as R&D related, which can be compared to two per cent research-related material in regional newspapers and 16 per cent in party political magazines (VA reports 2005:5 and 2006:3). There are, however, significant differences between sectors.

The most common R&D content concerns new products or prototypes, mainly in the journals of manufacturing companies, while less than a quarter of the material has an academic source. Articles that highlight partnership projects between companies and academia are rare.

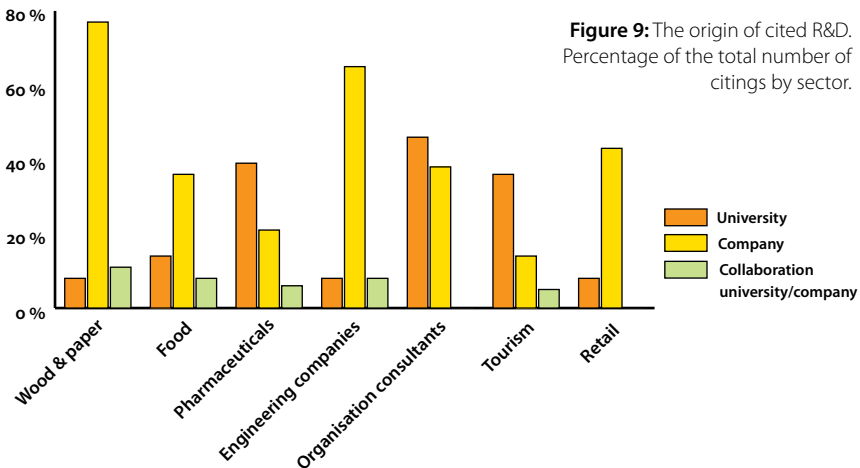
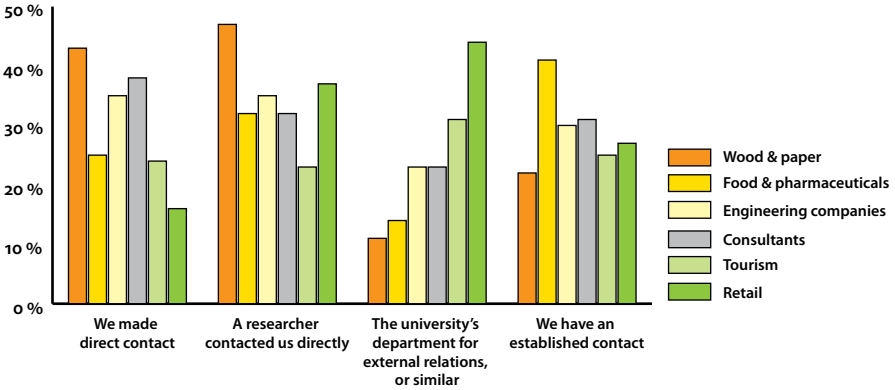


Figure 9: The origin of cited R&D. Percentage of the total number of citations by sector.

Figure 10: Before beginning a collaboration project with a university or research institute, how did you make contact? (Percentage of those involved in university collaboration).

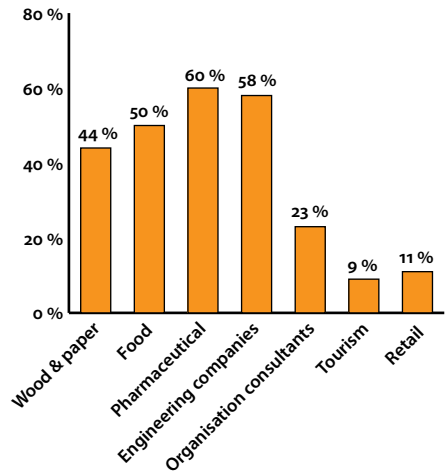


Trade journals could, to a far greater extent, be contact channels between companies and the academic research world, both by providing companies with more information about academic research and by showing academic researchers the needs of industry. Highlighting examples of collaboration projects would increase awareness of the mutual benefits.

The initial contacts that lead to collaboration take place in a variety of ways. In the study there is no single method that stands out as particularly common or popular, but differences exist between the various sectors. Wood and paper companies, for example, indicate more frequently than the others that researchers or PhD students have contacted them directly or that they themselves have contacted the researchers or PhD students. Retail and tourism companies indicate more often than others that contact was established with the help of an external relations office

or similar department at a university and that they seldom make contact themselves. Food and pharmaceutical companies indicate most often that they already have established and regular contacts.

Figure 11: Number of pages of R&D related content in the journals of each sector.



Reward collaboration!

Several Swedish and international studies show that researchers have a positive attitude towards collaboration with industry and that universities are getting better at integrating cooperation into their programmes. But many researchers feel that they do not get enough recognition for their efforts. Many collaborative initiatives are perceived as forced; the universities do not recognise the actual need to increase dialogue to develop their activities and surprisingly few have follow-up goals.

But there is value in collaboration for researchers as well! Collaboration generates trust and creates new knowledge that can be applied both in academia and business. Researchers gain new broader perspectives and insights into how their expertise can be applied in new directions.

VA's studies have shown that changes are needed in both culture and attitudes in the academic world. To achieve this, *incentives* are needed for both researchers and universities, as well as *awareness* of the value of collaboration for the research community.

▶ Our researchers and educators are struggling to fulfil their teaching responsibilities and obtain external grants. Getting them to set aside time for collaboration is our main problem. I believe the solution is for special resources to be allocated. **Göran Sandberg**, Vice-Chancellor of Umeå University

▶ We need remuneration models for both researchers and universities to bring about a faster change. If this is done formally, sooner or later it will happen informally as well. **Björn O. Nilsson**, President of IVA

Involve the public!

Research conducted by companies has a credibility problem with the general public. Three out of ten have more confidence in university researchers than company researchers, while the reverse is true for only three per cent. Six out of ten agree to some extent that “research conducted by companies is profit-driven.”

There is therefore a strong need for *dialogue* with the general public around the results and benefits of collaborations between academia and business and on how such partnerships work.

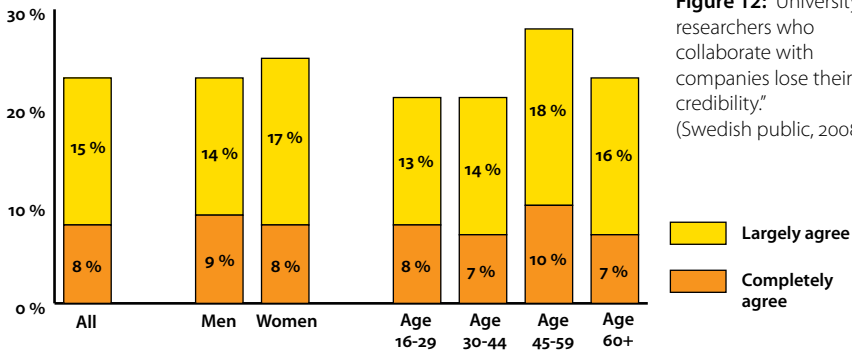


Figure 12: “University researchers who collaborate with companies lose their credibility.” (Swedish public, 2008).

Develop meeting places!

Both the interview study and the reflections from representatives from the business and academic worlds show that there is a great need for *meeting places*. But how can these be created?

“We need meeting places where there is time for exchange and understanding, to see each other’s needs. In the medical community of course such meeting places exist, as well as strong networks. The corporate partners programme at the Stockholm School of Economics is another good way to initiate relationships,” says **Niklas Prager** CEO of Pfizer Sweden.

He would like to see more organised opportunities for business leaders and academics to mingle. He points out that meetings are important to promote an understanding of the activities the parties are involved in and what drives the individuals.

“We need to get people to meet, talk and do things together!” says **Göran Sandberg**, Vice-Chancellor of Umeå University.

“I believe that it is only when we get people to understand the world of business that things will start to happen.”

Sandberg believes that if the Government sets aside funds for 200 industrial doctoral students who were then loaned out to companies – like a pool of academics – we would see some real effects. Companies would have access to another type of knowledge and new PhDs would get crucial industrial experience.

“A lot is said about cooperation, but little is done. We don’t need more confer-

ences or studies. Show us the money and start working.”

Göran Sandberg believes that more intermediaries may be needed. Not a new government agency, but rather a joint, non-profit organisation that can act as a meeting place for the parties.

Monica Lindstedt, Chairman of Hemfrid, believes that a reverse think tank would be interesting, where the research community has advisory bodies with representatives from civil society. She would also like to see opportunities to send questions to a research panel.

According to **Michele Micheletti**, Professor of Political Science, more local meeting places would be a good idea. She suggests creating arenas where students would also have an opportunity to participate in discussions about society, get new impressions and create new networks. She believes that more points of contact would be created if people from industry moderated seminars and lectured at universities.

Björn O. Nilsson, President of the Royal Swedish Academy of Engineering Sciences, IVA, also draws the conclusion that more meeting places are needed and suggests an investment in science parks. His own workplace is an arena for academia and the business world which also acts as a catalyst to find new kinds of meeting formats.

“My vision is that entrepreneurship will be considered an additional qualification in the academic world and taught from preschool,” says Björn O. Nilsson.

Can knowledge be fruitful?

The knowledge society is here!
But what does that really mean?
Is the business world making full use of research?
Is academia making sure that its product – knowledge – is finding new channels into society?

These are questions that Vetenskap & Allmänhet, VA, (Public & Science) has aimed to answer in a study summarised in this booklet.

Business leaders have a positive attitude towards research-based knowledge

but not enough is happening, especially in the fast-growing service sector.

The need for knowledge and collaboration exists but there are many obstacles:

- Cultural differences
- Communication problems
- Traditions

In order to turn more research results into products, services and cash:

Create meeting places!
Tear down communication barriers!
Develop communication channels and increase the flow of knowledge!
Reward collaboration!
Involve the general public!

Read more at www.v-a.se

