

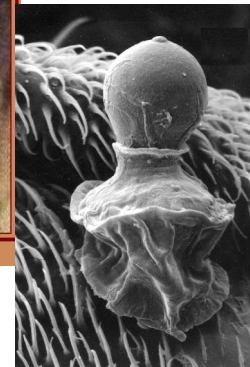
Excellence and Mobility

-bridging as a strategy for building Excellence

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Excellence in Research: -more than publications & citations

Most value to society at large is gained if Research efforts deliver on all of the following three aspects:

- * *Frontier research (publications, citations, prizes)*
- * *Relevance* (in partnerships, methods; and being global!)
- * *Impact* (Paradigm shifts! Brought in use! Good students)



The risk scenario

If Europe focuses on Research Excellence *sensu stricto*
⇒ Europe continues to produce frontier and highly quoted publications

But the world moves on:

US (and soon also China and India) will build most efficiently their economies on bringing new knowledge in use, hereby being more competitive in a globalized knowledge society

=> leaving Europe behind (?)



Message: take guidance from the 3-fold "Excellence in Research" criteria

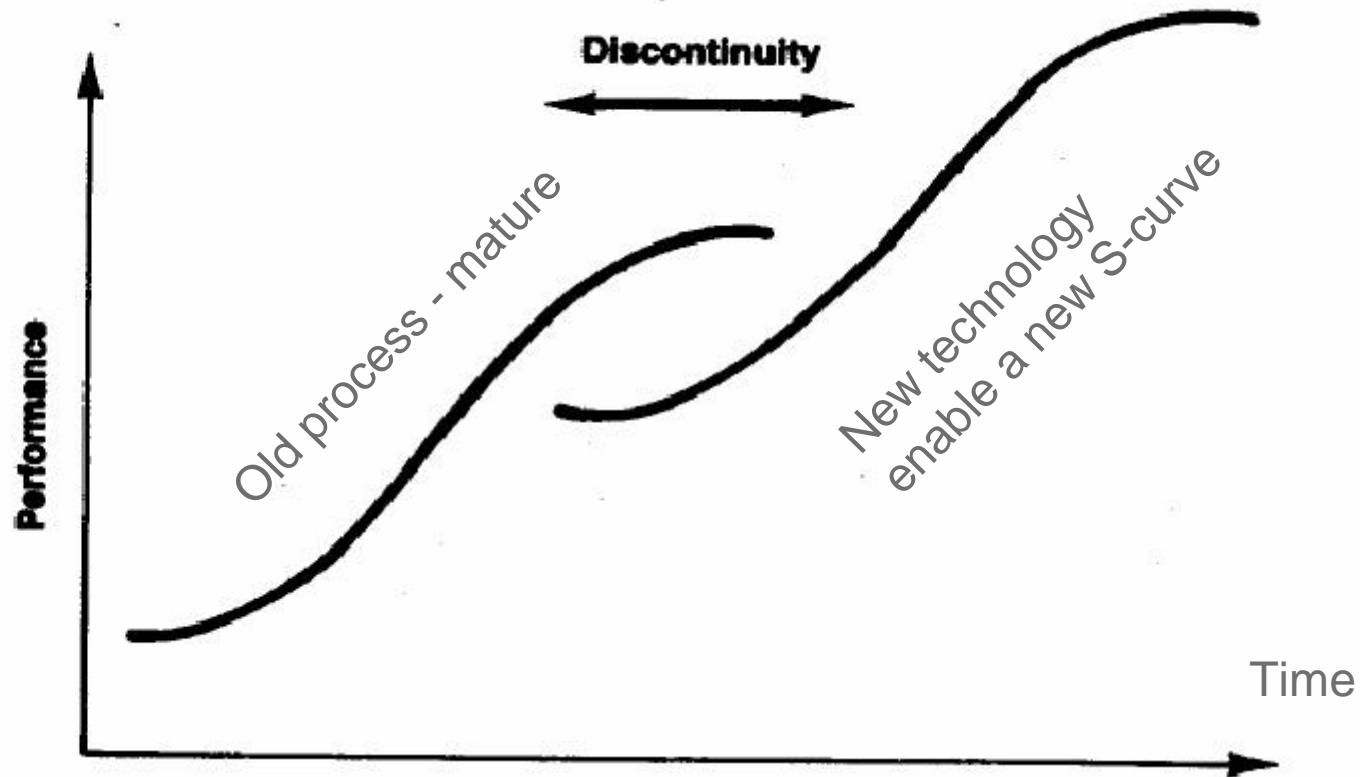
Recommendation:

The Nordic countries and Europe as a whole have to improve in efficiency and capability with regard to use of new knowledge –both for improvement in the industrial and in the public sector. The most efficient users of European generated knowledge is US!

*) This "3-fold Excellence in research project evaluation" is for the last 2-3 years used by the strategic research council in Denmark (DSF)



New concepts, stimulated by **bridging** between disciplines, cultures, sectors



S-curves: representing a discontinuity, when one paradigm or technology replaces another



Bridging between disciplines

Interaction between research disciplines **gives breathtaking results!**
More than than ever before

Recent Examples:

BioNano science (physics, chemistry and biology)

Bioinformatics (mathematics and biology)

Bioenergy (microbiology, biotech and engineering)

Biomedicin (biology and medicin)



Build results from bridging the disciplines

Suggestions

Facilitate interaction between disciplines through:

- Modify the academic educations to open the minds for cross disciplinary thinking
- Build attractive state of the art Infrastructures, with common but competitive access, attractive to several types of researchers
- Build incentives for establishing multi disciplinary research groups



Bridging between Academia and Industry

Bridging between **Industrial** and **Academic** research gives value:

- Creates stimulus and potentially also synergy; win/win!
- Brings new knowledge in use
- Gives inspiration to research education (phd and post doc)
- Builds mutual respect and understanding



Bridging between Academia and Industry

Suggestions:

- Support to Private/Public Partnership PhD´s + to PPP post docs;
 - Give preference to international PP partnerships
- Establish incentives for researchers to swob between sectors
- Initiate a Sabbatical program between industry and academia
- Avoid obstacles as e.g. Compulsory Access to sideground and background (as in 6FP)

Excellence must be in focus for all research –also strategic and applied



Excellence is not achieved through consensus

Excellence is build through competition –by merit only

Mainstreaming and too much red tape creates mediocrity

Demand for excellence in research is even more needed to
focus on when it comes to strategic and applied research



Bridging between cultures

Different cultures bring different approaches to research

Use it proactively to bring diversity and dynamics to a research environment

Up to now Focus in EU has been on bridging between N, S, W and East Europe and between EU and US and Japan

Now:

Focus on research collaboration with excellent research groups in growth countries

Timing:

The time is right, we have the opportunity now; it may not be such a wide window of opportunity if we do not act now

Bridging to research excellence on other continents



Suggestions:

- Stimulate research collaboration between Europe and countries like China, India, Brazil, Russia, Thailand etc
 - use the Nordic countries to spear head this endeavour!
 - establish win/win collaborations
 - act now! **Cross culture mobility is stimulating research!**
- Attract talent from all over the world to Europe
 - build on European "good life" assets: openness, transparency, fairness; human rights and democracy
- Set goals for attracting also US researchers to Europe, not just on repatriation (**mobility is good for research!**)
 - overcome restrictions for getting people into Europe



Bridging between the generations

Suggestions

Give room for the junior faculty to be heard and to lead

Let the students meet and be stimulated by the excellence they meet among the older generation world leading scientists

Set aside a certain quota for risk-taking investment of research money from public research grants
–giving the deviant thinkers and the youngsters a chance



Bridging between North and South

The Nordic countries (and Europe at large) has world leading expertise in areas of relevance for solving important problems in the developing world.

This gives a moral obligation to act
(It is very embarrassing that the 20/80% paradox is still intact)

Why is it almost totally neglected when we talk about research in EU? And in Nordic countries?

As we are entering into a globalized knowledge society it becomes even more important to focus on knowledge for fighting poverty. The Nordic countries is in the best position to start acting proactively.



Thank you for your attention!

Questions are welcome



Overcoming the uneven gender balance

Keep a double focus:

- improve the gender balance! We need more female professors (also in Nordic countries and especially in Denmark)

and

- keep an eye on that the male youngsters in these very years (at least in Denmark) deselect higher education and a research career