



Jacob Wallenberg
Chair
Investor AB

investor



Funding, allowing European basic research to become industrially relevant



Between universities, venture capital and industry



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Relevant to many large corporations



Conditional on government support



(Incremental innovation), but: 'reed downwards tick'. (new, science driven opportunities)

Revolutionising the deep tech transfer

Europe performs well on leveraging and improving existing technology – 7 of the top 10 countries in the Bloomberg Innovation Index 2021 are European. However, we excel mainly in incremental innovation, exploiting existing technology platforms. We are lagging when it comes to bringing disruptive technologies to market.

Such technologies are often labelled “deep tech” – innovations founded on scientific discoveries or tangible engineering innovations. Deep tech is the basis for most new industrial technologies and a necessary element in addressing current societal and environmental challenges. They are also core in navigating the extraordinarily volatile industrial environment.

The economic case for deep tech is strong – and yet in Europe, private funding for deep tech is weak. Capital markets have since the ICT boom optimised to finance software companies – and steered away from deep tech and its perceived risks and long lead-times. Also, university research often stops long before a research result is mature enough to be the base for commercially-oriented innovation.

Europe’s relative inertia on the financing side holds back the industrialisation of research- and high-tech based innovation. More problematically, it does so in a time of turbulence in the global technology landscape, where we a) see the end of life of many of the legacy technologies that form the backbone of large industries and b) face increased pressure of sustainable transformation of industries,

energy systems, transportation, etcetera. Moreover, geopolitical turbulence counteracts knowledge-sharing and cooperation, with two superpowers in a race for leadership on semiconductors, quantum computers and AI systems – and Europe unable to match their pace.

Funding the science-to-industry innovation transfer

Science underpins the future competitiveness of any industry – yet in Europe we still struggle with the transfer of new science to industry. The Wallenberg Foundations set out to form a coherent tech transfer system, complementary to publicly-funded tech transfer.

The Wallenberg Foundations fund basic research and strategic research programmes aimed at e.g. autonomous systems, AI, quantum technology, sustainable materials and the digitisation of life science. The Foundations also support laboratories and other facilities enabling cross-disciplinary research (such as Swedish SciLifeLab, that makes unique technologies and expertise available to scientists in different areas of life science).

Lately, the Wallenberg Foundations have introduced a proof-of-concept grants programme called WALP – the Wallenberg Launch Pad. Research groups can apply for grants to investigate the minimum viable product and commercial feasibility of their research results. Such soft funding for pre-commercial verification of research is an

important prerequisite for attracting private investments in the prospective spin-out companies.

In addition, the asset management arm of the Wallenberg Foundations has initiated an in-house venture firm to provide seed- and early-stage funding of university spinouts. The venture firm invests in companies on commercial terms but can support companies long-term, not as a closed-end time limited venture capital fund. The firm focuses on research funded by the Wallenberg foundations and aims to “crowd in” additional private capital by positioning itself as an early stage and leading investor in deep tech.

We believe that a region’s access to long term capital and ownership for highly innovative firms is core to industrial competitiveness. More than that, it is a central mechanism to protect strategically important capabilities. Thus, Investor – with the Wallenberg Foundations as its largest shareholder – as well as other industrial groups with the capacity to foster and grow spinouts, become important to the innovative industrial ecosystem.

How to unlock Europe’s deep tech potential

The European Innovation Agenda of July 2022 acknowledges the importance of Europe’s world-class position research and deep and disruptive technologies. However, it does not adequately address the lack of efficient mechanisms for tech transfer, crippling our potential. To come to terms with this, I see the need for the following actions:

First, we need to urgently find better ways of packaging basic research results into useful innovation platforms, typically as deep tech

start-up companies. The excellent European basic research needs to be supplemented by equally excellent applied research that produces commercially relevant, industry-ready results. Regulatory obstacles, such as abstract worries about state subsidies, often lead to research being halted before results are tangible enough to involve private actors. Yet, we are competing with a strong, federally-funded institute sector in the US, aimed at converting basic to applied science directly applicable to industrial challenges.

Second, long-term steering of research, funding of relevant start-ups and directing innovation procurement requires deep understanding of long-term trends in science and industrial dynamics. We lack agencies that define and manage strategic projects (like DARPA, NIST, etc) and set the direction for joint efforts.

Third, we need to strengthen funding for the establishment and growth of deep tech start-up

companies. The EIC fund is an excellent initiative at European level, but we need to improve the local environments close to the European universities. Solutions would be blended financing combining grant and equity, more deep-tech funds, cooperation with CVC funds, as well as commercially savvy tech transfer offices at major universities.

Fourth, industry should invest more in their interface with academia and the deep tech ecosystem. Such interface will be synergistic – stimulating learning and collective action.

We have all the elements in place – research universities, large global industries and an entrepreneurial landscape as never before. We just need confidence and boldness to put these together into an ecosystem that will make us define the industries of tomorrow.

