5 ways that industry-academia collaboration sustains innovation and economic growth

Ignitec

We are an award winning product design consultancy, we design connected products and instruments for pioneering technology companies.

5 ways that industry-academia collaboration sustains innovation and economic growth

Reading time 10 mins

Key Points

- The UK is one of the top 5 most innovative countries in the world and has set fixed targets for Net Zero, sustainability, and a high-growth economy that cannot be met without industry-academia collaboration
- Universities are more advanced at understanding what talent looks like and improving access to facilitate social mobility and increase diversity
- Increased diversity results in a more creative and innovative workforce
- Academic research is instrumental in giving companies a competitive edge and insights to develop new ideas, and it also leads to the creation of spinout companies that develop the economy and local communities even further
- There’s a lack of trust and transparency on the part of both industry and academia to share data openly and meaningfully
- Increased collaboration – in the form of spinouts and specific partnerships between private companies and university research teams – could resolve these challenges

Ben Mazur

Managing Director

Last updated Sep 5, 2023

I hope you enjoy reading this post.
If you would like us to develop your next product for you, click here

The UK is one of the top 5 most innovative countries in the world – exceptional standing resulting from our robust research and development sector, strong intellectual property laws, and a collaborative culture that unites industry, academia, and government. However, the UK's legally binding net-zero targets put increased pressure on industry-academia collaboration to accelerate innovation – a crucial enabler to ensuring those targets are met.

At the same time, the ever-present risk of a global recession and economic volatility increases the need for innovation even further. Building and strengthening the connections between business and academic institutions are critical to sustaining innovation, resilience, and growth.

1. Universities are more advanced at understanding what talent looks like and using digital technologies to improve social mobility and access to disadvantaged groups
2. Industry needs workforce diversity, creativity, and fresh perspectives to drive innovation and steer the development of new ideas
3. Companies need academic research to stay ahead of the competition
4. Companies that partner with academic institutions for targeted research innovate more effectively
5. Spinout companies created by university enterprise teams are becoming increasingly important to the UK's high-growth business ecosystem

Suggested articles

Angel investors in Bristol every local startup should know

Design and Manufacturing of Environmental Monitoring Technology

A lean business plan template for startups and entrepreneurs

Why is industry-academia collaboration essential?

Industry (regardless of sector) and academia are mutually dependent. Both are needed for economies to thrive, and both need one another to survive. King's College London asserts that collaboration between tech companies and universities is crucial to creating a better workforce – especially where social mobility and the diversity that drives innovation are concerned.

For example, universities are more advanced at understanding and identifying what talent looks like. However, digital technologies and AI introduce new opportunities that can improve access for disadvantaged groups, therefore improving workforce diversity.

In addition, companies cannot stay a step ahead of the competition without research – most of which is backed by some sort of public grant. The benefit of supporting academia for tech companies, in particular, is the access they get to cutting-edge research. Some universities, such as the University of Bristol, give free access to online scholarly publications, but many leading science journals aren't open-access, and subscriptions can be costly. One strategy that companies use is to designate particular employees whose role is to scour scientific journals and attend research conferences in the hopes that something interesting catches their attention.

PreScouter (a global network of multidisciplinary academic and industry professionals) highlights that although there is undoubtedly value in published journals,' the hardest part of research isn't about asking the right questions, it's about finding the right answers'. For this reason, another – more practical – strategy companies deploy is to partner up with academia to get hold of the research results they're looking for directly. For example:

- The Energy Biosciences Institute: A collaboration between energy giant BP, the

University of Illinois, the University of California at Berkley, and Lawrence Berkley National Laboratories in California. Their goal is to overcome the barriers to maximising the environmental and economic benefits of biofuel
- Audi's collaboration with the Technical University of Munich for innovation in digital factory transformation
- Nestlé and Imperial College London collaborate for solutions to improve nutrition
- Agrifood corporations engage more with academia (than startups) to promote innovation

Social mobility and innovation-driven academic research aside, the benefits of industry-academia collaboration are tangible, even at a student level. By engaging more with students, businesses benefit from fresh perspectives and out-of-box thinkers; insights into the latest trends; a cost-effective talent pool that can be scouted, recruited, and nurtured early on; increased collaboration; and demonstrable commitment to social responsibility and diversity.

University spinout companies are central to the UK's high-growth business ecosystem

Spinouts are companies formed based on academic research generated and owned by a university (or research institute, firm, or educational institution). They are often better equipped to turn academic research into real-world impact due to their dynamic nature and ability to make decisions quickly. Spinout companies generally channel millions of pounds back into university research, thus benefiting local economic development and job creation.

At the same time, universities nurture spinouts by providing physical space, access to equipment, assistance with commercialisation strategies, talent and local business networks, and help secure grants and equity funding from angel investors or early-stage financing.

Beauhurst's Spotlight on Spinouts 2023 revealed that Manchester and Bristol show the highest growth in spinout populations, while Edinburgh continues to attract the most spinouts from across the UK. In addition:

- Spinouts attracted a total equity investment of £2.13bn in 2022
- CleanTech and Genomics were the dominant spinout sectors
- The Department for Science, Innovation and Technology commits to increasing public expenditure on R&D to £20bn per annum by 2024/2025 and delivering a £280m Higher Education Innovation Fund to support spinouts
- The substantial increase in spinouts founded by women showcases the expanding inclusivity within the entrepreneurship landscape and the benefits of championing gender diversity

- A decrease in universities' average stake signals a shift towards more balanced partnerships that empower spinout founders to take more ownership

In the South West region, over 50 spinouts created by the University of Bristol speak to how crucial industry-academia collaboration is for high-growth ecosystems to thrive and significantly contribute to sustainable innovation.

Overcoming the challenges of Big Tech and academia collaboration

Genuine and meaningful collaboration requires trust and transparency – especially when sharing information and developing accurate insights from published results. On the one hand, scientific error (e.g. bias and influences unrelated to scientific content; inaccuracies or mistakes in the research process) misleads research projects, raises questions about its reliability, and undermines its authority and relevance.

In addition, when scientists publish papers in journals, they only release the information they wish to share. Peer review (critical examination by other scientists) occurs secretly, and discussions aren't released publicly. The closed nature of science, with authority resting in the hands of specific gatekeepers (i.e.journals, universities, and funders), is harmful, and a more open approach would better serve the scientific method.

On the other hand, there's the issue of empirical data that's essential to academic research and scientific study. The big tech companies are sitting on a wealth of data (Google, Amazon, Facebook, Apple, and Microsoft, aka GAFAM) that could allow researchers and policymakers to answer pertinent questions and develop detailed insights. And yet there is no – or very little – scholarly research published based on data provided by big tech platforms.

- GAFAM often fund research, academic departments, and thinktanks, but they seldom give data – which is the most valuable thing to an empirical researcher
- When data is made available by some digital companies, their objectivity is questioned: companies selectively grant data for studies choosing data sets that enhance their public image.

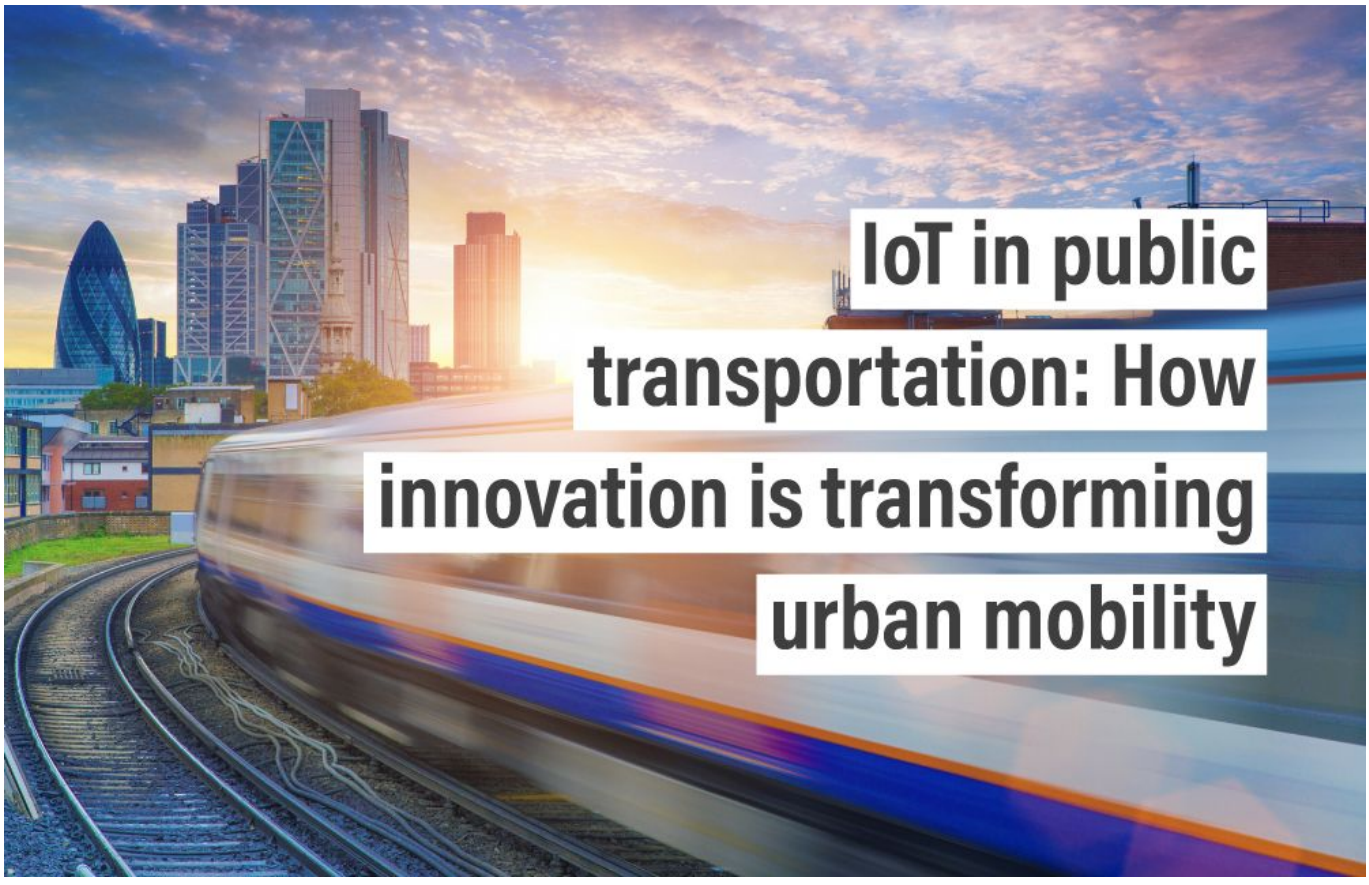
This reluctance on the part of big tech is understandable: they fear helping competitors, violating user privacy, triggering legal problems, or getting bad publicity from negative findings – even when the data they share can be fully 'anonymised'. The only way to get around this is for lawmakers to pass legislation requiring companies to release data for research – such as the EU Digital Services Act, which will go further by imposing financial penalties for non-compliance. Similar proposals for the UK, which would fall under the Non-Domestic Rating Bil, are still under legislative review.

What does the future of industry-academy collaboration look like?

The challenges that academia faces with business and big tech; and the challenges that industry has with academia can be resolved with more collaboration. The success of university spinouts and private partnerships proves what can happen when both sides have a vested interest and can be held accountable to each other and their stakeholders (i.e. scientists and researchers, founders and investors, employees and customers).

Ignitec® has a long history of supporting universities and research, and we'll continue to do so. Collaborating with academic institutions on research projects that ultimately lead to developing products that serve both people and the planet is part of the work we're most proud of. If you're in academia and looking for a tech agency to collaborate with, get in touch!

Up next



IoT in public transportation: How innovation is transforming urban mobility

Last updated May 16, 2024 | INSIGHTS, IoT, SUSTAINABILITY, TRANSPORTATION

How IoT in public transport meets the demand for increased efficiency, lower costs, and improved sustainability.

read more