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# Quantum leap: harnessing the power of proximity



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**Oxford Technology Park (OTP) prime location next to the University of Oxford’s Begbroke Science Park positions it to drive innovation. Ironstone’s Ian Harris discusses how OTP is leveraging its location and facilities to attract a potent blend of quantum, life science and technology occupiers with the potential to power UK productivity.**

### **What has helped OTP to attract a blend of quantum and life science occupiers?**

Close geographical proximity between research institutions, scale-ups, and even the largest pharmaceutical and technology companies is a known driver of innovation. That is part of the reason why places like San Francisco are so innovative, there is a blend of all these types of occupiers in the same location.

The Innovation Quarter at OTP provides ideal scale-up space for smaller occupiers in the immediate locality which makes it easier for them to retain staff post-move, while the Park’s buildings have been designed to be highly flexible and can accommodate a wide range of potential uses including wet and dry labs, R&D space, and GMP production. We have three quantum-related businesses amongst our occupiers, together with others that specialise in gene technology, and another that produces infectious disease antigens from which vaccines can be developed.

Lastly, the nature of the construction of our tech boxes and Innovation Quarter space and its relatively low cost of construction compared to other more “trophy” assets, make our buildings an affordable offering in the Oxford market. Importantly, the science that can take place within the building is the same in either case.

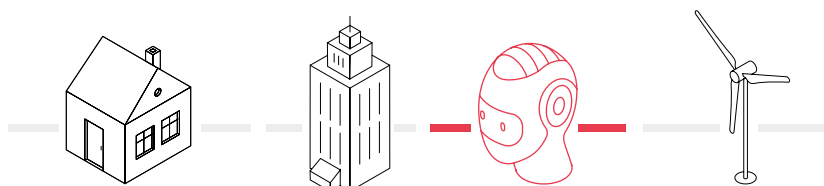
### **What are the benefits of having a blend of life science/technology/quantum occupiers within a park like OTP?**

History’s biggest innovations often come through the transfer and exchange of ideas between different people. The principal benefit of having a blend of life science and technology occupiers is that it allows for collaboration at the intersection of the various disciplines. Many of the complex challenges in society today require a collaborative approach which can only be achieved through bringing together experts from different fields. Providing an environment in which this can take place is crucial.

The increased diversity of the talent pool at the Park will lead to greater creativity, innovation, and productivity within the UK. On a more local level, a park wielding a diverse occupier base should create jobs and attract investment to the location.

Are you seeing an increased convergence of the life science and technology industries? What role do you think quantum computing will play in this?

The boundaries between tech and life science are becoming increasingly blurred. One example would be in the field of drug discovery where tech, AI, quantum, and robotics are all having a profound effect in improving success rates and shortening timescales in what is a notoriously laborious and lengthy process.



It is getting a lot harder to clearly discern what is a life sciences company and what is a technology company, and that's no bad thing. More efficient processes mean we can get greater research output, which will ultimately pay significant dividends for both economic progress and health outcomes.

### **What macro-level infrastructure is needed to nurture Britain's quantum computing industry?**

We need to see a continued and augmented commitment to Government funding in the sector.

The signs are encouraging. The Government recently announced an investment of £45m into the quantum sector as part of its commitment to transforming the UK into a quantum-enabled economy by 2033. The construction of the new facility at Harwell for the National Quantum Computing Centre is another good indicator of the strength of investment into the sector. However, more support will likely be needed if we are to fully unlock the industry's potential.

Investment in, and improvement of, the UK's power network will be necessary if it is not to become a limiting factor in the growth of the quantum sector. Quantum technologies can be power-hungry, largely because of the requirement for cryogenic cooling to achieve the near absolute zero temperatures required for superconducting qubits.

Housing is also critical. If the sector is to flourish, then there needs to be affordable, accessible housing options to accommodate the young talent that will take these businesses forward. Oxford, Cambridge and central London – the most significant regions for the life sciences and technology industries in the country - have some of the most expensive housing stock in the world as a proportion of income, which represents a significant barrier to entry for firms looking to establish themselves within the existing clusters.

### **Is the UK's existing grid infrastructure an obstacle to success?**

Undoubtedly. Lack of availability of power is a nationwide problem and a barrier to development. The issue is not so much a lack of power at a national level but, rather in getting the power to the right places. The UK government has committed to investing in sustainable renewable energy sources such as wind solar and nuclear, but the grid infrastructure needs significant investment to distribute the power more efficiently.

### **What other regions are you looking at? Why are they interesting?**

Our focus remains on the established Golden Triangle hubs of Oxford, Cambridge and London's Knowledge Quarter. We are firm believers in the Genius Loci theory that life science clusters form around world class universities, teaching hospitals and research establishments. Whilst there are interesting things taking place in other locations such as Manchester, Leeds and Birmingham for example, they don't yet have the critical mass or the supply/demand tension that we see in our core markets.

### **What effect could the quantum computing industry have on UK productivity?**

The full scale of the potential impact of the quantum sector on UK productivity is not yet fully understood. There is doubt that it will be transformational, and as evidenced by the likes of Google, Microsoft and Amazon investing heavily in the sector.

The tech giants have not been slow to realise the probable scale of the opportunity that quantum will present. Anything that relies on complex calculations stands to be revolutionised be it pharma, genetics, finance, or logistics.

Lastly, if the UK can advance and maintain its reputation as a global leader in quantum together with science, tech and innovation generally then it will continue to attract the investment, talent and partnerships that drive productivity gains.

