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Silicon Island

This long overdue UK tech boom could create wealth on a massive scale

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Dear Reader,

What are we waiting for? We have what it takes, we know how big the rewards are, we have ample evidence to support the view it can be done. We just have to reach out and take it.

What am I talking about? We'll get to that!

Alexander Graham Bell was born in Scotland but it was North America that benefited first from the invention of the telephone. Michael Faraday was born around the corner from our offices in London. He was a polyglot and lent his name to a host of inventions. We owe the electric motor and electrolysis to his genius.

John Logie Baird invented the first television set. Percy Shaw invented the "cat's eyes" now found on most roadways. Frederick Walton invented linoleum. George William Manby invented the fire extinguisher. John Shepherd-Barron invented the ATM.

Alexander Fleming discovered antibiotics. David Brown invented Viagra. Timothy Berners-Lee is credited with inventing the World Wide Web and James Dyson perfected the vacuum cleaner.

Do you know anyone who made a fortune from these inventions? Did any of these inventions create a stockmarket boom in the UK? Did we lead the world in the commercialisation of these technologies? Did these inventions contribute to universal employment and high standards of living?

We might have been able to argue in the affirmative during the Industrial Revolution or even the dotcom boom but it has been a long time since the UK was the world leader in technological innovation and speculative investment.

It doesn't have to be that way. Most of the ecosystem that powers Silicon Valley would be quite simple to replicate in the UK, with a bit of joined-up thinking. We already have most of the ingredients, but the reason I am writing about this now is

because the last vital pieces to the puzzle are now falling into place.

This is an unmissable opportunity for the ambitious. A chance to be an early mover in a homegrown tech ascension. As a subscriber to *Frontier Tech Investor* you should be getting very excited. You are perfectly placed to cash in.

This month I have selected a company to kick things off – ideally positioned to see huge growth from this made-in-Britain tech boom.

Let's first think about what Silicon Valley has that puts it in pole position for developing new world-beating companies… and then we'll look at how we're just a few crucial steps from creating our very own "Silicon Island".

First off it has world-leading educational facilities. Stanford and Berkeley in Northern California feed graduates into the engineering and technology sectors. Then there is ample private capital to invest in new ventures and a rich core of talented individuals capable of helping new companies develop business models. It has incubators to help get new ventures started and it has a large market to sell into when products are ready.

The US tax code is specifically designed to encourage business development with a range of write-offs not available to payroll employees. The carried interest exemption represents a major incentive towards participating in pooled capital ventures. Meanwhile, the tax code is also very forgiving of failure with exits from personal bankruptcy in less than six months.

If anyone thinks this kind of ecosystem can't be replicated, just look at what China is doing. It has spent years studying what the US does right and is putting a long-term plan into play to turn the Pearl River Delta (Shenzhen, Macau, Hong Kong and Guangzhou and Dongguan) into its own version of Silicon Valley.

It has the factories, investment capital, people, subsidies and a freewheeling absence of a regulatory framework to make it happen. Most of all China sees it as the only way to achieve the nation's long-term goal of global domination.

The state-funded plan is to turn the entire basin into a massive manufacturing/innovation hub aiming to compete and win in the 21st century economy of the future. Meanwhile, Alibaba's base in Hangzhou, about a 90-minute high train ride from Shanghai, is a tech hub all of its own as the innovation at the heart of the company breeds new companies.

"Massive wealth creation"

Now let's think about what the UK has and what it is missing. We have more world-class universities than anywhere in the world outside the US. Cambridge is a world-renowned centre of technological excellence and plays host to a substantial pharmaceutical/biotechnology sector.

The primary strength of Oxbridge is their graduate programmes and their ability to attract gifted students from all over the world. What the UK needs more of are graduates in science, engineering and programming. That's going to be fundamental to moving up the ranks for technological prowess.

What China lacks in educational facilities, it is outsourcing to the UK, US and Australia. Our universities are educating China's tech innovators. There is a clear financial incentive to take in foreign students, but the bigger point is that this is a pointless long-term exercise if we do not capture their economic potential once educated.

China's 1,000 Talents programme is aimed directly at encouraging overseas scientists to relocate but its primary focus is on attracting the Chinese diaspora home with promises of big payouts for commercialising their research. This is exactly the kind of programme the UK could easily implement.

The Silicon Roundabout of Old Street in London has been growing for 20 years. It started off with the tech hub innovator and was well on its way before David Cameron championed tech around 2010. However, that positive attention from government was a major catalyst for growth and the area now sports upwards of 5,000 businesses and stretches well into Hackney and the East End.

Companies like Cisco, Facebook, Google, Intel, McKinsey and Microsoft have moved in. Partnerships with local universities like City, University

of London; London Metropolitan University; Imperial College London; Queen Mary University of London; and University College London have been created and there is real potential for strong companies to evolve from the developing ecosystem.

The City of London sits a stone's throw from Silicon Roundabout but London is not known as a private equity centre. Part of the reason for that is because it has always been more focused on public markets. Investment banking, the legal, accountancy and insurance sectors, underwriting bonds issues and trading anything and everything has been the stock and trade of the City for generations.

The traditional route in the UK to bring new companies funding has been through a listing on speculative exchanges like AIM. That puts UK investors in a better position to invest in early-stage companies than in other markets like the US and China where private equity companies or the government are early investors.

This is why I am so excited. We are now going to get our chance at massive wealth creation. We are going to see a wave of commercialisation emerge from the UK's universities and startups that dwarfs anything we have seen and a lot of those companies are likely to pitch tent in the stockmarket where we can invest.

This can be a double-edged sword. The UK has by far the most liquid capital market in Europe and it successfully encouraged many promising new companies to list on its markets.

The downside is that many of these companies subsequently get taken over by much larger international rivals. ARM Holdings being acquired by Softbank was a good deal for equity holders at the time but it also robbed them of the opportunity to continue to benefit from the future success of the company.

"The innovator's bursary"

One of the biggest factors in the success of Silicon Valley has been the big payouts early employees have received when the companies go public. Think of this like a special type of "bursary" innovators and their early team get paid.

That has helped to create overnight millionaires but it also supplies ambitious people with the funds to go off and start their own ventures. It has a knock-on effect that provides momentum.

For example, Tien Tzuo was one of the first employees at Salesforce before he started Zuora, which in turn became a multi-billion-dollar company. He's one of a legion of former early tech employees to start his own venture. This is what I consider to be the compounding effect of success. It's an ability to dream big and to pursue the prize of exponential wealth.

Private equity investors are willing to support new companies because they have seen how much money they can make.

Meanwhile, entrepreneurs are willing to risk it all to start a new company because of the success they have been a part of and the enthusiasm for innovation in the wider community.

It is this exact mindset which is most difficult to replicate and it is what the UK has to work hardest on.

There is another important ingredient that helps to support the risk-taking culture. It is government support. The technological revolution that has allowed the US market to power ahead of just about everywhere else for the last decade has been driven by technology firms.

What is less often discussed is that the foundations for many of those companies came from primary research pioneered by government-backed research. The internet, surgical robots, GPS and a host of other technologies arose from the US's DARPA unit. Technological advantage has been part of the national psyche for decades and that has filtered down into the companies that now lead the market.

Government-backed boom

The UK's national priority for decades has been the National Health Service. The government already spends over £750 million a year on medical research while domestic charities spend another £1.3 billion. The result of that investment is a world-class medical development sector with academic citations second only to the US.

Let's not forget that DeepMind, the crown jewel in Google's artificial intelligence empire, is still centred in the UK and was built with domestic talent. The potential here is that the UK will become an artificial intelligence centre of excellence and will be able to field considerably more companies if access to computing power and bandwidth is made available to them.

The UK is home to a healthy community of energy innovators because of the expertise that has evolved here because of the need to develop and exploit the North Sea oil finds. There are a range of measurement, valve, pipe and pressure companies that dominate their respective fields because of the start they got in the domestic energy sector.

The UK's aeronautics sector has long benefited from the size and professionalism of the UK's military and that is only going to be enhanced as the global geopolitical landscape becomes more uncertain.

Boris Johnson spent a good part of his re-election campaign speaking about the need for technological innovation when he wasn't talking about Brexit.

At a UN conference in September he spoke about where both the risks and opportunities lie and announced a tech summit in London for 2020. With an increased majority he can now plot a new course for the UK in the technologies of the future. If Boris has his way, that will include a functional fusion reactor.

However, it's not as if Boris gets to wave a wand and make it happen. The reality is the UK is home to oodles of talent and technologies and people that just need a chance to truly change the world. It is in their potential that the investment case resides.

The only way to get to the end destination of technological leadership from the middle of the field where the UK currently resides is through massive investment in primary research. That will take place both in universities and companies but the aim will be to create leaders that can generate income and jobs for the UK on the global stage.

We are now potentially at the dawn of putting technology on the front page of UK policy for decades to come and that will create an investment environment like nothing we have seen before.

Dominic Cummings, Boris' chief adviser, stated last week what he is looking for:

The categories are roughly:

- *Data scientists and software developers*
- *Economists*
- *Policy experts*
- *Project managers*
- *Communication experts*
- *Junior researchers one of whom will also be my personal assistant*
- *Weirdos and misfits with odd skills*

This being to ensure he has people on hand that can help with decisions well outside his "circle of competence". I couldn't be more excited. The way to get the best value from government is to ensure the bureaucracy works in the most professional manner possible.

Technocratic management coupled with a desire to infuse the economic and political sphere with best-in-class technological solutions is close to a best-case scenario for the UK economy.

When we look to the future, not only for the year but into the next decade, the calendar of technological rollouts is already well stacked. We know that 2020 is going to be a big year for 5G.

We know that almost every automotive company has ambitions to have at least half their sales from electric vehicles between 2022 and 2025. There are dozens of teams working on fusion reactor designs and all want to beat the ITER project to the prize of net positive energy. Meanwhile, Amazon and Microsoft are ramping up competition in the cloud services sector.

Those are just the sure bets we know are virtually inevitable in the next decade.

By the time we get to 2030, quantum computing will probably have changed the world in ways we can't even imagine. The proof of concept drugs that are coming out today in the genetic cures sector are only the first volley in what is likely to represent transformational change for the healthcare sector and more importantly for how we fund healthcare.

I strongly believe that we are on the cusp of a change in the UK economy that couldn't have been dreamed of a decade ago.

The stage is now set for value creation on an epic scale and the mid-cap sector is where the average investor is most likely to benefit.

Frontier Tech Investor will show you how to profit

A number of our current UK holdings are likely to be beneficiaries of the increasing focus of the UK administration in the technology sector.

Avast Plc, as a cybersecurity company, is a clear beneficiary since security comes part and parcel with a greater focus on data. **Advanced Oncotherapy** is in the process of commissioning its first proton beam accelerator in Cheshire ahead of putting it into use later this year. **Ceres Power** has been going from strength to strength as the hydrogen fuel cell sector gains wider acceptance.

I don't think the advantage **Genus** has in providing pigs with immunity to swine flu can be exaggerated and it is a purely UK innovation. **Meggitt** has broken out not least because of the increasing demand for its products as the geopolitical environment in the Middle East deteriorates further. **Oxford BioMedica** pulled back rather sharply over the summer but is on a solid recovery trajectory and its take on genetic sequencing remains one of the only viable competitors to CRISPR.

The point here is that the UK companies leading in their respective sectors are all likely to benefit from additional government support to bring their plans for full commercialisation to fruition. The simple fact of the matter is that with the UK leaving the EU, it is essential to plot a way forward that is income producing and quickly creates a positive balance of payments to ensure it was the right decision to leave.

I strongly believe that we are on the cusp of a change in the UK economy that couldn't have been dreamed of a decade ago.

The Conservatives have a once-in-a-lifetime chance to reshape the economy. They need to make a success of it because to fail will mean handing the country over to Labour at the next election. That should be incentive enough to be imaginative.

As we head into a future where technology and how to both innovate and implement it becomes a priority for government policy, it is worth considering what the outlook is looking like. The UK already had a wide range of potential solutions to intransigent global problems waiting in the wings for a helping hand at commercialisation.

Friends of mine in Cambridge are busy developing a novel cancer treatment and have already had early successes with their strategy. The UK has long expertise in engineering, aeronautics, fintech, healthcare and the energy sector that can be utilised to propel the economy into a leading position internationally. The will to do so is what has been missing and it now appears to be present.

I expect to return to this top repeatedly over the coming year because animal spirits have been unleashed in the UK market and that is likely to spur investment opportunities here for years to come.

Right now, I want to bring to your attention one particular company that is most likely to benefit from the emerging favourably environment.

This month's recommendation

Wide Area Network Distributed Computing or WANdisco is a UK-based cloud computing company backed by solid intellectual property, an experienced management team and partnerships with a broad swathe of the world's largest Big Data companies.

The key benefit WANdisco provides is an easy transition to the cloud for companies. Through its fusion platform it allows companies to develop any array of connections to data storage providers like Microsoft or Amazon they wish. Additionally, it is the world leader in live data transfer which no other company is currently competing in.

This is particularly relevant to the financial services sector

where real time pricing and communication with databases is essential. It also relevant to the healthcare sector where data is shared between sites or where remote teams work collaboratively on problems.

When the company IPOed it already had Hewlett-Packard, Walmart and Lockheed Martin as customers. In the last 18 months, it has enhanced its relationship with IBM with the result that revenue from royalties increases to 50%.

It improved its reseller status with Microsoft so that it is now a joint go-to-market on packaged Azure offerings. It also improved its partner status with Amazon Web Services and developed new product integrations with Alibaba Cloud.

Importantly, the company now has the highest accreditation offered by Oracle for best practice and that is a major spur in developing the firm's deal pipeline. It has also successfully signed up new customers in the insurance, banking and telecommunications sectors as well as securing the US government as a customer.

A challenge for any small company in dealing with large companies like Microsoft is getting money out of them. Big companies know they have the upper hand when dealing with revenue-hungry small companies so they will often display just enough interest to ensure the small company continues to try its best to get the business, with doing enough to justify handing over money. That is exactly the situation WANdisco is in with Microsoft.

When the company raised an additional $17.5 million in share capital in February 2019, Peel Hunt analysts had this to say: "This materially de-risks the balance sheet, which held $10.7 million cash at the end of 2018, and strengthens WANDisco's position in any discussions it is having with, for example, Microsoft."

When it raised an additional $16.5 million in November, it was able to do so at a substantial 23% premium to the existing share price. There are a number of important points to understand about that development.

The first is that the company needed the additional capital because while it remains highly successful in signing up new customers, the icing on the cake will be when its Microsoft business goes revenue positive.

Secondly, the fact US-based private equity investors like Davis, Global Frontier, Ross Creek and UK investors Herald were willing to pay a premium for the additional shares supports the view the lows are in.

The third is the February share issuance included a 12-month lock-up period. That means the share needs to show signs of recovery soon to encourage those investors to continue to hold.

That's why I am bringing the share to your attention now. I believe this is a very favourable time to buy. When it raised the cash, the company confirmed its positive guidance on 2019 which implies an additional $18 million in revenue from H2 2019. The company's Fusion system has already been embedded with Microsoft. If it manages to have a large contract signed, I believe the share will quickly double.

Just last month the company announced a $1 million contract expansion with Alibaba. This follows on from having already signed up 1,000 customers in China in fiscal 2018.

The clear intention of the company is to become an indispensable interlocuter between businesses and cloud providers where it can take a cut from both sides of the transaction. The ease of use case WANdisco offers customers is a powerful incentive to sign up and that is contributing to the evolution of a recurring income stream.

The total addressable market for the company is estimated at around $100 million per annum which would represent growth of at least five times from what the company is currently generating. Meanwhile, the compound annual growth rate for data storage is 38% which could see significant growth for the company over the medium term.

Dr. Yeturu Aahlad is the brain behind 35 of the company's patents and is a chief data scientist and co-founder.
He invented the Distributed Coordination Engine (DConE) technology that forms the foundation of the company's interface and enables active-

active communication which also allows live data to travel back and forth over the cloud.

He previously worked for Fujitsu was part of the Sun/Netscape team that developed whole new server platforms for the original COBRA distributed network framework. He is joined on the board by individuals with long experience of bringing companies to their full market potential and engaging with investors. You need both visionaries and market-savvy people to drive success and WANdisco has that in its board.

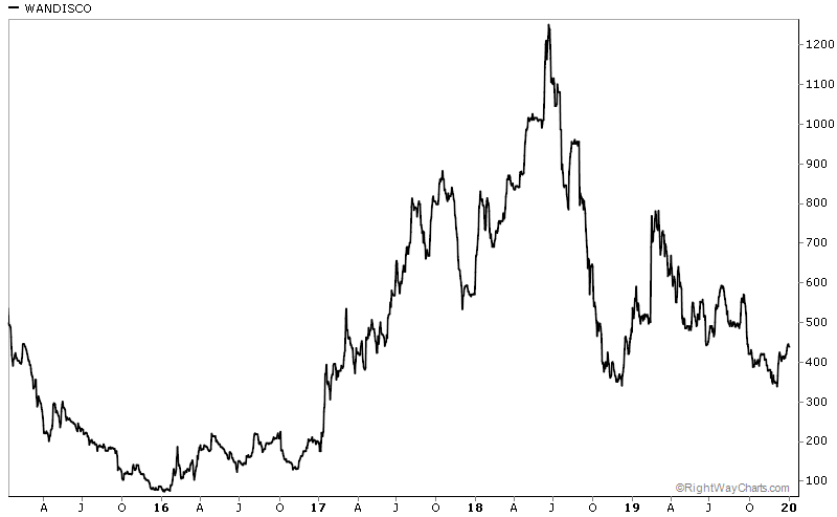
I recommend the share a buy up to 500p. My 12-month target is 800p but over the coming three years I expect the share to rise to at least 1,200p assuming it successfully signs large contracts.

The risk is that sales do not ramp up as the company expects which would result in an ongoing capital requirement and potentially dilution of the position. I am encouraged by the success of the recent share issuance but this a risk nonetheless.

All the best,

Eoin Treacy
Investment Director, *Frontier Tech Investor*

Action to take:	**Buy WANdisco Plc**
Ticker:	WAND LN
Price as of 07.01.20:	429.00 GBp
Buy up to:	500p
Market cap:	£207.44 million
52-week high/low:	858p/330p



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