

Southampton's finest invention and its pioneer tech start-ups

The backbone of the internet was developed in Southampton. Its digital future look bright, too, says *Ellie Zolfagharifard*

American troops waiting to sail for Normandy in 1944 have left their mark in Southampton. More than 100 of their names are etched into a 62ft brick wall at Western Esplanade – a reminder of the city's crucial role in D-Day.

Today that wall is crumbling, as are many of the concrete post-war buildings that were quickly erected following devastating Nazi air raids.

"You know, the old joke that they tell about Southampton is that what the Luftwaffe failed to achieve, the planners succeeded," says Sir David Payne, who has lived in the city ever since studying at the [University of Southampton](#) in the mid-Sixties.

The 75-year-old may be brutally honest about Southampton's aesthetic shortcomings, but he is passionate about its future as a force in technology. Sir David is one of the city's most celebrated residents, credited with developing the world's first practical optical fibre amplifier.

The technology today forms the backbone of the internet. It is used in optical fibres to boost light signals, allowing vast amounts of data to travel at rapid speeds all over the globe. "It's no idle boast when we say we changed the world," says Sir David, speaking about his work with colleagues Graham Reed and David Richardson.

"We claim to have invented what makes the internet work," adds Dame Wendy Hall, another of the city's leading technologists, and director of [Southampton University's Web Science](#)

Institute. But that's not the first thing people usually associate with the city.

Southampton, which has a population of just over a quarter of a million people, is still trying to shake off its reputation as a declining port city. A change is slowly taking place that aims to inspire a new generation of technology pioneers.

"Southampton is an interesting place," says John Mountain, Starling Bank's technology chief, who has recently opened an office on the city's waterfront in Town Quay. "It doesn't somehow make the news. But there's a load of tech talent down here."

The city ranks in the UK's top five tech superclusters, ahead of Cambridge and Bristol, according to the latest report by estate advisers CBRE. Between 2010 and 2016, the number of hi-tech workers grew by a quarter. In 2017, Southampton's turnover for digital tech businesses was £2.1bn.

The city's port has shaped a global perspective.

"I've often contended that the culture of the people at Southampton is determined by the fact that we tend to have a very international view of the world," says Sir David.

Dame Wendy believes this is down to the university and its strengths in science, technology and engineering. In the past two decades, it has spun out 27 companies, four of which have floated on London's Aim with a combined market value of £180m.

Ben Clark is partly responsible for those figures. He runs the Future



Worlds incubator on campus, helping to mentor students and grow start-ups that he says stand “shoulder to

shoulder” with those in Silicon Valley. His frustration isn’t the lack of available talent, but the pessimistic attitude of British investors.

“Whenever I’m in Silicon Valley the sense of hope is just palpable,” says Clark. “There’s this sort of enthusiastic optimism that maybe just maybe, you’re the next Zuck, or maybe just maybe, this could be enormous. I think, often in the UK, we start in the opposite direction.”

Despite the differences in attitude, he believes Southampton is, in many ways, better than Silicon Valley. For one thing, he says, you’re not stuck in traffic every day to get to work, London is just one hour away and there is a far better work-life balance. There are also more opportunities to grow a start-up.

Clark is now on a mission to inject some US-style optimism into his students – and so far, it seems to be working. Joshua Steer, for example, has built upon an undergraduate project in prosthetics to create spin-out company, Radii Devices. The company’s software helps clinicians predict the pressure between a limb and a prosthetic to help create the perfect fit. Through Future Worlds, 25-year-old Steer has raised £180,000 to commercialise his technology.

Major tech companies have also invested in the city. IBM has a base, alongside the likes of Ordnance Survey, Sparkbox, Senseye and Etch, as well as telecoms company toob.

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Profs Graham Reed, Sir David Payne and David Richardson, University of Southampton

—CHRISTOPHER PLEDGER FOR THE TELEGRAPH—