LONDON THE CONVERGENCE CAPITAL

LOND CN & PARTNERS

FOREWORD

As the newly appointed Deputy Mayor of London for Business, I am delighted to showcase London as the capital of convergence. With world-class talent, access to international markets and a culture of collaboration, London's digital technology sector continues to attract and create the world's most innovative tech businesses.

This report showcases why this could only happen in our great city, where historic strengths in financial services and the creative arts converge with technology to create new sectors in FinTech, AdTech, EdTech, Digital Health, FashionTech and more.

I look forward to seeing the future of technology in London and seeing it continue as the best place in the world to do business.



Rajesh Agrawal Deputy Mayor of London, Business and Enterprise



For centuries, London has been a global centre for trade, finance, science and the creative arts. Now the tech explosion of the past decade is launching the city on the cusp of a wave of fresh innovation. World-class domain expertise is intersecting with tech talent at scale, and at speed. The result, as London Technology Week 2016 demonstrated, is a ferment of innovation and entrepreneurship that ranges from finance to fashion, from transport to genomics.

London is the world capital of convergence, harnessing and bringing together intellectual and financial resources from across the world. It has, and always will be, a truly global and open trading city. Digital technology has enhanced that openness; and that is not going to change.

No city in the world enjoys London's quotient of talent, technology, culture and capital. It is a potent combination.

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Professor David Gann, Imperial College London

THE TALENT HEADS HERE

Entrepreneurial talent flocks to London. Millions of international workers have come to the city from overseas to live and work, and now call London home – including one million Europeans. "No other city in the world has the level of international talent as London," says Martin Mignot of Index Ventures, the VC firm that has invested in 1 European billion-dollar 'unicorns' or technology companies with a \$1bn+ market value. "This is where the gross scaling talent lies."

A recent report from EY ranked London as second only to Silicon Valley as the most likely place to produce the world's next tech giant. The new GP Bullhound European Unicorns 2016 report found that 18 out of the 47 European 'unicorns' were founded in the UK – and most of them are based in London. Those 18 companies are worth a combined \$40bn.

Their founders come from around the world: two Estonians founded Transferwise; Portuguese entrepreneur Jose Neves started Farfetch; and American banker William Shu founded Deliveroo.

According to Deloitte, the number of high-skilled employees in London has increased by 16% from 1.47m to 1.7m in the past three years. This equates to an additional 235,000 high-skilled jobs created in London in that period. "It's fantastic being in London because you can attract global talent," says Jenny Griffiths, founder and CEO of SnapFashion, which sits at the intersection of retail, fashion and publishing. No other city in the world has the level of international talent as London... This is where the gross scaling talent lies.

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Martin Mignot, Index Ventures



GOVERNMENT RUBS SHOULDERS WITH INNOVATORS

In London, politicians and regulators are not just engaged but accessible. "London is the effective city for getting institutions and hipsters working together," says Lawrence Wintermeyer, CEO of Innovate Finance. "They are all within 15 minutes via public transport. I can breakfast with a Westminster politician, have coffee with a CIO, lunch with a founder, and dinner with the Lord Mayor. You get more; more ideas than anywhere else in the world. There's a quality of face time that you only get in London."

With so many tech businesses in London, it's also easy for regulators and politicians to visit and learn from them. From tech tours for local council officers through to pitching competitions in royal palaces, entrepreneurs are gaining more opportunities to connect with government. "It's impossible to imagine a local authority not dealing with startups, if it wants to improve," notes Richard Walkley, CEO of Haringey Council.

IT'S A HIGHLY CONNECTED CITY

"London has data oozing out of every pore," says Professor David Gann of Imperial College. "It is probably the richest data city in the world." He points to the London data store, which provides public access to huge numbers of data sets. Open data has underpinned the emergence of world-leading transport apps such as Citymapper.

It's set to get bigger and better. When the east-west Crossrail line opens in 2018, it will be "the most digital piece of public network infrastructure in the world," he adds.

London is the effective city for getting institutions and hipsters working together... You get more ideas than anywhere else in the world.

Lawrence Wintermeyer, CEO of Innovate Finance.



NEW ECOSYSTEMS ARE EMERGING...

New globally significant ecosystems are emerging in the heart of the capital.

Some are physically taking shape. Situated by the British Library and London's St Pancras station, the towering Francis Crick Institute is set to become one of the world's top multidisciplinary biomedical research institutes. When fully operational, it will house 1,250 scientists. Only one mile further west, the £3bn, 25-acre White City Campus of Imperial West is being built, in which 10,000 researchers, students, startups and technology businesses will eventually operate.

Not all ecosystems are giant construction projects, of course. "London has all the ingredients to be the global capital for digital health," says Anna King of DigitalHealth.London, a new ecosystem that is bringing together clinicians, healthcare providers, research institutes, entrepreneurs and industry to give digital health companies a clearer route to market, based on the needs of patients and the NHS. Innovative digital health companies such as Big White Wall are expanding internationally.

EdTechUK is a strategic body set up to draw together schools, universities, government departments, publishers and tech entrepreneurs; facilitating and accelerating innovation within educational technology.

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London has all the ingredients to be the global capital for digital health.

Anna King, Digitalhealth.london

...AND SO ARE NEW CLUSTERS OF EXPERTISE

Ambitious UK government policy in genomics is helping to drive growth in this complex and novel science. "The UK Government wants to make genomics part of clinical reality," says Julia Fan Li of US bioinformatics business Seven Bridges Genomics. "This brought us here and is spawning many small companies who are coming to London to work on this cutting-edge science."

That means bringing together tech talent with the deep expertise held within London's universities, as well as nearby Oxford and Cambridge.

The same is true in Artificial Intelligence (AI) and machine learning expertise, where London is emerging as a world centre. Several of Britain's best-known AI companies – notably Deep Mind, which was bought by Google – started off as research projects within these institutions before being spun out as businesses.

THERE ARE MORE BRAINS PER SQUARE MILE

London is intellectually fertile: it is Europe's leading city for patent registrations in healthcare, wireless technology, video games, multimedia and software.

With 4 universities in the world's top 40 (more than any other city) and 7 universities in the top 200, London is awash with talent – 400,000 students will study in London each year. There are more university degrees per capita than any other city of its size.

These world-class universities are bringing together world-class research with entrepreneurship, from UCL Advances to King's Student Entrepreneurship Institute to Innovation RCA.

In west London, Brunel University and property developer U+I have teamed up to create a new hardware accelerator at the old EMI Vinyl Factory – where millions of the world's best-selling records were pressed and distributed.

LONDON TALENT

4 UNIVERSITIES IN THE WORLD TOP 40

7 UNIVERSITIES IN TOP 200

MORE UNIVERSITY DEGREES PER CAPITA THAN ANY OTHER CITY OF ITS SIZE

...AND MORE CORPORATES LOOKING TO COLLABORATE

London boasts more international corporate headquarters than any other city in the world, who are tapping into the tech expertise that is on their doorstep.

"Digital is unchartered territory, steeped in unknowns, which can feel uncomfortable for risk-averse leaders who have always done things in a particular way. But those ways are no longer delivering. Just like digital disruptors are paving new paths and making up the rules as they go, large incumbents have the opportunity to do so too," says Bruno Berthon, Managing Director, digital strategy global lead, Accenture Strategy.

Microsoft and Barclays have been running start-up accelerators in London for several years. Fashion giant Burberry has long been renowned as a tech-savvy corporation. But engagement amongst London-based corporates across sectors is ramping up. The MasterCard Start Path program allows MasterCard to partner with startups to help them scale. Other examples include retailers John Lewis and Topshop, betting group William Hill and even hedge fund manager Winton Capital.



IT'S A MAGNET FOR TECH GIANTS

The US tech giants form a significant part of London's tech ecosystem. Facebook has its second largest engineering operation outside of Silicon Valley in London. Google's new London office in King's Cross is set to house thousands of its staff. Enterprise social network, Yammer - now part of Microsoft - chose London for its engineering centre, ahead of New York.

Interest amongst global technology companies continues, with 21 overseas delegations visiting London Technology Week 2016 to look at London as a place to invest.

IT'S ONE OF THE WORLD'S GREAT CONSUMER MELTING POTS

London's resident population is a global mosaic: approximately one-third were born and raised as Londoners, one-third come from the rest of the UK and the remaining third were born outside the UK. This kaleidoscope of cultures means that there are over 300 different languages spoken in London. With its growing, smart population of early adopters, London is the world's most fertile ground for new ideas.

"No city is as open to fashion business as London," says Matthew Drinkwater, Head of the Fashion Innovation Agency, which is based in the University of Arts London. "London is where young creatives from around the world look as a place to start. It has some of the most forward-thinking retailers, and the world's consumers come here for the retail experience."

It is the go-to city for consumer tech applications. Take food delivery company Deliveroo; starting from London has proved to be a significant advantage for its business model – from the density of its population, its many different 'villages' and neighbourhoods, and its profusion of high street chains and independent restaurants.

London is a leading global city for the development and adoption of fintech technologies. EY's Fintech Adoption Index shows that 25 per cent of digitally active Londoners identify themselves as fintech users; this rapid adoption of new payment technologies lies behind the heavy investment into the UK's fintech sector. Earlier this year, for example, Mondo's app-only service – still in beta stage – raised £1m from Crowdcube investors in just 96 seconds.

OVER 300 DIFFERENT LANGUAGES SPOKEN IN LONDON



SUCCESS IS BREEDING SUCCESS

Exits, IPOs, and scaleup successes are enhancing the London ecosystem – and that pipeline is building. London has a growing cadre of successful tech entrepreneurs who are reinvesting their time and money into helping new ventures. "If we each put money back into ten companies, you get real leverage," says John Hughes, chairman of FTSE-listed Just Eat.

The London Stock Exchange is, he adds, "the quality stock market to list on. Capital from around the world will invest in a London quoted company."

CREATIVITY MEETS CULTURE MEETS TECH

The intersection of the arts and tech is firing London's creative powers. No other city has both the heritage of artistic output, craft and product design to fuse with its tech talent.

"It is the best place in the world to create content," says musician and technologist Beatie Wolfe. "In the US I share; but London is the making zone. Here you have the tools and the contacts. It is incredibly organic. You don't need to fly all over the world; London has everything you need to pull off radical ideas and projects."

Her work is a true synthesis of music, fashion, technology, history and art: she wears a jacket cut by a Savile Row tailor who dressed David Bowie and Mick Jagger, and which is made from fabric woven with the chords of her latest single, which in turn was recorded in the same room in London where Paul McCartney wrote *Eleanor Rigby*.

Districts of London with centuries of history of craft manufacturing have been reinvented. In Dalston, revolutionary new music tech is being created by ROLI – whose American founder Roland Lamb gained an MA in product design at London's Royal College of Art. In Shoreditch, tech-enabled jewellery is being created by Vinaya and product design meets innovative education in firms such as Technology Will Save Us. London is the making zone. Here you have the tools and the contacts. You don't need to fly all over the world; London has everything you need.

Beatie Wolfe, musician and technology entrepreneur

LONDON'S CONVERGENCE HEROES











DELIVEROO



worldremit.



ROLI

London Technology Week is a festival of live events that takes place annually throughout the capital in June to celebrate and cultivate London as a global powerhouse of tech innovation. As part of London Technology Week 2016, we shone a spotlight on London's Convergence Heroes – ten London companies using technology to disrupt traditional industries such as fashion, education, travel, financial services.

From the future of music to mental health support, from digital jewellery to mobile banking, these ten Tech Convergence Heroes are making the most of their London advantage.

Methodology

We conducted extensive desk research and consulted widely. We interviewed and received recommendations from investors and CEOs, academics and policy-makers. We sought nominations from more than 30 of London's accelerators and incubators. Finally, we asked the Mayor of London's Technology Ambassadors to review and select the final 10 candidates.

BIG WHITE WALL

Big White Wall (BWW) was founded in 2007 as a safe, anonymous online community for anyone experiencing mental health problems such as depression or anxiety. Many people experiencing poor mental health don't even get as far as asking for help, and still fewer receive treatment. It is estimated that 1 in 4 people suffer from mental health issues but many do not ask for help, let alone receive treatment. With over 40,000 members, BWW has grown and developed to offer services across the UK and beyond, offering 24/7 access to peer support, professional counsellors and therapeutic courses.

"Technology impacts our lives in so many ways, it is imperative that this includes our personal wellbeing too," says Tina Trenkler, Managing Director at BWW. By using big data and rigorous clinical governance to provide a service that is free at the point of use and proven to work, Big White Wall is a true hero for London's growing digital health ecosystem.

Digital Health

@BigWhiteWall1

www.bigwhitewall.com



Welcome to Big White Wall. Having a tough time? Feeling low or stressed? Start feeling better now.

CITYMAPPER

For many Londoners, life is defined as BC and AC – before and after Citymapper. Founded by Azmat Yusuf in 2011, this is the company that reinvented the transport app, built for commuters and their daily needs. The free journey planning app uses uses open data from Transport for London, OpenStreetMaps, Foursquare, Google, Apple and other sources. Now live in 29 cities around the world, it provides city dwellers with extensive information about how to get from A to B with all transport modes available.

It's a brilliant example of how opening up more than 20,000 government-held data sources can underpin innovative apps. Citymapper has even built its own tools so that users and other parties can add and fix the data used.

Citymapper is in serious growth mode, having recently raised a fresh \$40m round from investors such as Benchmark Capital and Index Ventures.

TRAVELTECH

@Citymapper

citymapper.com/london





DELIVEROO

In the blink of an eye, the Deliveroo rider has become one of the most familiar sights in London. Founded in 2013 by American ex-banker William Shu, the company has raised more than 139m and expanded rapidly worldwide – it now operates in a total of 68 cities across 12 countries.

This is a company on a mission to change the way the world thinks about takeaway; through marketing, selling and delivering quality restaurant meals at the press of a button.

Deliveroo has merged the intersection between food and technology, having leveraged London's population density, high street chains and independent restaurants, thriving tech scene and on-demand culture to drive significant growth.

FOODTECH

@Deliveroo

deliveroo.co.uk





MONDO

A bank that belongs on the smartphone, not on the high street: that's the bold aim of Mondo, who epitomise the vibrant innovation that's occurring across London's fintech and new banking space.

Founded in 2015 by Tom Blomfield, Jason Bates and Jonas Huckestein the branchless, app-only service is still in its beta stage but is creating huge excitement. In March, the company raised \pounds 1m from Crowdcube investors in just 96 seconds – a record for equity crowdfunding. It aims to have its full banking licence later this year – in the meantime, more than 140,000 people are on the waiting list to open an account.

A progressive regulatory regime and a deep talent pool means that London is creating a fertile environment for challengers in the retail banking industry. Backed by Passion Capital as well as the crowd, this particular challenger with its hot coral bank card looks set for dizzying growth.

FINTECH

@getmondo

getmondo.co.uk





ROLI

Founded by Roland Lamb, an American who studied comparative philosophy at Harvard before doing an MA in product design at London's Royal College of Art, ROLI is creating a new category of expressive music technologies. Its touch responsive Seaboard instruments have received universal acclaim from musicians and the media alike.

The multi-award-winning Seaboard RISE remodels the piano keyboard as a soft, silicone surface that lets music-makers shape sound through five dimensions of touch. ROLI's free app, NOISE, turns the iPhone into a powerfully expressive musical instrument. Through integrated hardware, software, and social products, ROLI is creating a new space: Connected Music.

Coders, engineers, musicians and marketers are heading to east London to join this exciting Dalston company, with investors following. Recently, Colorado-based VC firm Foundry Group led a \$27m Series B fundraising – the firm's first investment outside the US.

MUSICTECH

@WeAreROLI

roli.com/about

ROLI



SEENIT

Founded in 2014 by Emily Forbes, Seenit's app and platform helps organisations collaborate on video with their employees, fans and customers from around the world, making it easy to direct and collect user-generated content from smartphones. "One person can build and direct a global film crew of thousands and publish reactive and engaging video captured by people who care the most," she says.

After having the initial idea when creating her own documentary, she pitched and won backing from specialist B2B brand accelerator Collider. Seenit subsequently became part of the BBC Worldwide Labs programme and later took office space at Idea London, the incubator sponsored by UCL, Cisco and DC Thomson. The company has recently won further backing from London-based angel syndicates including Force Over Mass. Today they've grown to a team of 16 and are based in Soho.

Inspired by other London media-tech success stories such as Unruly, Seenit is rapidly growing revenues and gathering major brand clients such as the BBC, Benefit, The Body Shop, BT Sport and Red Bull Racing.

ADTECH

@_seenit

seenit.io





TECHNOLOGY WILL SAVE US

Founded in 2012 by designer Bethany Koby with her technologist husband Daniel Hirschmann, the Shoreditch-based Technology Will Save Us is bringing toys into the 21st century. "Success for us is empowering young people and parents to get hands-on with technology," says Koby.

Technology Will Save Us is an outstanding example of London's strengths in product design, education and technology. Their kits, which are all designed in-house, have been sold in 97 countries. This year they were commissioned to design the BBC micro:bit, a miniature computer that will be donated to one million British children.

At the end of 2015, Tech Will Save Us completed a $\pounds 1.2m$ seed round led by SaatchInvest, with participation from European seed-stage VC fund Backed and international investors, to drive its international growth. They are currently using Kickstarter to launch their latest Mover Kit – an educational toy that kids build themselves and then bring to life with active play.

EDTECH

@_seenit

techwillsaveus.com





VINAYA

Founded by Kate Unsworth in 2013, Vinaya's range of tech-enabled jewellery explores the relationship between humans and technology: think neuroscience meets philosophy meets psychology meets design meets tech. Its range of vibrating rings, necklaces, and bracelets are already on sale and a flow of innovative new products are emerging. The latest is Zenta – a biometric band that will monitor your emotions.

Vinaya is described as "a shining beacon, beautiful design and tech that engages," by Matthew Drinkwater of London's Fashion Innovation Agency. It was one of the initial cohort of London's first Fashion Tech incubators and is now based in Shoreditch, where its Vinaya House is part design studio and part research lab.

FASHIONTECH

@VINAYAhouse

vinaya.com





WORLD REMIT

WorldRemit's founder Ismail Ahmed first saw the opportunity to improve money transfers while at university. Studying in London, he needed to send money to family members in Africa. The online service enables people to send money to friends and family living abroad, using a computer, smartphone or tablet.

When you connect London's tech and financial smarts with the vast array of different communities in the UK who want to remit their money, you have the potential for a world-class disruptor. The company, which was founded in 2009, has raised approximately \$130m in a series of funding rounds and is now in global growth mode.

WorldRemit's low-cost alternative service is available to senders in 50 countries, offering transfers to more than 125 destinations, with more than 400,000 transfers being made each month.

FINTECH

@WorldRemit

worldremit.com





YOYO WALLET

Founded in May 2013 by Alain Falys and Michael Rolph, Yoyo Wallet is a mobile-first payment, loyalty and personalised marketing platform for retailers, brands, and the consumers they want to serve.

Yoyo seeks to unlock the dormant value mobile holds for retailers, brands and consumers by creating a platform for a truly personal buying experience for consumers. Yoyo integrates with any retailer point of sale (POS) system to create fast and secure mobile payments that matches customers to their basket data. This creates a payment system that enables brands and retailers to answer the big three questions: How do I know my customer? How do I engage my customer in a personal way? How do I create a unique brand experience?

Its first customer was Imperial College London; today, Yoyo handles more than 30,000 transactions per month across the university's 32 food and drink outlets. Yoyo is now used in more than 40 universities and over 100 corporate locations. It is used in more than 40 universities and over 100 corporate locations.

FINTECH

@yoyowallet

yoyowallet.com

yoyo wallet"



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