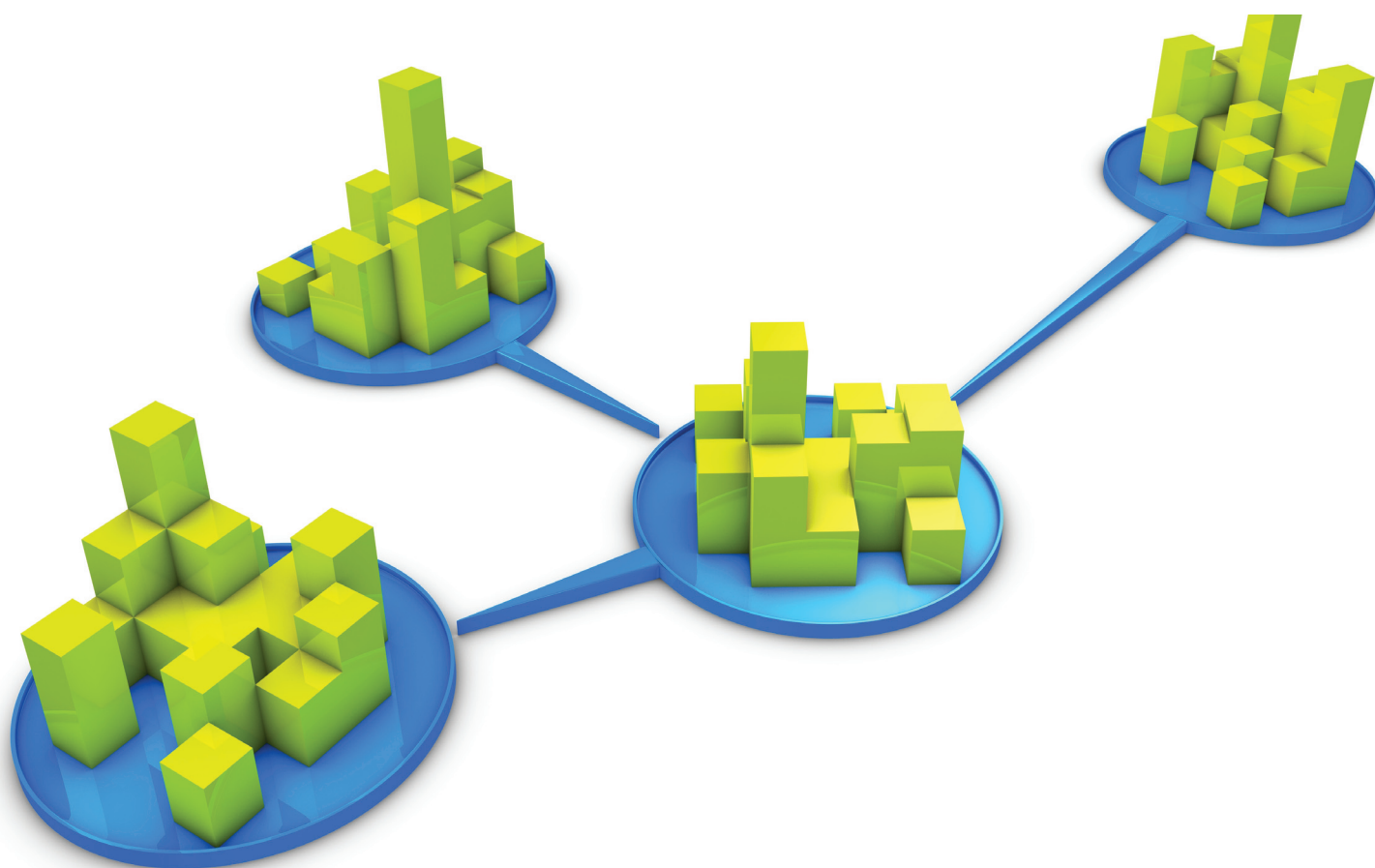


RESEARCH

SILICON WORLD 2012

The rise of the global real **e**-state market



Cornish & Carey Commercial
Newmark Knight Frank



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SILICON WORLD – THE RISE OF THE GLOBAL REAL E-STATE MARKET

It started in Silicon Valley

For more than 30 years, Silicon Valley, in San Francisco's Bay Area, has been the focal point for modern technological innovation and development. Some of the world's largest companies — including Apple, Google and Intel — got their start here. This 30-year growth arc has created an industry that is worth almost \$3 trillion in the US alone, just counting companies listed on the world's stock exchanges.

A RECENT STUDY
FOUND THAT
DEMAND FOR
COMPUTER AND
MATHEMATICAL
SCIENCE WORKERS
ROSE BY 42,400
POSITIONS IN THE
FIRST HALF OF 2012.

In addition to economic growth, the various companies in the technology market have created a tremendous number of jobs. A recent study by US-based business and research association, The Conference Board, found that demand for computer and mathematical science workers rose by 42,400 positions in the first half of 2012, and that vacancies now outnumber job seekers by 4.5 to 1.

Now a global phenomenon

Following Silicon Valley's lead, centers of technology innovation have developed across Asia, Australasia, Europe and North America — from Silicon Wadi in Israel to Silicon Alley in New York, Silicon Prairie in Chicago, Silicon Oasis in Dubai and Silicon Welly in Wellington, New Zealand.

But, wherever they are, these technology centers have demonstrated the same potential for growth.

Driving employment

In the UK, a recent report by the Recruitment & Employment Federation and KPMG suggests

that the IT and telecom sector generates £140 billion a year in business, and employs 600,000 people. A recent survey by Barclays found that 92% of companies in the technology sector expect to create jobs over the next 12 months.

The technology sector is driving growth and employment in other countries as well. For example, in India, a recent study commissioned by the Government of Karnataka (which boasts Bangalore as its capital), found that IT sector revenues now accounted for 6.4% of India's GDP, compared to a global average of 2.7%. Moreover, India's IT industry has been growing at an average of 16.9% a year since 1997, and now directly employs more than 2.5 million people.

Driving the future

The purpose of this report is to identify how the different technology clusters in the US, UK and India have evolved, what the driving factors were behind their location and growth, and what the future has in store for their ongoing development.



THE SILICON VALLEY STORY

San Francisco's Bay Area has long been associated with invention and innovation, from Lee de Forest's invention of the Audion vacuum tube at the beginning of the 20th century, through to Hewlett Packard's growth into the world's largest manufacturer of PCs.

THE CLUSTER OF TECHNOLOGY COMPANIES IN THIS RELATIVELY SMALL GEOGRAPHICAL AREA HAS BEEN KEY TO THE VALLEY'S SUSTAINED GROWTH.

Through it all, Stanford University has played a key role in the development of the area — both by encouraging the entrepreneurial approach to starting technology companies, and by investing in the infrastructure which provided much of the impetus for the area's growth.

The catalyst for what we now call Silicon Valley was the establishment in the mid-1950s of the Stanford Industrial Park, an area aimed exclusively at technology companies. The creation of microprocessors in the 1970s accelerated the area's growth. Today, Silicon Valley has spread from San Mateo in the north to San Jose in the south, with its focal point at Palo Alto — home to Stanford University.

The cluster of technology companies in this relatively small geographical area has been key to the Valley's sustained growth. Tech start-ups from across the US, and beyond, gravitated toward California to capitalize on access to both a skilled workforce and venture capital.

Attracting new talent

The cycle fed on itself as the expanding sector attracted high-tech workers, which helped feed companies' ability to grow. Because of this, unemployment rates (in Santa Clara County) have been in decline since 2009, and some of the Valley's major occupiers including Apple, Google, eBay, Lockheed, Symantec, LinkedIn and Facebook have increased their hiring.



Building property demand

Today, Silicon Valley has around 62 million square feet of office stock, and a further 143 million square feet of research and development space. While office demand in major metro areas across the US has been recovering tentatively after the global slowdown, Silicon Valley has outperformed similar metropolitan areas due to the expansion of the tech sector. Class-A office vacancies have declined to a healthy 11% and annual rents have reached \$36.00/square foot. This has prompted a number of developers to begin new projects. We are aware of more than 20 space requirements in the 50,000-120,000 square foot bracket alone – an encouraging sign for ongoing business expansion.

Predicting the future

Predicting what the next successful technology innovation will be is nearly impossible. However, there is a very good chance it will be conceived in Silicon Valley.

One of the sectors that will drive growth over the next five years is “clean tech.” This includes recycling, renewable energy and electric motors from companies such as Tesla, Bloom and Sunpower. By 2016, estimates are for 60,000 new clean-tech jobs in California, creating significant volumes of tenant demand.

Additionally, new technology trends will boost a variety of companies. The expansion of cloud technology will drive business growth for both software and hardware providers. Tablets will increasingly replace PCs and netbooks, and social media will continue to grow and evolve. Advancement in second-screen technology will provide opportunities for app developers and broadcasters, while mobile technology – including streaming, 4G and voice interface – will benefit online retailers and social-media providers.

In addition, companies that have been hoarding cash in the face of uncertain trading conditions are expected to invest more in IT needs in the near future. Forecasts from Forrester Research suggest IT expenditures in the US will grow from \$30 billion in 2011 to \$120 billion in 2016 – a fourfold increase.

Increasing property demands

This places obvious pressures on supply, particularly with office and R&D vacancy rates at their current low levels. So, given the expected growth of the sector, what are the options for expanding tech companies in the Valley?

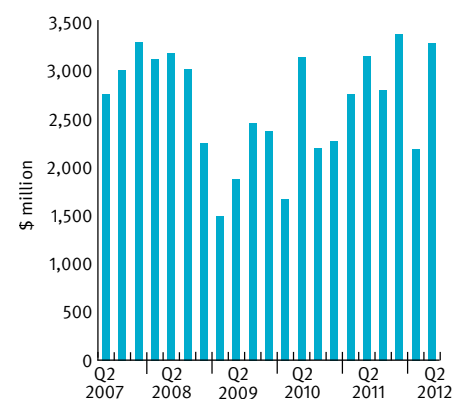
In response to the falling vacancy rates and rising class-A rents, we expect a spate of speculative development projects in the Valley. One of the largest will be Ellis Partners’ project at 2325 Orchard Parkway, which will provide 1 million square feet of campus space. We expect strong competition from tenants for the upcoming development space, leading to positive growth in class-A rents.

In the meantime, many companies have been looking at alternative options further afield. San Francisco has seen unprecedented demand for office space, all driven by the tech sector. The first quarter of 2012 alone saw more than 500,000 square feet of absorption, and we are currently tracking 6 million square feet of office requirements.

The California tech cluster has clearly outgrown the traditional geographical area of Silicon Valley. But established companies and start-ups alike will still want space close to their competitors and peers. The strong demand for offices in locations such as San Francisco demonstrates the tech sector’s willingness to look beyond the Valley. The ongoing investment in office development in the Valley, along with office refurbishment in San Francisco, will ensure the region can accommodate and retain growing companies.

THE EXPANSION OF CLOUD TECHNOLOGY WILL DRIVE BUSINESS GROWTH FOR BOTH SOFTWARE AND HARDWARE PROVIDERS.

Figure 1
Silicon Valley venture capital transactions, Q2 2007-Q2 2012



Source: PwC / National Venture Capital Association

NEW YORK HAS ATTRACTED INTEREST FROM A NUMBER OF SILICON VALLEY-BASED COMPANIES LOOKING TO SET UP REPRESENTATIVE OFFICES WITH GOOGLE, APPLE AND FACEBOOK ALL CONDUCTING BUSINESS FROM MANHATTAN.

A BROADWAY SUCCESS

New York is known as one of the world's most powerful cities; a global financial capital and home to the United Nations. The city's business focus has traditionally been on finance and commerce, with office demand largely focused upon the financial district of Lower Manhattan.

The growth of the tech sector in New York City was seeded just to the north of the financial district in Midtown South, along the Broadway corridor from Tribeca through SoHo to Madison Square and the Flatiron District – an area nicknamed Silicon Alley. It was here that the start-ups clustered during the dot com boom towards the end of the 1990s.

Although many of these companies failed to survive the subsequent crash, the area has been the hub around which the current resurgence of the City's tech scene is taking place. And the tech scene is certainly seeing impressive growth. A recent study by the Center for an Urban Future found that employment in the City's tech sector grew by almost 29% between 2007 and 2012, compared to less than 4% growth for total employment.

Diversity within the tech sector

New York has attracted interest from a number of Silicon Valley-based companies looking to set up representative offices with Google, Apple and Facebook all conducting business from Manhattan.

Silicon Valley companies have also turned to New York to set up engineering operations. Facebook has recently opened a 40,000-square-foot engineering office on Madison Avenue, and is reportedly looking to expand into 100,000 square feet in the New York Times Building. The root of this interest lies in the incumbent pool of talented infrastructure engineers who have served their time working for the global corporates based Downtown.

Importantly, while many of Silicon Valley's resident tech firms have focused on R&D, the majority of New York's tech companies are concentrating on new media. Examples of this include companies such as Huffington Post, Tumblr, Foursquare and GroupMe. This has meant that New York has not been in direct competition with Silicon Valley, and thus not had to compete for the skilled workers and funding that are drawn to the west coast.

A new tech capital?

Given its position as a global financial capital, New York will surely continue to attract major tech tenants, however the start-up scene is still in its relative infancy. It is the growth of the smaller, innovative companies that will help drive office demand over the next few years.

Last summer, mayor Michael Bloomberg announced plans to provide virtually free real estate and up to \$100 million of infrastructure investment in return for a commitment from the private sector to build a science and engineering campus. By the end of the year, Cornell University had signed up to the project, with an additional \$350 million of funding from a billionaire alumnus. Importantly, the project included a \$150 million venture capital fund for start-up companies that agree to stay in New York for three years.

New York has not been short of VC funding – it has seen the number of VC deals increase significantly while Silicon Valley has seen deal volumes fall. While in the past start-ups were most likely to move west to chase funding, the situation is changing to enable them to stay put.

Digital companies in Manhattan



Source: www.mappedinNY.com

Impending supply crunch?

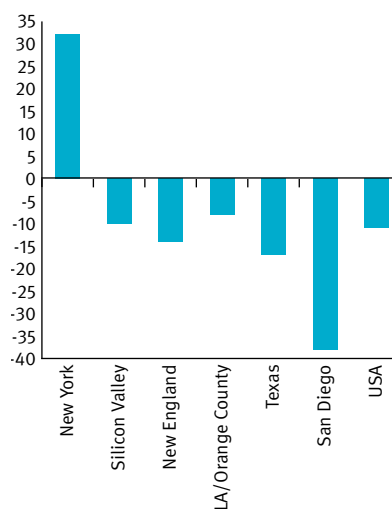
Given the growing tech demand for space in Midtown South, what will the options be for tenants over the next two years? The availability rate in Midtown South is currently just 10.0%, the lowest of any of the three Manhattan submarkets, and its lowest level since 2008. In addition, there has already been in excess of 800,000 square feet of positive net absorption so far in 2012, with just 400,000 square feet of new space under construction.

As the global economic recovery gathers strength, demand for commercial space will increase and those markets with the lowest vacancy rates such as Midtown South will experience upward pressure on rents. However, for many tech companies being located in Midtown South is not crucial to success. The connectivity between New York City's districts opens up viable locations for tech occupiers outside the established tech cluster.

The tech sector looks to be firmly embedded as an important New York occupier, and this position is likely to strengthen over

time. Whether New York can achieve mayor Bloomberg's aim of becoming the technology capital of the world remains to be seen, however it has certainly earned its place as a true global tech cluster.

Figure 2
Growth in venture capital deals by region, 2007-2011



Source: PwC / National Venture Capital Association

THE CONNECTIVITY
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ACCORDING TO DATA FROM EXPERIAN, LONDON ACCOUNTS FOR MORE THAN 26% OF ALL UK JOBS IN COMPUTING AND RELATED ACTIVITIES, AND ALMOST 20% OF UK TELECOM JOBS.

THE TECH CLUSTER IN CENTRAL LONDON

London has been home to tech sector tenants since the early 1970s when IBM purchased its current headquarters building on the Southbank. This continued through the '80s and '90s, as innovators such as Verizon and Sony Computer Entertainment moved into their City and West End locations.

The new millennium heralded the second wave, with the arrival of today's tech giants including Apple, Google and Microsoft which focused on the West End.

The third wave involves innovation the likes of which London has never seen. While the large overseas technology and telecom companies are thriving, there has also been a proliferation of UK start-ups and companies at varying stages of growth. These firms are also choosing the capital as the place to anchor their fledgling businesses.

The benefits of being in London are well documented: its time zone, language, political stability and tax advantages make it an international business capital. However, London's culture and quality of life have been crucial in attracting innovative businesses.

Business is booming

Because of these many benefits, London is one of the fastest-growing tech clusters in the world. This is borne out by the impressive increase in the take-up of office space by tech companies, which doubled to 1.2 million square feet between 2010 and 2011. The first half of 2012 has already seen 600,000 square feet of transactions, despite the wider economic slowdown. Data from corporate finance advisory group Ascendant suggests that venture capital investment into UK tech start-ups reached a 10-year high in the first half of 2012, which will drive demand going forward.

Business is moving

To ensure access to the most creative staff, companies recognized the need to locate themselves near these young innovators. As the young and ambitious gravitate

towards London, so did the tech businesses. According to data from Experian, London accounts for more than 26% of all UK jobs in computing and related activities, and almost 20% of UK telecom jobs.

While larger businesses gravitated to a variety of London submarkets, a number of smaller start-up companies moved to the area near the Old Street Roundabout. Over time, this has become a cluster within a cluster. Now known as Tech City, firms there can take advantage of the benefits of being in close proximity to competitors and peers.

Although the growth of this cluster began organically, government initiatives through the Tech City Investment Organization (TCIO) have encouraged investment in the area and helped raise the profile of local tech occupiers. According to a recent report by Centre for London, there are 1,500 tech companies based in Clerkenwell, Hoxton and Haggerston – double the count in 1997.

Space needs are growing

The tech sector has grown considerably across Central London as consumer and business demand has fuelled expansion. Although the financial and business services sector remains the most prolific occupier of office space, the tech sector's share is rising inexorably: the tech sector now accounts for 17% of the Central London leasing market, compared to 6% in 2006.

Among others, Google is poised to acquire upwards of 500,000 square feet at the King's Cross Central development, in addition to the 25,000-square-foot incubator it recently acquired in EC1. Apple has a potential 200,000-square-foot consolidation requirement, and eBay is actively searching for up to 100,000 square feet – driven

by a desire to move from its current fringe location to Central London. If just one of these requirements transacts by the end of the year, tech sector take-up is likely to be greater than the record year of 2011.

Submarkets are growing more popular

For these larger tech occupiers, the challenge will be identifying viable options in a market where available office space is on a downward trend. The last two years have shown that tech occupiers are more interested in finding the best building for their business needs, rather than concentrating on a particular area, or even a specified rent bracket. This will prove a benefit during this property cycle, as supply in some submarkets will be particularly tight. Activity over the last six months has been focused on Clerkenwell. While this will continue, the submarket does have a finite pipeline of available space. Office developments in the Fitzrovia area, as well as Google's forthcoming exit of their space at Central St Giles in Covent Garden, will present options further west.

While larger occupiers have the purchasing power to widen their choice of accommodation, the same is not necessarily true for smaller tech companies and start-ups. For many, a lack of trading history has a negative impact on covenant strength, which makes landlords reluctant to accept them as tenants. Traditionally, new companies — particularly

from the financial sector — have offered rent deposits to assuage landlords' concerns. However, for the majority of young tech occupiers, this is not an option.

Incubators and tax breaks are making a difference

Demand from smaller companies and start-ups is likely to be focused on Tech City, where occupiers can take advantage of incubator facilities and the networking opportunities offered by clustering with their peers. In addition to Google's incubator, Vodafone, Barclays and GREE have recently announced plans to open facilities to help start-ups in the area. There is also increasing venture capital focus on London start-ups, with some new funds dedicated to investing in digital firms.

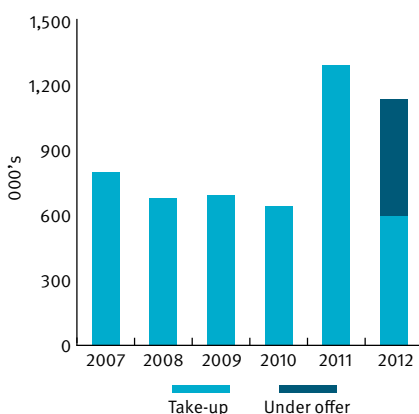
Alongside government plans to offer early-stage-investment tax breaks — such as the research and development tax break, which will offer up to 225% tax relief — this direct investment from large tech companies should help start-ups achieve their potential.

The London office market has adapted well so far to this new demand from tech occupiers, and the early signs suggest that it will continue to do so. In London's case, the active backing of tech growth through government policy, along with healthy venture capital interest, is likely to help reinforce the capital's attractiveness to tech occupiers.

IN ADDITION TO GOOGLE'S INCUBATOR, VODAFONE, BARCLAYS AND GREE HAVE RECENTLY ANNOUNCED PLANS TO OPEN FACILITIES TO HELP START-UPS IN THE AREA.

Figure 3

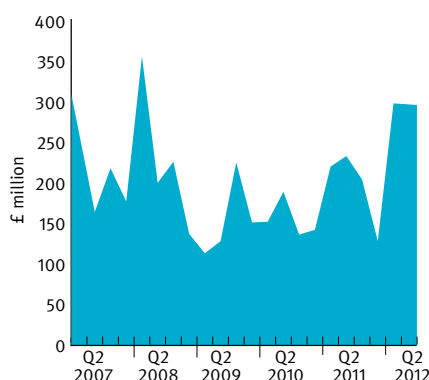
Central London tech sector take-up



Source: Knight Frank Research

Figure 4

Venture capital investment into UK & Irish tech companies



Source: Ascendant Limited

THE THAMES VALLEY – EUROPEAN TECH HUB

Situated on the doorstep of London, the Thames Valley is widely regarded as the ‘Silicon Valley of Europe’. From Microsoft to Adobe, HTC to Vodafone and Intel to Panasonic, the region is home to an impressive array of globally renowned tech companies including 11 of the world’s top 15 technology corporates and nine of the world’s top ten fastest growing software companies.

To the world at large, Thames Valley towns such as Reading, Bracknell, Maidenhead and Slough will be less familiar than the many technology companies who have chosen to locate in them. However, taken together, they form key components of one of the world’s foremost technology clusters, interconnected by the ‘M4 corridor’, a key arterial motorway flowing westward from London via Heathrow airport to Wales.

A 25 year evolution

The technology ‘pioneers’ in the Thames Valley arrived in the mid-1980s as US companies including Microsoft, IBM and Wang sought to establish a foothold in the European markets. With London’s nearby Heathrow airport providing a key portal between the US and Europe and its ready supply of skilled, English-speaking workforce, the Thames Valley provided the ideal location.

In the 25 years since the first IT hardware pioneers arrived, technological advances have spurred successive waves of investment, namely from the software and the mobile telecommunications industries. Today, the region is home to well over 1,500 tech businesses, ranging from the large global players to aspiring small indigenous enterprises, and relative newcomers to the tech scene from the Asian tiger economies. Reflecting this considerable growth, office stock in the region has more than doubled to 92 million square feet since the mid 1980s.

Importantly, the Thames Valley is also much more than a European foothold for tech companies, and has itself been at the forefront of some of the world’s leading technological advances, from wireless

technologies to the development of cutting edge software. In addition to European Headquarters and marketing functions, multi-national companies have extensive research and development, design and production facilities often working in close collaboration with renowned academic institutions in the region, in particular Reading University and the world famous Oxford University.

Benefits of the Thames Valley

Although the efficiency of the transport network has provided the key foundation to its success, the Thames Valley has since developed the critical mass to remain a leading tech cluster for decades to come. Its catchment workforce and academic institutions are tuned in to the business make-up of the region, with over 7 million workers and c.100,000 employed in technical IT roles, the highest density of IT professionals in the UK. The region’s 20 universities also churn out 66,000 graduates to the market place each year, including 7,000 from computer science, software engineering and electronic engineering courses.

The Thames Valley provides an attractive and affordable alternative to locating in Central London. For the first arrivals to the Thames Valley, the region provided the opportunity to base themselves in more familiar ‘campus style’ settings, without the associated cost and congestion associated with Central London. Indeed, the rapid establishment of the business park concept in the years since has changed the economic landscape of England’s South East region. Today, some of the biggest and best known examples include Green Park and Thames Valley Park in Reading and Stockley Park, Heathrow.

According to the Financial Times’ Cities & Regions of the Future 2012/13 report, the Thames Valley is the top performing small region in the UK, taking into account a number of factors including economic potential, human resources, cost effectiveness, quality of life, infrastructure and business friendliness.

The Thames Valley is one of the few regions in the UK where one can live and work in a picturesque setting. While benefitting from close proximity to London, almost half of the region is classified as an area of outstanding natural beauty. It is also host to some UK’s biggest attractions, including Henley, Ascot Racing course, Blenheim Palace and Windsor Castle.

HEATHROW AIRPORT



- 68 million passengers a year serving 181 locations.
- More weekly departures to the top 30 global cities than any other European airport.
- 22 million business travellers a year, with over 2.6 million travellers from North America.

A bright future ahead

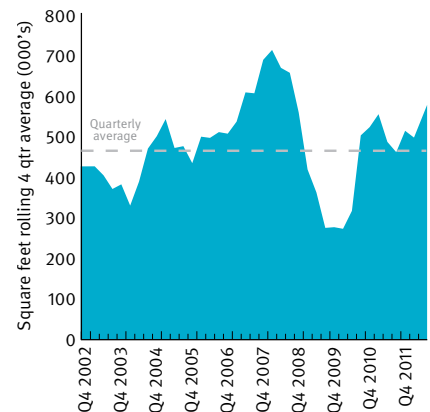
Set against challenging headwinds in the global economy, the Thames Valley is well placed to continue to prosper in the coming decades. The tech sector has proven relatively resilient to the recent downturn with the phenomenal growth of Apple and the rapid emergence of Asian mobile telecoms companies such as HTC and Huawei bucking the general trend (figure 5). The region is also sectorally diverse, with tech companies flanked by hundreds of global players, including the European Headquarters of blue chip brands, financial services, pharmaceuticals, and oil and energy companies.

The well documented rise of London's very own nascent tech cluster, focused on start-up businesses around the Old Street roundabout will only serve to reinforce the

Thames Valley's pre-eminence as a UK tech hub. The Thames Valley will be complimentary to London's new tech phenomenon, providing a conveyor to fledgling companies 'graduating' from the incubator environment of the Silicon Roundabout and with the sites to accommodate them.

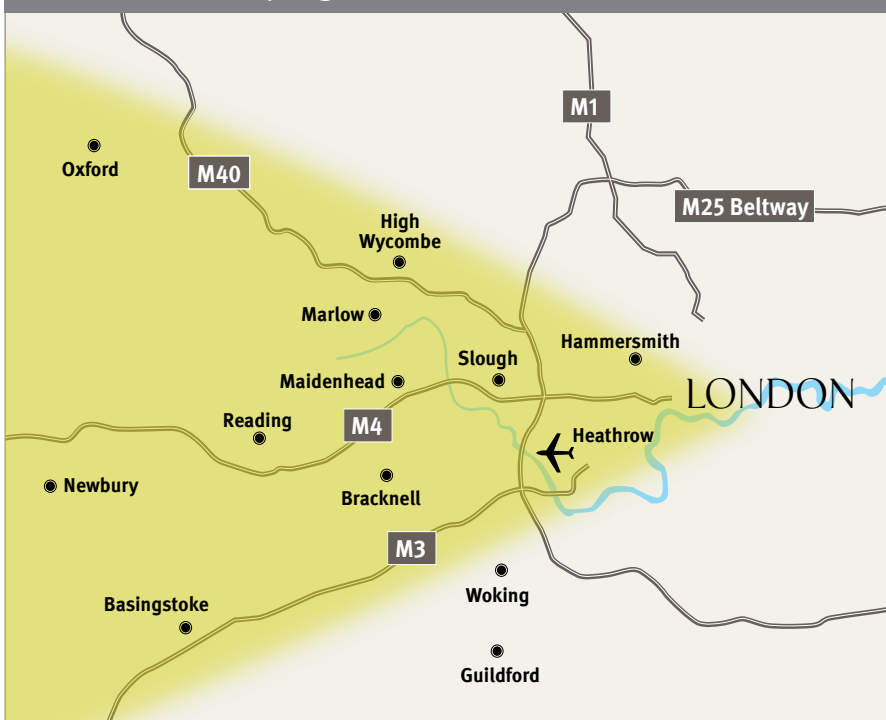
This complimentary existence will be secured with the arrival of Crossrail in 2018, a new rail line running east to west directly through Central London and into the heart of the Thames Valley, with stops at Maidenhead and Slough. As well as boosting the labour catchment area through faster connectivity, it has the potential to change the dynamics of the technology sector in the South East of the UK, with major global tech companies operating small, client facing satellite offices in Central London while continuing to basing the core operations in the Thames Valley, including research and design and marketing functions.

Figure 5
Thames Valley office take-up



Source: Knight Frank Research

The Thames Valley region



Selected companies in the Thames Valley

Company	Location	Headcount (approx)
Acer	High Wycombe	200
Adobe	Maidenhead	400
Alcatel	Maidenhead	600
ATOS	Reading	450
Canon	Heathrow	500
CISCO	Heathrow, Reading	1,200
Computer Associates	Slough	1,200
Dell	Bracknell	1,000
Fujitsu	Slough, Bracknell	1,600
Harris	Reading	700
HP	Bracknell	1,300
HTC	Slough	400
Huawei	Reading	500
Hutchison 3G	Reading, Maidenhead	1,000
IBM	Heathrow	600
Lexmark	Maidenhead	250
LG Electronics	Slough	200
Microsoft	Reading	2,000
O2 Telefonica	Slough	2,000
Oracle	Reading	3,000
Panasonic	Bracknell, Newbury	500
Research in Motion	Slough	600
SAP	Bracknell	1,000
Seagate	Maidenhead	200
Sony Ericsson	Reading	1,000
Sophos	Oxford	500
Symantec	Heathrow	850
Thales	Reading, Basingstoke	800
Verizon	Reading	2,000
Vodafone	Newbury	2,000
Yell	Reading	800

MORE THAN 2,000
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BANGALORE – THE ‘SILICON VALLEY OF INDIA’

As Silicon Valley has become synonymous with the wider California tech scene, the City of Bangalore is synonymous with India's growing tech cluster. Known as the ‘Silicon Valley of India’, the cluster can trace its roots to the original ‘Electronic City’ industrial park, developed just outside Bangalore in the late 1970's.

The Electronic City concept was conceived by R K Baliga, the then Chairman of the Karnataka State Electronics Development Corporation (Keonics), who's vision was to make Bangalore the Silicon Valley of India.

Originally funded by Keonics, the complex grew to cover a 330 acre site to the south-east of Bangalore City, and is home to major global tech companies including 3M India, Hewlett-Packard, Siemens and Infosys. Now, Electronic City is maintained by a consortium of occupiers known as the Electronic City Industries Association.

More than 2,000 tech companies have now established operations in Bangalore and the city's tech cluster has long since outgrown the Electronic City complex. The construction of the new international airport at Devanahalli, which commenced in 2008, shifted the focus of developers, investors and tenants to North Bangalore. Significant improvements in infrastructure and transport have been made alongside numerous real estate projects to satisfy the occupier and investor demand.

Rapid sector growth

India's IT sector revenues have grown from 1.2% of GDP in 1998 to 6.4% in 2011, and the latest estimates suggest that more than 2.5 million people across the country are directly employed by the tech and outsourcing industry. India's tech sector grew at an annual rate of 22.5% to \$26.8 billion between 2004 and 2011, and as a result Bangalore has attracted a large pool of skilled migrant workers from across the country. This has

led to an unprecedented increase in demand for residential space. Almost 85,000 residential units were launched in Bangalore in 2010-2011.

Buoyant demand for real estate

The state of Karnataka, of which Bangalore is the capital, is home to a third of India's software technology park units. Indeed, more than 60% of all Karnataka's exports in 2009-2010 (latest available data) were tech-related. Demand for office space in Bangalore from tech companies is now focused on locations within the CBD and the Suburban Business District (SBD) as well as peripheral locations such as Electronic City.

It is due to its tech sector representation that the Bangalore office market witnessed significant year-on-year growth in the 12 months to March 2012 (FY 2012). Take-up of office space totalled 12 million square feet, a 10% increase on the comparable period to March 2011, the highest of any Indian region. Considering the backdrop of uncertainty in the global financial markets, this increase in activity is encouraging although activity did slow towards the end of the period as occupiers became more cautious about committing to expansion space.

However, the driver of leasing activity has been expansion in the technology and outsourcing industry, which accounted for 70% of all activity in the FY 2012 period, and demonstrates the sector's resilience to wider market movement.

Export-driven success

Considering India's IT revenues are primarily driven by exports, it is not difficult to see how the sector's success depends heavily on economic performance in its overseas target markets. As well as biotechnology, the Bangalore IT sector is focused on electronics and software, which in theory could easily be affected by rationalisation of business operations.

However, to date there has been little evidence of a reduction in tech sector demand, as evidenced by the increased take-up in FY 2012. The global outlook for the IT sector is positive, which ought to continue to fuel demand for space in Bangalore. The active State funding policies in place regarding Information Technology are likely to provide an additional boost to growth in the sector.

**IT IS DUE TO ITS
TECH SECTOR
REPRESENTATION
THAT THE
BANGALORE OFFICE
MARKET WITNESSED
SIGNIFICANT YEAR-
ON-YEAR GROWTH.**

Policy supporting growth

The National Policy on Information Technology (2011) includes an objective to more than triple tech sector revenue to \$300 billion by 2020, and to create a pool of 10 million additional skilled workers in the ICT sector.

At a more local level, the Karnataka Information and Communication Technology Policy (2011) and the Karnataka Animation,

Visual Effects, Gaming and Comics Policy (2012) both aim to encourage start-up businesses through direct funding and improved facilities. Previous policies have also pledged to offer incentives to encourage R&D.

Where next?

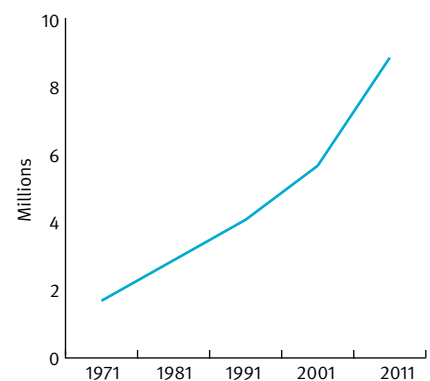
The important question is does Bangalore have a sufficient development pipeline of commercial space to absorb these new entities?

The Bangalore BIAL IT Investment Region is a 12,000 acre development site located 15km to the north of Bengaluru International Airport, and one of the largest infrastructure projects in Karnataka's history. Funded by both State and private investment, the region is projected to provide direct employment to 1.2 million people. The first phase is due to complete later this year, with the second phase scheduled to complete in 2017 and the third and final phase scheduled for 2022.

Looking ahead, Bangalore is perfectly placed to accommodate and benefit from the growing technology sector. According to Nasscom/AT Kearney's 2012 Innovation report, the future global position is encouraging, with India consistently ranking first in the Annual Global Services Location index. Additionally, Indian firms have been at the forefront of technological innovation, particularly in the areas of business model and process innovation, and there is also evidence of an emergence of start-ups in and around Bangalore.

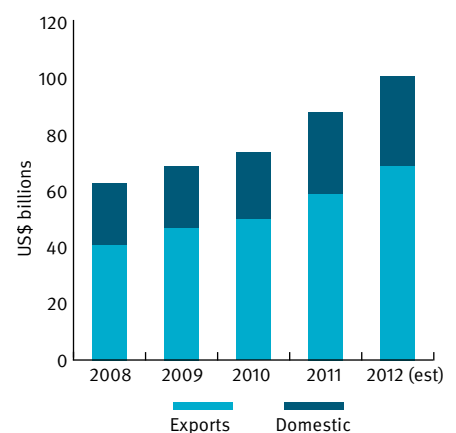
Bangalore is becoming an increasingly important global player in IT provision and innovation and we expect the office market to follow suit as companies recognise the relative value associated with costs in the area and access to the highly skilled, young workforce.

Figure 6
Bangalore population growth, 1971-2011



Source: Census data

Figure 7
Indian IT-BPO* revenues, 2008-2012



Source: NASSCOM

* Business Process Outsourcing

REAL ESTATE
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CONCLUSION

The technology sector has seen significant growth over the last few years and this growth will certainly continue into the future. The sector is already a target for cash rich investors who have purchased assets in personal mobile devices, cloud computing and social networking. According to PwC, there were in excess of \$50 billion of tech sector M&A deals in the first half of 2012 in the US alone.

The industry that was largely conceived in Silicon Valley has spread across the globe, with clusters of innovation developing on every continent. However, as we have demonstrated, these clusters are unique. None of the technology clusters we have examined compete with each other – each attracts different types of companies with a variety of business requirements.

Understanding these differences and the unique requirements of tech occupiers within each cluster is key to understanding the tech sector's real estate needs.

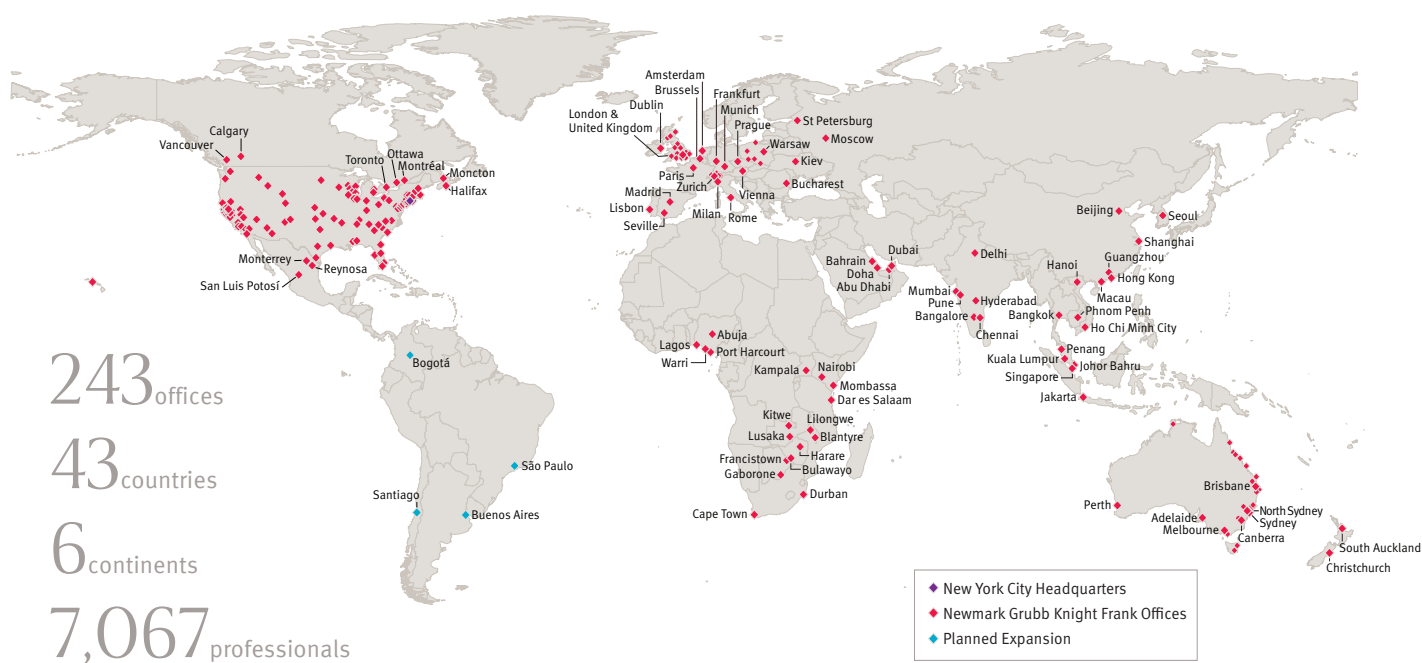
The volume of real estate transactions to tech sector occupiers is evidence that advances in technology are not leading to a decline in the volume of office and R&D space that the sector requires. In fact, the opposite appears to be true as firms increasingly recognise the value of staff and allocate space and facilities to ensure personal well-being and encourage creativity.

In addition, a growing number of tech companies are (or are growing to be) truly multinational, and must consider their occupational requirements in a global context. Understanding each market's real estate dynamics can help inform tech firms' decision-making processes and maximise value.

The rapid growth that the sector has undergone has created its own issues in terms of occupancy. In markets such as Silicon Valley, Bangalore and Thames Valley, expansion is more easily dealt with through the greater availability of land for development. However, in markets such as London and New York, a different approach is needed to ensure that the need for large-scale relocations is kept to a minimum thus reducing capital expenditure costs.

Real estate considerations will become increasingly important as the tech sector expands, and a long-term strategic approach to occupational needs will ensure longevity of tenure and maximise value.

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