

Appendix Two – Opportunities and Challenges

A STRATEGIC ECONOMIC PLAN FOR THE ENTERPRISE M3 AREA 2018 – 2030

A globally competitive region, unique
for its knowledge, digital & design
based economy



Opportunities and Challenges

The Enterprise M3 area is a national asset and an economic powerhouse. It is a significant net contributor to the UK economy, powerful incubator of future focussed high growth sectors. It is intrinsically equipped to compete in international markets, with a highly successful track record in exports, and has attracted the highest number of foreign owned firms of any LEP outside of London.

State of the Economy

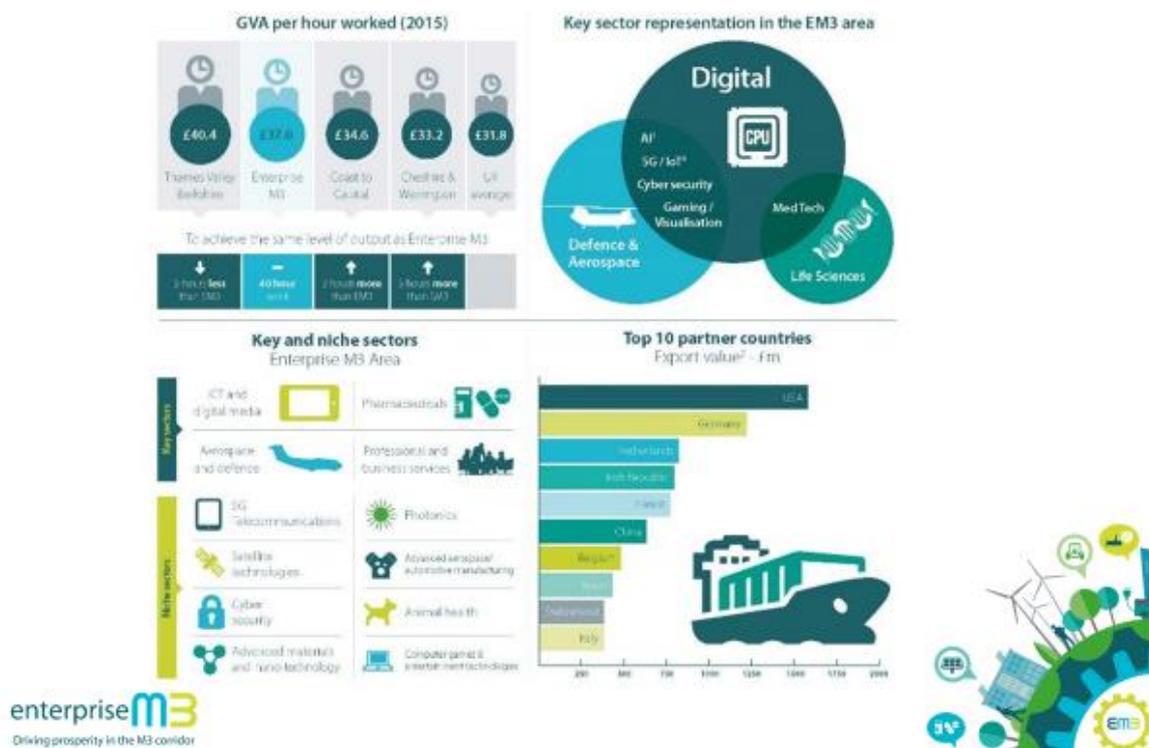


Figure 1

4% Growth with focus on Digital and Clean Growth

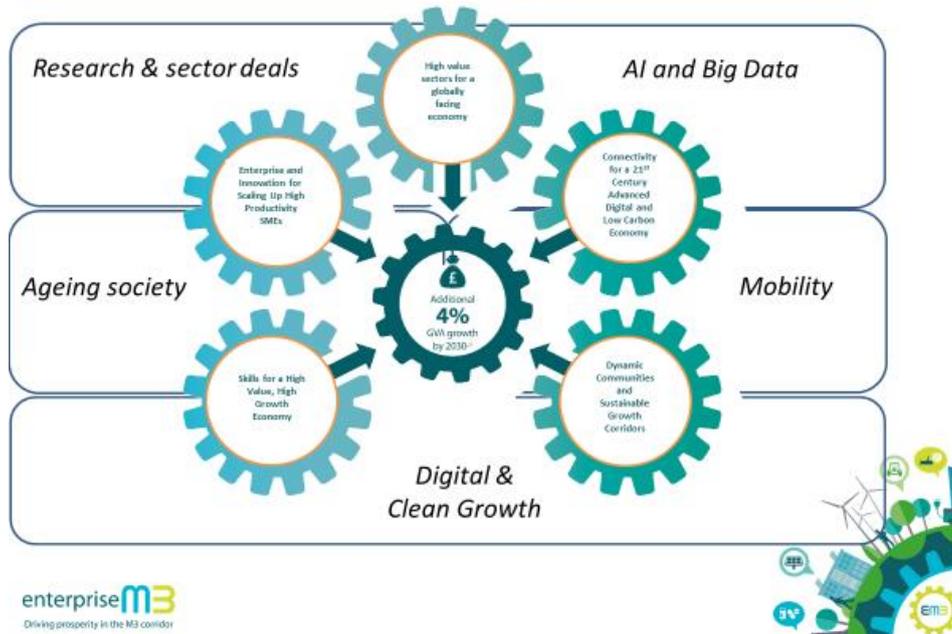


Figure 2

The Enterprise M3 LEP supports a globally competitive region which is unique for its knowledge, digital and design-based economy. The Government's Industrial Strategy Grand Challenges, along with its research and industry deals, are natural opportunities for our area. See Fig 2.

The underpinning and cross cutting nature of digital and clean growth mean they are important not only for directly related sectors but also for delivering productivity across the wider economy. This Strategic Economic Plan sets out five strategic priorities for growth.

- High Value Sectors (see below for more details on some of our high value, high growth sectors*)
- Scale Up High Productivity SMEs
- Skills for a High Value Economy
- Connectivity for a 21st Century Economy
- Dynamic Communities and Sustainable Corridors

The following summarises areas of intervention and potential investment to deliver our ambitions:

High Value Sectors

- Effective support interventions for our High Value Sectors
- Partnership working across LEP boundaries
- Broadening our approach to draw in FDI

Scaling Up High Productivity SMEs

- Grow digital employment
- Work in partnership with our Growth Hub, universities and innovation accelerator partners to support our

5G focus

- Support the ambitions of Innovation South
- Support centres of nationally significant innovation

Skills for a High Value Economy

- Lead new ideas to respond to skills challenges
- Specific interventions to support the future workforce and high growth sectors including digital skills
- Work in partnership with employers
- Increase number of apprenticeships

Connectivity for a 21st Century Economy

- Aim to create Europe's first 5G region
- Connectivity to Heathrow
- Invest in infrastructure including sustainable transport
- Increase capacity on road and rail
- Future Mobility Strategy

Dynamic Communities and Sustainable Growth Corridors

- Investment along strategic corridors
- Rethinking Town Centres
- Accelerating the building of new homes
- Stimulate Grade A office space

* High Value Sectors

Space/Satellite:

The important links between space & satellites and the digital economy present a major growth opportunity for Enterprise M3. According to the UK Space Agency, the Enterprise M3 area space organisations have a £1 bn turnover, which is second only to London and is has 10 times that of Oxfordshire space organisations. The same analysis indicates our space sector has the fourth highest employment rate in the UK.

Surrey Satellites Technology Ltd (owned by Airbus, yet operated as an independent company under that umbrella) is recognised as a world-leader in the small satellite sector and has a 40% share of the global small satellite market. It runs a significant mission control centre, from which it currently operates 19 satellites, and the company has end-to-end capability in the design, manufacture and operation of those satellites across their Guildford and Bordon bases.

In Farnborough, QinetiQ, who provide a broad range of services across several areas of aerospace, defence and space, have a strong focus on R&D, and has market penetration across the world, including into the American public sector, though the UK Government remains its primary source of revenue.

We are working with partners to develop a world class innovation centre in which academics and business draw on outstanding capabilities in 5G, satellite manufacture & operations, robotics, Earth observation, telecommunications, data analytics to stimulate development and delivery of Earth information and innovative space services of the future.

Aerospace & Defence

Enterprise M3 has a strong heritage in the defence industries and a concentration of internationally significant aerospace and defence companies around Farnborough. They include Quinetiq, BAE Systems, which has its headquarters here, and the defence and space operations of Airbus UK. The area offers access to powerful, world-leading research with the Universities of Southampton and Surrey judged to be first and second respectively in the UK for research excellence in electronic engineering, metallurgy and materials.

The aerospace industry is increasingly dependent on the exploitation of digital technologies to maintain competitiveness in the global marketplace. Continual innovation and disruption is a core constituent of growth within this sector and presents a significant opportunity for Enterprise M3 to make the offer that differentiates itself from many other regions: its excellence in digital enabling technologies.

With partners we will help support and nurture an environment in which our major defence and aerospace have easy access to locally produced high quality research, innovation, technologies, talent and skills.

The UK Government is a major client and driver of our aerospace and defence industry. We will take every opportunity to impress on government the importance of ensuring their procurement processes encourage innovation in technologies, supply chains and skills in home grown centres of excellence such as the aerospace cluster in the Enterprise M3 area.

Digital/Cyber Security

We are working with Royal Hollow University of London to establish a regional centre for industry to support business in the field of cyber security and big data analytics. The aim of the project is to establish a Centre that will house specialist activities such as Smart Card and IoT Security alongside initiatives to support Digitally Secure Supply Chains, whilst also providing links to complementary facilities and expertise across the region. These initiatives will facilitate technology developments and product innovation, and provide a base for early stage start-ups and spin outs with access to unique resources and expertise.

Acting as a beacon across the LEP region, the Centre will channel existing expertise within Royal Holloway and other regional universities to businesses, creating a premier region for integrating cyber security, big data, artificial intelligence and advanced communication with new business opportunities including the internet of things, aerospace, automotive applications, healthcare and construction. It will act as a central location for key institutions seeking to support cyber security in areas such as technology, standards, training, certification and act as a focus for industry.

Life Sciences / Med-tech

The potential to fuse strengths in world class digital enabling technologies (5G; Big Data Analytics; Cyber Security; Photonics; AI, Robotics and Machine Learning) with Med Tech enterprises is our area's specialist offer to the Enterprise M3 Life Sciences cluster, adding value and setting it apart from other region's life sciences strengths.

Enterprise M3's ambition is to help enable our Med Tech and life sciences firms access and adopt digital enabling technologies in order to harness their full potential for innovation, growth and improved productivity. Our business population includes an estimated 200 Life Sciences companies with approaching 90 Med Tech firms and 30 Therapeutics Discovery and Development businesses. Our Med Tech companies include approximately 30 diagnostic technology companies.

We will be publishing an Enterprise M3 Local Life Sciences Sector Deal this year which sets out four main ambitions and an associated plan of activities to achieve them. Those ambitions, which we will deliver in close partnership with the Enterprise M3 Growth Hub, are: Building Insight and Trust; Support for Growth; Enhancing Innovation and Space to Grow.

Creative / Gaming/ Createch

The region surrounding the M3 Corridor contains the UK's largest concentration of creative businesses and jobs, outside of London. This M3 Creative Corridor provides creative employment to nearly twice as many people (153,792) as Manchester, Birmingham, Bristol, Bath, Brighton, Cambridge and Dundee combined (86,650).

The high profile, internationally acclaimed games cluster in Guildford, the "Hollywood of Videogames", is a leading player in an area which has been a longstanding host for many of the UK's leading Games/VR development companies such as Electronic Arts, Epic Games, Media Molecule, Ubisoft, Supermassive, Hello Games, nDreams, and Figment.

This outstanding industry base in the creative digital sector is supported by several universities providing a research, innovation, and talent base to match. The University of Surrey and University of Creative Arts are key industry allies here. Royal Holloway University, supported by Enterprise M3, is behind the development of research and development facilities to drive growth in an existing regional cluster of audiovisual and creative technology companies. These firms, including Sony, Pinewood, BBC Worldwide, focus on innovations fuelled by immersive experience, data-driven personalisation, smart devices and AI to create the next generation of storytelling that will engage audiences and customers in novel and commercially viable experiences.

Building on our investment in 5GIC, Enterprise M3 aims to strengthen the Gaming cluster around Guildford and surrounding area by providing local and international digital gaming businesses who locate to the area with access to a fully operational 5G test bed at the 5G Innovation Centre (5GIC). This relationship means the Guildford gaming cluster is the first in the world to have the opportunity to begin to develop new products and services based on 5G capability.

We will support further investment needed to maximise the effectiveness of the Guildford gaming cluster and to take full commercial advantage of the potential to apply gaming technologies including virtual reality, robotic control, data analysis and visualisation in other sectors such as defence, aerospace, marine and healthcare.

This fusion of digital creative technology with other sectors is a particular strength of the Enterprise M3 area and a driver of innovation and growth which the LEP will pursue.

The potential for growth in exports in this area of innovation is very substantial for the most competitive companies. Working with DIT and our Growth Hub, the Enterprise M3 LEP is developing an internationalisation strategy that will support this sector's international ambitions; and we will continue to help promote the Guildford gaming cluster to the international market through strong and active engagement with DIT. The Enterprise M3 strength in "Createch" – the interaction of creativity and technology – is a major source of innovation for our economy and, along with growth in our creative companies themselves, createch will be a significant factor in achieving our overarching ambitions for achieving more foreign trade, improved productivity and economic growth.

Linking to our Local Industrial Strategy

This SEP is a solid evidence based foundation for working with Government to shape our Local Industrial Strategy. The following summarises the key areas that will drive our initial thinking.

- Deep Dive of Evidence
- Tap in to local business intelligence
- Link to Industrial Strategy Grand Challenges
- Investigate particular issues, e.g.
- Readiness of SMEs to adopt new technologies
- Low Productivity Base
- Brexit Readiness
- Identifying opportunities for investment
- UK Shared Prosperity Fund
- Industrial Challenge Funds
- Private Investment

Rising to the Grand Challenges

Our five priorities underpinned by digital technologies and our commitment to clean growth mean our area is well placed to rise to the Four Grand Challenges set out in the Government's Modern Industrial Strategy published in November 2017: Ageing Society; Clean Growth; Future of Mobility & Artificial Intelligence and Big Data.

Our area already has outstanding strengths and an existing track record in work to overcome these Grand Challenges. Going forward, our approach is these are our Grand "Opportunities"

The following evidence and case studies underline the point.

In support of our **Ageing Society**, the Technology Integrated Health Management (TIHM) project links the Kent., Surrey & Sussex Academic Health Science Network (AHSN) with the University of Surrey, Royal Holloway University of London, Surrey and Borders NHS Trust, the Alzheimer's Society and ten technology companies to provide patients and carers with wearable sensors and monitors to increase their ability to live independently.

The TIHM project highlights the potential our area has to build links between digital innovation capabilities and the healthcare system to improve the health and wellbeing of our older population. The first phase of the project saw the devices tested at the 5G Innovation Centre in Guildford before they were rolled out across a network of 350 homes.

It also highlights how Digital Enabling Technologies are blurring traditional sector boundaries: of the companies involved in the project, some, such as Docobo, based at Leatherhead, are established specialists in digital health; others such as Arqiva, a major communications infra-structure company based at Winchester, are using their wider range of digital capabilities to develop applications specific to personalised care.

On **Clean Growth** – Enterprise M3 has the lowest carbon emission profile compared to South East & Coast to Capital LEP's. We are working with central Government and those LEPs towards a vision for our region's low carbon economy.

This builds on an existing commitment to clean growth, as demonstrated in several investment decisions for example, £1.5 million into the Energy for Life project at Marwell Wildlife to help build a low carbon energy and waste management centre, which reduces the amount of zoo animal waste being processed on site, the need for waste collection and therefore cutting local lorry journeys by approximately 152. This project also supports the generation of low carbon energy and a reduction in Marwell's carbon footprint of circa 15,000 tonnes – that's approximately 16%.

Another example is the Wood Processing Grant Programme which helps create a network of up to 20 wood-fuel & timber processing hubs providing low carbon solutions to energy needs, and alternatives to energy intensive products.

Looking forward, areas of potential focus for us to help drive clean growth include, using more bio fuels and renewables, improving electricity and gas battery storage, district heating and local energy schemes, retrofit and new energy efficiency measures in buildings, and a transport revolution in road, rail and air, including digital connectivity and provision for electric vehicles.

These ambitions to create a clean growth, low carbon transport system link directly to the Future of Mobility. Enterprise M3 LEP has always recognised investment in sustainable transport, can contribute significantly to achieving our economic growth objectives and targets, and reducing carbon emissions. This investment has a strong focus on improving the quality of sustainable forms of transport so that the modes of public transport, walking and cycling play a role in reducing congestion and providing access to employment, retail and services.

Research carried out by us to help quantify the benefits of investing in sustainable transport packages, suggested these do deliver improvements to the reliability of the transport network, offering a wider range of travel options for local journeys in our major and local centres, and reducing dependence on the private car. The LEP remains committed to supporting investment in sustainable transport solutions to maximise the associated economic and environmental benefits.

Going forward, as a key member of Transport for the South East, (TfSE), Enterprise M3 intends to embrace the full range of economic, productivity and environmental opportunities presented by the transport revolution.

TfSE has been established to speak with a single voice about strategic transport priorities for the region, and to secure strategic investments in the infrastructure of the South East. Enterprise M3 is already helping to shape developments with TfSE on sustainable road and rail improvements, in particular, important plans to achieve a new southern rail access to Heathrow.

The LEP has identified a southern rail access to Heathrow combined with other service and infrastructure enhancements as vital rail infrastructure improvements. In addition to Heathrow Southern Rail Access, Crossrail 2 and the Woking Flyover are also strongly supported as together these improvements would help unlock and support economic growth and job creation within the LEP's Sci:Tech corridor including Basingstoke, Farnborough, Woking and Guildford.

Enterprise M3 LEP would wish to see the southern rail access strongly linked to smart mobility and the latest digital technologies. This includes ensuring that the new link is fully compatible with Network Rail's digital railway aspirations, as well as utilising low emission vehicle technologies, smart mobility services and intelligent asset infrastructure.

We are also working with the University of Surrey and globally significant satellite companies to link 5 G and satellite technologies. 5G satellite technologies will be an important enabler for the reliable connectivity of autonomous vehicles and the success of this new mode of transport.

Accenture has estimated Artificial Intelligence could add up to £654bn to the UK economy by 2035. Enterprise M3 LEP is already engaged with a number of important partners with expertise in this area including Royal Holloway University. Its Computer Science Department is one of the UK's leading centres for research into algorithms and complexity, distributed and global computing, machine learning, and software language engineering.

This has generated many examples of industrial applications of AI including automated target identification with QinetiQ, fault diagnosis with Marconi Instruments/FRI, biomarker discovery with CIPHERGEN Biosystems, anomaly detection with Thales UK, missing values and imputation with Office for National Statistics, abdominal pain treatment with Western General Hospital, Edinburgh, smart meter analysis with British Gas.

Enterprise M3 has embarked on a forward looking skills strategy designed to help upskill and reskill those people particularly vulnerable to the negative impacts of Artificial Intelligence. This includes work to bring higher education and higher skills training to Basingstoke, with a particular focus on developing the skills of the existing workforce; and the Innovation South Virtual Campus which brings together employers, colleges and universities to provide flexible on line skills development also suitable for full time employees.

Enterprise M3 recognises the ability to deploy Big Data sets has huge commercial and practical potential, whether it's, for example, analysing customer data or making a diagnosis from vast amounts of information about medical conditions. There are many companies within our area with outstanding industry expertise in these areas including IBM and QinetiQ, and we will support them and their supply chains to take full advantage of these new industries.

Challenges

As part of our determination to deliver further success we have identified the areas of our economic performance which need to be addressed in order to unlock further growth. These are set out in the main report and summarised below.

We have uneven economic activity in our area around employment concentration and declining sectors, including high value ones. Much growth is being driven by consumer services which does not equate to higher value economy. Growth in digital sectors is lower than in other parts of the country. There is also a productivity gap in manufacturing, distribution and ICT when compared to other LEPS, particularly TV Berkshire.

Prosperity and opportunity are not shared evenly across the area with swathes of wealthy and middle class earners and also dispersed areas of high deprivation and those that are "just about managing".

There is a productivity gap in manufacturing, distribution and ICT when compared to other LEPS, particularly TV Berkshire.

Growth in digital sectors is lower than in other parts of the country. Growth in high value sectors is not as fast as it could be.

Enterprise M3 towns can play a stronger role in the LEP's economy. Our Growth Towns and Step-Up Towns have not performed to their full potential.

Although residents in Enterprise M3 are relatively highly skilled there are considerable gaps in the economy. Businesses are increasingly reporting skills shortages as a barrier to growth and enhanced productivity.

We have identified a need to make the area attractive to so-called “Young Urban Professionals” who can create the jobs of tomorrow. Many younger residents are commuters and we have relatively older population when compared to the UK.

House prices are high and affordability index calculations show a wider gap between incomes and property prices here than in other parts of the UK. (See below for more details**)

Efficient transport networks are key to delivering connectivity locally, regionally and for competitiveness in international trade. Congestion acts as a major barrier to growth in key centres and we need to address this issue to increase productivity, attract and retain businesses and highly skilled workers.

**Housing

Housing in our area, although cheaper than London's, is expensive relative to local wages. In part, this is due to low levels of housing development. Between 2003 and 2013, 4,700 homes per annum were delivered across the LEP area. Local Plans targets, as analysed in the LEP's housing study, stand at 5,500 homes per annum to be delivered across the LEP, but the same study estimates housing needs of as much as 11,000 homes per annum. Therefore, there is a large gap between the housing that is planned for delivery and what is needed in the area.

As a result of high and rising house prices, large numbers of people commute into the LEP area from other parts of the South East where housing is more affordable. In particular, there is a net inflow of 10,000 people per day from the Solent area, reflecting the better availability of cheaper housing there.

We need to ensure that housing provision in our area meets the needs of our skilled workforce, and supports our businesses to hire the people they need. Housing development is often contested due to the perception (and sometimes reality) that housing development is not supported by adequate infrastructure provision leading to, for example, higher congestion, overcrowded schools, and pressure on existing amenities.

Considering housing and infrastructure together is extremely important. As major housing developments such as at Whitehill & Bordon demonstrate, their success is dependent upon significant transport developments.