



# THE NORTHERN POWERHOUSE AND INDIA **UNLOCKING THE OPPORTUNITY**



Confederation of Indian Industry



Manchester  
India  
Partnership

# Foreword

**When Prime Minister Narendra Modi met with Prime Minister Theresa May in London in April, they agreed to forge a dynamic new India-UK Tech Partnership.**

Leveraging future-tech to build on the UK's historical trading ties with India is a key priority for the Department of International Trade. As Her Majesty's Trade Commissioner for South Asia, I feel connectivity – bringing people closer together – is key to realising this ambition.

This November, the North of England will get even closer to India: Jet Airways will inaugurate the first direct flight between Mumbai and Manchester, connecting the economic capital of the fastest-growing major global economy to the UK's largest economy and the Indian diaspora outside London. The benefits of connectivity should be felt far beyond the cities themselves and ultimately strengthen engagement between regions and wider national economies.

This publication highlights the scope and scale of potential collaborative opportunities between commercial organisations and academia in both markets with complementary objectives and capabilities. Enhanced travel links will contribute to growing numbers of tourists for both the UK and India, strengthening cultural ties and improving mutual understanding.

The new link will bring with it the potential to significantly enhance existing regional ties and to enable new partnerships to grow and develop. Initiatives such as this are just the beginning in the development of an even more fruitful relationship between the Northern Powerhouse, the UK, Maharashtra and India. Investors, businesses and ultimately local residents will benefit from these opportunities. The road ahead is promising.



**Crispin Simon**  
UK Trade Commissioner to India

**India has had a phenomenal growth story to share in recent years; one that has been driven by its various states competing to increase the ease of doing business, and by better connectivity throughout the country.**

The UK's economic relationship with India remains strong and with over 800 Indian companies expanding their footprint across the UK, the Confederation of Indian Industry (CII) encourages Indian companies to continue to seek out opportunities across the UK, and in particular the North of England. The public private partnership, Manchester India Partnership, has acted as a gateway to many Indian companies looking to the Northern Powerhouse.

Connectivity remains at the core of a roadmap for future opportunities. The new direct flight connection from Mumbai to Manchester is only the beginning of a new era in increased business opportunities between India and the North of England. This publication lays out the current scope and future opportunities for the two geographies across key sectors – energy, health, advanced manufacturing and digital – mapping the capabilities across the region with opportunities in various states in India.

CII is proud to have been a part of this effort to present a roadmap of opportunities for India and the UK. The publication not only highlights but confirms our long-standing confidence in the strength of the UK-India economic relationship. The time is opportune for the two countries to encourage this partnership and grow together.



**Chandrajit Banerjee**  
Director General,  
Confederation of Indian Industry (CII)

# Introduction

**It is my pleasure to introduce this important study, which identifies the opportunities for collaboration between the North of England and India.**

1

The publication of this report coincides with the launch of direct flights between Manchester Airport and Mumbai, India's economic capital, which will be pivotal to these opportunities being exploited.

Securing a direct route to India was one of the region's long-term priorities and many years' work has gone into building the case for a service and finding the right airline partner. That is why I am delighted to be working with Jet Airways on this new service, which is of huge significance to our region for a number of reasons. Jet has recognised what we already knew: that the North has a fantastic array of economic, sporting, cultural, academic and natural assets.

Coupled with the fact there are more than 200,000 people of Indian origin living in the North, in addition to over 100 Indian businesses, it is clear that the North of England can more than sustain a regular direct air route to India. Indeed, that has already proven to be the case, with demand being so strong since news of the service was announced, that Jet has already increased its frequency from four to five times a week.

The reason we attach so much importance to securing links to markets like India is not just to give our passengers greater choice, but because of the wider impact such connectivity has on the prosperity of the region.

We know that direct routes facilitate increased flows of people, goods and services, as barriers to trade, investment and knowledge exchange are removed. As more people travel between two places, awareness of what makes them good places to visit and do business with is raised considerably.

What this report does is identify where the most significant opportunities for economic and cultural collaboration lie. It sets out how the Manchester-Mumbai route – and other new services that follow – can serve as a catalyst for growth and prosperity, enabling the North to tap into one of the world's fastest growing economies and giving India direct access to everything this part of the world has to offer.

The catalytic impact of direct connectivity sits at the heart of the rationale for establishing the Manchester India Partnership, which I am honoured to chair. It has brought together public and private sector organisations, who have united behind the common goal of forging closer ties with India.

This work will not just benefit Greater Manchester, but the North as a whole, as identified in this report. Furthermore, it will make a significant contribution to the creation of a balanced and outward facing UK economy, at a time when its relationship with key international markets is more important than ever before.

I would like to place on record my thanks to all of the organisations that have helped get the Manchester India Partnership to where it is today, and would also urge any others interested in contributing to our common goal of forging closer ties with India to contact us, so we can explore ways of working together.

I hope you enjoy this report and look forward to working with all of our partners on further strengthening the relationship between Manchester, the North and India.



**Andrew Cowan**  
CEO, Manchester  
Airport;  
Chair of the  
Manchester India  
Partnership

# Executive summary

2

## UNLOCKING THE OPPORTUNITY

Direct flights between Manchester and Mumbai commence on 5th November 2018, providing a real catalyst for economic growth.

The alignment of the North's economic strengths with India's sectors of focus - demonstrated by key strategic initiatives such as Digital India, Make in India and Clean Energy India - makes the North an ideal collaborator with India. A stronger partnership between the North and India also makes sense in the context of the UK's industrial and export strategies, and initiatives such as the UK-India tech partnership.

Given the economic and strategic complementarities, the Manchester-Mumbai route represents a fantastic opportunity to propel the North's relationship with India forwards and, in doing so, further the interests of both the UK and India.

## SIZE OF THE PRIZE

Indicative analysis based on the existing literature on the benefits of connectivity, and on recent evidence of the economic impacts from the introduction of similar international routes such as Manchester-Beijing, suggests that the size of the prize is significant: the new Manchester-Mumbai route could support around 2,000 jobs and unlock up to £400m in GDP for the North over the next five years, including:

**Trade and investment – up to £300m in GDP:** Better connectivity will decrease the logistical constraints faced by Northern and Indian businesses, facilitating new commercial relationships, and

unlocking substantial bilateral trade and investment opportunities. Notable existing examples of Indian investment into the North include the upgrade of the Novelis aluminium recycling plant in Warrington, Piramal Enterprise's expansion of its Morpeth hormonal product manufacturing facility, and the arrival of IT companies Tech Mahindra and 42Gears in Greater Manchester.

**Research and development – up to £20m in GDP:** Enhanced connectivity will facilitate knowledge sharing between the North and India, which will in turn augment the capacity on both sides to conduct innovative research and development, and to use cutting-edge technologies effectively. The University of Sheffield Advanced Manufacturing Research Centre's collaboration with PTC Industries in opening India's first ever titanium casting facility serves as a prime example of the benefits of knowledge sharing, with Northern expertise generating a real impact on Indian industry.

**Education and skills – up to £20m in GDP:** A growing number of Indian students are pursuing studies in the North, whilst more and more UK students are looking for career opportunities abroad. The new route will accelerate this trend and facilitate new opportunities for students on both sides. Notable progress on this front includes the University of Bolton's partnership with the Karnataka State Higher Education Board and the University of Salford's partnership with the Indian Institute of Management Bangalore, one of Asia's leading business schools.

## Tourism – up to £60m in GDP:

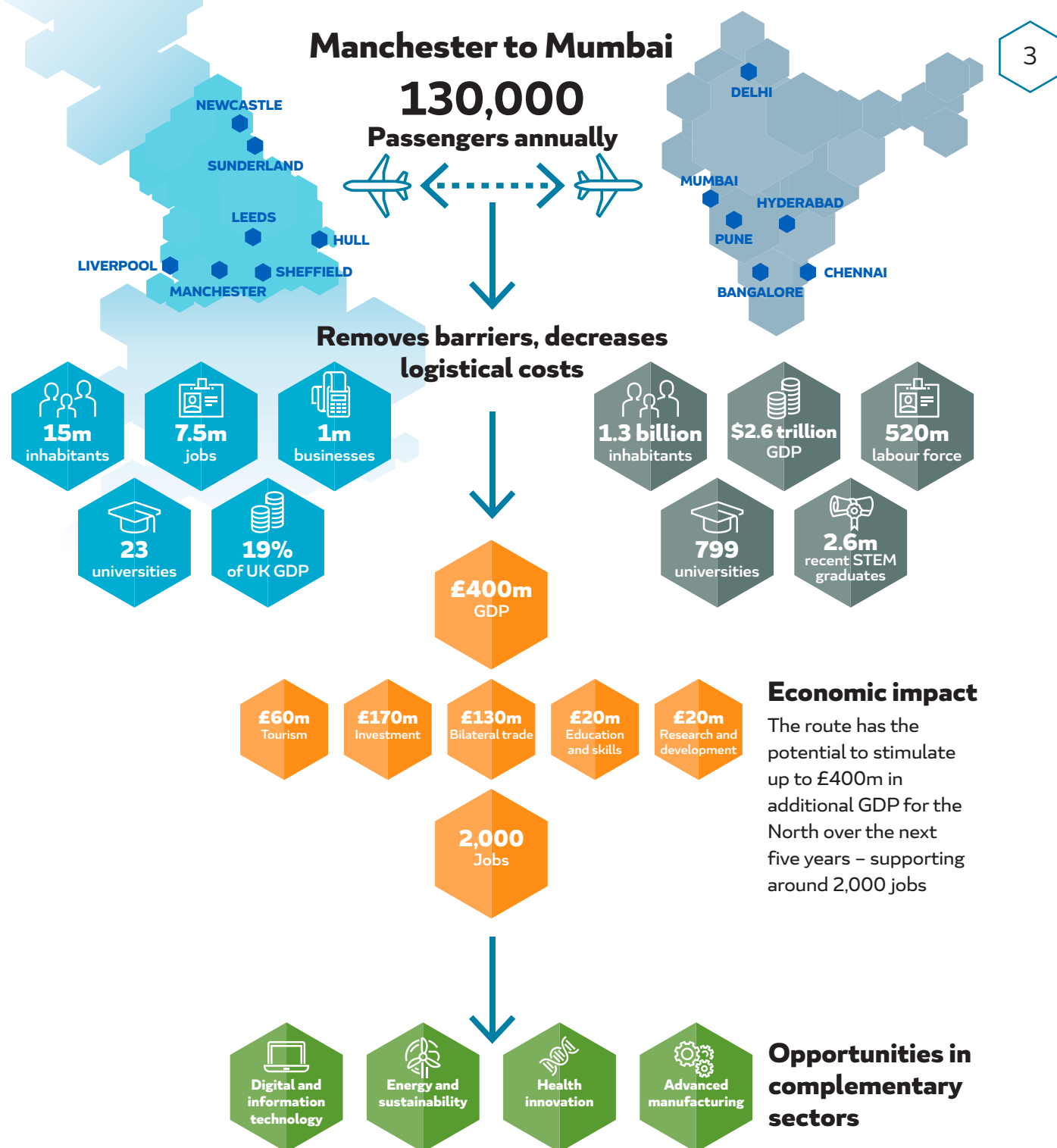
Just as business travel will become easier, leisure travel between the North and India will become simpler, stimulating significant additional tourism demand, particularly in the context of a rapid growth in the number of Indian citizens obtaining passports and looking to travel abroad. A highlight will be the Cricket World Cup in 2019 in England and Wales – with three of the 11 venues being located in the North, and with a semi-final and India versus Pakistan taking place at Old Trafford, tourism in the North is set to see a significant spike.

The successful delivery of economic benefits depends on the actions of industry, academia and government in both the UK and India. Initiatives like the Manchester India Partnership have brought the public and private sectors together to forge alliances with similar bodies in India, such as the CII and UKIBC.

Such collaborative efforts across the two countries, in addition to the involvement of key governmental departments ranging from the Department for International Trade and the Foreign and Commonwealth Office to the Department for Transport and the Home Office, will be key in unlocking the opportunity between the North and India. With the right support and engagement from all parties, there is a real possibility that the economic impact will grow over time beyond the £400m.



# The opportunity



# Manchester to Mumbai: a catalyst

4

**The new Manchester-Mumbai route will bring India and the North closer together than ever before, generating substantial new opportunities for collaboration.**

## NEW CONNECTIONS

The first direct flight between India and the North of England launches on 5th November 2018. This new service by Jet Airways will initially operate five days a week between Mumbai and Manchester Airport, potentially connecting in excess of 10,000 passengers per month.

The route will strengthen existing and create new ties between Manchester, the UK's largest economic hub outside of London, and Mumbai, the economic capital of India, whilst having significant impacts in the adjoining areas.

Manchester Airport's role as the North's primary international gateway will ensure the benefits of the connectivity will spread to all parts of the North, including key cities such as Liverpool, Leeds, Sheffield, Hull and Newcastle, whilst onward connectivity at Mumbai's Chhatrapati Shivaji Maharaj International Airport will allow access to 45 domestic destinations including key economic hubs in India such as Delhi, Bangalore and Chennai.

As has been seen with similar international routes launched in recent years, it is anticipated that the Manchester-Mumbai direct route will stimulate a significant volume of additional demand. This is likely to lead to increases in service frequency and to the introduction of new direct routes to other parts of India, such as a potential Manchester-Delhi route, a journey that is already being made indirectly by 170,000 passengers. The Manchester-Mumbai route represents the first key step towards a wider improvement of Indian-Northern connectivity.

## ECONOMIC BENEFITS

Shorter travel times bring distant places closer together, making it easier for governments, businesses, investors and citizens to collaborate.

As well as increasing the number of passengers, the introduction of commercial routes will facilitate air freight and raise trade volume – evidence shows a 40% increase in exports from Manchester Airport to China from the recent introduction of a direct international route between Manchester and Beijing.

Air connectivity also boosts foreign direct investment (FDI) by easing logistical constraints and raising awareness of the location as a potential investment proposition; as such the new route is expected to stimulate further bilateral investment.

Indian FDI created approximately 6,000 jobs in the UK in 2017-18; more than from any other country outside of the USA and Germany. Conversely, the UK is also active in India, with nearly £1 billion invested in 2016-17, the sixth largest sum globally.

The UK is the most popular long-haul destination for Indian nationals after the USA, and India is the most popular long-haul destination for UK residents, also after the USA. The new route will make the North and India more accessible than ever before, capitalising on the existing popularity of both destinations to generate substantial additional revenues from tourism for the North and India.

The introduction of the new Jet Airways direct route will catalyse further growth in tourism, FDI, trade and innovative collaborations between India and the North which in turn, will make the economic case for further direct routes between the North and India, initiating a virtuous circle of connectivity-driven growth across both geographies.



# The Northern Powerhouse

**With its rich history, diverse culture, and an economy that would rank as one of Europe's 10 largest, the North is a region of great potential and importance.**

5

The North comprises some of the UK's most important economic centres, including Sheffield, Newcastle, Manchester, Liverpool, Leeds and Hull. These cities were the bedrock of the Industrial Revolution and have a rich heritage in innovation and manufacturing. The economy of the North contributes more than £300 billion to the UK economy, a figure which would rank it as the eighth largest economy in Europe, exceeding the scale of major national economies such as Belgium and Sweden.

The North offers 'quality of life' and is home to renowned attractions such as Hadrian's Wall, the Lake District and the Peak District; myriad museums, galleries and theatres capturing the region's culture.

The North also has major sporting and all-purpose venues hosting large-scale entertainment events such as Leeds Festival, Premier League and Champions League football, and the upcoming 2019 ICC Cricket World Cup.

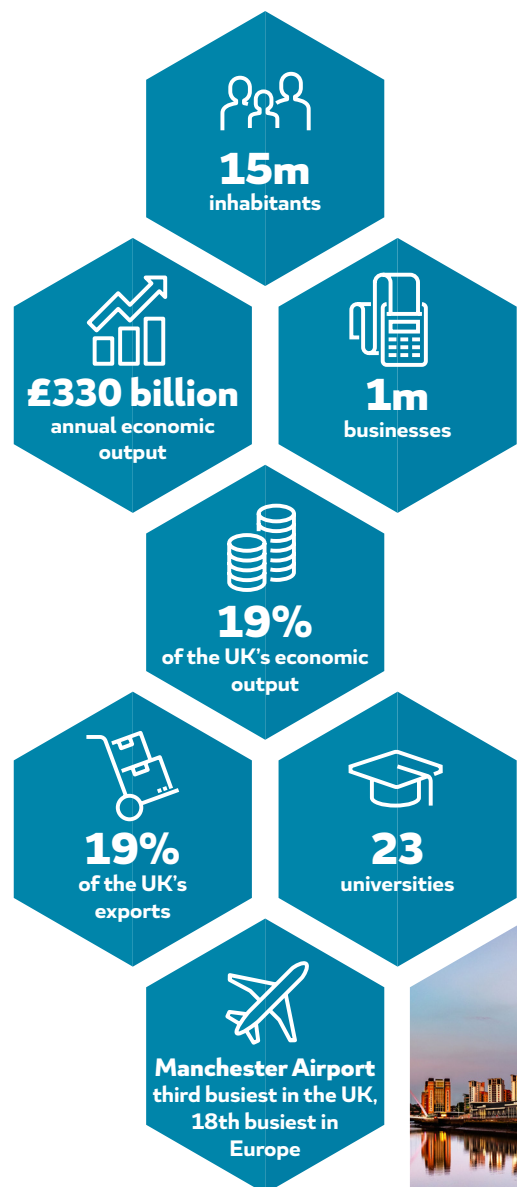
At the same time, there is still scope to build on these strengths further to fully realise the economic potential of the North.

This was the stimulus for the ongoing Northern Powerhouse (NPH) initiative, introduced by the UK government in 2014. The purpose of the NPH is to catalyse the further expansion of the Northern economy through a series of strategic measures.

In particular, the NPH initiative aims to unlock the North's economic potential by enhancing domestic connectivity and transport, skills base and educational attainment of the workforce, enterprise and innovation activity, and international trade and investment.

In light of these objectives, a stronger partnership with India makes great sense. The new direct route from Manchester to Mumbai offers a perfect opportunity for the NPH to engage with the best of Indian industry and academia to attract and develop skilled workers; to collaborate on academic research and innovative business ideas; and to ultimately promote further bilateral trade and investment as part of the development of a closer long-term relationship between India, the North, and by extension, the UK.

The North of England is home to:



# Northern capabilities

6

**The Northern Powerhouse Independent Economic Review (NPIER) highlighted the key economic sectors in which the North is most competitive.**

The NPIER identified four 'key' economic sectors in which the North exhibits expertise and international competitiveness: advanced manufacturing, energy, digital, and health innovation; which are enabled by the North's additional strengths in financial and professional services, logistics, and education.

Strengths in these four key sectors have been identified in all parts of the North, but some notable examples of particular specialisms can be highlighted.

For example, Sheffield City Region's Advanced Manufacturing Park (AMP) has seen industry-leading companies such as Boeing, McLaren and Rolls-Royce cluster together there to take advantage of the region's excellence in research and development. Switching focus to academia, the University of Manchester's continued pioneering research into the two-dimensional material graphene is another particular highlight

demonstrating the North's excellence in highly advanced manufacturing.

In Hull, Siemens has invested £160m in Green Port Hull for wind turbine production, helping the region become a world leader in renewable energy. In addition, Sellafield forms part of a vibrant set of nuclear supply chains connecting Cumbria with Cheshire and beyond, including four of the six locations of the National Nuclear Laboratory – state-of-the-art facilities for cutting-edge research into all aspects of nuclear energy and technologies.

In digital, a number of city regions have developed clusters of activity, most notably Manchester, which has attracted investments from the likes of Amazon, Google, Jaguar Land Rover, and Tata Consultancy Services in recent years, with particular R&D emphasis on key topical themes such as big data and the internet of things (IoT).

Finally, in health innovation, the North is home to many leading research centres in the life sciences sector, across Liverpool, Leeds, Manchester and Newcastle. The North's particular strengths in digital health solutions – such as the Connected Health Cities programme – and in the manufacture of pharmaceuticals place the region at the forefront of the UK and Europe.

At a broad level, each of the North's core capabilities is complementary to a high-priority strategic objective for the Indian government. Specifically, the North's deep expertise and capabilities in the advanced manufacturing and digital sectors make it a key potential collaborator to push forward major economic initiatives under the Modi government, such as 'Make in India' and 'Digital India'. Furthermore, the North's status as an international leader and innovator in the areas of health and energy place it in a prime position to assist India in tackling significant challenges in sustainability and the provision of healthcare.


In light of these complementarities, in addition to contextual factors such as the existing historic relationship between the North and India, and the imminent establishment of a direct route that will bring the two geographies closer together than ever before, the North is uniquely positioned to emerge as one of India's most valued and prominent economic partners.



## REGIONAL CAPABILITIES AND SECTORAL STRENGTHS

7

### KEY:

-  AIRPORT
-  DIGITAL AND INFORMATION TECHNOLOGY HUBS
-  ENERGY AND SUSTAINABILITY HUBS
-  HEALTH INNOVATION HUBS
-  ADVANCED MANUFACTURING HUBS



### 2015 FIGURES (2011 PRICES)



### 2050 PROJECTED FIGURES



# Indian potential

8

**India is the fastest growing major economy in the world. Its potential cannot be understated.**

Given the scale and diversity of its economy, India would be a valuable partner for any country or region, but its existing ties to the UK make it particularly suitable to collaborate with the North.

## TRADE AND FDI

India is the UK's seventh largest trade partner in goods outside of Europe (sixth in share of UK imports; 11th in exports). It is also the third largest exporter of services to the UK outside of Europe; with particular focus on IT services and professional services.

India has established itself in recent years as one of the UK's primary sources of foreign direct investment (FDI). In 2017-18, Indian FDI into the UK created around 6,000 new jobs – more jobs created through FDI from any country outside of the USA and Germany.

The introduction of the direct route between Manchester and Mumbai will serve to bring the North and India closer together. As a part of this process, investors, entrepreneurs, and businesses on both sides will become better acquainted with each other's offerings and talents, facilitating the pursuit of collaborative endeavours and, in turn, stimulating further bilateral trade and investment between the two geographies.

## SKILLED WORKFORCE

An essential foundation of the Indian economy is the continuous growth of the skilled tertiary-educated workforce. India's increasingly service-based economy is dependent on its strengths in information technology, a vibrant start-up culture, and emerging R&D competitiveness – all of which require high quality human capital.

The world-class universities of the region coupled with major research projects conducted in conjunction with the private sector – such as Aura, a collaboration on offshore wind energy led by the likes of the University of Hull and Siemens

– offer opportunities for Indian students to further develop their skills.

The North can support Indian upskilling through its academic institutions and businesses. It can also benefit from the knowledge exchange by attracting the best Indian students and workers to contribute to its growing skills-based economy.

## TOURISM

Long-haul trips from India have been increasing due to income and population growth. The number of international journeys made from India, (leisure and business) has grown by an average of 10% per year over the last 10 years; increasing the total figure from 8.3m journeys in 2006 to 21.9m in 2016.

The UK is the second most popular long-haul destination for Indian citizens after the USA with over 400,000 visits per year. The existing demand primarily funnels through London, however it is expected that the new direct route will propel the popularity of the UK even further by encouraging Indian visitors to consider Manchester as an alternative entry point to the UK, unlocking Indian tourism for the whole of the North.



## REGIONAL CAPABILITIES AND SECTORAL STRENGTHS

### MUMBAI

- **Financial services** – the commercial capital of India; responsible for 40% of India's foreign trade; home to 10th and 11th largest stock exchanges in the world.
- **Information technology** – the birthplace of the Indian IT industry; home to the largest IT company in India – Tata Consultancy Services (ranked as the most innovative company across all sectors in India by Forbes); home to the Indian Institute of Technology Bombay (IITB) – ranked by QS as the top university in India and a top 100 university worldwide for computer sciences.

### PUNE

- **Education** – home to 10+ universities, attracting students across India, Middle East and East Africa, as well as several major research institutions including the Indian Institute of Science Education and Research and the Centre for Development of Advanced Computing.
- **Information technology** – home to leading IT multinational Tech Mahindra; also home to the Rajiv Gandhi Infotech Park, a 2,800-acre purpose-built area housing over 800 IT companies of various sizes.

### BANGALORE

- **Digital and IT** – dubbed the 'Silicon Valley of India'; employs 2.5m IT professionals (35% of national total); home to four of India's top ten largest IT companies (most notably Infosys and Wipro); home to India's largest start-ups (Flipkart, Ola Cabs); accounts for the greatest share of India's IT service exports; India's most mature and lucrative e-commerce market.
- **Advanced manufacturing** – home of the Department of Space, and its primary R&D arm specialising in developing satellites and launch vehicles, the Indian Space Research Organisation; India's leading hub for emerging biotech industry.

### DELHI

- **Digital and IT** – growing culture of innovation, competing for the mantle of the start-up capital of India, with Delhi start-ups raising \$4.3 billion in funding in 2017 alone (second only to Bangalore's start-ups).
- **Tourism** – home to three UNESCO World Heritage Sites; India's most visited city, with around 6m international tourist arrivals annually.

### HYDERABAD

- **Health and life sciences** – Hyderabad is home to many of India's leading organisations and research institutions in the biomedical sciences field, including the Indian Heart Association, the National Institute of Nutrition, and the Indian Institute of Chemical Technology.

### CHENNAI

- **Manufacturing** – India's leading city in the automotive industry, responsible for approximately a third of India's total vehicle and component production; home to leading global manufacturers such as BMW, Ford, Daimler, Hyundai and Nissan.
- **Information technology** – second-largest exporter of IT services after Bangalore; leading regional manufacturer of computer electronics; home to TIDEL Park – one of the largest IT parks in Asia.

# Unlocking the opportunity

10

**Enhanced connectivity between the North and India could unlock up to 2,000 jobs and £400m in GDP for the North over the next five years.**

As highlighted in the Transport for the North's International Connectivity Commission Report, particularly in the post-Brexit landscape, international connectivity will be critical in maintaining the North's prominence on the global stage.

Drawing on the existing literature on the economic benefits of direct connectivity, and on recent evidence of impacts from the introduction of similar routes such as Manchester-Beijing, the new direct route between Manchester and Mumbai could generate up to £400m for the North over the next five years, comprising:

- £170m in investment
- £130m in trade
- £60m in tourism
- £20m in education
- £20m in research and development

The enhanced connectivity will naturally foster closer relations and reduce barriers between the North and India, however, unlocking the full £400m opportunity and creating jobs will be contingent on the active collaboration of business, academia, and policymakers alike, notably in the key sectors identified below.

## **UNLOCKING THE OPPORTUNITY: DIGITAL AND INFORMATION TECHNOLOGY**

The North is a key contributor to the UK's sustained success in information technology, generating approximately £10 billion a year and employing 18% of the UK's tech workers. India is the fifth largest

exporter of IT services globally with an annual growth rate, since 2000, of 16%; faster than any other major economy.

India is home to more start-ups than any country outside of the United States – new creative ideas and solutions are being developed and tested constantly in hubs such as Bangalore, Chennai and Hyderabad.

Given the abundance of entrepreneurship in India, the North will benefit from taking advantage of the enhanced connectivity to intensify such efforts to bring the best of India to fortify the North's position as an international technology hub. Efforts are already being made to identify and attract high-potential Indian tech companies to the North, through initiatives such as the Deloitte Tech Fast 50, with recent success stories such as Tech Mahindra's arrival in MediaCityUK, and these should intensify with the introduction of the new direct route and the removal of key logistical constraints.

For Indian businesses, the North represents a cost-effective entry point to the UK outside of London that offers a foothold in a mature and large digital market; and access to a diverse talent pool consisting of students at world-leading institutions, and professionals with deep expertise in key growth areas such as machine learning, internet of things, smart cities, big data, fin-tech and e-commerce.

## **UNLOCKING THE OPPORTUNITY: ENERGY AND SUSTAINABILITY**

India is the world's third-largest consumer of energy and demand will continue to grow. In order to meet this growing demand and honour India's commitments under the Paris Agreement, the government is making efforts to diversify from conventional non-renewable energy.

To this end, PM Modi has placed particular emphasis on India's production of wind and solar energy. India has enormous untapped potential in wind power – despite ranking fourth in the world with an installed wind power capacity of 33 gigawatts, it has the potential to reach a maximum capacity of 302 gigawatts. As an active member of the International Solar Alliance, India is also working to leverage developed nations' finance to grow its own solar capacity to 1,000 GW by 2030.

The North is well-positioned to help India transform its energy and fuel portfolio, particularly contributing with its expertise in renewable energy cluster formation, innovation in offshore wind generation, as well as growing expertise in battery technology. Equally, Northern energy operators entering new markets may be open to exploring investment portfolios worldwide, including India.



### UNLOCKING THE OPPORTUNITY: HEALTH INNOVATION

In the context of rapidly evolving demographics and rising healthcare expenditure, the affordability and provision of healthcare are key issues in the Indian political landscape, as evidenced by the recent high-profile launch of PM Modi's flagship health insurance scheme, dubbed 'Modicare'. The North's excellence in the life sciences, with particular expertise in digital health innovations and pharmaceuticals, make it a suitable partner to work with India on navigating its key challenges.

There are over 1,000 life science businesses, which collectively account for £17.5 billion of the North's £304 billion economy and employing over 570,000 people, including 38,000 highly-skilled professionals.

A particular Northern capability of interest for India is digital health. This is exemplified by the Connected Health Cities programme, which draws on resident and patient data across the North and uses advanced analytics to simulate and model health ecosystems, allowing more informed strategic decision-making, as well as cost reductions through a better approximation of procurement needs. This kind of technology-driven solution for reducing healthcare costs is of immediate and direct relevance to India in the context of the aforementioned challenges.

### UNLOCKING THE OPPORTUNITY: ADVANCED MANUFACTURING

One of India's immediate economic objectives is to consolidate its strengths in manufacturing and to enhance its competitiveness in the sector. This is reflected in PM Modi's 'Make in India' initiative which aims to create 100m additional jobs in manufacturing and to increase its share of GDP to 25% by 2022. In light of this strategic objective, and the North's historic and current status as an international hub for advanced manufacturing, the potential for collaboration here is obvious and significant.

The North's expertise in manufacturing dates back to the Industrial Revolution, and over time, it has evolved to encompass a large variety of disparate sectors, with current strengths in areas including aerospace, automotive, pharmaceuticals, healthcare and energy.

Northern expertise can help unlock the enormous potential of India's manufacturing sector. In addition to cutting-edge academic research, such as the University of Manchester's ongoing world-leading work with the two-dimensional material graphene, the North's extensive industrial experience and familiarity with capabilities such as AI, machine learning, 3D printing, and advanced metal fabrication could be leveraged to encourage the adoption and development of these technologies and capabilities in India, with anticipated long-term benefits for the productivity of India's manufacturing sector, and the prominence of Northern industry.

### UNLOCKING THE OPPORTUNITY: DRAWING ON THE ACADEMIC INSTITUTIONS

Beyond these key sectors, India and the North are home to world-class academic institutions, which should be engaged to promote knowledge exchange, and to supplement industry relationships. With a significant number of Indian students in the UK and the North, UK students looking for opportunities abroad, and given the existing historic cultural ties, there is great potential for further crossovers between academic institutions on both sides.

Notable progress includes the recent partnership between Tech Mahindra and the University of Salford, and an upcoming collaboration between the University of Bolton and the Karnataka State Higher Education Board.

These collaborations are positive initial steps in the right direction. Academia underpins competitiveness across all of the sectors alluded to thus far by producing the highly skilled workers and facilitating the cutting-edge R&D and innovation required.

Therefore to truly capitalise on, and to enhance, Northern and Indian capabilities, it is imperative that both geographies supplement industrial collaborations with a continued effort to engage academia, with a particular emphasis on leveraging the expertise of students and academics at leading institutions on both sides.



# The North in action

12

**Across each of the key sectors identified, the North is already working with Indian businesses to capitalise on the joint opportunities.**

## DIGITAL AND INFORMATION TECHNOLOGY

The North contains a number of the UK's most significant digital and information technology clusters with particular strengths in e-commerce, high-performance computing, cognitive computation, data analytics, simulation/modelling, and machine learning; each of which has enormous potential to cross over and complement other sectoral strengths of the Northern economy. The North's digital economy is thriving, and it is home to seven of the UK's 27 tech clusters. Some of the North's prime locations for digital and technology include Hull, Liverpool, Leeds, and Sheffield.

Greater Manchester is home to the largest creative, digital and tech hub outside of London. The region is recognised as one of Europe's leading digital and innovation hubs, with key strengths in cybersecurity, e-commerce and fintech.

With the presence of a wide array of multinationals in addition to an established start-up culture – with nearly 1,600 tech start-ups formed

in 2016 – Greater Manchester epitomises the North as a great place for companies of all sizes to operate and grow. Tech Mahindra and 42Gears are perfect examples of two Indian businesses of vastly different scales that have both successfully transitioned into the North joining Tata Consultancy Services as part of an emerging cluster of Indian tech companies.

### CASE STUDY: 42GEARS

**Founded in 2009, 42Gears is an Indian SME software development company that enables businesses to manage employees' usage of company mobile and desktop devices to maximise productivity and ensure data security in a cost-efficient manner.**

**Headquartered in Bangalore, Karnataka, sustained rapid growth has quickly garnered 42Gears' international recognition – including Deloitte's Tech Fast 50 India (2015, 2016, 2017); and 'Gold' tier partner of Samsung's Enterprise Alliance Program in 2016. This international recognition led to an introduction to MIDAS, Manchester's inward investment agency, and in August 2017, after careful deliberation, 42Gears chose to open an office at Piccadilly House, in the heart of Manchester.**

**A year since their move into the North, 42Gears has increased its global client base from approximately 6,000 to 9,000, fulfilling expectations and portending an extremely bright future.**

### CASE STUDY: TECH MAHINDRA

**Originally founded in 1986 as a joint venture between BT and Mahindra Group, Tech Mahindra is one of India's 50 largest IT services companies, employing more than 110,000 people across 90 countries, with an estimated FY18 revenue of £3.6 billion.**

**In April 2018, Tech Mahindra bolstered its existing UK operations by officially opening its new office in MediaCityUK in Greater Manchester, a purpose-built innovation hub for media and digital enterprises, serving as the headquarters for their Northern operations.**

**Since launching in the North, Tech Mahindra has since announced a partnership with the nearby University of Salford to collaborate on various tech initiatives such as smart cities and the internet of things (IoT).**

**Ashish Pandey, VP and client executive at Tech Mahindra Salford, said: "Greater Manchester is flourishing and is an ideal location to establish our Northern operations centre. In addition, Manchester is a technology hub and is ranked in the top 20 European digital cities, with an excellent talent pool to draw from, being home to four universities and 99,000 students."**





## ENERGY AND SUSTAINABILITY

The North has significant strengths and expertise in the generation, storage, and distribution of renewable energy. It has a long-standing track record with low-carbon technologies, including nuclear energy, offshore wind energy, and a growing expertise in battery technologies.

One of India's top priorities under the Modi government is realising an efficient and effective transition towards a more renewable energy system due to increasing pressures on demand stemming from urbanisation, income and population growth.

India's challenge is significant and the bulk of public investment in Indian infrastructure is expected to be diverted to energy, transport and urban improvement. As a result, the UK energy sector is attracting a significant amount of foreign direct investment.

The North East, which includes the cities of Sunderland and Newcastle, has particular strengths in relation to wind and low carbon industries, and one initiative that is primed to benefit from this opportunity is Aura, a working group of key industry partners, academia, national, local and regional government – led by the University of Hull.

Aura is a project that brings together multidisciplinary excellence, knowledge, and innovation within the offshore wind and low carbon industries; striving to enhance and maintain the current momentum for regeneration and position the area as a global centre for the transition to a low carbon economy. Some of the key names the University of Hull is already bringing together to achieve its aims are systems manufacturing expert Siemens Gamesa Renewable Energy, and world-leading renewable energy developer Ørsted; which will provide a huge opportunity for collaboration with Indian energy companies.

The North is already collaborating with Indian businesses within the sector, as evidenced by the North West's involvement with Novelis, a subsidiary of Mumbai-headquartered Hindalco.

## CASE STUDY: NOVELIS

**Novelis is a subsidiary of Hindalco Industries Limited, one of Asia's largest integrated producers of aluminium and a leading copper producer, which is a flagship company of the Mumbai-headquartered Aditya Birla Group.**

**The company is the world leader in aluminium rolling and recycling and has committed significant investment to upgrade its plant in Warrington in the North West; enabling it to improve processing volumes by more than 250%.**

**The Novelis Warrington plant also serves as a launch production site for the industry's first independently certified, high-recycled content aluminium designed specifically for the beverage can market.**

## HEALTH INNOVATION

The health and life sciences sector accounts for £17.5 billion of the North's £304 billion output in terms of GVA, and is forecast to grow by over 40% by 2030. In total, 570,000 people are employed in the sector across the North, 38,000 of whom are high-skilled, with 48,000 supported in the private sector and its supply chain.

There are more than 1,000 health and life science businesses in the North, and 97% of them are SMEs; this strong supply chain has played a large role in attracting inward investment into the sector, such as the £550m 10-year investment from AstraZeneca in Cheshire. Health innovation is widespread



## THE NORTH IN ACTION

across the North, demonstrating international competitiveness across a number of key specialisms, including digital health/health analytics, pharmaceuticals, medical devices, drug discovery, and health devolution.

Given India's rapidly expanding pharmaceutical market and its growing demand for the provision of high-quality, cost-efficient healthcare, the North's all-round excellence in life sciences and its expertise with innovative, cutting-edge healthcare solutions could be leveraged to further develop the collaborative relationship between the Northern Powerhouse and India.

For example, Liverpool City Region is one of the UK's leading geographies for industrial activity and academic expertise in the health and life sciences sector. Liverpool has the largest number of specialist hospitals and health centres in the UK outside of London, as well as the largest bio-manufacturing centre in Europe; home to companies including AstraZeneca, Medimmune, Allergan, Seqirus, Eli Lilly, Bristol-Myers Squibb, and Teva. The region also has more than 8,000 life science students, 10,000 life science professionals, and over 100,000 healthcare workers.

The North's strengths in life sciences are recognised by Indian industry, with Piramal Enterprises's involvement in the North East serving as a prime example.

### CASE STUDY: PIRAMAL ENTERPRISES

**Piramal Enterprises, the Mumbai-headquartered medical packaging company, invested \$11m in its Morpeth facility in the North East, which enabled the business to triple its production capacity for hormonal products, including contraceptive pills and hormone replacement therapies, by around two billion tablets per year. The new suite now houses formulation, packaging coating and tableting equipment.**

**Vijay Shah, Piramal Enterprises' Executive Director and COO, said:**  
**"The production of hormonal products is a highly specialised, niche area. The Morpeth facility is our Centre of Excellence for these products and this expansion will greatly enhance our offer and potential for growth in this space."**

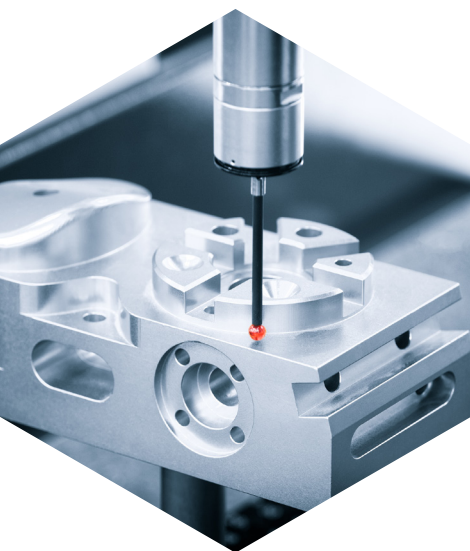
### ADVANCED MANUFACTURING

As the epicentre of the Industrial Revolution, the core industrial activities of manufacturing and engineering are at the heart of the North's history and its economic legacy. Whilst the North, in line with wider trends, has gradually transitioned to a more service-based economy, the region has leveraged and advanced its expertise throughout the years to retain its competitive advantage and status in these fields.

What the North lacks in scale and breadth now in comparison to the rest of the world, it more than makes up for with quality and depth, and the region's capabilities with respect to advanced manufacturing – as attested to by the presence of industrial giants such as Boeing, Rolls-Royce, Siemens, Nissan, and GSK – are nothing short of world-class.

Turning to India, one of the Modi government's top strategic aims is to upskill the Indian manufacturing sector and to enhance its global competitiveness as part of the 'Make in India' initiative. The continued importance of this aim, and the UK's role in achieving it, was demonstrated in PM Modi's recent visit to the UK in April, when a desire for greater collaboration in advanced manufacturing was expressed on both sides.





Given these contextual factors, the North is set to play a critical role in the uptake and development of advanced manufacturing technologies and processes in Indian industry across a variety of sectors spanning aerospace, automotive, electronics, and pharmaceuticals.

A great example of how the North is already using its technology-driven capabilities to support and advance the Indian manufacturing industry, is the collaboration between Castings Technology International (Cti), the University of Sheffield Advanced Manufacturing Research Centre and PTC Industries.

#### CASE STUDY: PTC INDUSTRIES

In October 2017, Cti, the commercial castings arm of the University of Sheffield Advanced Manufacturing Research Centre (AMRC), assisted Indian foundry group, PTC Industries, in establishing the Indian subcontinent's first ever titanium casting facility in Lucknow, Uttar Pradesh.

Cti's technical development team provided critical support with the basic titanium process technology, commissioning, layouts, equipment design and specifications for the new titanium foundry, which is already producing high-integrity castings in key international markets, including valves for the USA and European oil and gas sectors. Cti and PTC are now in discussions with the Indian Institute of Technology (IIT) to assist with a project that will accelerate the development of a Technical development corridor in the Lucknow/Kanpur area.

The AMRC was established in 2001 as a £15m collaboration between Boeing and the University of Sheffield and is one of the UK's leading centres of excellence for advanced manufacturing across the aerospace, automotive, energy, medical and infrastructure sectors. Drawing on Sheffield's historic industrial and academic expertise in metalwork, the AMRC owns one of Europe's leading aerospace castings facilities, and is in possession of one of few furnaces worldwide that are capable of producing titanium castings of up to 500kg.

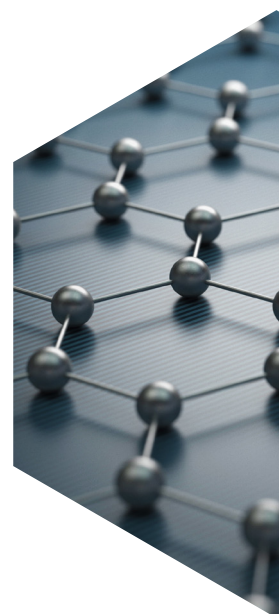
#### CASE STUDY: GRAPHENE

Graphene, the world's first 2D material, was first isolated at the University of Manchester in 2004. It has been nicknamed the "wonder material" thanks to its impressive properties; being 200 times stronger than steel, the world's most conductive material, flexible, transparent and impermeable.

While initial demand has focused on academic research and prototype development, the market is projected to be worth almost £800m by 2023, with a five-year compound annual growth rate (CAGR) of 47.1% from 2018 to 2023.

Manchester has the highest concentration of graphene expertise in the world with over 250 researchers working on graphene and related 2D materials. The city is home to the National Graphene Institute (NGI) and the Graphene Engineering Innovation Centre (GEIC) which will take products from research and testing to scale up production.

In response to strong interest from Indian businesses regarding the exploitation of graphene, a delegation led by the Department for International Trade (DIT), recently travelled to India to promote the use of graphene ahead of the opening of the GEIC on 10th December. Representatives from MIDAS and Graphene@Manchester promoted the opportunities available to Indian corporates, showcasing how Indian businesses can leverage Manchester's advanced materials research and innovation assets to "Make in India, Innovate in Manchester".



## THE NORTH IN ACTION

16

### TOURISM

The various destination marketing organisations that represent the regions of the Northern Powerhouse are charged with stimulating tourism within their respective locations, working alongside one another to further raise awareness of tourism and attract more visitors to the North.

The number of overnight stays across the Northern Powerhouse rose 4.3% in the first half of 2018, compared with the same period in 2017, taking the total to 33.6m. Visitors to Northern Powerhouse regions spent a total of £2.3 billion.

India is one of the key international markets of focus, given its size and emerging trends. In recent years, rapid economic growth and the establishment of new airports and international routes have driven a major increase in the popularity of international travel among Indian citizens. The total number of international journeys made by Indian citizens has grown by an average of 10% per year over the last 10 years; from 8.3m journeys in 2006 to 21.9m in 2016. This trend is expected to continue, and the Manchester-Mumbai route will play a key role in capitalising on this growing demand.

### CASE STUDY: COX AND KINGS

Due to close cultural ties, Indian tourists deem Manchester as the second most familiar city in the UK, which is evidenced by the 13,000 Indian citizens who visited in 2017 – but Marketing Manchester is committed to building on this.

In partnership with India-headquartered Cox and Kings, the world's longest established travel company, and Visit Britain, Marketing Manchester is developing marketing tours of Britain, which start in Manchester and take in destinations across the North – allowing tourists to explore more of the UK. They include: self-drive tours; Manchester city breaks; Flexihol rail tours to Manchester, Liverpool, and York; and a fixed departure group tour. The campaign to promote these tours will run January to March 2019 and have a value of £200,000.

A similar tour that ran in 2017/18 with Cox and Kings has successfully delivered Indian visitors to the destination and experienced year-on-year growth. Manchester also hosted an Indian film crew from Travelxp to film two city travel shows for distribution across a global network of more than 91m homes, including in India.

2018 has marked a starting point for engagement with potential Indian tourists but following the launch of the direct route between Manchester and Mumbai, with the support of Jet Airways, Marketing Manchester will develop relationships with key market contacts and organise a series of digital advertising, social media and communications campaigns.

As a result, 2019 is anticipated to be a transformative year for Indian tourism in Manchester and the North. Next year, six fixtures of the Cricket World Cup (CWC19) will take place at Old Trafford, including a semi-final, and the most-watched fixture in international cricket when India take on Pakistan. CWC19 will also provide Manchester and the North with a unique opportunity to connect with 438m TV viewers from India.



# What next?

**Leeds, Manchester, and Sheffield, all have bespoke strategies for India, which reflect the complementary focus areas covered in this report. These local strategies leverage wider strategic initiatives from UK and Indian governments.**

17

## LOOKING FORWARD

Delivering economic benefits requires a joined-up approach from business, academia and policy-makers in both the UK and India – recent success stories and respective economic strategies highlighted in this report show that trade, investment, R&D, education and tourism are priority themes for intervention in both countries.

The North's interest in working with India is reflected in the activities of key dedicated bodies, such as the Manchester India Partnership – a dedicated public/private initiative to connect entrepreneurs and businesses, as well as national and local government organisations.

Prime Minister Modi's visit to the UK in April 2018, his first since 2015, gave way to a wide-ranging discussion with the UK government. Among the various topics of discussion, key outcomes included:

- i) A new UK-India tech partnership to stimulate India's digital economy
- ii) A new trade partnership to promote trade in the life sciences and IT sectors
- iii) A Statement of Intent to explore possible cooperation in advanced manufacturing
- iv) A new UK-India fund to develop green infrastructure in India

Post-Brexit, the UK will be using initiatives such as the UK-India Tech Partnership, the Northern Powerhouse, and the export and industrial strategies to drive economic growth. Equally, India has embarked on a range of initiatives including Digital India, Make in India, Clean Energy India that complement the economic specialisms in the North.

Key platforms such as the UK-India Tech Summit, due to be attended by the UK's Secretary of State for International Trade and the Indian Aviation Minister, and the International Business Festival will provide further opportunity for progress.

## CONCLUSION

The improvement in connectivity between the North and India represents a significant opportunity for both parties to collaborate with, learn from and, ultimately, benefit one another.

Complementarities in economic and strategic aims, the use of a common language, and the deep cultural ties through the Indian diaspora mean that the North and India are well positioned to work together. Given the North's core economic strengths in the digital, life sciences, advanced manufacturing, and energy sectors, this close alignment with the key strategic and economic interests of both nations presents a major

opportunity for the North to play a critical role in shaping the future of the UK-India relationship.

The launch of direct flights between Manchester and Mumbai provides a real catalyst for economic growth in both the North of England and India. The size of the prize is significant: the 130,000 passengers using the route annually could generate up to £400m in GDP for the North over the next five years, supporting around 2,000 jobs.

With the right support from government, industry and academia, the prize is there for the taking.



# Acknowledgements

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## MANCHESTER INDIA PARTNERS



**Deloitte**



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**Manchester India Partnership**