

WORKING PAPER

# Connected clusters 2: mapping interregional connections in the UK

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## Table of Contents

<i>Executive summary</i> .....	<b>2</b>
<b>1. Introduction</b> .....	<b>4</b>
<b>2. Registered office address and trading office address</b> .....	<b>7</b>
<b>3. Growing Together Alliance</b> .....	<b>9</b>
<b>4. Data and methodology</b> .....	<b>11</b>
<b>5. Findings</b> .....	<b>14</b>
<b>Conclusion</b> .....	<b>45</b>
<b>Appendix</b> .....	<b>48</b>
<b>References</b> .....	<b>51</b>

# Executive summary

Business location decisions play a critical role in shaping regional economies, influencing investment, job creation, and economic resilience. While policy has often focused on fostering competition between regions—either by directing resources in high-growth areas or redistributing funding more widely—less attention has been given to the underlying connections between regional economies. This research examines firm location choices to provide new insights into how businesses operate across different geographies, helping to inform strategies that better support businesses and the places they operate in.

Understanding the trading address choices of firms is crucial for gaining insights into the connections between different parts of the economic landscape and the ways in which regional and national development strategies can harness these. Trading addresses, as opposed to registered addresses, reflect where companies actively conduct their business operations, interact with customers, and use local resources. These choices provide a clearer picture of the economic hubs within a region and the connections between them, revealing patterns of business activity, sectoral growth, and regional interdependencies.

This paper examines how businesses in the Growing Together Alliance (GTA) position themselves within and across different regions. By understanding these patterns, we can better understand the strengths and specialisations of each area, and how these could contribute to a more interconnected and resilient national economy. To do this, we look at the trading address choices of knowledge-intensive businesses across the six major regions in the United Kingdom (UK) that make up the Growing Together Alliance:

- BusinessLDN
- Business South
- Business West
- Cambridge Ahead
- Northern Powerhouse Partnership
- North West Business Leadership Team (NWBLT)

The choices made by these firms reflect their strategic priorities, particularly in key sectors of the economy such as Life Sciences, Net Zero, and Data Infrastructure, and in turn, demonstrate connections between different regional economies.

For our analysis, we mapped and classified knowledge-intensive firms based on their sectoral activities using a dataset provided by The Data City. This dataset employs Real-Time Industrial Classifications (RTICs), which uses a combination of data scraping, machine learning, and expert input to categorise firms by the sectors of the economy in which they are engaged. Rather than relying on how firms may have recorded their business activities through the use of Standard Industrial Classification codes, the RTICs provide an up-to-the-minute picture using real-time data to highlight the types of sectors in which firms are operating.

While RTICs provide valuable insights and a dynamic perspective on the UK's innovation economy, it is important to note that they have limitations. The dataset cannot explicitly explain why firms are located in specific places, but instead provides a high-level understanding of the interconnectedness between clusters, highlighting the need for complementary qualitative research to explore firms' location decisions in greater depth.

This analysis complements a partner report, *Connected Clusters (2025)*, conducted in collaboration with Growing Together Alliance members, which draws on interviews with business leaders, academics, and investors to provide deeper insights into the factors influencing firms' location choices and the development of cluster connections.

### ***Key findings***

- Central London – Westminster, the City of London and Camden in particular – remains a critical hub for business activities, with a significant concentration of firms choosing to trade in the capital, particularly in sectors like CleanTech and Artificial Intelligence.
- Manchester, Leeds, and Bristol also serve as vital hubs for business activities, attracting firms from various regions and playing a significant role in the broader UK economy.
- Greater Cambridge and Manchester have emerged as key centres for specialised sectors, such as Life Sciences in Cambridge and Net Zero and Data Infrastructure in Manchester.
- Regional trading patterns highlight important connections between areas that drive growth across the UK. For example, Business South and Business West have strong ties to neighbouring regions, fostering local collaboration, while NWBLT connects with a wider range of regions, supporting broader interregional collaboration. These connections show how regions work together and rely on each other, creating opportunities for shared economic growth.
- Greater Cambridge is the smallest area by geography and population, and shows a strong regional presence highlighting a more localised and specialised focus. Though with fewer overall connections to other regions as is to be expected given scale, it is worth noting that the connections that do exist include major UK innovation companies headquartered in Cambridge.
- Firms based in GTA regions have strong business ties beyond their borders, with a strong presence in Birmingham, Cardiff, and Edinburgh.

The structure of the report is as follows: first, it defines trading and registered addresses within the context of business operations. Second, it introduces the partners of the GTA and outlines

its goals. Third, the report details the dataset and methodology used, and finally, it presents key findings and insights from the analysis.

# 1. Introduction

The spatial distribution of firms across regions and cities is a key topic in economic geography, offering insights into regional development and the forces driving economic growth. Understanding the factors that influence firms' location choices, particularly their trading addresses, sheds light on broader patterns of urbanisation and regional economic disparities.

Understanding how geographic factors shape the distribution of economic activities, influenced by forces such as market access, resource availability, and regulatory environments, has long been a central discussion in regional economics (Krugman, 1991). The foundational work of Marshall (1890) on agglomeration economies provides an early framework for explaining why firms cluster in specific areas, emphasising benefits like reduced transportation costs, a pooled labour market, and knowledge spillovers. While these principles remain foundational, contemporary studies refine and expand upon them in the context of modern economies.

For example, Overman and Nathan (2013) argue for the critical examination of the spatial scale at which industrial policies operate, suggesting a nuanced approach to agglomeration and clustering that accounts for urban dynamics, innovation systems, and localised economic interactions. Similarly, Overman and Xu (2024) highlight the persistent spatial disparities in labour markets across the UK, driven by the concentration of high-skilled workers and the interplay between supply and demand for skills. These modern analyses underscore that clustering and agglomeration are dynamic processes influenced by factors such as innovation ecosystems, regional inequality, and the self-reinforcing nature of economic activities. Such insights demonstrate that firms' location choices are not only strategic but also shaped by a complex interplay of historical, economic, and policy-driven factors that continue to evolve in response to global and local economic conditions.

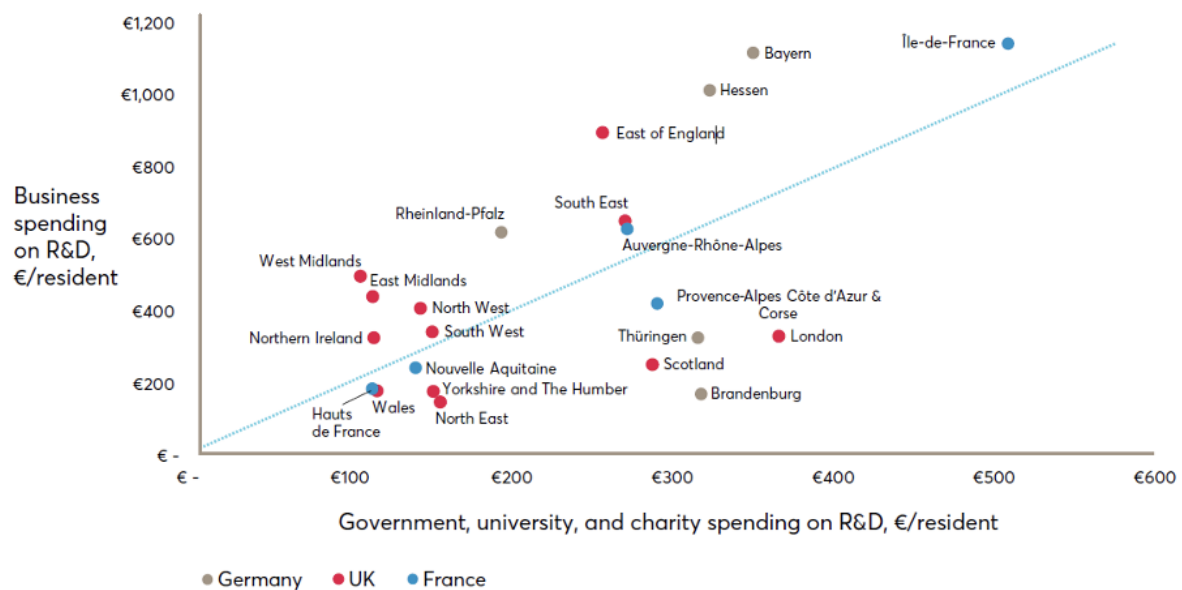
Strategic decisions about where to establish a business are influenced by various factors, particularly for knowledge-intensive firms. Connections to academic institutions or the quality of life in specific areas may be significant. Proximity to markets, the quality of infrastructure, and the local regulatory framework are also critical in these decisions. Porter (1998) highlights how geographic clusters of interconnected firms and institutions create competitive advantages that are difficult to replicate. This clustering effect not only boosts individual firm performance but also enhances the overall economic vitality of the region. Similarly, firms are drawn to locations offering the best combination of economic benefits, including access to markets, resources, and a skilled workforce, thereby shaping regional economic landscapes (Fujita, Krugman, and Venables, 1999). Insights from the Connected Clusters report (2025), produced by the Growing Together Alliance in parallel with this report, emphasise the importance of factors such as access to diverse talent pools, the role of academic institutions in shaping regional

specialisms, and the critical value of physical connectivity in driving decisions about business location. The report further highlights that fostering connections across regional clusters – through infrastructure development, innovation funding, and collaborative leadership – can amplify the advantages of clustering and create a more inclusive and sustainable innovation ecosystem across the UK.

Urban economies and agglomeration effects are particularly important in understanding why firms concentrate in bigger cities. Glaeser and Gottlieb (2009) discuss how big cities act as economic hubs, where firms benefit from dense networks of suppliers, customers, and talent. This concentration fosters innovation and productivity, making larger cities attractive locations for businesses. The benefits of urbanisation are significant factors in firms' decisions to locate in specific cities, contributing to ongoing growth and economic dynamism in urban areas (Duranton and Puga, 2004). However, the relationship between local economies has received less exploration, with policy often focusing on a competitive approach, with resources allocated to successful regions or funding diverted to spread growth more widely across the country.

In the UK, debates often centre on whether investment should focus on the 'Golden Triangle' of Oxford, Cambridge, and London, or be distributed elsewhere. For example, in their seminal study on Research and Development (R&D) funding across the UK, Forth and Jones (2020) clearly set out the disparity of R&D investment across the different regions of England (Figure 1).

Figure 1: R&D investment across the different regions



Source: Forth and Jones (2020)

The uneven distribution of firms across different cities reflects broader regional economic disparities, which are crucial for effective regional planning and economic policy (McCann, 2013). Tailored regional development strategies are necessary to address these disparities and promote balanced growth.

When collaborative approaches are suggested, they typically follow a 'brains and brawn' model, advocating for knowledge-intensive businesses to establish manufacturing centres in more 'left-behind' areas. This perspective overlooks the fact that both knowledge-intensive businesses and manufacturing activities are spread across the country and that knowledge-intensive businesses and manufacturing activities are, in many cases, tightly connected (Ciriaci and Palma, 2012).

In this study, we map the distribution of knowledge-intensive businesses within the regions making up the Growing Together Alliance (GTA), focusing on their trading address choices to uncover the underlying dynamics of economic geography that influence these decisions. Following Anselin (1988), and Goodchild and Janelle (2004), we visualise the spatial data from The Data City by mapping firms based on their trading address choices. The analysis centres on the connections between locations in the catchment areas of the member organisations of the GTA, aiming to understand the factors influencing businesses' location decisions for both their registered offices and additional trading sites. By examining these location decisions, we provide insights into the economic dynamics shaping regional development and the spatial patterns across the GTA.

## 2. Registered office address and trading office address

The concepts of trading and registered office addresses play a crucial role in defining a company's legal and operational presence.

The registered office address is the official address of a company and is where all the important legal documents and government correspondence are sent. In the UK, for example, every company must have a registered office which is recorded with Companies House. It is where the business is legally located, even if no actual business is done there. Companies often choose this address based on legal or administrative convenience; sometimes, it's in a prestigious location to boost their image or in a region with tax or regulatory advantages.

The registered office address must be a physical address in the UK and in the same country that the company is registered in; for example, a company registered in Wales must have a registered office address in Wales. The address must also be "appropriate". By this, the government means that:

- *"you or someone acting on behalf of your company will be made aware of any post addressed and delivered to your company"*
- *when your company receives post at this address, it's possible for the sender to get confirmation of delivery"*

(UK Government, n.d.)

On the other hand, the trading address is where the business operates and is the physical location where the company actually runs its operations – where products are made, services are provided, and where customers and suppliers interact with the business. In other words, it is an address *"...where your customers, banks or suppliers send you correspondence and can be different to the company's registered address therefore it doesn't have to be public information"* (UK Trading Address & Registered Office Services, 2024). This address is chosen based on practical business needs, such as being close to customers, suppliers, or major transport links, and keeping costs manageable.

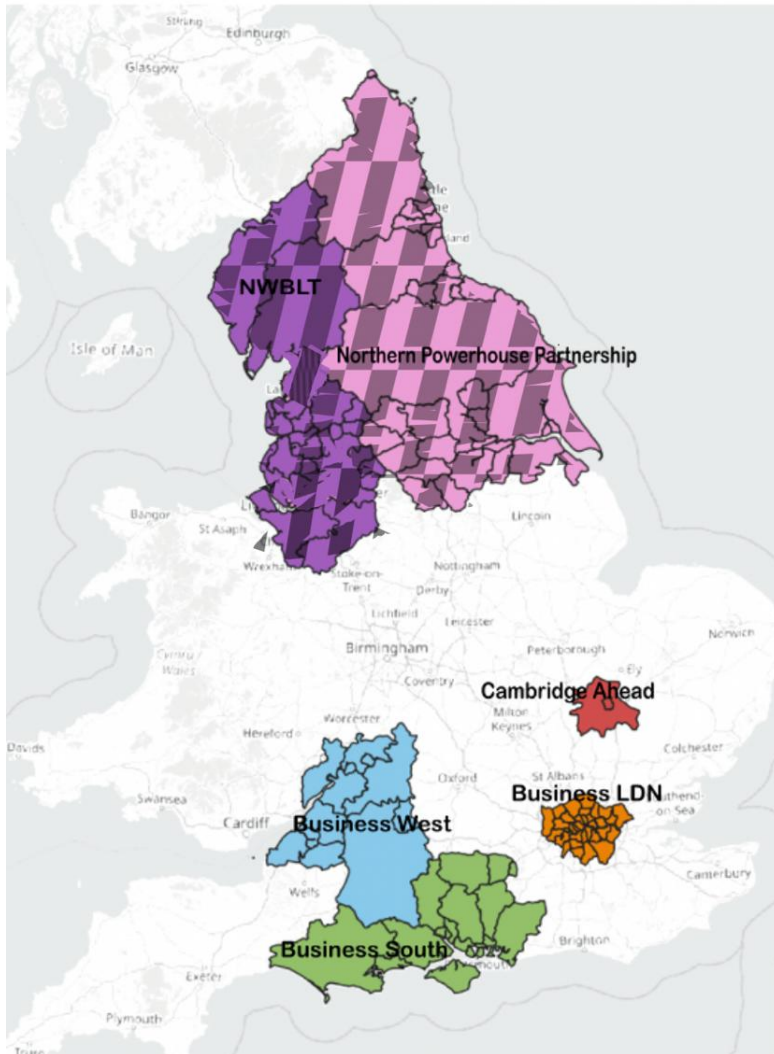
The reason why a company might have different addresses for these two purposes often comes down to strategy. A company could have its registered office in one place, perhaps for tax benefits or to comply with legal requirements, while its trading address is somewhere else entirely, chosen for its operational advantages. For example, a business might register its office in London for prestige but carry out its day-to-day operations in a more affordable or logistically convenient area.



Understanding why and how companies choose their registered and trading addresses can tell us a lot about their priorities and strategies. It is not just about where a business is located, but also why it chose those locations and what that says about how the company is run. This report explores these choices for the regions covered by the Growing Together Alliance.

A complementary study carried out in collaboration with members of the Growing Together Alliance includes qualitative interviews with employers that have a presence across different GTA regions. These insights explore the motivations behind regional expansion and provide a deeper understanding of how companies evaluate and select locations for growth. The findings suggest that these decisions are strongly influenced by key drivers such as access to specialised talent, physical connectivity between regions, availability of innovation funding, and the leadership and governance structures within each region. Companies are increasingly drawn to regions that provide the necessary infrastructure for growth, particularly in terms of transport links and a thriving culture of innovation. Furthermore, the research highlights that the ability to tap into local academic strengths, such as expertise in AI in London, or advanced materials in Manchester, plays a crucial role in determining where companies establish operations. These findings underscore the importance of fostering connectivity between regional innovation clusters to support a more integrated and collaborative UK innovation economy (Connected Clusters, 2025).

### 3. Growing Together Alliance



The Growing Together Alliance (GTA) is a collaborative initiative launched in 2023 by six major like-minded regional employer representative organisations in the UK: the Northern Powerhouse Partnership (NPP), BusinessLDN, Business South, Business West<sup>1</sup>, Cambridge Ahead, and the North West Business Leadership Team (NWBLT).

The Alliance aims to strengthen cooperation across different regions of the UK, focusing on driving sustainable, inclusive, and place-based economic growth. The creation of the GTA also provides an opportunity to look across the different economies that are covered by the alliance and start to understand the connections and synergies already present across the constituent economies.

Figure 2: Geographies of the GTA<sup>2</sup>

The key objectives of the Growing Together Alliance revolve around enhancing regional economic performance and addressing the challenges of inequality. Considering the UK's ongoing regional economic disparities, the Growing Together Alliance offers an opportunity to better recognise the connections between innovation clusters across the UK (Connected Clusters, 2025).

<sup>1</sup> Business West cover the whole of the south-west of England including Devon and Cornwall. However, for the purposes of this analysis we have focused on the east of the region around Bristol and Bath.

<sup>2</sup> \*The Northern Powerhouse Partnership (NPP) area overlaps with the North West Business Leadership Team (NWBLT) region. For visualisation purposes, the NWBLT and NPP regions are coloured differently. The area filled with black lines represents the entire NPP area.

The Growing Together Alliance focuses on building on regional strengths to boost productivity, innovation, and economic growth (Cambridge Ahead, 2023). It aims to attract investment in areas like innovation and spatial planning while encouraging foreign direct investment to drive technological advancements. The GTA also works to influence national policies, ensuring they reflect the connections between regional economies, and support a more balanced and resilient UK economy. By bringing regions together, the GTA addresses issues like underinvestment and poor connectivity (Connected Clusters, 2025). Its efforts focus on improving infrastructure, housing, and economic development to create long-term, sustainable growth. The GTA is committed to ensuring this growth benefits all regions, from established areas to emerging economies. Through collaboration and targeted strategies, it aims to strengthen the national economy and create a better future for all.

Each organisation in the GTA has its own strengths and regional focus, but they all share a commitment to supporting sustainable growth and working together across the UK. The table below highlights the key priorities for each partner, showing how they contribute to the overall goal of regional productivity and good growth.

*Table 1. Partners of the GTA*

<b>Growing Together Alliance member</b>	<b>Priorities</b>
<b>BusinessLDN</b>	Making London the world's leading city by addressing current challenges, securing future opportunities, and fostering prosperity for both the capital and the UK (BusinessLDN, 2024).
<b>Business South</b>	Uniting business leaders, educators, public bodies, and entrepreneurs in the Central South to drive regional prosperity through collaboration, growth, and innovation (Business South, 2024).
<b>Business West</b>	Helping companies grow, innovate, and export, working to make the South West a top region for living, learning, and working by connecting people, public bodies, and businesses for a more inclusive and productive environment (Business West, 2024).
<b>Cambridge Ahead</b>	Driving sustainable and inclusive growth in Cambridge by leveraging research, analysis, and collaboration with key stakeholders to inform policymaking and enhance long-term prosperity and quality of life in the region (Cambridge Ahead, 2024).
<b>North West Business Leadership Team (NWBLT)</b>	Uniting leaders to shape the North West into the best place to live, work, and do business, leveraging their collective experience and networks to drive positive change for the region and its people (North West Business Leadership Team, 2024).
<b>Northern Powerhouse Partnership (NPP)</b>	Bringing together business and civic leaders across the North to boost economic growth in the North through improved connectivity, devolution, and education, creating a network of thriving cities (Northern Powerhouse Partnership, 2024).

## 4. Data and methodology

In this study we use a cutting-edge approach developed by The Data City, known as Real-Time Industrial Classifications (RTICs)<sup>3</sup>. This method combines machine learning with expert insights to create a new classification system, serving as an alternative to traditional Standard Industrial Classification (SIC) codes.

RTICs utilise real-time data, analysing text from over five million company websites through machine learning algorithms. The process involves three main steps:

### Creation of the Real Time Industrial Classifications (RTICs)

1. **Defining industry verticals:** A taxonomy specific to the industry is created by identifying key terms related to technology, activities, or supply chains. This is done through research, expert input, and analysis of company websites to select examples that define the sectors of interest.
2. **Training the platform:** These examples are input into The Data City's Data Explorer platform to help it learn the language and activity segments of the targeted sector. Additional examples from outside the sector are used to refine the algorithm, helping it distinguish between relevant and irrelevant companies. The initial output is then reviewed by experts.
3. **Validation and regular updates:** The final step involves checking the accuracy of classifications by verifying company website links and ensuring the machine learning process accurately identifies each company's sector. Regular updates and reviews ensure the classification system remains accurate and up-to-date with industry changes.

(Nagesh, 2023).

RTICs allow companies to be classified in multiple sectors if they exhibit overlapping language patterns. For example, a company that creates AI-driven software could be classified under both Artificial Intelligence and Software Development RTICs (Garcia, 2022).

To examine the connections between the local economies of the constituent members of the Alliance and map the locations of registered and trading addresses of knowledge-intensive businesses within the geographies of the Growing Together Alliance members, we began our analysis by first narrowing the dataset to include firms associated with RTICs that have trading

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<sup>3</sup> See Appendix Table 1 for the description of the sectors.

addresses within the GTA. This initial step ensured that the analysis in this report was tightly concentrated on those firms that fell within the relevant geographies.

With the filtered data, we looked at the distribution of trading addresses across the various local authority districts within the GTA where these firms are registered. The objective here was to identify the locations where firms are conducting their business activities, offering insights into how business operations are spread across different regions. For example, firms with a registered address in the BusinessLDN area have a significant number of trading addresses in NPP and NWBLT areas. This pattern suggests a potential network or connection between these regions.

Building on these findings, we also identified the key RTICs within the Growing Together Alliance to understand their role in connecting different locations. By analysing the top RTICs that link various regions, we aimed to uncover the factors motivating firms, particularly those in knowledge-intensive sectors, to establish their trading addresses in specific areas. This analysis provided valuable insights into the strategic considerations that influence location choices, such as proximity to industry hubs, access to skilled labour, or the presence of regional innovation ecosystems.

Innovation clusters, such as those identified through The Data City RTICs, offer a deeper understanding of how interconnected regional economies contribute to national growth. For example, the UK Government's mapping of innovation clusters through The Data City RTICs highlights the significant role that these clusters play in enhancing the innovation strengths across the UK (UK Government, 2024). These clusters are not just hubs for academic and industrial expertise but also critical to fostering the relationships that drive business expansion and technological advancement. Through the identification of key RTICs, the Growing Together Alliance can highlight the strategic advantages of various regions, such as those in Cleantech, Advanced Manufacturing, AI, and Life Sciences, which are interconnected and thrive on collaboration across multiple locations.

In addition to The Data City RTICs, insights from interviews conducted with business leaders, investors, and employers, as outlined in the Connected Clusters (2025) report, shed light on the decision-making processes that influence location choices. These qualitative interviews highlight how access to talent, proximity to key infrastructure, and the ability to tap into regional innovation ecosystems play a significant role in shaping companies' decisions to expand, or establish new locations within the UK. By directly engaging with employers and investors, the report provides a more comprehensive view of how businesses navigate the UK's innovation landscape. These direct insights further enrich the understanding of regional economic connectivity, validating the critical role of interconnected innovation clusters in fostering inclusive economic growth and offering a deeper layer of context for the RTIC analysis.

## ***Limitations***

It is important to note that while RTICs provide valuable insights, they may not fully represent the entire knowledge-intensive economy. However, they provide an evidence-based snapshot of the connections in each place's innovation economy and offer a fresh perspective on industrial classifications that traditional datasets may not fully capture.

The Data City database is updated bi-monthly, which can make it difficult to replicate results. Updates may introduce new sectors, which can affect trends and comparisons over time. This also means that emerging sectors might not be fully represented in earlier data.

Additionally, RTICs are often limited to the information companies publish on their websites, which can present limitations in fully capturing their operations. For example, some companies may highlight sectors like net zero goals or AI usage, making them appear as key sectors even though these may not fully represent the company's broader activities.

## 5. Findings

In this section, we present the overall findings for the Growing Together Alliance (GTA). Following this, we provide key observations for each of the six GTA partners, highlighting the critical RTICs for the respective region that serve as vital connections between different locations. It is important to note that the RTICs do not capture all aspects of the innovation economy, as explained in the chapter above. Therefore, the findings should be viewed as an informed, evidence-based snapshot of these connections rather than a comprehensive representation of each location's broader innovation ecosystem.

Before interpreting the results, it's important to note that the regions covered by GTA members vary significantly in both geography and population size. For example, Greater Cambridge is the smallest area by geography and population among the partners, while NPP geographically covers the largest area.

### 5a. Overview

Figure 3: Business flows across GTA regions

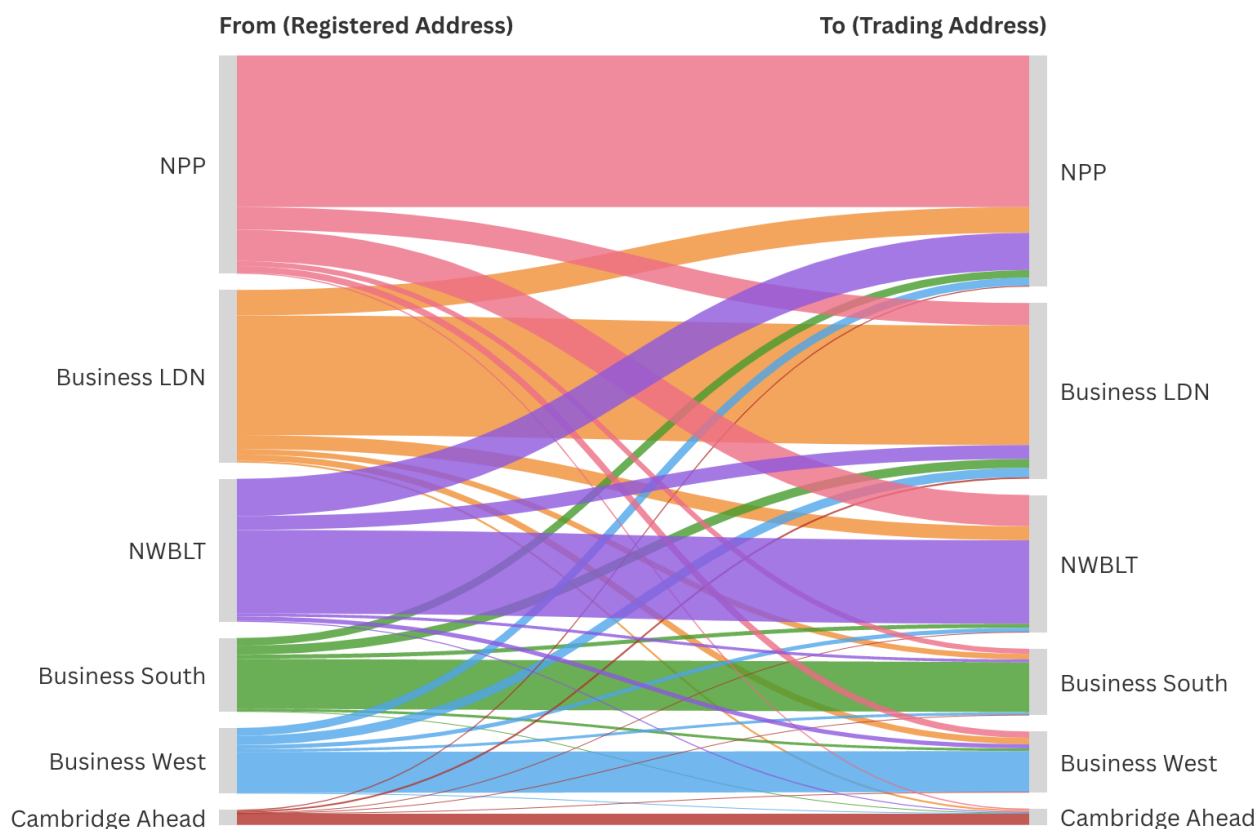


Figure 3 shows the distribution of businesses across GTA regions, reflecting their registered and trading addresses. The diagram visualises how businesses are spread out, indicating the flow of firms from one area to another. The thickness of the lines in the diagram represents the number of firms, highlighting key trends and connections between the various regions. The figure also shows that for business activities, the majority of firms tend to remain within their region.

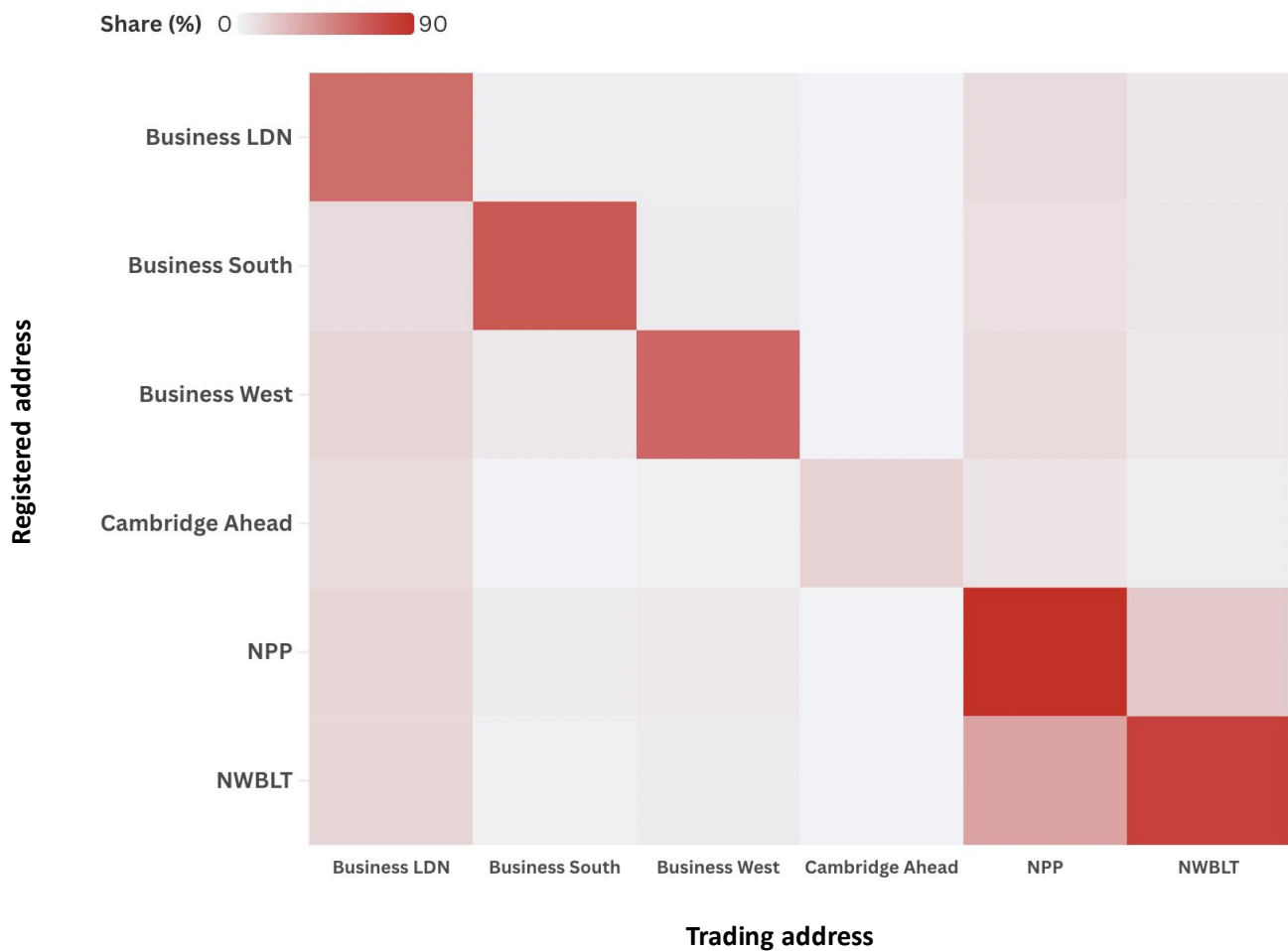
Some regions, such as the North West (represented by the Northern Powerhouse Partnership), and London (represented by BusinessLDN), stand out as major trading hubs, attracting firms from across different parts of the GTA. Their strong connections highlight their importance in driving economic activity and linking multiple regions together. Northern Powerhouse Partnership and BusinessLDN also show a close relationship with each other, emphasising their shared role as key players in the broader network.

On the other hand, the area covered by Cambridge Ahead has fewer connections, likely due to its smaller size or population, leading to more localised economic activity. However, connections do exist, particularly in high-growth sectors, where businesses engage with other regions through innovation and investment in specific sectors such as Artificial Intelligence (Table 2). Business South and Business West show steady but moderate levels of interaction, reflecting their balanced contributions to the network. These differences show how regions play unique roles in the bigger picture, from central hubs to localised economic centres.

To give a better understanding of the relative levels of connectivity in relation to overall area size, we also examine the share of total firms in each region in Figure 4. Firms operating in each region concentrate most of their trading activities at their registered address, underscoring the preference for operating within familiar geographic and economic environments.



Figure 4: Relative levels of connectivity between GTA geographies



The analysis shows that while each region has a dominant trading activity closely tied to its registered address, there are notable contributions from other areas that highlight interregional connections and diversification. According to Figure 4, firms located in the regions represented by Business South, Business West, and Cambridge Ahead have notable trading connections with those in the region covered by the Northern Powerhouse Partnership (NPP). Businesses in the regions covered by NWBLT and Business LDN also show strong ties with those in the regions covered by the NPP, highlighting regional economic interconnections.

These findings suggest that while firms are strongly connected with their 'home' region, there is also evidence of collaboration and diversification across regional boundaries. Building on these insights, looking at the key RTICs across GTA members gives us a clearer picture of the knowledge-intensive sectors shaping regional economies. While each region has its own strengths, there are also similarities, showing how industries are interconnected beyond their home base. These insights could be used by policymakers to tailor strategies that enhance regional strengths while addressing gaps in diversification. Investments in infrastructure, training, and sector-specific incentives could help regions reduce economic vulnerability and build resilience.

Table 2. Overview: Key RTICs and local authorities for each GTA area

GTA Member	Key RTICs	Local authorities with a high number of firms
BusinessLDN	Net Zero, Energy Generation, Data Infrastructure, CleanTech, Artificial Intelligence	Westminster
		City of London
		Camden
Business South	Business Support Services, Net Zero, Agency Market, Advanced Manufacturing, Digital Creative Industries	Dorset
		New Forest
		Winchester
Business West	Net Zero, Business Support Services, Agency Market, Energy Generation, Life Sciences	Wiltshire
		South Gloucestershire
		Bath and North East Somerset
Cambridge Ahead	Life Sciences, Business Support Services, Research and Consulting - Physical Sciences and Engineering, Net Zero, Pharma	South Cambridgeshire
		Cambridge
Northern Powerhouse Partnership (NPP)	Net Zero, Energy Generation, Agency Market, Life Sciences, Business Support Services	Leeds
		Manchester
		Knowsley
North West Business Leadership Team (NWBLT)	Net Zero, Business Support Services, Agency Market, Life Sciences, Data Infrastructure	Manchester
		Cheshire East
		Liverpool
Non GTA Area	Net Zero, Energy Generation, Agency Market, Data Infrastructure, Research and Consulting - Physical Sciences and Engineering	Birmingham
		Cardiff
		City of Edinburgh

\*See Appendix, Table 1 for the description of RTICs.

The knowledge-intensive sectors across the regions covered by the GTA partners highlight a strong focus on Net Zero, Business Support Services, Energy Generation, Life Sciences, and Data Infrastructure, with variations in specialisation across regions. Firms in the BusinessLDN region emphasises CleanTech, AI, and Data Infrastructure, while Business South integrates Advanced Manufacturing and Digital Creative Industries alongside Business Support. Firms in the Business West region combines Net Zero, Life Sciences, and Energy Generation. Firms covered by Cambridge Ahead predominantly specialise in Life Sciences, Pharma, and Research & Consulting in Physical Sciences and Engineering. Firms in the regions covered by the Northern Powerhouse Partnership (NPP) and North West Business Leadership Team (NWBLT) both prioritise Net Zero, Life Sciences, and Business Support, with those in the region covered by NWBLT also focusing on Data Infrastructure. Outside the regions covered by the GTA, Birmingham, Cardiff, and Edinburgh follow similar trends, particularly in Net Zero, Energy, and Research & Consulting.

These findings underscore regional strengths in sustainability, high-tech innovation, and industrial transformation.

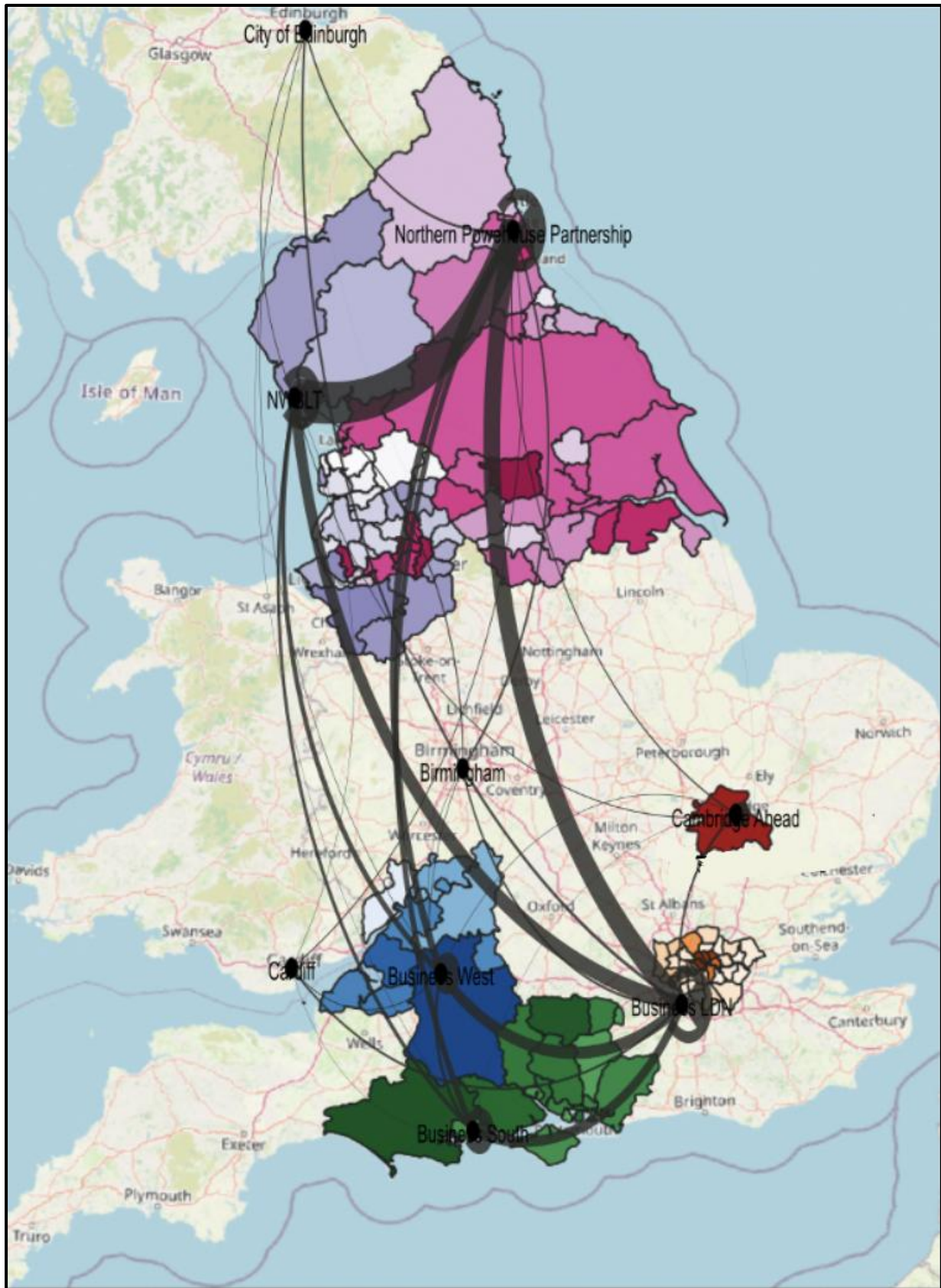
Figure 5 (below) summarises the overall findings in three ways:

**1. Concentration of firms:** highlights the concentration of firms across the local authority areas that make up the various Growing Together Alliance regions. Darker colour concentrations indicate a higher percentage of firms within a given region. For example, within the Business LDN geography, Westminster accounts for 15 per cent of firms, with the City of London contributing a further 10 per cent. In the Northern Powerhouse Partnership area, Leeds leads with 15 per cent, followed closely by Manchester at 12 per cent. Similarly, in the region covered by NWBLT, Manchester and Leeds also stand out, as they are home to the majority of firms. Within the Business South geography, Dorset contributes 10 per cent of firms, while in the Business West region, Wiltshire has the largest share at 12 per cent. These figures underscore the relative importance of specific local authorities within each alliance geography.

**2. Network flows:** The thickness of the links shows the network flow between each GTA region. As can be seen from the map, there are notably strong connections between firms in the geographies represented by the Northern Powerhouse Partnership (NPP) and NWBLT, as well as between BusinessLDN. The strong link between firms in the regions represented by NPP and NWBLT is expected, given that those in NWBLT region operates as a subset of those in the NPP region, reflecting an intrinsic alignment within their regional collaboration. Similarly, firms in the region represented by BusinessLDN demonstrates connections to those in the Cambridge Ahead and Business South regions, forming important links that integrate the broader geography. The map provides a clear visualisation of where the strongest interregional connections are concentrated, particularly among those in the regions represented by NPP, Business West, and Business LDN, as well as their ties to firms in other regions covered by Cambridge Ahead and Business South.

**3. Connections beyond GTA geographies:** The map also highlights the business connections outside the GTA areas, with firms registered in GTA regions maintaining a significant number of trading addresses in Birmingham, Cardiff, and the City of Edinburgh. This pattern reflects strong interregional business networks that extend beyond the boundaries of the GTA, emphasising the strategic importance of these cities as hubs for economic activity. Additionally, within the Cambridge Ahead geography, East Cambridgeshire emerges as a key trading location for firms in that region.

Figure 5: Summary of all key findings for the GTA



## ***5b. Growing Together Alliance area-specific results***

In this section, we analyse the distribution of firms in regions represented by GTA partners, focusing on their trading addresses within different local authorities to better understand regional economic relationships and potential business mobility trends.

The analysis of RTICs across different regions covered by the Growing Together Alliance (GTA) reveals a rich diversity of industry strengths and specialisations. Firms in regions represented by Business South and BusinessLDN show a blend of traditional and emerging sectors, with a strong emphasis on sustainability and digital innovation. Firms in the area covered by Cambridge Ahead stand out for their focus on life sciences and research-driven industries, consistent with the area's global reputation as a centre for biotechnology and healthcare. Firms in the regions represented by the North West Business Leadership Team (NWBLT) and Northern Powerhouse Partnership (NPP) demonstrate a strong commitment to sustainability, with net zero being a leading sector in both regions, alongside a well-rounded mix of industries that include advanced manufacturing, life sciences, and clean technology. Overall, these patterns highlight the unique economic landscapes of each region, driven by both regional strengths and broader industry trends.

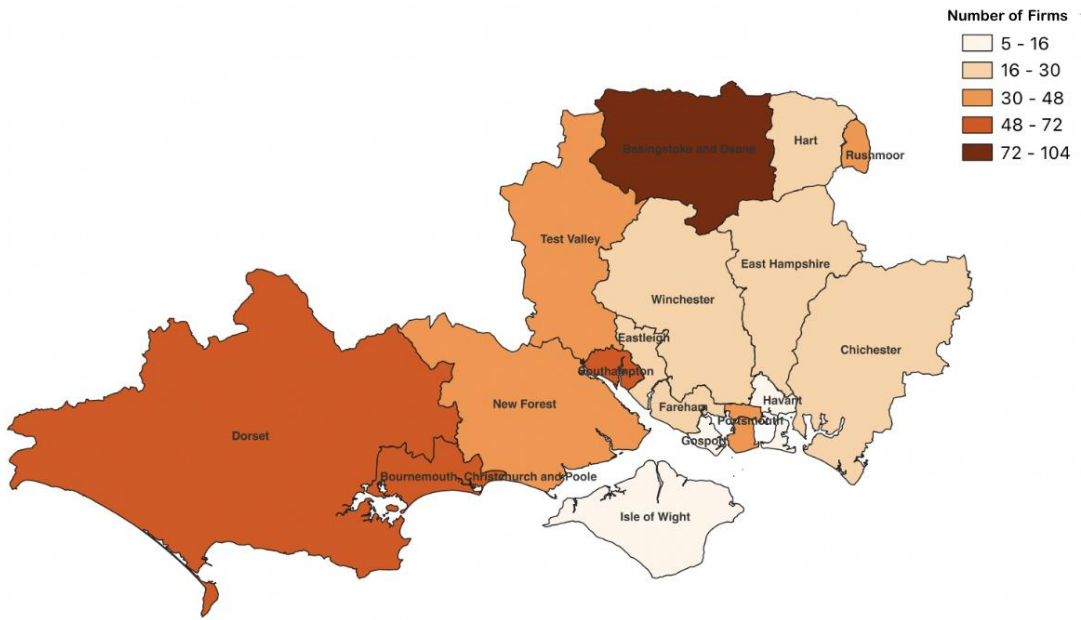
### *i. BusinessLDN*

The following maps demonstrate that the highest number of knowledge-intensive businesses, while registered in the area covered by BusinessLDN, continue to choose trading addresses in central London areas, with Westminster, the City of London, and Camden being the primary locations. However, outside of the region represented by BusinessLDN, the highest concentrations of trading addresses of firms with a registered office within the area covered by BusinessLDN, are found in Manchester, Leeds, and Bristol, indicating these cities as vital hubs for business activity outside London.

Businesses with registered addresses in the area represented by BusinessLDN have the highest number of trading addresses in the Basingstoke and Deane local authority, which forms part of the M3 corridor. Key RTICs connecting firms based in the BusinessLDN area include: **Net Zero, Energy Generation, Data Infrastructure, CleanTech and Artificial Intelligence.**

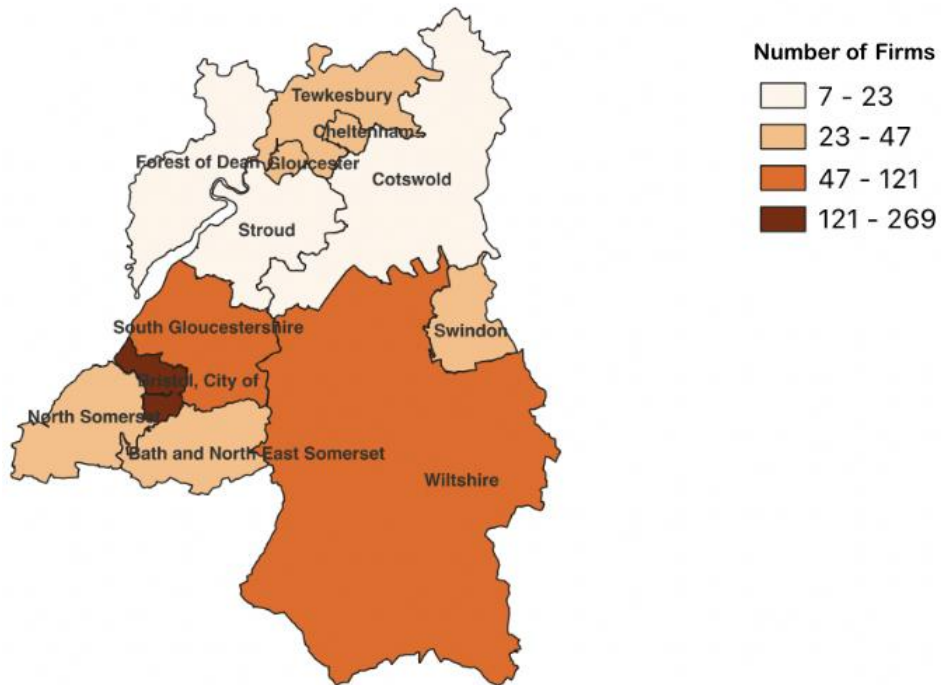
Registered address: **BusinessLDN**

Trading address: **Business South**



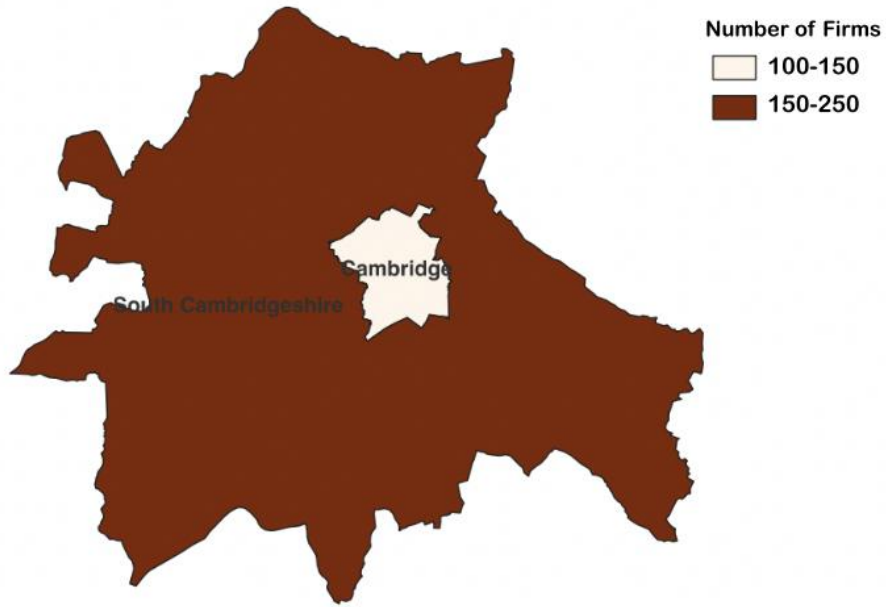
Registered address: **BusinessLDN**

Trading address: **Business West**



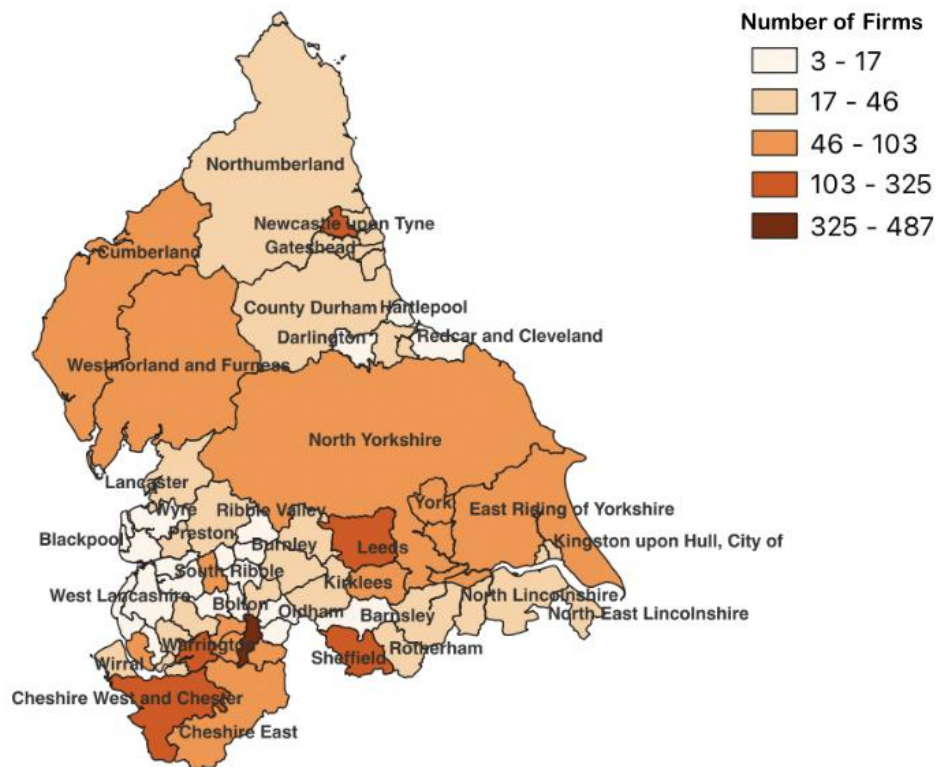
Registered address: **BusinessLDN**

Trading address: **Cambridge Ahead**



Registered address: **BusinessLDN**

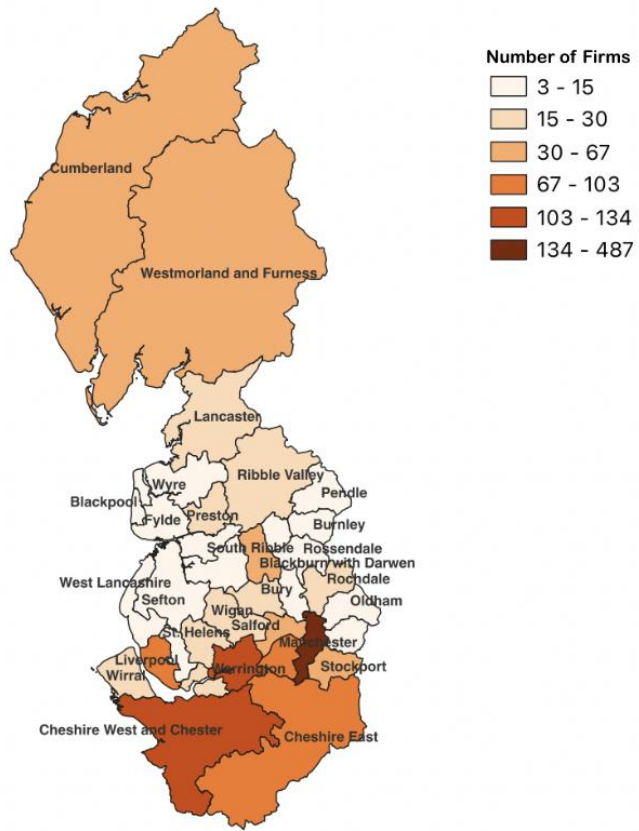
Trading address: **Northern Powerhouse Partnership**





Registered address: **BusinessLDN**

Trading address: **North West Business  
Leadership Team**

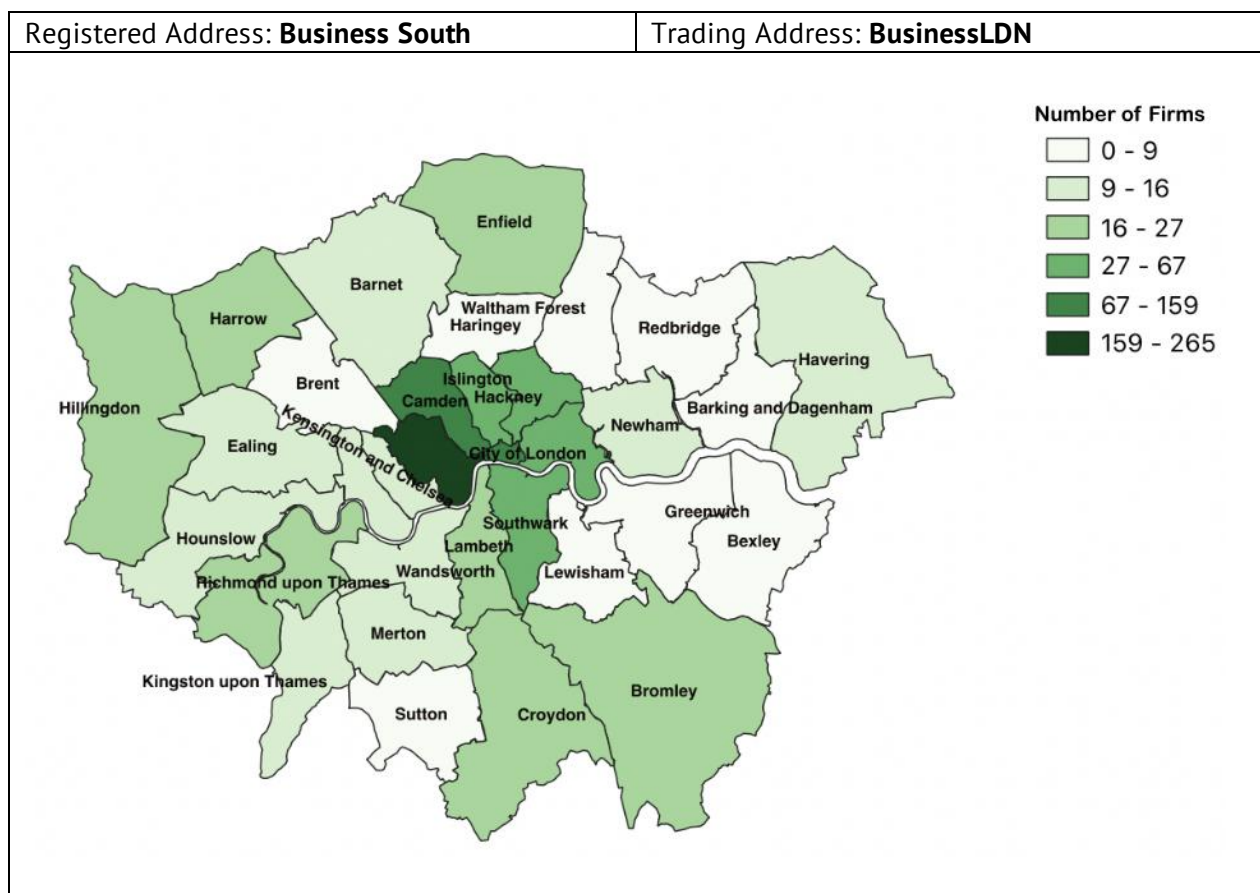




ii. *Business South*

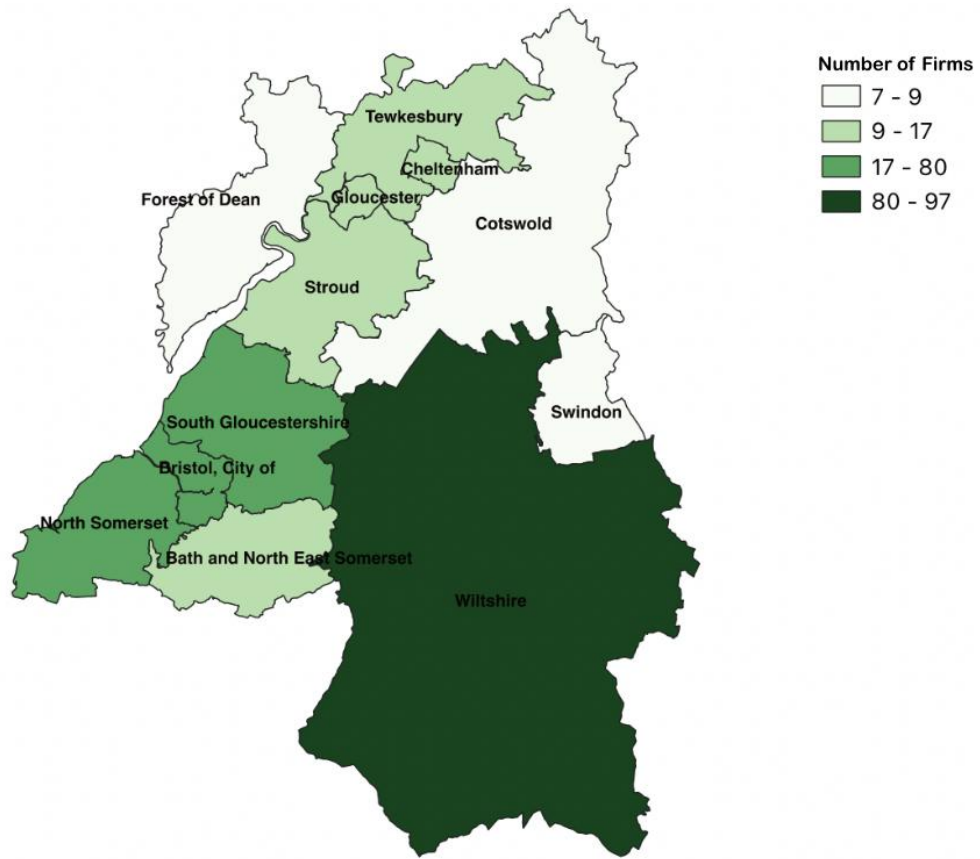
A significant number of businesses based in the area covered by Business South extend their trading operations to the area represented by BusinessLDN, especially in central places like Westminster and the City of London, indicating a strong business link between Business South and the capital. In contrast, their presence in other regions, such as those represented by Business West, Cambridge Ahead, and the northern areas covered by the Northern Powerhouse Partnership and North West Business Leadership Team, is relatively limited. This suggests that while Business South-registered firms are primarily focused on regional operations, they also recognise the strategic importance of maintaining a presence in London, while showing less engagement with businesses in other parts of the UK covered by the GTA.

Key RTICs connecting firms based in the Business South area include: **Business Support Services, Agency Market, Net Zero, Advanced Manufacturing and Digital Creative Industries.**



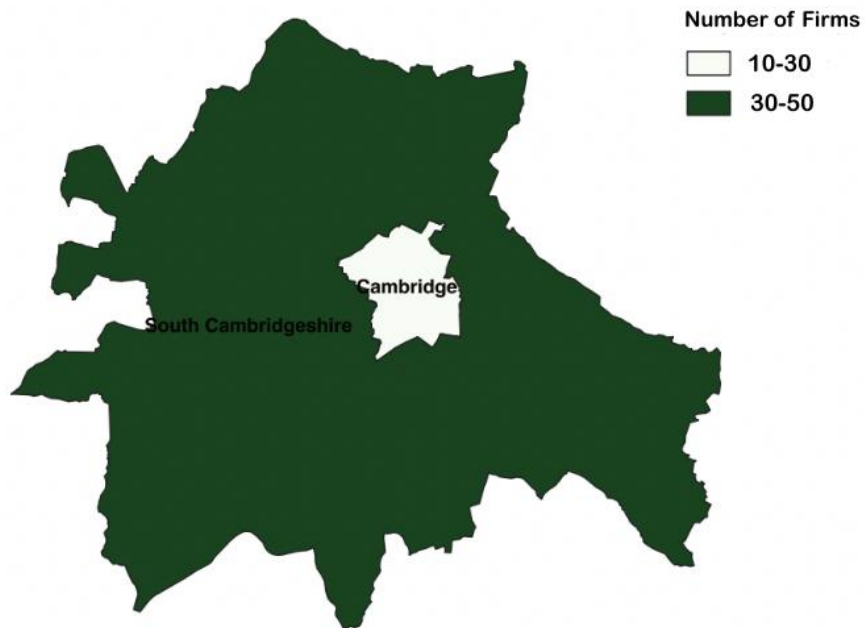
Registered address: **Business South**

Trading address: **Business West**



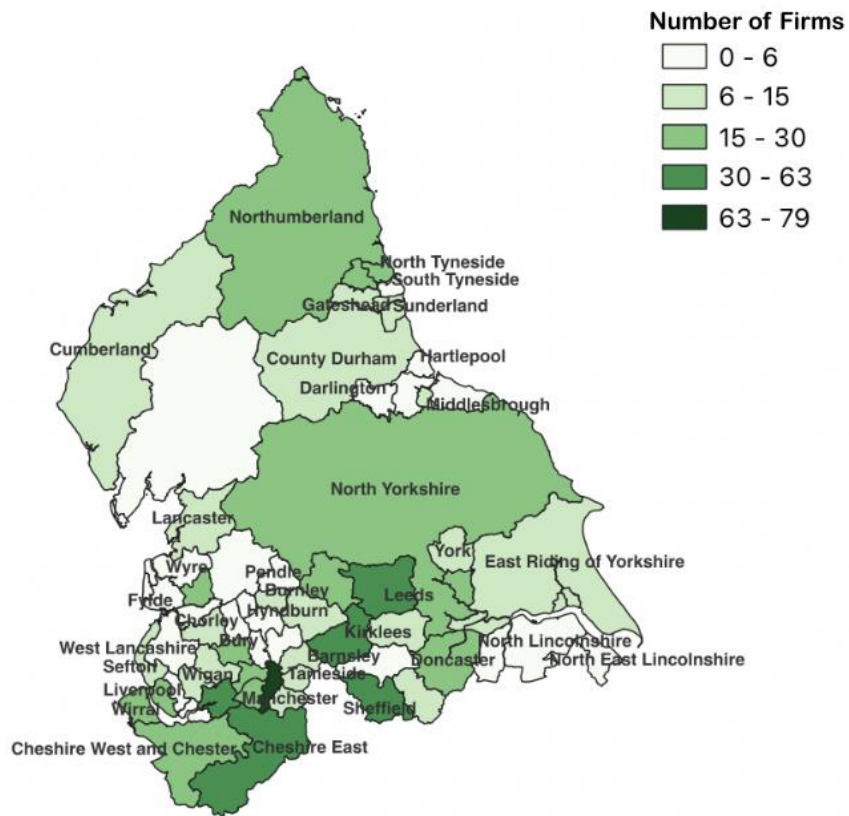
Registered address: **Business South**

Trading address: **Cambridge Ahead**



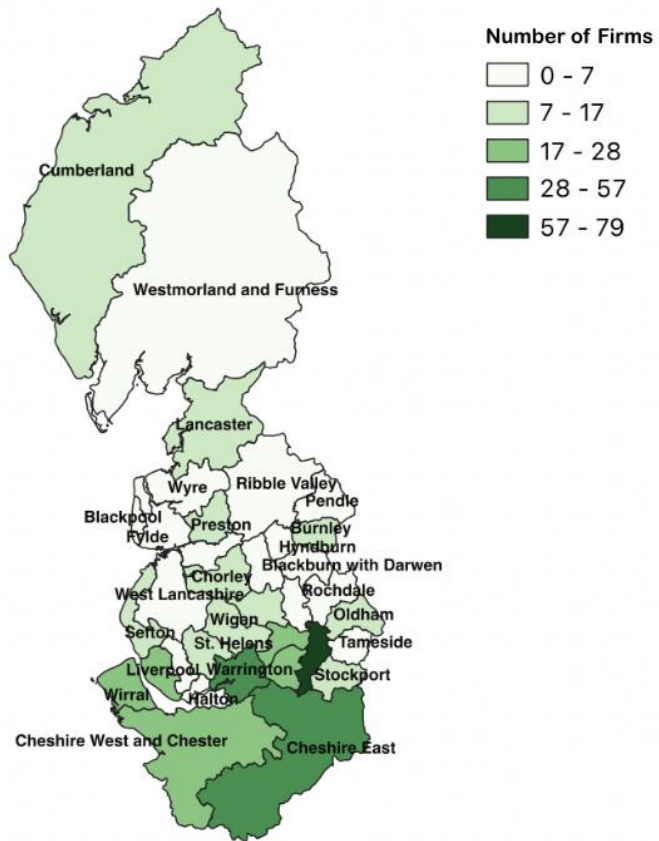
Registered address: **Business South**

Trading address: **Northern Powerhouse Partnerships**



Registered address: **Business South**

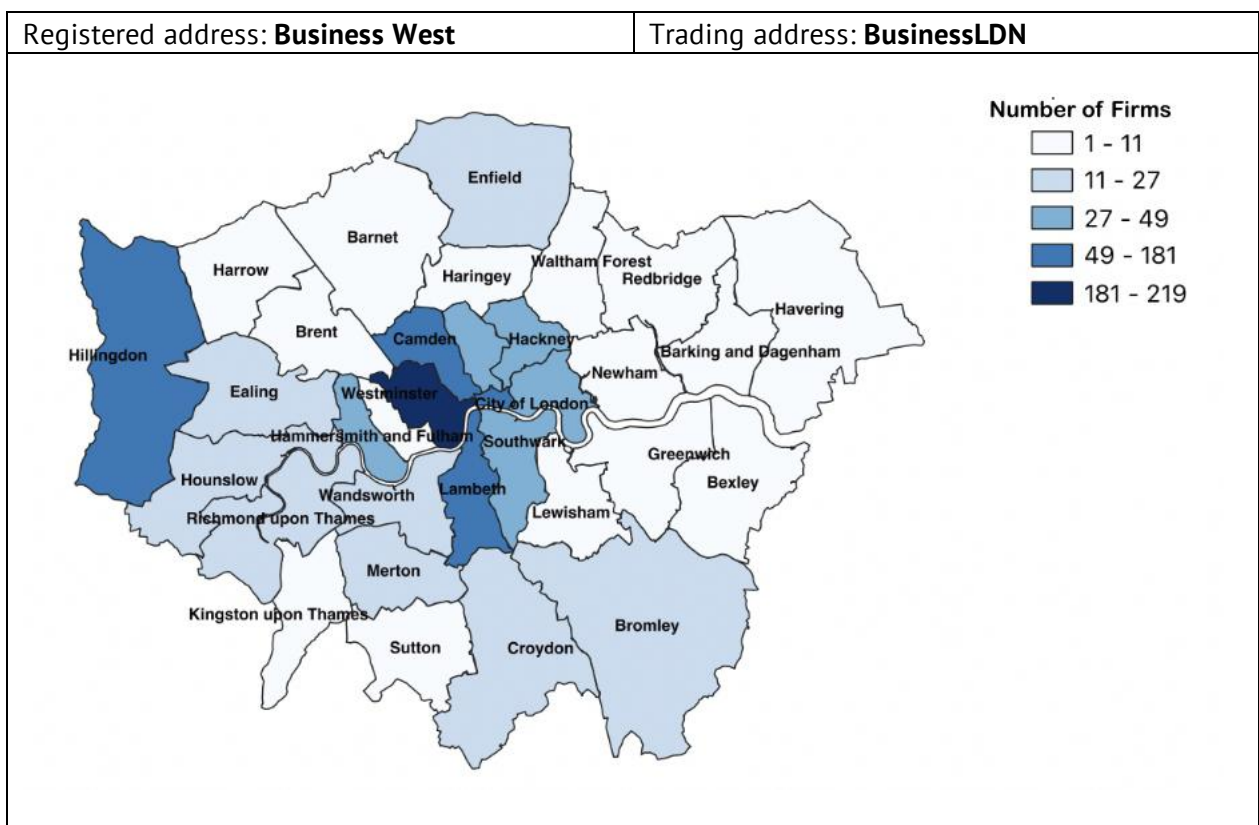
Trading address: **North West Business Leadership Team**



iii. *Business West*

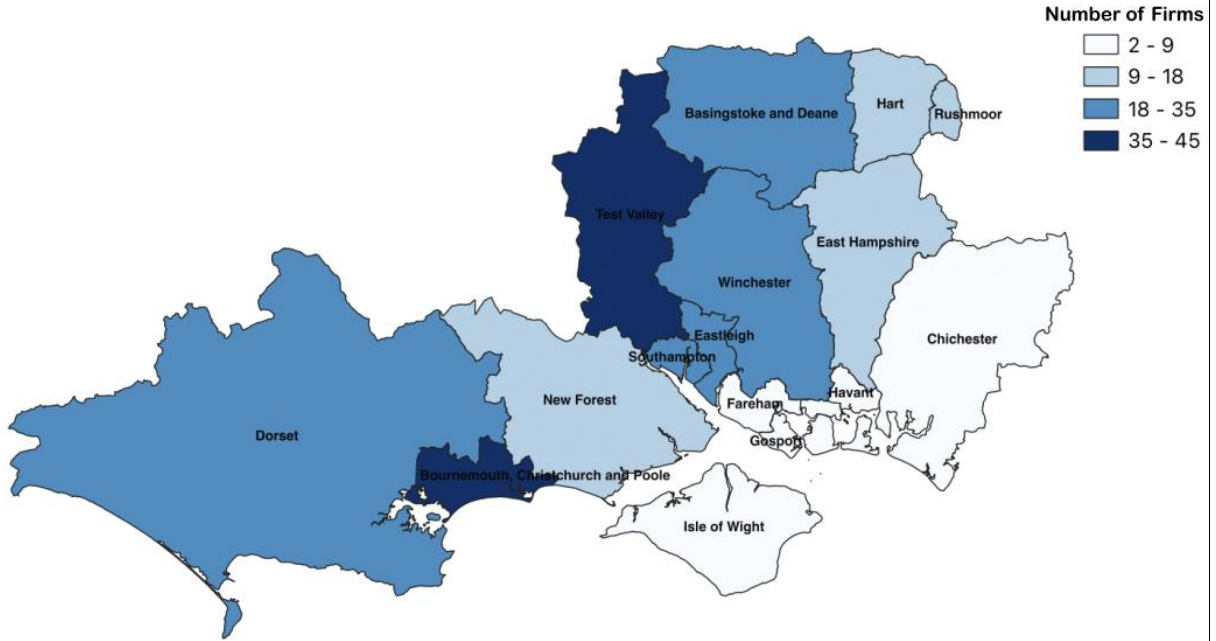
Companies with a registered address in the region represented by Business West, reveal a strong preference for trading within their home region, much like the patterns observed of those operating in the Business South region. Wiltshire, South Gloucestershire, and Bath and North East Somerset are the primary trading locations. Like Business South, firms also exhibit a significant presence in BusinessLDN, particularly in central areas, underscoring London's critical role as a business hub. However, firms from Business West show limited engagement with regions like Cambridge Ahead and Business South. One key difference from Business South is that firms with a registered office in Business West have slightly more interaction with northern regions like Manchester and Leeds, suggesting some regional variations in business strategies. Overall, the data suggests that firms covered by Business West prioritise maintaining strong regional ties while also leveraging the opportunities presented by the London market.

Key RTICs connecting firms based in the Business West area include: **Business Support Services, Agency Market, Energy Generation and Life Sciences.**



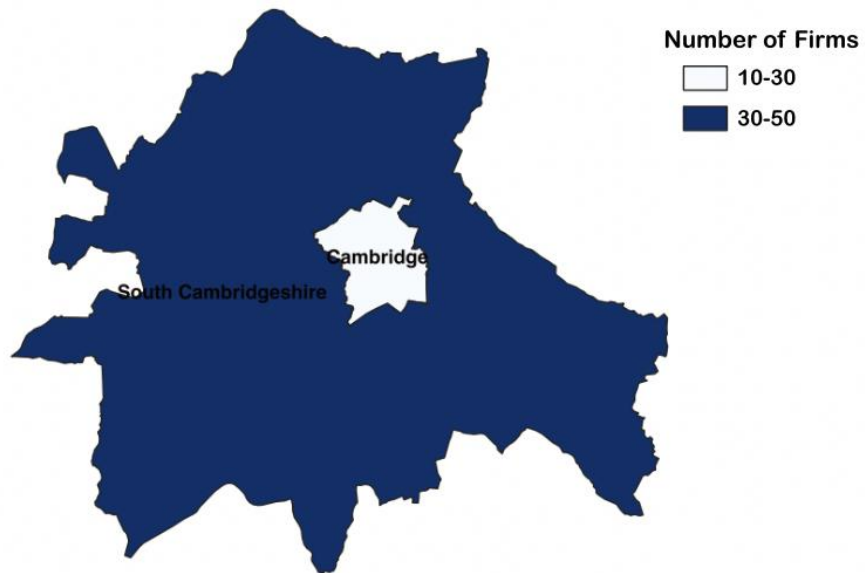
Registered address: **Business West**

Trading address: **Business South**



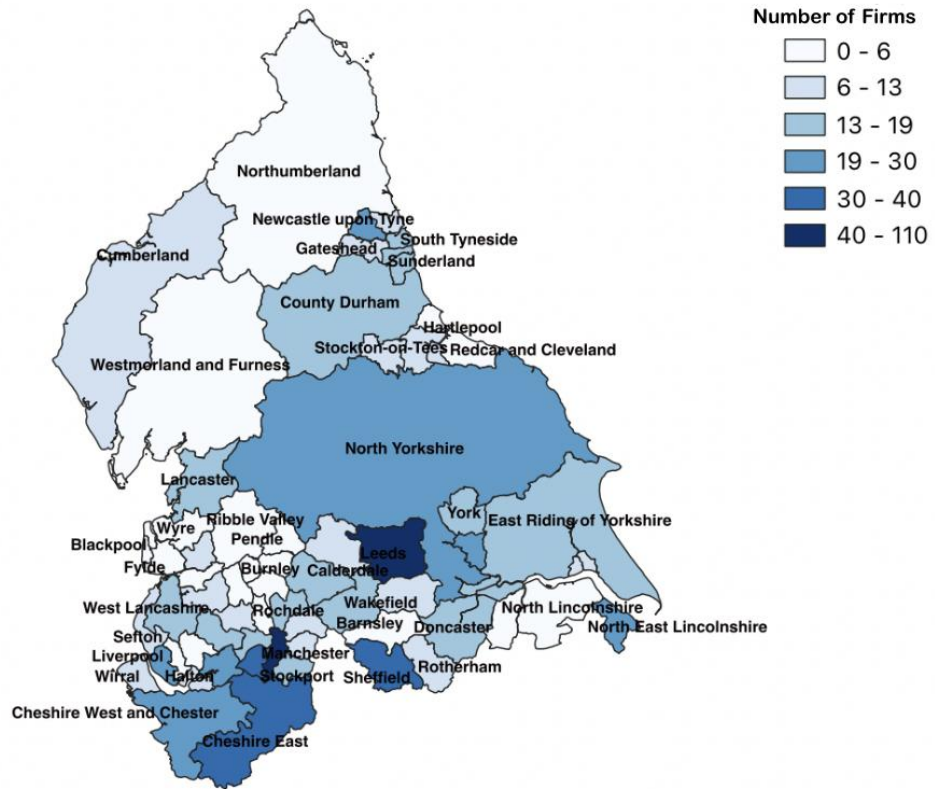
Registered address: **Business West**

Trading address: **Cambridge Ahead**



Registered address: **Business West**

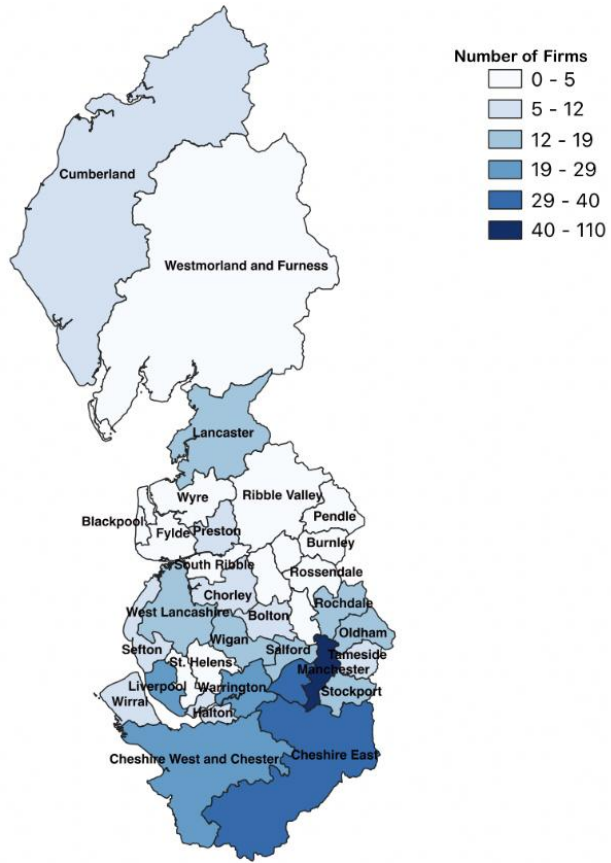
Trading address: **Nothern Powerhouse Partnership**





Registered address: **Business West**

Trading address: **North West Business Leadership Team**

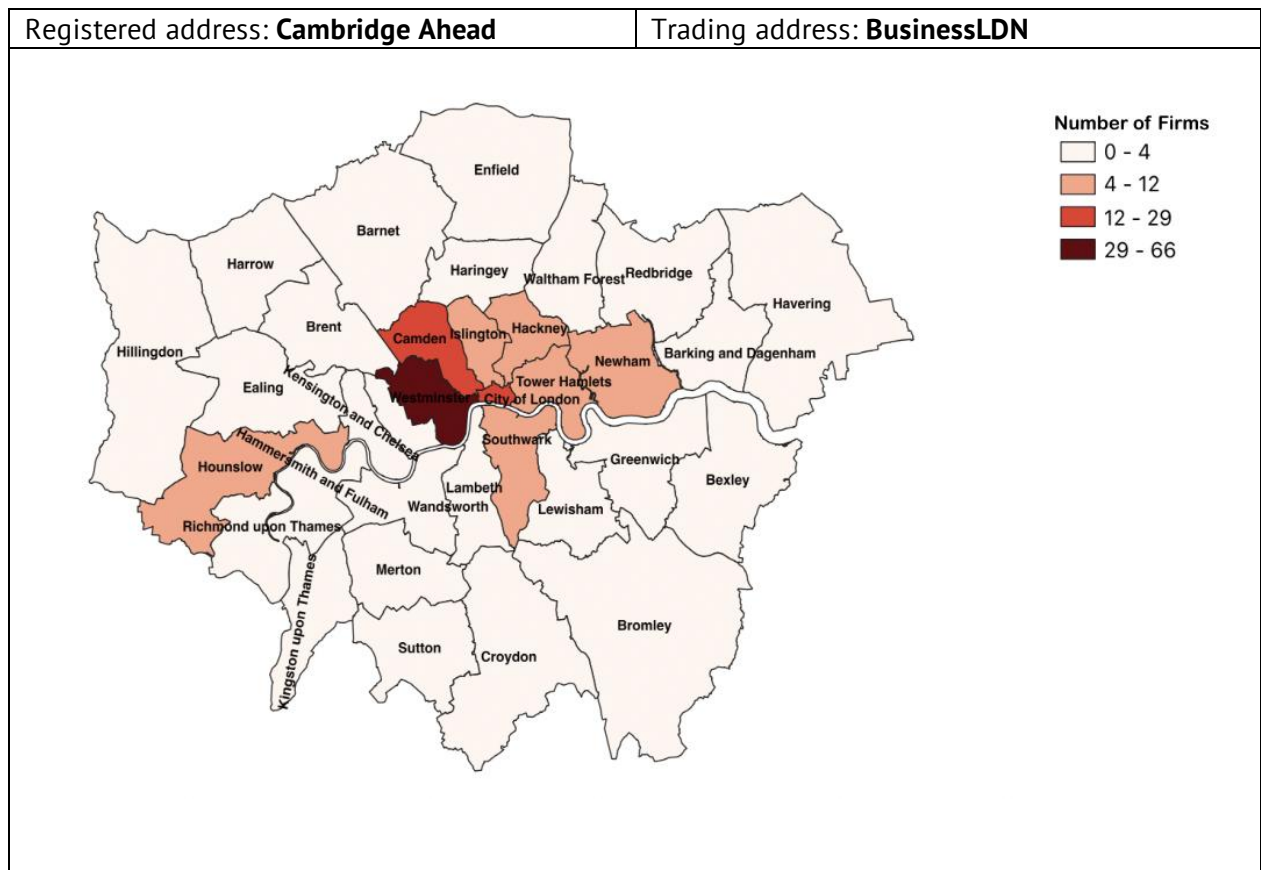




iv. Cambridge Ahead

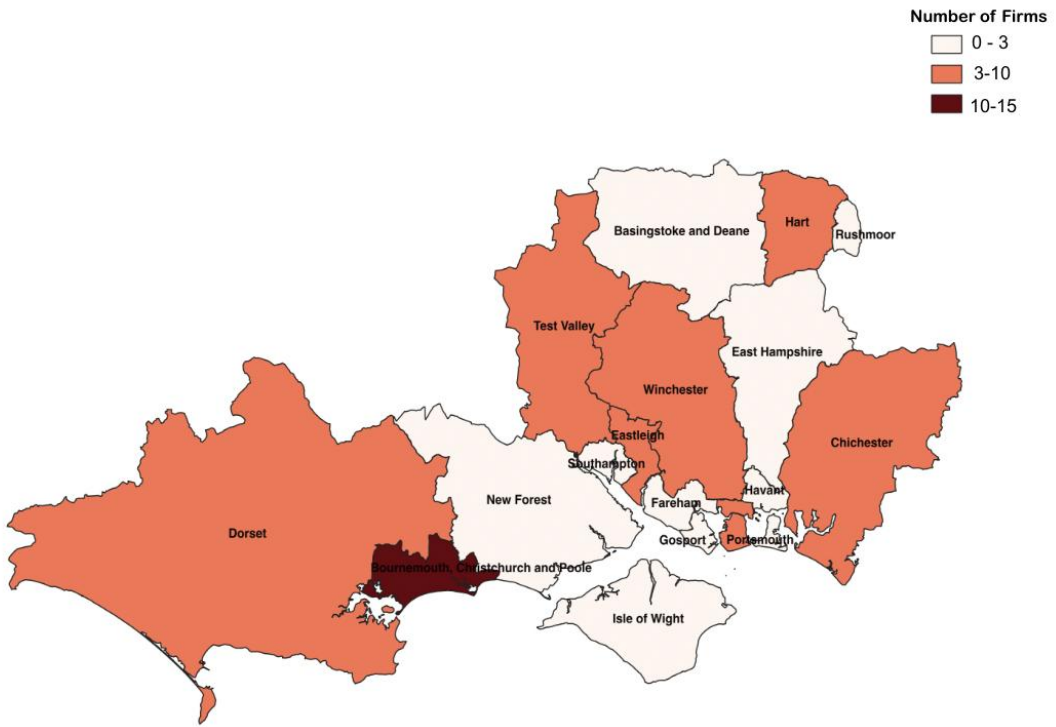
The maps highlight a preference among firms registered within the Cambridge Ahead geography to trade locally, with the vast majority operating within South Cambridgeshire and Cambridge itself. This local concentration underscores the importance of the Cambridge region as a key centre for business activity, likely driven by its robust innovation ecosystem. While there is some engagement with firms in the BusinessLDN region, particularly in central areas like Westminster and Camden, the interaction with other regions represented by the GTA such as Business South and Business West is more limited, reflecting a more focused geographical strategy. Additionally, there is modest trading activity in northern cities like Liverpool and Manchester, suggesting these areas serve as secondary hubs for Cambridge-based businesses looking to extend their reach. While different regions within the GTA prefer Greater Cambridge as a trading address, companies registered in the area covered by Cambridge Ahead have fewer trading addresses elsewhere. This indicates strong regional ties and specialisation, reducing the need for these firms to seek trading opportunities outside their home region. Overall, the data reveals that firms in the Cambridge Ahead region are primarily locally oriented, with strategic expansions into London and, in smaller numbers, into the North. Understanding these practices could inform initiatives aimed at fostering similar economic linkages and growth.

Key RTICs connecting firms based in the Business West area include: **Life Sciences, Business Support Services, Research and Consulting in Physical Sciences and Engineering, Net Zero and Pharma.**



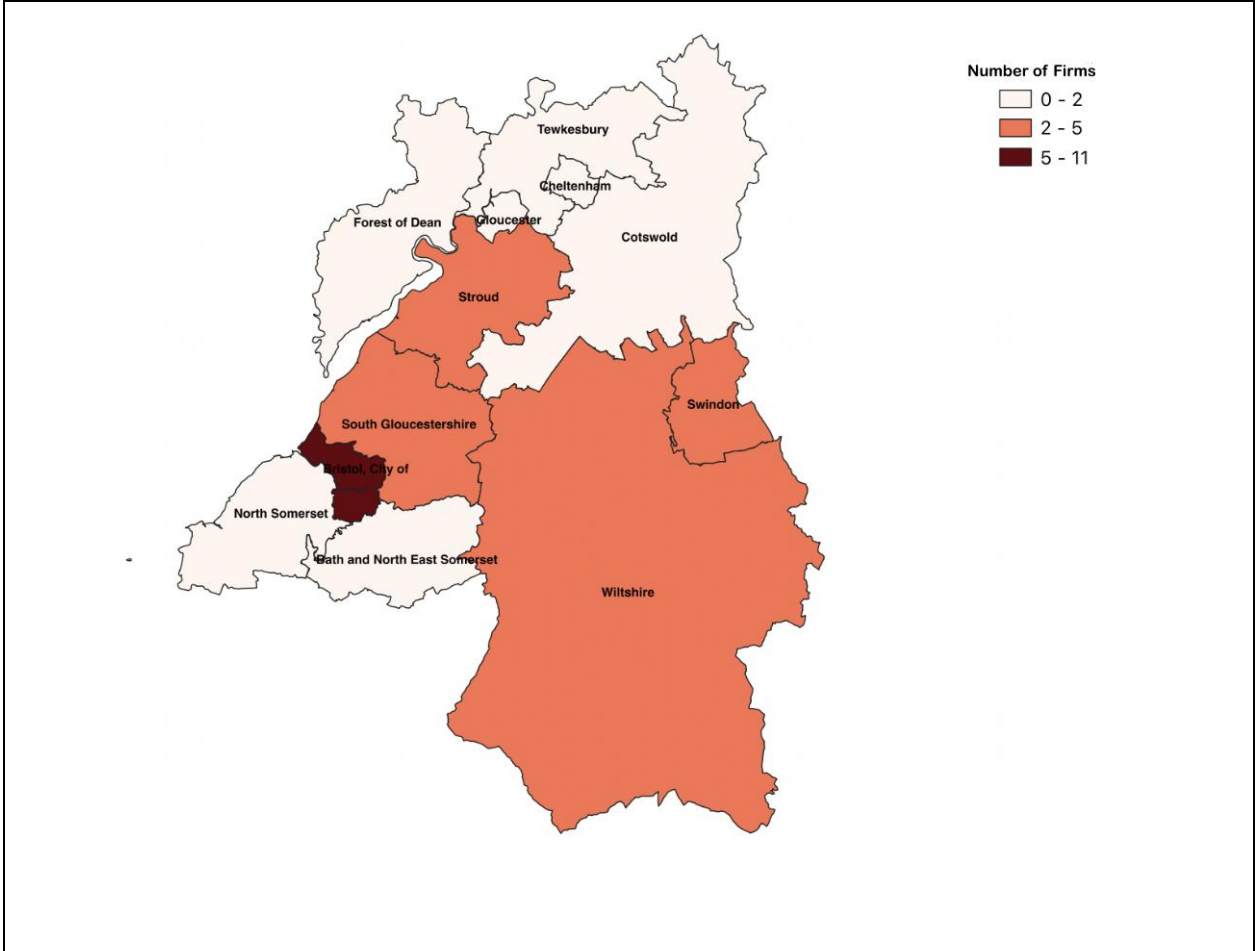
Registered address: **Cambridge Ahead**

Trading address: **Business South**



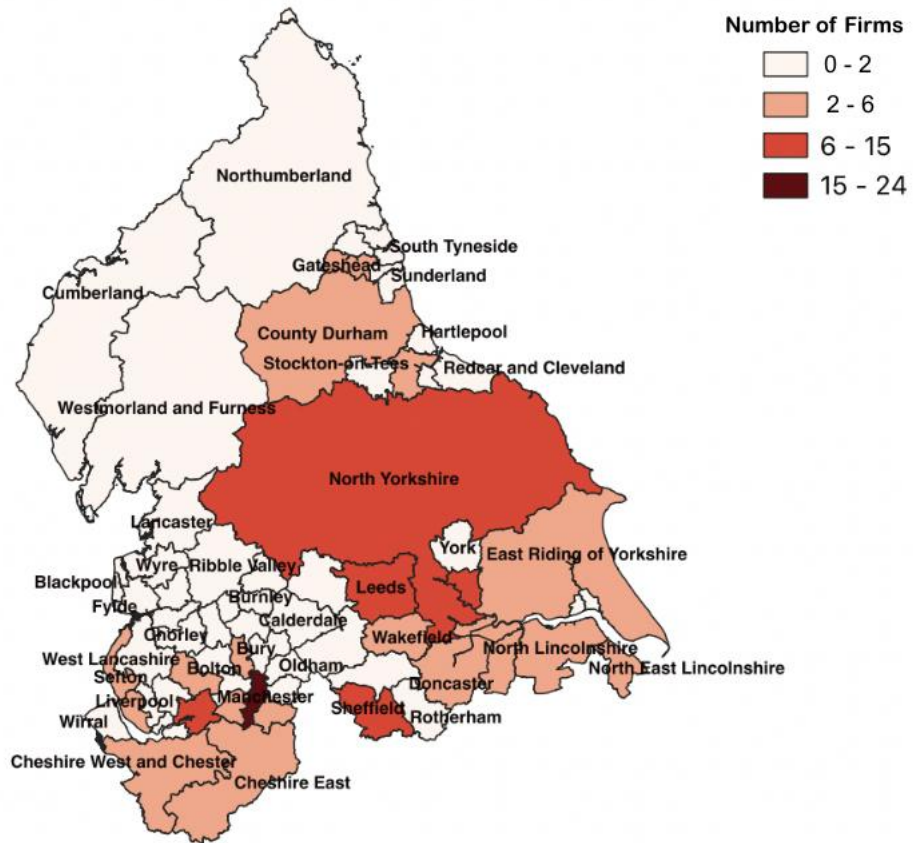
Registered address: **Cambridge Ahead**

Trading address: **Cambridge West**



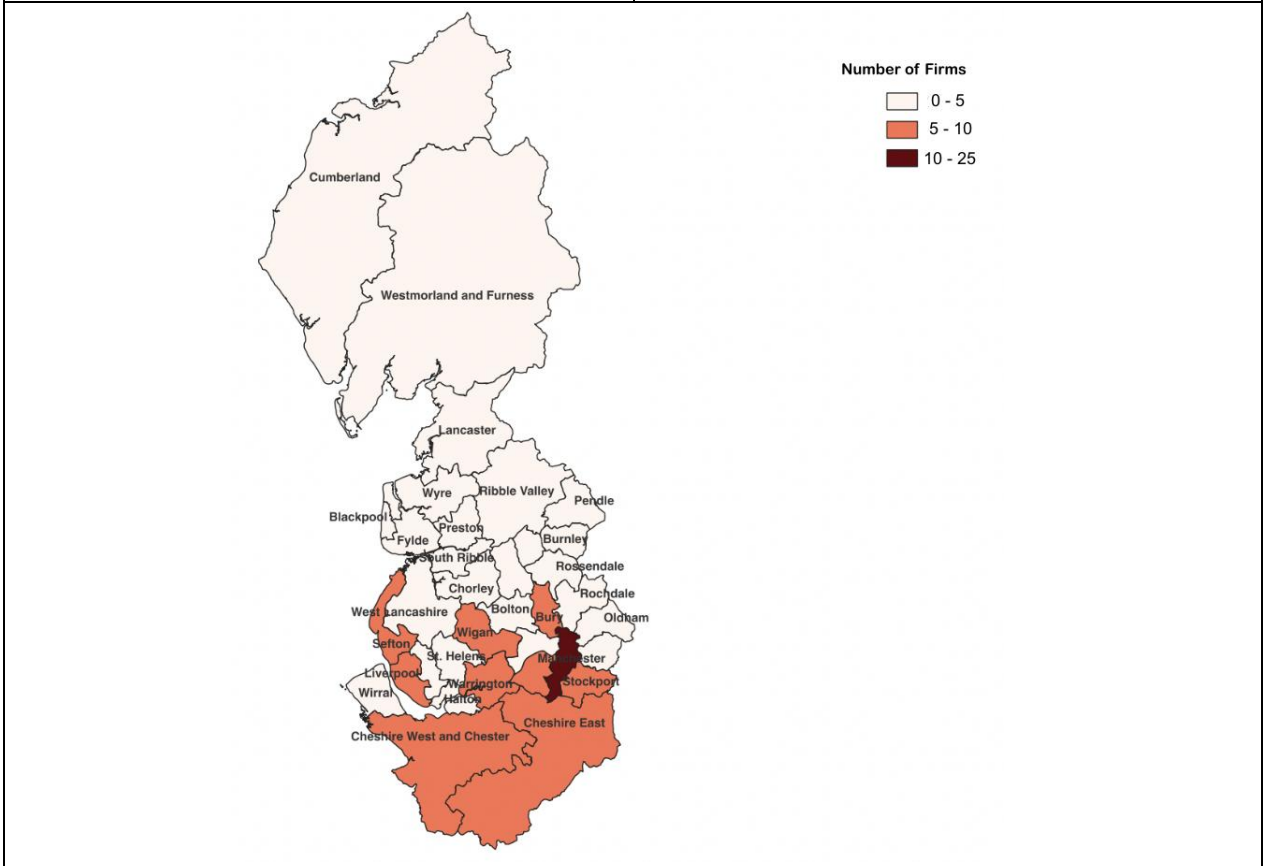
Registered address: **Cambridge Ahead**

Trading address: **Northern Powerhouse Partnership**



Registered address: **Cambridge Ahead**

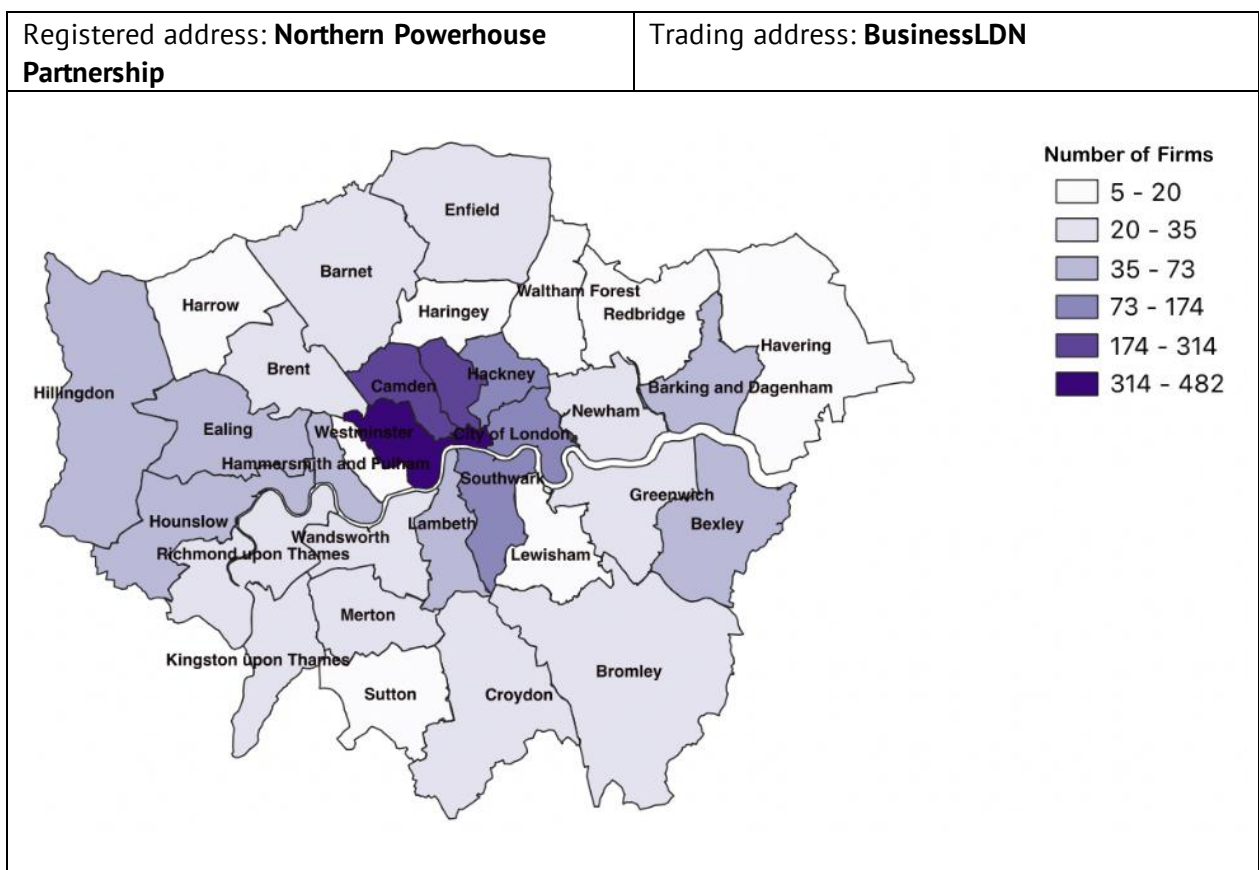
Trading address: **North West Business Leadership Team**



v. Northern Powerhouse Partnership (NPP)

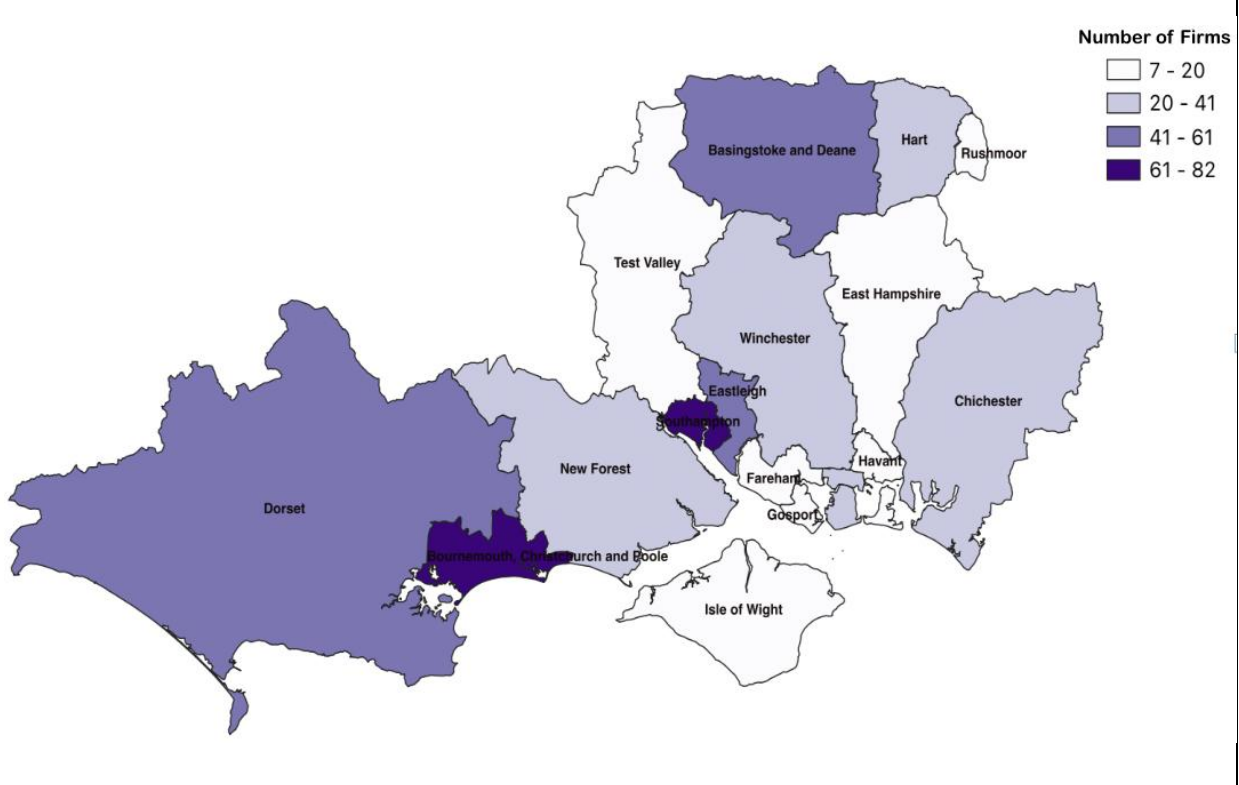
Companies registered in the geography covered by the Northern Powerhouse Partnership are predominantly concentrated in major Northern cities like Leeds and Manchester, which act as vital centres for their operations. A significant number of these firms also maintain trading addresses in London, particularly in high-profile areas like the City of London and Westminster, reflecting the strategic importance of the capital. Additionally, firms in the NPP region engage with markets in the South, particularly in Business South and Business West regions, and also show interest in the innovation-rich environment of Cambridge. Manchester's role as a key hub for firms in the regions covered by both the NPP and NWBLT underscores its centrality to the Northern economy. Overall, firms in the NPP region demonstrate a balanced approach, combining a strong local focus with strategic expansion into other important regions.

Key RTICs connecting firms based in the NPP area include: **Net Zero, Energy Generation, Data Infrastructure, Agency Market, Life Sciences and Business Support Services.**



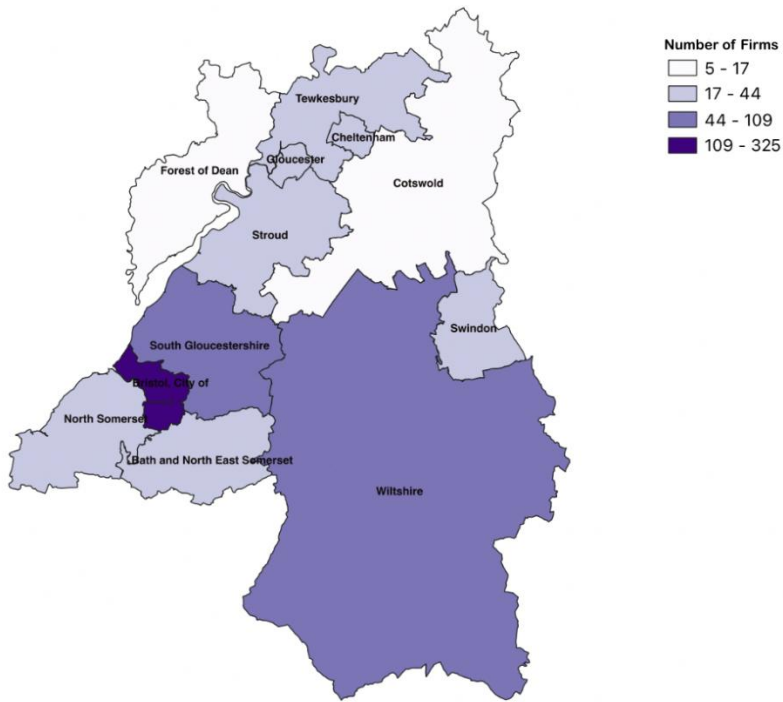
Registered address: **Northern Powerhouse Partnership**

Trading address: **Business South**



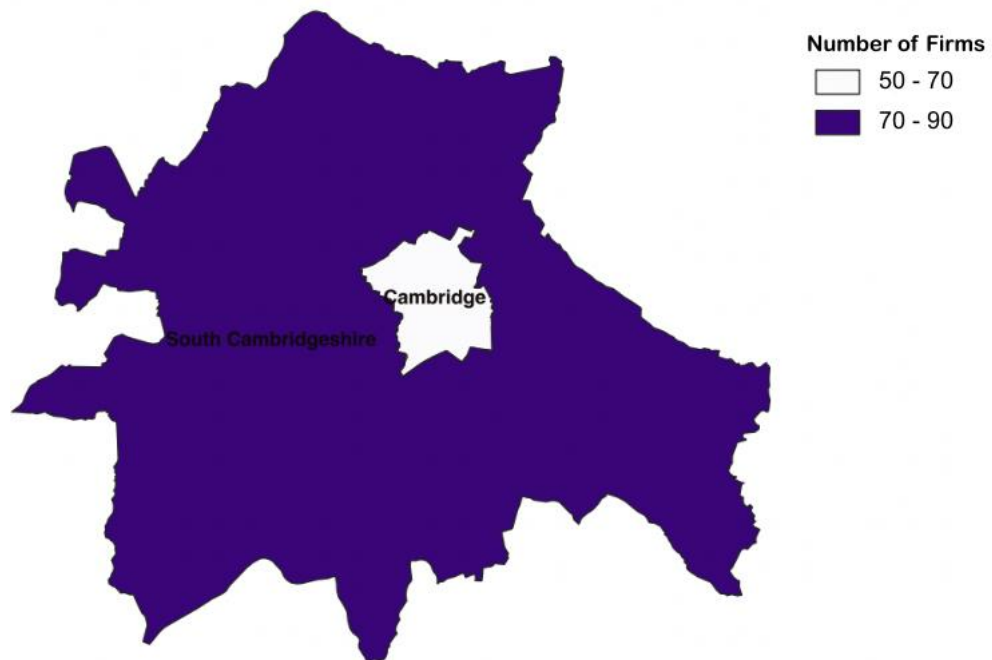
Registered Address: **Northern Powerhouse Partnership**

Trading Address: **Business West**



Registered address: **Northern Powerhouse Partnership**

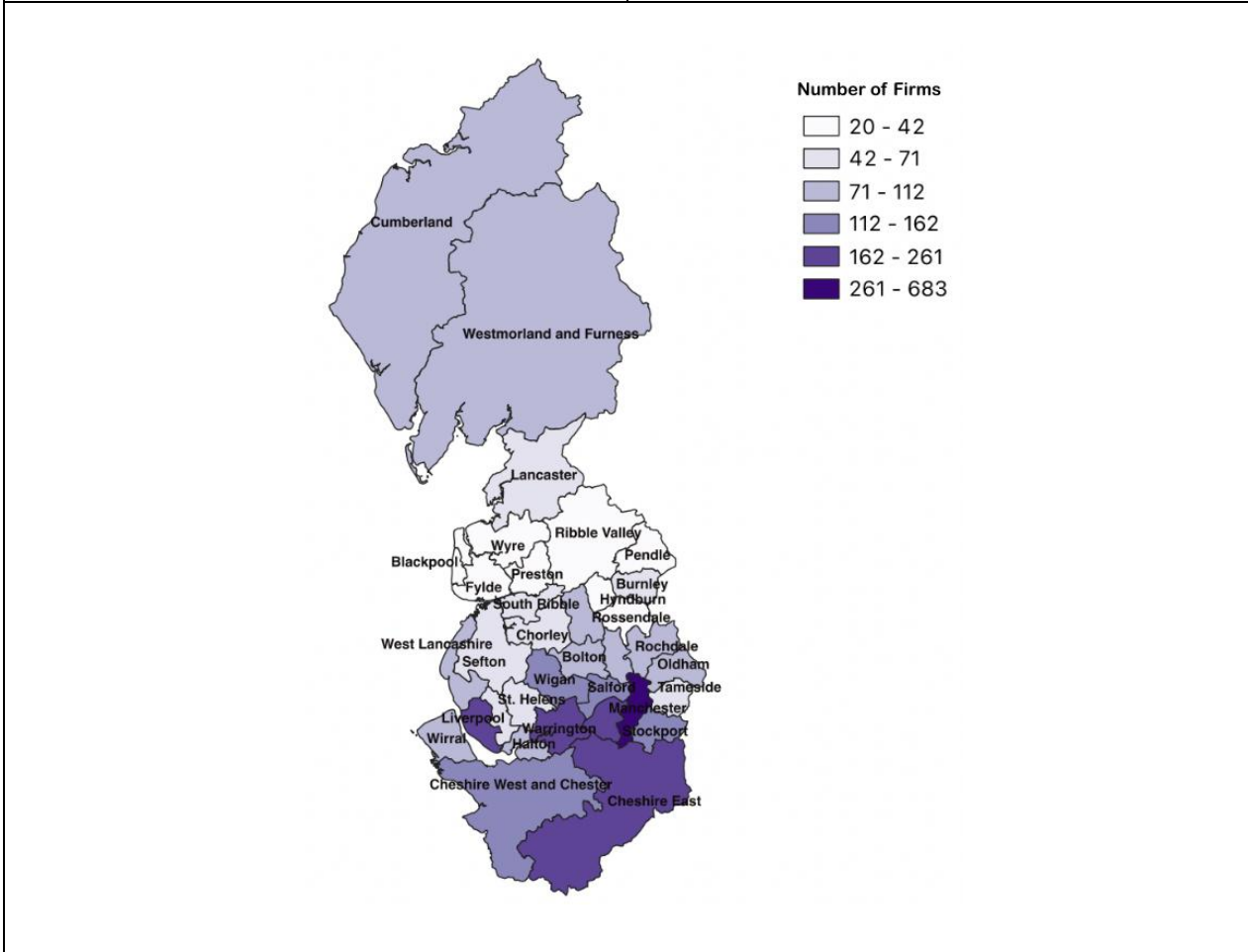
Trading address: **Cambridge Ahead**





Registered address: **Northern Powerhouse Partnership**

Trading address: **North West Business Leadership Team**



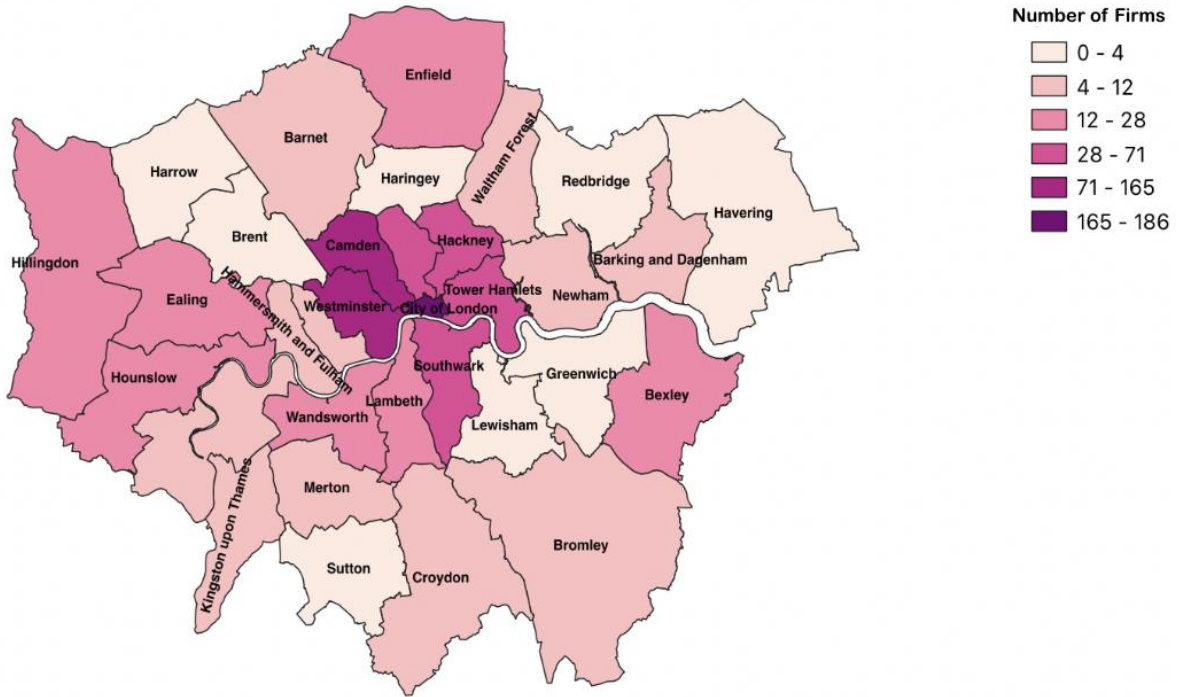
vi. *North West Business Leadership Team (NWBLT)*

Manchester, Cheshire East, and Liverpool host the highest numbers of trading addresses in the region. Manchester, in particular, plays a dual role, being a central hub for firms in the regions covered by the NWBLT and the Northern Powerhouse Partnership, which highlights its importance as a business centre in the North of England. Additionally, there is significant engagement with London, particularly in the City of London, Westminster, and Camden, reflecting the strategic importance of the capital. The data also shows moderate interaction with firms in the regions covered by Business South and Business West, where select locations such as Eastleigh, Southampton, and Bristol serve as key trading spots. In contrast, the presence of NWBLT firms in the Cambridge Ahead region is limited, while firms in the Northern Powerhouse Partnership geography shows strong regional collaboration, especially in Manchester and Leeds.

Key RTICs connecting firms based in the Business West area include: **Net Zero, Business Support Services, Agency Market, Life Sciences and Data Infrastructure.**

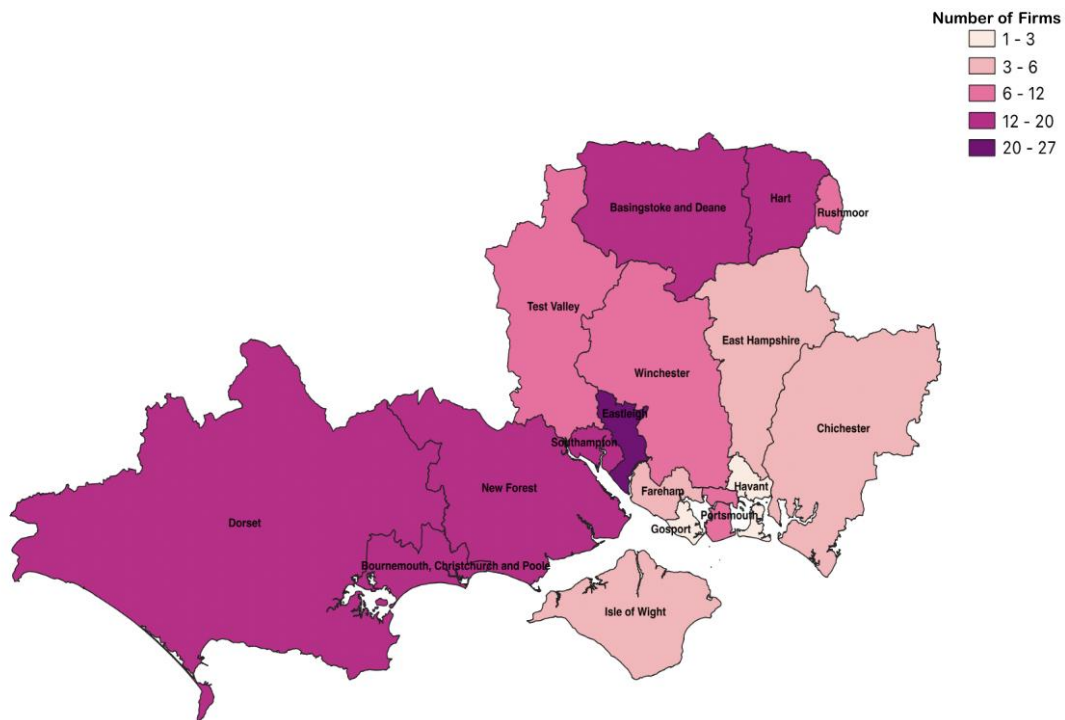
Registered address: **North West Business Leadership Team**

Trading address: **BusinessLDN**



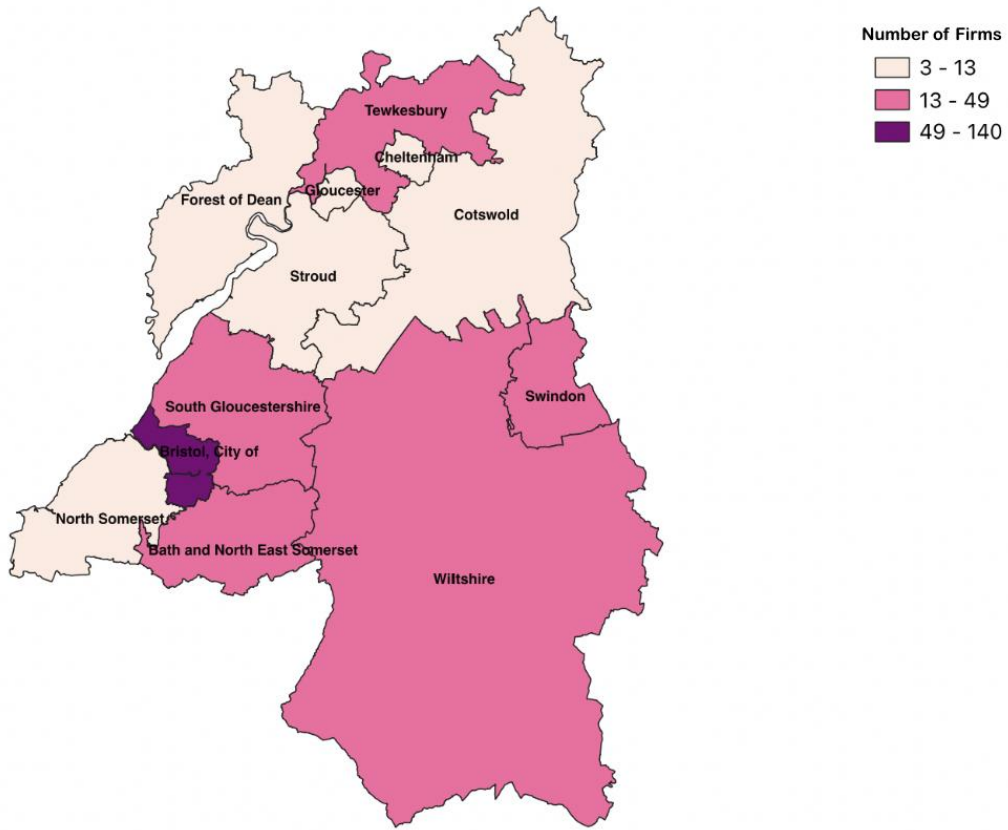
Registered address: **North West Business Leadership Team**

Trading address: **Business South**



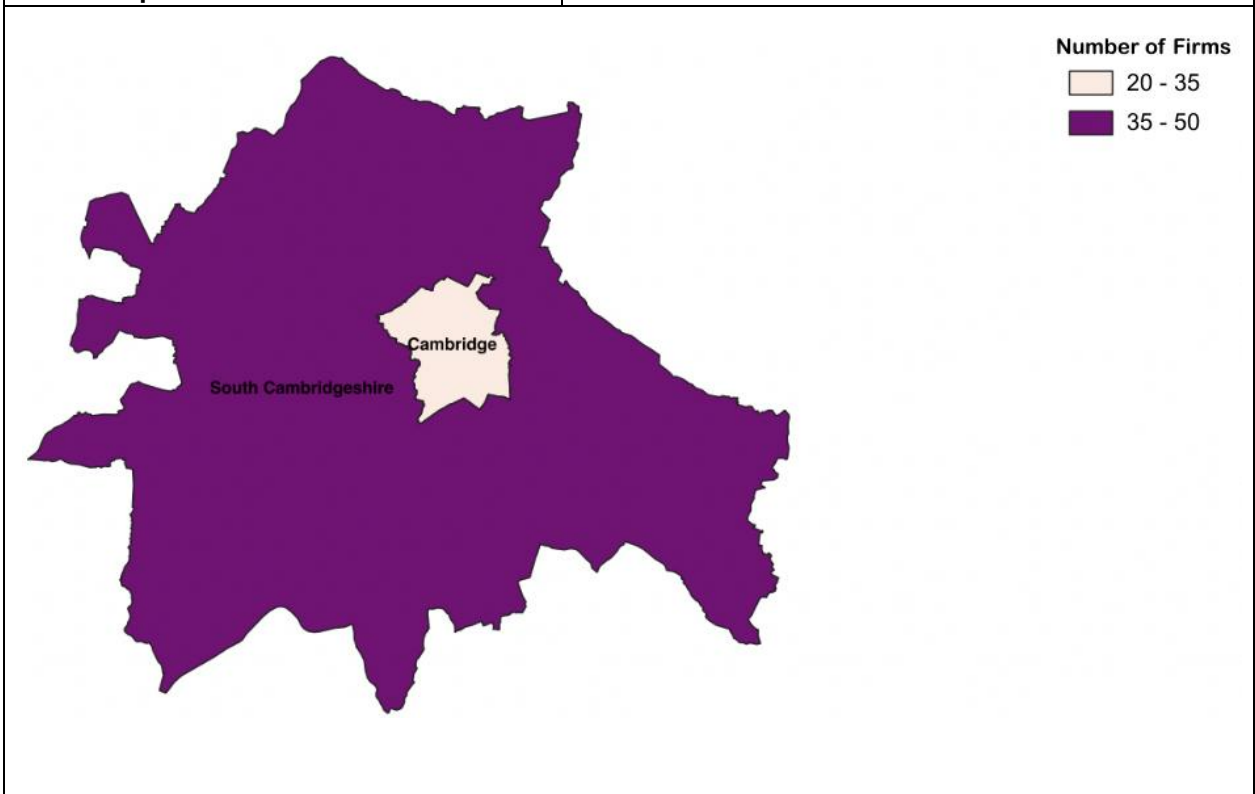
Registered address: **North West Business Leadership Team**

Trading address: **Business West**



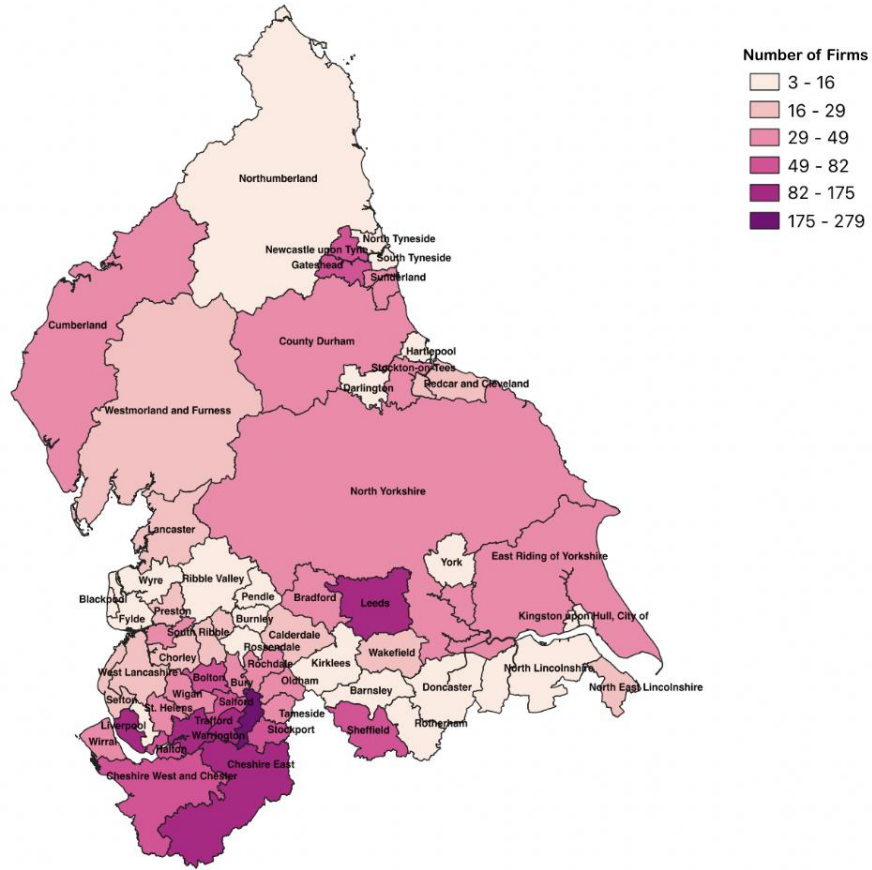
Registered address: **North West Business Leadership Team**

Trading address: **Cambridge Ahead**



Registered address: **North West Business Leadership Team**

Trading address: **Northern Powerhouse Partnership**



# Conclusion

From the findings in sections 5a and 5b, we conclude that:

## **Concentration of firms in the BusinessLDN geography**

BusinessLDN represents a significant concentration of firms, both in terms of registered and trading addresses. The data suggests that London remains a strategic hub for businesses due to its strong economic infrastructure, access to capital, and proximity to other key markets. This dual role underlines London's continued dominance as the economic capital, though the data also hints at other regions gaining traction.

## **Regional interconnections and business mobility**

Figures 3 and 5 reveal significant interconnectivity between regions, where many firms are choosing to trade in regions different from their registered addresses. For example, significant numbers of firms registered in Business South and Business West are trading in areas represented by BusinessLDN, and similarly, firms from across various regions are trading in NPP geographies. This indicates that businesses are leveraging the strengths of multiple local economies, reflecting a highly interconnected and mobile business environment in the UK.

## **The dominance of firms' trading addresses in the regions represented by the North West Business Leadership Team and Business LDN**

The NWBLT and Business LDN regions stand out as having a notably high number of trading firms. These GTA regions have the highest concentration of firms trading there. This indicates that businesses see the area as an operational hub, and the region is becoming an attractive location for firms to conduct business, potentially regional economic incentives, favourable policies, or strategic advantages that are drawing firms from across the UK.

## **Internal trading patterns**

Firms trading in the Business South and Cambridge Ahead regions exhibit a strong tendency to trade with other businesses within the same area, while businesses registered in other areas of the GTA show more diversified trading patterns across different areas. This suggests a well-established local business ecosystem and a more niche focus. Similarly, firms covered by Business West show a more balanced sectoral and geographic distribution. The distribution of firms across Wiltshire, Bath and North East Somerset, and Cambridge suggests a balanced approach to regional development and sectoral specialisation, leveraging its strengths in Life Sciences and Energy Generation.

## **Geographical focus**

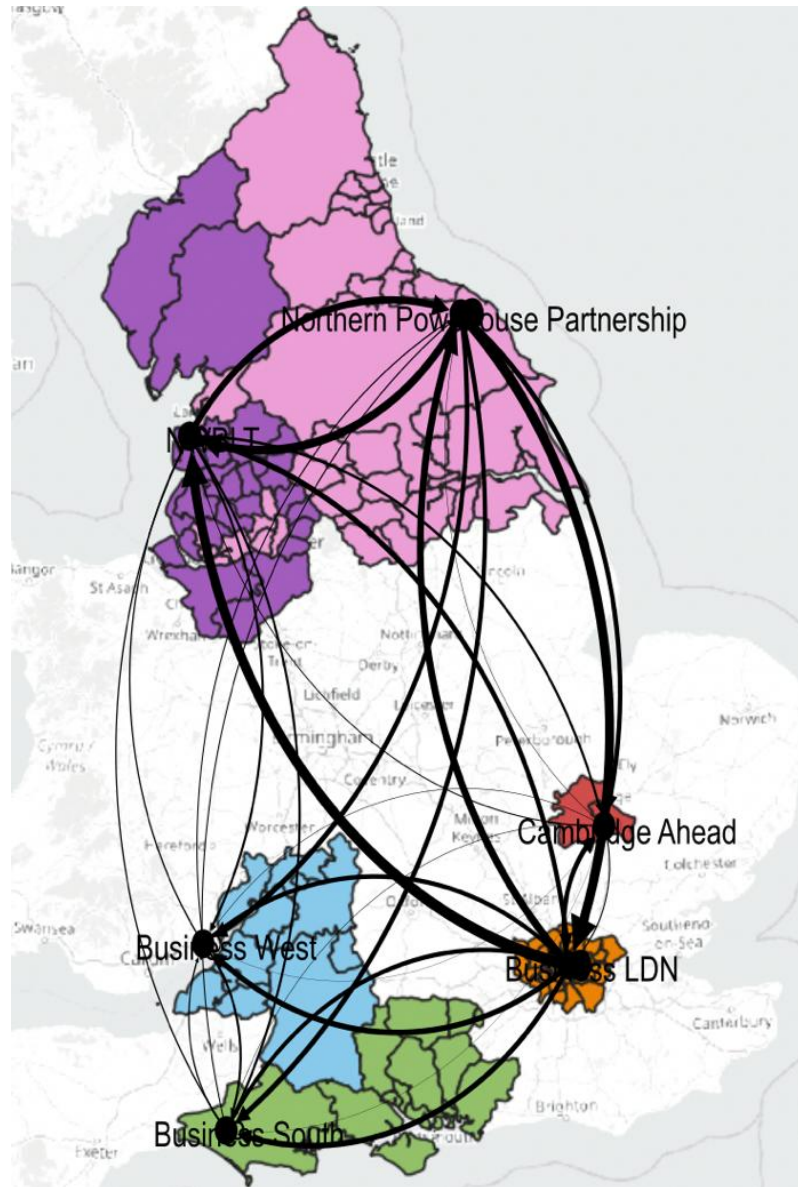
Central London areas like Westminster and Camden host a significant number of trading firm addresses, reflecting the region's importance as a business hub. These locations offer access to extensive legal and professional services networks, which can provide firms with strategic

advantages such as credibility, financial expertise, and business support. Similarly, Manchester and Liverpool are key areas with a high concentration of firms trading addresses in the NWBLT region, underscoring their roles as major economic centres in the North West.

### **Key knowledge intensive sectors and sectoral growth**

Table 2 highlights several key sectors that form the backbone of regional innovation economies, with distinct sectoral clusters emerging in specific areas. Net Zero and Energy Generation emerge as dominant sectors across multiple GTA regions, reflecting a collective commitment to sustainability and energy innovation. Firms in the BusinessLDN area are predominantly in CleanTech and AI, particularly in Westminster and Camden, reinforcing central London's role as an innovation hub. Firms in the Cambridge Ahead region specialise in Life Sciences, Pharma, and Research & Consulting in Physical Sciences and Engineering, aligning with Cambridge's strong academic-industrial ecosystem. Firms in the regions represented by Business West, NPP, and NWBLT share a focus on Net Zero, Life Sciences, and Business Support Services, with Manchester and Leeds emerging as key regional centres. Firms with the NWBLT and BusinessLDN geographies also emphasise Data Infrastructure, driving digital transformation in London and Manchester. The clustering of firms within specific regions around these sectors highlights the presence of sectoral clusters, which can be leveraged to drive further growth, foster collaboration between firms, and strengthen regional innovation ecosystems.

## Case study: data infrastructure



Data Infrastructure, one of the RTICs, stands out as a sector with a high number of trading addresses in areas outside their registered locations. This map shows how firms in this sector operate across different regions.

Arrows show the flow between registered and trading addresses, with thicker arrows representing more firms. Key hubs like BusinessLDN, the Northern Powerhouse Partnership, and Cambridge Ahead play a central role, with strong connections to other regions.



# Appendix

Table 1: Description of the RTICs

Source: Descriptions are taken from *The Data City's* website.

AdTech	Companies that create technology and SaaS platforms that marketers use to target, design, deliver and review the effectiveness of their advertising.
Advanced Manufacturing	Companies using the most innovative technologies and processes to increase productivity, often in the highest value-add parts of manufacturing sectors.
Advanced Materials	Companies working to create, commercialise, and improve materials and products incorporating advanced materials.
Agency Market	Companies providing marketing, advertising and product promotion and sales services.
AgriTech	Companies developing and implementing new agricultural technologies.
Artificial Intelligence	Companies leveraging AI and machine learning, launch new products, customise product designs and plan future financial action.
Autonomy and Robotics	Companies developing technology and systems that enable machines to operate independently or semi-autonomously.
Biopharmaceutical	Companies involved in the development and production of innovative medical solutions.
Business Support Services	Companies providing services that facilitate the activity of third party businesses.
CleanTech	Companies in clean energy, environmentally sustainable product or service design and provision such as water purification, biofuels and other adapted goods.
Computer Hardware	Companies designing, integrating, or reselling computer hardware.
Cryptocurrency Economy	Companies offering products and/or services enabling or assisting with the transaction, investment or mining of blockchain currencies or the application of non fungible tokens to other uses.
Cyber	Companies working across the cybersecurity and computer safety sector; Cryptographic Authentication, Endpoint Security, Identity Management, IoT Security, Network Security, Incident Detection and Response, Risk Management, Threat Management.
Data Infrastructure	Companies involved in; Data Centre Cooling, Data Centres, Data Storage, Data Infrastructure Hardware, Data Infrastructure Services, Data Infrastructure Software, Trusted Execution Environments.
Data Intermediaries	Companies specialising in the governance, exchange, and management of data, encompassing cooperative member-driven models, individual-centric data control platforms, and evolving or undefined roles in the data ecosystem.
Design and Modelling Technologies	Companies providing technological products and services that support design, prototyping and production.
Digital Creative Industries	Companies using new technologies in creative markets such as advertising, film, and music.
E-Commerce	Companies supporting E-Commerce sector through platform development, inventory management, tracking and logistics services.

Ed Tech	Companies creating technology that supports teaching and learning and enhances educational outcomes.
Electronics Manufacturing	Companies that design, integrate or manufacture electronics, especially microelectronics, or that provide allied services to the electronics industry.
Energy Generation	Companies involved in techniques used to generate energy from fossil fuels, nuclear power plants, solar panels, biofuels, wind amongst other sources.
Energy Management	Companies creating infrastructural networks, technology and software and the provision of services to administrate energy use and consumption.
Energy Storage	Companies designing and producing innovative technologies to store electricity or heat that has been previously produced.
Engineering Biology Application	Companies involved in the applications side of engineering biology sector.
Engineering Biology Supply Chain	Companies involved in the supplychain side of engineering biology sector.
FinTech	Companies involved in the creation, facilitation and commercialisation of software, service, and intelligent technologies to support financial institutions and personal finance products.
Food Tech	Companies developing food and drink processing technologies, taxonomy adapted from Forward Fooding.
Gaming	Companies focused on the development, commercialisation, and advertising of video games and allied industries such as gaming events.
Geospatial Economy	Companies working with geographical data in some form, including but not limited to; Data Capture, Data Processing and Visualisation, Geospatial and GIS Technologies, Navigation Technologies.
Immersive Technologies	Companies and start-ups focused on the development, manufacturing, and delivery of Immersive Technologies.
In-Orbit Servicing and Manufacturing	Companies with the range of specialised activities engaged in constructing, maintaining, refueling, and managing spacecraft and satellites, as well as producing hardware, software, and materials directly within the space environment.
Internet of Things	Companies creating objects with the capability of communicating with each other and sharing data over the internet.
Land Remediation	Companies supporting land remediation process through brownfield restoration, remediation and project management services.
Legal Services	Companies providing comprehensive legal assistance and representation across a diverse range of areas, including corporate law, consumer rights, criminal defense, family law, real estate, intellectual property, tax, and estate planning.
Life Sciences	Companies and organisations involved in research, manufacturing, human health, biology, biotechnology, and chemistry. Key components of the Life Sciences sector.
Marine and Maritime	Companies working across shipping, port operations, offshore energy production, fishing, marine engineering and various other verticals.
MedTech	Companies involved in the development and deployment of medical devices, products, services and solutions within the healthcare system.

Media and Publishing	Companies, agencies, organisations and groups involved in the production and distribution of information through broadcast, print, video, music and other forms of media.
Modular Construction	Companies involved in the process of producing components, or in some cases entire structures, in an off-site location before being assembled on-site.
Net Zero	Companies tackling a specific problem within a specific time frame – reducing greenhouse gases produced by humans.
Neurotechnology	Companies focused on developing technologies that interact with the nervous system to record, stimulate, or modulate its activity.
Omics	Describes biological sciences that end with -omics. This includes areas of study such as Genomics, Transcriptomics, Proteomics and Metabolomics.
Pharma	Companies and organisations dedicated to the development, testing, production, distribution and marketing of medicines or pharmaceutical drugs.
Photonics	Companies designing, manufacturing and using advanced optical technologies. This includes those working in microelectronics, remote sensing, telecommunications and even quantum technology.
Quantum Economy	Companies including those involved in software development, component manufacture, quantum computer development and photonics (the physical science of light waves).
Quantum Technology	Businesses developing and commercialising products that directly use quantum technology.
Rehabilitation	Companies and organisations dedicated to developing medical practices and supplying Rehabilitation services.
Research and Consulting – Physical Sciences and Engineering	Companies providing complementary research and consulting services within the Physical Sciences and Engineering sector. This includes those working across physical sciences, engineering and architecture.
Robotics and Autonomous systems	Companies that specialise in developing and implementing robotic and autonomous technologies across a variety of industries.
Sensors	Companies that focus on leveraging sensor-based technology to automate and optimise production processes.
Software Development	Companies that are responsible for designing, creating and maintaining computer programs.
Software as a Service (SaaS)	Companies involved in the process of delivering software or applications over the internet as a cloud-based service rather than being installed or downloaded.
Space Economy	Companies across key verticals, from geospatial analytics to in-orbit services.
Streaming Economy	Companies that stream or enable the streaming of content from the internet.
Supply Chain Logistics	Made up of logistic experts and businesses driving operational efficiency across supply chains through tech or other processes, it's an industry dedicated to problem solving and delivering cost-saving services.
Telecommunications	Companies providing key transmission services that allow us to communicate via voice, data, text, sound, video and other methods.
Wearables and Quantified Self	Companies involved in wearable technology that's worn on the human body – often as an accessory or within clothing – used to record vital signs or other ambient information that's fed back to the wearer.

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