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NATIONAL REPORT ON E-COMMERCE DEVELOPMENT IN UK

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National report on e-commerce development in UK

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It was written by Tong Meng of the University of Birmingham.

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Acronyms

ABS	Annual Business
B2B	Business to Business
B2C	Business to Consumer
EC Directive	Electronic Commerce
EDI	Electronic Data Interchange
ICT	Information and Communication technologies
OECD	Organization for Electronic Co-operation and Development
SEOs	Search Engine Optimization
SMEs	Small and Medium sized Enterprises

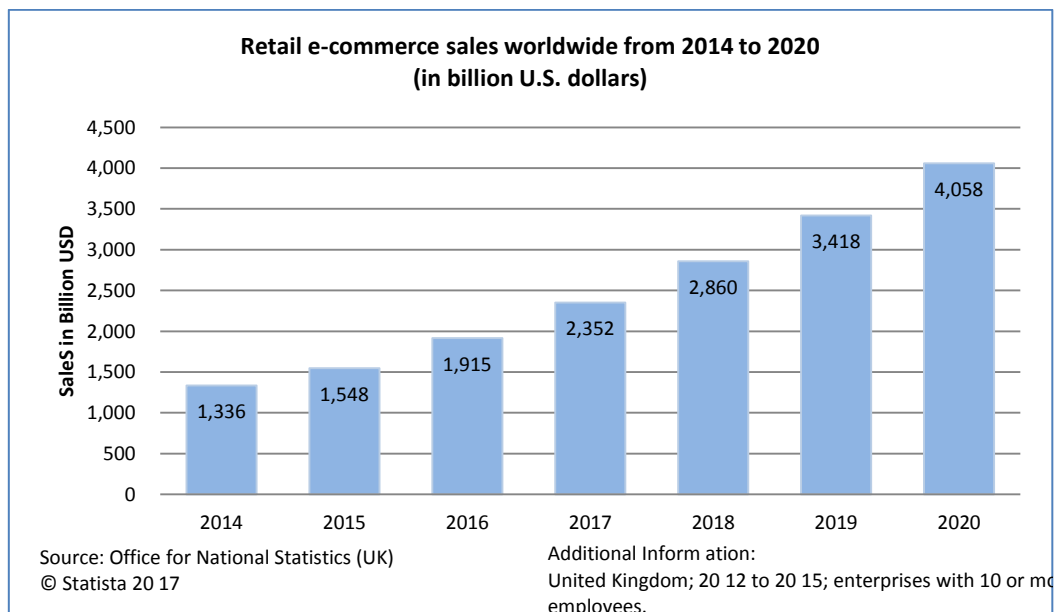
Abstract

As a well-developed E-commerce market with its contribution to GDP over 6% in 2015, UK has experienced an almost twenty years' development on E-commerce domestically and worldwide. In this paper, we aim to introduce the development of E-commerce business in the UK where the economy is dominated by SMEs rich data analysis. The related regulations, laws and other details of process of online business are also covered. Finally, we introduce the findings and experiences during the development in the past decade and discuss the potential upcoming issues especially for SMEs in the near future.

1. An Overview of E-commerce Market

With the rapid increase of internet penetration in the developing countries, E-commerce had a booming growth especially in term of B2C in the past decade and larger weight to the GDP. Figure 1 show that the total value of E-commerce in 2014 would increase over 30% after two years and is expected to be tripled till 2020. However, its only accounts for 2% of the world GDP value in 2015.

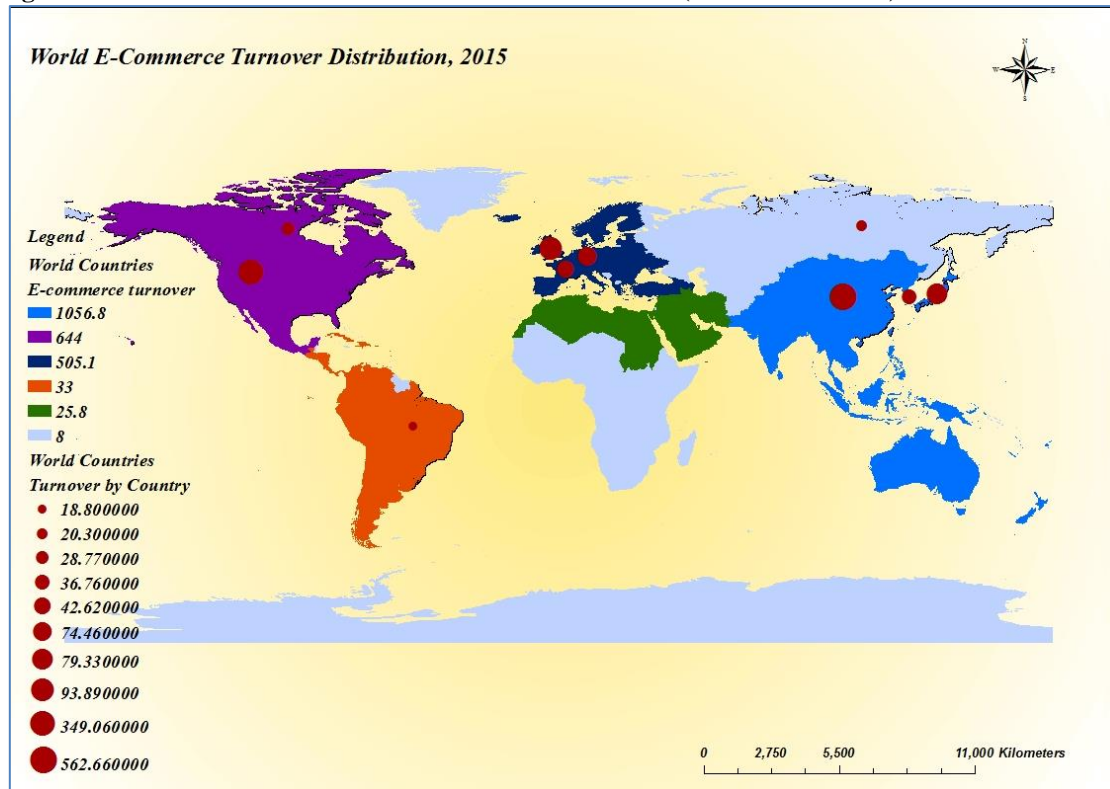
Figure 1 The trends of E-commerce growth worldwide



The geographic distribution of E-commerce market value on B2C shows that Asia-pacific area with \$1,056.8 billion and a 28.4% annual growth rate from 2014 to 2015 place the top. The following large market of E-commerce is in North America and EU. China and United States with their over 50% share of turnover within the region becomes the largest market while the largest market in Europe is United Kingdom. Although OECD countries is still having larger market value by taking advantage of their early start, more comprehensive market regulation,

logistics and higher internet penetration rate, we also observe a significant growth in BRICS countries especially China with their large population constructed market and lower transport costs.

Figure 2 E-commerce Market Size and Distribution (Sales in \$ Billions)



Source: Eurostat, World Bank, IMF and Ecommerce Foundation, 2016

The development of E-commerce has also significantly impacted the turnover of traditional stores around the world. A reduction up to 2% on brick and mortar retailers has been found in European countries in 2015. However, the reduction may not happen in countries such as Spain and Italy which lack comprehensive services and logistics for E-commerce.

E-commerce Giant Corporations such as Alibaba and Amazon provide trading platforms for SMEs. The traditional local market sale clusters have been moved online attracting consumers from both domestic countries and overseas. It has reshaped shopping for young people below fifteen and the patterns of marketing strategy especially in terms of social media appliances.

1.1 The definition of E-commerce

E-commerce involves the buying and selling of goods and services or transmitting of funds, data and information through electronic networks, in conjunction with supplementary tools such as smart mobile device and email. The business transactions can be categorized as business-to-business, business-to-consumer, consumer-to-consumer and consumer-to-business. By taking

advantage of the spread of the Internet, its appeal to young people and the relative simpler business pattern, C2C and B2C have experienced a rapid growth in the past decade. As the most commonly used B2B E-commerce technology, EDI (Electronic Data Interchange) helps to provide data transaction and exchange between companies and organizations. EDI handles complex transactions through computer-to-computer exchange of documents. However, compared to B2C the growth rate of B2B is lower in the past five years. The reasons are summarized in Table 1.

Table 1 The comparisons between B2B and B2C

Business to Business	Business to Consumer
Marketing is more complex (clients and prospects need to understand how products work and integrate with existing systems)	Simple marketing and sales cycles
Prices highly variable	Fixed prices
High volumes, wide product range	Low quantities
Need for flexible shipping and logistics solutions	Easy shipping
Tax and regulation has a high impact on sales and therefore large workforce employed to work within these restrictions	Little regulation and tax complexity
Wide product range and high volumes	Products easy to showcase and market

Source: eCommerce Expo “The 2015 B2B E-commerce Report: A View from the Frontline”

The development of B2B and B2C has followed different trajectories in terms of growth rate and business cycle. B2B focuses more on productivity rather than marketing compared to B2C. B2B focuses on professional communication, brand name reputation and close relationships with business partners. Analyst firm Frost & Sullivan has projected that global B2B online retail sales will reach \$6.7 trillion by 2020 in the study *Future of B2B Online Retailing* released in 2014. Others expect that the market size of B2B is twice as large the B2C and has great potential to keep growing. Finally, the business cycle for B2B is much longer than B2C. A new pattern of outsourcing and trade through E-commerce channels would rationalize the upstream-downstream distribution, especially for multinational firms, and save acquisition costs.

2. The importance of the UK market

2.1 An Overview of E-commerce Market in the UK

This section introduces the structure of E-commerce market and the position of SMEs in the UK economy. It summarizes the process and development of E-commerce adoption for SMEs. The development of B2B and potential issues are also discussed.

China and the United States were the largest E-commerce markets in 2015 with E-commerce percentage share to GDP at 7.05% and 6.12% respectively. Taking advantage of a 93% internet penetration rate and 49.8 million online individuals, the United Kingdom is the third largest B2C market with estimated \$174.2 billion online sales of goods and services in 2016¹. The UK also has the top rating within EU for E-commerce market potential and amount of spending per e-shopper.

Table 2 Top 10 Countries in terms of e-GDP

GDP at market prices, GDP per capita at market prices and share of E-commerce in GDP, 2015

	GDP at market prices	GDP per capita at market prices	Share of E-commerce in GDP
Global	\$73,106bn	\$20,776	3.11%
China	\$10,866bn	\$7,925	7.05%
United Kingdom	\$2,849bn	\$43,714	6.12%
South Korea	\$1,378bn	\$27,222	4.70%
USA	\$17,947bn	\$55,904	3.32%
France	\$2,423bn	\$36,503	2.97%
Japan	\$4,123bn	\$32,477	2.77%
Canada	\$1,551bn	\$43,249	2.30%
Germany	\$3,357bn	\$41,162	1.97%
Australia	\$1,236bn	\$56,328	1.80%
Spain	\$1,200bn	\$25,581	1.68%

Sources: Eurostat, Ecommerce Foundation, IMF and World Bank, 2016

¹ <https://ecommercenews.eu/ecommerce-uk-reach-e174-billion-2016/>

An E-commerce survey of UK business selected 11,000 firms from manufacturing, production, construction, distribution, and service sectors, produced a comprehensive E-commerce and ICT (Information and communication technologies) Activity Study in 2015, supplemented with information from the Annual Business Survey (ABS) and the Office for National Statistics²

Figure 3 UK E-commerce sales, 2008 to 2015 (excluding micro-enterprises)

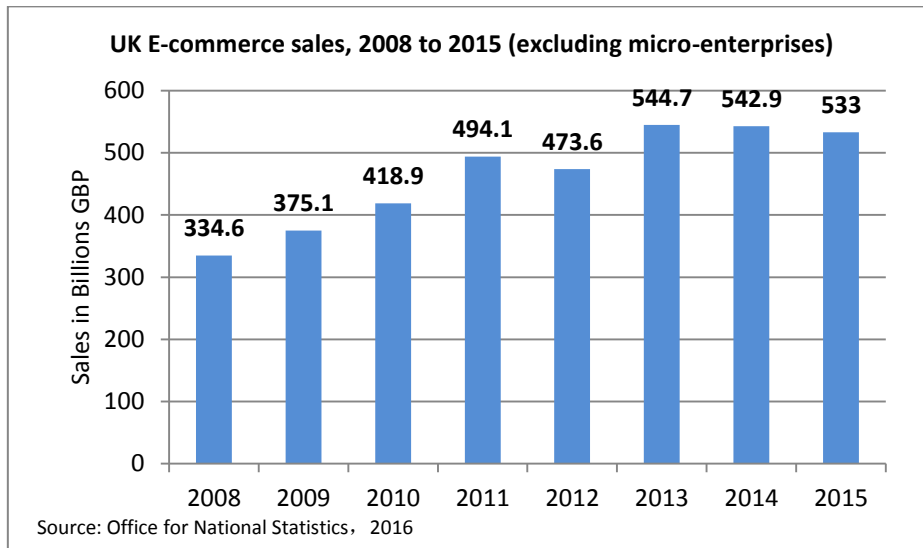


Figure 3 shows that total E-commerce sales in the UK grew steadily from 2008 to 2011, falling in 2012. Across the period, the overall rise was 37%. Figure 4 shows the value of total sales by method. B2B E-commerce sales through EDI were £243 billion in 2008, 60% higher than E-commerce sales through website. However, the gap between sales through EDI and website decreased due to the rapid growth of B2C, and sales values through website increased to 67% of the sales value through EDI. The rate of growth for EDI sales (23.5%) is lower than website sales (57.4%) over the time period.

² All prices are under current price basis and without any deflation in this report and following tables.

Figure 4 E-commerce sales in the United Kingdom (UK) from 2008 to 2015

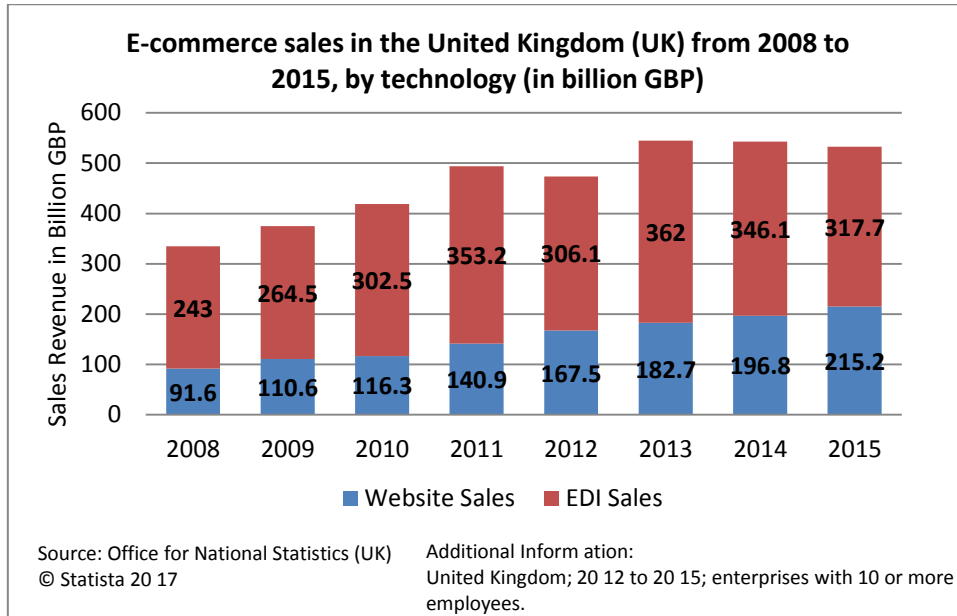
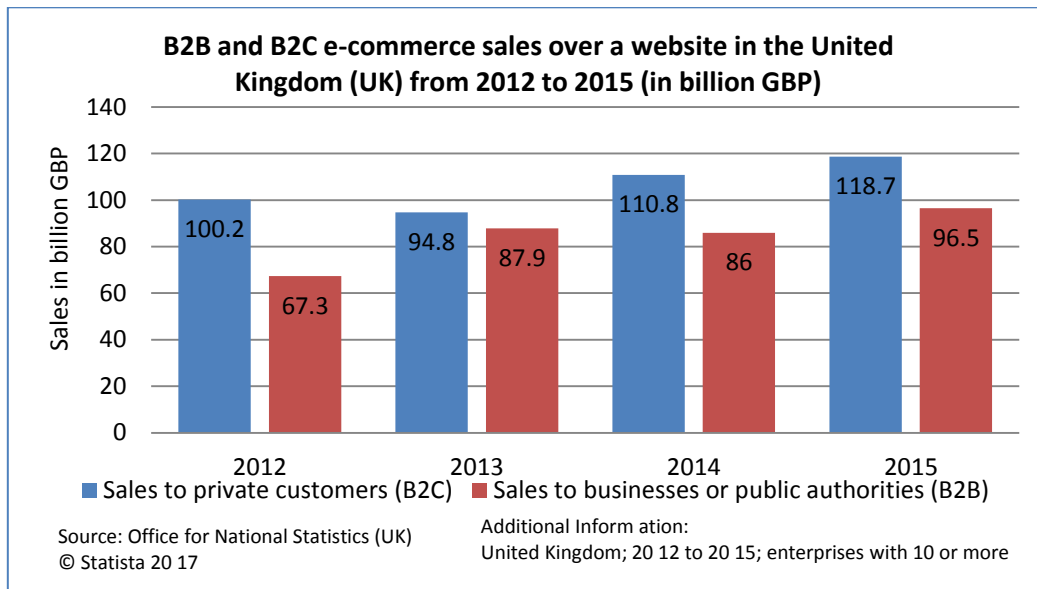


Figure 5 show that B2C sales are larger than B2B sales with around 20% value gap. Both types had sustainable upward trends from 2012 to 2015. Although experiencing a rapid growth of B2C, the overall market size of the B2C is still smaller than the sum of B2B value through EDI and website.

Figure 5 B2B and B2C E-commerce sales over a website in the United Kingdom (UK) from 2012 to 2015



2.2 The Structure of UK Economy by firm size

The structure of manufacturing industries has been reported by the UK House of Commons since 2000. Firm size is mainly classified by the number of employees and the value of turnover. Firms with 0 to 250 employees are defined as SMEs, Firms with 0-10 employees are micro-businesses. Businesses with more than 249 employees are large firm. Giant firms have over 1000 employees. Table 3 shows the number of businesses in the private sector since 2000. The annual growth rate is 0-7%, while the increasing rate of employees fell but still remains at around 24%. Overall, the annual increase in the number of businesses is on average 3%, and the increase of businesses across the whole time period is 59%. The growth of self-employed businesses is above the overall increase of business establishment (77% to 59%).

Table 3 Private Sector Businesses in the UK

Year	Number of Businesses(Thousand)	Change on Year (Thousand)	% change on year	% that are employers
2000	3,457	-	-	32%
2001	3,502	35	1%	33%
2002	3,573	71	2%	33%
2003	3,679	106	3%	32%
2004	3,925	247	7%	30%
2005	3,927	1	0%	30%
2006	4,125	199	5%	29%
2007	4,272	146	4%	29%
2008	4,284	12	0%	29%
2009	4,375	92	2%	28%
2010	4,589	108	2%	27%
2011	4,589	106	2%	26%
2012	4,818	229	5%	26%
2013	4,914	97	2%	25%
2014	5,247	333	7%	24%
2015	5,401	154	3%	24%
2016	5,498	97	2%	24%

Source: Business Statistics, House of Commons of the United Kingdom

In 2016, 15.7 million employees worked for SMEs, whilst the turnover was estimated at £1.8 trillion (47%). Businesses with employees between 10 and 250, accounted for 5% of the overall number of businesses, 27% of employment and 29% of turnover. In general, over 99% of the businesses in the private sectors are SMEs, of which micro-businesses account for 96% of all SMEs. However, those micro-businesses only account for 32% of total employment and 19% of total turnover. On the other hand, 7,200 large firms account for 40% over total employees and 53% of turnover at £2 trillion.

Table 4 Private sector businesses in the UK by number of employees, 2016

	Businesses		Employment		Turnover	
	(Thousands)	%	(Thousands)	%	(£ billions)	%
No Employees	4,172	76%	4,535	17%	255	7%
SMEs (0-250 employees)	5,490	99.90%	15,734	60%	1,825	47%
Micro (0-9 employees)	5,254	96%	8,513	32%	718	19%
Small (10-49 employees)	204	4%	3,970	15%	561	15%
Medium (50-249 employees)	33	1%	3,251	12%	546	14%
Large (250+)	7	0.10%	10,470	40%	2,036	53%
Total, all businesses	5,498	100%	26,204	100%	3,861	100%

Source: BIS, Business Population Estimates Notes: Data relates to the start of 2016 Numbers rounded to the nearest 1,000

One may also note that 76% of the SMEs are without any employees suggesting that more and more micro-businesses are run by the owner. Table 5 shows the share of registered businesses (88,000) without employees among all private sectors. Moreover, the reduction in the numbers of registered businesses with employees (9,000) is also higher than those without employees (5,000). A 3,000 increase in the number of sole proprietorships for unregistered businesses was also observed. Overall, there is an increase of self-employed businesses rather than large businesses, although large businesses still contribute more turnover to the economy in the UK.

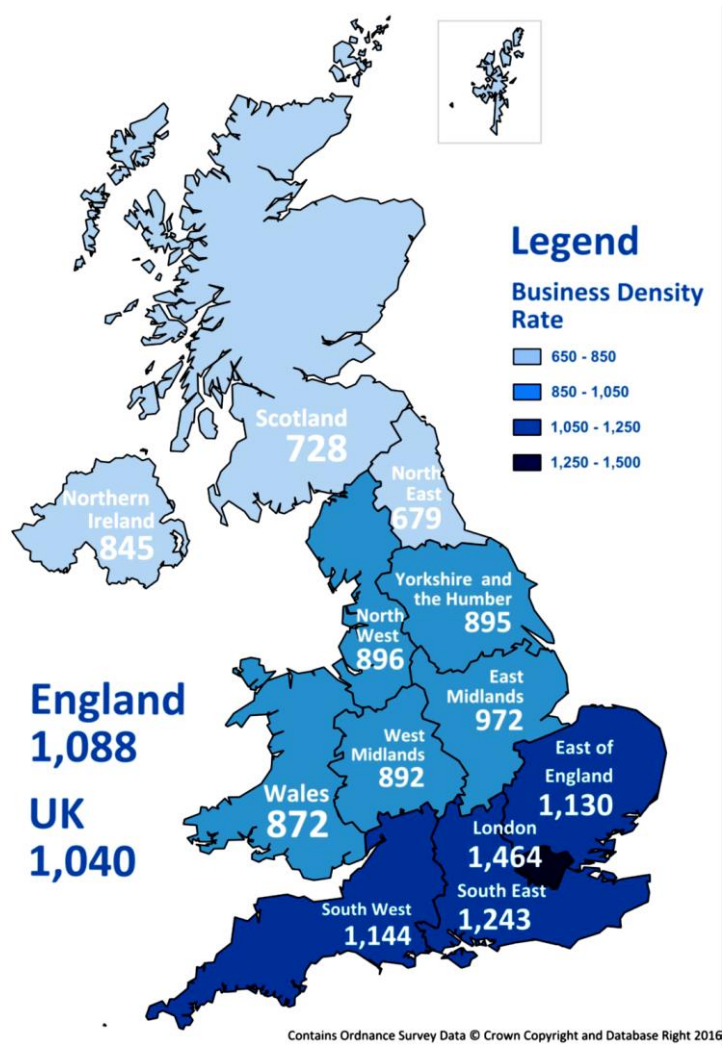
Table 5 Changes in the number of businesses, by legal status, between the start of 2015 and the start of 2016

		Sole proprietorships	Ordinary Partnerships	Companies	Total
		Change			
Unregistered businesses		3,000	-7,000	N/A	-4,000
Registered businesses		-14,000	-9,000	125,000	101,000
Of which	with employees	-9,000	-7,000	29,000	14,000
	Without employees	-5,000	-2,000	95,000	88,000
All private sector businesses		-12,000	-16,000	125,000	97,000

Source: Business population estimates for the UK and Regions, 2016.

Figure 6 shows the geographic distribution of businesses in the UK. Table 6 shows that SMEs are dominant in terms of the number of enterprises in England, Scotland, Wales and Northern Ireland. In general, the geographic distribution of businesses in England follows the North-South divide. Over a quarter of the SMEs were established in London and south of the UK. The geographic distribution of manufacturing industries is also varied. Although London has the largest number of businesses, its share of manufacturing industries is below the average, making its total number of manufacturing industries businesses below the South West and slightly above the West Midlands. The share of manufacturing industry is only around 5% in average of the total number of enterprises whilst the annual growth rate of overall businesses is 2%.

Figure 6 Number of businesses in the UK private sector per 10,000 adults, UK region and country, start of 2016



Source: Business Population Estimates for the UK and Regions 2016.

Table 6 Business statistics by regions and countries of the UK

	Number of Enterprises (Thousands)	% Change on year	per 10,000 resident adults	Employers (Thousands)	SMEs (0-249 emp) (Thousands)	Manufacturing enterprises %
North East	147	8%	679	39	146	5%
North West	522	-2%	896	133	521	5%
Yorkshire & Humber	391	3%	895	98	391	6%
East Midlands	371	4%	972	93	370	5%
West Midlands	413	3%	892	108	413	7%
East of England	556	5%	1,130	131	555	5%
London	1,012	3%	1,464	221	1,011	3%
South East	900	2%	1,243	200	898	5%
South West	516	-3%	1,144	120	516	6%
England	4,827	2%	1,088	1,144	4,817	5%
Wales	222	4%	872	54	222	6%
Scotland	325	-5%	728	95	324	6%
Northern Ireland	124	6%	845	34	124	5%
United Kingdom	5,498	2%	1,040	1,325	5,492	5%

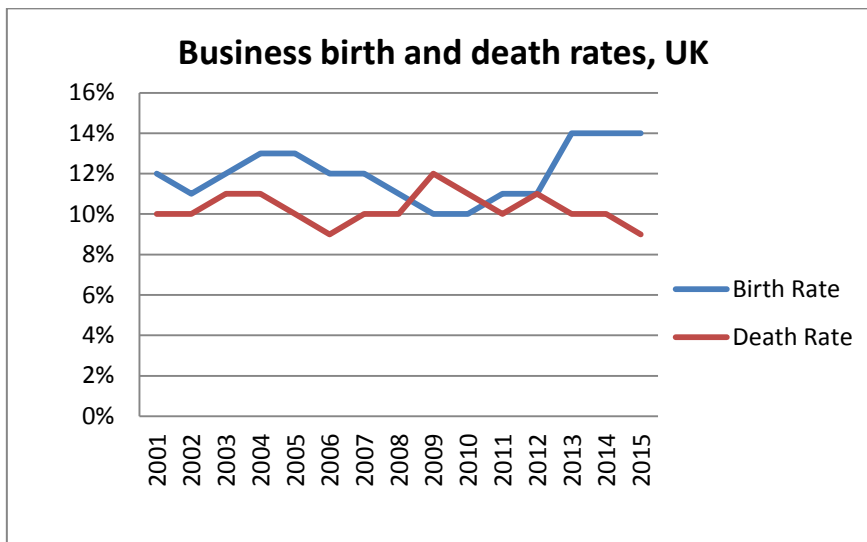
Source: BIS, Business Population Estimates Notes: Data relates to the start of 2016 Numbers rounded to the nearest 1000

Table 7 shows the businesses distribution of industry sectors in the UK. Over 70% of businesses, employment and turnover came from the service sector, whilst the professional and scientific represented 15% of the total number of businesses, 10% of total employment and 8% of total turnover. This suggests that most of the professional and scientific services are self-employed businesses. On the other hand, retail services represented 19% of total employees dispersed in 10% of the businesses. A similar situation can be seen in construction sectors; there

are more self-employed businesses. The size of manufacturing firms is relatively large. Finally, the retail services and manufacturing had the largest share of turnover among all industry sectors in 2016.

The prosperity of an industry is also determined by its business cycle and Figure 6 listed the birth rate and death rate of overall industry sectors in the UK. Birth business is defined as a business which starts trading in the statistical year while a dead business stops trading in the statistical year. Apart from post-financial crisis, the birth rate has surpassed the death rate during most of the time period. In 2015, there were 383,000 births which suggested a 32,000 increase compared to the previous year. The new birth business surpassed the death business by 131,000 from 2014 to 2015. In general, the mean birth rate in average is 12% while the death rate in average is 10% across the whole time period.

Figure 7 Business birth and death rate in the UK



Source: Business Statistics, House of Common Library, 2016

Table 7 The structure of businesses by industry sectors, 2016

Businesses by Industry in the UK		Number of businesses		Employment		Turnover
		(Thousands)	%		%	%
Agriculture, mining and utilities		182	3%		3%	6%
Manufacturing		266	5%		10%	15%
Construction		975	18%		8%	7%
Total Services		4,075	74%		79%	72%
Of Which:						
	Retail	544	10%		19%	36%
	Transportation	314	6%		5%	5%
	Accommodation & Food	186	3%		8%	2%
	ICT	338	6%		5%	6%
	Financial and Insurance	89	2%		4%	-
	Real estate activities	106	2%		2%	2%
	Professional and scientific	824	15%		10%	8%
	Administrative & support service	460	8%		11%	6%
	Education	312	6%		2%	1%
	Health and social work	348	6%		7%	2%
	Arts and Recreation	252	5%		3%	3%
	Other service activities	303	6%		3%	1%
Total		5,498	-		-	-

Source: BIS, Business Population Estimates Notes: Data relates to the start of 2016 Numbers rounded to the nearest 1000 Turnover % does not include financial services Number

In summary, the structure of business in the UK has shown the importance of SMEs to the economy. To increase productivity and turnover by adopting E-commerce business pattern has been discussed since 2000s. The Electronic Commerce (EC Directive) Regulations 2002 and other related regulations have provided the fundamental framework of E-commerce business. In the next section, we further investigate the B2B market in the UK in conjunction with classifications by firm size and industry sectors. It released the current status of the B2B market in the UK and provides potential implications to its development in the near future.

2.3 The Structure of B2B market in the UK

Unlike China, where SMEs own 50% of the B2B market, the structure of B2B market in the UK is more close to the US in that large firms play an important role. The value of E-commerce sales over EDI from firms with more than 1,000 employees has surpassed £160 billion since 2014 while the value share of overall SMEs is less than 15%. We find more skewed sales distribution for website sales in Figure 7 after we exclude micro-businesses from the sample. Given the limited value of sales from micro-business in previous analysis, large firms have dominated the domestic market of B2B E-commerce in the UK since 2009. Although they account for 99.3% of the total number of businesses, the sum of E-commerce value through B2B for SMEs was only around £50 billion which is one-third of large and giant firms. The value of sales for businesses with employees between 10 and 49 is £9.7 billion, whilst for businesses with employees between 50 to 249 employees it is £35.6 billion.

Figure 8 B2B and B2C E-commerce sales over a website in the United Kingdom (UK) from 2012 to 2015

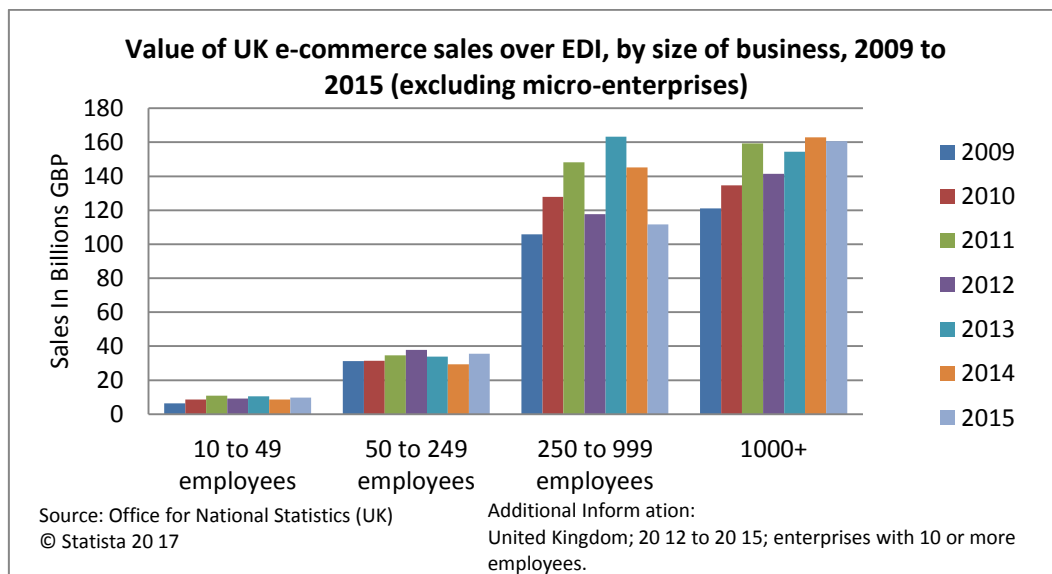
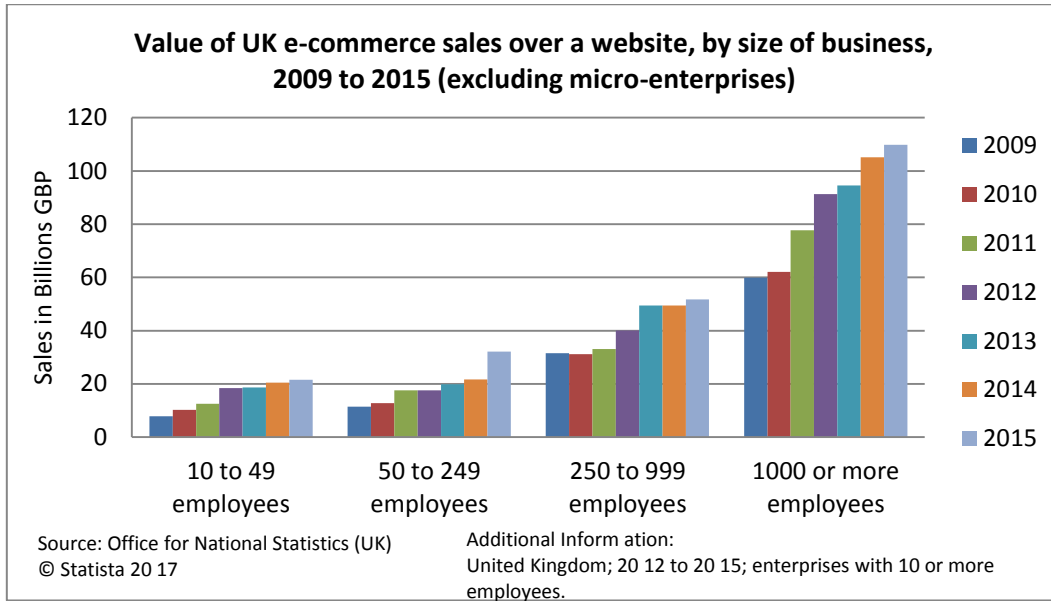


Figure 9 Segments of E-commerce by industry in the UK, 2009-2015



The value gap between SMEs and large businesses (250-999 employees) is close for E-commerce over website, although the sum of E-commerce value for SMEs is still half of the sales value for giant businesses (over 1,000 employees). In 2015, the sum of E-commerce sales for SMEs was £53.7, which is almost 50% of the sales value for giant businesses through website.

Figure 8 show that over 50% of UK businesses attending B2B exhibitions between 2012 and 2013 are small firms with revenue of less than £250 million. Moreover, 56.3% of those attendances are first-timers. With the development of B2B through website in the UK, more and more SMEs has adopted to pattern of E-commerce and collaboration with giant businesses through online platforms. In general, large businesses use B2B while the use of B2B E-commerce for SMEs is still low. However, given that the growth rate of sales values for SMEs through website is 64%, while the growth rate for giant firms is only 45% during the time period, SMEs are expected to play more important role in the near future.

Figure 10 Revenue of UK businesses attending B2B by size of business, 2012-2013

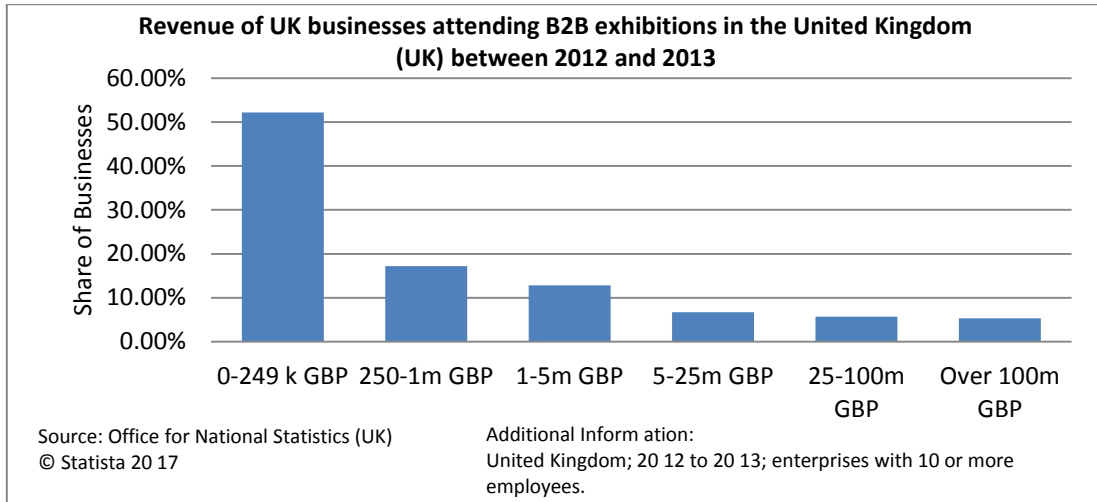


Figure 9 also show the distribution of E-commerce by industry sectors from 2009 to 2015. It is unsurprising that whole sales and manufacturing industry sectors have the highest value of total E-commerce sales at £189 billion and £155 billion respectively. Construction reports the highest growth rate at 50% in 2015, although total sales are still smaller compared with sectors. The distribution of E-commerce sales shows that the adoption of E-commerce still appears in the traditional industries rather than service industries, which have the largest share in the UK economy.

Figure 11 Segments of E-commerce by industry in the UK, 2009-2015

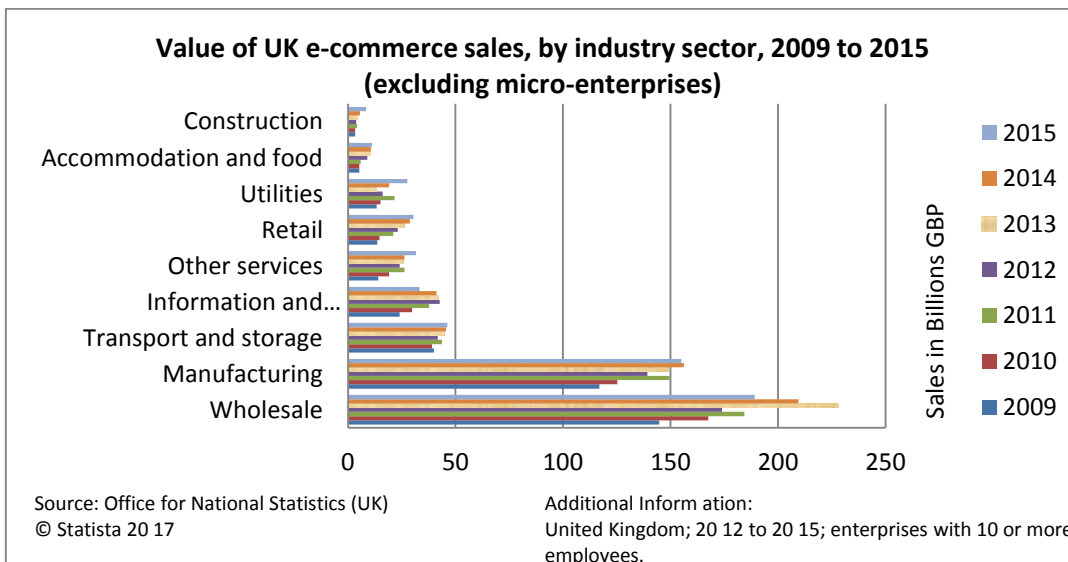
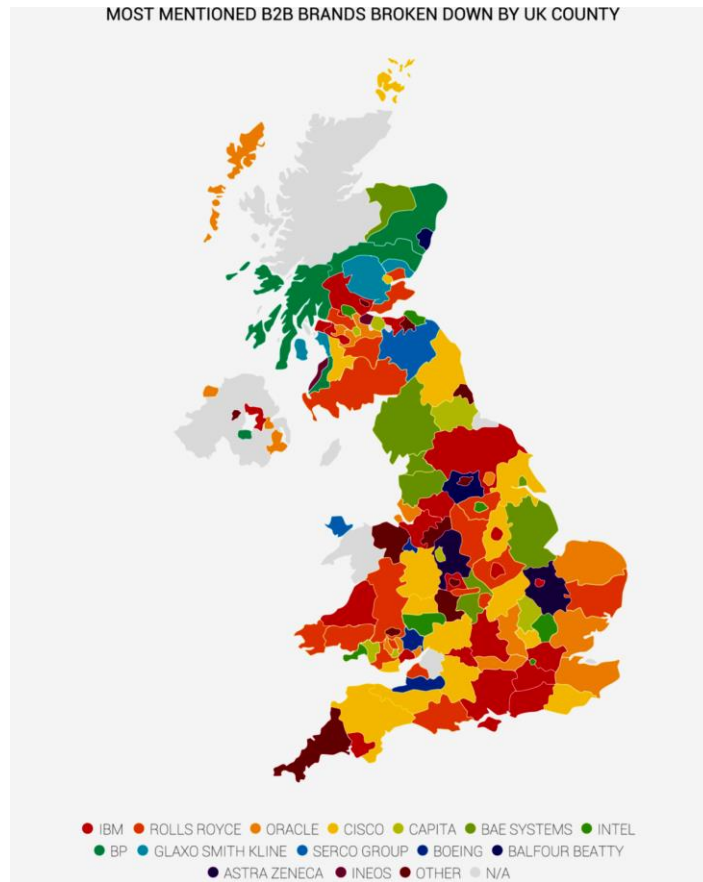


Figure 12 Most mentioned B2B Brands Geographic Distribution, 2015



Source: B2B Social Media Report, Brandwatch, 2015.

Large firms currently dominate the B2B market in the UK. However, the penetration of each brand name is geographically uneven. Figure 10 shows the most influential B2B brand name according to region. IBM and Rolls Royce are more often to be mentioned in the south, while BP and Serco Group are more likely to be mentioned in northern Scotland. Moreover, urban areas focus on different brand names than rural areas. For example, IBM was mostly mentioned within the urban areas of each administration in the Midlands and Northeast. Moreover, IBM dominated the London area, which has a more advanced economy and intensive social media network. On the other hand, those natural resource based E-commerce markets are more likely to mention brand names such as BP in Scotland. It also implies that SMEs should also consider the great local impact of those large firms when becoming involved in B2B E-commerce.

2.4 Use of social media and mobile devices by E-commerce businesses

Another essential factor of E-commerce business is the Internet and various social media that help to build the link between firms and consumers in the E-commerce market. It is also important for firms engaged in B2B E-commerce, to establish their connections with potential

business partners through social media networks such as Twitter and Facebook. Apart from E-commerce through EDI, most of the E-commerce transaction through website can be achieved on a desktop computer or laptop. However, the development of mobile phone has made website browsing “on the go” more popular. Businesses that are slow to react to such changes may see a potential reduction in E-commerce growth and sales.

The 2015 report on E-commerce and ICT activity shows that 50.1% of all businesses in the UK have a website. Most large firms, over 97%, had a website, and 86% of medium sized firm with employees between 10 and 49. Only 46.8% of micro-firms had a website. Considering the structure of E-commerce sales shown above, it can be partially explained by the very high value of E-commerce by large firms compared with SMEs. In terms of internet access, micro-firms also had the lowest Internet access compared to medium and giant firms. Higher internet connection speeds makes the process of E-commerce business quicker and smoother. Similarly, small firms have much slower internet access speeds, while 56.3% of large firms use broadband with internet connection speed over 100Mbps.

Use of website as a channel for B2B Commerce is a passive way of interacting with potential customers. With the development of social media, including Facebook and blogs, a positive connection between business partners can be established. Over a third, 35%, of all the businesses used social media to interact with customers in 2015. With 39.5% using social network rate, manufacturing industries become the top industry in terms of social network use. Especially, 17.3% of all the businesses use blogs or microblogs, such as Twitter, while 76.7% of giant firms used these types of social media for business connection. The firm size determinants social networks use.

Figure 13 Internet purchasing and access to the internet "on the go" using a portable computer, 2015

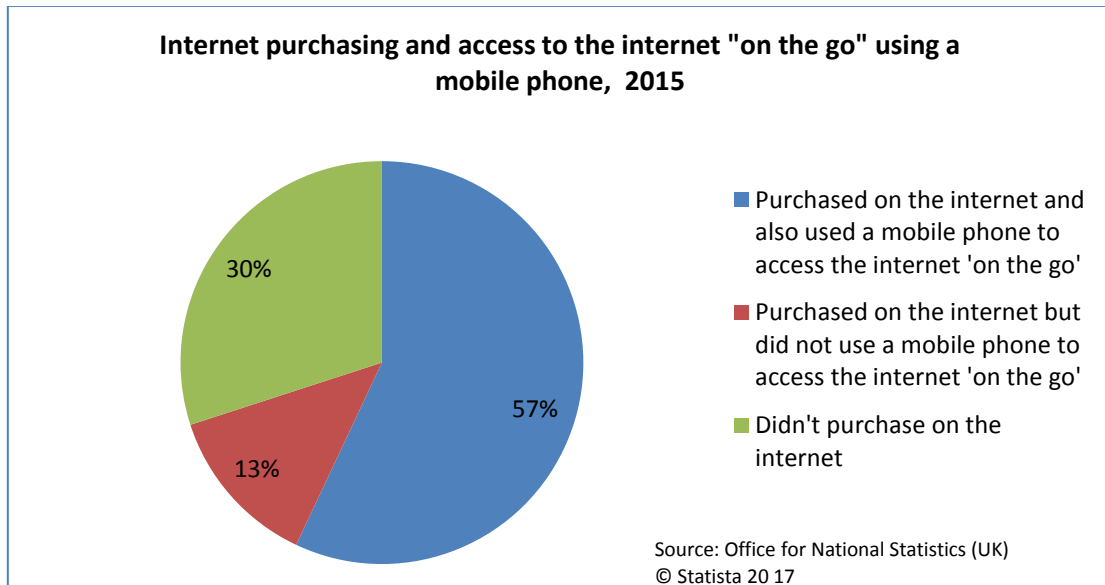
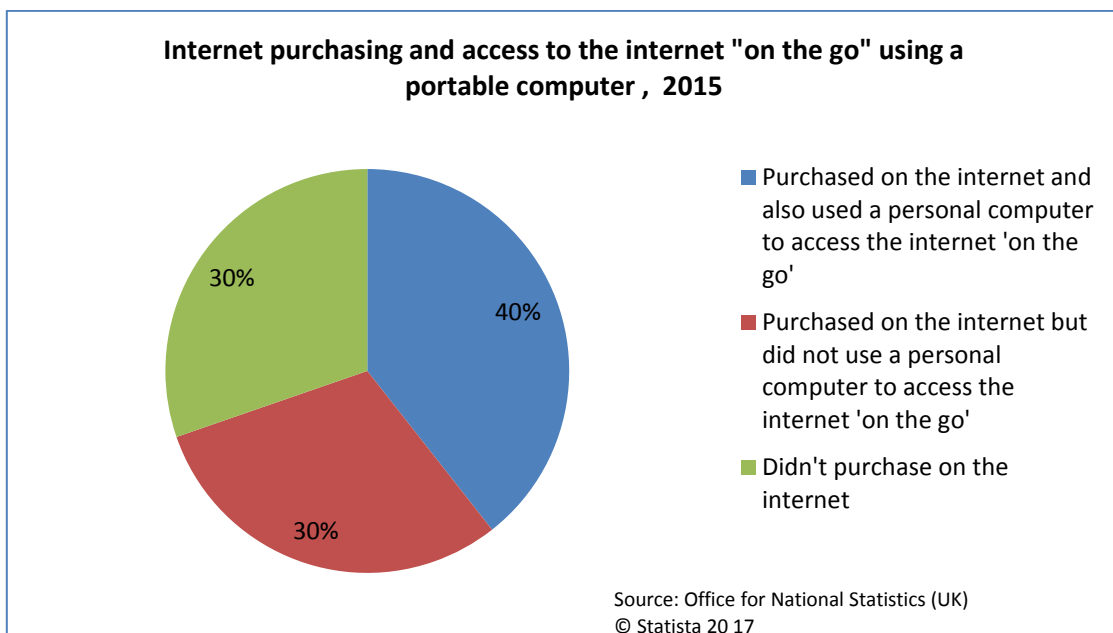


Figure 14 Internet purchasing and access to the internet "on the go" using a mobile phone, 2015



The development of internet access devices has had a great impact on E-commerce. People are more likely to look at products online through their mobile phones. Geographically, regions with higher wireless network coverage may have relatively advanced B2B E-commerce development.

3. E-commerce Regulatory Overview

Apart from laws and regulations on trade and other commercial activities, four directives and laws cover online sales. The Distance Selling Act 2000 concentrated on consumer rights while others are more focused on E-commerce business regulations in terms of business setup and information confidential protection. This section reviews data protection and information protection during E-commerce business procedure and discusses the core regulations of E-commerce based on the Electronic Commerce (EC Directive) Regulations of 2002.

3.1 The Data Protection Act 1998 and ICO Cookie Law

Information on customers, including address, preference, personal details and characteristics, can be collected by business partners through E-commerce for marketing. In the UK, there are two laws that protect customers from inappropriate usage of collected data from online buyers. The Data Protection Act 1998 lists the general regulations in terms of data collection and use.

An E-commerce business should register at the Information Commissioner's Office and pay a small registration fee. The business cannot collect information or data that are not related to their business activities. They are responsible for customer data and information security and customers have the rights to request and remove the data from the database. A clear notification must be indicated in terms of the use of collected data on the business website. The data must not be taken out of the EU without the permission of customers. Finally, the business must specify the terms and conditions of data use outside the the EU by third party organizations and provide guidance on how to remove the data. Cookies are applied to record and track the path of visitors using portable computers, mobiles or other devices. More comprehensive explanation and details can be found on <http://ico.org.uk>. The "ICO Cookie Law", updated in 2011, aims to protect the right of visitors when cookies record shopping information and entice visitors to purchase more using this information. E-commerce

3.2 The Electronic Commerce (EC Directive) Regulations 2002

The Electronic Commerce (EC Directive) Regulations 2002 implement the EU's Electronic Commerce Directive 2000 into UK law. The Directive was introduced to clarify and harmonize the rules of online business throughout Europe with the aim of boosting consumer confidence. E-commerce in the regulation is defined as "any service normally provided for remuneration at a distance, by means of electronic equipment for the processing (including digital compression) and storage of data, at the individual request of a recipient of the service". The requirement for an information society service to be 'normally provided for remuneration' does not restrict its scope to services giving rise to buying and selling online. It also covers services (insofar as they

represent an economic activity) that are not directly remunerated by those who receive them, such as those offering online information or commercial communications (e.g. adverts) or providing tools allowing for search, access and retrieval of data". However, the directive and regulations have exceptions to taxation; betting, gaming or lotteries; data protection; the activities of a public notary; the representation of a client and defense of his or her interests before courts; or cartel laws.

In general, the regulation concerns E-commerce businesses in the UK rather than customers. The key principle of the regulations is the "Country of Origin" that businesses should comply with the regulation of the country in which it was established. Therefore, a UK business may only need to comply with the regulation when doing business with partners in other EU countries. Of course, the "Country of Origin" principle has some exceptions when it conflicts with public policy; protection of public health; public security, including the safeguarding of national security and defense and protection of consumers, including investors of other member states in the EU.

The regulations cover the full procedures of business from business E-commerce. A business should provide a name on their website, an accurate address for direct communications beyond its postal and email address, other details of the service provider, including its email address. The registration number of business, the particulars of the relevant supervisory authority if the services are subject to an authorization scheme, details of any professional body or similar institution with which the service provider is registered, his or her professional title, and the Member State where that title has been granted, besides reference to the applicable professional rules where the service provider exercises a regulated profession, and finally the accurate price with and without tax and delivery fees must be placed on the website and invoice of the online order.

In terms of commercial promotion of activities through email or text message, the regulations constrain the size of SMS message to a maximum 160 characters and a URL of a website where more information can be obtained should be placed at the end of the message. Such commercial messages either by email or by text message must clarify the commercial purpose; the person it is sent on behalf of, and clearly describe the conditions if there is a promotion code or voucher. For unsolicited commercial messages, the regulations state that: "A service provider shall ensure that any unsolicited commercial communication sent by him by electronic mail is clearly and unambiguously identifiable as such as soon as it is received". The main requirement for online contracts from the regulations is to ensure the legal system allows the contracts to be conducted online and its legal validity does not deprive due to its online characteristics.

The directive requires all member states to ensure the electronic signature is valid and allows the legal system allows contracts to be concluded online. Report on E-commerce by the Law Commission for England and Wales in 2001 especially mentioned that statutory requirement of “writing” and “signature” are able to be provided by e-mail or online trading.

There are also clear rules for online orders and delivery. The seller must provide the steps to follow to conclude the contract, the technical means for identifying and correcting input errors prior to the placing of the order, and the languages offered for the conclusion of the contract.

The seller must provide "appropriate, effective and accessible technical means" to allow buyers to identify and make corrections before completing their orders. A knowledge receipt must be sent out without undue delay by electronic means. Receipt of the order must also be acknowledged without undue delay by electronic means. Other detailed regulations such as the form acknowledgement and targeting E-commerce transactions are also provided.

As the Internet server provider, the sellers are generally free of liability of any damage, any other pecuniary remedy or for any criminal sanction based on the information that illegal activity it caused.

3.3 Consumers' Right

The Distance Selling Act 2000 and the Electronic Commerce (EC Directive) Regulations 2002 are two regulations that include the terms of consumer rights. The Distance Selling Act 2000 lists comprehensive regulations to protect consumer rights, excluding B2B transactions. On the other hand, the contract sections of the Electronic Commerce (EC Directive) Regulations 2002 list the very important principle that “Country of Origin” is not applicable to the terms of consumer contracts. Therefore, one may need to comply with regulations of the countries where the customers are located.

4. An overview and development of Logistics in the UK

The UK Logistics and Posts Sector is a £55 billion business that accounts for 5% of GDP in the UK. There are 63,000 companies employing 1.7 million people. In recent year, rising fuel prices and climate change, increased competition, emerging markets and consolidation, and increase of outsourcing and developments in technology have impacted this business sector. Building a good reputation and providing various value added services is essential for having a competitive edge. In this regard, technology upgradation in this sector is important, for example, a web based tracking system not only helps the customers track the delivery of their purchases but also helps the logistics sector streamline their business processes.

The logistic sector in the UK can be classified as freight transportation, maritime and port operations, postal and courier activities and warehousing, storage and handling. The market share is dominated by local SMEs while some large firms include Gist, HOYER, P&O Ferrymasters, Stobart Group, and Wincanton. Other main logistics companies in the UK are listed in Table 8.

Table 8 Logistics Company in the UK

Logistics Company	
	<p>Autologic</p> <p>Established in 1996, Autologic was successfully floated on the London Stock Market in 1997.</p>
	<p>Vehicle Inspection At First Point Of Rest</p> <p>Vehicle Storage & Handling</p> <p>Vehicle Technical Work Scheduling: New Car Enhancement, Paint & Accident Repair</p> <p>Parts Ordering & Stock Control</p> <p>Vehicle Technical Work: Paint & Transportation Repair</p> <p>Vehicle Storage & Handling (awaiting transportation)</p> <p>Vehicle Transportation – Multiple Car Transport Delivery, Single Car Covered Delivery</p>
Examples	<p>Bishopsgate</p> <p>As providers of one of the most comprehensive distribution, handling and warehousing services available in the UK for hi-tech equipment, we have earned a reputation for excellence in the moving and special care of critical, delicate, valuable and cumbersome goods with our final mile, 2 man delivery solutions.</p>
	<p>Specialist transportation</p> <p>Assets loading / unloading</p> <p>Waste disposal handling</p> <p>Exhibitions</p> <p>End of lease returns</p> <p>Asset reclamation</p> <p>WEEE Asset Collections</p> <p>Relocation</p> <p>Site surveys and risk assessments</p> <p>Installations</p> <p>Project Management</p>
	<p>The Chartered Institute of Logistics and Transport in the UK</p> <p>Clipper Logistics Group</p> <p>GAC</p>
Others	<p>OBS Logistics</p> <p>Parcellforce</p> <p>Stobart Group</p> <p>TDG</p> <p>Unipac Shipping (UK) Ltd</p>

5. Empirical analysis and forecasting

5.1 The adoption and advantage of SMEs in B2B market

The development of E-commerce in the UK can be summarized E-commerce by looking at the conclusions of some academic studies.

Case 1. Adoption of E-commerce by SMEs in the UK: Toward a Stage Model

The adoption of B2B E-commerce for SMEs in the UK can be divided into four steps Daniel *et al.* (2002):

1. Stage 1. (Developers) These companies had the lowest level of E-commerce service in operation compared with the other following stages. The most common development areas in this stage include: developing email communication with customers and suppliers (87%), providing information about the company's products and services (85%) and the company itself (77%), such as website establishment and advertising and brand building through webpage.
2. Stage 2 (Communicators): The companies would make extensive use of email to communicate with customers and suppliers (90%) and the web to find business information (78%). To communicate with employees (57%) by sending emails and electronically exchanging documents and designs with customers and suppliers (56%). The most common development activity in this stage is mainly focusing on website build-up (73%) and product and service information development (59%).
3. Stage 3. (Web Presence) Companies were undertaking development activities including communicate with customers and suppliers by using email (95%), using the web to find external information (81%), using email between employees (63%) and electronically exchanging documents and designs (56%). The development of websites that introduce the company and its products and services has increased to 98% and 89% respectively. New developments include taking of orders (31%) and receiving orders on-line (24%).
4. Cluster 4 (Transactors) Apart from previous development activities, companies were additionally taking orders on-line (62%), providing after sales service or contact (62%) and taking recruitment on-line (44%). New development activities in this stage include receiving payments on-line (7%), ordering and payment of inventory purchasing (7%) and the delivery of digital goods on-line (6%).

Table 9 lists the results showing the significance of contextual variables at each stage of E-commerce adoption by industry sector and regions. A higher value implies higher E-commerce adoption value for each industry. Professional Services had the highest proportion of adoption at stage 1, 2 and 4 compared with other industries. On the other hand, Public/Health/Education/Charities have the lowest proportion of adoption at stage 4 suggesting that E-commerce was not attractive to the non-profit industry sectors.

Table 9 Nominal Contextual Variables by Adoption stage

Variables		Stage 1 (N=39)	Stage 2 (N=135)	Stage 3 (N=203)	Stage 4 (N=208)
Industry sector	Manufacturing	17.9	21.1	21	21.1
	Construction/Property	17.9	26.3	14.8	11.2
	Retail/Hospitality	3.6	12.6	17.3	17.1
	IT/Communications	0	4.2	5.6	10.5
	Professional Services	39.3	17.9	25.3	34.2
	Public/Health/Education/Charities	21.4	17.9	16	5.9
Region	London	33.3	29.6	29.5	22.2
	South England	15.4	22.2	17.5	21.2
	Central England and Wales	30.7	28.1	39.5	38.4
	North England and Scotland	20.5	20	13.5	18.2

In summary, Daniel *et al.* (2002) found that the companies with higher E-commerce adoption levels were more intent to export than those at lower adoption levels. SMEs which had experienced EDI or the BACS³ payment system were more likely to adopt E-commerce.

Case 2. The diffusion of E-commerce in UK SMEs

According to the research conducted by Wilson, Daniel and Davies (2008), SMEs can be classified in four categories depending on their stage of E-commerce development. These categories include: developers, communicators, promoters and customer lifecycle managers⁴

³ Bacs Direct Credit (also known as “bank transfer”) is a secure service enabling organizations to make payments directly into another bank or building society account.

⁴ http://oro.open.ac.uk/11228/2/JMM_E-commerce_in_SMEs_Revised_paper_24July06.pdf

Cluster 1 (Developers): This cluster appears, therefore, to represent companies at the very start of their e-commerce adoption, or companies with some intention to develop e-commerce but who to date have done very little in this regard. The most common areas of development activity were: communication with customers and suppliers, branding and providing information about the company and its products.

Cluster 2 (Communicators): The companies in cluster 2 were making extensive use of electronic media for communication with customers and suppliers and for finding business information, presumably in the main using Internet access and email. In this group the most common development activity was focused on the classic 'brochureware' Web site basics of providing company or product and service information.

Cluster 3 (Promoters): Companies in cluster 3 were undertaking electronically all of the activities which characterize cluster 2, such as communicating with customers and suppliers and finding external information. It comprises companies that are operating an information-only web site and are looking to develop transactional capabilities.

Cluster 4 (Customer lifecycle managers): Companies in cluster 4 were undertaking all of the activities from cluster 3, and in addition were far more likely to be taking orders electronically and providing after sales service. These companies may move on to develop new e-commerce capabilities which have not been discussed in this study.

Case 3. Critical success factors for B2B E-commerce use within the UK NHS Pharmaceutical Supply Chain

Cullen and Taylor (2008) provide a detailed discussion on the development of B2B E-commerce in the UK. Using survey data, the authors investigated the NHS pharmaceutical supply chain, and found that "system quality," "information quality," "management and use," "world wide web – assurance and empathy," and "trust" are important determinants of the success of E-commerce, though the relevance of each factor varies according to the party. Table 10 shows that the NHS and wholesale sellers are more concerned about the reliability of the system while firms who provide and purchase goods are more concerned about the reliability of business transaction. Information quality is crucial for all parties when engaging in E-commerce.

Case 4. Usage, barriers and measurement of social media marketing: an exploratory investigation of small and medium B2B brands

Using mail survey data, Michaelidou *et al.* (2011) investigates the use of social networks for SMEs in the UK. The study finds that almost 50% of SMEs use social network sites to attract new customers.

Table 10 Mean values for the five composite factors

Composite Factors	NHS		Wholesaler (purchase)		Manufacturer		Wholesaler (sales)	
	2		3		3		1	
F1 System Quality	4.44	(1.09)	3.86	(1.04)	4.19	(1.05)	4.32	(1.09)
	1		1		2		3	
F2 Information Quality	4.67	(1.15)	4.13	(1.11)	4.22	(1.06)	4.14	
	5		5		4		4	
F3 Management and Use	3.31	(0.81)	3.07	(0.83)	3.75	(0.94)	3.75	(0.95)
	4		4		5		5	
F4 WWW assurance and Empathy	3.66	(0.90)	3.41	(0.92)	3.57	(0.89)	3.35	(0.85)
	3		1		1		2	
F5 Trust	4.28	(1.05)	4.13	(1.11)	4.28	(1.07)	4.24	(1.07)
Average Mean Value	4.07		3.72		4		3.96	

Notes: Figures in parentheses are the standardized means within groups; figures in italics are the within-group rankings of each factor

5.2 Trends and forecasting of B2B in the UK

The growth of B2B in the UK has fallen behind B2C in the past decade. However, it has become the priority strategy of expansion for many enterprises in recent years. Studies find that B2B E-commerce in the UK is still reliant on low-cost Internet platforms. Given the great potential of B2B in terms of innovation, large and international firms have started to offer services through online platforms. In terms of online media, although EDI is the main media used for B2B, more transparency and comprehensive information would make websites more attractive. Searching Engine Optimization (SEO) could further increase the possibility of websites being viewed by potential customers without extra costs.

However, domestic SMEs may face increased competition on account of internationalization of E-commerce in B2B and the dominance of larger firms. One may also see an increase in the complexity of cross-border barriers, trade tariffs, currency volatility, and shortage of skilled labor supply.

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