The Brighton CDIT cluster three years later

Second Wave Firms Survey

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1. Introduction and methodology

1.1. Aim of the study

The Brighton Fuse report published in 2013 showed the extraordinary growth and vitality of Brighton and Hove's Creative Digital and IT companies (CDIT). While there was always anecdotal evidence of the cluster's rise since the 1990s the Brighton Fuse was the first systematic study that showed:

- Significant revenues and employment, our sample of 500 firms generated £231,166,481 in 2010-2011, and employed 3,162 people. The sample was 32% of our sample frame.
- High levels of growth and high levels of innovation. Average growth in revenues for 2010-11 was 14.7%. Only 1% reported no innovation.
- Interdisciplinary, 'fused' skills bases. 'Fused' and 'Superfused' firms that combined creative design with technology grew faster, and innovated more than 'Unfused' firms. This showed that high performance did not only depend on Science, Technology, Engineering and Mathematics (STEM) disciplines but also Arts and Humanities (A&H).

These results raised the profile of the cluster as well as our understanding of the nature of creative-digital work in the high growth sectors more broadly. Nevertheless, the Brighton Fuse project also addressed issues and challenges within the Brighton CDIT cluster and raised some questions that are as yet unanswered. The aim of this study is to add a second wave to the one cross-sectional study carried out in the first Brighton Fuse project in order to update basic figures and to address these aspects. In particular, this study will concentrate on three urgent issues: the on-going resilience of the cluster; business models of the firms; and skills required for CDIT work.

The first issue regards the resilience of the cluster and its ability to sustain growth over time. The first Fuse project showed the remarkable rates of growth for CDIT firms in a period of unfavourable economic climate in the UK. However, especially considering the relative small size of the firms in the cluster, and the young age of many firms included in the sample, we were interested to observe whether these rates of growth could persist over time, and how comparatively stable were the revenues of different sectors within the CDIT cluster. The first part of this report will discuss the resilience of the cluster in terms of survival and sustained growth, three years after the initial Fuse project.

The second issue is about business models, the ways that firms generate and capture value. The Brighton Fuse highlighted that Brighton CDIT firms have been able to achieve exceptional levels of inventiveness and innovation, but also that they found it more difficult to fully appropriate of the value of their work. This is part of the broader and long standing discussion about value creation versus value capture. One way to address this issue is to analyse in more detail what business models are adopted by Brighton CDIT firms, and whether some of them may be more conducive to a better value capture. The second part of this report will address this issue by studying in more depth the sources of innovations of Brighton CDIT firms, and identifying what business models are more often adopted by these firms.

The third issue regards skill gaps. The Brighton Fuse project highlighted the presence of barriers and challenges hindering the activity of Brighton CDIT firms, one of these barriers was related with skill gaps in the firms' workforce. Among other possible barriers like competition, these skills gaps did not prove to be the strongest, but these types of skills barriers were perceived more strongly by fused, innovative, and high growth firms. Thus, overcoming these skills gaps is crucial in order to ensure long-term prosperity in the entire clusters, since they seem to impact more significantly on the more successful firms. The third part of this study will break down these skills barriers identifying what types of skills are more problematic, it will concentrate on whether firms still perceive skills barriers three years after the first survey, and how firms are coping with this issue.

1.2. Methodology and data

The methodology of this study heavily builds upon the first Brighton Fuse project, since one of the main purposes of the second wave survey is to ensure it is comparable with the first wave of data. A short questionnaire has been developed including detailed questions about the three above-mentioned issues, which was then submitted to the same companies that took part in the first survey.

In terms of sampling strategy, the first step has been to check how many companies were still active after three years. We found that 423 out of 484 companies were still active. 14 businesses were excluded, since they were selected to take part in the freelancers survey, which was reported in the publication 'The Brighton Fuse 2: Freelancers in the Creative Digital IT Economy'.[1] These 14 respondents had participated in the first survey and were in fact limited companies run by a sole

[1] Sapsed, J., Camerani, R., Masucci, M., Petermann, M., and Rajguru, M. (2015) The Brighton Fuse 2: Freelancers in the Creative Digital IT Economy, AHRC. Available from: www.brightonfuse.com

director with no employees. This type of business is, in legal terms, a firm, but several nationwide studies - such as the Labour Force Survey - consider it as a self-employed worker with limited liability status. Consistent with this they have been included in the freelancer survey, and therefore excluded from the second round of the Fuse firm survey. Table 1.1 shows our sampling numbers.

Table 1.1. Sampling

Total firms surveyed in the first Fuse project	484	
Not active in 2014 or without info	-61	(12.6%)
Active firms	423	(87.4%)
Firms included in freelancers survey	-14	
Sampling frame	409	
Responses obtained	268	(65.5%)

This process yielded a list of 409 firms who have been invited to participate in the survey (sampling frame). The survey was carried out over the phone by a professional survey operator, using the questionnaire, and the survey tool provided by the Brighton Fuse researchers. The data collection was conducted in the period August-October 2014, obtaining 268 valid responses (65.5% response rate).

2. Resilience, survival, and sustained growth.

2.1. Survival rate

The first step in order to check the resilience of the cluster was to analyse the survival rate. The first Brighton Fuse survey was conducted in 2012 with questions referring to the financial year 2010-11, while the current survey obtained data for the period 2013-14. As a consequence, with the data collected, we were able to analyse the performance of Brighton CDIT firms over the three-year period between 2011 and 2014.

A total of 484 firms participated to the first Fuse survey in 2012. The existence of these firms in 2014 has been checked in Companies House and other sources (see Table 2.1), and we found that 42 closed down in the last three years (8.7%), 6 (1.2%) moved to another city or merged with a company operating in another place, and for 13 of them (2.7%) we could not find any information, which probably indicates that they are not in operation anymore. In total, 61 firms were inactive after three years (12.6%).

Table 2.1. Closures and departures

Total firms surveyed in the first Fuse project	484	(100%)
Inactive firms after three years	61	(12.6% of the total)
Closed down	42	(8.7% of the total)
Moved or merged	6	(1.2% of the total)
No info available	14	(2.7% of the total)

A higher than 87% survival rate after three years is a very positive result, especially if we consider the fact that the vast majority of the firms in our sample are small or even micro firms, and the fact that, at the time of the first survey, one fourth of the firms was younger than 5 years.

If we look at the characteristics of the firms that were still active after three years, we see that factors such as high rates of innovation and high turnover growth rates seem to be associated with a higher survival rate. In terms of firm age, more than 40% of the firms that did not make it after three years were startups (younger than five years), 80% had less than 5 employees (50% only one employee). The results about fusion are more puzzling, we found the highest survival rate for the fused firms, while unfused and superfused firms managed to survive less frequently. The sectors with the lowest survival rates are Web portals and e-commerce, followed by

Design services, Content, and the residual category "other" (mostly including business doing artistic crafts).

Table 2.2 shows some of the main events which occurred since the previous survey. The most frequent ones have been the change of name or rebranding, which occurred in 11.6% of the cases. Quite interestingly, more than 10% of the respondents have started a new related business indicating that a great level of entrepreneurial ferment in the cluster. Other businesses went through a process of merger (5.2%), or acquisition by (1.9%) or of (0.7%) another business, or a change of ownership (1.1%).

Table 2.2. Events since previous survey

Change of name / rebranding	11.6%
Started a new related business	10.8%
A merger with another business	5.2%
Moved office	3.4%
A change in your legal status	2.6%
An acquisition by another business	1.9%
Change of ownership	1.1%
Expanded: new office	1.1%
An acquisition of another business	0.7%
Stock market flotation / IPO	0.7%
Change of directors	0.7%

2.2. Growth and profitability

In terms of financial results, the last three years have been a period of consolidation and sustained growth for the Brighton CDIT cluster. Table 2.3 shows the comparison between the first and the second survey in terms of turnover, employees, and sales per employee.

The 'Fuse 1' report, based on 484 responses, highlighted a very high average turnover growth in the period 2010-11, equal to 14.7%. The same figure for the period 2013-14 is slightly lower (12%) but if we consider median growth rates, they appear much higher in 2014 than 2012 (8.5%, vs 3.8%). This indicates that even though the overall average growth rate is slightly lower in 2014 than 2012, in the most recent period more firms have been able to achieve a higher growth in their sales. This increase in sales reflected on employment, with the number of employees growing by more than 10% between 2013 and 2014. The median figure suggests that the cluster as a whole has been expanding, whereas the mean growth figure may be unduly influenced by a few 'star' performers.

The figures on turnover and employees indicate that the average size of firms has increased significantly. The average turnover grew from 623,000 to more than 956,000, and the employees from 6.7 to 9.4.

Also the productivity of employees measured by the turnover / employee ratio has increased significantly, from an average of almost £78,000 in 2012 to more than £101,000 in 2014.

Table 2.3. Turnover and employees in the two survey waves: average values and growth

	Survey 2014 (N=268)		Survey 2012 (N=484)	
	Mean	**Median**	**Mean**	**Median**
Turnover	956,043	250,000	623,000	175,000
Turnover growth	12.0%	8.5%	14.7%	3.8%
Employees	9.4	3.1	6.7	2.0
Employees growth	10.3%	0.0%	n.a	n.a
Turnover per employee	101,509	66,667	77,933	58,333

Note: The first Brighton Fuse survey was conducted in 2012 with questions referring to the financial year 2010-11, while the current survey obtained data for the period 2013-14.

One may think that the comparison between the two survey waves may be biased because the second wave only includes firms that successfully survived, some of which may also have undergone mergers and acquisitions, and that the second wave excludes a number of Ltd firms with no employees which were included in the freelancer survey. In addition, some firms may have answered the financial questions in one of the two waves, and opted not to respond in the other one. For all these reasons, we provided the same figures regarding firm performance for the firms that answered both surveys, and excluded firms that experienced any mergers or acquisitions during the last three years. These figures are reported in Table 2.4. Overall, the consolidation process is confirmed. During the last three years, the Brighton CDIT firms who managed to survive, also grew in size, on average.

Table 2.4. Turnover and employees figures for matched questionnaires only

	Survey 2014 (Mean)	Survey 2012 (Mean)
Turnover (N=170)	1,058,190	621,728
Employees (N=261)	8.7	6.7
Turnover growth (N=174)	11.9%	16.1%
Turnover per employee (N=157)	107,548	87,718

One of the issues that emerged from the first Brighton Fuse project was related to the ability of Brighton's firms to capture value from their activities. For this reason, the second wave survey included questions on profit and profit growth, since the ability to generate profits could be taken as a proxy for value capture (this question was not included in the first wave). The issue of value capture will be analysed in greater detail in the next section, while here only the average profit growth figures will be shown.

Table 2.5. Profit and profit growth

	Survey 2014 (N=268)		Survey 2012 (N=484)	
	Mean	**Median**	**Mean**	**Median**
Profit	75,847	37,500	n.a	n.a
Profit growth	15.6%	2.5%	n.a	n.a

The results are quite noticeable (Table 2.5), since the average firm obtained around £75,000 profits in the financial year 2013-14. On average only 5.6% of the firms reported to have experienced a loss, while 81.5% had a positive profit, and 12.9% broke even. Even more remarkable are the results about profit growth. On average, respondents reported a 15.6% increase in profits in the same period, which even exceeds the average turnover growth (12.0%), indicating a very good performance of Brighton CDIT firms in generating value and securing an adequate return from their investments.

2.3. Sectoral composition and fusion

One of the main results of the first Brighton Fuse project showed the great variety of activities carried out by CDIT firms in Brighton, epitomized by the multiplicity of sectors represented in the sample. Table 2.6 shows that this diversity is maintained after 3 years.

Table 2.7 shows the average performance by sector in terms of turnover, profit and employees growth. Arts organizations are the only ones experiencing an average decline in their turnover, which is however, compensated by a growth in profit, which could be partially explained by a contraction of the number of employees (-2.7%) that reduced the running costs of these organizations.

Table 2.6. Breakdown by sector

	Survey 2014 (percentage)
Architecture and Interior Design	4.9%
Arts organisation	8.2%
Content	20.5%
Creative goods and Crafts	5.6%
Design services	14.6%
Digital Agency	12.3%
Digital technologies	13.4%
KIBS	9.0%
Marketing services	8.6%
Other	1.5%
Web Portals and e-commerce	1.5%
	100.0%

The sector experiencing the highest turnover (and profit) growth is marketing services (+32.1%), followed by digital agencies (+17.6%), and architecture and interior design (+14.6%). It is observable that in general high turnover growth is accompanied by profit growth, with the notable exception of digital technologies and web portals whose profits grew much faster than turnover.

Table 2.7. Turnover, profit, and employees growth between 2013 and 2014 by sector

	Turnover growth	Profit growth	Employees growth
Marketing services	32.1%	32.1%	11.5%
Digital Agency	17.6%	20.6%	12.2%
Architecture and Interior Design	16.4%	16.0%	2.1%
Content	14.6%	19.6%	15.9%
KIBS	10.9%	9.7%	12.2%
Digital technologies	10.2%	23.9%	12.1%
Design services	8.8%	6.5%	13.2%
Other	6.0%	2.3%	8.8%
Web Portals and e-commerce	4.5%	8.5%	0.0%
Creative goods and Crafts	1.4%	1.3%	-1.7%
Arts organisation	-7.6%	6.5%	-2.7%

In terms of fusion, Table 2.8 shows that the breakdown of the sample in unfused, fused and superfused firms for the second wave, is very similar to the first one. As a reminder, fused firms are those who combine in their activities artistic/creative and technical knowledge, superfused firms do so more intensively, while unfused firms rely on less diversified sets of knowledge.

Table 2.8. Breakdown by fusion

	Survey 2014 (percentage)	Survey 2012 (percentage)
Unfused	34.7%	34.9%
Fused	29.8%	30.5%
Superfused	35.5%	34.7%
	100.0%	100.0%

The differences in the performance of firms controlling for their level of fusion is stunning (Table 2.9). Superfused firms experienced an average sales growth of 22.3%, profit growth of 25%, and employees growth of 20.6%, compared to fused firms that show growth rates more in line with the average, and unfused firms that are much below the average (particularly in relation with turnover growth, which almost stagnated in the period 2013-14).

Table 2.9. Turnover, profit, and employees growth between 2013 and 2014 by fusion

	Turnover growth	Profit growth	Employees growth
Unfused	0.6%	6.8%	2.7%
Fused	13.6%	13.9%	6.3%
Superfused	22.3%	25.0%	20.6%

Overall, three years after the first Fuse project, the CDIT cluster in Brighton seems in very good health. Only a relatively low percentage of firms closed down, and the average turnover growth rates are still double digit, with firms' profits growing, on average, even faster than turnover. Fusing creative and technical knowledge is still a key driver of success and prosperity for CDIT firms. According to our data, although being unfused does not seem to threaten the survival of CDIT firms, but it does significantly hamper their possibilities to grow.

3. Innovation, business models, and value capture

3.1. Innovation

The first Brighton Fuse showed that firms in the cluster have extremely high levels of innovation: 99% of firms were engaging in at least one of the standard innovation categories, which are also used in the regularly executed Community Innovation Survey. These include:

- New and distinctive goods and services
- New processes improving efficiency and service
- New materials that are eligible for copyright
- New software
- New business models
- Staff training, investing in employees' innovative skills

We did find that 59.9% of firms engaged in business model innovation in 2012, but there were other indicators that related to value creation and value capture. This was particularly where Intellectual Property was concerned: although we found 55.5% of firms were innovating materials that were eligible for copyright, only 8% had identified royalties as a source of revenue. Only 1% of respondents had applied for a patent and none had registered a design. This was consistent with our qualitative research where we learned that many firms were predominantly relying on work-for-hire type business models, which typically meant firms were creating value for clients rather than capturing it for themselves in less work-intensive modes.

Table 3.1. Percentage of firms engaging in different innovation activities

	Survey 2014 (percentage)	Survey 2012 (percentage)
New goods	49.3%	55.7%
Material eligible for copyright	49.6%	55.5%
New services	61.2%	63.7%
New software	37.7%	37.2%
New processes	66.4%	71.1%
New business strategies	56.0%	59.9%
Staff training	70.5%	60.4%
Register a trademark	7.5%	11.9%

Similarly to the 'Fuse 1' survey we asked whether respondents engaged in several modes of innovation in the period 2013-14. Results (Table 3.1) show that Brighton CDIT firms are still very innovative in both product/service innovation (61.2% of the firms introduced new services, 49.3% new products) and process innovation (new processes: 66.4%, new strategies: 56%), even though, in general, most of the innovation activities have been carried out slightly less frequently than in the previous survey. Staff training is the only mode of innovation that increased significantly from the previous survey, perhaps because of the skills gap that was highlighted in the discussions raised in Brighton Fuse.

Figure 3.1. Firms engaging in x modes of innovation

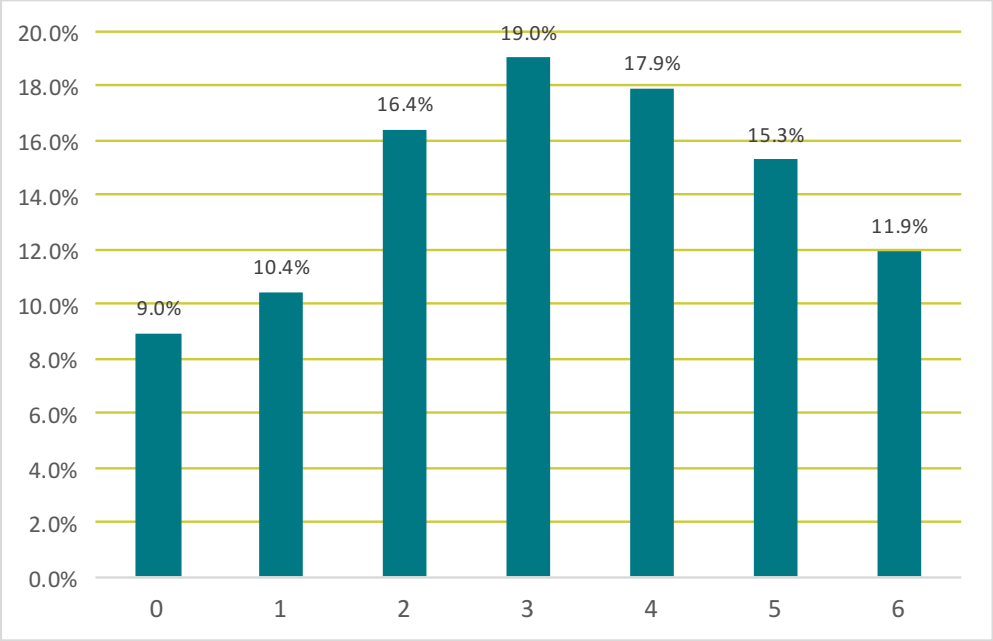


Figure 3.1 shows the breakdown of firms by number of innovation activities carried out in the period 2013-14. About 9% of firms did not engage in any innovative activity (it was 1% in the previous survey), 10.4% of them engaged in one innovative activity, and the rest in two or more simultaneously.

In general, there is a positive correspondence between innovation and firm performance (Table 3.2). We observe that the firms not innovating are the only ones that reduced both their sales and their workforce (although they still grew their profits), and that firms engaging in a lot of innovation activities (5 or 6) are growing much faster than the others in terms of sales, profits, and employees. The results for the other firms are less clear.

Table 3.2. Innovative activities and firm performance

Number of innovative activities	Turnover growth	Profit growth	Employees growth
0	-3.2%	11.4%	-4.4%
1	5.5%	7.3%	1.2%
2	8.7%	17.6%	-2.5%
3	16.8%	13.7%	17.3%
4	12.3%	6.1%	13.1%
5	14.1%	23.0%	13.6%
6	22.6%	29.1%	27.2%

How do we interpret the apparent decrease in innovation compared to three years ago? On face value we would see this decrease as a negative trend, given that these sectors depend on novelty and improvement to stay competitive, as we have seen from the performance results in Table 3.2. However it could be interpreted in other more positive ways. Perhaps at this point of economic recovery firms have found some innovations are finding their market or application, and that the search and experimentation need not be so frenetic as they need to be during the depths of a downturn. Innovation scholars have long debated the effects of downturns on motivation to innovate. Gerhard Mench had argued that firms are incentivised to introduce innovations more rapidly during depressions, while others like Christopher Freeman argued that there was no real evidence for this and the likelihood was that innovation slowed down during downturns[2]. Those debates were mainly concerned with large established firms doing conventional R&D. It may be that this population of startup firms are 'finding their range' with new services and processes and settling on the ones that work. It may therefore be natural that there is less frequent innovation search, especially given the healthy financial data and profitability, perhaps the problem of value capture is improving, as firms switch from exploration to exploitation. However the slightly increased number of firms that reported no innovation at all is perhaps a cause for concern.

Table 3.3 shows the average innovation activity by fusion, sector and size. In general, the level of innovation increases with the level of fusion and with firm size. The sectors that introduced more innovations are digital agencies, web portals, marketing services, and digital technologies.

[2] See an account of this debate in, for example, Coombs, R., Saviotti, P., and Walsh, V. (1987) Economics and Technological Change. New Jersey: Rowman and Littlefield, page 179.

Table 3.3. Innovation by sector and fusion

		Number of innovations
Average		3.2
Fusion	**Unfused**	2.7
	Fused	3.3
	Superfused	3.5
Sector	**Digital Agency**	4.1
	Web Portals and e-commerce	3.8
	Marketing services	3.5
	Digital technologies	3.5
	Design services	3.3
	Content	3.2
	KIBS	2.8
	Creative goods and Crafts	2.7
	Arts organisation	2.5
	Architecture and Interior Design	2.2
	Other	1.3
Size	**No employees**	2.4
	2-5 employees	3.1
	6-10 employees	3.8
	11-25 employees	4.0
	More than 25 employees	4.3

Another indicator that we bring to this second survey is the sources of innovation, which was not included in the first. The results here show that the most important source of innovation is internal to the firms, since 73.9% of the firms heavily rely on their employees as their primary source of innovation and new ideas. However, several other external sources are significantly important. This is the case with clients, suppliers, and professional networks. Also freelancers play a key role, about one third of the respondents rely on their freelancers as sources of innovation. Less important are other sources such as competitors, leaders and influencers, and universities.

Figure 3.2. Importance of different sources of innovations

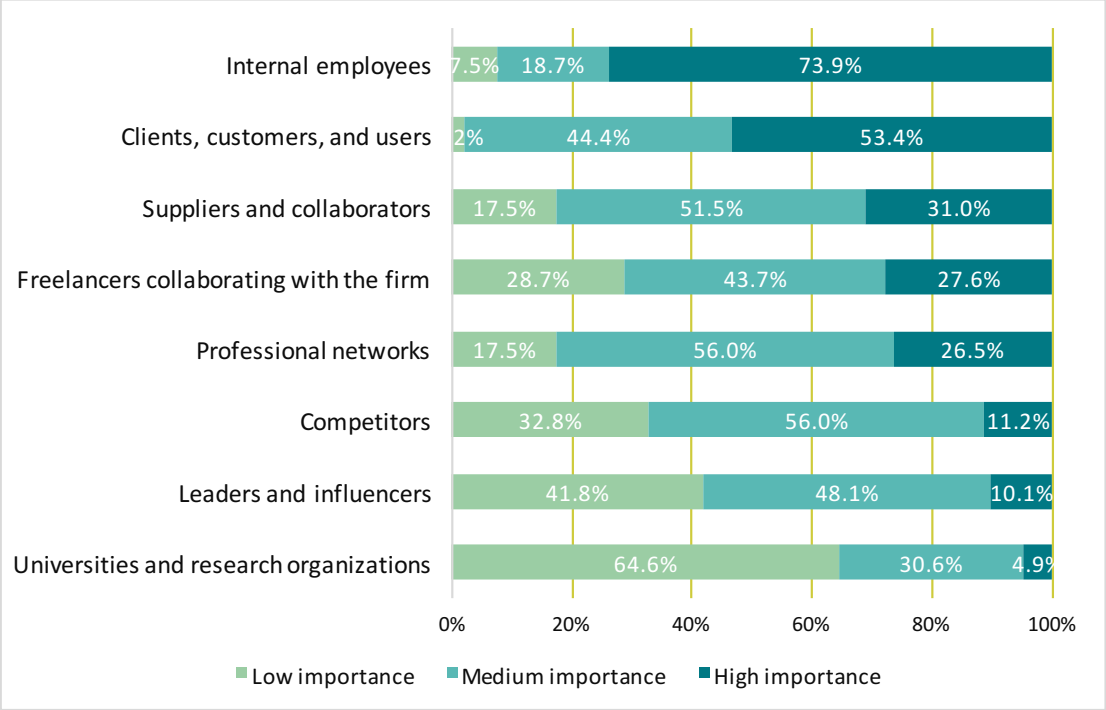
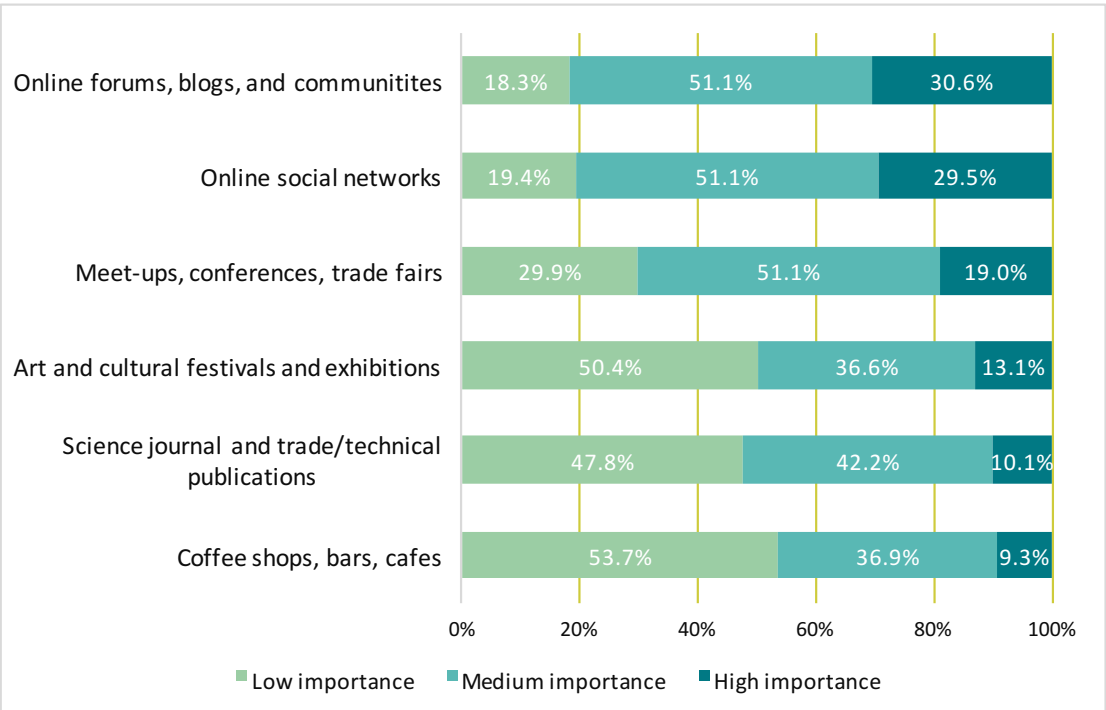


Figure 3.3. Importance of different channels and venues for accessing new ideas and innovations



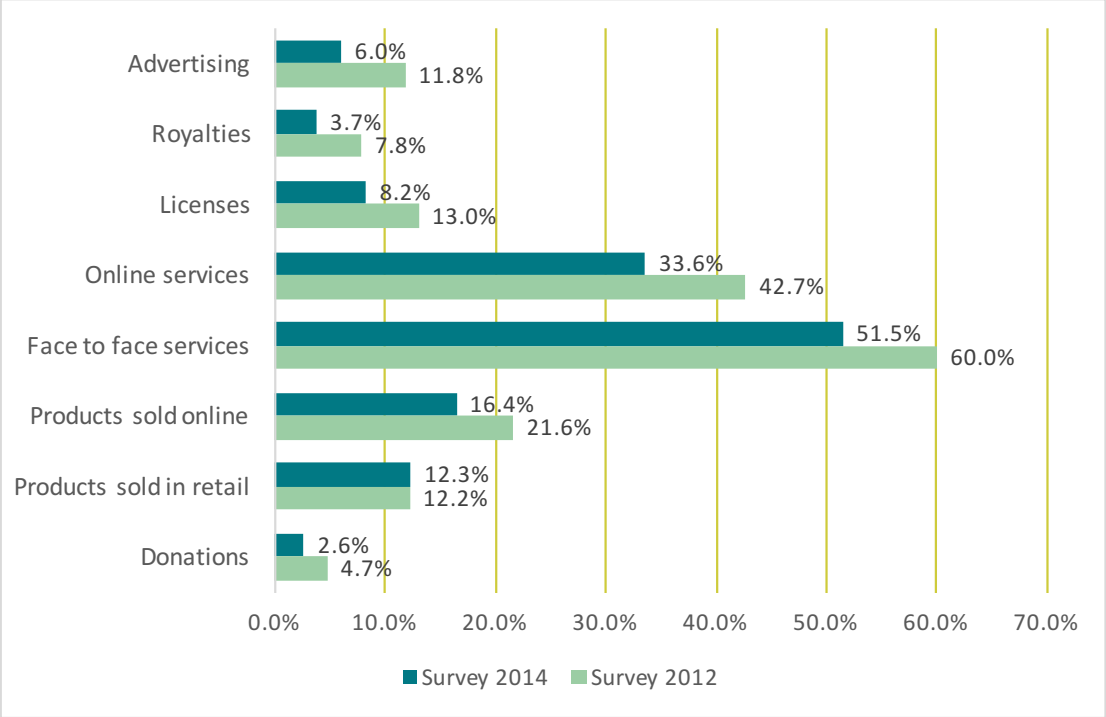
The two most important channels are web-based, the first one is online forums, blogs and communities, while the second is represented by social networks. They are followed by meet-ups and conferences. Less important are artistic and cultural festivals, and coffee shops and bars. Science journals and technical publications

require some further consideration. They are identified as highly important by 10% of the respondents, and somehow important by 42%, which is a quite surprising result if we consider that these sectors are usually not considered science-based.

3.2. Business models

In this section we present data regarding two important issues, the first about the sources of revenues for firms and the second about business models, the way those revenues are generated.

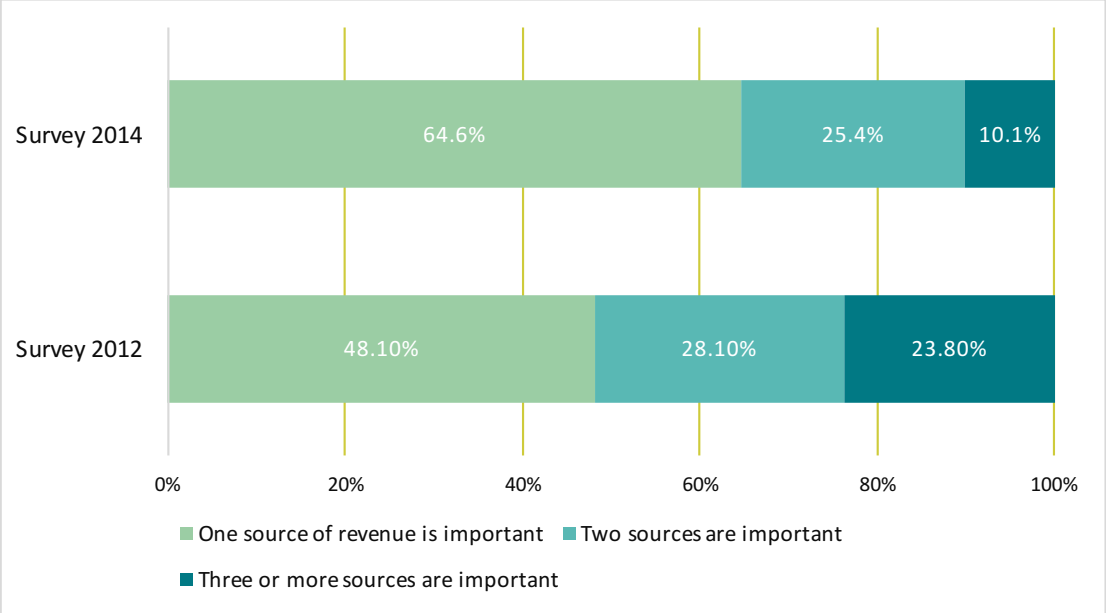
Figure 3.4. Relevance of different sources of revenues (% of firms considering them as very important) in the two surveys



We note that the relative importance of each single source of revenue is always lower in the second survey compared with the first one. This may indicate that firms specialized in a smaller number of activities. This is confirmed by the figure below.

In the previous survey 48.1% of the firms considered only one source as important, for 23.8% three or more were important at the same time. In the second round these figures changed, 64% mostly rely on one source, and only 10.1% consider more than three sources of revenues important at the same time.

Figure 3.5. Level of specialization of CDIT firms in terms of sources of revenues



On the innovation results we noted that firms were innovating less frequently and speculated that this may be because they were finding some success with certain innovations and therefore decreasing their search activity. Consistent with this we find that they are focusing on less activities, with almost 90% relying on only 1 or 2 sources of revenue in the new survey. However when we look at the average level of performance for firms at each level (Table 3.4) we find that firms that have three or more significant sources of revenue appear to do well on performance indicators like turnover growth, profit growth, employees growth and innovation. Nevertheless the figures are not so clear-cut for the less differentiated, the average two-source firm has higher turnover growth than the average three-source firm, for example, and the average one-source firm has higher profit growth. We cannot definitively claim that greater differentiation is associated with better performance, although certainly three or more seems to pay-off more than only one.

Table 3.4. Average performance of firms for each level of differentiation in revenues

	Turnover growth	Profit growth	Employees growth	Innovation
One source of revenue is important	11.0%	16.4%	8.7%	3.1
Two sources are important	14.0%	9.1%	12.6%	3.2
Three or more sources are important	13.5%	28.8%	14.0%	4.1

Of course there will also be other variables in play, such as sector. The most differentiated sectors are: marketing services and digital technologies, which we know from our interviews tend to have a variety of sources of income since they involve quite versatile activities and generate higher revenues growth as sectors generally. Another significant variable in the ability to differentiate appears to be firm size: 80% of micro businesses (only 1 employee) rely on one source of revenue and 20% on two.

We also checked whether our respondents had changed the composition of their revenues between the first and the second survey. This means whether at least one source of revenue was changed from being "very important" to being "not important at all", or vice versa.

Table 3.5. Firms performance of firms that changed the composition of their revenues or not

	%	Turnover growth	Profit growth	Employees growth	Innovation
Did not change	57.1%	9.0%	11.7%	5.0%	3.0
Changed	42.9%	16.1%	21.0%	17.2%	3.4
	100%				

We found that 57% of the firms made some significant changes in the composition of their revenues. The sectors more prone to change have been design services, KIBS, digital agencies, digital technologies, and architecture. Innovating in business models that results in changed revenue sources appears to pay off in terms of revenues and growth. The performance of the firms that changed their types of revenues is higher for all the indicators considered.

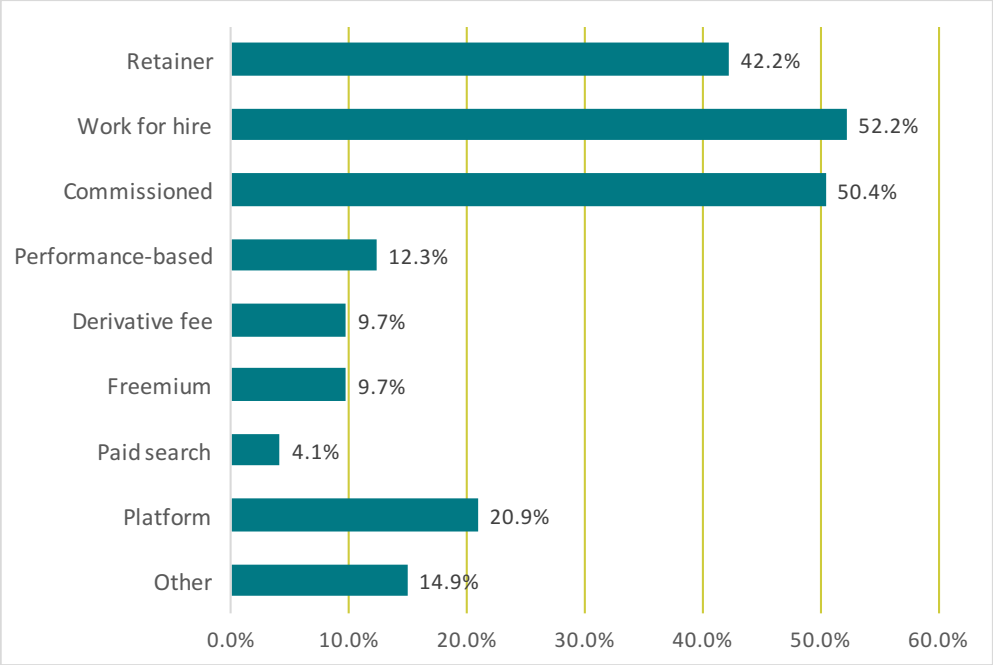
The second step has been to try to identify whether the firms in our sample have adopted one or more business models. The list that we worked from in the questionnaire includes business models known to be very frequently used by firms in the CDIT industries, as well as types that emerged as important from the 77 face-to-face interviews carried out during the first Brighton Fuse project.

We discussed the variations and distinctiveness of business model types at length during the questionnaire design and tested how these should be presented in the questionnaire with practitioners.

The business model types and a brief description were given in the questionnaire exactly as follows:

- **Retainer model**. A client pays you to work for an extended period, often with an indefinite end date or intention of continuity
- **Work for hire**. You deliver work for a client over a period with a clear end date and the client keeps the IP
- **Being commissioned**. You deliver work for a client over a period with a clear end date and you keep the IP
- **Performance-related payments**. You are paid based on results, such as a percentage of increased sales for your client
- You charge a **derivative fee** on transactions (including micro payments from online transactions)
- **Freemium**. You provide free access to online services or content with extras chargeable for a fee
- **Paid search**. You receive search-related advertising income
- You provide a **platform** for user generated content.

Figure 3.6. Business models in the CDIT cluster (% percentage of firms considering them very important for their business)



Work-for-hire and commissions are the two most important, used by a majority of firms. According to our definitions above and in the questionnaire the distinction between the two is that with commissions the developer/supplier keeps the IP. Since commissions are almost as prevalent as work-for-hire this may be an indication that value capture is not such a problem. However we should also remember that

royalties and licensing income is still very low for firms, so although it may be that firms are retaining IP they do not appear to be making on-going revenues from that IP. It appears therefore that the commissions are important as short-term projects at this point, albeit with potential for greater value capture than the work-for-hire.

We find that the retainer model is indeed important to a large number of firms, as suggested by our interviews in the first Brighton Fuse project. This model that has been long been a standard in professional services including advertising, seems to continue in its current digital manifestations of digital agencies and marketing services, as seen in Table 3.7. Our interviews have suggested that these firms employ a number of business models, as confirmed by this survey data, but they prefer to work on a retainer basis and try to move regular work-for-hire clients onto this model. This has the advantage of stable income but also allows for time and resource to develop longer-term campaigns and 'off-piste' types of innovative work that would be precluded by projects with defined deliverables.

We also find that the retainer is important for the digital technologies sector. This will include various on-going service and support arrangements, where firms may be contracted to be on-call as and when required. This may also include online subscriptions that entail work on the part of the developer. The retainer is an interesting model that has not been researched so much as more project-based forms of organising business.

Table 3.7. Business models by sector (higher than average emboldened)

	Retainer	Work for hire	Commissioned	Performance-based	Derivative fee	Freemium	Paid search	Platform
Architecture and Interior Design	15.4%	46.2%	**69.2%**	**23.1%**	7.7%	0.0%	0.0%	0.0%
Arts organisation	18.2%	22.7%	45.5%	**13.6%**	**13.6%**	4.5%	0.0%	13.6%
Content	34.5%	**56.4%**	**60.0%**	**18.2%**	7.3%	**14.5%**	3.6%	16.4%
Creative goods and Crafts	6.7%	13.3%	13.3%	0.0%	6.7%	0.0%	0.0%	6.7%
Design services	**43.6%**	**66.7%**	**61.5%**	7.7%	2.6%	7.7%	0.0%	**33.3%**
Digital Agency	**66.7%**	**78.8%**	**51.5%**	3.0%	6.1%	3.0%	**9.1%**	**30.3%**
Digital technologies	**66.7%**	50.0%	50.0%	5.6%	**13.9%**	**13.9%**	**5.6%**	19.4%
KIBS	29.2%	50.0%	50.0%	**29.2%**	**20.8%**	**16.7%**	**12.5%**	20.8%
Marketing services	**69.6%**	**56.5%**	39.1%	**13.0%**	8.7%	8.7%	4.3%	**30.4%**
Other	25.0%	25.0%	25.0%	0.0%	**25.0%**	**25.0%**	0.0%	0.0%
Web Portals and e-commerce	0.0%	0.0%	0.0%	**25.0%**	**25.0%**	**25.0%**	0.0%	**25.0%**
Average	42.2%	52.2%	50.4%	12.3%	9.7%	9.7%	4.1%	20.9%

Online business models like freemium, derivative fees and platforms are used by the high growth web portals sector, with paid search used by digital agencies, digital technologies and design services, as well as Knowledge Intensive Business Services, which use a variety of different business models. As we might expect, Table 3.8 shows that larger firms tend to use a broader range of business model types.

Table 3.8. Business models by firm size. (higher than average emboldened)

	Retainer	Work for hire	Commissioned	Performance-based	Derivative fee	Freemium	Paid search	Platform
No employees	40.3%	55.2%	56.7%	11.9%	3.0%	4.5%	1.5%	11.9%
2-5 employees	39.6%	49.1%	43.4%	11.3%	10.4%	8.5%	4.7%	20.8%
6-10 employees	38.5%	59.6%	57.7%	15.4%	11.5%	11.5%	0.0%	23.1%
11-25 employees	60.9%	47.8%	52.2%	8.7%	17.4%	13.0%	8.7%	30.4%
More than 25 employees	55.6%	44.4%	50.0%	16.7%	16.7%	27.8%	16.7%	38.9%
Average	42.2%	52.2%	50.4%	12.3%	9.7%	9.7%	4.1%	20.9%

Looking at the economic performance associated with business model differentiation shows again a mixed pattern. Table 3.9 suggests that higher growth and innovation is associated with a more differentiated business model portfolio, but not all the indicators show this, performance being a complex effect of different factors. Innovation however does increase with each level of differentiation.

Table 3.9. Performance of firms with different levels of differentiation in their business models

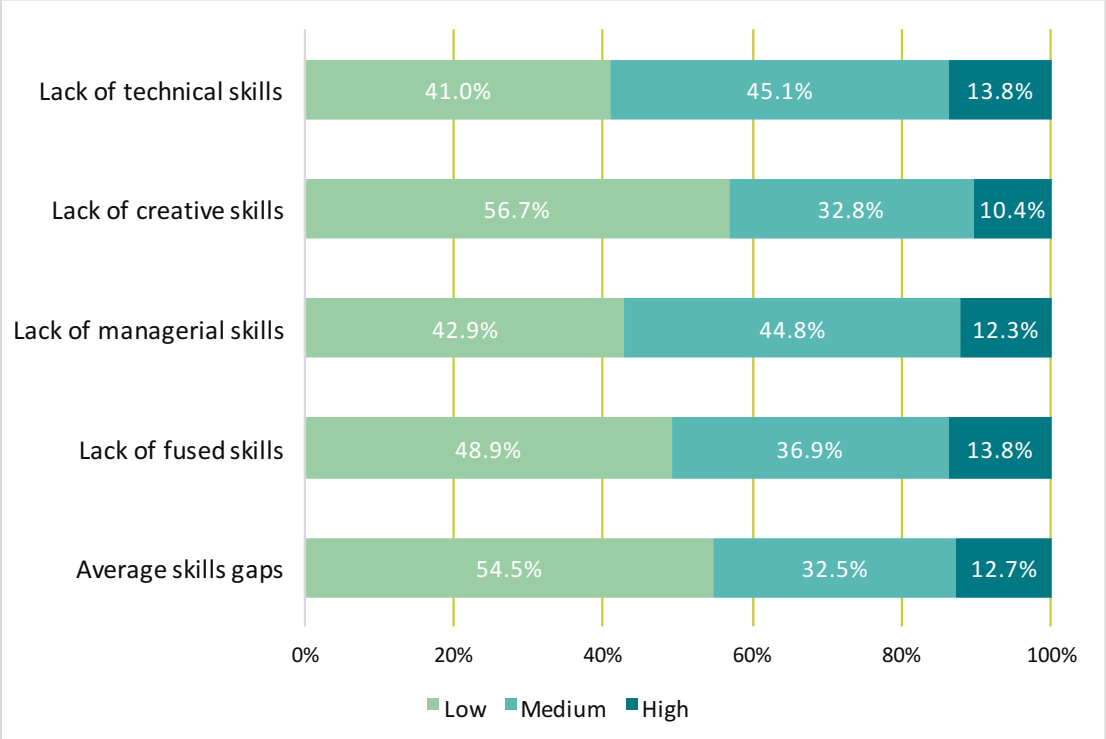
	Turnover growth	**Profit growth**	**Employees growth**	**Innovation**
One business model	**10.4%**	**10.3%**	**2.4%**	**2.5**
Two business models	**9.4%**	**18.2%**	**14.4%**	**3.4**
Three business models	**18.6%**	**22.8%**	**9.2%**	**3.6**
Four business models or more	**11.5%**	**11.8%**	**26.8%**	**4.5**

4. Skills

The first Brighton Fuse project showed that Brighton CDIT businesses experienced a number of barriers hindering their growth. Skill gaps figured among these barriers. They were not considered particularly relevant by the average firm, but were considered very important for some categories of firms such as superfused, high growth, and innovative firms.

This section provides further analysis on skills gaps in Brighton CDIT firms. The first step is to break down these skill gaps into more detailed types of skills. In particular, the survey investigated four types of skills: technical, creative, managerial and fused (talent combining creative and technical skills).

Figure 4.1. Relative importance of different skill barriers



Similarly to the first Brighton Fuse survey, on average most of the firms perceived skills barriers as moderate, with a relative small percentage considering them as very relevant (ranging between 10.4% and 13.8%).

However, if we look at the various skills gaps for different sub-categories of firms we note that superfused, innovative, and high-growth firms experience higher skills barriers than the average for all the types of skills considered. Specifically, fused skill gaps are - almost by definition - more problematic for superfused firms, fused, and managerial skills gaps are the highest ones for highly innovative firms, while high

growth firms suffer in particular from technical skill gaps. While one would expect that small and micro firms could have more problems to acquire new skills due to lack of resources, our data shows that the relevance of skill gaps increases with the size of firm, with medium and large firms experiencing skills barriers more often than the small ones.

Particularly interesting is the comparison of the results of the two survey waves. The situation, in fact, does not seem to have improved much during the last three years, on the contrary it has worsen. Only 18% of the firms declared that their skill gaps have lowered since the first survey, for 55% of the firms they remained the same, while 27% of the firms are experiencing higher barriers.

Figure 4.2. Importance of different ways to acquire new skills

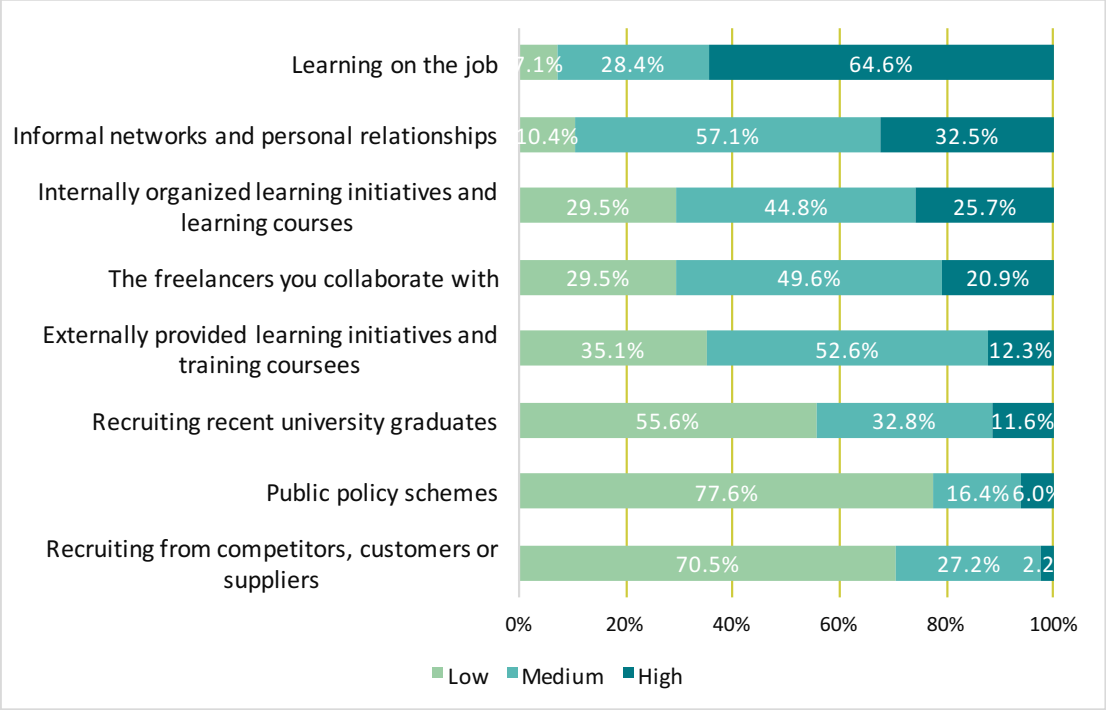


Figure 4.2 shows how firms try to cope with these skill barriers, by rating the importance of different ways to acquire new skills. Learning on the job is by far the most important way to acquire new skills for the firms in Brighton CDIT sector (64.6%), followed by informal networks and personal relationships (32.5%), and internally organized learning initiatives (25.7%). Quite interestingly, recruiting from competitors, customers or suppliers seems to be a very infrequent practice for the firms in the cluster; perhaps showing that these firms pay particular attention to business ethics issues. Also the figure about freelancers is very interesting, for more than 20% of the firms, the freelancers they collaborate with are a very important source of new skills. If we compare this with the previous results of the importance of freelancers as a source of innovation, we could definitely conclude that

freelancers definitely play a key role in the cluster that goes well beyond providing services and consultancies to local firms. Comparing these results with our study of the Brighton CDIT freelancers is also intriguing, as we found freelancers appeared to be more self-reliant in their learning, compared to the importance of networking to these firms.

Table 4.3. Barriers to learning and new skills development

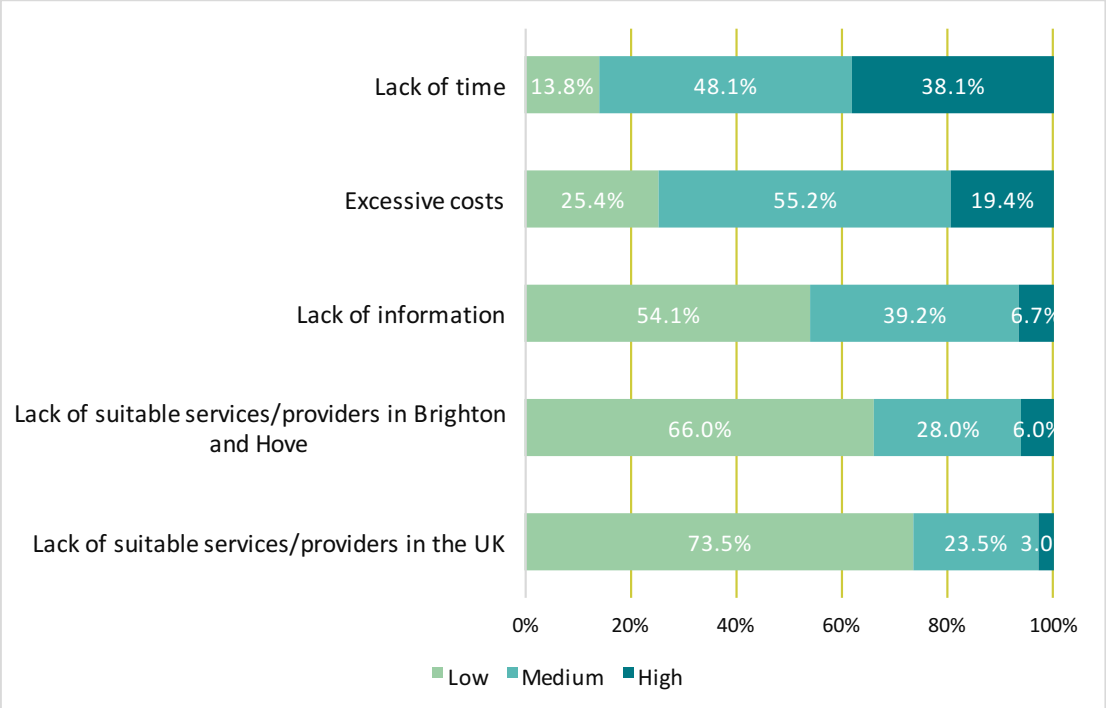


Figure 4.3 reports the main barriers to learning and new skills development faced by firms. The most important one is lack of time, followed by excessive cost. Relatively less important are the other barriers, such as lack of information, and lack of suitable services (locally and nationally).

In conclusion, skill gaps remain a critical issue. Even though these skill gaps are not generally perceived as problematic, they are still considered a challenge for specific categories of firms that are crucial for the success of the cluster (superfused, highly innovative, medium-large size, and high growth firms). On top of that, although more than 70% of the firms have provided training for their staff (see section 3.1) the skill gaps did not improve since the previous survey.

At the same time, according to the results of the survey, surveyed firms claimed to have all the instruments to cope with these skill barriers (there are enough solutions at local and national level), and they deem lack of money, and especially lack of time as the main barriers to new skills development.

It may be that the solution to these skills gaps must include some merger of internal and external business knowhow as well as that of the organisations with centuries of dedication to knowledge and learning: the universities. This is likely to require new modes of engagement however, judging from the barriers perceived by firms..

5. Conclusions

The original Brighton Fuse study showed that firms in the Brighton and Hove cluster were prosperous and innovative, combining arts and technology skills in productive ways and had connective tissue with other firms, freelancers and institutions in the city. The research also showed that firms face barriers to further growth and for the high growth, innovative and 'superfused' firms it is the availability of skills that prevents them from scaling-up to new levels.

Three years later we conducted a survey among those firms who had responded to the first survey to assess whether those results were a phenomenon of their time or whether there are deeper, structural tendencies in the cluster. We also used the opportunity to ask questions that we had not asked in the first survey, on profitability, and business models.

The first encouraging result was that the survival rate was over 87% of firms, a remarkable figure for a sample of young firms in uncertain, immature markets. High revenue growth and innovation is associated with these surviving firms. We found that there is still remarkable turnover growth in the cluster, even while it is slightly lower than the 2012 mean figure, it is still extraordinary at 12%. Moreover, there has been an interesting shift in the sample over the three years as shown by the median figure, which is higher than in 2012 suggesting the preponderance of firms have moved up as a collective. Some high-fliers in 2012 may have won some major projects but the overall health of the cluster looks more vital in 2014. This has been a period of consolidation and solid growth.

As regards our new questions, we also found that over 80% of firms were profitable, which is again a very high level of performance since many of these firms are effectively start-ups. This informs the on-going debates stimulated by the Brighton Fuse as to whether firms are capturing value or just generating it for others. The high level of profitability would seem to suggest that firms are able to accumulate and therefore invest in their businesses. In terms of business model types we found a range of ways to engage with customers among the sample, with the three most important being work-for-hire, retainers, and commissions. Over 50% of firms have important commission work, which suggests that firms are indeed retaining IP, however we also note the low level of revenues for royalties and licensing so

perhaps that IP is not yet paying-off. The patterns of business model differentiation and their effects on performance are complex and there is much in the results to fuel these debates, without resolving them.

Finally we also raised again the issue of skills, the absence of which was a known barrier to growth with superfused, innovative, high-growth firms. This is still the case. Not only has the problem not improved but it has actually worsened, and this is in spite of the one increase in innovation over the last three years: internal staff training. The provision of skilled talent to work in these high growth businesses is not a simple process to remedy. We suggest it is unlikely to be resolved through any one initiative of any one actor or category of actor within the cluster, and will need the collective intelligence and effort that has sustained it in other areas.