Creative Fuse North East WP7 Fuse Ethnography
Creative Fuse North East: Knowledge production, interdisciplinarity and innovation
(End of project work package research report)

Dr Audrey Verma[1] and Dr Cathrine Degnen[2]
[1] audrey.vermajames@gmail.com / audrey.verma@newcastle.ac.uk
[2] cathrine.degnen@newcastle.ac.uk
Sociology, School of Geography, Politics and Sociology
Newcastle University
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1. Research introduction

This research was undertaken by Dr Audrey Verma and Dr Cathrine Degnen. It constitutes Work Package 7 (WP7) of the Creative Fuse North East (CFNE) project. The research of WP7 is funded by the AHRC (Arts & Humanities Research Council) and primary ethnographic fieldwork was carried out over the period of 19 months between December 2016 and July 2018. The focus of the research is the nature of knowledge production in the interdisciplinary and cross-sector collaborations of CFNE.

2. Creative Fuse North East overview and the ethnographic context

This section serves to provide a background of CFNE and details key aspects of our research context. We highlight here i) the project's history and some of its primary socio-political underpinnings, ii) the sprawling scale of CFNE's networks and structures, and iii) the complexities of operations, relations and interests within the project.

Creative Fuse North East (CFNE) is a regional cross-university and cross-sector project building on previous Fuse projects in London (2012-2014) and Brighton (2011-2013). Fuse projects are broadly premised on the idea that 'fusion' – defined in terms of creative-digital interdisciplinarity – leads to greater innovation and economic growth. This definition, that may be read also as a hypothesis, originated from the work of the CIHE's (Council for Industry and Higher Education)[1] creative, digital and IT (CDIT) taskforce, first articulated in The Fuse report published in September 2010. Empirically, the idea of fusion was rooted in the taskforce's observation of increasing co-dependence between digital platforms and content creation, resulting in the emergence of new job roles that called for a combination of technical and artistic skills and the proliferation of environments where, as a key stakeholder instrumental in the formation of Fuse described, "the creative talent that develops content and services are as vital as the technologists who deliver them" (hence also the construction of the CDIT umbrella by the task force). Strategically, by highlighting the economic importance of creative arts and humanities disciplines, the fusion hypothesis was intended in part as a balance to dominant policy narratives and funding models that privileged science, technology, engineering and mathematics (STEM) subjects.

Led by the five North East universities (Durham, Newcastle, Northumbria, Sunderland and Teesside), CFNE draws on the concept of fusion to engage with the CDIT sector in the North East of UK. The partnership of the five universities on this project was borne out of the pre-existing networks of the North East Culture Partnership (NECP) that focussed on the region's creative and cultural industries. The bid for CFNE, commissioned by the AHRC in late 2014, was a collective response from a core group of people who knew each other and had worked together on previous cross-sector collaborations dating back to 2001. The bid for CFNE was solicited and iteratively shaped by the five university partners and the AHRC, subject to peer review lasting for over a year from early 2015. Early proposal drafts were critiqued for being too university-focussed, research-oriented and leaning too heavily toward interventions in cultural organisations. Steering pushed the project more towards business support and a focus on the CDIT sector. The accepted bid blended both research and applied elements, with an emphasis on the latter, that would be undertaken over the period of two and a half years (30 months between May 2016 to October 2018).

[1] now the National Centre for Universities and Business (NCUB)

CFNE's approach may be seen as experimental in part as there were two phases proposed, and the interventions of the second phase would be fleshed out based on the research findings emerging out of the first phase. The first phase of the project involved an empirical mapping of the region's CDIT sector, primarily through an online (later also phone) questionnaire survey of the sector. This survey was conducted between December 2016 and June 2017. The survey research was designed to i) paint a better picture of the region's CDIT sector and to understand the sector's needs and gaps that CFNE could go on to address in its second phase, and ii) provide data that would allow comparison of the effects of fusion by region (i.e. the North East of England compared to Brighton).[2] Although the survey was the key feature for the project during the first year, much of the energies of the core group (i.e. CFNE project management and Operations Group) during this time were also directed at laying the groundwork for university-business/public organisation collaboration through the mobilisation of networks. These networks, created or activated chiefly through the efforts of the Operations Groups members, core academic staff at the partner institutions, and through monthly CAKE (Collaboration and Knowledge Exchange) events, were intended as the basis for the applied second phase of the project.

The second phase of CFNE involved, in part, the application of knowledge gleaned from the first phase to develop and implement 'Innovation Pilot' or 'Innovation Development' initiatives, funded by the AHRC. For ease of reference within the project, these initiatives were generally referred to as Pilots, and we adopt this reference for the purposes of this report. The aim of the Pilots was to encourage CDIT-centred innovation by bringing different academic disciplines together, and facilitating collaboration between businesses, public organisations and academics from the five North East universities. These Pilots were also seen as a potential testbed for models of knowledge transfer between smaller business players and arts and humanities academics, relatively untested grounds compared with more common and established collaborations between natural sciences disciplines and larger corporations or industries.

There were two competitive rounds for funding of Innovation Pilot Grants (of up to £5,000) or Innovation Development Awards (of up to £25,000). The first was an internal call with partner universities leading on bids, and the second was an open call where bids were led by businesses or public organisations. Where the internal call comprised paper-based applications followed by a closed panel selection, the open call was refined to shorter paper-based applications followed by a pitch-based selection. The selection panels in both rounds were made up of project management, representatives from the partner universities and from the region's industry and public sector. CFNE stipulated that all applications must be submitted from a consortium consisting of at least one freelancer or one small or medium-sized enterprise, and staff from at least two of the partner universities. Consortiums had to illustrate how their proposals were responding to an identified demand from the region's CDIT sector.

A parallel stream to these Pilots in the project's second phase was ERDF (European Regional Development Fund) and ACE (Arts Council England)-funded activity. Leveraging on the AHRC monies, the ERDF funds constitutes a pot of monies for investment in the regional economy through the partner universities. Although the five universities operate as a regional consortium, the ERDF funds had to be obtained through two separate Local Enterprise Partnerships – Tees Valley Local Enterprise Partnerships (TVLEP, covering Teesside

[2] Please refer to the initial CFNE report (July 2017) for a more detailed account of the project's survey findings.

University's involvement) and North East Local Enterprise Partnerships (NELEP, covering the involvement of Durham, Newcastle, Northumbria and Sunderland Universities). These funds are tied to specific deliverables (e.g. business support, knowledge transfer programmes, student placements) and subject to strict audit by the DCLG (Department for Communities and Local Government), with mechanisms for clawback of funds in place if targets are not met by the end of the project.

The responsibility for meeting ERDF targets is shared between the five institutions, proportionate to each institution's financial footprint in the project, and governed by a collaboration agreement. Each institution decided individually on how best to deliver its programme to meet its targets. While some of the partner institutions would deliver their targets primarily through the procurement of external services, others used in-house resources, and yet others balanced between both methods. The ACE monies were a supplementary fund intended to facilitate the participation in CFNE of creative practitioners and organisations. The complex "patchwork quilt" of CFNE's funding structures and governance is represented in Fig. 1. A collective decision was however made by the core group to present the project as an undifferentiated and coherent whole to external stakeholders: This meant that no strict difference was made to external participants between the separate funding streams and agendas.

In addition to the complex funding structures and governance, the extensive partnership across the five universities and numbers of external stakeholders made for a sprawling project. Fig.2 gives a sense of the scale of CFNE in terms of the multitude of immediate and ancillary actors involved, which in turn shaped the complex relations and varied interests present in the project. We estimate conservatively that across the partner universities, Steering Group and Advisory Board, over 130 people were directly involved with the CFNE project. This figure does not include ancillary actors and the dozens of businesses and organisations that were engaged in various ways throughout the project, particularly in the AHRC-funded Pilots and ERDF/ACE-funded activity during CFNE's second phase.

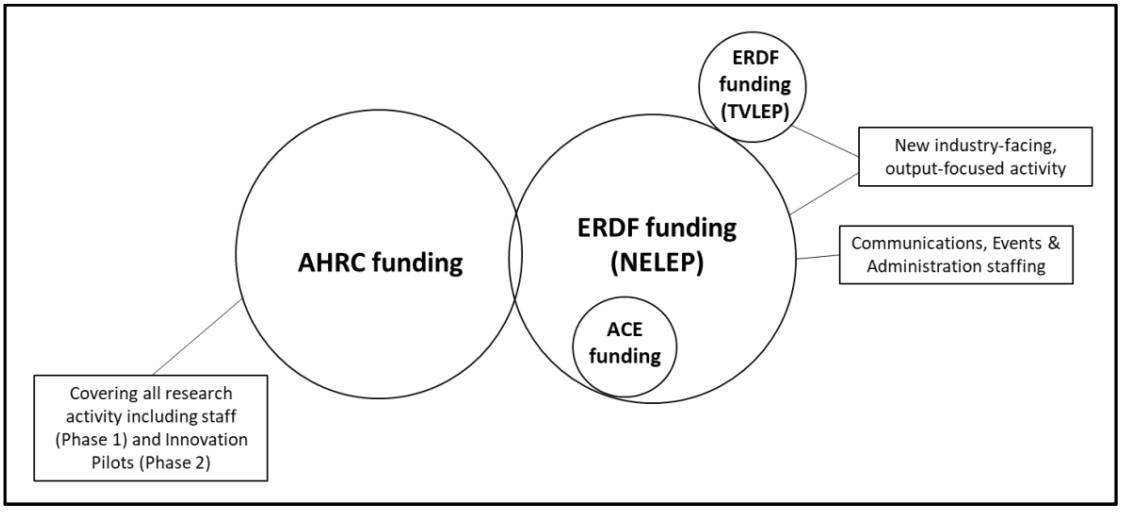

Fig 1. Creative Fuse North East funding (not to scale)

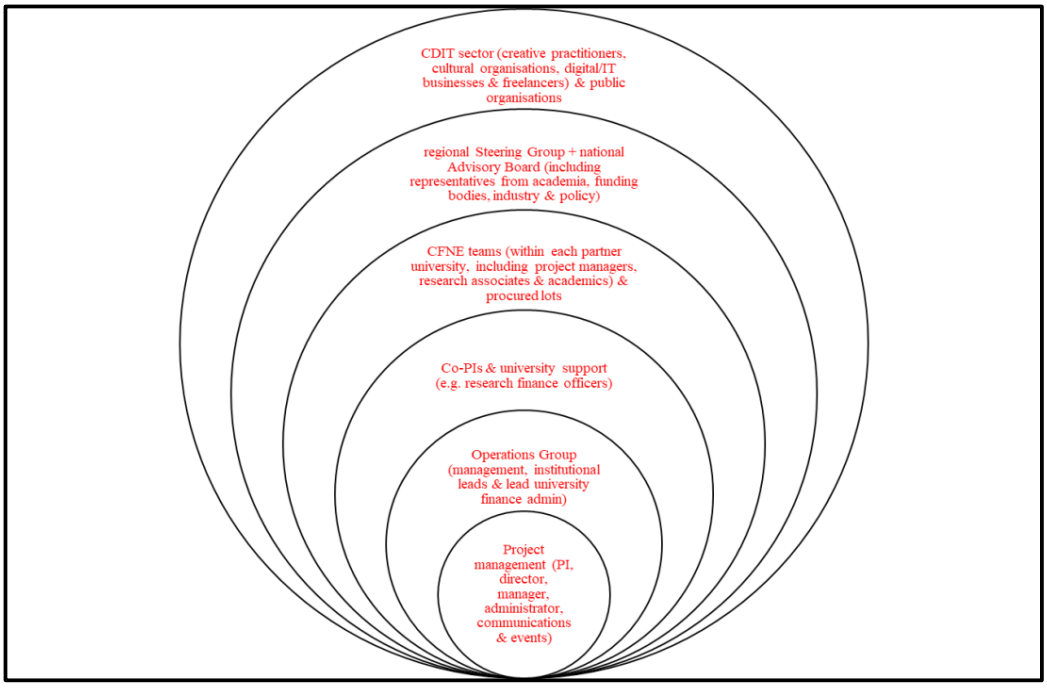

Fig. 2: Creative Fuse North East's participants and stakeholders

3. Research aims

WP7 set out to ethnographically document CFNE with a view to critically understand the nature of knowledge (co-)production within the interdisciplinary and cross-sector project. This involved looking at the processes, practices, networks and narratives of the project at two broad levels. First, we examined CFNE in terms of the localised engagements between the multiple academic disciplines, institutions and cross-sector interests involved in the project. Second, we considered the sociocultural applications and logics of interdisciplinarity and innovation within the wider institutions and networks that CFNE is embedded in. The overall task of WP7 has thus been to capture knowledge production within CFNE, and to locate its practices of interdisciplinarity and innovation critically within wider socio-cultural milieu.

The exploratory questions we set out with were designed to elicit a broad understanding of CFNE and included: What is CFNE and Fuse; what are its aims and the interests that coalesce around it? What are the historical, economic, political, and cultural factors that created Fuse, and that now configure CFNE? What do the social worlds of Fuse look like, that is to say, who are the actors and what are the networks of CFNE? What are the shared meanings and recurring ideologies, models, frameworks, language and practices of CFNE?

Further central questions emerging early in our research process were focussed on the dimensions of knowledge production in CFNE and included: How do institutional and structural (e.g. funding, data management, legal, management) factors facilitate and constrain the aims and processes of CFNE? What are the power dynamics built into or created by such projects, and how does this inflect knowledge production, practices of interdisciplinarity and ideas about what innovation is? How are key terms such as creativity and innovation defined, categorised and evaluated? What are the forms of knowledge and models of collaboration emerging through CFNE, and how do these relate to innovation? And what are the implications of projects such as CFNE for arts and humanities disciplines, and more broadly for university-based knowledge production?

As social scientists with an interest in the production of knowledge, three interrelated strands of inquiry focussed and shaped our research on WP7 throughout, namely:

i. The social, political and institutional contexts facilitating and/or constraining the activities of CFNE and Fuse. Here, we studied the operations and shape of the project in the North East and considered the factors configuring the national Fuse agenda and earlier projects in London and Brighton.
ii. The existing and emerging frameworks, networks and meanings underpinning CFNE and Fuse. This included understanding how concepts such as the 'Triple (or Quadruple) Helix' and the 'entrepreneurial' or 'civic university', and models such as innovation, technology and knowledge transfer programmes in the STEM disciplines, are understood and enacted. We did not take these as *fait accompli* but as ideas and practices iteratively made and remade dependent on social and cultural contexts.
iii. The processes, approaches and methods of CFNE that facilitated interdisciplinary collaboration and generation of innovation. Here, we paid attention mainly to localised CFNE activities and participants within the Pilots in the second phase of the project, and to events in the first phase geared towards these Pilots (for example, CAKE events).

4. Method and materials

Our ethnographic study was comprised primarily of immersive participant-observation led by Audrey and managed by Cathrine. Alongside participant-observation, we used semi-formal and informal interviews and collated textual, visual and digital materials relevant to the project.

In October and November 2016, we prepared research documents and protocols, devised recruitment strategies and data management plans, and obtained ethical clearance for this research. Following the granting of ethical clearance by Newcastle University's Faculty of Humanities and Social Sciences, from December 2016 to July 2018, we followed CFNE from incipiency (including tracing the origins of Fuse) to the tail-end of the second phase in which the Innovation Pilots of CFNE were implemented. During this period, one or both of us were present to participate in, observe and document formal and informal discussions related to Fuse, including events and meetings occurring as part of the project (including Operations Group meetings, Steering Group meetings and Advisory Board meetings). We also spoke to many actors involved in the project (e.g. academics from across a breadth of disciplines and all five partner universities, university support personnel, funders, and CDIT businesses and public organisations in the region) to collect relevant histories, narratives, perspectives and documents.

Our presence as 'outsider insiders' at project meetings and CFNE events was discussed at multiple junctures and permission sought from gatekeepers and participants for the research to be conducted in these settings. CFNE presented an unusual and challenging context for our ethnographic fieldwork, in part also since we were 'studying up' with respondents in policymaking, industry and higher education, and 'sideways' with colleagues who share similar backgrounds and were working on the same project as us. This awareness accounts in part for the 'polymorphous engagement' characterising our research methods, wherein multiple sites were explored, several techniques of fieldwork were combined, and a genealogy of Fuse was undertaken in order to critically write an ethnography of the project. Owing to the ethical complexity of undertaking an ethnography of CFNE, we approached informed consent as an ongoing, iterative process of negotiation characterised by open dialogue.

In addition to gaining insights into the project by attending CFNE-related events and interviewing key stakeholders, five Pilots were followed closely in the second phase of the project. These Pilots were chosen to represent a breadth of initiatives in terms of size of organisations involved, purposes of project and accessibility. The five Pilots we followed included two social impact projects, one creative arts initiative, one commercial industry-led project, and one experimental effort in educational futures. Our descriptions of these Pilots and other aspects of the project here and in forthcoming publications reflect a balance between providing rich ethnographic detail and our commitment to protecting the anonymity and confidentiality of our participants.

We focussed on AHRC-funded activity, in large part due to the limitations of our capacity and resources as ethnographers on this large-scale project. As we highlighted above however, the complex funding structures of the project and the decisions made by the core group to present the project as a coherent whole to external stakeholders meant that no strict operational difference was made between AHRC, ERDF or ACE-funded activity. We were therefore present during discussions and meetings around ERDF and ACE-funded activity and kept broadly informed of this strand of the project's activities.

The data we collected covers 148 points of fieldwork engagements in total, each representing a project event in which an ethnographer was present as a participant-observer, an interview, or a logged/recorded interaction with a participant. Scratch notes taken as participant-observers were written up as fieldnotes after each event/interaction. Textual and visual material was also collated in a secure database. Between July 2018 and September 2018, we procured professional transcriptions for recorded interviews and analysed all data collected.

5. Working across disciplines, institutions and sectors

Interdisciplinarity has received substantial scholarly attention in recent decades, and there are two more immediate dimensions to the concept: The first pertains to interdisciplinarity as an increasingly common and required but messy, non-linear and epistemologically fraught practice within academia, where researchers cut across (or are expected to cut across) disciplinary and institutional boundaries to conduct research especially in problem-focused areas to derive solutions. The second dimension speaks to cross-sectoral partnerships, articulated by the Triple or Quadruple Helix model and the idea of the 'entrepreneurial university'. The scholarship in this regard has been concerned with the nature of interactions between academia, industry, policy and the public; and provides both a modelling of and a framework for implementing and evaluating cross-sector collaborations. While not explicitly couched as interdisciplinarity in the literature, we propose that the meeting of perspectives and approaches within cross-sector work can be reasonably thought to constitute forms of interdisciplinarity, just with actors and interests beyond traditionally academic remits. We thus understand interdisciplinarity as encompassing both collaborations across different academic disciplines and across the different sectors (i.e. universities, businesses and various commercial interests, and public organisations e.g. government bodies and charities).

Our purpose has been to contribute to the growing body of literature accompanying both these dimensions, in which the actual practices and narratives involved in interdisciplinary knowledge (co)production are documented to critically and empirically reflect on interdisciplinarity, knowledge creation and innovation production. While our ethnographic inquiry focussed on knowledge production in the CFNE project, we also explored along the way the broader context of the North East as region, including (but not limited to) the growth

of the CDIT sector, the central role of the public sector and the North East's relationship to London.

Given that our approach is social scientific and that we have aimed to understand issues from the 'insider' standpoint, this report on our research findings does not constitute what may be widely understood as a project evaluation. It does not single out any one element, person or perspective, does not provide an assessment of success or failure, does not make speculations on alternatives, and does not make any claims to objectivity or completeness. Rather, this report draws together multiple strands of data from a clearly complex project and analyses them through a critical social scientific frame. We do this with the aim of identifying patterns and questions that help us to think through the wider implications of our findings for the nature of knowledge production, the practices of interdisciplinarity and the generation of innovation.

6. Findings

We summarise key findings here for readers seeking an early overview of our research. We will be developing these findings in forthcoming academic publications. *We thus require that readers request both author's permissions before reproducing any part of this report and adhere to proper attribution and citation if using our work. Queries should also be directed to both authors.*

6.1. CFNE in the context of the 'ivory tower' and 'silo' problems

CFNE may be analytically located as a project in which the longstanding questions and growing anxieties over the social functions, economic contributions and perceived inaccessibility of UK universities play out in salient ways. The perception of the gaps between business and academia speaks to the commonly articulated perception that UK universities tend to operate in the "ivory tower" (where knowledge is kept locked away within the university sector by use of obscure language, the exclusionary physical spaces of university campuses, and academics who are disengaged from 'the real world') and in siloes (where knowledge is fragmented across individual institutions and disciplines that do not speak to each other). In addition to the broader Fuse agenda of highlighting the economic importance of the arts and humanities disciplines, CFNE was positioned as a potential solution to both the ivory tower and silo problems in UK's higher education sector.

6.2. Defining and establishing CFNE

Despite this Fuse agenda, defining the remits and aims of CFNE and establishing it as a viable and attractive project for its target stakeholders was a challenge from the outset. This was in part because there was a sense that the project was, as one of the Advisory Board members described, "a bit like jelly" in its lack of definition, concrete referents and aims. This was a feeling shared by several core group, academic and industry stakeholders we spoke to during the project's first year. To add to this, it was clear from early on that the project was seeking to create meaningful conversations (both to maximise impact and to justify the project in a positive way) above and beyond balancing the extensive immediate stakeholder groups and multiple interests already involved (i.e. regional CDIT businesses, public organisations and businesses). The core group was interested, for example, in having the "ear of government" both regionally and nationally. This shaped, amongst other things, the compositions of the Steering Group (with members mainly from the region) and the Advisory Board (with members including policymakers operating at the national level), and the style in which the survey findings from the first phase of the project were written up.

The practice of trying to reach a wide an audience as possible, one that was discussed and revisited frequently during project meetings, raises two related points. First, it highlights the impact and engagement agenda that has been increasingly valorised within the higher education sector, bringing into question the implications of this agenda for how projects are managed, its key terms defined, and findings presented. Second, it reveals a tension in CFNE between the need to achieve specific remits by appealing to particular target groups and the perceived need to appeal to multiple interest groups, raising the issue of whether this has an *a priori* effect in shaping the knowledge production process.

Some core group members did however embrace and encourage the uncertainty and ambiguity as part of what one of them described as action research that would lead to the co-production of knowledge and innovation. These core group members did not want to be prescriptive, for instance by waiting for the survey results (from the project's first phase) to think through the Innovation Pilots in order to respond to the sector's demands rather than assuming this was known, and by abstaining from giving examples of what a CFNE Innovation Pilot might look like so that there would be no pre-determined ideas of what would be considered as potentially innovative.

While most stakeholders understood the spirit of this approach, the lack of direction alongside mounting time pressures meant that (at least before the Innovation Pilots and ERDF activity took off) the teams within each of the partner institutions had to create their own meanings and make their own plans. For instance, in discussing their role, a research associate explained that they did not know what their role should look like and had not received any guidance, but that they got the "sense that [they were] there to build and shape the Pilots" and had thus undertaken test projects and research on the relevant policy terrain within the region. In another example, at a project meeting, an academic described some of the plans their institution had put in place toward the internal call for Pilot grants, which started internal discussions around whether CFNE would accept and deem as innovative Pilot proposals that retrofitted existing research ideas. Separately, an industry stakeholder from the Advisory Board and a creative sector participant also expressed their concerns about the lack of co-production of Pilots with industry and sector stakeholders, particularly during the first round of Pilot funding call. These instances i) underline tensions between the ideals of action research and the need for clarity in output-oriented projects such as CFNE, for example around core concepts such as *innovation*, ii) highlight the necessity for strong leadership steer and management approaches in projects of this scale and size, and ii) hint at the importance of time (and competing temporal frames) within the project.

6.3. The perceived communications deficit

The challenge of establishing the project, notably in terms of bringing CDIT businesses on board and creating networks necessary to forming collaborations necessary for the project's second phase, was framed by the core group primarily as a communications issue.

The communications problem was seen as being due to i) perceived linguistic differences between academic and business communities (linking back to the alleged tendency toward exclusionary academic knowledge, in this case with the use of jargon), and ii) the lack of personnel to act as centralised points of contact for the project's external stakeholders, contacts that could facilitate flows of information to and from the project's academic community. Approaches to fixing the perceived communications deficit leaned toward tactical decisions on how best to engage particularly with business and policy stakeholders (e.g. what words to use or avoid, how to present information on the CFNE website, social

media interest, which events to attend and persons to talk to), more than what the strategic vision of the project would be as such (e.g. what does CFNE aim to achieve, what are its key messages, who are the target beneficiaries, what sort of Pilots would be aligned to the project's remit, how academic talent and knowledge at all five universities may be better identified and tapped).

To correct the perceived communications deficit without the resources (ERDF monies) in the first phase of the project to hire dedicated communications personnel, the core group relied on getting the word out about the project through their own networks (extending outward to other networks through these networks) and via gatekeepers (including Advisory Board and Steering Group members) within the sector and public organisations in the region. Although much of this word-of-mouth approach was conducted digitally, the core group did a considerable amount of legwork in meeting key contacts and gatekeepers in person. Activities included those such as the monthly CAKE (collaboration and knowledge exchange) events, which were primarily networking events featuring three to four "lightning" talks delivered by an even mix of speakers from academia, industry and public organisations. CAKE served as a vehicle deemed crucial by the core group for creating spaces of conversation in the first phase that would in theory lead to collaborations in the second phase. This did happen in several instances, as was the case with one of the social impact Pilots we followed.

Given however that the funding for the project's first phase was dedicated to research that would map the region's CDIT sector, network activity and events were unfunded and dependent on the efforts of project management (e.g. for advertising and baking cakes) and the goodwill of the partner universities (e.g. for venue hire). While there were multiple discussions and attempts to obtain funds for CAKE, the absence of funding from this aspect of the project's activities highlights two points about the contexts and processes of knowledge production. First, it underscores the ways in which funding regimes may inhibit post-priori programme additions and changes within large projects, creating tensions between the ideals of exploration, innovation and editing in research on the one hand, and the need to adhere to the funding structures on the other. Second, it raises considerations of the value of rigour, review and foresight in prior planning within projects of CFNE's scale, notably in relation to the balance between drawing on the valuable practices of previous projects (CAKE, for example, was originally implemented by the University of Birmingham's Digital Humanities Hub) and how a new project distinguishes itself as unique from other projects in order to be deemed 'novel' to funders.

We were particularly interested in the language used to communicate the project to industry partners. This was crafted with care following considerable discussion, to avoid academic jargon in favour of "business-friendly language". 'Hooks', stories, anecdotes and case studies featured heavily throughout the project's activities and were deployed narratively to explain the ideas underpinning the project. There was also concerted effort to build CFNE's 'brand', raise its 'brand awareness', and to speak the language of industry and policy by drawing on formal reports and documents such as the UK government's Industrial Strategy (2017). This linguistic crafting represents one example of *translation* as a key task in CFNE. While translation in this example refers most obviously to the acts of rendering words and ideas easily accessible between two distinct social groups, following the use of the term in science and technology studies (STS), we also take translation to mean the process by which actors shape the 'rules of engagement' as it were and align interests with other actors within CFNE's networks.

6.4. Bringing businesses on board

A key dimension of our study pertained to the complex balance of multiple cross-sector and cross-disciplinary interests throughout the project. In the early stages of the project, the question of how to engage businesses (and to a lesser extent, public organisations) was a preoccupation for the project's core group, i.e. management team and Operations Group. This was partly responding to strong concerns articulated by key advisors from industry and policy that the project was too "academic-ky" and not "business-ey" enough. Bringing businesses to the table was viewed as a primary challenge for the project, and also framed more broadly by the core group, Advisory Board and Steering Group as a perennial problem that universities should confront, given the perceived detrimental gaps between academic and business interests.

While the initial lack of business interest in the first year of the project was considered by the core group as a communications deficit, in terms of both quantity and quality (as above), other actors we spoke to (including participants from industry and industry-facing CFNE members, some who had organised events to garner business interest for the project) added to the list of possible reasons for the early lack of business interest. These included: i) lack of tangible incentives for businesses to collaborate with universities, ii) differences in motivations, baselines and flexibility of structures, and iii) incompatible schedules/response times. These reasons began to point to more complex, structural and multi-faceted reasons for low levels of explicit collaboration between universities and businesses, and beyond the construction of universities as exclusionary spaces housing inaccessible knowledge.

Network-based activities were clearly important to establishing the project. However, various stakeholders, both within and outwith the CFNE project, noted the challenges of reaching parts of sector in the North East that were not actively part of established networks or that did not occupy frequented spaces (e.g. craftspeople, rural businesses, freelancers). They also noted the lack of clearly articulated ideas and means for bridging the gap between the conversations facilitated by such activities to actual collaborations in the form of Innovation Pilots – that is to say, how to translate talking to doing, representing another instance in which the importance of translation as a key task of CFNE was highlighted.

Further, there were finance-based concerns from the Advisory Board, partner institution academics and cultural/creative sector stakeholders over i) how monies were being spent (for instance the costs of the event launch that was held in what is seen as an upscale private venue, but which was justified by the core group as a perceived need to enhance project visibility by inhabiting spaces that the CDIT sector would be familiar with and attracted to), ii) the proportion of the funds that would be used by the universities compared to the funds that would flow to the sector through the Innovation Pilots, and iii) the relatively low amounts on offer for the Pilots that could potentially disincentivise industry partners. These concerns highlight the heterogeneity of stakeholders and competing interests within the project, partly in terms of different spaces (e.g. upscale venues to attract digital businesses compared with coffeeshops frequented by freelancers or markets for craftspeople) and geographically dispersed places (e.g. rural businesses compared with urban enterprises in the North East) (see also section 6.11).

Considerable strides were made in bringing businesses on board for the project's second phase (around September 2017). This was achieved i) by couching CFNE as a platform for universities to add value to the region's CDIT sector by responding to its needs and the gaps

articulated in the survey, for instance by working with the sector to address the "aspirational gap" (i.e. low numbers of students from the North East enrolling into the region's universities) and graduate skills gaps (i.e. lack of computing skills and interdisciplinary exposure) by highlighting opportunities to students, ii) due to the efforts of full-time communications and events personnel on the CFNE management team, and full-time research associates and management hires within each partner institution, both of whom were adept at mobilising networks (rather than merely being networked individuals), and iii) because the industry-led round of Pilot funding and business support/placement programmes that were now on offer proved to be tangible, low risk and quick draws.

The project was pitched to stakeholders as an opportunity i) to create connections between the North East's higher education sector, its CDIT businesses and public organisations with the view of building a strategy for the region and, ii) as a key advisor from policy reflected, a means for "universities to add value to the sector" in terms of helping businesses to start up and scale up (e.g. by transferring knowledge and opening up use of university facilities). The concept of *value* was a recurring one within the project. For instance, a member of the core group defined creativity within CFNE as ideas that added value to the CDIT sector, and a senior academic with industry experience understood innovation to be creation of perceived new value. These definitions were notably different, for instance to that articulated by a creative sector representative, who told us that "artists are evangelists for creativity as something that enhances who we are". These articulations highlight the need to i) consider the contestations over the concept of *value* in regards to what universities, artists, businesses and various stakeholders do, ii) unpack who benefits from the creation of value in its various definitions, and iii) understand how various people benefit in both the short and long terms. Further, CFNE represents for us a case study where academic institutions and the knowledge produced by universities appear to be repurposed for the creation of particular forms of economic value. The project may therefore also be understood in relation to ongoing debates around the nature and remits of academia in UK given the increasing demands on the sector to be explicitly market-facing and marketised.

6.5. Advantages and barriers to collaboration for businesses and organisations

The two rounds of calls for Pilot funding garnered 102 applications (30 of which were funded) addressing a breadth of issues, ranging from cybercrime and health to music, education and data. The feedback from the businesses and organisations involved particularly in the external call (industry-led) Innovation Pilots was largely positive, with smaller businesses and creative practitioners appearing to benefit most from the collaborations. Participants in the Innovation Pilots that we followed cited several advantages to the collaborations they were part of, including:

i) CFNE as a consolidated way to easily access the currently fragmented expertise and knowledge bases within universities. One of the social impact Pilots we followed was initiated by a large public organisation (but led by one of the partner universities). Two key members of the organisation confided they had been trying to get into contact with university experts for years to advise on an increasingly urgent digital issue. They had not had much luck in the past because of the lack of centralised points of information or contacts when cold-calling universities, and a lack of longevity with connections made through this method. This provided empirical evidence of the lack of access to expertise and experts in universities. Through CFNE, the organisation had the opportunity to liaise with academics and students - though not necessarily experts in the digital issue they were looking to solve - across at least three of the partner universities over the

course of their Pilot, which included university-led scoping workshops, solution-oriented "hack" events and a dedicated CAKE session.

ii) The opportunity to undertake research-based activities they would normally not have the resources for or could not take risks on, to calibrate, extend or expand their current remits or practices. In the case of the creative arts Pilot we followed, the CFNE grant monies allowed a small creative business to explore the use of virtual reality (VR) or augmented reality (AR) technologies for enhancing experiences and maximising the impacts of their performances. While the company decided, after experimentation, that the use of VR was not appropriate for the particular performance undertaken during the Pilot, the process of exploring allowed them to think through the applications of VR or AR technologies within their performance spaces, and follow-on funding is enabling them to continue to "find the narrative that needs to be told with immersive technology". A key member of the company told us that the Pilot grant and working with academics was a generative experience: "It was a research process [that gave] us that freedom and space to research things properly and go through a process of challenge and rigour". Where the process our participant was referring to include a series of discussions with academics around the use of VR and AR in performative settings and initial testing in performance spaces, this raises questions for us around how *research* was understood and what forms of research becomes enacted in such cross-sector collaborations.

iii) Facilitating new practices and ideas that could be leveraged on for further funding or competitive advantage. One of the social impact Pilots we followed leveraged on their CFNE Pilot grant to apply for more funding from a public body to allow them to expand the new client-facing digital project started through CFNE. The commercial Pilot we followed resulted in a novel VR-based application that allowed the retailers and designers involved in the Pilot to showcase their products easily from their mobile devices, which a designer and owner of a medium-sized business explained would potentially help "celebrate our unique selling point" and distinguish them from their competitors in a saturated market.

Evidence of benefits extending outwards to local communities could also be found, for instance with one of the social impact Pilots focussed around volunteerism and with the public participants in the creative arts Pilot. There was little criticism from external partners, but a recurring issue articulated was with regards delays in disbursement of fund monies from the universities, which was more acutely a problem for smaller enterprises, creative practitioners, and not-for-profit organisations, highlighting a logistical barrier for knowledge transfer between universities and the smaller businesses that tend to make up the CDIT sector. A leading member of the creative arts Pilot we followed explained, "taking six months to pay a freelancer or a small company is far too long" but were quick to add that the core project group knew this and were doing all they could to mitigate the paperwork required by various university and funding body administrations. This latter articulation provides further empirical evidence of the heterogeneity of academic stakeholders within CFNE, but also with the idea of the university in this context being composed of a complex mix of levels of scale, responsiveness, and operational time frames.

6.6. The role and participation of academics

While the focus on business and external partners paid off, a less articulated challenge for the project began to show more acutely during the open call Innovation Pilots: The participation

of academics in these collaborations tended to be secondary rather than equal, with many academics occupying roles akin to consultants or evaluators as opposed to partners co-shaping the Pilots. This was the case for all but one of the Pilots we followed. For example, in one of the community-facing Pilots, a charity and a digital business were the leading partners on the project. A senior academic from one partner university provided a template for the proposed digital platform based on their previous research (the charity and business decided not to use this template in the first round of funding), and a small group of academics from another partner university provided last-stage evaluations of the new platform built by the business in close partnership with the charity. In another Pilot we followed, the commercial Pilot, a public organisation and digital company led on the project, with one senior academic (who had extensive previous ties to the relevant industry) involved closely in a consultative capacity. In a third Pilot, the educational futures Pilot, while the idea for the project originated from all team members equally, two small digital businesses led on the project, with one academic focussing on what was perceived as a stand-alone and secondary element of design, another academic providing basic market research, and a third academic consulting on the potential syllabus.

This lack of equal academic participation in the Pilots raised for us considerations around how CFNE's shaping of cross-sector collaborations determined who or which agendas were represented, if transfers and benefits accrued were perceived as unidirectional or mutually beneficial, who was participating on the academic side, and what were the factors that encouraged or inhibited academic involvement.

At an immediate level, the lack of academic engagement was at least partly due to quick turnovers for submission of applications to the funding call, coupled with the difficulty of aligning precisely the available pool of academics with the right call during the given time. Most 'front-line' academics balancing teaching, administration and research portfolios are not always able to move quickly and nimbly in a responsive-mode given their existing workloads, workloads that have minimal scope for additional capacity at short notice. At a macro level, a member of the core group observed that the Pilot applications from the internal call reflected a "struggle by the academics to contextualise their applications in economic terms rather than research terms". Additionally, the attractiveness of the project to academics had been taken as a given, in part because there were a good number of academics already written in to CFNE. Where there were no fixed ideas of what sort of Pilots the project would attract in the open call and no guarantees that the academics written in to CFNE would be part of successfully awarded Pilots however, identifying and attracting relevant academic expertise to the Pilots became a challenge in part as no centrally held-databases on staff expertise exists at any of the partner universities.

Further, while there were concerns around the lack of co-production with industry stakeholders in the university-led Pilots, there were fewer equivalent articulations of concern with industry-led Pilots retrofitting existing projects to obtain funding. Although this was discussed by the core group in terms of shaping the call, several of the Pilots eventually funded by the selection panels in the second round of calls were projects by individuals that were deemed 'good ideas' but did not necessarily meet criteria around consortium composition and co-production at the time of the pitch. University partners were brought in retrospectively on these Pilots.

Generally, there had also been comparatively little consideration of i) what it might take for academics to engage with businesses, ii) the functions and values of academia (and

concomitantly what academics can offer within cross-sector collaborations), and iii) why academics would want to participate given the mismatches of incentives and processes firmly built into current academic structures and aims in UK higher education. In the latter half of the project, partly in response to the aforementioned issues, there was a less formal attempt to create and test the role of 'academic champions' within each of the partner universities. The academic occupying this role would communicate CFNE's opportunities to their university colleagues as well as take stock of the expertise within their institutions with the view of brokering interdisciplinary and cross-sector collaborations.

While there were some critiques on the social scientific robustness of hypotheses and methodologies underpinning Fuse, the academics we spoke to were also largely supportive - at least in principle - of the project. They acknowledged for instance that business and academia are not antithetical, that one of the key functions of a university education is to produce graduates into a vibrant and well-functioning economy, and that there is value in collaborating with local communities. This did not however alleviate concerns about the implementation of projects such as CFNE within currently dominant models of higher education. While some (generally more senior and established) academic participants were in positions that allowed them to collaborate with businesses if they wanted to, others noted that such work is often accompanied by extra paperwork, is not part of their workload structure (or as one of the project's co-investigators pointed out, greatly exceeds the time written in for their involvement) and generally does not count for much within the model of incentives that shape academic careers, unless there were clear alignments between their research expertise and the Pilots' remit.

Even where there was less instrumentalist desire to be involved in CFNE, one academic who was keen to create dialogue with businesses around long-term employability trends suggested that the project was a case of "monkeys and zebras being pushed into a room and forced to procreate" by university management, only to be let down by "hyper-bureaucratic university structures" placing limits on academic autonomy and a general failure of the project to convey the functions and value of universities beyond short term gains and "profit-driven tick-boxing exercises". A core group member pointed out that companies already tend to collaborate well with other companies and are at the forefront of research for market or product innovation, technically negating the need for universities to participate in projects if all is that is being asked for are short term outlooks or projects that produce profitable novelty as opposed to genuine innovation.

If CFNE was not able to harness and convey the genuine and long-term value of academic involvement, the project would risk producing, as another academic stakeholder expressed, "jilted businesses and bitter academics", neither of whom would leave the project with any better understanding of the importance and potential of the other. Such sentiments were echoed by an advisor to the project from industry, who questioned the contrived nature of the project, suggesting that university-business interactions that happen organically, outside project structures and strictures, are more valuable to all parties involved, especially students and graduates.

These perspectives reveal for us three main points of disjunction. First, they highlight gaps between current higher education sector structures that incentivise specific forms of knowledge production (e.g. specialisation, publication, quantifiable outputs) and university, policy and funding discourses that seek to back projects that prioritise exploration, innovation and new forms of thought and collaboration. Second, there exists a tension between the desire

to collaborate across institutions, disciplines and sectors, versus practical barriers (e.g. the volume of paperwork; bureaucratic and technical issues; saturated workloads) as well as perceptions of the intentions of parties encouraging the collaborations (e.g. profit margins for university management or force-fitting pre-determined agendas for managerial box-ticking rather than advancing research and knowledge-oriented aims). Third, there is an allusion to the different temporalities that academic research and businesses operate on: For example, with regards CFNE's aim of encouraging graduate employability within the region's CDIT sector, where academic research in the area may focus on longitudinal studies or take long-term strategic perspectives (such as over several decades to build future-appropriate syllabi), businesses necessarily operate on a more immediate to medium-term scale of several years. Where both temporal frames are crucial, our observations raise the question of how best to acknowledge and bridge the gaps between differing timescales that may not necessarily align.

6.7. Hierarchies of academic labour

There was a distinct pattern that emerged with regards to which academics engaged most with CFNE. With the Pilots, they tended either to be senior academics in secure roles (often professors) and already had prior relationships with their collaborators or experience of industry, or they were fixed-term research associates whose contracts were tied exclusively to the project. With the day-to-day delivery of CFNE programmes, notably with the Pilots and ERDF/ACE-funded activity, most of legwork was undertaken by fixed-term research associates or fellows whose contracts were tied to CFNE (averaging between 12 months to 24 months and ranging from 2-3 days per week on CFNE to full time). The roles of research associates varied from institution to institution, with some tasked with focussing on just the delivery of Pilots, and others focussed solely on ERDF outputs.

While these roles required postholders to possess advanced academic degrees, research associates from one of the partner universities indicated that their responsibilities revolved largely around marketing, networking and workshop organisation for ERDF activities, and research associates from two other institutions were focussed just on ensuring the running of AHRC-funded Pilots that their university was involved in. Few associates we spoke to had dedicated time on their contracts for producing outputs deemed necessary for pursuing conventional academic careers (e.g. writing research publications), and the research component of their roles appeared to be built around rather than into their remits. Additionally, there was the observable practice of drawing on unpaid student labour within the project such as 'student ambassadors' or videographers at project events.

Part of the hierarchies of labour within CFNE also connected to the concerns around project finances: Where the Advisory Board in particular was keen that project funds that would flow to the sector, specifically through the Pilot grants, rather than be used by the universities (thus also reiterating the explicit economic direction and intended business beneficiaries of CFNE), we were made to understand that the first phase (sector survey) of the project was heavily staffed by academics at the professorial level. The cost of staffing in this phase was therefore a considerable expense that meant AHRC pot of monies would "not go very far" in the second phase.

These observations highlight in part the hierarchies of labour within the project, leading us to consider a series of wide-ranging implications, including i) whose definitions of creativity and innovation are operationalised within the project, ii) what forms of work are necessary for the project to operate in relation to whose and which work is ultimately recognised and rewarded, and iii) how projects such as CFNE contribute to the formation of new

postdoctoral subjectivities that no longer align with traditional research roles, resembling instead the work that would otherwise be procured from external consultants or companies. This simultaneously expands the spectrum of what constitutes 'academic interests', creating spaces for less traditional types of academics (e.g. those who are keen to employ their skills in settings outside academia), while potentially widening existing gaps between more securely employed academics and precariously contracted (often early career) academic labourers.

6.8. Academic interdisciplinarity

Some participants indicated that CFNE created valuable, and in some cases unprecedented, steps toward interdisciplinary working within the individual partner universities. They also noted experiencing encouraging interactions between academics who had not met or spoken before, not least since interdisciplinary work tends to be disincentivised in formal academic settings. For instance, a research associate and a core group member both observed that in their universities, interdisciplinary was not part of their institution's culture and CFNE represented one of the first and few times academics from different disciplines had come together.

In regard to interactions across academic disciplines within CFNE, we observed a dominance of particular disciplines and approaches (for example, business and design thinking) in the project. In at least two of the partner institutions for example, finances and administrative support for the project flowed through the business schools. Given that CFNE and Fuse was intended to underscore the importance of arts and humanities disciplines, the dominance instead of other disciplines in the project may be embedded in wider academic discussions around the marginalisation of the arts and humanities, and within broader longstanding considerations of how different perspectives may complement or silence others within interdisciplinary settings.

6.9. Cross-university collaboration

The partnership between the five universities was lauded as a unique selling point to industry and policymakers, bucking standard practices in UK's higher education sector in which universities tend to operate as competitors rather than as collaborators. As noted in Section 2 above, CFNE has its roots in the Universities for the North East Consortium. While the Consortium disbanded in 2012, the Culture sub-committee of the Consortium i.e. the North East Culture Partnership (NECP) that started with a focus on the region's creative and cultural industry, continued meeting. Between 2001 and 2005, the sub-committee had received grants for projects, and this spirit of collaboration translated into early conversations with NELEP and TVLEP around obtaining potential EU funding. Around this time, in late 2014, AHRC approached the NECP with its five North East universities to submit the CFNE bid, building on Brighton Fusion and London Fuse. The bid was thus put together by a core group of people who comprised a long-standing network, possessing similar points of reference, connections and tacit knowledge going into the project.

The scale and complexity of working across multiple processes and structures was in many ways uncharted terrain for the institutions involved, requiring for instance flexibility, adaptation and responsiveness from university administration (e.g. finance officers) who were in regular communication with funding bodies, the management team, and peers from partner universities. It is worth noting that the administrative layer was present from an early stage in the bid (as with other funded projects in the university) and will have to be in place for several years after the project, for example to provide information for audits. We were

however made to understand that university administration tends to have high turnover rates, raising questions for us around how, with whom and where institutional memories are located in universities (for example in terms of understanding the processes and being able to access paperwork such as intellectual property arrangements required to facilitate multiple universities working together in enmeshed ways with smaller local businesses).

In practice however, in the delivery of the project's programmes, there were few spaces of cross-university connectivity observed. For example, within the social impact Pilot we followed where the academic partners were an integral part of the project, these academics were based exclusively at one university, and most were research associates or fellows with contracts tied exclusively to CFNE. While the larger structural factors discussed earlier (e.g. mismatches of academic incentives and cross-sector working) may account for the lack of collaboration between academics across the partner universities, the relatively minor role played by some academics within Pilots also tended to occur where they were written into bids at a late stage or where they were added to a bid more to fulfil requirements (that academics from at least two of the partner universities had to be named as part of a Pilot).

The lack of cross-university collaboration may have also been caused by multiple other factors. At a broad level, the integration of the various funding streams was a challenge for project management and created contradictions for cross-university collaboration. A member of the core group explained that "none of the budgets speak to each other" and that there is a great deal of complexity in handling the funds individually, much less coherently across five institutions with multiple systems and processes, reiterating the central role of finance and funding in the project. While the separate funding streams were presented as a coherent whole to external stakeholders, these monies were treated as completely different internally (in part owing to the difference in funding structures and in part owing to university administration). At one of the partner universities, for instance, we came to learn that the job advertisement for one CFNE position took over a year to get through HR and finance because of ERDF monies clashing with AHRC monies. The advertisement for the job was batted back and forth between departments, highlighting, as one senior academic put it, the "nightmare [caused by] lack of internal support structures and processes" for projects like CFNE. We were told that the complexity and scale of project meant that some university partners and academics were "warned off" the project early on, raising issues around who could (in multiple senses of the word) *afford* to engage with the project, what factors ultimately encouraged participation, and the effects of inclusion and exclusion created by funding complexities.

Crucially, where the AHRC Pilot grants encouraged cross-university collaboration, the delivery of ERDF outputs was individual to each of the five partner universities and, in some cases, created potential competition. By way of example, with regards the business engagements required for ERDF target delivery, interactions with a given business could only be counted to the efforts of one university. Additionally, while the DCLG would only be interested in the total number of outputs delivered by the project as a whole, the collaboration agreement between the partner universities built in systems of penalties for partners who failed to meet their set targets. The requirements of the different funding streams thus created what appeared to be a fundamental contradiction for cross-institution collaboration, highlighting a need to balance the drive in the higher education sector to obtain large pots of funding with due prior consideration of compatibility of logic and logistics of different funders.

At a day-to-day level, two key factors shaped cross-university collaboration, and these factors emphasise for us the centrality of time and importance of staffing and communications within the project. First, there were fairly constant changes in terms of who was part of project. In addition to new hires throughout the project (particularly in the first year), a number of academics who had been written in on CFNE had either moved on or experienced changes in career circumstances, for instance due to university restructuring. This occurred in the approximate year following the submission of the original bid and the following year before the implementation of the project's second phase. This resulted in challenges for central management in keeping track of project staffing, alongside a situation where approaching colleagues for collaboration was not always straightforward. Keeping interest and enthusiasm for the project alive during the year also became a key task for institutional leads. Staffing changes were not limited to academics, also affecting administrative support for the project, for instance when both AHRC finance officers of a partner university left and changed departments within a span of a month (see also 6.13).

Second and related to the first in some ways, maintaining internal communications over the five partner universities presented a challenge especially in the project's first year, both organisationally and technologically. Part of the broader effect of this challenge was a lack of clarity for instance with regards data sharing, as was the case with the survey results from the project's first phase. Where data from the survey was accessible only to some staff from one of the partner institutions on grounds of confidentiality and there were no cross-institution data management platforms, some academic participants we spoke to felt there was a degree of gatekeeping that created barriers for both collaborative academic knowledge production and for creating an archive or legacy of data and ideas generated during the project. Technological and organisational work-arounds were possible in principle, but seemed too costly in regards to finance, time and the socio-cultural groundshifts required to enact them.

6.10. The mix of Russell Group and Post-92 universities

We noted awareness around the mix of so-called Russell Group and Post-92 universities within the partnership. While this did not pose persistent challenges to the day-to-day operations of the project, it was nonetheless a context that influenced, for instance, decisions around participation made in early stages of CFNE's formation. There were concerns from the management of one of the partner universities with regards the largely applied remit of CFNE, which was perceived as being at odds with the fundamentally research-based work their establishment understands itself in terms of. Further, with regards work package constitutions, the Russell Group partner universities featured more prominently in the first (research) phase of the project and the Post-92 universities leaned toward the second (applied) phase. The division of project labour, while not clear-cut, thus reflected another layer of academic heterogeneity, raising considerations about the hierarchies between institutions in relation to the forms of knowledge production they are associated with.

6.11. Space, place and geography

While CFNE has its roots in similar projects in London and Brighton, the project was very much shaped by its geography and the socio-cultural specificities of the North East. Recurring place-based themes that our participants used to contextualise CFNE included:

i) The persistent and pervasive effects of post-industrial decline and economic austerity in the region: A core group member explained early on in the project that the politics and economics of the region had direct relevance for the shaping of CFNE. The North East universities had, for instance, played key roles in the cultural regeneration of the region

via their presence, research and public engagement activities. At times, the role in buttressing this regeneration has been more practical, too: Teesside, Northumbria and Sunderland universities had respectively financially bailed out MIMA (Middlesbrough Institute of Modern Art) in Middlesbrough, Baltic 39 in Newcastle, and The National Glass Centre in Sunderland in the recent past. All of these contributions to the economic and social life of the region fitted in with the shared idea of the 'civic university' of those institutions, while increasing the public profiles of the universities, and were part of the background to narratives of the role of CFNE in this particular part of the nation at this moment in time.

ii) The relationship between the North East and London: Another core group member explained that the formation of the Universities for the North East Consortium (in which CFNE had its origins) in 1998 revolved partly around a sense of identity emerging from being the smallest English region in terms of size and distance from Westminster and London. This invoked the perception of core-periphery relations between London and the North East that we would hear of repeatedly throughout the project from multiple participants. For instance, in describing the CDIT sector in the region, an industry stakeholder expressed concerns that people "still think about [the North East] as heavy industry, flat caps, whippets, there is nothing here [...] We are still suffering from that [and] the government focussing on London doesn't help". Their account highlights the historical and continued imbalances of perception, power and finance between the region and the capital city. Put in this context, CFNE could be interpreted as a source of investment in and as signalling recognition of the region, while emphasising the embeddedness of universities within their local contexts. At the same time however, some of the decisions made by the core group with regards the project's policy strategy, for instance having the survey report launch in London rather than in the North East, raised the issue for some participants of whether the project (and by extension, universities) reinforces rather than corrects the core-periphery imbalance. Where the project's consortium of five universities did not manage to secure follow-on funding from a competitive national funding call, this was perceived partly by some as being consistent with the marginalisation of the North East in the distribution of national resources.

iii) Intra-region fragmentation and inequalities: Within CFNE, the socio-politics of geography and space played out at several related levels, all of which had a cumulative effect in shaping cross-institution collaboration while emphasising the mutually informing relations between universities and local contexts. Broadly, there was an issue with regards to the balance of power within the project that reflects historical intra-region tensions. Where Newcastle University is the administrative core of CFNE and Newcastle has traditionally been considered the most resourced locality within the region, parity in decision-making across the five partner universities had to be repeatedly negotiated throughout the project. The geographical fragmentation of the region, exemplified and amplified for example by poor transport links, was mirrored in the fragmentation across the partner universities. Some participants from partner universities that were located further away from Newcastle expressed a feeling of isolation from the "hub of project activity". This was compounded by a lack of a dedicated project space, and an industry-facing core group member explained that the shared university premises allocated to CFNE in the project's second year was unlike business settings, lacking in the collegial atmosphere in spaces inhabited by people in

the CDIT sector. This concern underscored the conceptual importance and heterogeneity of spaces occupied by CFNE (see also section 6.4).

6.12. Diversity and inclusion

The question of whose definitions, ideas and voices were reflected by CFNE also played out in relation to the diversity of participants in the project. The project's core team (project management and Operations Group) was disproportionately male, both in terms of numbers and the actors who wielded influence over the general shape and ground level implementation of the project. While somewhat successful efforts were made to achieve gender parity on the Advisory Board, Steering Groups and selection panels, an academic participant in the project noted the lack of women's voices at the operations level, and we observed that the roles occupied by women within the operations group were largely administrative, secretarial or supporting.

The possible eventualities of harassment or abuses of power within collaborative arrangements seemed not to be considered, nor were the responsibilities of the project in the event of such issues. For instance, there were no prior measures and due processes put in place to prevent or address potential hostilities in the Innovation Pilot collaborations. Additionally, as these collaborations happened in interdisciplinary, inter-institutional spaces (and often in ad-hoc, not highly visible forms), pathways to properly address such issues were not self-evident. Existing power hierarchies within academia and between institutions thus were susceptible to being reproduced rather than rectified. Additionally, where student placements were an integral proposed part of each of the five partner universities' ERDF programmes, responsibilities for arranging these placements were left up to the due processes of individual universities. We came to understand that at least one institution was considering ways to opt out of any direct liabilities within these arrangements, raising questions around which groups of students were able to participate in potentially career-enhancing placements, and whose ideas businesses were able to engage with.

During the lead up to the Innovation Pilots and ERDF activity, the issue of 'knowns' and 'unknowns' emerged: some Operations Group members expressed concerns that the businesses and organisations being engaged by the project leaned toward partners already known to the team, rather than bringing new partners into the fold. There is evidence to support this concern, based on an initial qualitative overview of the applications made in the open call in addition to our in-depth ethnographic study of the five Pilots, but the consequences (positive and negative) of this are harder to discern. Additionally, there were notably low levels of ethnic diversity at all levels of the project, internally and externally, including in all business-facing activities during the second phase. This again raises the pertinent issue of which groups are excluded from the benefits of CFNE, and how that might be addressed in any future work.

These points speak partly to the closed networks and 'revolving doors' within the North East that several of our participants described. An industry stakeholder described how their company was now co-managed with colleagues from the region who have been in similar circles for over two decades. A senior university administrator explained the positive aspects of cadreship within the region when discussing their extensive work experience in the region's public sector: "In the North East, you meet a lot of the same people, but this also means you are more inclined to work together and therefore compromise and negotiate to get where you want to go". A senior academic pointed out that while the level of familiarity in the region can be positive since trust is necessary for collaboration, it can be hard for new

people and new ideas to get in. A creative sector stakeholder who also has extensive experience in the region's public sector expressed similar frustration with what they felt was "quite a tight knit community in the North East" that leaves talent outside the 'right' circles "massively untapped". These observations, alongside the points highlighted above with regards representation and diversity, necessitate a deeper examination of the social relations within the project, in part to understand how the generation of innovation is facilitated or inhibited by patterns of inclusion and exclusion.

6.13. Time

Time was a critical and recurring theme emerging from the ethnographic study, as we have begun to show in previous sections. In practice, there were multiple layers to the project's temporality, including the effect of delays (see section 6.9), different approaches to time across sectors (see section 6.6), differing schedules between stakeholders, and legacy planning. A repeated refrain particularly in the first year of the project revolved around the "knock on effect" of external delays, chiefly due to long waiting periods for communication and confirmations from funders. This resulted, for instance, in the project formally starting 14 months after the submission of an initial position paper, six months later than expected. The account of these delays was broadly similar across the various core group members we spoke to who raised the issue. Their descriptions however also revealed deeper but easily overlooked mismatches in the operational timings of the various sectors involved. For instance, some of the key communication with funders occurred during summer, typically a quiet time for universities, meaning that few core project members were around to engage fully with emails and queries. Further, the initially slow uptake of the CDIT sector survey in the project's first phase was accounted for as an issue of (mis)timing since the survey was rolled out in late November 2016. According to our research participants, this is a period when some CDIT businesses start to wind down for the year.

Additionally, an industry-facing core group member explained that project management in terms of accounting for time was a challenge. Where there was a disproportionate mix of full-time to part-time staff employed on CFNE, many core group members and most of the established academic staff were employed on the project on a part-time basis (between several hours a week to 3 or 4 days a week, with some academics involved in different phases of the project and not necessarily on others). There were far fewer full-time personnel, most of whom were members of the management team and research associates within the individual institutions. With regards to the part-time academic staff, the industry-facing core group member explained that they found the general academic reluctance or inability to account precisely for their allocated CFNE hours challenging, given that such a flexible approach to time would not be acceptable in a corporate environment outside academia. This articulation underscores the heterogeneity in approaches to time both within the project team and across sectors, while revealing underlying differences in priorities and accounting measures between academics and businesses.

Alongside the ubiquitous language of delays, timelines, schedules and deadlines at all project meetings, CFNE's limited lifespan was a central aspect of CFNE. Legacy-planning was a preoccupation throughout the project, and the question of 'what happens after 2018' loomed large even in 2016. The pursuit of extension, particularly through follow-on funding, also meant diverting resources (e.g. staff, time, intellect) from the existing project. This aspect of the project may be read in the three wider and related contexts: i) the compression of time and acceleration of economic activity in postmodern societies, highlighting changes in scales and relations of production, ii) the recent acceleration of academic knowledge production,

drawing attention to the changing nature of academic research and calling into question the quality of the knowledge generated under time-sensitive conditions, and iii) the ways in which competing temporalities shape *a priori* what forms of knowledge production and innovation are possible in a project such as this, and the nature of interdisciplinary working itself.

7. Future plans

We plan to publish academic articles in the coming 6-18 months, building on the original analysis we have presented within this report. Our publications will broadly cover the following three areas we consider to be of analytical importance: i) the implications of new forms of university-business collaborations for knowledge production, academic labour and the university of the future; ii) the differing experiences and notions of time within various sectors and in multi-organisation projects; and iii) the practices and tensions of creative digital sector work in the context of labour relations in post-industrial North East UK.

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