***In a flash of time: knowledge resources that enable professional cross-boundary work***

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 *“Kathmandu. 9.0”. I knew exactly what that meant…within 5 minutes we were talking to the team and talking to suppliers. Within an hour it was clear that this was going to be a very big appeal’.*

* *HN 3 – Digital Influence and Engagement Manager.*

**INTRODUCTION**

Professional working pioneered the principle of cross-boundary work in several ways. Both classical and neo-classical professionals have worked across boundaries, often in specialist teams, to innovate, meet client demands and further scientific knowledge (Kinnie & Swart, 2019; Salvoldi & Brock, 2019; Liu, 2018). Furthermore, there has been a growing recognition that work organisation, in general, is going through a period of upheaval (Marchington, Grimshaw, Rubery & Willlmott, 2005; Swart & Kinnie, 2014). In particular, the boundaries of organisations, within which professionals work, are changing and there is a greater propensity for temporary or contract work, self-employment, and project-based employment in neo-classical professions (Cappelli & Keller, 2012). These and other structural and agentic aspects represent a shift to a ‘project society’ (Lundin, Arvidsson, Brady, Ekstead, Midler & Sydow., 2015).

In this paper we focus on the importance of cross-boundary working in a context where time – and the impact of having to respond in a short space of time – is vital. In particular, we use a knowledge resources lens to understand how this dynamic integration takes place. We draw on a case study of a project-network organisation (PNO) in the humanitarian sector, ‘Humanitarian Network’ (HN), and examine how the organisation can draw several professions together to respond rapidly (within hours) from a relatively ‘steady-state’ to launching an appeal that raises tens of millions of pounds. In particular, we find that human, social and organisational capital are critical to enable the integration of professions and organisations in a temporally condensed context. Our findings indicate that human capital was focused on individual expertise, local and global, but also knowing where individual expertise was distributed, i.e, knowing who knows. Social capital proved to be essential in enabling, what was called, a collective, to operate. We found that relationships between member agencies were vibrant and had historical significance. Finally, the impact of organisational capital cannot be underestimated as it was a key co-ordinating mechanism between professions, organisations and societies.

The sudden and extreme temporal shift at the heart of our research is one that is not often seen in professional work where projects and client demands can emerge over weeks, months or years (van Marrewijk, Ybema, Smits, Clegg & Pitsis, 2016). Indeed, time and temporality were not initial drivers of our research, but they emerged as clearly important factors in our case which we investigated further. Yet the way of working and deployment of human, social, and organisational capital across a networked organisation has implications for the way that work happens in a variety of, seemingly increasingly common and important, contexts. The main contribution of the paper is that we indicate how professionals, from various disciplines, draw on knowledge resources to respond to temporal shifts; defined here as appeal ready and a period of joint action (appeal).

In the following sections, we discuss some of the main drivers for changes in work organisation that lead to temporary, networked ways of working, such as professionals working in PNOs. It is important to note that we do recognise, as stated earlier, that professionals have pioneered networked ways of working, but do also acknowledge that there are general trends that support new ways of working as well.

**THEORETICAL FRAMEWORK**

***A changing (and increasingly cross-boundary) world of professional work***

First, increased cost and competitive pressures, rapid technological developments mean that professionals work closely with clients and suppliers to deliver products and services in networks (Marchington et al., 2005; Weil, 2014). In this context, the boundaries of the organization have changed from a relatively solid state, to being more fluid, or blurred (Burke and Morley, 2016). This means that they do not employ all their professionals, representing their human capital, but organizations work flexibly by (i) drawing on contractors (Fisher et al., 2008), (ii) placing professionals on client sites, and (iii) collaborating closely with suppliers in order to produce products and services.

Second, there is an increasing need for professionals to utilize their expert knowledge, often in inter-disciplinary teams (Bos-de Vos, Lieftink, & Lauche, 2019), and to work together at the level of the network in integrated project teams (IPTs). These large-scale projects are motivated by the requirement for diverse and specialized skill-sets, governance and cost pressures that require organizations to compete and collaborate within the IPT. Hundreds of firms of various sizes work together physically or virtually on a shared site (Flyvbjerg, 2014) over perhaps 5-10 years. Professionals and other knowledge workers are seconded from, but remain members of, their own organizations and bring together complementary knowledge and skills to focus on the project.

Third, changes that are taking place outside the boundaries of organizations hold significant implications for both the temporality and the organization of professional work. There is a greater propensity to rely upon contract work, including self-employment and project-based employment (Cappelli & Keller, 2012). In this context professionals, who can be free-agents, and firms often collaborate, beyond the boundaries of the organization, in a variety of ways to produce network-level outcomes (Manning, 2017; Moliterno & Mahony, 2011). Previous research indicates that PNOs and Project Based Firms (PBFs) have become increasingly prevalent and important (Johnson, 2011; Manning, 2010). PNOs are ‘composed of legally independent, yet operationally interdependent individuals and organisations who maintain longer-term collaborative relationships beyond the time limitations of particular projects’ (Manning, 2017: 1399). At the heart of PNOs are PBFs (see Figure 1) that act as the key coordinating entity, control property rights, employ core professionals, and have formal control over task and team (Whitley, 2006). Using these resources, they initiate projects, pull in resources and build inter-organisational teams. They do this by establishing, maintaining, and using ties of varying formality and regularity. As such they are neither purely emergent nor completely boundary-less as seen in other projects and network forms.

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*Insert Figure 1 Here*

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PNOs have 3 main characteristics; (i) strategic coordination is via a PBF or project entrepreneur (ii) they maintain core project teams, and (iii) they have flexible pools of substitute or complementary partners. These networks have been examined in a variety of contexts most notably construction (van Marrewijk et al., 2016), film and television (Johns, 2010), and international development (Manning & von Hagen, 2010). Regardless of industry, Manning (2017) argues that PNOs can be differentiated based on project variety, connectivity, organisational specialisation, and geographic concentration. However, we see time, tempo and temporality as aspects that have not been previously examined within this analysis. Within this context, there is a tension between the core PBF, and the dynamic, transient PNO. This is because the former may be functioning at a steady state whilst the latter needs to coordinate to deliver outputs at a fast pace for shorter periods of time. Furthermore, there is a neglect of how time impacts the initiation, enactment and dispersal of project resources – the past, present and future of the PNO that is important to understand given the core and wider organisational field of a PNO. Time is a key differentiator, in our view, across projects and PNO development that cuts across industry.

***Knowledge resources which impact on cross-boundary professional working***

Human Capital theory (Becker, 1964) uses economic logic to study individual decisions dealing with investments in productivity-enhancing skills and knowledge. Most definitions of HC state that it comprises knowledge, skills, intellect and talent of individuals (regardless of whether the context of the firm). This construct is important in our case study given that we explored the interaction between various professions. The inclusion of human capital in our theoretical framework therefore enabled us to understand how individual knowledge sets come together both in periods of an appeal ready state as well as when the network upscales to be in an appeal response state.

Social capital refers to the value that relationships hold in organizations. The value of human capital is tied to social capital (Subramanian & Youndt, 2005) and although each may play a determinant role, they may act also in combination to enable work to be produced in loosely structured networks such as PNOs. From within the social capital lens, it is important to look outside the boundaries of the firm, toward the network. It is also important to acknowledge that social capital becomes a connective resource which, not only connects various forms of human capital, but also holds the wider project network together.

Individual knowledge and collective relationships integrate via processes, systems and shared philosophies, i.e., organizational capital to produce outputs (Kang, Snell & Morris, 2007). This is well researched at the level of the organization and include client engagement processes, people management, technology infrastructure. It is, however, less clear how organizational capital would look and function at the level of the PNO given its network characteristics. It is, however, clear that whilst working in networked contexts, the ability to co-ordinate activities and knowledge, become increasingly important. Hence, the fine-honed organizational capital could enable fast-paced interaction of professional islands of knowledge.

We are cognisant of the fact that knowledge resources extend beyond what we know (human capital) but also includes who we know (social capital) and the processes that are used to produce outputs (organisational capital).

***Time and temporality***

Time and temporariness can have important implications for organising professional work. Temporary organising, by its nature, is distinguished from more permanent organising by the fact that there is an ex-ante end point, such as a date or a target (Bakker, Cambré & Provan, 2009, Burke & Morley, 2016). As such it is a very source of variation among organisations in general, but also within temporary organisations; ‘temporary’ is still a very general and vague concept. Yet being temporary can affect issues such as trust and social relations, which are so central to professionals relating to one another, (Bechky, 2006; Meyerson, Weick & Kramer, 1996), resource allocation to projects and tasks, uncertainty, and task immersion. It can affect and be affected by the team makeup, the task and the context of the organising (Bakker, 2010). Moreover, individuals can have a shared mental structure that affects what they do and how they do it (Bakker, Boroş, Kenis, & Oerlemans, 2013). Time is therefore becoming more important when considering the temporary nature of professional work organisation, which emphasizes the need for speed, flexibility and change in a complex and dynamic world (Gilson & Davis, 2019, Schreyögg & Sydow, 2010).

In order to deal with this uncertainty and to be prepared for high-tempo or risky settings, organisational and social resources exist to help teams and organisations achieved their aims (Hällgren, Rouleau & de Rond, 2018). Co-ordinating mechanisms and structures are important for work to be done at a fast pace in a network. However, these co-ordinating mechanisms are often related to more permanent organisations with teams of employees that can take time to embed these processes. For example, SWAT teams, aircraft carriers flight deck crew and firefighters are employed in specialised permeant teams to deal with such occurrences (Bechky & Okhuysen, 2011; Hällgren et al., 2018; Weick & Roberts, 1993). Yet the importance of co-ordinating mechanisms is rarely considered in the form of temporary organisations.

We have hitherto sketched how changes in work organisation have developed, specifically the prevalence of more temporary/networked working with a focus on PNOs within a wider move to the projectification of professional work organisation. These developments represent the context for our paper. Our main research question within the PNO context is: *Which knowledge resources enable professionals to work at a fast pace within networks*? We take a knowledge resource perspective to answer this question. Prior research indicates that looser networks and employment/contractual relationships are often formed on the basis of the availability and requirement for specialist knowledge which professionals hold. Human capital often defines who will work with whom and for which period.

We use the multiplicity of knowledge resources as a lens to understand how professionals work in PNOs at a fast pace to achieve networked level outcomes. In our case study, which we discuss in the next section, these outcomes have an impact on society and ultimately saves lives. Hence, the context of professional working in PNOs has important scholarly and practical implications.

**METHODS & CASE STUDY DESCRIPTION**

We researched the knowledge resources that enable fast paced responses in an ‘Humanitarian Network’ (HN), which is a fundraising network that brings together 14 leading aid agencies in the United Kingdom to raise money at times of humanitarian crisis. We focus on this because it is a pertinent example of the need to conduct professional work at a fast pace within a networked organisation. The professional roles include deep-seated knowledge of local country crises, aid-agency experience, financial acumen of managing monies raised and the management of complex networks which include broadcasting houses, social media and financial institutions. In this context, the stimulus for a project, or the need to respond rapidly, is often an impactful and unexpected disaster with immediate need for aid. Importantly, HN differs from the standard ‘international development’ domain as it is purely a fundraising vehicle for the aid agencies rather than an organisation with ‘boots on the ground’. Furthermore, HN encapsulates what a PNO is and how it operates, both in permanent (the core PBF) and temporary ways (the network of wider member agencies that come together). Moreover, the case addresses the notion of tempo, given that the project is initiated and the PNO upscales within hours and days of the emergency.

We report the findings from a case study based on multiple sources of empirical material for analysis. This includes 10 interviews with HN Secretariat staff at various levels and representatives, known as ‘Core Contacts’, from member agencies (See Table 1). These are important as we seek to understand the PNO from the multiple perspectives of individuals who work across different boundaries of organisation, time, and space. Interviews lasted between 45 minutes and 1 hour 15 minutes. Our interview guide began by establishing the work role of the individual, before exploring the structure of the PNO building on the work of Manning (2017). We then isolated a specific event, in most cases the Nepal Earthquake Appeal and used this to explore the economic, managerial, social and work organisation aspects of the PNO in the context. We explored human capital by asking questions such as ‘*what skills and knowledge do you bring?*’ and ‘*how much of this is HN specific*?’, social capital through questions such as ‘*do you regularly work with the same people*?’ and ‘*how do social norms develop here?*’ and organisations capital through questions such as ‘*are there any polices or procedures that govern the work?*’ and ‘*is there anything routine or habit here?*’

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*Insert Table 1 here*

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 The interviews were supplemented by visits to HN, documentary analysis of previous appeals and project documents, and by following recent PJAs. We also developed our analysis of HN through a week-long MBA class case study that members of the HN Secretariat engaged in. This supplemented our research material and was included in the analysis. The MBA case study also served as a signal of researcher saturation as we realised at the end of the week that we had reached a deep level of organisational and project understanding that was unlikely to be developed with further interviews.

We conducted thematic analysis (Braun & Clarke, 2006) across our empirical material to identify core themes related to forms of capital (knowledge resources) and temporality relating to professionals working across boundaries in a short space of time. In particular, we seek to understand how the work happens in this network. Our specific focus is on the knowledge resources that enable professional working during the onset of an emergency where there is a need for the PNO to respond rapidly.

***Case study context***

HN comprises of 25 secretariat staff, with professional backgrounds in international aid, and a Board of Trustees made up of member CEOs and independent trustees, essentially the PBF. It is surrounded by key member agencies and partners that senior members, importantly, describe as a collective and depicted the structure of this collective as layers of an onion (see Figure 2). Working out from the PBF core, the rest of the PNO consists of the humanitarian organisations and member agencies, the Rapid Response Network (RRN) of entities such as broadcasting houses and financial institutions, with the public being an important outer layer.

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*Insert Figure 2 Here*

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The board of trustees will work together, using clear guidelines, to make decisions about the launch of an appeal, known as a ‘period of joint action’ (PJA) that lasts approximately 2 weeks and it is these 2 week appeal periods that we focus on here as distinct projects and for which the PBF seeks to initiate and the PNO delivers. These appeals and projects are the fundamental reason for the existence of HN and, moreover, the key reason why it has adopted a PNO approach to the problem of emergency fundraising. The *ex-ante* 2 week appeal period serves to confirm that this is a temporary project, with a target of raising as much money as possible, albeit with a future measured in years regarding how the money is spent and accounted for. The ability to work through inter-connecting layers in the network is critical to launch an appeal that raises £millions and saves lives. The overall approach and efficiency of the process as well as improving it therefore has important implications

Since it was founded in 1963, HN has run over 70 fundraising appeals and raised more than £1.5 billion to help save lives and protect livelihoods in disaster-affected communities around the world. For example, the Tsunami Earthquake appeal raised £392m in 2004 to help about three-quarters of a million households whose lives had been devastated in South and South East Asia. In 2010 the Haiti Earthquake Appeal raised £106m and members reached 1.8m people in need with HN funds and in 2013 the Philippines Typhoon Appeal raised £97m and with these funds, members helped over 1.4m people. HN responds to the most challenging humanitarian situations in the world at a fast pace in a networked organisation.

This ability clearly depends on complementary knowledge resources, where each individual, and organisational layer has specific sets of experience related to the humanitarian disaster, fund-raising and the management of large sums of public funds that need to be used for humanitarian aid. As can be expected the mobilization of human capital can only take place through long-term and secure bonds of trust and embedded and embodied implementation of practices and processes.

**FINDINGS**

**From Steady state to appeal**

First, the data indicates that there were different tempos of professional working between being ‘appeal-ready’ and launching an emergency appeal. In times of steady-state, the Secretariat staff of 23 were full-time employed and occupied the upstairs office of their HQ in London. During this time they were monitoring and, what was described as tasks to *‘maintain, polish, and grow the machine’* (HN 2). In this time, the central PBF of HN would appear to be a regular organisation with regular working hours and pace of work. For the wider PNO, this included regular bi-annual or quarterly meetings and email contact. This time was spent building and maintaining a constant state of ‘appeal-readiness’. When an appeal would be needed was a source of constant uncertainty:

*We obviously don’t know when the next appeal is going to be. We have to be very reactive and essentially is our appeal readiness and preparedness that are watch words that we’re always working towards. Knowing that whatever we do will be pretty tested quite severely at any given time.* (HN 1).

This was compared to and contrasted with other emergency situations, such as response vehicles, where preparedness was vital; *‘Are we appeal ready? Bit like the fire engine. Someone calls the fire brigade, can you run to the fire engine and it starts and everything is right’* (HN 5)

Running to the fire engine was a good analogy for the sudden shift in tempo. When an appeal was likely and then launched, this was the move to the scale up or *‘surge’*. Here, staff were expected to:

*[I]mmediately drop everything to the extent that we can…We will be in touch with everybody in the Secretariat Team to make sure they know what’s going on…and recall people from leave if we need to…making sure that everybody is making this their priority* (HN 1).

This immediacy was emphasised by one participant recalling the WhatsApp message that arrived early on a Saturday morning and which initiated the Nepal Earthquake appeal as simply being *‘Kathmandu 9.5’* (HN 2). This sudden shift in temporal appreciation was hard for all involved. *‘Every appeal means that people are working, you know, 24/7. Every other project gets set aside’.* This was a stressful and busy time, *‘last year we did 3 appeals, [it was] enormously exhausting’* (HN 2).

The surge was also evident spatially with the downstairs social space of the organisation used as makeshift TV studios, press office and telephone bank. This was the:

*[P]hysical set-up. So it’s moving desks through there, getting our phones, a PC for each person and just making sure that everything’s connected up…so they [helpers and press] can come in and start working. They don’t want to, we don’t want to just come in and say phone’s not working. So it all happens quite quickly so you need to be ready to go. So that’s one of the first things [that happens].* (HN 2)

This was evident during our visit with this physical capital hidden in recesses behind curtains and locked away in cabinets. This enabled the scaling up from 23 staff to 80 professionals integrating work overnight once an appeal was launched.

Yet the surge was not just experienced spatially in London but experienced by others in the PNO around the world. Member agencies, suppliers, and members of the Rapid Response Network (RRN) such as the BBC, banks and payment takers, as well as celebrities would all experience a sudden change in tempo. During this time the central Secretariat would send out requests for information, monitoring documents and status reports from the member agencies, which often had a 5 hour deadline between HN sending it out and needing it back. This included information, such as agency presence and capacity in the disaster area, deployable resources in-theatre and in London, and communications protocols. This ability to move at incredibly short notice was an accepted part of the deal; *‘certainly an element of working with the HN is that you have to be prepared to be bothered quite seriously at times’* (HN 1) and expected to drop everything at any time of the day.

The launch of an appeal could come at any time, change the tempo and require immediate action. The PNO was often up scaled in a number of hours and days; once the upscaling had taken place then the activity around the functioning of the appeal took over at an incredibly fast pace. In this context, broadcasters, as part of the wider network, come together to televise the appeal, call-centres set up to take donations from the public, and financial institutions support the raising processing and allocation of funds.

An emergency and subsequent appeal launch was therefore an explosive temporal distortion and, importantly, a constant state of temporal uncertainty that was combatted by preparedness. The difference between steady state and appeal were therefore different temporal structures and experience differently.

We illustrate the sudden upscale in activity in Figure 3 which highlights the rapid onset of an emergency and the need to use the resources outlined here to (re)activate the PNO. The vastly different temporal structures, rhythms and orientations differentiates the projects of HN with more standardised or organisationally based projects that can be formulated over weeks, months and years. It is a matter of uncertainty as to when the ‘cliff face’ will appear and members of the PNO need to know that the network will rejuvenate and swing into action within minutes or hours of it being needed.

Our data indicates that knowledge resources, i.e., human, social and organisational capital are vital for professionals to deal with the temporality and temporal challenges of this PNO. Their interaction, we argue, ensures that the PNO is successful at being ‘appeal ready’ (where the PNO functions in a ‘steady state’) and secondly are able to upscale and launch an important appeal at high speed (where the tempo of work across the PNO becomes critical). It is important to note that the nature of these knowledge resources is at the heart of what it means ‘to do work at a fast pace within a network’. We therefore do not separate the two states (appeal ready and in-appeal) as the same knowledge resources enable both tempos. We now go on to develop understanding of how these resources impact and combined to help.

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**Human Capital**

First, we find that human capital is essential in generating connections between the central PBF and the wider PNO. That is to say, what professionals know, their knowledge and experience, enables the network to perform in both steady states and when work needs to happen at a very fast pace. Our analysis indicates that industry-specific human capital is important for interconnecting the various parts of this project-network organisation. The interviewees expressed the importance of understanding how humanitarian organisations functioned as well as the need to be familiar with local (country issues). This was also supported by industry-specific human capital development. As our respondents indicated:

*So for instance one big effort has been that DFID [UK Government Department for International Development] has put an enormous amount of funding into a project that’s hosted by say the Save the Children called* ***humanitarian leadership academy****. (MA 4)*

*Yeah. And being part of attending meetings within the senior management team and committees and the board. It gives you a very good insight of what their big issues are affecting this type of industry that kind of thing. So that gives you, you know quite a good insight definitely. (MA 5)*

Furthermore, the notion of ‘knowing and understanding the industry’ was also supported by respondents pointing to the importance of having a shared language. In particular, this enabled the network to respond at a fast pace when a disaster occurred and it allowed a diverse set of member agencies to interconnect when the PNO was at a steady-state. This shared language was also intimately connected with the organisational capital. In other words, it is important to have a shared language if a network needs to enact specific routines and procedures at a fast pace. Another respondent captured this importance in the following manner:

*So, you know, if you had say ActionAid, Christian Aid and Oxfam all talking one kind of language about these under that Indian refugees and C was just making up it’s own kind of language and assessment criteria under these. You know the whole thing would fall apart. You know we’ve all got to be able to* ***contribute knowledge in a kind of language that the others understand****. (MA 4)*

The data also indicates that the notion of a shared language, which is critical to the performance of the networked organisation, extended to the Board level and its interconnections with its wider context. Here influence within the network and the ability to mobilise relationships, which is an important link to social capital, was important. The Chair of the Board referred to the motivation for his recruitment of a specific individual:

*Because she brought us political contacts because she knew an MP. She can raise debates in the House of Lords. I had a guy called XXX who used to be Director of Programmes at Channel 4 was then Director of News and Current Affairs and running a big indie.* ***He was on the Board****. He went and I brought in XXX who’d been Editor and Chief at ITN former editor of Newsnight. And then was on the Board of the BBC Trust.* ***So that was extra Board expertise****. (HN 2)*

The importance of board experience and the way in which this enables links to the wider network through critical relationships in both steady state and periods of appeal speaks to the importance of the links between human and social capital. This also points to the need to consider the knowledge assets as interconnected; i.e., the networked organisation cannot rely on single sets of resources but need to consider how these resources integrate in order to deliver work at a fast pace (e.g., an appeal). This interconnection was expressed in the following way:

*In terms of skills for me obviously we needed the technical skills obvious whether it be communications or fundraising in particular…and then alongside those each person needs to have the relationship skills. HN is all about relationship skills with our trusts. (HN 5)*

Human capital was, therefore, vital for HN’s operations. What people knew and their experience were key. HC ensured that connections were generated between the PBF and the wider PNO, and this was often through a form of shared language that operated throughout the industry to include industry-specific HC. This knowledge and shared language helped to ensure that routines could be enacted at a fast pace when required

**Social Capital**

Second, the data indicated the importance of the enabling nature of **social capital** which served to interconnect the various stakeholders in the PNO. In particular, individuals in the core Secretariat were mainly focussed on *‘Keeping ties warm. You never know when you might need them’*. In between appeals, it was important to *‘maintain, polish, and grow the machine’*.

The importance of social capital was expressed as:

*[We] probably prioritise* ***relationship skills*** *over the technical skills because if you look at one of my appointments, A who I don’t think you’ve met he’s actually moving on actually this month. He’s the director of foreign policy. But his relationship skills were excellent…. So that’s why I said getting* ***the right fit*** *of person and being able to manage a team but more importantly be able to manage* ***relationships is important****. (HN 2)*

*So that’s a really, really important set of [UN] relationships and knowledge that if you don’t have you’re just excluded from a load of meetings and discussions and resourcing decisions. (MA 4)*

The development of social capital was facilitated via frequent contact with member agency ‘core contacts’, socialisation of new members, and specific functional groups and structures that mirrored the central PBF and facilitated human capital connections. It is vital to the functioning of a networked organisation to have interconnecting structures, enabled by frequent and continuous interaction, across the boundaries of the organisation. This was expressed in the following way:

*That sort of thing gets checked throughout the fortnight. Maybe we’ll pull the whole end forward a bit. Maybe we’ll extend it if it’s going particularly well if it’s still in the news. So that’s all-in dialogue with member colleagues and the board. So we’ll have met them more often as an executive team here (HN 1)*

*So we get them together quite often, you know for various reasons and the functional groups I mentioned maybe for learning exercises. Maybe… Recent examples of them are directory programmes and accountability went out to Kathmandu just before the end of the programmes there just to kind of have a final get together. And check in on how things are going and if there are any final issues. And that’s at least the third time she’s done that. (HN 1)*

*So I mean HN is quite different because it’s a* ***network rather than like a usual donor and the engagement is quite regular****. (MA 3)*

There was also an important dimension of ‘keeping the PNO together’ which was related to the stability of social capital. This meant that the interconnecting fibres of the network was held together by the continuity of relationships:

*We’ve had some steadfast suppliers certainly since I’ve been here and they’ve been with us for a long time. And so there is a little bit of reluctance of letting go because the relationship works more than anything else. And there’s a little bit of fear that when you drop someone and bring someone new on that it probably won’t work. Or potentially fail the appeal. (HN 5)*

The long-term stable nature of social capital was linked to the importance of trust, and specifically personal and professional trust, which was often expressed by referring to the network as a ‘collective’; and one that has been sustained over many decades.. This is a critical differentiator between PNOs that can respond at a fast pace and those that are more fragmented (Manning, 2010). As one of our respondents said:

*We use the platform of the HN to enhance trust through that kind of collective approach all the time. It’s definitely a big part of what we do and who the type of people we would look for to work here. (HN 1)*

At a wider network level, trust was required from broadcasters, primarily the BBC from whom they borrowed reputational capital to make an appeal, from member agencies and suppliers, and from the public as donors. Ultimately, HN had to trust and know that these members of the network could be counted on in times of appeal from the start and at very short notice. This was linked to the analogy of needing to know that the engine would start when it was required. ‘*Trust is essential to how we work. And that mutual trust between us as the Secretariat, our member agencies and everyone that we work with. I mean that’s a very important quality that we work very hard to build up’* (HN 1).

At an individual level, when the surge required HN to go from 25 to 85 often overnight, trust was incredibly important when individuals would turn up at HN HQ to work in the Press or Fundraising Offices and would *‘just have to hit the ground running a bit’ (HN 4).* They would need to be trusted by HN staff to be able to get up to speed on the situation and know their roles and responsibilities, as resources to train them were limited.

Indeed, HN seemed to try to minimise the need for swift trust by requesting agencies send the same people to help with the surge and also by maintaining Core Contacts who can be relied upon, *‘we try to say that we would like people for a minimum of 2 days in a row. I mean ideally we’d have one person for a full week’ (HN 4)’.*

The centrality and importance of social capital was also expressed in the PNO culture. The data indicated that what held the interconnected relationships as well as the actions together during an appeal, was a shared humanitarian philosophy. Our interviewees often referred to this as the importance of ‘*fitting into the spirit’*. This was also expressed by the core and all member agencies as a ‘*collective*’. Importantly, the networked organisation here refers to a holistic collection of membership rather than individual member agencies competing against one another. This engendered a strong, and historic, sense of trust. It was clear that everyone was in a steady state or an appeal together and sought to minimise competition. For example, during a particular humanitarian appeal, a member agency would never engage in their own fund raising. This confirms the importance of strong project-based ties which build on trust (Manning, 2017).

The data indicates that the characteristics of social capital was tightly linked to how human capital was developed within the network. Importantly, these interconnections were also facilitated through detailed organisational processes which enabled the PNO to function during stable states as well as during fast-paced appeals:

*That’s a big part of trying to pull all that stuff together and have everybody understand where they are in relation to who ends and make sure that those relationships and dynamics work well. We used to have something called the critical path which worked very well. (HN 1)*

*Team preparedness, timing is obviously the other factor…people with the right attitude, the right team if you like. Obviously understanding their roles and responsibilities and trust with each other. And finally but not least.. I mentioned this about relationship that you’ve built with your member organisations with the partners and everyone else. And everybody understanding their roles. So having the final thing would be relations with the systems and product management in place so everybody has that clarity. (HN 5)*

There was also a clear link between the PNO and the context, specifically in relational and knowledge-based terms. Here relationships with the broadcasters, social media and with the member agencies is of paramount importance, especially the BBC who were seen to have the ultimate go/no-go decision for an appeal. Clearly, both human and social capital enables fast paced work organisation within the network. Specifically, the interconnection between these knowledge resources acted as the foundation for the co-ordinating mechanism across the network; they coordinated relationships and actions which enabled fast-paced action across organisations. This is especially important given the networked aspect and that many stakeholders were dispersed across organisations; social capital is arguably what holds the PNO together.

*So yeah there’s an element when I was recruited to Chair the Board they wanted somebody who could rebuild the relationship. You know, I’d been Managing Director for XXX. I’d taken XXX into the merger with YYY to create [a national television channel]. …* ***So I knew everybody****. HN 2)*

**Organisational Capital**

The findings confirm prior research stating that in loosely structured networks, such as PNOs, the co-ordination mechanisms embedded in organisational capital become all the more important (Jarzabkowski, Le and Feldman, 2012; Kang, Snell and Morris, 2007). This was particularly evident from our interviews with member agency representatives.

First, there were clear governance structures and codes of conduct between the board of trustees and member organisations, which guide appeal decisions. This was mainly expressed in having clear criteria and a critical path that interconnected the various layers of the network and that enabled fast-paced work. This critical path was, at the time of writing, being distilled into ‘The Manual’. Several of our respondents referred to this as a way of co-ordinating action and spoke of how it was communicated to new starters at HN and with partner agencies, who would often be designated the Core Contact in order to get them appeal experience:

*If they didn’t already know about them on the day of a HN appeal someone in their organisation needs to get on the case very promptly. And make sure that they understand what happens and in what order. And then in order for the information to be pulled that will enable eventually the board of trustees to access those* ***criteria****. Does this crisis meet those criteria or not? Each organisation needs to be a very capable humanitarian agency that can supply accurate information about what it knows about the situation on the ground. (MA 2)*

*There has to be, there has to be a very clear* ***understanding of the spirit*** *that we just discussed. But also at the time of an appeal there has to be a clear understanding within each agency of what the criteria are. (MA 4)*

An important part of organisational capital, building upon the criteria, was that of detailed processes which co-ordinates the core of the PNO and its member agencies. These processes also enabled the PNO to upscale at a fast tempo during an appeal but it also integrated the various parts of the network during a steady state. The processes were extremely detailed and was also used to train/develop new individuals in the member agencies.

*I call it a* ***tool kit*** *really which shows where and what needs to be done and who needs to do what in an appeal. And that goes into quite a lot of detail and that’s the kind of thing we would run through in an emergency (HN 1)*

*We have a* ***parent timetable*** *of which press officers are coming in from which member charity when…. And then I think each morning of the appeal I did a news roundup. So my first hour or two was just looking out what news had come out that day on the Rohingya appeal. (HN 4)*

*If they’re brand new it’s just a case of we have a kind of a brief* ***induction sheet*** *and I’ll probably give them a rundown of how we work, and how they can log on and where they can access the files. (HN 4)*

There were also very clear communication channels between HN and member agencies, which facilitated practice rounds for appeals. We found further evidence of clearly structured roles which interconnected HN with the member agencies and facilitated knowledge transfer during and after an appeal. Importantly, the ensemble of organisational capital embedded tacit routines that underpinned the fast pace of work in the upscaling to, and during, an appeal. This points to the importance of knowledge management across the PNO which enabled both steady state and fast response actions. In particular HN relied on the following organisational capital to ensure that knowledge was interconnected across the PNO.

First appeal wash-ups, which are review meetings and workshops, are held after every appeal to celebrate successes and capture key learning points. These include Secretariat staff and teams, functional groups, creative agencies, broadcasters, and high value partners. Second reports, which included formal reporting templates on the results and other outcomes of each appeal, are presented to the Board and broadcasters, including through the BBC’s Appeals Advisory Committee (which also receives reports from the BBC’s own charities, Comic Relief, Sports Relief and Children In Need) at regular intervals throughout the appeal response cycle.

During an appeal we also found several important aspects of organizational capital. First, there were clear guidelines, used by the trustees, on which to base appeal launch/no-launch decisions. This was followed by a specific formula applied to divide funds raised between member agencies. There was also a clear awareness of the routines needed during an appeal. As one interviewee said: ‘*a process to follow so that everyone can slot in’ (HN 4)*. This ‘formula’ was also important in terms of keeping the PNO together after an appeal (or a surge in work tempo) until another period of fast paced work appeared:

*That’s probably the biggest tension if I’m honest. Thankfully under C’s leadership we have a formula that works. But when it comes to splitting the money and so forth there’ll always be members that think they should get more. So it’s important for us to challenge and to hold members to account in terms of how their money is spent. Not only from the public point of view, from the donors’ point of view is obviously number one. (HN 5)*

Organisational capital, expressed through governance structures, codes of conduct, the ‘critical path’ and the development of ‘The Manual’, and indeed the criteria for launching an appeal in the first place, serves as a vital co-ordinating mechanism. Other forms of organisational capital, such as wash-ups and debriefs enabled knowledge transfer which emphasises the interconnectedness of these knowledge resources. These artefacts of organisational capital helped to deal with the surge when it came and were used to induct new members of the network during steady-state.

**DISCUSSION: KNOWLEDGE RESOURCES AND TEMPORALITY IN PNOs**

Our data analysis indicates that the integration of knowledge resources, i.e., human, social, and organisational capital are important to for professional working in cases of irregular temporal patterns; here in steady state (appeal-ready) and rapid response periods. Importantly, social capital served as a mechanism to maintain strong relationships between diverse sets of professionals across the PNO. This enabled trust during times of an appeal and held the temporary organisation together during the post-appeal period. It also ensured that network-specific knowledge was maintained and developed to ensure future successful appeals.

Specifically, our findings point to the role of organisational capital as a co-ordinating mechanism in this context. The detailed processes, formula and training ensured that a network, that is loosely structured can function at a fast and effective pace. This supports the work of Burke and Morley (2016) which emphasizes the need for role-based interaction (Bechky, 2006), swift trust, and time-based control. These mechanisms become particularly important in temporary organisational settings, which are prevalent in professional networks, where there are no formal organisational control and coordination mechanisms. We develop this further by analysing the interaction of knowledge resources. Crucially, the resources developed in one appeal are developed in the following steady-state. As such, the shadows of past appeals stand over present appeals which in turn affect future appeals (Stjerne and Svenenova, 2016; Bakker et al., 2016).

Our findings here on trust add an interesting dimension to the HN PNO context. Trust is seen as vital in organisations and temporary organisations especially, given that people often come together suddenly to work on a project, reach the end goal or target, and then disperse. This often takes the form of ‘swift trust’ in temporary organisations such as this (Bakker et al., 2013; Meyerson et al., 1996). Yet here we find, as with Bechky (2006), that the fact that individuals in the network have the expectation of working together on an appeal in the future changes the dynamic (Saunders & Ahuja, 2006). Hence here swift trust is replaced by a more conventional approach that can be built up during the steady state period. While temporary organisations are often seen as ephemeral and loose, the core PBF at the heart of this PNO challenges this.

Our consideration of knowledge resources in the HN PNO is an important contribution as the mechanisms specific to PNOs are currently poorly understood. However it is worth discussing the crucial role of time, tempo and temporality here. There is an inherent tension in PNOs between the relatively stable PBF that, in this case, exists in steady-state and then the wider PNO which is then activated but relatively dynamic and transient network organisation. By considering a PNO that is so temporally dynamic, we argue that PNOs can be differentiated much more based on these aspects regardless of industry (such as construction vs events vs film/TV), which develops the work of Manning (2017). Time and tempo are key to consider for the initiation, enactment, and dispersal of project resources. Importantly, this transcends industry concerns and sensitivity. This makes a key contribution to the temporary work organisation literature as we pointed to the importance of the ability to assemble a networked organisation and respond to a crisis in a short space of time. Increasingly, in an uncertain world, professionals will be faced by working at different tempos, often unplanned, but always impactful.

While we appreciate the fact that our data represents an extreme example of high-tempo work but we are also cognisant of the fact that, if temporary organisations are to be effective, it is important to draw on our findings on both tempo and the knowledge resources that support the effective execution of work within loosely structured networks. Here the PNO form has been selected as a way for member charities to effectively outsource their emergency capability, pool resources and hedge the liability that a sudden onset emergency represents.

We recognise the limitations of our research, given that the paper is focused on a single case organisation, which is unique. However, the data provides clear examples of the nature of the knowledge resources that temporary organisations need to draw on to be effective. Furthermore, the data is qualitative in nature and, although providing rich evidence, the sample is limited. We were fortunate to obtain data from member agencies which provides detailed insight into the nature and processes of the PNO. Finally, studied both appeal ready process and appeal launch processes in order to indicate how professionals work across boundaries at different tempos. The former being a continuous process of knowledge sharing, whilst the latter sparks fast-paced interaction to generate societally beneficial outcomes.

Our research provides opportunities for future research in so far as it pinpoints the context and nature of much of the future of work organisation. It also paves a way to understand the resources needed to ensure fast paced work in temporary settings. Future research could examine similar cases in contrasting settings such as medical and global health emergencies, , expeditionary warfare, or other sudden onset situations with a different temporal structure and rhythm (Hällgren et al., 2018) and where, as is the case here, the network structure is a major differentiating factor. It would also be valuable to undertake larger scale studies which include quantitative measures and could provide a base for further comparisons.

Our findings here provide evidence of how networks of professionals from diverse backgrounds are managed and activated at speed. This seems to be increasingly important in the realm of professional work (Smets et al., 2017) where professionals come together for project work and then disperse. As is the case here, these are not necessarily those employed by the same PSF or organisation or indeed, who are known by the core co-ordinating entity. That is, this growing networked and project way of working increases the likelihood of working with those that one doesn’t necessarily know, doesn’t necessarily know when they are needed, or managing people who you don’t employ (Kinnie and Swart, 2019).

Following on from this, and underpinning much of our research here, is the idea of uncertainty, and we see that this leads to future research questions. This is linked to the metaphor of ‘the fire engine’ and the temporal uncertainty. Ultimately there is uncertainty as to when exactly the PNO will be needed; at times it may not be needed at all. There is, perhaps, a fine balance between being certain and uncertain, and a trade-off with being constantly ready to launch. What happens if that emergency or initiating need never comes? Furthermore, what are the various costs associated with maintaining these knowledge resources? And what can be done to reduce these?

**CONCLUSION**

In summary, the aim of our paper was to understand: *Which knowledge resources enable professionals to work at a fast pace within networks*? In order to answer this question and to contribute to literature, we sought to (i) examine the context and nature of professionals working across boundaries in temporary organisations, referred to here as PNOs, (ii) the various tempos at which PNOs need to function (in our case, appeal-ready and the launch of an appeal), and (iii) the knowledge resources which enable professionals to perform these actions. We have illustrated how forms of human, social and organisational capital act as key resources for professional workers to draw on in PNOs and that the interaction between them is critical in enabling this flow of work through a network. These are vital in this case as they help to lessen and deal with the uncertainty of a sudden onset emergency that requires immediate action. Importantly, we find that human capital, i.e., the individual professional knowledge and experience related to the organisation, the member agencies and the country reality, is critically important in order to mobilise action. Second, social capital, resembled an integrative mechanism for individual professionals and member agencies to respond altruistically and swiftly in times of crises. Finally, organisational capital acted as a co-ordinating mechanism to mobilise both action and funding to save lives. This is critically important, for both scholars and practitioners, given that the future of work is increasingly organised in loosely structured projects and require fast paced responses (Burke & Morley, 2016; Manning, 2017; Swart & Kinnie, 2014).

These findings have clear implications for the study of the professions and organisations as they point to three important points. The first being, that professionals will increasingly work across boundaries in uncertain contexts. The second is that individuals and organisations will work in conditions where time pressures will vary, from stable to fast paced. The final illumination of our findings is that all knowledge resources, i.e., human, social and organisational capital need to combine to support professional integration across a spectrum of time contexts.

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