

Making a place for technology in communities: PlaceCal and the capabilities approach

Prof Stefan White^a and Dr Kim Foale^b

^aPHASE, Manchester Metropolitan University, Manchester, UK; ^bGeeks for Social Change, Manchester, UK

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ABSTRACT

We discuss how a capability approach to information technology in neighbourhoods with low social capital can create embedded and sustainable Community Technology Partnerships (CTPs) that connect residents and institutions together, reducing barriers to social participation and collaborative action.

Current research indicates older people in deprived neighbourhoods have chronic problems with the effective sharing of community information, a key factor in the “digital divide” (Niehaves & Plattfaut, 2014). Manchester Age Friendly Neighbourhoods (MAFN) conducted 4,000 interviews in four ‘age-friendly’ resident-led neighbourhood partnerships in Manchester. This fieldwork demonstrated that the inability to create and share information within and across residents, communities and service providers is a key contributor to social isolation and barrier to local collaboration.

MAFN developed a CTP to correlate perceptions that it was difficult to find out what was going on in the neighbourhood, with an exhaustive audit of actual activity. The result was collective surprise at finding out about dozens of events in each area that were previously either poorly communicated or which were not normally published at all, relying entirely on word of mouth.

The CTP was developed using a capability model (Kleine, 2013) to discover and overcome both the social and technical barriers preventing the hosts of neighbourhood activities collaboratively and sustainably self-publishing their event information. This resulted in the production of PlaceCal, an holistic social and technical toolkit that ensures groups and individuals have the technology, skills, infrastructure and support to publish information, creating a distributed network of community information.

KEYWORDS

capability approach; technology; community development; age-friendly; digital inclusion

1. Introduction

In this paper we discuss how applying a ‘capability approach’ to information technology (Kleine, 2013) in neighbourhoods with low social capital can create embedded and sustainable ‘Community Technology Partnerships’ (CTPs) that connect residents and institutions together, reducing barriers to social participation and encouraging collaborative action.

We discuss the place of technology in communities in relation to the creation and sharing of information about local groups and events, and the impact of our own socio-technical intervention called ‘PlaceCal’ which was piloted in a Manchester neighbourhood by {Manchester Metropolitan University (MMU) and Geeks for Social Change (GFSC) from 2017 until present.

This PlaceCal pilot project created a community calendar which was co-produced by a wide range of partners working in the locality. It did this through a social intervention in the form of a community development programme which trained individuals, groups and organisations to curate and share a digital calendar ‘feed’ of their own events, as well as a technological intervention in the form of a digital platform for collating, processing and publishing those individual feeds to create a central source of community information.

We called this co-production process a Community Technology Partnership (CTP). The CTP used a capability approach to help understand the specific barriers everyone in the neighbourhood faced in effectively sharing community information, and attempted to overcome them as a partnership using a range of methods including one-to-one training, creation of the PlaceCal platform, and improved documentation.

This paper will discuss the ‘age friendly’ context for the intervention, and how we built on existing work applying capabilities to IT. Throughout, we distinguish a capability approach from existing ‘digital inclusion’ approaches, and conclude with the specific findings discovered in both delivering the PlaceCal platform and the CTP.

2. Neighbourhood Partnerships and the Capability model

2.1. Defining the capability approach

The PlaceCal CTP was conceived in order to apply a ‘capability approach’ to community technological development, building on existing ‘age friendly’ community development programme ‘Manchester Age Friendly Neighbourhoods’ (MAFN).¹

The MAFN project was conducted by an engaged-research team at MMU with the objective of co-creating resident-led multi-stakeholder partnerships located in specific deprived neighbourhoods in Manchester. The ‘neighbourhoods’ were defined by residents in relation to political ‘ward’ boundaries, each containing 6,000-10,000 people. The research component of this project focussed on developing a mixed-methods critical evaluation of these neighbourhood areas based on the World Health Organisation’s (WHO) ‘Age Friendly Cities and Communities’ (AFCC) principles. The WHO AFCC approach explores eight dimensions or ‘domains’ of well-being, including ‘communication and information’. The delivery component of the project focussed on creating neighbourhood partnerships that brought together communities of ‘place’ and ‘practice’, signifying that individuals were invested in the area but in different ways: living, working, or both.

This deliberate mix of communities of place and practice in the MAFN project is itself an application of a capability-based community development methodology. In our interpretation, it correlates with the concept of ‘active ageing’ in the AFCC approach as a position distinct from medical or social models of disability, instead emphasising

¹The project was based on an earlier successful and still ongoing 2012 pilot project (Phillipson, White, & Hammond, 2014), which was funded and undertaken in partnership with Southway Housing Trust. The MAFN project formally ends in March 2020, and is funded by the UK National Lottery’s ‘Ambition for Ageing’ programme.

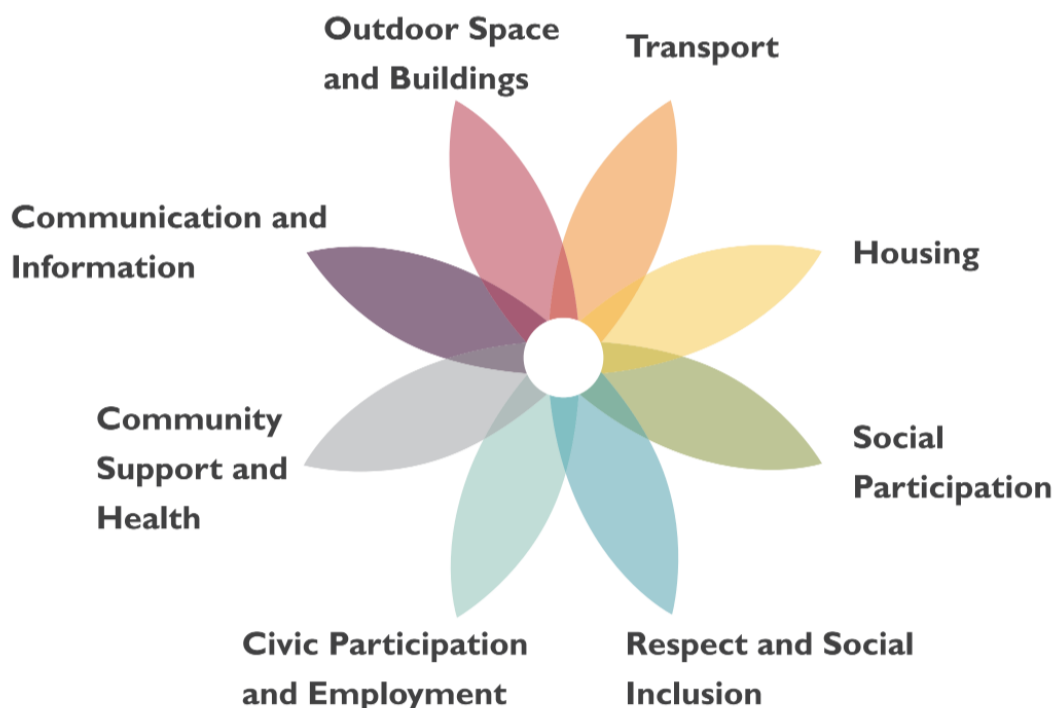


Figure 1. 'WHO Age Friendly Flower', as adapted by MAFN

the active self-determination of individuals in any social, economic or technical process (Nussbaum, 2003; Sen, 1999).

In discussions of this and earlier work operationalising the capability approach in the context of older people and place (White & Hammond, 2018) we argue that the distinction between place-based interventions emphasising the active role of older citizens in deciding and creating the services and systems that ensure equality of opportunity across the life-course have two key features in common with the capability approach. These two features are indicated in the WHO AFCC 'flower' diagram (Figure 1), which shows an individual older person's experience at the centre of a flower with eight petals each indicating a different domain of determining factors in the social, economic or physical environment. The diagram demonstrates how the 'age friendly approach' places individual human experience at the centre of both any understanding of the determinants of opportunities for a well-lived life, **and** at the centre of any actions taken to improve those opportunities (World Health Organization, 2007).

Definitions of the capability approach insist on 'people's freedom to choose the lives *they* have reason to value' (Sen, 1999, p. p18). All aspects of the social, economic and physical environment are implicated in the interdependent structural enabling or disabling of each individual's desires. This is represented in the WHO flower, which shows the interaction of multi-determinants of healthy ageing. In capability terms, Kleine (2013), using Alsop and Heinsohn (2005, p. p8), shows how the agency of the individual to make 'meaningful choices' is a capacity that is measured by that individual's 'asset endowment' which has 'psychological, informational, organisational, material, social, financial and human' components.

Reiterating these themes with a more philosophical tone, Nussbaum describes the capability model in the form of a question: 'what are the people of the group ...

actually able to do and be?’ (Nussbaum, 1999, p. p34). In doing so she offers a concrete ethical test to ensure that people are being engaged in a manner which respects their fundamental existence, rather than having choices ‘made for them’ on the basis of external characterisation or assumptions of their abilities, feelings or opinions. The test contains the expectation that this question needs to be asked of all individuals and groups, and requires an ongoing negotiation between all Beings.²

In this interpretation, we argue that the three main conceptual impacts of adopting a capability approach are the assumption of the right of each individual to define their Being, and recognition that *both* the actual existence *and* potential of their Being is interdependent with the social economic and political context of that existence. Firstly, there is a requirement for direct engagement with citizens and discovery of their real and actual desires. Secondly, individuals are always part of groups and societies, and our capabilities to achieve our desired Being are collective and relational. The third impact is demonstrated in the drive to ask this question at all. The capability approach is an active and collective question seeking to support individuals to overcome the actual specific barriers preventing them from realising their desired states of Being: indeed, this is why it is an *approach* and not a *model* (Sen, 1999).³

We summarise this interpretation of the capability approach and how it can be distinguished from a wide range of technical and social attempts to enable greater equity of opportunity in Table 2.1.

Models of difference
Models of difference
Manchester City Council Public Health
WHO Age Friendly Cities
PlaceCal
Capability
Citizen
‘Active-ageing’
Community Technology Partnership
What is the person or group actually able to do and be?
Programmes focussed on increasing equality of opportunity in place
Older people actively design and change services in collaboration with agencies and experts
People actively design and change digital services in collaboration with technological partners
Social
Service user / customer
‘Age Friendly City’
Digital inclusion training
Disabilities considered to be at least partially socially determined
Individuals identified as vulnerable are connected with care networks
Services work together to consult with older people and make the city better for them
Teach disadvantaged groups to use the internet so that they can access pre-existing commercial platforms and centralised information sources

²This account is expanded in terms of Spinoza by the authors in White (2018).

³Nussbaum’s work amplifies this ethical aspect of Sen’s approach which makes clear that people are not able to be who they are actually capable of becoming because of ‘deprivations’, ‘barriers’ or ‘handicaps’ they experience are the result of the compounding relationship between their personal characteristics and the barriers that the environment, in its physical, economic, social, political, and cultural aspects presents to them.

Deficit
Patient
'Disability Threshold'
(Software) user / customer
Individuals negatively judged against a pre-defined norm
Target clinical interventions more effectively e.g. reducing hospital admissions of frail older people
Physical barriers to service access removed
Follow technical standards for websites and documentation so that people are not excluded 'automatically' (ally)

The Deficit or 'medical' model attributes problems to an individual's deviations from 'the norm': in other words, 'abnormal' individuals are assumed to have a 'deficit' of some kind. Franklin (1999), speaking in a technology context, puts this bluntly: 'people are seen as sources of problems, while technology is seen as a source of solutions'. By contrast, the social model sees disability as created by the individual's relationship to the social environment, and argues that deficit-based approaches actually *disable* communities by implying 'communities in and of themselves are not competent [and] require the expertise of professionals' (Durie & Wyatt, 2013).

While the difference between deficit and social models have been widely discussed – especially in disability studies – there is little formal academic discussion about the relationship between the capability approach and other models. In a rare example, Mitra (2006) explains that the key feature of the capability model in terms of its relationship to other disability models is that 'the capability approach allows disability to be differentiated at two levels: at the capability level, or as a potential disability, and at the functioning level, or as an actual disability'.

This vital distinction between potential and actual disability disrupts generic, 'representational' approaches which create normative categories and disabling judgements. This insistence on the real potential and actual conditions of the existence of individuals and groups enables positive engagement with the real conditions of opportunity, and makes them part of the context for any future transformation.

Durie and Wyatt (2013) explore the practical application of these issues in a complexity theory analysis undertaken in relation to a key case study of 'The Beacon Project' where construction of a resident-led multi-stakeholder partnership is shown to have completely and enduringly transformed health, social and educational outcomes in a highly deprived neighbourhood in Cornwall over more than 22 years. This 'C2 Connecting Communities' methodology shows how the development of specific located interpersonal relationships between a range of different stakeholders is central to the success of any programme of transformative community development. Durie and Wyatt argue that social transformation is enabled through active collaboration of previously unequal and adversarial stakeholders ('the community' and 'the authorities') because these direct relationships increase the ability of both groups of stakeholders to address 'common' problems, and create the conditions for an emergent future which was previously unachievable.

The MAFN project explicitly followed the C2 methodology in order to operationalise this interpretation of the capability approach. The C2 method sets out key features of resident-led engagement processes and partnership building, and served as the basis for constructing partnerships developed both by MAFN and the PlaceCal CTP.

2.2. Technology and capability

Table 2.1 explores differences between the three broad models of dis/ability. In our interpretation these approaches should not be seen to be in opposition, but are complementary. The capability approach builds on both the social and deficit models, responding to the conditions affecting both actual and potential capabilities of both communities of place and practice in relation to different groups of older people. This section explores how these existing discussions of digital inclusion and accessibility relate to the CTP approach.

Research by the OECD (2016) paints a bleak picture of the state of digital skills in the UK. This study divides up common computer skills into several categories from 1 (simple) to 3 (complex). Level 1 skills consist of a range of day-to-day computing skills like ‘deleting an email’. 40% of ‘working age’ adults aged 16-65 struggle to complete all the tests at this basic threshold, being described as ‘under level 1’.

This picture is much worse for older people. The UK Office of National Statistics (2019, Figure 2) found 56% of those over 75 have either *never* been online, or not been online for over three months, increasing to 61% for over 75s with disabilities. The reasons for this are varied. 52% of non-internet users aged over 65 think that they’re simply not missing out on information (Pew Research Centre, 2014b), 65% think it’s too complicated, and 53% have privacy concerns (Friemel, 2016). This is exacerbated by social class, with 40% or less of over 65s with a high school education or less being online, compared to 87% of college graduates in the USA (Pew Research Centre, 2014a).

What people actually *do* when they’re online is enormously varied and heavily correlated with class and age. Digital exclusion is intersectional, and the worst experiences are suffered by those who are older, less well educated, less likely to be employed, female and disabled (Deursen & Dijk, 2014, p. p520). The result of this is an enormous gap between tech ‘haves’ and ‘have-nots’. It is not just a simple binary test – ‘are you on the internet / using a smartphone / on Facebook?’ – but a complex multidimensional matrix of skills, abilities, and capabilities. This matrix is highly impacted by a range of psychosocial variables, and significantly affected by overall motivation (McNeal, Hale, & Dotterweich, 2008) for the specific ‘clickable possibilities’ (Kleine, 2013, p. p38) the citizen wants to accomplish.

This situation is worsened still in the context of the current shift of government and statutory services to be ‘digital by default’ (UK Cabinet Office, UK Government Digital Service, & Rt Hon Lord Maude of Horsham, 2012), or worse, online only. In the UK, key activities such as claiming benefits, filing tax returns, and accessing medical services are in the process of being moved online ‘to transform public services . . . making them better and cheaper for taxpayers and more effective and efficient for government’ (ibid.). In other words, services are no longer ‘door to door’ but rather ‘person to person’, mediated by the internet (Wang, Zhang, & Wellman, 2018).

In practice this is placing increasing strain on ‘human’ services for older people. Anecdotal reports published by Age UK (2015) demonstrate this issue concretely:

Exclusion from online services . . . is a growing problem and people are sent to us to help. Telephone lines are busy and you are directed to online communication for almost everything – benefits, gas and electricity, tax, Blue Badges etc. Our local authority wants most changes reported online and they offer very little face-to-face service and are reluctant to take changes over the telephone (if you can get through that is). For sites that require an email before you proceed this is more of a problem as most clients don’t have one.

Current strategies to rectify this systematic exclusion in a technological context fall

Figure 1: Internet users by age group, 2018, UK

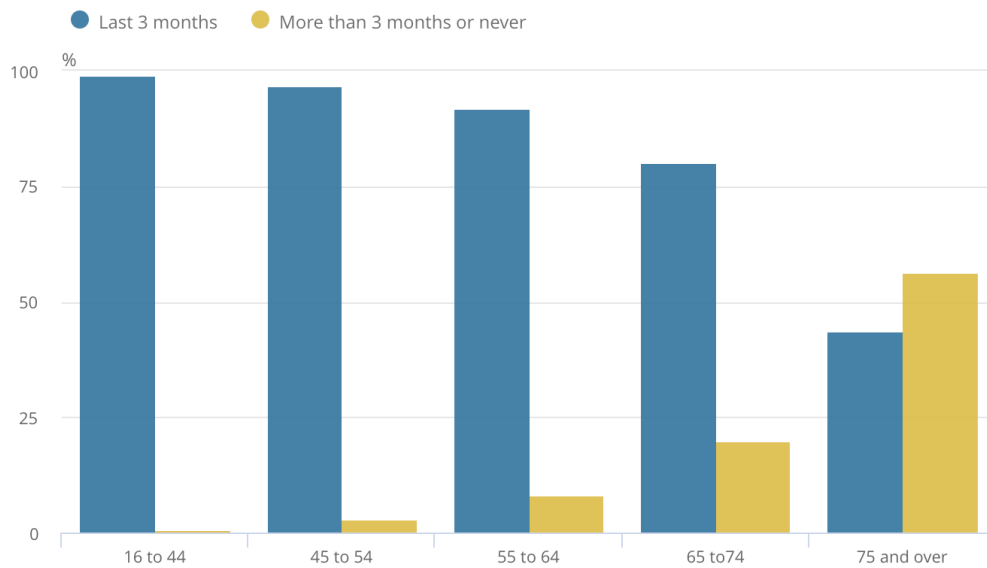


Figure 2. Internet users by age group (Office for National Statistics, 2019)

into two categories: ‘ally’ and ‘digital inclusion’.

‘ally’ serves as an example of a response to this context from a technical and deficit perspective. Popular website resources such as makesa11yproject.com focus almost entirely on the physically exclusive technical components of a website, ensuring that websites can be read with screen readers, for people with colorblindness, interpreted on a range of devices and with high contrast, etc. Such initiatives perform useful functions, but as perhaps indicated by the cryptic obfuscation of ‘ally’ – there are 11 letters between ‘a’ and ‘y’ – the focus is on (software) ‘users’ who by definition are separate from the expert professionals who produce these websites. Needless to say, this approach does not engage with wider determinants of exclusion and only considers as important the user’s interaction with the service.

‘Digital inclusion’ takes a skills and development approach that considers the social factors that make someone not able to (or want to) use a given website. The UK Cabinet Office (2014) breaks down digital inclusion into four categories: “access - the ability to actually go online and connect to the internet; skills - to be able to use the internet; motivation - knowing the reasons why using the internet is a good thing; and trust - a fear of crime, or not knowing where to start to go online”, for example. The data provided by the ONS (2019) indicate that this approach has a very long way to go to make government digital services inclusive for older people.

Our critique of the current situation is that neither inclusive design nor digital inclusion programmes seek to address the *underlying* causes of digital exclusion by transforming the product or system to make it more inclusive. Park & Humphry (2019) note that ‘digital inclusion can only be realised if all dimensions of access, affordability and digital literacy are resolved’. We would add that these are all complex social and economic factors that cannot be explained through ‘the digital’ or ‘literacy’ alone: this schema would presume that current services are basically perfect, and that anyone who doesn’t use digital technology to do what they want or need has a social or physical

impairment. Ultimately both the deficit and social programmes of technical inclusion predominantly seek to enable people to adapt to existing systems that were designed without conceptual or real engagement with people like them. A capability approach seeks to design systems and products which support people’s freedom to choose the ‘lives they have reason to value’ (Sen, 1999:18) – in our case, the simple wish to find things to do and people to meet locally in a deprived area bereft of digital capacity.

The remainder of this paper will discuss our capability approach to forming a CTP. This approach considers all the people, skills, infrastructure, tools and resources in a neighbourhood, analyses the barriers to digital participation, and asks what it is that people want to do and be using technology.

2.3. A capable neighbourhood

The MAFN co-research process involved over 6,000 conversations, culminating in the development of ‘Age Friendly Action Plans’ for each of the 5 communities where research was undertaken.⁴ In each case, the action plans demonstrated that ‘community information’ was a significant issue, a finding supported by a wide range of health, housing and social care stakeholders.

This research discovered a widely held perception there was ‘nothing to do’ in each of the neighbourhoods. An exhaustive audit of community activity in each area then discovered, on the contrary, that there was a significant amount of activity even in the least active area. These activities involved a wide range of stakeholders from tiny community groups to city institutions. This resulted in the creation of a shared Google Calendar maintained by MAFN community development staff. These calendars in themselves (pictured in Figure 3) became an extraordinary resource that allowed each partnership to get a full picture of what was going on in the neighbourhood, themselves enabling previously impossible collaborations and validating the C2 methodology.

People are saying they’re bored and there’s nothing to do – with this much on that’s mad isn’t it!

F/70s, resident in pilot area

Engagement with institutional partners revealed that across the health, housing, and community sectors there were a number of existing attempts to catalogue community activities described in terms of ‘asset mapping’ or ‘community directory’ initiatives. Each of these attempts, like the MAFN calendar, were inherently limited by funding and time, and required constant community development work to keep up to date. It was at this point that PlaceCal was initiated, which will be discussed in detail below.

The PlaceCal CTP evolved by exploring all the ways that we could increase connectivity and communication between and across neighbourhood project partners. Working with the existing context of collaboration developed by MAFN, we established that there was the potential for high quality, up-to-date and trusted information in the area that would allow individual organisations to share the burden of creating a central source of information.

We used a capability approach to understand and unpack the reasons why community information in our target areas was so poor despite current and previous efforts by a range of stakeholders. The CTP’s methodology was seeking to address the same objectives as MAFN’s C2 inspired goal of enabling all stakeholders to work together on a shared problem, and was built from the relationships established in the existing

⁴The Manchester wards Old Moat, Moston, Miles Platting, Burnage, and Hulme and Moss Side (one area).

06:30 – 09:00	Swim For Adults - Moss Side Leisure Centre, Moss Ln E, Moss Side, Manchester M15 5NN, UK
09:00 – 13:00	Hulme Library - Moss Side Leisure Centre, Moss Ln E, Moss Side, Manchester M15 5NN, United Kingdom
09:00 – 20:00	Nudge: Acupuncture - F22 - 9:00am - 8:00pm
10:00 – 11:00	Zumba Gold (for over 50s) - Kath Locke Centre, 123 Moss Ln E, Manchester M15 5DD, United Kingdom
10:00 – 13:00	Manchester MIND Advice Drop In - F14 - 10:00am - 1:00pm
11:00 – 14:00	Massage Therapy: Male Therapist - F6 - 11:00am - 2:00pm
11:00 – 14:00	Brunch Club - Will Griffiths Court, 3 Elwick Close, Manchester M16 7LA, United Kingdom
11:00 – 14:00	Powerhouse Library - Moss Side Powerhouse Library, 140 Raby St, Manchester M14 4SQ, United Kingdom
11:30 – 14:30	Yellowbird Age Friendly Drop in - Church of God of Prophecy Christian Centre, Manchester, United Kingdom
12:00 – 13:00	Easy Rhythms Circuits Class - Moss Side Millennium Powerhouse, 140 Raby St, Manchester M14 4SL, United Kingdom
12:30 – 14:00	ACCG - Dementia Café - Claremont Resource Centre, Rolls Cres, Manchester M15 5FS, UK
13:00 – 13:30	N.A - Meditation - G5 - 1:00pm - 1:30pm
13:00 – 14:30	Energy Healing - G16 - 1:00pm - 2:30pm
13:00 – 15:00	Can Survive UK - MOT (Men's group) - Training room - 1:00pm – 3:00pm
13:15 – 18:00	Self Help Services: ethoderapy - G15/IT Suite - 1:15pm - 6:00pm
13:30 – 14:30	Sporting Memories - Trinity House Community Resource Centre, Grove Cl, Manchester M14 5AA, UK
13:45 – 14:45	N.A - Meeting - G5 - 1:45pm - 2:45pm
14:00 – 15:30	Twinkle Boost: Age group 0 - 5 years - G6 - 2:00pm - 3:30pm
16:30 – 19:30	Barnados Womens Group - Zion Community Resource Centre, 339 Stratford, Manchester, Manchester M15 4ZY, UK
17:30 – 18:30	Chair Based Kundalini Yoga - Multi purpose - 5:30pm - 6:30pm
17:30 – 19:00	Yogazi - G6 - 5:30pm - 7:00pm
18:30 – 19:45	Lyengar Yoga - Training room - 6:30pm - 7:45pm
19:00 – 21:00	Mind and Body Classes - The Yard Theatre Manchester

Figure 3. An example of the shared Google Calendar for one day in one area

MAFN partnership.

Analysing what people ‘are actually capable of doing and being’ in this context required direct engagement with a range of stakeholders, a recognition of systemic and structural inequality, and active participation of partnership members in all creative stages. The CTP focussed on the capabilities of individuals and communities to create better lives for themselves and each other in the place that they live, as opposed to a focus on any single technology or pre-existing inclusion goal. Key to the success of this approach would be creating positive affective relationships between individuals, community organisations, and institutions that enable realisation of each partnership actor’s desires to create, publish, curate and maintain information in a meaningful collaboration.

Our working definition of a capability approach in the context of place-based communities therefore has three components:

1. direct engagement with and involvement of multiple stakeholders, (responding to real lived experience, not relying on representations created externally)
2. in a creative partnership, (working together to identify and address shared goals, ensuring all are included in the process)
3. actively enabling realisation of both group and individual capabilities. (generating new actual and potential resources through enabling new relations and actions).

3. How we made a Community Technology Partnership

As briefly discussed, PlaceCal was initially conceived of as a tool to move from the single, central, manual calendar maintained by the MAFN team, to an automated, cross-sector tool grounded in the existing partnership work. MMU and GFSC gained

funding from Innovate UK’s ‘Smart City Demonstrator’⁵ program ‘CityVerve’. Our bid fell under the ‘health and social care’ stream of the project.

We used the term ‘Community Technology Partnership’ to describe an intervention process that uses direct engagement with a broad range of stakeholders to build a partnership that facilitates co-production of a digital, technological object. The PlaceCal CTP specifically had the goal of designing, creating and maintaining a social and technological intervention that could improve aspects of community connectedness, impact on social cohesion, and reduce social isolation in low social capital neighbourhoods. We deliberately distinguish the development of PlaceCal software and training, and the CTP approach, in order to fully realise the importance of both, and offer a methodology for creating technological products in an embedded community context. We will now briefly describe how this methodology was applied.

3.1. Developing a prototype

MAFN had already facilitated the creation of a local partnership of organisations (discussed in Section 2.1), creating a ‘manual’ Google Calendar of all the events in the area as far as we were able to gather them through 18 months of community engagement (Figure 3). This manual calendar was eventually stretched to the limits of the software. For example, the calendar was not very good at browsing lots of events at the same time, had no geolocation features, and required an ongoing connection to the MAFN partnership to access. Crucially, this manual version required constant updates and maintenance, resulting in more work being created the more successful it got. The PlaceCal project aimed to automate and build on the underlying context that each organisation was actively sharing information with the MAFN partnership, and was maintaining a diary of some kind that allowed us to share their information.

We realised that if we could encourage each group in the partnership to publish their calendar online using software they were already using (or paying for) such as Outlook, Mac Calendar, Google Calendar or Facebook, we could use the built in ‘iCal’ or ‘API’⁶ features of these calendars to automatically combine, collate and publish the information in one place. Rather than the current system where each worker takes a ‘snapshot’ of each group’s activities whenever they met the group, we could train organisations to share their own activity information, and with the help of the PlaceCal software, give them the capability to publish this alongside that of others with much lower effort and much wider reach. This central source of event information would be a canonical source of local information that could be shared by every partner and used to create shared print outputs, for example.

GFSC developed the PlaceCal software in Ruby on Rails (RoR), a popular framework for rapidly developing web applications, and is currently live at placecal.org. The source code is licensed under the AGPL open source license, and can be downloaded from GitHub.⁷ The training and support materials are available under the same license, and published at handbook.placecal.org. All these tools were made free and open source to demonstrate our commitment to our overall methodology rather than

⁵A contested term there is not space to go into in this paper. See, for example Grossi & Pianezzi (2017): “There is a high level of agreement in the literature that there is as yet no common definition of a smart city ... Overall, the IT dimension appears central to the smart city and the advocates of this urban paradigm highlight the benefits resulting from the adoption of technologies, techniques and visions, granting that these are ‘scientific, objective, commonsensical and apolitical’ in nature”

⁶‘Application Programming Interface’, a computer-readable public interface to a database

⁷<https://github.com/geeksforsocialchange/PlaceCal>

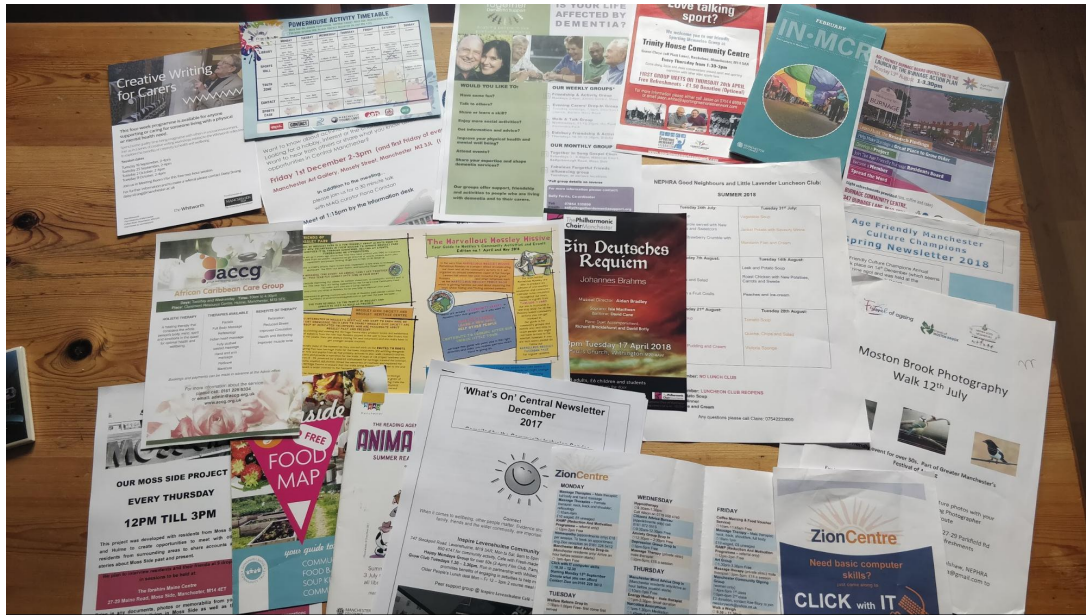


Figure 4. A selection of the current community information needed to find out everything going on in the area

any one software tool; to make development and design decisions public and transparent; and optimistically to encourage teams doing similar work in other neighbourhoods to be able to directly contribute to feature development.

Through co-design workshops with the age friendly partnership in Hulme and Moss Side we ensured accessibility (ally) of the site and branding by getting direct feedback throughout the process. Key developments included a warm and engaging ‘mid century’ colour scheme that still met high accessibility standards (WGAC AAA), a spacious design that reduces cognitive overload, a larger font size, and a user experience that requires as few clicks as possible to access information. The font size and colour scheme were tested with different groups of older people to ensure the site was ‘inviting’ and ‘friendly’.

We designed the event importing functionality in a modular way that allowed us to rapidly develop importers for any feed we discovered during the fieldwork process. As we spoke to each group, we created these importers as needed, and documented the process in our ‘living’ handbook.⁸ This handbook became our key resource for understanding and documenting the widely diverging technical and social contexts of groups attempting to publish information in our pilot area.

Given this diversity of technical requirements and the social complexity of getting individuals, groups and institutions to share their calendar feeds, it was very important for us to be agnostic as possible to the content and be able to work with what we were given. A large amount of the technical development therefore went into developing a system that could piece together missing information such as venue names and alternate names for the same building.

Our final prototype had three key features: a list of activities on each day (‘show me what’s on right now’), a list of activities at each community venue (‘show me what’s on at my local venue’), and a list of each ‘partner’ (‘show me the kinds of things I can do in my area’).

⁸<https://handbook.placecal.org>

Table 1. PlaceCal Roles

Role	Description of role	‘What I want to be and do’
Secretary	Active resident, health and social work connector roles, neighbourhood teams, etc	Enable local groups to publish information; be able to curate local information to create an active local identity
Citizen	People who live and/or work in neighbourhood, special focus on over 55s	Find out relevant information about where they live; be more connected to what is happening
Group Manager	General manager of community groups and centres	Publish up to date information about their organisation; be supported by local health workers and other organisations
Group Admin	Person who actually manages and inputs into the diary	Easily and quickly upload information about what’s going on; be able to spend more time face-to-face with service users
Social prescriber	GPs, services and family members who want to give advice to socially isolated people	Access to high quality hyperlocal information; be able to help people live better lives not treat them as patients
Developer	PlaceCal team member, web developers of organisational sites, third party app developer	Embed local information in their own website; be able to share information easily across a range of organizations
Commissioner	Organizations paying to generate information about areas in order to fulfill (generally health and social care) commissions	Enable their staff to create good shared resources; be able to deliver service outcomes within a complex system

3.2. *The capability engagement processes*

With our prototype in place, we began engaging every member of the age friendly partnership in the PlaceCal methodology. Our a priori categories for these groups were: ‘Institution’ (e.g. Manchester City Council); ‘Voluntary’ (e.g. third sector community centres) and ‘Community’ (e.g. small unincorporated groups directly running activities). Each group in this initial phase was consulted for up to an hour with a semi-structured interview about both what the group did and their current technical capabilities. This research uncovered a wide range of social and technical barriers such as: fearing the time and effort it would take; not understanding the meaning and efficacy of involvement; not having an internet connection; not knowing who in the organisation was responsible for digital publishing; and either not being able to get permission, or being unsure if permission was required.

This process led to a significantly more sophisticated understanding of capabilities and desired capabilities for a wide range of organisations types. These capabilities covered all aspects of publishing, editing, reading and curating information. From these discrete wishes emerged a list of ‘core capabilities’ (Nussbaum, 2003) or ‘roles’ that people wanted to ‘do and be’. These roles are summarised in Table 1.

Most people belonged to more than one of these roles: for example, everyone is a ‘citizen’, and ‘secretaries’ are often also ‘social prescribers’. We found this role taxonomy described very well the shared objectives and barriers in our specific context, and enabled reaching shared understandings of the capabilities we needed to enable through the CTP. It’s important to note that these roles help identify **general** common barriers across a range of distributed stakeholders, and do not replace the requirement for individual engagement with each group to discover their **specific** barriers. Identifying these roles was a key tool in understanding design objectives, communication, support,

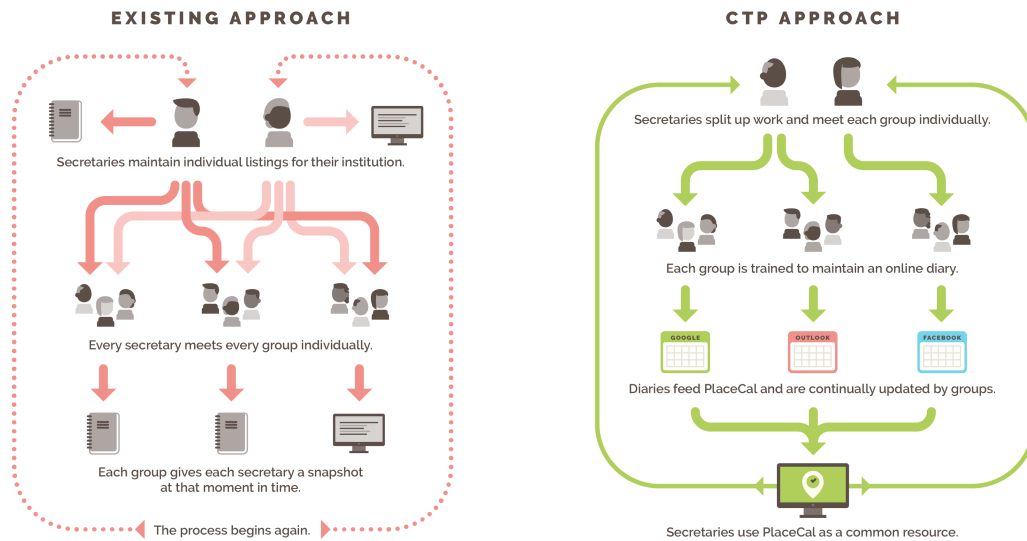


Figure 5. CTP approach schematic from the PlaceCal ‘Commissioner’ handbook

and training.

The rest of this section explores these roles in depth, and how through **direct engagement** in a **creative partnership** we **actively realised** their increased capability (as established in Section 2.3).

3.3. Roles and their capabilities

3.3.1. Secretary

As mentioned, an early finding was that several public health institutions, community activists, and development workers were undertaking work to create ‘asset mapping’ or ‘community directory’ services. The tools provided to them to do this were either non-existent or poorly designed, resulting in a range of spreadsheets, printouts and paper guides being circulated within each organisation, each incomplete, with overlapping and conflicting information, mirroring the existing situation for the organisations hosting and running activities.

We describe these situations in terms of the role ‘secretary’. It is not a ‘technical’ role but rather indicated the ambition to ‘enable local groups to publish information’ and ‘be able to curate local information to create an active local identity’. PlaceCal was designed to replace the current situation where each secretary met each group individually and manually created a list of events at that moment in time that required review every few months to keep it up-to-date. Every extra worker doing this role therefore actually *increased* the total effort to maintain this information in the area for each community group.

In the CTP approach, each group was trained to maintain their own listings, which were then aggregated and published on the PlaceCal platform. This shift in structure is shown in Figure 5. Through the partnership, work could therefore be divided evenly between workers in an area, shifting the focus from simply maintaining immediately out-of-date lists of information, to wholesale skills-based digital inclusion.

Training groups to maintain their own information had the unexpected side effect that some organisations, when trained to publish their own information, published almost twice as many events as we got from face-to-face interviews in the previous ‘manual’ method. We also discovered that the most frequent barrier to getting this information was finding out who the person responsible for maintaining the diary was in each institution, taking time, trust and patience to effectively engage each group.

One example of the success of this approach is that City Council’s ‘Central Neighbourhood Team Leader’ Patrick Hanfling has been able to shift his focus from reactively supporting local groups individually, to strategically managing festivals such as the Hulme Winter Festivals in 2017 and 2019, and has a growing partnership of support leading to increased overall provision. These Festivals had been dormant for many years, precisely due to the lack of joined-up information sources in the current climate of austerity.

We use PlaceCal regularly in terms of understanding the neighbourhood, and also sharing with others. It helps us understand the diversity of people and groups and what’s of interest to people, that picture of the diversity.

Patrick Hanfling, Central Neighbourhood Team Lead, MCC

Crucially, this role enables existing ‘on the ground’ trust networks to be replicated ‘online’, enabling the neighbourhood to present a collective, inclusive identity. The PlaceCal project’s ongoing ambition is to establish institutional buy-in so that this onboarding process becomes a routine activity of a range of frontline workers who will become PlaceCal secretaries and help ‘curate’ their community’s local information.

While many secretaries helped with the PlaceCal rollout, we were unable to fully train them to use the PlaceCal platform directly due to the limited resources in our pilot and the relatively high technical and social skills required to effectively engage local groups. To fully realise this role fully we are seeking funding to co-develop a ‘train the trainers’ program to gain all these necessary capabilities. Nevertheless, this is a small group of people to train when working in a partnership context in any given neighbourhood (say 5-20 per 50,000 people or so), so we believe this to be a surmountable problem in a future project expansion.

3.3.2. Community groups (managers and admins)

‘Community groups’ are incorporated or unincorporated organisations on a variety of scales from one person in their spare time, to cross-city and country institutions. We identified two key roles to working with them in the CTP context: ‘managers’, who were able to make the strategic decision and commit the institutional resources needed to be part of the PlaceCal platform, and ‘admins’, who were the workers with the job of actually doing the data entry on a day-to-day basis. In some cases, these were the same person, again reflecting the social/relational rather than technical/representational aspects of this work.

Secretaries in the pilot area worked with every community group in the neighbourhood to understand their technical and social needs. Overall we discovered an enormous skills gulf representative of the discussion in section 2.2, with groups of all scales struggling to use their current software and computer assets and unable to take on any additional technology. For example, members of large institutions commonly did not know how to access internal systems (or the bureaucracy in using them was insurmountable), and small groups often didn’t know they even had a calendar program as part of their email suite (in Outlook 365 or G Suite, for example). It was demonstrated

very quickly that the PlaceCal approach of working with existing calendar software was the only way this job was possible, with the median time to ‘onboard’ a group in *software they already had* being upwards of one day over several conversations, emails, phonecalls and visits.

By helping groups upload their events using existing tools, we made the crucial job of diary publishing as easy as possible and with a clear definition of success: publish a calendar feed and let us know about it. For example, Big Life Centres, a large community partner with two venues each with their own programme, previously published only a weekly paper leaflet distributed on their front desk, and were not able to get this information online. As the result of a key worker publishing this information in their existing Outlook system with the assistance of their existing IT support provider, PlaceCal has become the core events listing for the service, removing the burden on an already overstretched admin staff. In another case, it emerged the system that was already in use was outputting an iCal feed.

I am so pleased you think you can link to what we already have. I was quite concerned about setting up something additional as we don't have people with the skills or time to keep it all up to date. I have just about got to grips with what we do have!

Susan Ash, Mossley Community Centre

Secretaries and community groups working in partnership has allowed cross-sector access to accurate information about what everyone is doing, making a complex system of interrelated information streams seem simple and manageable. This collaborative publication has resulted in the previously ephemeral ‘community’ exiting as a coherent body, enabling a range of actors to very easily discover everyone active in the community.

In one example of this, a resident (F/50s) conducted an oral history project looking at how people use herbal medicine across different cultures. She told us that PlaceCal made it possible to get the actual contact information for people in a range of cultural groups that they had no other way of discovering, resulting in a multicultural herbalism event at a local garden centre. The CTP has therefore enabled the active realisation of projects far beyond our initial scope, drastically increasing community capability.

Community groups in the pilot area have been supported to publish information in a drastically simpler way than existing mechanisms. In Sen's (1984) terms, this increases their ability to convert capital (in the form of staff time) into capability (the ability to publish information effectively). Through the partnership, this information is now widely distributed with no additional effort on behalf of individual groups. We hope the CTP can now grow to enable community groups to work together collaborative to understand their needs and commission training, support and further software tools.

3.3.3. Social prescribers

‘Social prescribers’ are individuals and organisations who have a statutory duty to support the health of the community and who are seeking to do so by helping them connect to local activities, programmes and opportunities. A Nesta study (2013) discovered 90% of GPs would ‘socially prescribe’ if they had access to the right information, but only 9% of patients have received social prescriptions, a finding supported by the UK Government and the NHS (NHS England, 2019). This finding appeared to be confirmed in our pilot area as shown in the example below of work with a local GP practice.

I think it's really fleshed out the challenge of how we get information out. Having a tool



Figure 6. Dr Alasdair Honeyman at work using PlaceCal (right hand screen)

to let people find this out themselves seems totally obvious, it lets people teach me stuff, like “oh that refugee service is better than that one”, that helps us find a way together.

Dr Alasdair Honeyman, local GP

In discussion with Dr Honeyman it was clear that a key factors preventing him from social prescribing was the available time needed. The average UK GP visit is under 9 minutes (Irving et al., 2017), meaning that the individual flyers and posters pictured in Figure 4 were practically unusable as they took too long to browse, were generally poorly laid out for quick browsing, and went out of date very quickly. Further to this however, in order to be sure that he was supporting improved patient health, was the need to know that event listings were reliable, trustworthy and accurate. Once this was in place, it proved essential that this information was very quick to browse.

The CTP development work created a local trust network that ensured faith in PlaceCal listings being accurate and up-to-date. The single point of reference for daily activity led to Dr Honeyman GP setting up a screen just to display PlaceCal results, which he then routinely used in consultations. This has been instrumental in discovering highly specific and invisible lacks such as provision for a recent influx of Somali refugees in the pilot area, for example.

Creating a de-siloed and community owned and curated social prescribing resource has therefore dramatically increased relationships between GP practices and community groups, giving health workers the capability to care for the widest possible range of patient needs with little additional effort.

3.3.4. Commissioners

Overseeing this community partnership work are the individual institutional commissioners who actually commit the staff and resources. As part of the PlaceCal engagement we worked with NHS commissioners, housing associations, Manchester City Council's (MCC) website and innovation teams, GP Federation representatives, and health and wellbeing workers, to establish Manchester Public Information Group (ManPIG).

We quickly discovered a fairly stubborn assumption that the internet has already made information about community activity almost universally available, and free. On reflection with the group, we discovered that this was highly correlated with social capital. Given it was at least *possible* to find out about high social capital cultural events such as classical concerts, theatre, and art, it was counterintuitive for this group to discover that information wasn't available *at all* for more deprived communities. While there was a desire to, for example, 'see all the classical concerts on tonight in one place' (a desire shared by the local tourist board), this was seen as a 'nice to have', not the critical public health issue experienced in our pilot area. It became clear that this level of misunderstanding was a key barrier to overcome to justify the CTP approach to those who controlled city-wide budgets. One local councillor shared our frustration:

PlaceCal captures information that isn't held anywhere else. This is particularly useful to people who don't use social media, which can often be older people who are at higher risk of being isolated. What a shame it was they didn't know about all these other events or projects, precisely because there isn't a central place for them to be shared.

Cllr Emily Rowles

We worked with this wide range of senior managers across multiple sectors to understand these city-wide information issues, painting a picture of the full range of community activity. We were surprised to discover that very often we had the only 'technical' knowledge in the room, highlighting the lack of 'technological' knowledge even at the very top of statutory organisations. Through 'demystifying' this kind of knowledge and sharing our process and methodology openly with the group, we co-wrote a set of group aims and objectives. This process has highlighted the importance of good quality information, and begun the process of de-siloing information commissioning processes enabling these groups to share information and experience and work towards shared cross-sector initiatives.

3.3.5. Citizens

All of the above engagement as part of a local partnership has radically transformed neighbourhood information for each involved stakeholder and the citizens of the neighbourhood generally. We estimate about 3% of total community activity was published at the start of the project, compared to 70% at the time of writing. This dramatic increase has reduced the 'degrees of separation' that any individual has from neighbourhood activities and services, both directly and through friends, family and peers. Many of the success stories we have had in the PlaceCal pilot have been these indirect connections: concerned friends, social prescribers and health workers who now have the capability to find something to do for everyone in the neighbourhood.

The decentralised network of residents, VCSEs, 'community champions' and service providers sharing information through the PlaceCal platform has enabled the partners to work better together, is highly cost effective, and actualised the realisation of a range

of previously impossible tasks.

A keen example of this co-operative impact is the Hulme Winter Festival in 2018, where over 20 organisations came together to organise a shared festival across multiple sites, and collaboratively fund an A2 ‘whats on’ guide with information about all these groups. 10,000 of these guides were distributed to homes and community centres by a range of volunteers and staff across multiple organisations. This meant that even the 61% of disabled adults over 75 who do not use the internet (Figure 2) were able to directly benefit from the information gained in an otherwise ‘technical’ intervention. Needless to say, this capability was previously unimaginable for any individual group or institution in the pilot, but through the capabilities gained in our partnership work became manageable and affordable for all.

Overall, a wide range of citizen and the age friendly partnership reported to us that they can find community information easily which can be crucial to their health and their quality of life.

These citizens now feel part of a supportive and engaged community and no longer struggle to find social activities, with some helping to manage community groups, directly increasing both their own capability and the capability of the groups they joined.

One elderly man vv poorly who felt he was so poorly and isolated thought he was going to die. Said the tree and food had saved him.’

WhatsApp message sent by resident volunteer at 2018 Winter Festival

I was a bit low and my doctor asked me about stuff I liked doing and I wasn’t sure. We had a look at the things that were happening [on PlaceCal] and I always wanted to do some craft or sewing work. I bought a machine ages ago but didn’t have the confidence to know what to do. Now I am learning to make all sorts of things. I can repair stuff like holes and zips and other things. My doctor thinks the sewing group might have been what helped me stop needing my antidepressants – I think they helped too.

‘Samina’, Moss Side resident

4. Conclusion: making a place for community technology

The PlaceCal CTP used the capability approach to transform community information in our pilot area. Our approach has three stages:

1. direct engagement with and involvement of,
2. multiple stakeholders in a place-based creative partnership,
3. actively enabling realisation of self-defined (individual and group) opportunities.

The key difference between a capability approach and deficit or social approaches to technology is that the latter two only address the problem from a technical or a social perspective respectively. Deficit approaches only address technical issues related to physical accessibility, while social approaches only address issues related to categories of social accessibility.

Taken together, we argue they are insufficient to overcome the multiple technical, social and economic barriers to the actual socio-technical needs desired by communities in deprived neighbourhoods. These approaches do not require either direct engagement with those who are excluded, or a social commitment to helping individuals overcome their specific barriers but instead focus on representational issues (‘could someone with a disability *theoretically access* this service?’) with little (or no) accountability to

any specific population ('is this specific person or group *actually benefiting* from this service?').

In contrast, the CTP approach requires a creative partnership that can produce active solutions to specific experiences of exclusion that address the interdependence between social and technical issues. We believe that the case study presented here strongly indicates that such an integrated process can create and realize dramatically more inclusive opportunities.

At this point we seek to highlight one key lesson from the pilot process. We believe that processes of engagement that seek to overcome exclusionary mechanisms and to create and realise opportunities have to be concretely situated. 'Direct' engagement recognises that it is the quality of the relationships between specific people in a particular place which enables the expression or suppression of the potential and actual capability of individuals. The specific barriers faced by individuals and groups are varied and interdependent and social and technical, all at the same time. The engagement process supports each community group to work in direct collaboration with the agencies and expertise needed to address the specific barriers that prevent people achieving active, ontological goals, *in their own neighbourhood*. This specificity is essential to the objective of addressing both the absolutely particular actual and potential aspects of individual and collective capability.

The PlaceCal CTP specifically is focussed on actually connecting specific people to a source of trusted community information. This could mean helping people to turn a paper calendar into a digital one; negotiating with managers for permission to share information; working with off-site IT support to set up systems to share information; or making a printed copy of a month's events available at a local corner shop on request. While each of these desires has an accessibility and inclusion requirement that *could* be addressed individually, it is hopefully clear that the capability approach places these often unique needs in a meaningful, timely, and strategic context.

A CTP creates a wide range of shared benefits by enabling specific people in a particular place to realise opportunities that they were unable to do before. It increases the capabilities of both individuals and groups working in partnership, enabling people not to use technology as an instrument but use technology to 'do and be' what they actually want.

The authors are now working on a cross-sector collaborative funding bid to 'roll out' PlaceCal to the City of Manchester, working in partnership with the neighbourhood team, library services, housing associations, GPs, and the Local Care Organisation. This bid will enable the creation of a charity that will own and direct the PlaceCal initiative, funded and managed for the wider benefit of local communities on behalf of its members. We hope that this realisation of the capability approach can radically transform the way that we think about and share community information and build technology, both in the UK and internationally, and paves the way for similar initiatives by others.

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6. Disclosure statement

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8. Notes on contributors

Prof Stefan White
Dr Kim Foale

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