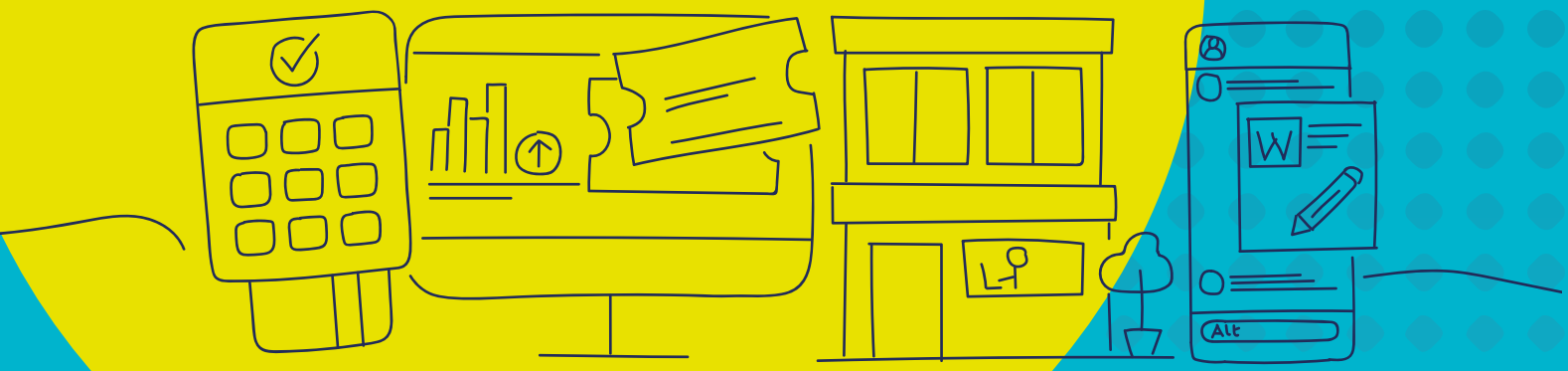
power to change | business in community hands

Promising Trouble

THE CASE FOR **COMMUNITY TECH**



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Executive summary

Community tech is a vital part of the modern technology ecosystem.

While a small number of very large companies might seem to dominate the digital landscape, the reality is that the Internet is full of alternatives and possibilities – of people making and sharing things for collective benefit. Over the last year we have met with and spoken to people from UK-based community organisations who are making and using technologies that generate benefit for and give power to communities. We have discovered what they have in common, the challenges they face, and the larger societal benefits that their approaches unlock.

This report offers a vision that simultaneously:

- **builds the resilience and impact of individual community organisations and the communities they are a part of**
- **contributes to the growth of place-based communities**
- **and promotes a more diverse and sustainable technology ecosystem.**

Innovation is not only something that happens at start-ups and in labs. It also happens in skate parks and community radio stations, in community energy companies and social care collectives, in community pubs and libraries. Community tech helps unlock the potential of everyone, not just entrepreneurs and academics, and helps strengthen the social fabric in trustworthy, beneficial ways. It can generate and retain economic and social value for communities, provide an alternative to big tech, and increase the resilience and autonomy of community organisations.

In the pages that follow, we describe the potential systemic impact of investing in community tech for place-based community organisations, and recommend:

- **Investing in expanding the pool of community tech creators** to diversify the ecosystem and give community organisations and others a wider choice of hardware and software
- **Helping ensure the expanded pool of creators is representative of the UK population**, actively reaching out to and supporting under-represented groups

- **Supporting the development of equitable governance models** and fostering a network of communities that share ideas and establish standards
- **Funding people for strategic delivery rather than for the development of emerging technologies or creation of one-off projects**
- **Investing in building medium and longer-term infrastructure**, including access to skills and resources to support maintenance and "business as usual". This will unlock more capacity for innovation, strategic forward planning, and collaboration.

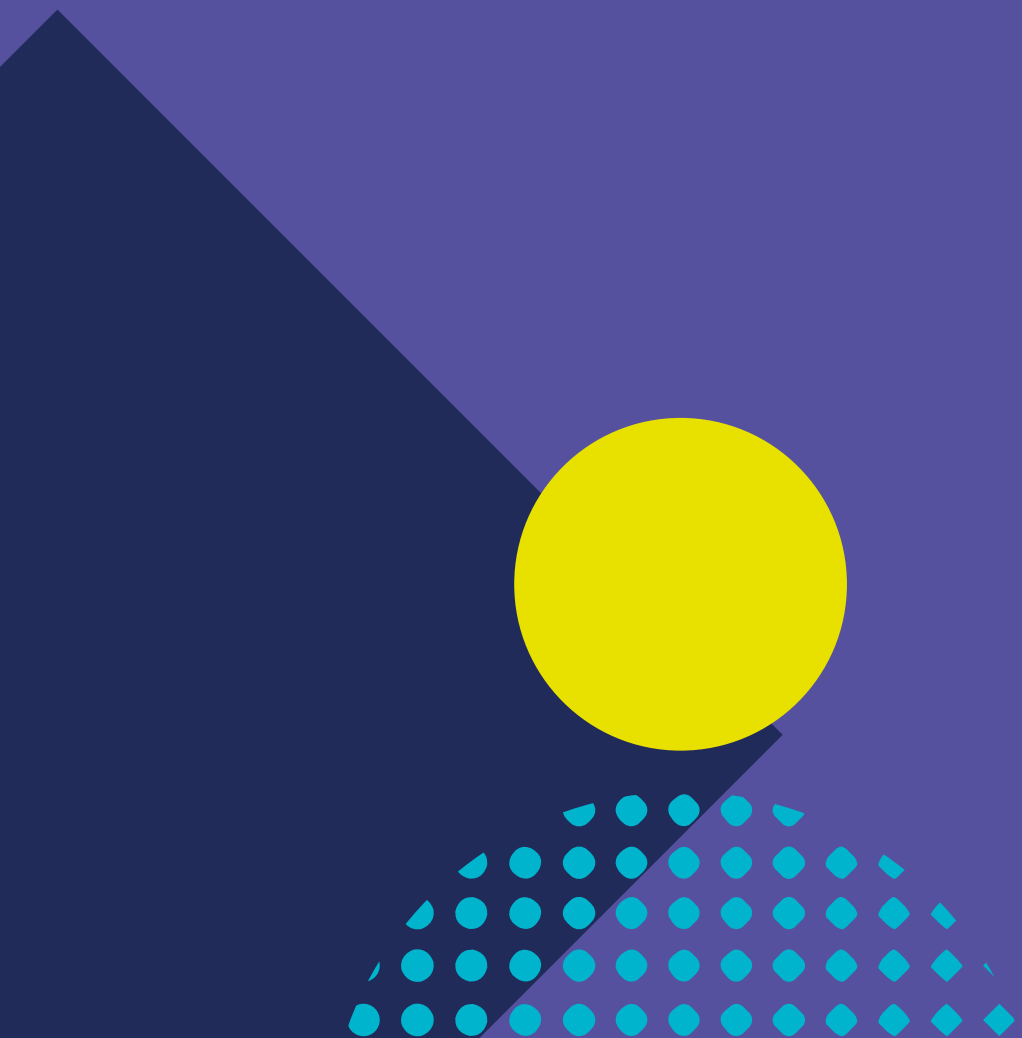
This report explains the systemic opportunities that can be unlocked by investing in people who are making a difference, and how supporting local-scale, impactful projects will also build a network of community-driven, climate-conscious, place-based innovation across the UK, and contribute to a better Internet for all of us.

It has been an inspiration to meet so many creators through the course of this research. This is a celebration of their contribution and commitment.

Rachel Coldicutt and Anna Dent
Promising Trouble

Introduction:

What is community tech?



The term “community tech” means any hardware or software that delivers benefit to a community group, and which that community group has the authority to influence or control. A community group may create a piece of technology for their own use or use by other groups, or to be governed or adapted by other groups.

This means community groups obtain influence or control over these technologies either because they created them, or have some ownership rights or other governance powers over them.

What is a community group?

A community group is a group of people who have organised themselves outside of the market and the state to achieve something together: perhaps to celebrate a shared interest, solve a common problem, or make a mutually beneficial change. Sometimes those communities are anchored in a place; other times their bonds might transcend place.

Community groups can also manifest as an organisation or a business

Community businesses and organisations are mission-driven, and are accountable to the communities that they serve. A few example are:

- The Bristol Cable is an independent media company that provides local news
- Knowle West Media Centre create tools and systems to help their communities find creative solutions to problems and achieve positive social change
- The Open Food Network is an online platform designed for farmers to sell produce and create food distribution networks.

Why build community tech?

The organisations that participated in our research do a wide range of things, from running local amenities such as skate parks, libraries and radio stations, creating art and media, to providing training and infrastructure that support housing, food banks and health care. Despite their varied business types, those that create community tech have all pioneered the use of technology to support different kinds of outcomes.

There are two clear motivations for creating their own technologies. Firstly, community tech creators had sound operational reasons as to why building their own products made sense. They talk about the cost of commercial products, and the lack of off-the-shelf products that can meet their needs. They see clearly how creating their own product can improve their operations, by both extending their capabilities, and replacing legacy systems cobbled together over many years.

Secondly, and as might be expected for community-driven organisations, they are also motivated by their values. They create technology that is in line with their values, rather than in opposition to them.

As such, these community organisations have a clear vision and a well-defined understanding of the problems they are trying to solve.

They can articulate why a tech solution is most appropriate, and how it can complement and support their core values.

Many of these organisations have gone through a process of gaining confidence in understanding and talking about tech, and seeing what it can do for them; they have reached a point where they know enough to spark ideas about what is possible. This confidence and 'just enough' knowledge is also distributed across the organisations that are creating community tech; there isn't just an IT person working in a vacuum, but the whole organisation grows together in appreciating the potential of creating their own tech.

The importance of learning from and working alongside peers was also a clear finding from the research. It helps community organisations see what's possible, and crucially to see tech being built by organisations they relate to, rather than a big tech company or venture capital (VC) backed start-up. Access to technical expertise and support, both internal and external, and long-term funding that allows community organisations to try new things (and to fail) are critical to the growth of community tech.

Who is involved with community tech — and how?

Not all community groups or organisations[1] use community tech. Some can achieve their mission using off-the-shelf or commissioned technologies, others might have a very light-touch approach to using digital products and tools; in some cases, using technologies is not essential for their mission, or they may have prioritised developing other skills and expertise.

When we looked at how community organisations interact with and use technology, we found three typical kinds of behaviour. These are:

- **Using** technologies as useful operational tools
- **Curating** a range of products and services
- **Creating** bespoke software to meet specific needs or values.

Those who create community tech typically have high levels of technical confidence and are strongly motivated to do things differently. However, a relatively small proportion of the community organisations we encountered are creators. Further quantitative research would be needed to confirm this, but the distribution of creators and users within community organisations looks likely to be in line with the theory of participation inequality: 90% of members of online communities are framed as users, with "9% as occasional creators, and 1% as high-frequency content creators"[2].

1 Community organisations are mission driven; if they are profit-making businesses, they reinvest their profits to support the needs of their community

2 Jakob Nielsen, "The 90-9-1 Rule for Participation Inequality in Social Media and Online Communities", Nielsen Norman Group website, https://www.nngroup.com/articles/participation-inequality/, accessed 27 July 2022

Although our research did not include any formal equality, diversity and inclusion monitoring, it's very possible that this small, influential group of creators reflect the demographic of the broader technology community in the UK — a demographic which is not representative of the UK population.

From our understanding of the community tech sector overall, we propose that investing in creators of community tech will have the most transformative long-term effect for the sector.

Ensuring that those who create community tech are representative of the UK population will lead to more inclusive technologies and services, and that shared infrastructure does not embed participation inequality.

Increasing the strategic capabilities of and the number of creators of community tech would diversify the ecosystem and give community organisations and others a wider choice of hardware and software.

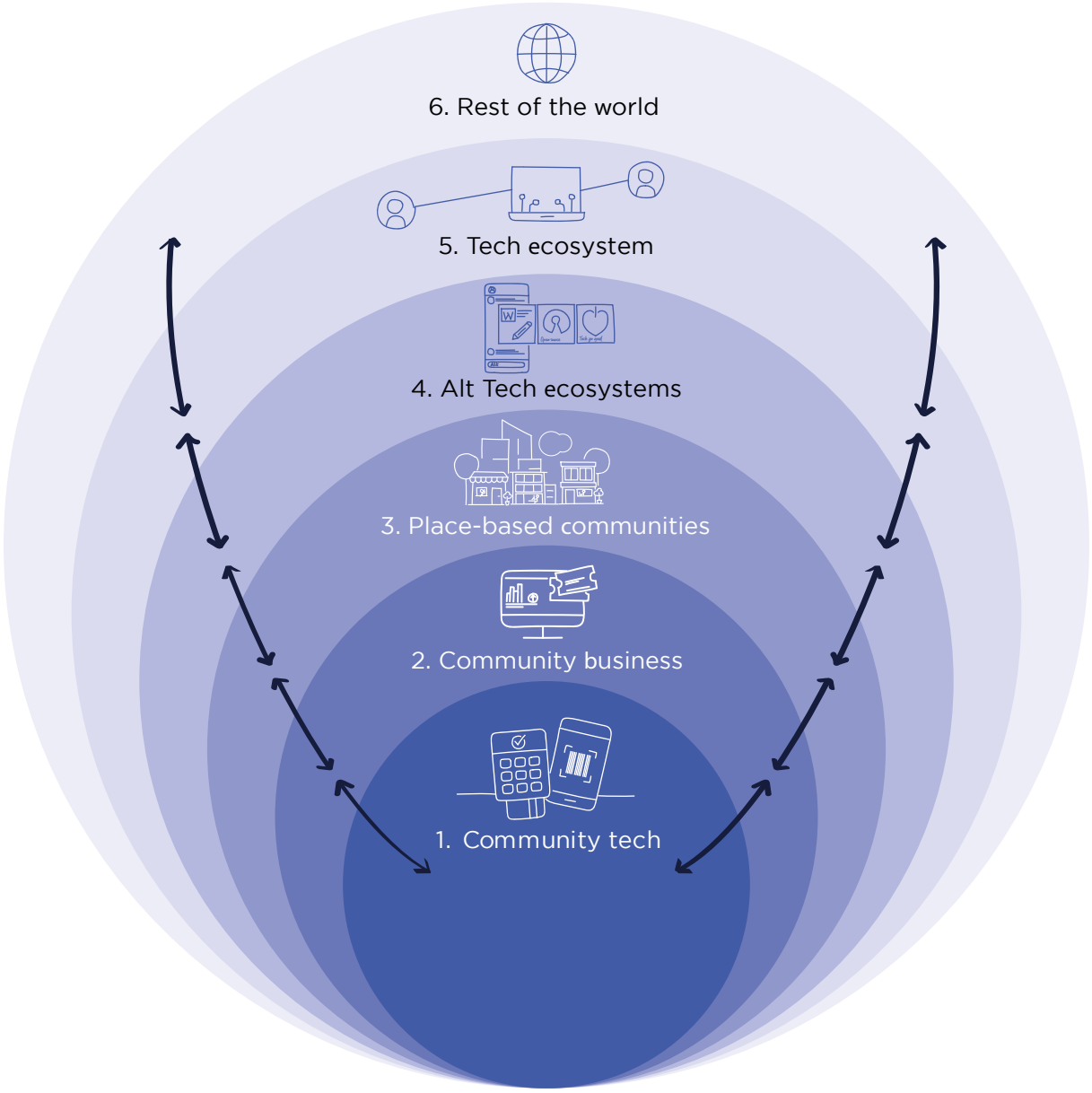
This report makes the case for the broader benefits of that diversification, and the importance of letting technology thrive outside of the market and the state.

Our hypothesis is that investment in community tech will result in:

- **Increased resilience and autonomy** for individual community organisations, collections of community organisations and communities themselves
- **Increased social and economic value** for communities
- **Alternative, maintainable infrastructure** for places that is not dependent on the business strategies of platforms, or closed, privately owned software
- **An alternative to big tech and platform dominance** that contributes to a broader community tech ecosystem, and delivers benefits to society
- A model for a **more maintainable, more climate-friendly** approach for the technology industry.

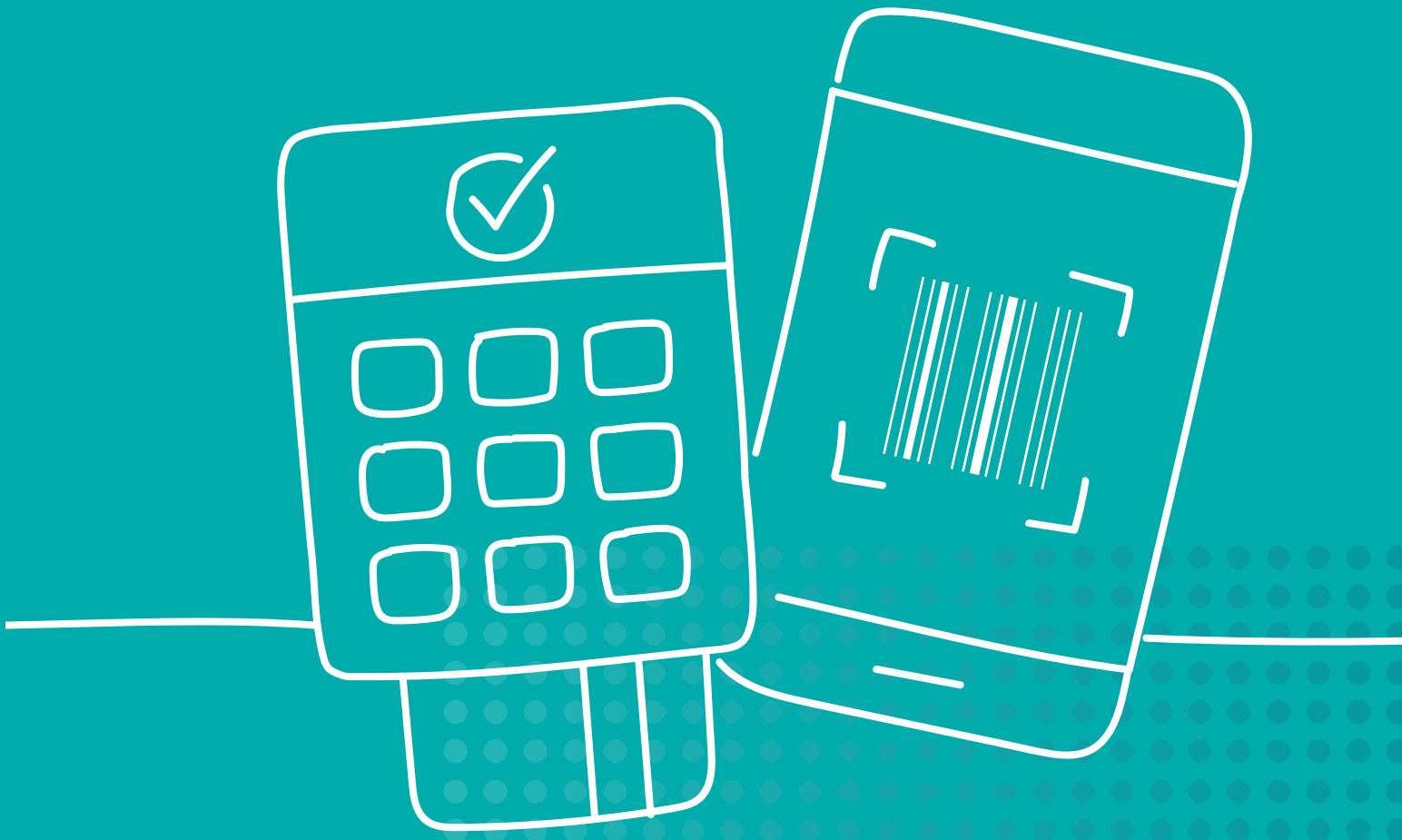
Community tech in context

Inspired by Bronfenbrenner's Ecological Systems Theory, the diagram below demonstrates the different layers of influence and context surrounding community tech. Each layer influences the others, and they combine to create the circumstances, motivations and purposes that drive the creation of community tech, and the facilitators and barriers that shape it. This report explores and describes the first four layers, to build up a comprehensive picture of community tech and the landscape it exists in.



Layer 1:

Community tech



Community technology is created and maintained for many different purposes, and therefore comes in a range of forms. Some community organisations build tech for themselves, some build for others, and some build technology that other organisations can take full ownership and governance of.

Chilli Studios is a creative charity for people experiencing mental health difficulties. Based in Newcastle, they offer in-person and online arts activities for their members.

During the pandemic they used Facebook Groups to keep in touch with members, and allow them to maintain their community. However, they found the wider Facebook environment unhealthy for members, with too much potentially harmful content.

They set about creating their own social platform with a more supportive environment, and community values at its core. Members will be able to use this new platform to keep in touch and share ideas and their creative work. The platform can also be used by staff to support members with any issues that crop up online.

In future, the platform will be available to other community organisations to use as well, with each having its own members-only space, and access to shared information about things like events and activities.

The most common kinds of community-made tech are replacements for more traditional business-to-business (B2B) software: i.e. the kinds of tools and services that help community organisations deliver their mission and create change. This includes back office tools such as community and membership management, publishing workflows, payment systems, ticketing, and project management.

Community-owned media organisation The Bristol Cable found that off-the-shelf back office software was too expensive, and also not suited to their needs. So, they have been building their systems for membership management and democratic participation. In doing this, they will actively preserve members' privacy by keeping all their data in-house, rather than on third-party platforms. They are now working with other community media organisations to share their system.

There are also organisations creating technologies specifically to generate community-owned data, enable creativity, and put power into the hands of communities. Knowle West Media Centre builds digital tools and systems to empower the community they work with, to make data about their community more transparent and shareable, and to transfer power and resources to local people. One example is an energy app that they built in order for local residents with solar panels to track their energy creation and usage.

A community-scale approach to innovation

Community tech is inherently small in scale — and certainly much smaller than the digital platforms that are now synonymous with the Internet. A small-scale approach to innovation — focused on the needs of specific communities — has several advantages for more positive social impact. These include:

- The potential for a 'digital commons' where all have access to the technologies and underlying code, in order to adapt and maintain for their own needs
- The potential to reflect numerous sets of values
- Governance models that are not tied to shareholder approval
- Increased awareness of climate impact.

Achieving ubiquity and replicability is a touchstone of modern digital technologies; such scale is often celebrated as offering efficiencies, simplifying user experiences, and generating huge wealth, but it has also entrenched the attitudes and market dominance of a small number of major players. A handful of Silicon Valley companies now set the norms for social and business interactions for billions of people and, as Azeem Azhar notes in Exponential:

> "Technologies are not just neutral tools to be applied (or misapplied) by their users. They are artefacts built by people. And these people direct and design their inventions according to their own preferences."[3]

Automation is employed within many facets of platform technology, and makes change happen faster and at a greater scale than non-automated processes, therefore having an intensifying effect. This means that platform technologies amplify the perspectives that informed their creation, often in ways that were not anticipated.

Our research has shown that these preferences, or values, do not always align with those of community businesses. As mentioned above, this dynamic has pushed The Bristol Cable to build a bespoke customer relationship management (CRM) system which upholds their community values.

Big Tech market dominance is also recognised by regulators and legislators in the UK and EU as limiting local innovation. A more pluralistic approach to innovation, positioned outside of the market, would also have the advantage of offering an alternative to market capture — and the concept of the digital commons offers a useful governance starting point for this.

3 Azeem Azhar, Exponential (London, 2021)

Community tech as a commons

Some (but certainly not all) community organisations may have the energy or resources to repurpose their digital tools as part of a digital commons. Funding the creation of a digital commons would offer some incentive for alignment around minimum cooperative standards and ways of working.

In their 2007 introduction to Understanding Knowledge as a Commons, Charlotte Hess and Elinor Ostrom discussed:

> "...the ability of new technologies to "capture" resources that were previously unowned, unmanaged, and thus, unprotected. This is the case with outer space, with the electromagnetic spectrum, and with knowledge and information."[4]

Community technologies, which are often created to fulfil a particular mission or bring to life a certain set of values, are ideal candidates for commoning: they are typically tools and services that sit outside of the market and the state, with the capability to deliver non-financial benefit to members and/or larger groups of stakeholders.

Yochai Benkler's 2002 essay Coase's Penguin, Or Linux, and the Nature of the Firm explores the relationship between Free and Open-Source Software and the commons. The essay particularly interrogates why developers might give their time voluntarily to create and maintain code, and the difference in effectiveness between peer-based production methods and methods used in a traditional business environment. He concludes that the two can live in harmony, capitalising on their different strengths:

> "I am not saying that peer production will supplant markets or firms. I am not suggesting that it is always the more efficient model of production for information and culture. What I am saying is that this emerging third model [of open source software creation] is (a) distinct from [markets and firms] and (b) has certain systematic advantages over the other two in identifying and allocating human capital/creativity."[5]

Nadia Eghbal's Working in Public: The Making and Maintenance of Open Source Software offers an analysis of Benkler's essay, and she identifies "intrinsic motivation, modular and granular tasks, and low coordination costs"[6] as being necessary to 'pull off' commons-based peer production. Of the community organisations we spoke with, few currently shared code with one another, and during our workshop discussions there was both frustration and surprise at the lack of shared repositories for use and re-use across the sector. Many shared high levels of intrinsic motivation and a desire to lower coordination costs as reasons to share, but also cited unequal levels of technical skills and a lack of short-term resource as creating barriers for informal investment in collaborating on this kind of shared infrastructure.

4 Charlotte Hess and Elinor Ostrom (eds.), *Understanding Knowledge as a Commons* (Massachusetts, 2007)

5 Yochai Benkler, "Coase's Penguins, Or, Linux and 'The Nature of the Firm'", *The Yale Law Journal* 112, no. 3 (2002), p. 381

6 Nadia Eghbal, *Working in Public: The Making and Maintenance of Open Source Software* (San Francisco, 2020), p. 74

With some investment in building medium and longer-term infrastructure, it seems likely that with the right funding and support community tech could help to diversify the technology ecosystem, offer alternatives to existing closed platforms, and support the emergence of technologies that express many different value sets.

Community tech as innovation

This increased pluralism is vital for a healthy digital society. However, it is not always welcomed by funders or investors, who often see innovation in more traditional terms, perhaps as summed up by Richard Jones:

> "Innovation is about matching new technical opportunities with unmet demands"[7]

Many UK technology and innovation funds operate in this way; several community tech creators we spoke with reported that they often find themselves skewing or reframing their existing plans and programmes just so they can apply to funding calls focused on novel uses of artificial intelligence or 5G.

Community tech operates differently to traditional modes of innovation: it matches existing technical opportunities with unmet needs.

Whether developing a voting system, membership software, or inventory management for a multi-use venue, community tech creators are likely to be resourceful and create technology within their (often meagre) means, having more in common with Jugaad[8], or frugal innovation, than with the application of emerging technologies.

It also links to the field of social innovation, which talks of small-scale contextualised innovation, rather than large-scale homogenised solutions. In social innovation, change happens and ideas spread through intentional but organic evolution rather than standardisation and replication. 'Generative diffusion' describes innovation that does not replicate a single model, but takes different forms and spreads through a variety of means[9]. Social innovation is also positioned as outside of traditional, business-focused models of innovation: "[these models] are only of limited use... much of the most important innovation of the next few decades is set to follow patterns of social innovation"[10]. Perhaps where community tech complements and builds on social innovation is its focus on place and communities.

7 Richard Jones, "An index of issues in UK science and innovation policy – part 2: some overarching questions", http://www.softmachines.org/wordpress/?p=2754, accessed 27 July 2022

8 A flexible, resourceful approach to problem-solving, using limited resources in a creative way, see Navi Radjou, Jadeep Prabhu and Simone Ahuja, *Jugaad Innovation: A Frugal and Flexible Approach to Innovation for the 21st Century* (London, 2012)

9 Murray, 2013, Strengthening Alternative Systems through Diffusion of Innovation; Murray, Caulier-Grice, Mulgan, 2010, The Open Book of Social Innovation

10 Mulgan, 2006, The Process of Social Inovation https://direct.mit.edu/itgg/article/1/2/145/9448/The-Process-of-Social-Innovation

Lee Vinsel and Andrew Russell refer to the more traditional, hopeful preoccupation with growth and new technologies as "the Innovation Delusion" and identify its cause as rooted in a concern to deliver short-term shareholder return rather than long-term infrastructure.[11] As they say in a chapter titled "The Problem with Innovation":

> "Old technologies aren't the only ones that require maintenance. Our culture celebrates software and digital technology as realms of cutting-edge development, but really most of the work invested in these state-of-the-art operations involves simply keeping them going."

Many community tech creators are engaged in an ongoing process of maintenance and operational management with little capacity to deploy new features. In this case, keeping the lights on is a form of innovation in itself — albeit one that is expected to take place on a tiny budget. As such, community tech creators rarely have the financial bandwidth to engage in speculative innovation that is not attached to a specific technology, and day-to-day maintenance can be difficult to fund.

We recommend funding people for strategic delivery rather than technologies or specific deliverables.

Clarity of vision alongside intrinsic motivation will, in many cases, mean that this kind of funding will lead to over-delivery against expectations. Whereas funding a feature set or a particular product is likely to result in over-complication and over-resourcing for specific projects. As Melissa Mean, director of We Can Make at Knowle West Media Centre explains:

"There isn't really a funding model for community tech. The reality is a constant scrabble to stitch and weave different (small) pots together… [there is a] reluctance among funders to fund human capital as well as widgets and kit. For community tech to grow, we need to invest in the growers."

Community tech and climate

While it is not a given that smaller-scale technologies will be better for the environment, there are many positive sides of working at community scale. By reimagining the tech stack as a local resource, not something delivered at arm's length ('in the cloud'), advantages will emerge. Chief among these advantages is visibility, in which community organisations can understand the climate impact of any third-party technology providers. This is a practical and relatively easy-to-achieve first step that will help community tech creators understand their fossil fuel use and take more direct control of it.

11 Lee Vinsel and Andrew L. Russell, *The Innovation Delusion: How our Obsession with the New has Disrupted the Work that Matters Most* (Currency, 2020)

We consulted with Chris Adams of the Green Web Foundation who shared[12] the Green Web Triangle, which includes an assessment framework to understand the fossil fuel impact of any technology decision. This framework has three levers — Alignment, Exposure, and Influence — that speak to the fact that modern technologies achieve a high level of abstraction at the point of delivery, often making it hard to interrogate who owns what, sometimes making it impossible to gain any traction or redress.

Working at a community scale can reduce this abstraction, and Adams' recommendations include, "Treating open source community projects like they're public infrastructure, and funding them accordingly". Adams quotes the German government's Sovereign Tech Fund, whose call for participation includes the line:

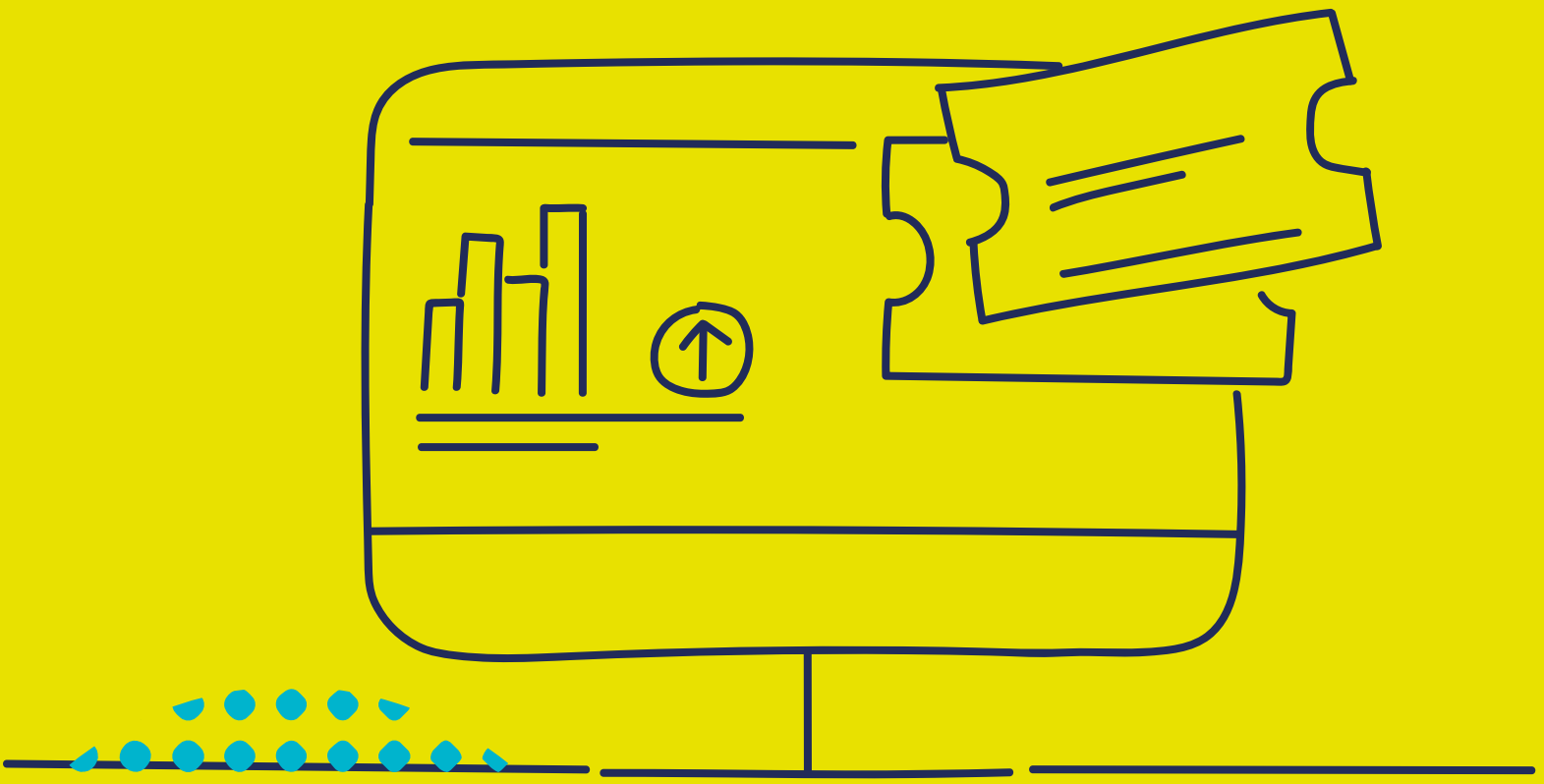
> "Available, accessible, and secure digital infrastructure is the foundation for digitalisation in the public interest."

While each community tech creator may be small on their own, the community tech ecosystem is composed of many small pieces which are loosely joined. Some initial investment is required in making these loose joins more visible via shared, lightweight standards and ways of working. But, the investment will return benefits in the long-term as community tech models and methods grow and diffuse to create an alternative infrastructure.

12 Chris Adam's presentation for Power to Change on "Getting to a Fossil Free Internet", https://bit.ly/power-to-change-fossil-free-tech

Layer 2:

Community organisations



When creating their own technologies, community organisations must navigate around the wider technology sector, where traditional businesses interact with technology in much more transactional ways. Layer 2 is about the community organisations themselves, and how they work with technologies that they use, curate, or create.

The people and skills in community tech

Rather than only recruiting its worker base through a strategic process, a community organisation may have access to a mixture of staff, volunteers, and trustees. Drawing on this flexible assortment of people and skills may mean that the organisation can call upon a wide breadth of specialist or strategic expertise. This is of course unpredictable, and will vary depending on where an organisation is based, or what projects they work on.

For instance, Knowle West Media Centre rely on a mix of internal and external expertise to create and use their tech products, such as their own contacts and projects database. Whereas Upper Norwood Library benefits significantly from technically skilled volunteers who happen to live locally.

Organisations that are steered by the skills and interests of members, volunteers and trustees will likely solve problems in different and more diverse ways. In addition, their strategic and tactical focus might shift depending on the needs of the community they are serving.

Finances also have a huge effect on who can be hired. This is especially true of software engineers, web designers and digital content specialists, who all command competitive salaries in the private sector. The availability of such staff at below market rates will be hit and miss, and depend on a wide range of factors that may be outside a community organisation's control. Knowle West Media Centre have found it difficult to recruit suitably skilled people because they can't pay what the broader market can, so in some instances they focus on training up existing staff.

It is possible that mission, vision and the ability to have a wide-ranging and impactful role in a small organisation (rather than a relatively constrained role in a larger organisation) will be more attractive for some potential candidates, but this would require further research to substantiate.

Several of the community organisations we spoke with that made their own technology relied on one highly skilled member of staff to manage or create digital products or services; while this raises issues regarding sustainability, standards and maintenance, it absolutely makes sense in the economic and cultural climate these organisations are operating in.

It's important to note that just one technically skilled person in an organisation can be a catalyst for the whole organisation to grow confidence in expressing their technology needs and ambitions.

At The Bristol Cable, hiring a software developer has boosted the confidence of all staff, helping them to develop new ideas — staff have not necessarily learned new technical skills, but rather have become familiar with terminology and processes. This in itself is valuable, because now the potential uses of technology have permeated throughout all aspects of the organisation, rather than being a standalone function. Staff have since worked together with the software engineer to collaborate on new tools and functionality, strengthening their ability to deliver activity core to their mission.

The presence of technically curious and confident people (either staff or volunteers) plays a large part in determining an organisation's approach to technology. These technical skills might include good digital production skills, including the ability to parse complex requirements from multiple stakeholders and wrangle numerous cloud services. Having hands-on design and engineering skills enables an organisation to actually make something, instead of just talking about making it.

This technical capability also means that staff can look beyond their own organisation and see what their peers are doing with technology; several interviewees mentioned the importance of drawing inspiration, sharing learning, and generally being on a 'shared journey' with other like-minded businesses. For The Bristol Cable, being able to have broader conversations within their sector about harnessing technology, and seeing what their peers are doing, has been important in sparking ideas.

Users

Our research found that most community organisations are users of technology, and see it as an operational tool rather than a strategic part of the business.

In some cases this may be because they are able to deliver their missions effectively without relying too heavily on technology; in others it might be because they don't have the skills, funding, or time to engage more strategically. Digital media and radio organisation Sheffield Community Media work extensively to support other community media organisations, who they often find lack both the day-to-day capacity and confidence to invest time and resources in developing their use of technology.

Our hypothesis is that it is not essential for all community businesses to acquire more digital literacy or technical intuition; instead, any technology used must relate to a need, fit with the mission, vision, and values, and be sympathetic to the spirit of the organisation.

That said, for those who want to employ a more digital approach, there are known practical blockers. Some community organisations don't know where to start with technology, or find that staff, volunteers or community members are resistant to increasing its use. This is why investment in the long-term cultivation of digital production skills — rather than one-off projects — would likely be more effective.

But the justification for increased digitisation across the whole sector is not clear; while it may lead to greater adoption of technology more generally, greater technical literacy may not always be necessary for the healthy development of a community organisation, and Power to Change's role in instigating broader digitisation should be considered through the lens of responsible technology.

It is also worth noting that Community tech products may sometimes seem more complex to use or less polished than off-the-shelf alternatives, and so may not always be the easiest thing for new technology users to get to grips with.

Curators

Those who 'curate' software tend to put together a selection of off-the-shelf products and services to meet their needs; this works really well for organisations that have both a clear sense of purpose and access to staff or volunteers with digital production skills.

While this can create some vulnerabilities — such as an over-reliance on free or cheap software and services, with little control over their terms of use — it can also liberate community businesses to select features that work for them from a wide range of tools and services, without being locked into an expensive enterprise solution that is not quite fit for purpose.

However, without good digital production skills and a clear sense of purpose, community organisations can find that they are stuck with a patchwork of tools that are just about good enough, and may be saddled with workarounds that make systems inefficient and not enjoyable to use.

This diverts time from addressing community needs, thus diluting impact.

Arts and mental health organisation Chilli Studios found themselves in this situation: "we had a lot of spreadsheets [to manage our customer relationships] which were starting to creak under the strain".

Curators have the greatest propensity to increase their use of Community tech tools

Upper Norwood Library, in south London, was taken over by the community in 2016 to save it from closure. Community involvement and steering of the library's activities is hugely important, and the staff and volunteers use technology to respond to community needs and ideas.

By curating a set of commercial and free digital tools, technology is used in not only back-office functions such as ticket sales, but also creative projects and livestreaming to the community.

The library benefits significantly from the skills of its volunteers. One of the trustees is a technology specialist, and therefore is able to identify the right set of tools that fulfil the library's needs. Their exact suite of tools might be tricky to replicate elsewhere, but the idea of curation is readily transferable.

Many organisations are successfully assembling and modifying selections of off-the-shelf technologies, which is an impressive demonstration of innovation and creativity. However, these are short-term strategies that are reliant on commercial companies and third parties to deliver continuity of service — and price. Terms of use, data collection policies, and feature sets can be changed at will by the provider; community organisations have no immediate right to redress if the features that allow their "digital public space" to exist are changed or simply go away.

The acquisition and subsequent change of terms of service for platforms including Instagram, Tumblr, and Flickr illustrate that privately owned platforms used as digital public infrastructure have few protections.

Relying on voluntary cooperation from private businesses for the contingency of good digital citizenship is neither democratic nor sustainable.

Creators

Every community organisation we have engaged with has clear justifications and high levels of motivation for their approach to using or creating technology. Very often, these relate to the wider systems they are operating in, and how mainstream technologies do or don't meet their needs and reflect their values.

Different operating models

Most B2B software is optimised for the needs of profit-making businesses, so it is unsurprising that some community organisations would prefer to use or create alternative(s), or some other kind of workaround.[13]

The back-office needs of a community business might entail features such as member voting, collaborative decision making, or volunteer recruitment and management.[14] These are not standard features in most B2B CRM systems. Moreover, a community organisation may have developed a distinctive way of working that they don't want to alter to fit around the features of a CRM system that is not fit for purpose.

Community media organisation The Bristol Cable found nothing on the market that could suit their needs, so they are building a bespoke CRM which is sustainable, community-driven, and fully accountable to its members. For them, technology is "rooted in [our] overall mission and values… [it] services the overall principles rather than being separate from the rest of the organisation".

13 These "other workarounds" might be worth investigating in more depth: anecdotally, we know several less technically confident community organisations that have created unorthodox workarounds or stopgap ways of working that have accidentally become embedded as long-term processes.

14 This is not an exhaustive list

Community tech infrastructure organisations provide a middle-ground between B2B software, and bespoke technology

Through our research, we spoke with community infrastructure organisations who create specialist technology that is reused across communities of practice. This is technology which is specifically created for reuse, but the scale is limited by the relatively small size of the addressable market. Additionally, the infrastructure organisations' values tend to be aligned with community values. These tools and services are more likely to be open source and have reusability baked in from the beginning.

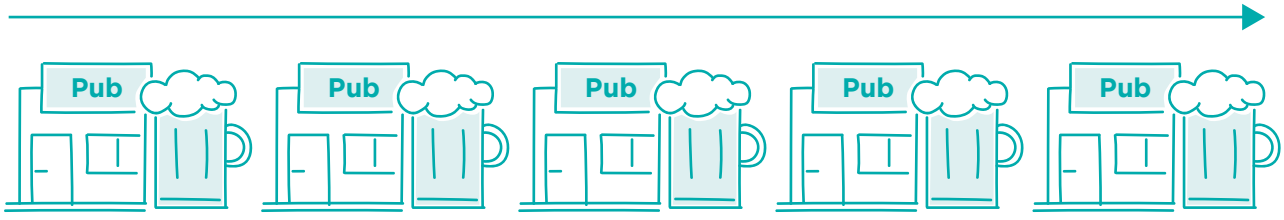
Community organisations that create infrastructure products bring deep subject-matter expertise that can be reused by a broader community of practice. These links to community organisations, and their shared values, as well as deliberately designed governance structures, may help to keep infrastructure organisations accountable to the communities that use them.

This infrastructure tends to be used by place-based organisations. The Open Food Network is a global platform adaptable for local needs, that supports food producers and community groups to build local and regional food distribution networks. Food enterprises become a member of the cooperative when they join, and participate in governance and research. The Network aims to support the viability of local, sustainable and community-focused food production and distribution.

For a community business, impact and effectiveness are a priority. Most mainstream tools are designed to support a for-profit business, which usually prioritises scale. For example, if a community group has successfully campaigned to save a local pub, that does not necessarily mean its mission will be to save pubs in other communities — whatever tools they use should therefore not be designed solely to 'save pubs'. The needs, activities, and markers of success for a community business are not necessarily replicable.

However, the traditional operating model for a profit-making business would seek to expand to as many pubs as possible, and look something like this:

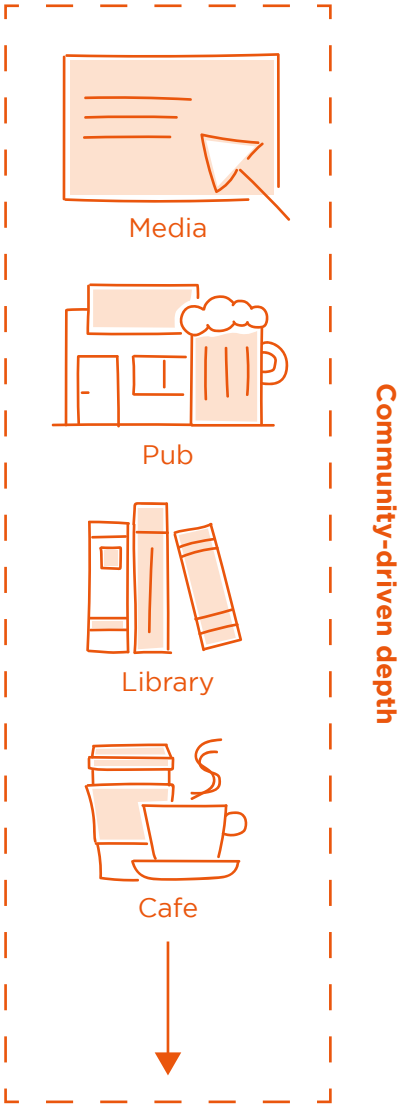
Commercial horizontal expansion



Lots of off-the-shelf business software is optimised for exactly this kind of expansion, which relies on replication rather than diversification.

A community business that was formed to save a pub or a library will have done so to protect an asset of community value. If this is the case, it might stop there and focus on the shift from activism to maintenance; or its members or management team might be inspired to diversify and deliver further community value.

This kind of diversification can take many forms, depending on the skills, money and expertise that are available, and on the problems that need solving. The community business might support the creation of a co-working space, a toy library, a lunch group for elderly residents; they might collaborate with a local food bank or a faith group; they might host a local radio station, or provide free wifi for local residents. The opportunities are endless, and will vary from place to place.



It's extremely challenging to use technology that is designed for replication and economies of scale in work that is deeply complex — particularly at the small scale that a community business operates in.

This is exactly why community technology exists: whether it's a curated suite of existing tools, or a set of brand new ones created by the organisation itself, organisations will always gravitate towards technology that is adapted to suit their specific needs.

Community technology aligns with community values

Making and using technology that upholds and reflects the values of community businesses is often a key part to the business itself. For community media organisation Sheffield Community Media, the ability to empower communities and hold others to account using technology is core to their work.

Many of the community businesses we spoke with preferred to manage their own data rather than pass it on to third-party services, and would rather avoid the 'toxic culture' present on dominant social media platforms. The organisations that raised this were among the most highly technically confident of the cohort, and are already established creators and owners of their own technology.

Creating technology that aligns with values means that things are often done differently to traditional businesses. Creative technology charity and community-interest company Knowle West Media Centre are planning to share anonymised data with local partners and with their community, and to explore the possibilities of greater community ownership of data. This is at odds with a for-profit model, where it would be more beneficial to store data in a centralised, closed system.

Finance and Strategy

Securing funding and devising strategy are intrinsically linked; when the only kind of funding available is short-term, organisations are forced to strategise for immediate impact. With a longer financial runway, organisations will have the time and space to make different choices, and to develop more high quality technologies.

Funding that focuses only on achieving successful outcomes as quickly as possible doesn't leave any room for experimentation. As Knowle West Media Centre say, "we need longer term investment, to be able to fail and keep going".

There is a significant need for funds with little or no attached expectation of achieving quantifiable outcomes. Community organisations need funds simply to operate and try things out, without needing to demonstrate a return on investment for every pound they receive. The provision of long-term funding has the potential to create social and cultural capital in the communities these organisations work in, whereas simply funding standalone community tech products only has a limited impact on expanding and strengthening the community tech sector as a whole.

In many cases the creation of community tech is actually a byproduct of short-term funding: the overhead of understanding and implementing third-party systems is too high, therefore there is a need for organisations to build or curate their own alternatives that they have more control over.

There are also concerns about the long-term costs of software licensing, and the risk of being priced out without an alternative. In the face of financial uncertainty, autonomy can seem to be easier to manage, even if it comes with many more risks and potentially higher staffing costs.

Unsurprisingly, community tech infrastructure builders have a greater focus on long-term strategic factors, while locally focused organisations tend to be more engaged with creating short to medium-term impact. Smaller organisations who make their own software without adhering to shared standards or modern best practice may be substantially limiting their impact and effectiveness.

For example, Open Food Network often sees community food businesses working with developers they happen to find through friends or family. They might build a platform that meets the business's immediate needs, but because of the custom nature of the software, is extremely difficult — or impossible — to maintain and adapt once the original developer has moved on.

Layer 3:

Technologies for place-based communities

The digital revolution of the last thirty years has shown how tools and technologies can enable online communities to form and thrive — and our research has shown that there is an ecosystem of community organisations that do exist online, connecting people across and between localities. But there are also clusters of community organisations that prioritise place-based collaboration, working together to meet and adapt to the needs and conditions of their local communities.

The starting point for our research was the pioneering and defining work being done by the Community tech Collective[15] in the US, including Community Tech NY[16] and the Detroit Community Technology Project[17]. Using the Detroit Digital Justice Principles[18], their work is: "committed to digital justice and to building community power through community-owned infrastructure".

Rather than focusing on distributed online communities, these programmes deliver active benefits to people in place. Building on the work and principles of the Allied Media Project, this approach puts people first:

"Wherever there is a problem, there are already people acting on the problem in some fashion. Understanding those actions is the starting point for developing effective strategies to resolve the problem, so we focus on the solutions, not the problems."[19]

The antithesis of this is technocentric thinking, which adopts the 'trickle down' approach of starting with technologies then looking for problems to solve. Community-driven, place-based innovation is a deliberate choice that celebrates making the most of existing assets; rather than importing new solutions, it prioritises being responsive, flexing skills and ingenuity to work with and respect the cultures and environments in place. It is important to emphasise this is technology shaped by communities, rather than just technology that sets out to address community/social issues.

This kind of regenerative innovation grows from giving people and communities access to infrastructure, resources and opportunities. Community Tech NY stresses the importance of not starting with technologies, but instead, "creat[ing] a space for listening and coming together around shared challenges and goals"[20].

15 See: Community Technology Collective website, https://www.ctcollective.org/

16 See: Community Tech NY website, https://www.communitytechny.org/

17 See, Detroit Community Tech website, https://detroitcommunitytech.org/

18 "Detroit Digital Justice Principles", Allied Media Projects website, https://alliedmedia.org/projects/detroit-digital-justice-coalition, accessed 27 July 2022

19 Allied Media Network Principles, https://alliedmedia.org/network-principles, accessed 21 July 2022

20 "Our Journey Map", Community Tech NY website, https://www.communitytechny.org/, accessed 21 July 2022

As Shannon Mattern says in *A City is Not a Computer*, every locality draws upon a wide repertoire of different kinds of formal and informal intelligence, including "site-based experience, participant observation, and sensory engagement".[21] In the UK, this kind of rich entanglement can also be seen in the work of organisations that practise place-based systems change. Civic Square in Birmingham is "reimagining the public square" at neighbourhood level,[22] combining an open public space with a participatory lab focused on regenerative economics and emerging digital interventions, including hyper-local listings. Onion Collective in Watchet runs local arts and innovation spaces, and also powers Understory, a collaboration with game developers Free Ice Cream, that helps a community map "the hidden connections that bind them together".[23]

But in the wider tech sector, place-based technologies are frequently not optimised to make the most of the people in place, and instead adopt a "smart city" model. This model often errs on the side of surveillance and data extraction, and is frequently rolled out in ways that attempt to standardise these varied kinds of local intelligence — prioritising top-down, corporate-friendly ways of creating change over social innovation.[24]

The importance of celebrating and optimising for local difference, as opposed to standardisation, is acknowledged in the UK government's Levelling Up white paper, which says it is important to:

"realis[e] the potential of every place and every person across the UK, building on their unique strengths, spreading opportunities for individuals and businesses, and celebrating every single city, town and village's culture. This will make the economy stronger, more equal and more resilient, and lengthen and improve people's lives."[25]

Community technology can play an important role in cultivating this diversity; in the words of Carolyn Hassan, CEO of Knowle West Media Centre, technology that is created by and accountable to a place-based community can play an important role in helping "value to stick to a place".[26]

21 *A City is Not a Computer*, p. 71

22 Civic Square website, https://civicsquare.cc/about/, accessed 27 July 2022

23 Understory website, https://understory.community/, accessed 27 July 2022

24 Karrie Jacobs, "Toronto wants to kill the smart city forever", MIT Technology Review (29 June 2022), https://www.technologyreview.com/2022/06/29/1054005/toronto-kill-the-smart-city/

25 HM Government, "Levelling Up White Paper: Executive Summary", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052046/Executive_Summary.pdf

26 Carolyn Hassan, comment in a Community tech workshop, facilitated by Promising Trouble in May 2022

In spite of this, technologies are frequently perceived by policymakers to only generate economic value.[27] However, according to research by Nesta in 2020:

> "people want innovation to be used to tackle inequality – but don't see it having that effect at present … They also believe we should be investing in innovation that has a positive social impact, even if it doesn't necessarily contribute to economic growth too. Top priorities included making the UK's population healthier, improving the UK economy, making the UK safer and addressing the causes of climate change."[28]

A cornerstone of the Levelling Up methodology is the six capitals, as outlined by the Integrated Reporting model, which are: physical, human, intangible, financial, social, and institutional[29] . These capitals also have general applicability to measuring the value of technologies. While much technology investment is focused on taking people out of place — whether through communication tools or via immersive, transporting experiences — digital technologies also have a critical role in delivering modern social infrastructure, which is now a critical component of day-to-day life in all places.

Currently much digital social infrastructure used by place-based communities is dependent on digital services which are profit-making platforms that neither reinvest in nor share governance with the communities that power their service — e.g. Facebook and WhatsApp (both owned by Meta) or NextDoor.

As well as good digital public services, good-quality connectivity, and support for digital businesses, holistic digital infrastructure should also be deployed to enable and maintain community building.

In the physical world and in the media, it is acknowledged that a mix of ownership and access models are required to support a healthy democracy and good outcomes for everyone: for instance, most people do not rely on shopping centres to complete all of their daily activities, and not every action is intended to be monetised. However, we depend on Meta and NextDoor for essential digital social infrastructure, meaning our digital lives do take place in the shopping centre; yet, in our physical lives, the make-up of the social infrastructure of a place is often rich and varied, including:

> "cafés, diners, barbershops and bookstores … public institutions, such as libraries, schools, playgrounds, parks, athletic fields, and swimming pools … sidewalks, courtyards, communities gardens … community organisations, including churches and civic associations".[30]

27 Department for Culture, Media and Sport, "UK Digital Strategy" (updated 6 July 2022), https://www.gov.uk/government/publications/uks-digital-strategy/uk-digital-strategy

28 Jen Rae, et al, "Is the UK Getting Innovation Right?" (Nesta, 2020) https://www.nesta.org.uk/report/uk-getting-innovation-right/

29 "Getting to Grips with the Six Capitals, Value Reporting Foundation website, https://www.integratedreporting.org/what-the-tool-for-better-reporting/get-to-grips-with-the-six-capitals/, accessed 21 July 2022

30 Eric Klinenberg, *Palaces for the People*

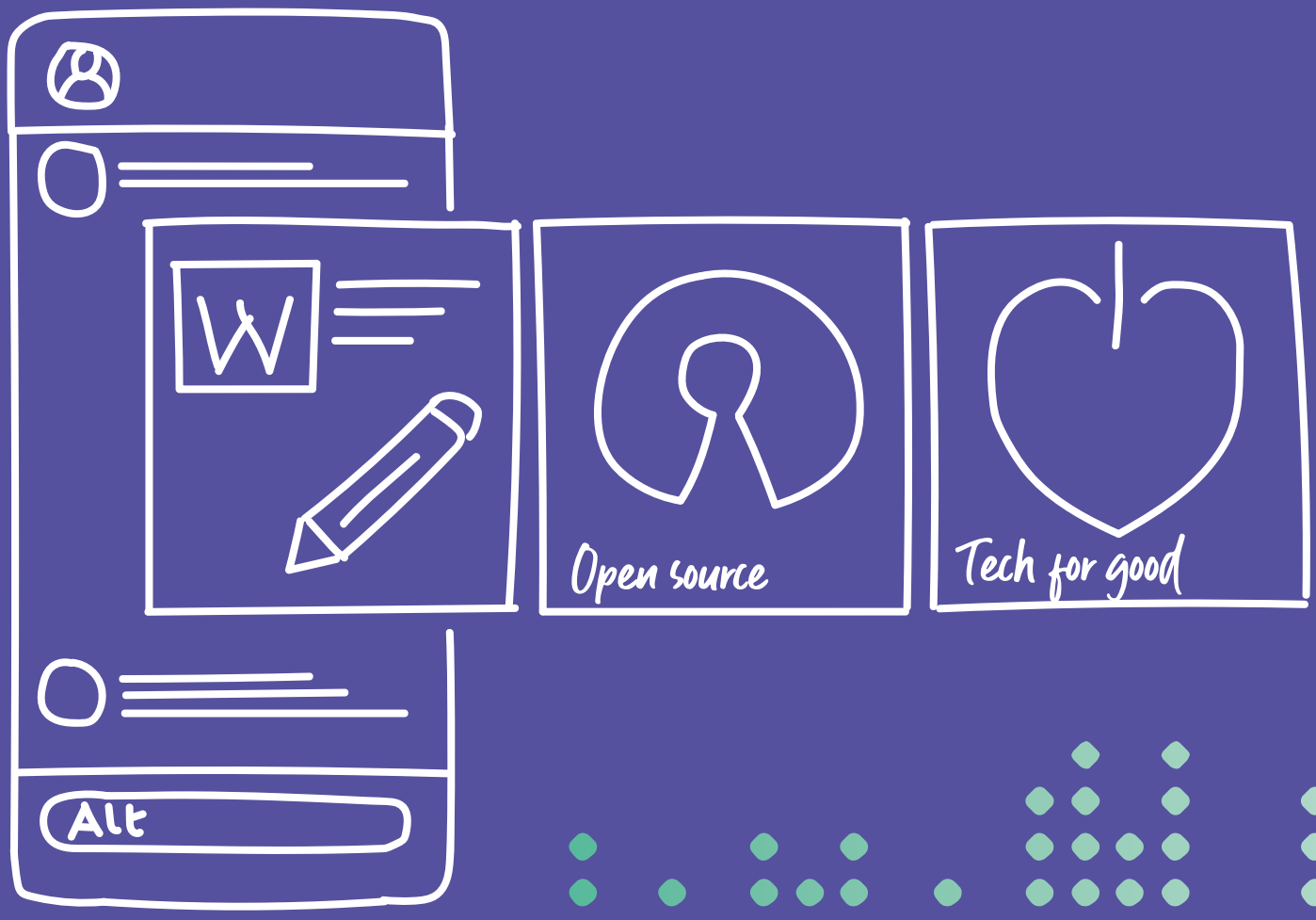
Caroline Slocock's analysis of strong social infrastructure — which, she says, "makes a place somewhere where people want to live, businesses want to trade and investors wish to invest" — sees an interplay between the built environment, services and organisations, and strong and healthy communities.[31] Digital social infrastructure cuts across all of these categories, creating the capacity to meet, organise and gather; deliver and advertise services; build local businesses; and grow friendships, communities of interest, and supportive relationships.

Social infrastructure broken down by type, from Early Action Task Force's "Valuing Social Infrastructure"

31 https://www.civilsociety.co.uk/voices/caroline-slocock-why-social-infrastructure-in-key-to-prevention.html

Layer 4:

The Alt Tech ecosystem



The Alt Tech ecosystem is populated by many technology approaches and communities that operate outside or on the edges of market and state-driven technologies; it is a place of pluralism, in which many complementary approaches operate in entanglement with one another. This comes before layer five, the Tech Ecosystem, which is dominated by a few nation-sized companies.

Just like civil society, the Alt Tech ecosystem is populated by many different kinds of groups and organisations, and these create and shape technologies for community benefit. The community groups and businesses discussed in this report are just a few examples of the multitudes that occupy this space: other contributors include, but are not limited to, academics, artists, activists, citizen journalists and citizen scientists, hobbyists, social entrepreneurs, and open-source developers.

There is space online for everyone — and that space will be improved by offering more amenities, and more shared services and tools.

The interactions here, and the sometimes blurred boundaries between active technologies and communities, generate resilience and possibilities, and help create a more diverse and representative technology, which in turn leads to more choice for everyone. Rather than fighting for competition within the market context of Layer 5, the Alt Tech ecosystem is a place of cross-pollination in which more reuse between communities can be fostered over time, bolstering and building a more diverse and representative technology landscape.

The Landscape

The Alt Tech landscape is a naturally decentralised environment which contains many different communities. These include, but are not limited to:

- those making and maintaining alternative physical networks
- the vibrant Tech For Good community
- the Wikipedians and Wikimedians[32] sharing knowledge and information with the world
- the social and charitable technologists
- the open hardware specialists and Fab Labbers driving retrofitting and repairable hardware
- the developers maintaining open-source repositories.

32 Volunteers that write and edit wikipedia content

There is crossover between community tech organisations and all of the above. For instance, some of the community organisations we spoke with also support Fab Labs, which are spaces for small-scale manufacturing. The intention behind them is to "democratise fabrication"[33] and create a space "where individuals have the opportunity to develop and produce custom-made things which are not accessible by conventional industrial scale technologies"[34]. While not every Fab Lab will be rooted in a community mission, using technology to create change at local (rather than planetary) scale with a high level of customisation is consistent with the way that community businesses also use software.

There is not space here to capture a full list of every Alt Tech community, let alone to describe them in detail, but it is important to understand that Community tech as described in this report both contributes to and derives benefit from this interrelated set of people and technologies — which, through being open and accessible, also provide essential infrastructure for the rest of the Internet and other emerging technologies.

Public interest tech and **civic tech** provide us with two good examples of this.

Public Interest Tech

A popular subject within Alt Tech strategies and programmes is how the world might be remade and rethought, particularly in those seeking alternatives to the dominance of major platforms. Digital technologies are very often associated with scale, so some of the better known approaches do not start with the direct needs of specific communities, but aim instead for more systemic change, oriented towards the general public.

All of the examples given below are from North American research and advocacy organisations, and they share a desire to recapture and redirect some of the Internet experienced by early users, before the market was shaped by the dotcom bubble in the 1990s.

For instance, Ethan Zuckerman's work championing Digital Public Infrastructure, based at the University of Massachusetts in Amherst,[35] looks to reclaim social media platforms as civic spaces. Aligned to this, the New York-based New Public researches and builds projects that create "healthy public spaces",[36] and they have identified 14 positive attributes for distributed social networks, arranged under the headings Welcome, Connect, Understand, and Act.[37]

33 Fab Foundation website, https://fabfoundation.org/#page-top, accessed 21 July 2022

34 Ivana Gadjanski, "Fabrication laboratories – fab labs – tools for sustainable development", Global Sustainable Development Report (2015) https://sustainabledevelopment.un.org/content/documents/640994-Gadjanski-Fablabs.pdf

35 Institute for Digital Public Infrastructure website, https://publicinfrastructure.org/, accessed 21 July 2022

36 New Public website, https://newpublic.org/, accessed 21 July 2022

37 New Public website, https://newpublic.org/building-block/2/welcome, accessed 27 July 2022.

Another North American project, the Electronic Frontier Foundation's Public Interest Internet, seeks to reclaim and amplify the pre-platform Internet, a place described by former EFF employee Danny O'Brien as:

> "the real internet... Often run by volunteers, frequently without any obvious institutional affiliation, sometimes tiny, often local, but free for everyone online to use and contribute to, this internet preceded Big Tech, and inspired the earliest, most optimistic vision of its future place in society."[38]

This 'real internet' is anchored in the potential of the 1980s and 1990s, when open-source software was what Nadia Eghbal calls "the vanguard for the rest of our online behaviour" and "the poster child for a hopeful vision of widespread collaboration".[39]

'Public interest' is defined by the New America Foundation as inhabiting a space outside of the market, drawing together expertise from what might otherwise be regarded as a hybrid of the political milieu and civil society, where "politicians, administrators, public officials, and even CEOs and nonprofit leaders" come together in "the study and application of technology expertise to advance the public interest/generate public benefits/promote the public good."[40]

One of the paradoxes of the Internet is that every nation state has a different patterning of social and political infrastructure, and tries to recreate that online. In this case, many North American conceptions of public interest speak to the local institutional landscape, which is inhabited by fewer universal public services than in the UK and many European countries. As such 'public' in this sense does not mean an entity that is owned and accountable to citizens because of taxation, but something that is in the wider service of the general population.

Civic Tech

Public interest tech may still be emerging, but civic tech is an expansive, global movement that has been running since the mid-1990s. The digital tools and services that citizens use and need are diverse: from tools to provide feedback on rubbish collections, air quality and planning consultations, to data and mechanisms to support democratic transparency and accountability — this is a thriving network of alternative technologies. At the time of writing, many thousands of examples can be explored on the Civic Tech Field Guide.[41]

38 Danny O'Brien, "Introducting EFF's Public Interest Internet", EFF, https://www.eff.org/deeplinks/2021/05/introducing-public-interest-internet, accessed 21 July 2022

39 Eghbal, Working in Public, p. 15

40 Austin Adams, "What is Public Interest Technology? Revisiting the Term That Defines Our Work", New America Foundation, https://www.newamerica.org/pit/blog/what-public-interest-technology-revisiting-term-defines-our-work/, accessed 27 July 2022

41 Civic Tech Field Guide, https://civictech.guide/, accessed 21 July 2022

While some civic tech is created or commissioned by governments, the majority is made by activists and social entrepreneurs. Fix My Street is a website run by MySociety, and allows people to tag necessary street repairs. Products like this act as useful intermediaries for communities to interact with local and national governments, and are often supported by a diverse range of income sources, including charitable funds, donations, and commercial services.[42]

There is a high degree of collaboration in the civic tech community, supported by regular conferences and other gatherings. There is also some reuse of tools and code between regions and practitioners: MySociety make their code open and available to use by other practitioners in countries including Chile, Argentina, Brazil, Nigeria and Cameroon; communities are often supported by multi-disciplinary groups of organisations, combining research and technology skills with investment.

As demonstrated, civic tech is a relatively complex and mature landscape. The mission and vision of individual bodies might vary, but most echo the ambition of the Charter Project Africa, which is to "promote the usage of civic technology to amplify citizen voices".[43] And as Weiyu Zhang of Civic Tech Lab at the University of Singapore says,

> "Civic tech promotes democratic engagement by citizens, for citizens"[44]

Although many civic tech initiatives may seem small, and are deployed at a local level, it's clear that combined together, they have a global impact.

The risks of Alt Tech

The plurality of Alt Tech would likely be perceived by the wider Tech Ecosystem (layer 5) as a risk to scale and efficiency. But scale and efficiency are not the most important considerations in every context. Our contention is that the broader societal impacts of vibrant technology pluralism are much more positive, and are essential to a thriving online future.

In his analysis of the built environment, Richard Sennett draws a distinction between the *cité* (the place) and the *ville* (the space). The *ville* is the built environment: the roads and buildings, hospitals, and schools; but the *cité* is the spirit; what Sennett calls the "consciousness" of a place that makes it attractive to live in. If Big Tech is the *ville* of the Internet, then Community tech and the other inhabitants of the Alt Tech ecosystem are the *cité*, where social norms are created, ideas emerge, and the sparks of life are felt.[45]

42 My Society website, https://www.mysociety.org/, accessed 21 July 2022

43 Civic Tech Fund Africa website, https://civictechfund.africa/about/, accessed 21 July 2022

44 Weiyu Zhang, "Civic Tech: An Asian Perspective", https://youtu.be/cZamU-afaTE, accessed 21 July 2022

45 Richard Sennett, *Building and Dwelling: Ethics for Cities* (London, 2018),

This means that fostering alternative technologies comes with different considerations, and risks — but the majority of risks can be mitigated by rolling out effective support. Risks to consider:

Maintenance and sustainability

- Some community technologies are created by single developers. If software is not sufficiently documented, or developed with reference to external standards, it can be difficult for others to maintain or reuse
- Bespoke technologies also may also be built in an incremental and additive way, becoming overly complex and inefficient to run, manage and host. These technologies would also be challenging for others to use and update, which in some circumstances could make repair difficult or impossible.

Lack of shared responsibility

- Having a single gatekeeper in an organisation could mean that technical expertise becomes siloed
- Lack of exposure to a broader community of practice may lead to unusual ways of working, and mean that community organisations do not benefit from shared knowledge.

Privacy and security risks

- Bespoke software may suffer from increased exposure to cyber attacks or security breaches, because they may not employ the same security measures as mainstream software which is built by large teams with much bigger budgets
- Higher risk of being out of step with legal standards and obligations, including local data regulations, GDPR and accessibility.

The existence of disaggregated community data sets also poses an interesting dilemma. On the one hand, the lack of aggregation is a useful counterbalance to the growing surveillance and convenience economy; on the other, there is a risk that community data could be excluded from important data sets that drive national policies, particularly as artificial intelligence and machine learning are increasingly relied on to deliver public and corporate products and services.

Conclusion and recommendations

Supporting local-scale, impactful community tech creators will aid the development of a network of community-driven, climate-conscious, place-based innovation across the UK, and contribute to a better Internet for all of us.

Benefits of investment in community tech

- **Increased resilience and autonomy** for individual community organisations, collections of community organisations and communities themselves
- **Increased social and economic value** for communities
- **Alternative, maintainable infrastructure** for places that is not dependent on the business strategies of platforms, or closed, privately owned software
- **An alternative to Big Tech and platform dominance** that contributes to a broader community tech ecosystem, and delivers benefits to society
- A model for a **more maintainable, more climate-friendly** approach for the technology industry.

Our recommendations cover a range of areas, some of which can be addressed through carefully deployed funding, and others that require collaborative approaches by those within the community tech sector and its wider ecosystem.

- **Invest in expanding the pool of community tech creators**. Encouraging those who are actually building community technology will have the most transformative effect on the sector. Currently, some organisations have to find software engineers externally, and if they are creating bespoke technology, organisations struggle to maintain it once the engineers move on

  Increasing the strategic capabilities of and the number of creators of community tech would diversify the ecosystem and give community organisations and others a wider choice of hardware and software. We have made the case for the broader benefits of that diversification, and the importance of letting technology thrive outside of the market and the state.

- **Ensure the expanded pool of creators is representative of the UK population**. The wider tech sector promotes the work of over-represented groups — the community tech sector must not emulate this. Investment in this initial cohort of creators should actively reach out to and support groups that are less commonly found in the wider tech sector.

- **Support the development of equitable governance models**. Commercial technology often does not share its code base so that others may adapt it, and is optimised to scale and recruit as many users as possible. This model does not benefit community tech, and so the sector should be supported to foster a network of communities where a cross-pollination of ideas is encouraged, and open source standards are established.
- **Funding people for strategic delivery rather than technologies or specific deliverables**. Clarity of vision alongside intrinsic motivation will, in many cases, mean that this kind of funding will lead to over-delivery against expectations. Whereas funding a feature set or a particular product is likely to result in over-complication and over-resourcing for specific projects.

Investing in building medium and longer-term infrastructure:

- **Develop shared standards and code libraries, and the proactive sharing of best practice**. To mitigate the risks described above of overly esoteric or complex technologies, a repository of code and other best practices accessible to all community businesses could be developed. Alongside this, a set of shared standards, governed and created by community tech practitioners, would not only reduce the risks, but also help make community tech more resilient, effective and future-proof.
- **Facilitate access to the right skills**. To deliver these standards, community organisations need access to the right skills. These might be gained through working with an external expert partner, or by trying to find someone to employ directly, though market pressures and high salaries can be a barrier to this. It may be necessary to deliberately create ways for community businesses to access skills, for example by identifying people who can be shared between settings, or through incentivising skilled developers and digital practitioners to participate in locally valuable technologies.
- **Develop a community of practice**. A community of practice may also be a useful asset to the community tech sector. Many community businesses in our research shared the value of speaking to their peers about what they are working on, and how learning about other community tech projects provided inspiration and opened up space for new ideas. The exact structure, focus and governance of a community of practice would need to be considered carefully, as well as how it would be resourced and run.
- **Make maintenance easy**. In order to focus on developing and growing the sector, many community tech practitioners need assistance to relieve short-term pressure. The lack of long-term funding means that small (often micro) teams frequently have little time to look beyond the day-to-day. Greater investment in running ‘business as usual’ would unlock the capacity for more innovation, forward planning, and resilience measures, like the ones above.

This report represents the beginning of a programme of research, community building and funding. Following the initial research that underpins this report, a number of areas for further research have been identified:

- Models of ownership and governance: how do communities get involved in community tech, who makes the decisions, who is accountable and how?
- Climate impact of community tech: can community tech be a net benefit for the environment, or does it have the same inherently negative environmental impacts as the wider tech landscape?
- Community tech links and regional inequalities: could community tech be a vehicle for the redistribution of wealth and power to 'left-behind' or otherwise disadvantaged communities and localities?
- The scope for shared standards and practices: what benefits could a set of shared community tech technical standards and practices have for community businesses, and how feasible is it to create one?
- What risks and opportunities for community tech are posed by Web3 (cryptocurrency, decentralisation and blockchain)?

About this document

This report reflects desk research and qualitative research with UK-based community organisations conducted by Promising Trouble for Power to Change in 2021 and 2022. It is not a definitive picture of every way communities use technology, but a focused exploration of the potential of communities, technologies, and place.

Of course "community" and "technology" are both expansive terms, and there are some significant segments we do not cover in this report: these include Free (Libre) and Open-Source Software communities, online-only communities, and distributed communities that create tech for good or public-interest tech. Our focus has partly been guided by Power to Change's vision for powerful communities and better places, but is also a reflection of the fact that others are working on programmes that fund and support these communities of practice and interest. It is also the case that — outside of the "Smart Cities"[46] — place is an often under-rated factor in technology and innovation programmes.

Among the many influences on this report, we would like to particularly mention the pre-existing work of the Community Technology Collective, an emergent network of organisations dedicated to digital justice, community technology, and digital stewardship. Community Tech New York and the Detroit Community Technology Project are founding members of CTC and sponsored projects of Allied Media Projects.

Research Methods

The research underpinning this report was carried out in 2021 and 2022 through semi-structured interviews, workshops and a literature review.

Citation

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Permission to share

46 For more information: https://post.parliament.uk/research-briefings/post-pn-0656/

About Promising Trouble

Promising Trouble is a social enterprise, committed to growing awareness of the social impacts of technologies and building alternative systems, technologies and communities of practice.

promisingtrouble.net

About Power to Change

Power to Change is the independent trust that supports community businesses in England. Community businesses are locally rooted, community-led, trade for community benefit and make life better for local people. The sector owns assets worth £870m and comprises 11,300 community businesses across England who employ more than 37,000 people. (Source: Community Business Market 2020).

From pubs to libraries; shops to bakeries; swimming pools to solar farms; community businesses are creating great products and services, providing employment and training and transforming lives. Power to Change received an original endowment from the National Lottery Community Fund in 2015 and a further £20million grant in 2021.

Power to Change wants to create better places through community business. Our vision is that by 2025, more communities in England will run businesses that give them power to change what matters to them. They will create more resilient places that are better to live and work in for everyone.

powertochange.org.uk

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