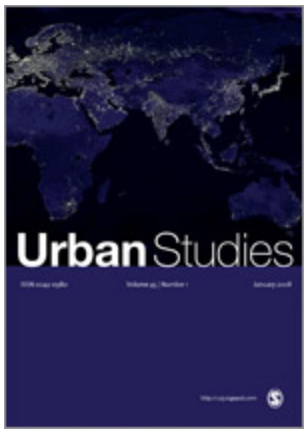


Provisioning Otherwise: Platform Co-operatives and the Reworking of Platform Urbanism

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Abstract

Urban life is increasingly organised through platforms, but platform urbanism has largely been understood through corporate intermediation, extraction and regulation. This article asks what becomes visible when platformisation is approached instead through the politics of provision. Drawing on 31 semi-structured interviews across a translocal platform co-operative ecosystem, it examines how co-operatively governed digital infrastructures make shared provision workable across places. The article develops platformed mutual provisioning to describe a recursive process through which dispersed capacities are assembled around situated needs, extended through federation, and kept collectively governable through maintenance, democratic learning and data stewardship. The findings show that platform co-operatives matter less as ownership alternatives in themselves than as fragile experiments in organising the coordinating capacities on which food systems, logistics and civic economies increasingly depend. Their significance lies in keeping those capacities revisable as they become infrastructural to everyday provision. The article argues that this opens a wider politics of co-operative infrastructural urbanism, in which digital urbanisation is judged not by growth or technological novelty, but by whether the power to coordinate provision remains answerable to those who depend upon it.

Keywords: Platform co-operatives; platform urbanism; urban infrastructure; urban provision; urban commons

1. Introduction

Urban life is increasingly provisioned through platforms. Delivered meals, ride-hailing journeys and short-term lets reorganise access to labour and everyday services through privately governed systems of coordination rather than merely adding digital convenience to the city. Platform urbanism names this reorganisation, wherein platforms act on the relations through which urban life is supplied and made actionable. Srnicek's description of platforms as "digital infrastructures that enable two or more groups to interact" (2017: 29) is essential because it locates platform power in the ownership of coordination, while work on platform urbanism shows how this ownership becomes spatially consequential when urban assets, service work and everyday routines are rendered available to corporate intermediation (Fields, 2022; Graham, 2020; Pollio, 2021; Wachsmuth and Weisler, 2018; McNeill, 2021).

But the consolidation of platform urbanism as a field also creates a risk. The corporate platform can become too quickly stabilised as the only meaningful figure of platform-mediated urbanisation. Leszczynski (2020) cautions against accounts that rehearse platform urbanism as an inevitably dystopian extension of capitalism and neoliberalism, while Barns (2019) and Van Dijck et al. (2018) remind us that platforms are also infrastructures of mundane interaction and public value struggle, even when these capacities are captured by corporate actors. But my point is not to soften the critique of platform capitalism, but to examine what is missing – if Airbnb makes housing available to tourist markets through the rent gap of the platform economy (Wachsmuth and Weisler, 2018), ride-hailing produces new "spatial bottlenecks" in local economic geographies (Graham, 2020), and delivery platforms draw on roads, airports, restaurants and waiting spaces without taking

responsibility for their reproduction (Pollio, 2021), then the urban problem is not extraction alone but the capture of coordination itself.

Platform co-operatives become significant for urban studies here, though not simply as fairer ownership models. Platform cooperativism has often been framed through democratic ownership, from Scholz's call for "new ownership models for the Internet" (2016: 2) to Schneider's (2018) "internet of ownership" and Sandoval's (2020) warning against "co-op fetishism". But co-operativism cannot be reduced to ownership or legal form. The "co-operative difference", as Novkovic (2008) argues, also resides in values and organisational practices through which members seek to meet shared needs under relations of democratic responsibility. An urban reading therefore has to move the question sideways – not only whether workers or users own the platform, but how co-operative practices might reorganise the infrastructures through which provision becomes possible in place.

Platform co-operatives become consequential when they alter the practical arrangements through which shared needs are met. A food platform may make dispersed supply accessible to public buyers rather than simply host online exchange; a delivery co-operative may reorganise logistical work around conditions negotiated by workers themselves rather than simply reproduce the app-mediated labour relation; a civic technology initiative may provide digital capacities through which community organisations can collaborate without dependence on proprietary infrastructures. In the context of Barcelona, Cañada et al. (2023) locate delivery co-operatives within territorial mobilisation and the social economy rather than digital entrepreneurship alone. The significance of such initiatives does not therefore depend on whether they replace or outcompete corporate incumbents. Co-operatives have long existed alongside other organisational forms, often because a particular group needs

something that prevailing arrangements do not provide on acceptable terms. Organising platform-mediated coordination around a shared need also means keeping it answerable to the people whose work and everyday lives it helps coordinate.

Provision therefore becomes the hinge of the argument. Urban policy often celebrates innovation and competitiveness, yet the systems that matter most to everyday life are usually ordinary and easily overlooked. Foundational economy scholars describe these goods and services as the "social and material infrastructure of civilized life" because households depend on them daily (Foundational Economy et al., 2022: 1). As platform infrastructures become embedded in everyday urban life (Barns, 2019; McNeill, 2021), more of this ordinary provision is coordinated through digital arrangements of access and exchange, even though the work through which it becomes usable remains materially and institutionally situated. Food still has to be aggregated through hubs, delivery negotiated through streets and transport systems, and public procurement worked through local institutions. Co-operative arrangements offer no automatic solution, but rather hey make visible a tension that platformisation intensifies between coordinating capacities that can extend across territories and the people, institutions and material settings through which provision is actually sustained.

Against this background, the article examines how platform co-operatives rework the coordination of urban provision through co-operatively governed digital infrastructures, as a way of rethinking platform urbanism. It develops platformed mutual provisioning to describe a recursive process in which provision is assembled around situated needs, extended through federated relations and kept collectively governable through maintenance. Rather than stages of development, these movements are mutually sustaining, whereby situated provision draws

on capacities built beyond the locality, while those capacities remain useful only through continued participation and repair.

The article contributes to urban studies by repositioning platform co-operatives as experiments in the infrastructural organisation of provision rather than as alternative ownership models alone. This reframes platform urbanism beyond an opposition between corporate extraction and municipal regulation, while extending work on "other" urban digital platforms that has drawn attention to citizen-based initiatives and local projects beyond dominant corporate examples (Chiappini, 2020). The argument is not that platform co-operatives resolve the contradictions of platform capitalism, but that they expose a different terrain of urban struggle – whether the coordinating capacity increasingly exercised through platforms can be held closer to the people, institutions and places through which everyday life is sustained. Taken together, this points towards what I call co-operative infrastructural urbanism, where the coordinating capacities of provision become objects of co-operative organisation across civic, public and market relations. The next section develops this argument by examining the urban conditions under which co-operative platform infrastructure becomes possible.

2. Provision and the urban conditions of co-operative platform infrastructure

To understand platform co-operatives as urban infrastructures, provision must be treated not as the delivery of finished goods or services but as the ongoing work that makes urban life practically possible. Infrastructure studies refuse to treat infrastructures as passive systems beneath social life. Star's observation that infrastructure "becomes visible upon breakdown"

(1999: 382) remains instructive because failure exposes otherwise backgrounded relations of dependency and maintenance. Urban scholarship has extended this insight by showing how infrastructural life is fractured through "splintering" or uneven networks (Graham and Marvin, 2002), assembled through the capacities of "people as infrastructures" (Simone, 2004), and continually sustained through social relations that exceed technical systems (Amin, 2014). Provision, from this perspective, is less an outcome than a practical accomplishment whose continuity depends on those relations holding together.

Platformisation reorganises the relation between need and supply by inserting an infrastructural layer of coordination. Everyday provision does not become platformised solely because a digital interface appears. It does so when access, visibility and exchange come to depend upon rules embedded in privately governed systems that increasingly determine how needs can be recognised and how capacities become available to meet them. What looks like a smooth transaction often rests on backgrounded work that only becomes visible when contested – when restaurants reorganise around app orders while riders absorb unpaid waiting time, kerbs acquire new logistical functions and civic organisations become dependent on commercial cloud systems. Platform power therefore resides partly in occupying the space in which provision is made actionable. Not only is value extracted from activities already taking place, but the coordinating relations through which collective needs are met become governed elsewhere.

Changing ownership alters this relation, but it does not settle it. Co-operation is not exhausted by a legal structure that distributes ownership differently, since democratic organisation depends upon practices through which members learn to exercise authority, negotiate common needs and reproduce co-operative values over time. Research on worker co-

operatives has long shown that democratic organisation carries its own difficulties of participation, leadership and resilience, particularly when co-operative values have to be sustained within wider market relations (Cheney et al., 2014). Commoning shifts attention from possession to the relationships through which shared capacities are continually reproduced. For De Angelis (2017), commons persist within and against pressures that threaten to enclose or exhaust them, while Chatterton (2016) understands urban commoning as a difficult politics of transition rather than a protected realm outside capitalism. A platform co-operative therefore becomes infrastructurally significant not because its software or assets are formally shared, but because the coordination they enable remains open to use, contestation and collective responsibility among those whose livelihoods or everyday access depend upon it.

Digital infrastructure complicates this relationship further. Work on digital commons has shown how distributed collaboration can organise production outside conventional firm hierarchies, most notably through what Benkler (2006) terms 'commons-based peer production', while Bollier and Helfrich (2019) emphasise that commons acquire their meaning through the social practices that sustain them. Yet the mobility of digital resources differs from the material conditions of provision. Code can travel across jurisdictions with relative ease, but the provision it supports remains tied to places where food is aggregated, deliveries negotiate streets and public institutions organise procurement. Digital capacities become infrastructural through these situated relations rather than through circulation alone. Openness may make software readily reproducible elsewhere, but it does not by itself make the resulting infrastructure common.

Provision also directs attention away from exceptional innovation and towards the ordinary systems through which liveability is reproduced. Foundational economy scholarship has made this move by foregrounding goods and services whose social importance exceeds their capacity to generate growth (Bentham et al., 2013; Calafati et al., 2023), while diverse economies work reminds us that urban economies are never exhausted by capitalist firms because they are also constituted through co-operation, reciprocity and community practice (Gibson-Graham, 2006; Gibson-Graham et al., 2013). The language of provisioning pushes the argument beyond recognising economic diversity towards the harder question of whether the relationships upon which everyday life depends can continue to be reproduced. Fraser (2017) locates this dependence within an economy that relies upon life-making capacities while repeatedly destabilising them. The problem is therefore also one of responsibility: who is expected to notice, sustain and repair the dependencies through which provision continues? Tronto (2013) makes that responsibility a matter of democratic organisation, while Sanchez (2023) shows how it can acquire infrastructural form through urban practices of commoning. Once coordination itself becomes platform-mediated, these questions extend to the technical and organisational capacities through which provision is kept usable.

These questions of responsibility quickly become questions of scale. Corporate platforms acquire infrastructural power partly by making coordination repeatable across places, but remaining local offers no simple escape from that power. The local may reproduce exclusion and unequal relations as readily as any other scale, as Purcell's (2006) warning against the "local trap" makes clear. Nor would reproducing corporate platform scale solve the problem, since shared capacity could simply become another centralised system whose rules drift away from situated provision. Plantin et al. (2018) show how platforms acquire infrastructural characteristics through standardisation and reach, whereas platform co-operatives face a

different spatial challenge: shared infrastructure has to extend beyond the locality without drawing authority away from the places in which provision is organised. Federation – independent co-operatives sharing selected technical and organisational capacities – offers one way of negotiating this tension. It redistributes capacity across places rather than dissolving territorial difference, leaving local organisations still embedded in the institutional environments through which they are funded, recognised and able to act.

Those institutional environments are not external to co-operative provision. Work on new municipalism, community wealth building and urban commoning has challenged the assumption that public institutions should merely regulate markets from the outside, showing instead how procurement, funding and other institutional capacities can alter the conditions under which alternative provision becomes viable (Bianchi, 2018; Guinan and O'Neill, 2020; Manley and Whyman, 2021; Thompson, 2021). Barcelona's technological sovereignty agenda illustrates the promise of shifting digital infrastructure away from corporate control through open-source software, data sovereignty and procurement reform (Charnock et al., 2021), although such experiments extend beyond the municipality into locally rooted co-operative and community practices (Lynch, 2020). Yet public support enters these arrangements on particular terms. Emanuel et al. (2026) show how municipal engagement can stabilise and extend grassroots initiatives while also reshaping the autonomy through which they organise themselves. For platform co-operatives, institutional support therefore becomes part of the urban politics of provision: the resources that make shared capacity viable can also alter the conditions under which that capacity remains collectively governable. Together, these tensions shift attention beyond the individual platform towards the wider urban ecology that makes co-operative coordination viable. I call this terrain co-operative infrastructural urbanism.

3. Empirical setting and approach: a translocal field of co-operative provision

The empirical field is a translocal ecosystem in which co-operative platform infrastructures circulate across places but become consequential through situated systems of provision. Rather than a sectoral survey or comparative case study of bounded organisations, the study follows a relational urban object: the infrastructures and organisational capacities through which platform co-operatives make provision workable in particular places. A food hub may rely on nearby producers and public buyers while using software maintained across national networks; a courier co-operative may work particular streets while drawing on federated code developed elsewhere. This relational/territorial sensibility(McCann and Ward, 2010) attends to how infrastructures mutate as they encounter situated institutional conditions (McFarlane, 2011; Robinson, 2016).

The field was constructed around organisations occupying different positions within this provisioning ecology. Open Food Network (OFN) provides open-source infrastructure through which producers, food hubs and buyers organise distribution through locally rooted instances connected across wider networks. CoopCycle combines shared software with a federation of worker-owned cycle-delivery initiatives operating in particular cities. These two networks became the principal empirical anchors because their multi-level forms generated especially rich material on local provision, federation and maintenance. Other interviews broadened this picture. For example, Autonomic and the Open Co-op/Meet.coop illuminate digital capacities supporting co-operative and civic organisation, while Data Commons Cooperative concerns shared data infrastructure for solidarity economies. A wider group of

cultural, publishing, governance and technical co-operatives, including Subvert, Mirlo, Stocksy United, COSMOS Co-op, Loomio, Brave.coop, the Phone Co-op and Hypha, provided additional perspectives. These organisations are therefore not treated as equivalent urban cases, but as differently positioned actors connecting place-based provision to translocal supporting infrastructures.

The study draws on 31 semi-structured interviews conducted between 5 March 2025 and 18 February 2026 with 27 individuals, four of whom were interviewed twice in follow-up conversations. The empirical centre of gravity was the UK and Europe, with additional participants based in North America, Australia and New Zealand. My previous research on platform cooperativism had already given me sustained familiarity with the field and its intellectual and organisational debates (Zhang et al., 2025), which informed the identification of organisations and organisational positions relevant to the study. This familiarity did not arise from a formal role within the organisations examined; participants were approached directly through organisational or publicly available contact details. Selection was purposive and sought variation in organisational position rather than statistical representativeness, bringing together founders and local organisers with software practitioners, food-system actors, federation representatives, researchers and advocates who could illuminate different parts of the infrastructural ecology. The aim was to trace how co-operative provision becomes workable when digital infrastructure, local organisation and wider institutional support have to be held together.

Analysis proceeded abductively rather than by imposing the three empirical dimensions in advance. Interview transcripts were initially coded around recurring concerns including coordination, governance, locality, software, funding, maintenance, data, institutional

relations and scale. I then compared these concerns across organisational positions and moved iteratively between the material and debates on platform urbanism, infrastructure, commoning and provision. Following an abductive logic in which empirical puzzles refine theoretical explanation (Timmermans and Tavory, 2012), this process progressively brought three interconnected problems into view: making dispersed capacities usable in place, sharing infrastructure across places without consolidating authority, and reproducing the technical and democratic conditions through which provision remains collectively governable. Sections 4-6 separate these analytically, but they are not treated as sequential stages.

Prior familiarity with the field also shaped interpretation. It made its normative vocabulary around democracy, fairness and common ownership familiar to me, but also created a risk of reproducing participants' own understandings too readily. I therefore treated these commitments as empirical claims rather than evidence of their accomplishment, reading them alongside accounts of funding shortages, governance difficulty, technical dependency and institutional compromise. Comparison across organisational positions helped probe where such claims held, fractured or acquired different meanings across the field.

The resulting account is translocal but not global. Its concentration in the UK, Europe and other Anglophone settings means that the forms identified here should not be expected to take the same shape in contexts governed by different co-operative laws, state relations or digital markets. The aim is instead to trace how a recurrent urban problem appears across this field: how co-operative digital infrastructures can circulate beyond a locality while remaining answerable to the situated relations through which provision is made.

4. Assembling provision in place: platforms as civic-economic infrastructure

The first empirical movement concerns how platform co-operatives make dispersed capacities usable in place. Across the interviews, platforms were rarely described as marketplaces alone. Their more consequential work lay in organising relations too fragmented to sustain provision: small producers needed aggregation to meet institutional demand, while couriers and civic organisations relied on shared digital capacities without wanting to surrender control over how work was organised. This extends Minuchin and Maino's (2023) account of counter-logistics as a field in which urban collectives can rework how goods and services become available. What mattered was less the alternative app itself than the work through which dispersed capacities acquired a usable urban form.

The food-related interviews made this especially tangible. Open Food Network (OFN) participants described the platform as a means of strengthening local food systems rather than expanding a single digital marketplace. Subsidiarity was central, with decisions expected to remain "at the most local level possible" (Interview 1: OFN UK) and food hubs operating independently around their producer communities. The platform mattered because it enabled forms of aggregation that still had to be physically accomplished. Interviewee 1 described a hub as

> *"a virtual organisation that brings together about 85 different food producers. And we hire a church hall one morning a week to bring all that produce together and then distribute it."*
>
> (Interview 1: OFN UK)

The ‘virtual’ organisation thus depended on a church hall, a weekly rhythm of collection and the labour of bringing producers into one logistical arrangement. Platform coordination did not dissolve place; it enabled that place to perform more infrastructural work.

Public procurement revealed why this mattered beyond consumer choice. Institutional buyers may want to source locally, but local aspiration does not itself create a supply system capable of meeting regular demand. The participant illustrated the problem through a school seeking “100 kilos of carrots every week” when an individual grower might supply only ten:

> *“What we need is a networked food system where a hub can have a contract with a school […] and the hub then has access to 85 different food producers.”*
>
> (Interview 1: OFN UK)

The hub performs the missing work of aggregation; the “100 kilos of carrots” specifies the infrastructural gap between local aspiration and institutional demand. The platform helps coordinate it, while the institutional buyer turns dispersed production into a more predictable demand relationship. Other OFN interviews showed this becoming an institutional strategy, with local councils commissioning advice on food hubs and place-based procurement projects seeking to move smaller producers into public-sector supply (Interview 4: OFN UK). This develops Morgan and Sonnino’s (2010) argument that public procurement can rework urban food systems, but also exposes a prior infrastructural problem that purchasing power becomes transformative only when producers can be made institutionally usable without first being absorbed into a large supplier. Platformed mutual provisioning begins here as the work

through which local capacity acquires enough collective form to enter relationships that individual actors could not sustain alone.

Cycle logistics made the spatiality of that achievement harder to miss. An organiser from the CoopCycle-affiliated Eraman described it as "a local cooperative because we only work in our city", while explaining that free software mattered to "our ability to self-manage […] our own ways of producing and our own tools" (Interview 31: CoopCycle). The city was not simply a service area but the environment in which work, traffic conditions and worker control had to be reconciled. A participant from Liège explained the purpose of profitability in similarly situated terms:

> *"We want the money to stay at the local level […] We want to create good jobs, fair jobs. And we want to reduce the externalities of deliveries in the city."*
>
> (Interview 29: CoopCycle)

Here the value of delivery was inseparable from what delivery did to the city. The participant connected cycle logistics to fewer accidents, less pollution and stress, while the partnership with DPD, a logistics company, concentrated deliveries in pedestrianised areas and around the new tram where vans were difficult to use. This gives a situated inflection to work showing how platform logistics depends upon urban infrastructural interfaces while shifting many of their costs onto workers and public space (van Doorn, 2017; Pollio, 2021). But the Liège account also complicates a simple opposition between co-operative and corporate provision. DPD remained a global logistics company, but working with it allowed the co-operative to occupy parts of the urban delivery system on different terms. The participant's

insistence that this could happen "without giving our soul to the devil" is better read as negotiated coexistence than ideological purity: co-operative provision was assembled inside an already heterogeneous urban economy while attempting to retain local employment, worker control and responsibility for the effects of circulation.

The civic technology interviews occupied a different position in this ecology. Autonomic Coop did not coordinate food or parcels through streets, so its infrastructure should not be treated as urban in the same immediate sense. Its significance lay in the supporting digital layer upon which civic and co-operative organisations increasingly depend. One worker contrasted their approach with organisations for whom "technology is just a tool" – using, for example, Amazon Web Services, Google Analytics or proprietary workplace platforms – arguing instead that

> *"the technological supply chain matters. The product we provide also has to respect the rights of our customers, but also the tools that we use need to be open source, part of the commons, privately respecting […] I guess you could think of us as sort of like a fair trade technology shop."*
>
> (Interview 11: Autonomic)

The interviewee went on to describe self-hosted tools and 'sovereign control' over organisational infrastructure rather than dependence on third parties. Autonomic sits one step removed from the church hall or delivery street, but that distance is analytically useful: situated urban provision increasingly relies upon translocal technical capacities whose ownership and maintenance shape what local organisations can do.

Open Co-op made this supporting role legible through "shared need". Meet.coop emerged during the pandemic because technical co-operatives required conferencing infrastructure they could collectively trust. As the participant put it, the initiative came together "out of this shared need", which was "the most important element of any collaborative endeavour" (Interview 14: Open Co-op). This shifts the meaning of co-operative infrastructure away from competition with an incumbent platform. A co-operative may begin because a group needs a capacity that existing arrangements do not provide on acceptable terms, and the platform gives that need an organisational and technical form.

Taken together, these accounts do not describe equivalent kinds of urban infrastructure. They reveal different positions within a provisioning ecology. OFN and CoopCycle show digital coordination becoming materially embedded through hubs, procurement relationships and streets, while Autonomic and Meet.coop show how less visibly urban technical capacities can support organisations whose work is place-bound. What joins them is a recurrent act of assembly: needs, people and technical capacities that begin dispersed have to be made usable together somewhere. Platformed mutual provisioning starts from this work of emplacement, even though – as the next section shows – the capacities on which it depends rarely remain local in their making.

5. Scaling sideways: federation without platform centralisation

Once provision is assembled in place, scale becomes a question of how capacities developed somewhere become useful elsewhere without turning shared infrastructure into a distant centre of command. Across the interviews, this happened less through replication than through connections among co-operatives embedded in different institutional environments.

Locality offered no guarantee of democratic or durable provision; the problem was how to share capacity while keeping decisions close to the conditions they concern.

Open Food Network made this visible through an architecture that was translocal without being placeless. A European coordinator described national instances linked through an umbrella association that represented them at European level and coordinated shared projects:

> *"We have in each country […] an instance. So one in UK, another in France, another in Italy, in Spain […] Then we have an umbrella association […] coordinating the different Open Food Network […]*
>
> (Interview 3: OFN Europe)

The same network connected farmers across countries, but its most revealing form of sideways movement concerned software. When Spanish and Italian users needed the platform to accommodate vegetable-box models, the request entered a development pipeline involving teams elsewhere, including Australia and Canada, to find "a common solution" because "the software is always developing" (Interview 3: OFN Europe). Local practice could therefore alter infrastructure used elsewhere rather than simply conform to a finished technical standard. Yet circulation also redistributed dependency. Development depended heavily on grants, sometimes secured in one country for work whose benefits accrued across the wider network, while the participant described this reliance on funding as "a risk for the project". What scaled was therefore a capacity to pool development and absorb uneven resources across places, but doing so required continual translation between needs that did not arise from identical food systems or funding environments.

CoopCycle showed the same tension more explicitly through territorial difference. An organiser from Eraman rejected freedom as the ability to do "whatever we want", describing it instead as the capacity to participate in how the conditions of work were made. CoopCycle, they continued, was "not just a software" but a community allowing local co-operatives to "organise ourselves in a bigger way" (Interview 31: CoopCycle local instance). That bigger organisation did not remove national context. Spanish co-operatives had formed their own association so they could negotiate with shared customers under Spanish conditions, while arrangements that worked there might make little sense in France because, as the participant put it, "the goals depend on the context". Federation was useful precisely because difference remained present inside it.

At federation level, the coordinator described more than sixty independent co-operatives connected through horizontal governance, with information moving between members and the federation board (Interview 20: CoopCycle). The political value of that distance appeared when he explained that the federation could sometimes 'say whatever we want' because it was not tied to a particular city council, whereas a local co-operative might depend on municipal money to survive. Federation did not lift delivery work out of the city; it gave locally exposed organisations another position from which to negotiate those dependencies, operating partly as a buffer rather than an escape from them.

There is, however, a limit to how far this translocality can be imagined as borderless. Digital infrastructure and organisational knowledge can move internationally more readily than co-operative membership or legal authority., Padmanabhan (2024), a research fellow of cooperative legislation, shows that co-operative law in many jurisdictions restricts

participation in international co-operatives, particularly across parts of the Global South, and argues that legal reform is necessary if genuinely international co-operative forms are to become viable. The distinction is important because OFN and CoopCycle demonstrate that infrastructure can be federated across borders while the organisations using and governing it remain legally situated. Scaling sideways therefore does not imply one global co-operative stretching across territories. It describes a looser movement in which capacities are shared across legally situated organisations whose room for manoeuvre continues to be shaped by jurisdiction.

The Data Commons Cooperative exposed another version of this relational geography. Its problem was not how to reproduce one organisation across cities, but how solidarity-economy actors could become legible to one another when the same organisation mattered differently to different networks. As one participant explained:

> *"A worker co-op in New York City would be of interest both to the US Federation of Worker Co-ops and to the Cooperative Economics Alliance in New York City […] because they have different lenses. It could be geographic, it could be sectoral […]"*
>
> (Interview 25: Data Commons Cooperative)

The example resists assigning the co-operative to a single scale. Its significance could be urban for one organisation and national for another, while other relationships followed different institutional geographies. The practical difficulty was that Data Commons lacked a sufficiently "user friendly tech platform" through which members could update and compare information peer-to-peer. Sideways scale therefore also depends on infrastructures of

recognition: distributed actors have to become visible across overlapping geographies without one classificatory centre exhausting what they are.

The interviews also cautioned against turning this pattern into a normative formula. Reflecting on earlier platform co-operative experiments, a Subvert founder argued that democratic ambition could outrun the organisational capacity needed to sustain it:

> *"The main challenge isn't that cooperative platforms haven't had […] resilient democracies. I think in many ways they haven't even gotten to the point where they can be that just because the business itself wasn't there to support it […] you start something like this, I think inherently it's more centralised to start."*

(Interview 17: Subvert)

The observation does not make centralisation a necessary first stage in some universal developmental sequence. It points instead to a project-level problem: participation cannot be expanded indefinitely around infrastructure that has not yet become viable enough to support the people expected to govern it. The same participant later argued that ecosystem support had to grow from "the projects learning how to sustain themselves, not the other way around". The local work of assembly is thus already entangled with how infrastructure moves and whether democratic organisation can endure. A locally workable initiative may need shared infrastructure to survive, while federation itself remains meaningful only insofar as the organisations sustaining it retain enough capacity to participate.

Scaling sideways names this recursive movement. Its promise lies neither in federation as a virtue in itself nor in escaping the local through digital reach, but in allowing infrastructure to circulate while decision-making remains responsive to the situated needs from which that infrastructure acquires purpose. The result is a form of scale made through continuing alignment rather than expansion: places become less isolated because they can share capacity, yet the usefulness of what they share depends on keeping it revisable from where provision is actually lived. Holding that alignment together, however, requires resources and maintenance, which is where the fragility of co-operative infrastructure becomes most apparent.

6. Holding provision in common: maintenance, data and democratic capacity

Holding provision in common concerns the reproductive work through which the arrangements traced in the previous sections remain usable. It is not a later task that begins once local provision has been assembled or shared infrastructure extended elsewhere. Both already depend on continuing acts of maintenance, governance and repair. The interview material repeatedly made this visible because co-operative infrastructures operated with limited resources inside markets whose conditions they did not control. Maintenance therefore has urban consequances in Graham and Thrift's (2007) sense – when software, support or organisational capacity fails, the consequences are felt in the food hubs, delivery systems and civic organisations whose situated provision depends upon them.

The first form of maintenance was cultural. Democratic ownership did not produce democratic practice automatically. An OFN participant returned repeatedly to the difficulty of

"sociocracy" because people arrived carrying habits formed elsewhere, where authority was expected to come from above. Earlier in the interview he described sociocracy as people needing to be "de-hierarchised", meaning they had to "learn how to work in a way that's not hierarchical"; when reflecting on what the organisation had learned, he made the point more explicitly:

> *"[You cannot expect] people to just drop into a cooperative, sociocratic structure without a lot of handholding and building of experience and building of trust. The whole psychological makeup of working in a co-op is different […] and people need to adjust."*

(Interview 15: OFN UK)

Co-operative culture appears here as something practised rather than possessed. The capacity to participate, disagree and exercise authority has to be learned, which also means that democratic infrastructure depends upon forms of care that rarely appear in an ownership diagram. The participant's concern with conflict resolution was revealing for the same reason: sociocracy worked by teaching people to voice concerns and remain with disagreement rather than treating consensus as the absence of friction. Democratic subject formation is therefore part of infrastructural maintenance because the relations through which shared provision is governed have to be continually reproduced.

Technical competence posed an analogous problem. An Autonomic worker described sociocracy as "a way of exercising co-operative values", but also showed how difficult it was

to resource the learning through which technical autonomy could be sustained. When somebody became stuck during client work,

> *"the client budget doesn't really provide time for them to learn […] and we don't have an internal way to track learning time […] there's no budget for it"*
>
> (Interview 11: Autonomic).

The point is mundane but consequential. Skills do not simply reside inside a co-operative; they deteriorate or become insufficient as technologies and client requirements change. Yet the time required to learn is difficult to charge to a client and equally difficult to fund internally. A Loomio participant described a related organisational transition, where the intensity of building something new eventually gives way to "a more steady maintenance or growth path", at which point some of the enthusiasm that initially held people together can dissipate (Interview 26: Loomio). Maintenance therefore carries a double burden, where the infrastructure has to keep working, while the people capable of sustaining it have to remain willing and able to do the less visible work through which continuity is produced.

One OFN account of what happened when its open-source software was forked during the pandemic showed why openness alone cannot secure common infrastructure. Microsoft legally forked OFN's code for Purdue University, but the resulting platform quickly became detached from weekly updates and user support. Farmers continued to encounter OFN branding while using increasingly outdated software, and when OFN sought to bring them back onto its supported system, Purdue refused to release the database because "these are our customers […] we own that database". The participant accepted that "there is no legal issue

there", yet the result was "big reputational damage" (Interview 2: OFN UK). What had travelled was code without the relationships that made it dependable. Common infrastructure therefore cannot be reduced to licensing. Its commonness is also produced through update routines, technical support and the capacity to remain accountable when something goes wrong.

Data introduced another problem of keeping relations common after they had been rendered digitally legible. Another OFN participant described "12 years of back data across 21 countries" recording producers, products, prices, hubs and delivery arrangements. Its value was obvious, but so was the risk of separating that value from the communities that had generated it. The challenge, he explained, was to ensure that data was "used ethically" and that those seeking access would "conform to our values" (Interview 3: OFN UK). These concerns bring data stewardship into the organisation of co-operative provision, since stewardship entails responsibility towards those whose interests are implicated in how data are accessed and used (Wendelborn et al., 2023). Once platform infrastructures make food systems knowable in new ways, deciding where that knowledge goes and on whose terms becomes part of governing the provisioning relationship itself.

The economics of maintenance made all of these questions harder. Another OFN worker explained that user fees could cover server hosting but not the wider labour required to keep the platform useful, adding that "support is the biggest one" among its recurring costs (Interview 4: OFN UK). Data Commons faced the same problem prospectively. Its participant expected that a growing network would generate "more maintenance costs", "more support costs" and other continuing expenses, with its proposed low transaction fee designed primarily to cover those costs rather than generate returns (Interview 25: Data

Commons Cooperative). These accounts shift the economic question away from whether co-operatives can outcompete corporate incumbents. The more immediate difficulty is how to finance the ordinary labour through which a shared infrastructure continues meeting the needs for which it was built.

Endurance is not a third stage of platformed mutual provisioning but a condition of the other two movements. Provision remains assembled only while its coordinating infrastructures work, and federation remains meaningful only while shared capacity stays connected to those expected to govern it. Democratic learning, technical support and data stewardship are different manifestations of this same problem – holding infrastructure in common means continually reproducing the relationships that make it usable and accountable. Fragility is not outside this argument. It reveals why co-operative urban provision has to be understood less as an alternative already achieved than as an ongoing practice of keeping shared capacity alive.

7. Provisioning otherwise: platformed mutual provisioning and co-operative infrastructural urbanism

It is tempting to read platform co-operatives as an ownership correction to platform capitalism, as if changing who owns the platform would be enough to produce a different urban politics. The interviews make that proposition more difficult to sustain. Democratic ownership can sit on top of infrastructures that remain too fragile to do the work through which provision becomes dependable. What matters, then, is whether coordination can remain collectively revisable as it acquires infrastructural weight. Platformed mutual

provisioning names this political problem. Its movements are recursive in a sense that local provision generates demands taken up through federation, while maintenance reproduces the competence that keeps this relation open. Provision remains mutual only while these relations can continue to work upon one another.

The carrot contract and the Microsoft fork discussed earlier help shift a familiar question in digital urbanism. Critical smart urbanism research made the calculative capacity to render cities knowable politically visible (Kitchin, 2014), platform urbanism has shown how such capacity migrates into commercial infrastructures, prompting Söderström and Mermet (2020) to describe platforms as effectively occupying the urban "control room". Hodson et al. (2024) sharpen the issue further by asking who controls infrastructural reconfiguration as platforms enter established systems of provision. The cases here suggest that control is necessary but not sufficient. OFN in this study could own its code and still lose practical authority when a fork detached software from support. A public buyer could possess procurement power yet remain unable to source locally until dispersed supply was made collectively usable. Platformed mutual provisioning therefore shifts attention from control alone towards the making and reproduction of coordinating capacity. Urban platform power lies not only in owning interfaces or data, but in becoming able to compose dependencies into arrangements on which others come to rely.

Once coordination is understood as a capacity rather than an interface, infrastructure itself looks different. Anand et al. (2018) insist that infrastructures are made through fragile relations rather than existing as self-contained technical objects. The cases here extend that insight into digital coordination. The infrastructural object is sometimes software, but just as often it is the organisational relation that allows a school to reach small producers or enables

a courier co-operative to draw on knowledge produced elsewhere. Lane et al. (2026) similarly show how community organisations can themselves perform infrastructural work within urban economies. I use "co-operative infrastructural urbanism" to describe the politics of organising these connective capacities through co-operative relations. Unlike approaches that begin from the resource to be commoned or the institution expected to protect foundational provision, the focus falls on the coordinating capacity that links provisioning actors across those institutional boundaries. Municipal power matters where it reshapes those relations, not because the municipality is their necessary centre.

This also changes what it means to take co-operative culture seriously. The sociocracy accounts show that culture is not a soft value added to an otherwise technical infrastructure. It shapes whether members can actually inhabit collective authority once it has been formally granted. The same problem surfaces in Autonomic's unfunded learning time and OFN's struggle to keep an open-source fork connected to support. Democracy becomes materially dependent on competence that has to be renewed. Mutuality therefore concerns more than reciprocity between stakeholders. It describes an organisation of responsibility in which dependency is not allowed to disappear behind the interface. A co-operative infrastructure becomes thin when ownership remains shared but the material means required to exercise it concentrate elsewhere.

Nor should this politics be confused with institutional purity. The Liège partnership with DPD shows co-operative provision being made inside an economy it does not control, while the municipal relationships around OFN and CoopCycle reveal similar entanglements with public authority. Gerli et al. (2024) find that relations between grassroots digital initiatives and incumbent actors shift across time and scale rather than following a linear passage from

resistance to incorporation. That helps explain why coexistence is not necessarily evidence of co-optation. The harder question is whether such relationships leave those doing the provisioning able to alter the terms on which coordination takes place. A municipality can anchor demand without becoming the centre of governance, just as engagement with a corporation need not determine the purpose of a co-operative service.

The field examined here offers one situated answer rather than a template. Its European and Anglophone centre of gravity means that the federated forms observed here are shaped by particular co-operative laws and relationships with public institutions. Bharat Taxi suggests another trajectory, in which the Indian state has actively enabled a multi-state co-operative platform (Ministry of Cooperation, 2026), while Padmanabhan (2024) shows why restrictions on transnational membership can prevent digital federation from becoming organisational federation. These differences open a comparative agenda around institutional pathways rather than geographical replication. Future work might ask how platformed mutual provisioning is remade when public authority helps constitute platform scale from the outset, or where legal and informal economic arrangements make federation take very different forms.

There is a danger, however, in turning this argument into another promise that better infrastructure will solve an urban problem. Monstadt et al. (2025: 1709) describe infrastructures as “ongoing, relational, and contested sociotechnical processes”, a warning that matters just as much for co-operative alternatives as for smart-city solutionism. The interviews suggest a slower politics. Funding that prizes launch but not upkeep can leave democratic infrastructure technically hollow. Procurement can redistribute urban provision only where organisations are able to translate dispersed capacity into dependable supply.

Provisioning otherwise is therefore not the promise of a platform that solves the city. It is the unfinished work of keeping the power to coordinate urban life close enough to collective need that those who depend upon it can still reshape what it becomes.

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