







# Favouring Open Social Innovation and Entrepreneurship for Urban Sustainability Transitions: The U-SOLVE Approach

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## Abstract

Innovation and entrepreneurship approaches, typically designed to serve economic development and corporate ambitions, can be adopted and repurposed for driving communities towards sustainable and inclusive growth. Recognising this as well as the pressing need for change and the obligation to solve a myriad of urban challenges, U-SOLVE (a project supported by the European Neighbourhood Initiative) seeks to stimulate cities and their stakeholders to co-create a future that is sustainable for people, the environment, and that is based on circularity and redistribution of resources. Open Social Innovation approaches, materialised through entrepreneurial activities and advocating for creative and cultural solutions, are chosen with the purpose to bring positive urban transformation and break through unfavourable locked-in sociotechnical systems. Measuring the impact of such an approach and simultaneously ensuring that it is pragmatic, flexible and scalable, this is achieved by utilising the Doughnut Economy – a transformative approach that promotes social development under the ceiling of planetary ecological limits. Recognising the multidimensionality of sustainability transitions, multi-actor co-creation processes are activated to boost the implementation of the UN's Sustainable Development Goals in urban contexts, seeking for the appropriate orientation of innovative technologies and business models proposed by start-ups and entrepreneurs from creative and cultural sectors, specifically addressing the priorities expressed by local actors. The developed approach aims to highlight human capital as the critical asset for thriving communities, as well as embed the creative economy into the development of business solutions that have the power to influence behaviours, meet social needs and encourage the success of urban sustainable interventions.

**Keywords:** Urban; Open Social Innovation; Entrepreneurship; Sustainability; Co-Creation

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## 1 Introduction

The proliferating sustainable development challenges affecting urban areas increase the need for a societal mindset change and a shift towards sustainable behaviours and actions. Innovative strategies for urban transformation and regeneration, combining nature-based with society-based solutions are essential, to make our cities thrive and prosper. Innovation and entrepreneurship approaches, typically designed to serve economic and corporate ambitions, can be adopted and reconfigured accordingly for driving urban communities towards sustainable and inclusive growth.

Recognizing the criticality of the need for change, as well as the importance for urban regeneration, U-SOLVE - an empirical project supported by the ENI CBC MED Program - sought to stimulate and mobilise cities and their stakeholders in the East Mediterranean and Middle East (EMME) region, to co-create a future that is sustainable for people and the environment. U-SOLVE experimented with an innovative process, which was built upon the 'Doughnut Economics' principles [1], promoting social development under the ceiling of the planetary ecological limits. Quintuple helix co-creation processes were activated to boost the implementation of UN's Sustainable Development Goals (SDGs) in urban contexts of the Mediterranean region, seeking for the appropriate orientation of innovative technologies, creativity and business models, towards priorities expressed by local actors through a participatory process. Importantly, by implementing the U-SOLVE project, all involved groups and parties were forced to accelerate their learning curve for the effective and cooperative development of sustainable urban communities.

This paper is structured in four sections. After this introductory paragraph, Section 2 touches upon the U-SOLVE project and its theoretical foundations. Section 3 outlines the Project's methodological approach. And, finally, Section 4 summarises key methodological/empirical results and provides a number of concluding remarks.

## 2 U-SOLVE's Theoretical Background

### 2.1 Navigating Urban Complexity

Cities have always been centres of commerce, engines of ingenuity, economic growth and innovation. However, saddled by rising population, heedless thinking, legacy infrastructure and limited budgets; cities face an increasingly complex set of issues associated with waste management, mobility, urban planning, social inclusion, all of which are exacerbated by climate change.

The need for tackling the aforementioned challenges by sustainably developing in all urban domains is prompting a re-assessment of how cities around the world are designed and governed. Further, city administrations will not be able to address the increasing demands, changing demographics and ageing infrastructure on their own. Active participation of the private sector, factual dialogue with knowledge providers, as well as citizens' engagement, are necessary throughout the urban development value chain. As urban demands and complexity of infrastructure and services grow, the resources required to tackle them (e.g., knowledge, finance, legitimacy, agency) are increasingly spread across many different stakeholders. In such a scenario,

partnerships, co-creation and co-governance have gained increasing relevance in driving urban transformations.

## 2.2 Theoretical Framework

The underpinning theoretical framework of this paper is formed combining theory from the fields of sustainability transitions [2, 3], innovation and entrepreneurship [4, 5, 6]. More specifically, the remainder of this section considers how the Multi-Level Perspective (MLP) has been conceptualised as a founding theoretical framework of sustainability transitions, and the role of the entrepreneurial ecosystem in achieving such transitions. Finally, the relatively new concept of Open Social Innovation [7] is considered here and so as to anchor the MLP and EE in place-based sustainability transformations that are not only territorial and material but also social and immaterial. Figure 1 below illustrates the theoretical foundations.

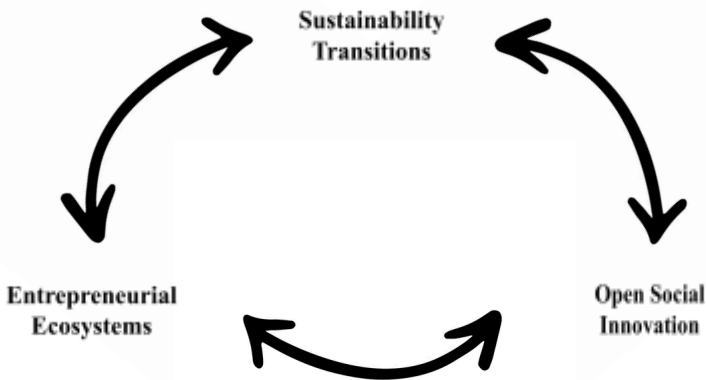


Fig. 1. Theoretical foundations.

By integrating these discourses, a deeper understanding of the multifaceted challenges facing urban sustainable development can be gained and innovative strategies for addressing them can be identified. For example, by studying sustainability transitions, emerging technologies and trends that have the potential to transform urban systems can be discovered. Entrepreneurial Ecosystems provide a platform for startups and entrepreneurs to develop and scale these technologies, while open social innovation facilitates collaboration and knowledge-sharing among diverse stakeholders to accelerate the adoption of sustainable solutions.

### 2.2.1 Sustainability Transitions and the Multi-Level Perspective

The motivation behind promoting sustainability transitions in urban areas is that those are faced with persistent environmental and societal problems that cannot be solved by incremental change and a business-as-usual attitude [8]. Be that as it may, transitions to new sustainable socio-technical systems in energy, transport, waste etc.

are vital and are urgently needed. These socio-technical systems have multiple dimensions and actors involved, making them complex in nature and difficult to navigate and adjust. Many of them, which have been in place since the second world war and even before that, are causing lock-ins and path dependencies; these systems need to be reconfigured completely, shifting to modes of production and consumption that are environmentally, socially and economically viable [8]. This shift, as stated by Geels (2018) [9], involves not just changes in technology but also changes in consumer practices, cultural meanings, infrastructures, and business models. Further, politics and public policies have a key role and a lot of power in making or breaking transition efforts.

In the sustainability transitions literature, the MLP – developed by Arie Rip and René Kemp, and further refined by Frank Geels and Johan Schot [10, 11, 12] – is a founding theoretical framework and a prominent research approach to conceptualise and better understand the process of transitions and what is involved.

The MLP argues that transitions are the result of dynamic processes happening within and between three analytical levels: 1) niches – the space where radical innovations take shape and are protected from dominant rules; 2) socio-technical regimes – the institutional structuring of existing, incumbent systems and which are difficult to reconfigure due to the path-dependencies and lock-ins that have been established around them over a long period of time; 3) socio-technical landscape developments – the changes and critical challenges that put pressure on the locked-in regime and create cracks and windows of opportunity for niche innovations to break through and bring about the right conditions for a shift from one socio-technical regime to another to happen [13]. Penna and Geels [14] state that actors operating in the ‘niches’ level develop radical innovations whereas the incumbent regime and actors focus on incremental innovation. As mentioned before, incremental innovation will not suffice when working towards achieving sustainability transitions and for this reason, the attention shifts to niche actors and activities.

When it comes to sustainability transitions, seven characteristics need to be taken into consideration. Transitions are *multi-dimensional co-evolutionary processes* consisting of numerous elements and involving changes in a range of dimensions. Transitions are *multi-actor processes* – groups and actors from academia, politics, industry, and civil society with their own resources, capabilities, beliefs, strategies, and interests are affected and mobilised. Transitions involve *stability and* at the same time *change* – achieving a transition to a new sustainable system encompasses interactions between impulses for radical change and the forces of stability and path dependence that characterise incumbent systems. Transitions are *long-term processes* – niche innovations might take years before they reach widespread diffusion and it can take a long time to destabilise incumbent systems and overcome resistance from incumbent actors. Transitions are also characterised by *uncertainty and open-endedness* – multiple niche innovations and activities compete with each other, and this creates multiple possible transition pathways and a future that is open-ended. Whereas uncertainty stems from the non-linear character of innovation, political, and socio-cultural processes, transitions are affected by *contestation and disagreement* – due to the highly contested nature of the notion of sustainability and the resistance of incumbent economic actors against new promising innovations and transition pathways. Finally, transitions are characterised by *normative directionality* – private

actors have limited incentives to address sustainability, since it is mostly a public good; public policy is needed to shape the directionality of transitions [15].

### **2.2.2 Entrepreneurship and Entrepreneurial Ecosystems**

Entrepreneurial Ecosystems (EE) can be defined as complex, interconnected networks of actors, resources, and institutions within a specific geographical region or industry sector that collectively facilitate the creation, growth, and sustainability of entrepreneurial ventures. These ecosystems encompass a wide range of stakeholders, including entrepreneurs, investors, government agencies, educational institutions, support organisations, and cultural influencers, all of whom contribute to the vibrancy and dynamism of the entrepreneurial landscape.

Looking at the literature concerning the complexity and multi-dimensionality of sustainability transitions can help urban actors better understand the dynamics at work in transitions to new sustainable systems. As mentioned before, landscape pressures create windows of opportunity that allow niche radical innovations to break through the locked-in socio-technical regime; this is when the tension between stability and change occurs creating the right conditions for the desired transformation to start materialising. Currently, the landscape is exerting pressure on the incumbent regime and this landscape pressure comes in the form of climate and ecological crisis, pressing social inequalities and demographic changes, the pandemic, and the need for systemic change brought by the war in Ukraine and other major conflicts [16].

Radical innovations that have the power to take advantage of windows of opportunity for systemic change are assumed to emerge in niches; this is where entrepreneurs operate and nurture the development of such innovations [17]. With this in mind, giving power and the right tools to entrepreneurs to innovate seems to be a promising solution for accelerating sustainability transitions, especially now when the regime seems to be 'vulnerable'. The positive impact that entrepreneurs and the creation of entrepreneurial ecosystems (EEs) can have on urban communities is further supported in entrepreneurship literature.

More specifically, Schumpeter stated that entrepreneurship is a disequilibrating phenomenon rather than an equilibrating force [18]. Connected to this, Schumpeter proposed the theory of creative destruction arguing that entrepreneurial activity (initiated by individuals and/or firms) can displace locked-in incumbents, ultimately leading to a higher degree of growth and to dramatic improvements in the quantity and quality of people's lives [17, 18]. What is more, entrepreneurship and EEs have been increasingly considered as means to sustainable development and the SDGs [19], and as engines for transforming the world and overcoming local as well as global challenges [20].

Concerning EEs, the fundamental ideas behind this concept emerged in the 1980s and 1990s as part of a shift in entrepreneurship studies towards a broader community perspective that incorporates the collective role of social, cultural, and economic forces in the entrepreneurship process [4]. Further, empirical studies proved that EEs can be vehicles for empowerment and enablers of economic development, poverty alleviation and other forms of social value [20]. Entrepreneurs and EEs, through their sustainable outcomes and resilient character, maximise the impact of SDGs and create long term gains for both the environment and society [21, 22].

### **2.2.3 Open Social Innovation**

Reflecting on the paper's theoretical background and connecting sustainability transitions with entrepreneurship discourse, a strong argument can be made in favour of entrepreneurship and EEs and their capacity, given that the opportunity is there, to disrupt the unsustainable incumbent regime and create the right conditions for change to happen. However, and having in mind environmental and social challenges/pressures, it is vital to think of change as a collective effort. By the same token, state of the art research on open and participatory processes argues that potential solutions to sustainability challenges exist but are unevenly distributed among citizens and stakeholders; and the road from idea to impact requires interaction based on both collaborative and competitive principles [7, 27].

Open social innovation, an approach that combines features from the models of social innovation and open innovation, fits in the discussion of transitions and entrepreneurship as it highlights the importance of establishing an appropriate environment of collaboration between public-private-society when scouting, developing and scaling up solutions to social and environmental challenges [27]. In this context, Urban Living Labs (ULLs) have been emerging, as a specialisation of the living lab methodology, which embeds open social innovation processes into the urban environment [28].

Furthermore, open social innovation builds upon concepts of social innovation and transformative social innovation by emphasising the importance of openness, collaboration, and inclusivity in the innovation process. It highlights the value of engaging diverse stakeholders, such as businesses, governments, academia, and civil society, in co-creating innovative solutions. By fostering transparency, scalability, responsiveness, and empowerment, open social innovation aims to drive more impactful and sustainable outcomes.

While social innovation and transformative social innovation focus on innovation for social and environmental benefit and transformative change, respectively, open social innovation emphasises the importance of openness and collaboration in driving innovation for sustainable development. It underscores the need for inclusive, participatory approaches that engage diverse stakeholders in co-creating solutions to complex societal challenges.

Importantly, discourse from the above-mentioned fields can benefit from additional insights relating to and empirical cases into collaborative entrepreneurial activities and what it takes for such activities to grow, break through the incumbent regime and ultimately contribute to sustainable development and the SDGs [22, 23]. For this reason, an appropriate experimental methodological approach has been developed within the framework of the U-SOLVE project – this approach will be discussed in the following section.

### 3 Methodological Approach

The paper's methodological approach was operationalized through the actions of the U-SOLVE project, which were structured around four distinct components, each with specific outputs. Table 1 provides an overview of the outputs associated with each component.

**Table 1.** U-SOLVE components and their project outputs.

Component	Project outputs
1	Roadmap and methodologies for empowering urban ecosystems
2	Scouting business ideas and start-up process support: Co-designed start-up selection processes and new entrepreneurial start-up ideas and start-up companies addressing environmental issues and capital investments in start-ups
3	Urban hubs oriented to impact entrepreneurship
4	Urban entrepreneurial policy for sustainable development in the Eastern Mediterranean and Middle East Region

Importantly, all project components together seek to establish a supporting process devoted to young and women entrepreneurs who wish to turn their ideas into impactful businesses with a focus on the environment and sustainable development. When it comes to SDGs and urban sustainability, according to the U-SOLVE approach, the promotion and influence of sustainable behaviours and cultures can be achieved through open social innovation, entrepreneurship and creativity. For the project, entrepreneurs are encouraged to embrace the diversity offered by the cultural and creative sectors (creative economy), to develop innovative products and/or services with a meaningful and transformative impact. Combining innovation, entrepreneurship and the creative economy helps bring down disciplinary barriers and allows for the application to urban challenges imaginative knowledge and counter-intuitive thinking that can give rise to radical innovations and trigger behavioural disruption for achieving sustainability transitions [24].

What is more, throughout the lifespan of the project, valuable data and information are collected and explored in order to develop roadmaps/methodologies for creating sustainable urban ecosystems as well as strategic documents on urban entrepreneurial policy for sustainable development in the EMME area. It should be noted here that in the project there are six partner countries involved – Greece, Italy, Cyprus, Jordan, Palestine, Egypt – all partner countries are actively participating in all project components. It is also important to mention that the project is scheduled to end in December 2023. Below, each component is discussed.

#### 3.1 Roadmap for the Development of Urban Entrepreneurial Ecosystems

Mapping the ecosystem is a process that aims to boost the impact of the project and detect functions and connections. The methodology used for delivering the objectives of this step is built on the assessment of the entrepreneurial ecosystem of each partnering country following a series of determining steps as per the ANDE framework [25]. This includes an initial identification of the geographic unit of

analysis for each of the involved countries, followed by an analysis of the actors and functions of the ecosystem by utilising qualitative and quantitative approaches. Figure 2 offers an overview of the methodology utilised for the entrepreneurial ecosystem mapping conducted for U-SOLVE and based on the ANDE tool.

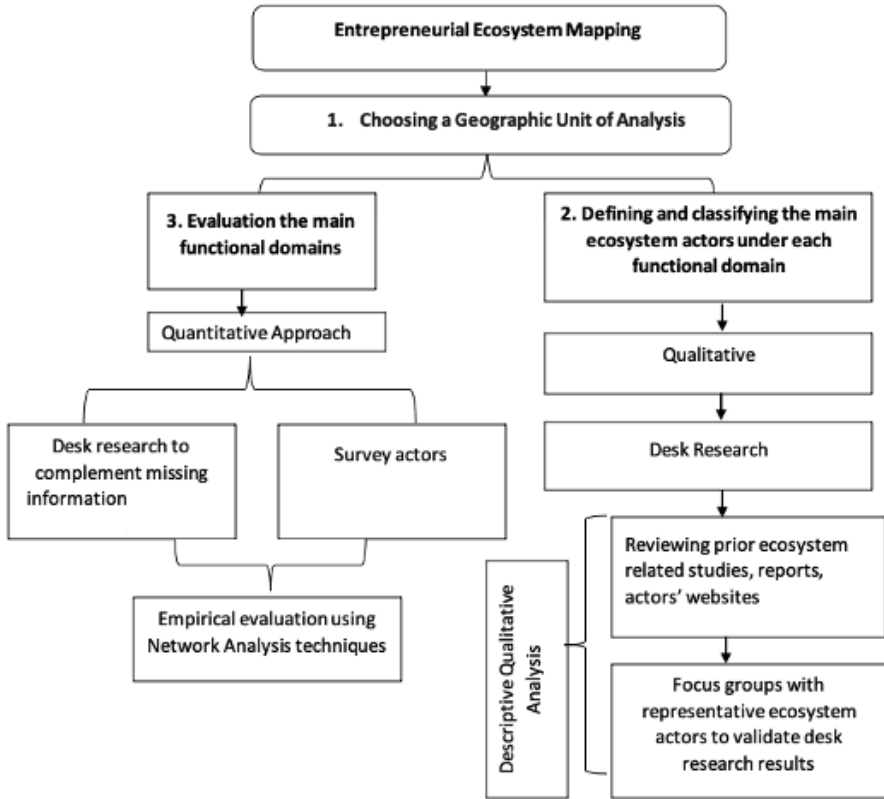


Fig. 2. Methodology for ecosystem mapping as per the ANDE framework.

Regarding the ecosystem mapping, this is in co-creation with citizens, public authorities, academia, investors/financial institutions, businesses and business support organisations, among other stakeholders. Specifically, a series of focus groups validate the desk research results on identifying the actors of each domain, and a survey is used to evaluate the main functional domains of the ecosystem.

### 3.2 Scouting Business ideas and Start-Up Process Support

Based on the outputs of the ecosystem mapping, this step of the project aims to identify the arising urban development challenges of each pilot city, set the selection criteria for proposals and initiate and conduct a scouting process for new entrepreneurial ideas in the creative industries domains, of high local impact and scalable potential. In reference to impact, the business ideas that are scouted, their impact is measured against the ‘Doughnut Economy Framework’ which combines the



goal of social development with the obligation to stay below the biophysical planetary boundaries [1].

Support to the entrepreneurs is offered through incubation programmes with a focus on youth and women, as per the project's objective. The focus on youth and women is justified for several reasons. They represent untapped potential, and by empowering them, innovation and economic growth is further unlocked. Additionally, promoting diversity and inclusion within the entrepreneurial ecosystem leads to more innovative solutions. Addressing gender and age disparities in entrepreneurship is crucial for achieving economic empowerment and social inclusion. Furthermore, entrepreneurship offers opportunities for financial independence and serves as inspiration for future generations. Overall, supporting young people and women as entrepreneurs is not only a matter of equity but also a strategic investment in fostering innovation, diversity, economic empowerment, and social inclusion. Then, the support methodology has been designed in the following sequence: 1) Lead generation – 2) Pre-incubation – 3) Incubation – 4) Growth services.

The programme of capacity-building activities is following MIT's Disciplined Entrepreneurship, a systematic series of twenty-four steps comprising well-established tools to provide key elements necessary to create innovative and scalable businesses [26]. Co-designing methodologies via participatory techniques are utilised throughout the start-up process.

### **3.3 Implementation of Urban Hubs**

To provide sufficient support to start-ups, an urban hub in each of the participating cities is established. This allows the interaction between entrepreneurs and stakeholders, and the orientation toward uprising socio-environmental challenges. The hubs act as incubators by being the physical space hosting the Entrepreneurial Ecosystem, offering start-up supporting processes and the required capacity-building activities determined in previous steps. Simultaneously, hubs represent the reference point for the community engagement processes and policies. All hubs are intended to remain operational after the completion of the U-SOLVE project, in collaboration with the involved stakeholders, which would be engaged in the establishment of an ULL. A networking process will be coordinated among the urban hubs of each country by the lead partner, to ensure continued collaboration.

### **3.4 Development of Strategy and Policy Recommendations**

This component of the project aims to create policy proposals that support entrepreneurship for sustainable development in an urban environment, at a local and regional level. The outputs of the previous actions are utilised, and the involvement of policymakers and local governmental bodies is required to draft policy proposals and strategies. An agenda on the sustainable development of urban-focused entrepreneurship is prepared for each city participating in U-SOLVE. Each signatory will be committed to enhancing urban resilience through the development of an entrepreneurial ecosystem that adopts sustainable development policies. In order to develop a common strategic policy, the plans prepared for all participating cities will be compared through a series of transnational workshops for the governmental institutions.

## 4 Results and Discussion

The literature around sustainability transitions, and more specifically the MLP framework, allowed for conceptualisation, operationalisation and work as a reminder not to overlook niches, regimes and landscapes - this understanding is required to comprehend the complexity of sustainability transition processes and identify promising opportunities for change. Further, entrepreneurship discourse provides evidence to support the argument that entrepreneurs with radical innovations have the power to disrupt locked-in, unfavourable to the environment and society regimes, and consequently maximise the impact of the SDGs. Open social innovation complements the aforementioned scholarship and emphasises the importance of open collaboration and communication.

The premise behind U-SOLVE's methodological approach was to nurture entrepreneurial activities in specific pilot cities of the EMME region, with sustainable development and sustainable change in mind. Constructing a fitting strategy around four methodological blocks, the U-SOLVE project representatives in each partner country have engaged in the appropriate activities and have collected and will continue to collect valuable information and data. Importantly, empirical results up to this point in the lifespan of the project validate theoretical arguments from transition studies that support the complexity and multi-dimensionality of change. Similarly, implementing the project allowed the involved institutions to engage in multi-actor activities and understand the role and influence/power of different urban actors in sustainable development processes, as well as experience the dynamic of contestation and disagreement and how this impacts new and promising innovations and transition pathways.

Relating to the actor roles and influence, results showed that sustainable change is hindered by the lack of an all-inclusive, transparent interaction and experimentation of urban actors during policy and decision-making processes, as well as the appropriate mindset and culture for solving complex sustainable development challenges. It has become evident that policy-making procedures might exclude local society; however, society might be also lacking interest in the present configuration of open participatory processes. Still, results showed that mobilising the creative and cultural industry, through a lean, transparent and collective dialogue, can significantly enhance the community engagement towards place-based urban sustainable transitions.

Further, empirical realisations showed that activating a community's wide-ranging interest is a complex task; accepting and adapting to changes takes time; fostering imagination and sense of ownership can help build stronger communities; and conceiving with a long-term horizon in mind rather than expecting immediate outcomes is key. Further, it resulted that the sustainable transition of cities can be pursued through a creative effort around existing areas and settlements, rather than the further promotion of urban sprawl as a shortcut to move away from the wicked urban problems.

Human capital emerged as the critical asset for thriving communities. The creative economy can generate solutions that influence behaviours, meet social needs and encourage the success of interventions for urban sustainable development. Activating the creative industry (at the crossroads of the arts, culture, business and technology)

can trigger imagination and breed urban cultures, fostering socio-technical systems towards more sustainable and equitable models.

Finally, by the end of the project, integrated methodologies for creating sustainable urban ecosystems will be tested, as well as strategic documents on urban entrepreneurial policy for sustainable development will be composed. These 'blueprints for change' will offer insights into entrepreneurial activities and what it takes for such activities to grow, break through the incumbent regime and eventually contribute to sustainable development and the SDGs.

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