ASPHALT -ART AS AN INNOVATIVE WAY FOR SUSTAINABLE MOBILITY

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Abstract
In recent years, sustainable mobility has emerged as a central pillar in urban development strategies, aiming not only to reduce environmental impacts but also to enhance the quality of life in cities. Within this context, innovative approaches that combine functionality, aesthetics, and community engagement have gained increasing attention. One such approach is Asphalt-Art, an urban intervention that utilizes creative design and artistic expression on road surfaces to influence mobility patterns and promote safer, more inclusive public spaces.

Asphalt-Art goes beyond mere decoration; it acts as a tool for traffic calming, pedestrian prioritization, and the redefinition of underused urban areas. By introducing visually striking and context-specific artworks, streets can be transformed into dynamic environments that encourage walking, cycling, and other sustainable forms of mobility. Furthermore, these interventions often emerge from participatory processes, where local communities, artists, and city authorities collaborate to co-create meaningful urban experiences. This strengthens civic identity while simultaneously fostering environmental awareness and social inclusion. Asphalt-Art can also serve as a low-cost and flexible alternative to traditional infrastructural solutions, providing immediate and measurable benefits in terms of safety and accessibility. The integration of art into mobility planning highlights the potential of multidisciplinary strategies that merge urban design, culture, and sustainability.

Ultimately, Asphalt-Art demonstrates that innovation in sustainable mobility does not solely rely on technological advances, but also on creative, human-centered interventions that reshape the way people interact with public space.

Key words: *Sustainable urban mobility, inclusion, accessibility, traffic safety, visual art intervention.*

INTRODUCTION

One of the most significant challenges facing contemporary cities today is balancing their development dynamics with the reduction of their carbon footprint. In Greek cities, the lack of urban green spaces is considered one of the most critical environmental and structural problems. Furthermore, sustainable urban mobility aims both to enhance quality of life and to promote long-term sound environmental practices and economic development.

As is evident, the process of city formation is complex and multifaceted, shaped by a combination of factors. Each city has its own unique history and evolution over time, influenced by specific events and historical circumstances that define its spatial and developmental footprint (Samourkasidou, 2023).

Sustainable mobility ensures accessibility and seamless movement for all social groups, placing particular emphasis and priority on the most vulnerable. Traffic congestion today contributes to the degradation of mobility itself and of the environment, undermining urban functionality by hindering or obstructing essential activities and restraining the development of new uses (Mendizabal et al., 2018).

The main reasons why sustainable urban mobility is considered a necessary condition for a city's sustainable development are the following (Samourkasidou, 2023):

⇒ Climate change mitigation
⇒ Reduced dependence on oil
⇒ Reduction of road accidents
⇒ Decrease in air pollution
⇒ Reduction of traffic congestion
⇒ Support for the local economy
⇒ Enhancement of the city's image
⇒ Creation of conditions for equal accessibility
⇒ Improvement of citizens' health and well-being

This paper explores the contribution of a contemporary participatory planning tool—asphalt art—to the promotion of sustainable urban mobility and to the creation of livable, safe, and attractive cities.

Through international best practices, as well as the presentation of an ambitious project in the city of Kavala aimed at creating school routes with the assistance of asphalt art, the study first seeks to investigate the degree of familiarity and acceptance of such participatory processes and practices within cities. Subsequently, it highlights the benefits arising from the adoption of such practices at the urban scale.

1. THEORETICAL FRAMEWORK

1.1 Participatory Planning

Participatory planning theory emphasizes the democratization of spatial decision-making processes. Rooted in communicative planning theory (Healey, 1997) and collaborative governance models, it recognizes citizens as co-producers of urban space rather than passive recipients of top-down interventions.

According to current trends and principles in spatial planning—such as the introduction of the 15-minute city model and the implementation of climate mitigation strategies at both local and neighborhood levels—the interaction and co-creation with local communities and stakeholders is considered vital in identifying and defining their needs. Consequently, the adoption of participatory planning models is becoming increasingly imperative.

The conclusions drawn from the systematic documentation of the evolution of this planning model highlight the importance of participatory processes and consultation in spatial planning, both during the design phase and throughout the implementation of a strategy or project. Another key issue emphasized is the high degree of social acceptance and "appropriation" of a project when the local community has actively participated in its design and/or implementation (Topouzi and Samourkasidou, 2025).

The methodological and theoretical insights derived reinforce the value of participatory planning, particularly with regard to (Topouzi and Samourkasidou, 2025):

a) rapid interventions (quick wins), adaptation measures, and mitigation actions that cities are required to undertake in response to climate change and the green transition;
b) increasing citizen participation in strategic planning and urban interventions, such as those supported by EU regional policy, where participation constitutes a conditionality; and
c) the utilization of different tools depending on the target group, as the approach varies, for example, between school communities and older adults.

Indicative tools include: Goals Grid Analysis, Collective Visioning, role-playing games ("Step Up"), board games such as "Build Your Own Block," walkshops, among others (Samourkasidou, 2025).

In this context, asphalt art operates as a participatory micro-intervention that engages local communities—particularly children, schools, and neighborhood stakeholders—in the co-design of public space. Such processes enhance social capital, foster place attachment, and strengthen civic ownership of mobility transformations.

1.2 Tactical Urbanism

Tactical urbanism has gained increasing attention as a flexible, low-cost, and participatory approach to urban planning, enabling cities to address urgent spatial challenges while actively engaging citizens. It plays a key role in fostering inclusivity, experimentation, and community empowerment, offering opportunities to test interventions in real urban contexts before committing to permanent solutions. At the same time, tactical urbanism raises questions regarding the longevity of interventions, the level of institutional support, and equity in access and benefits. Evaluating these interventions through citizen participation, including e-participation methods, provides valuable insights into public perceptions, acceptance, and priorities. Such evidence-based assessment not only enhances transparency and accountability in urban decision-making but also helps integrate social and psychological considerations into planning, ultimately supporting more resilient, human-centered, and adaptive urban environments (Tactical Urbanist's Guide, 2016).

By 2050, two-thirds of the global population is projected to reside in urban areas. People are migrating to cities at unprecedented rates, and this trend shows no signs of slowing. Such an unparalleled urban expansion must be addressed sustainably if we aim to advance toward resilient and livable cities.

Streets constitute an integral component of urban environments. They function as vital channels that enable the city to remain active, facilitate efficient movement, and provide services that enhance the overall quality of life. While this urban growth has brought many benefits, it has largely developed in an unregulated manner over recent decades, prioritizing automobiles and simultaneously marginalizing the role of pedestrians and local residents in public streets.

Historically, streets were not merely conduits for vehicles; they served as spaces for gathering, social interaction, and play. The notion that private automobiles dominate public space is a relatively recent phenomenon. In recent years, there has been an emerging recognition of the need to reconsider and redefine our relationship with streets, emphasizing inclusivity, accessibility, and multi-functional urban public space.

Asphalt art, as a tool of tactical urbanism, aligns with this framework by transforming road surfaces into multifunctional public spaces through artistic design. These interventions often recalibrate traffic behavior, visually narrow carriageways, improve pedestrian safety, and contribute to traffic calming without requiring large-scale infrastructural investments. Tactical urbanism is applied by a diverse set of actors—including governmental institutions, private enterprises, nonprofit organizations, citizen groups, and individual practitioners—particularly in contexts where there is a need for rapid, temporary, and cost-effective interventions. Such interventions are typically implemented as pilot initiatives, enabling a systematic evaluation of the design's effectiveness, continuous monitoring of functional performance, and iterative refinement to address any identified shortcomings. Equally critical is the assessment of social acceptance and community engagement, which provides insights into the intervention's perceived value, fosters a sense of local ownership, and informs potential scaling or replication within the urban environment. This approach underscores the dual focus of tactical urbanism on both functional outcomes and participatory legitimacy in shaping resilient and inclusive public spaces.

In synthesis, the theoretical framework positions asphalt art at the intersection of sustainable mobility, participatory governance and tactical experimentation. It is

conceptualized not merely as an artistic intervention, but as a spatial planning instrument capable of catalyzing behavioral change, strengthening community engagement, and supporting the transition toward low-carbon, inclusive urban systems.

2. ASPHALT ART AS A TACTICAL URBANISM TOOL: URBAN INTERVENTIONS

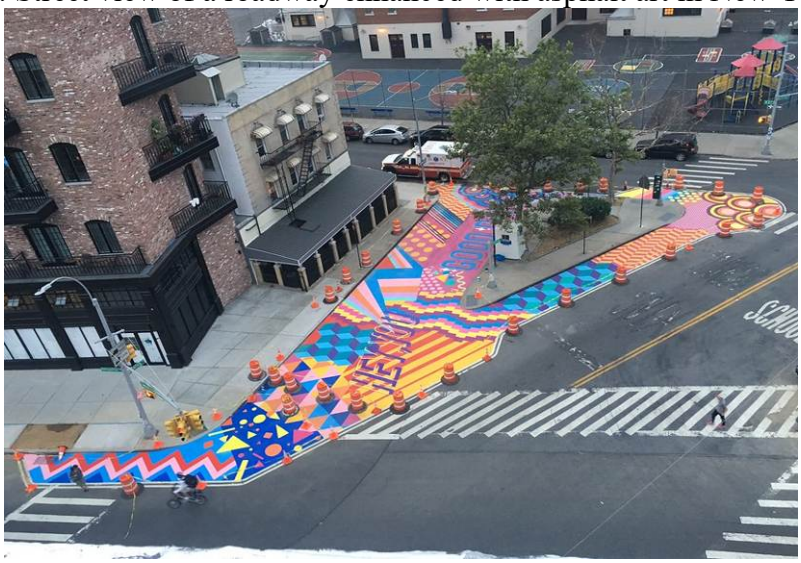
Asphalt art is an increasingly prominent and rapidly evolving tool in urban design. Globally, it is commonly employed to implement temporary interventions aimed at reclaiming public space and reducing its domination by motorized vehicles. Asphalt art is used both to redesign public areas—such as plazas and social gathering spaces—and to create designated pathways, including school routes. A defining characteristic of this approach lies in the high degree of community participation, the reliance on volunteer engagement, and the resulting social acceptance of the intervention.

The overall outcome of the entire process is complex and multifunctional. Beyond aesthetically enhancing the urban landscape and giving the area a strong local identity, it improves the distribution and accessibility of public spaces and reinforces the principles of sustainable urban mobility, such as enhanced road safety. Importantly, by actively engaging the local community through participatory design tools, the process fosters a sense of collective ownership and social acceptance of the interventions. In this way, the initiative not only strengthens the urban resilience of the area and supports its climate neutrality but also cultivates long-term community engagement and awareness of sustainable urban practices.

The following three examples illustrate successful applications of asphalt art: two involve the creation of public plaza spaces in New York City and Milan, respectively, and the third concerns the establishment of a school route in Limerick, Ireland. These cases are deemed successful not only because they fulfilled their intended objectives—by redesigning public space and reclaiming areas that had increasingly been occupied by private vehicles—but also because they achieved significant social acceptance, reflecting the active engagement and endorsement of the local communities.

The New York City Department of Transportation entered a transformative phase during the period 2007–2013. Throughout this time, the agency implemented a comprehensive redefinition of urban streetscapes, encompassing the rehabilitation of aging infrastructure, the introduction of a citywide bike-share program, the modernization of public bus systems, the addition of 400 miles of dedicated bicycle lanes, and the establishment of 60 pedestrian plazas. These interventions exemplify a strategic shift toward prioritizing multimodal mobility, public space enhancement, and sustainable urban transportation (New York Pioneers Asphalt Art, 2016).

Figure 1: Street view of a roadway enhanced with asphalt art in New York City



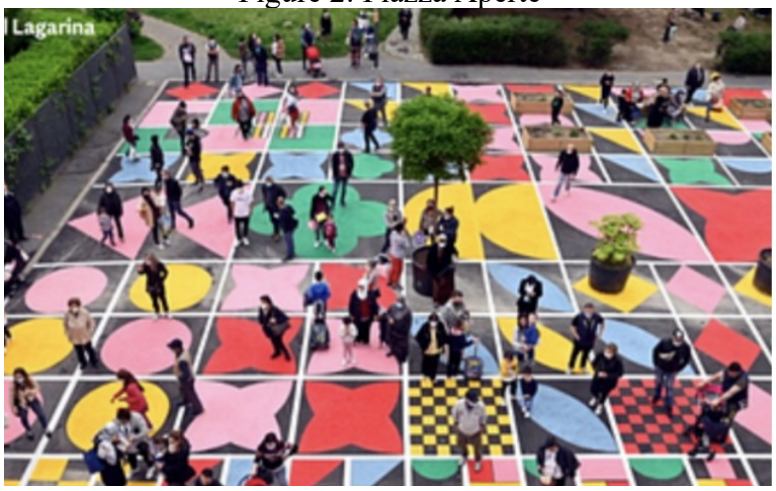
Source: https://www.moderncities.com/article/2016-jul-new-york-pioneers-asphalt-art

The DOT Art program further extends this vision by conceptualizing transportation infrastructure as a platform for temporary public art. Through collaborations with community-based organizations and professional artists, NYCDOT converts functional elements—such as traffic barriers—into large-scale murals and revitalizes underpasses through dynamic light installations. This integration of artistic interventions within the transportation network not only enhances the aesthetic and experiential quality of urban mobility but also fosters community engagement, placemaking, and a participatory approach to the reimagination of public space (New York Pioneers Asphalt Art, 2016).

Piazze Aperte, a citywide tactical urbanism program, was developed in Milan, Italy, with the support of AMAT – the Municipal Agency for Mobility and Environment – in collaboration with Bloomberg Associates and the Global Designing Cities Initiative. The project aims to enhance public spaces as community hubs, expand pedestrian areas, and promote green mobility, thereby improving both the urban environment and the quality of life for residents. By employing the principles of tactical urbanism, Piazze Aperte seeks to reestablish public squares as central components of neighborhood life, creating places that foster social interaction and community connection (Citywide tactical urbanism programme, 2019).

Since its inception in 2019, the initiative has involved continuous collaboration among multiple stakeholders in the design, development, and implementation phases, enabling its expansion across the city. Piazze Aperte aligns with Milan's 2030 strategic objectives for urban regeneration, environmental sustainability, and sustainable mobility. The program further incorporates participatory actions through Collaboration Pacts, guided by the principles of shared governance, as part of a co-design process actively involving the city administration, local actors, and residents (Citywide tactical urbanism programme, 2019).

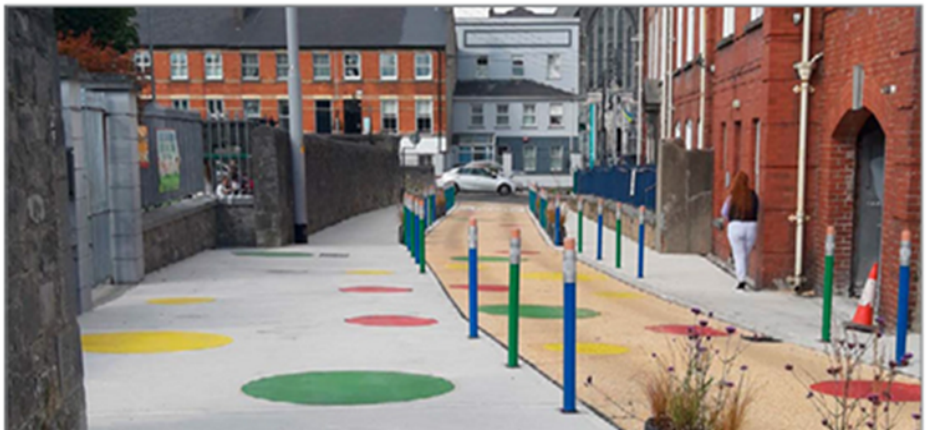
Figure 2: Piazza Aperte



Source: https://urbact.eu/good-practices/citywide-tactical-urbanism-programme

The Safe Routes to School (SRTS) Programme was developed in partnership with the National Transport Authority (NTA) and Green-Schools in 2020 as a response to the need to support schools to increase walking and cycling to school.

Figure 3: School Route in Limerick, Ireland



Source: Safe Routes to School (https://www.limerick.ie/council/services/roads-and-travel/active-travel/active-travel-limerick/safe-routes-to-school)

3. ENHANCING SCHOOL ROUTES THROUGH ASPHALT ART: THE CASE OF KAVALA

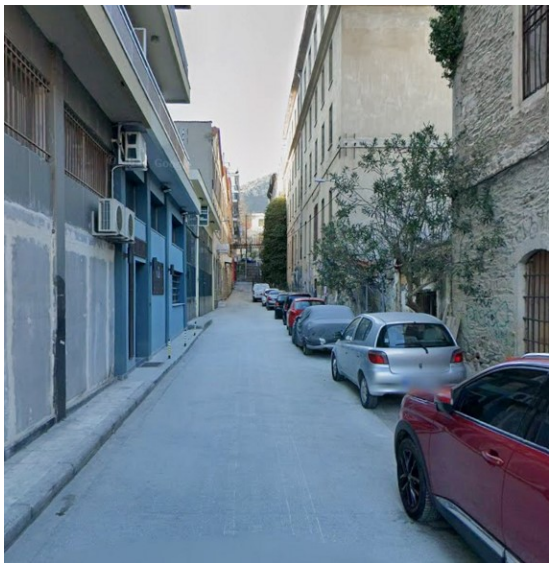
Although the experience of mobility directly affects the quality of life of children and adolescents in the city—particularly in their daily journeys to and from school—these age groups are often excluded from planning processes.

Through the use of participatory planning tools, children and young people will have the opportunity to express their views, co-design interventions in the neighborhoods surrounding their schools, and collaborate in the implementation of pilot applications of their ideas. The aim is to improve infrastructure suitability, enhance travel safety, and ensure accessibility for all.

Through awareness-raising activities, children and young people are encouraged to develop a new, more environmentally friendly mobility culture, contributing to the creation of better conditions for the future and assuming an active role in promoting sustainable mobility.

Within the framework of European Mobility Week 2022, a voluntary intervention was conducted on Nikis Street by the Municipality of Kavala, to enhance its aesthetic quality, including a raised crossing to improve safety, primarily for students. In collaboration with the school community of the 10th Primary School, a safe school route was established.

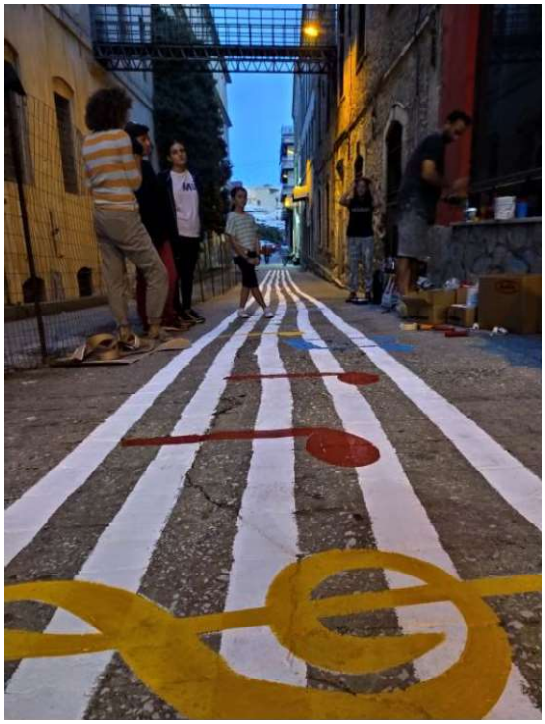
The following photographic documentation illustrates the pre-intervention conditions and the outcomes of the urban intervention following the participatory collective actions.

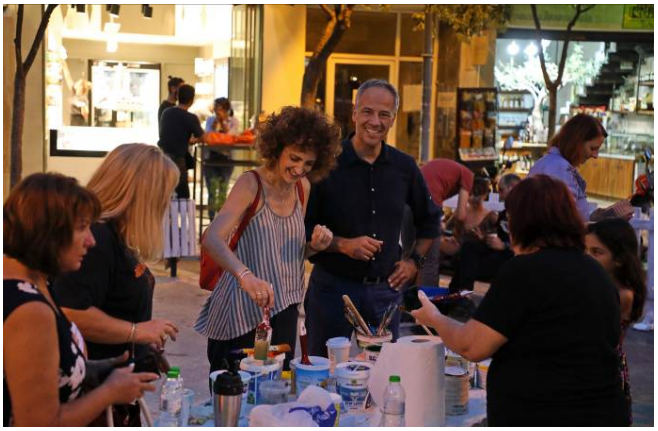


Nikis Street prior to the intervention

Πηγή: Source: Author's personal collection

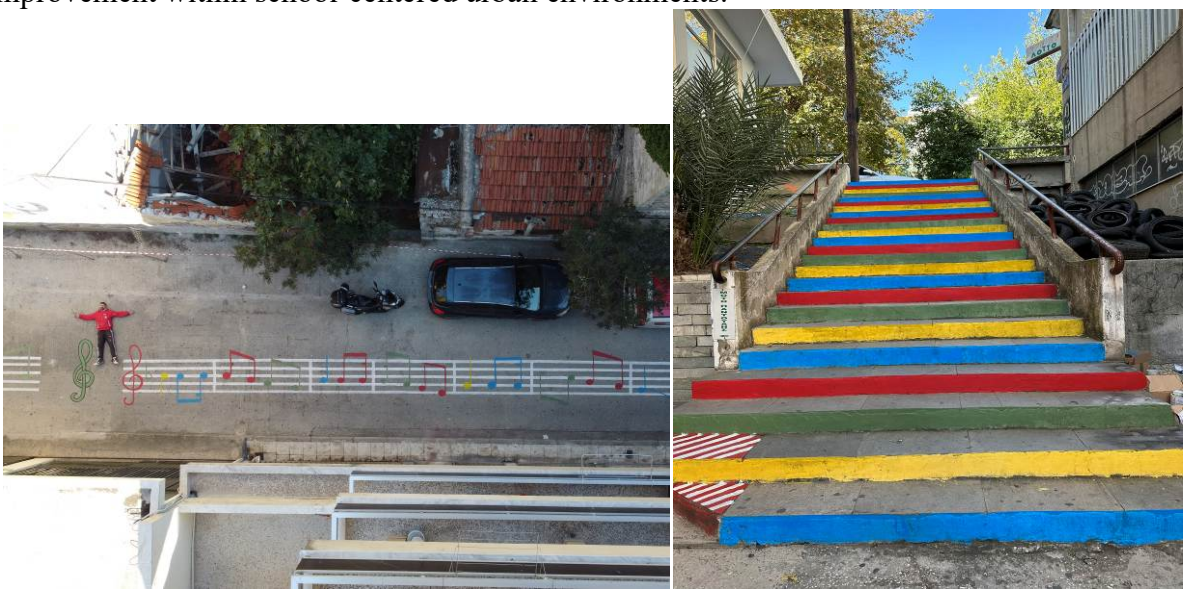
The following photographic documentation illustrates the participatory asphalt-art intervention on Nikis Street during the implementation of a school route.





Πηγή: Source: Author's personal collection

In the third and final set of photographs, the completed outcome of the school route intervention following the participatory process is presented. The core concept centered on the creation of a musical staff, including notes, the G-clef, and other familiar musical symbols, deliberately selected to provide an accessible and engaging theme that enabled active involvement of primary school students. The design process was carried out under the supervision of an experienced asphalt artist and involved collaborative workshops with students and local stakeholders. High-performance paints with specialized properties were employed, designed to reduce surface slipperiness, enhance long-term durability, and maintain aesthetic quality under outdoor conditions. This approach demonstrates the potential of participatory urban interventions to combine educational engagement, safety, and aesthetic improvement within school-centered urban environments.



Πηγή: Source: Author's personal collection

CONCLUSIONS

The implementation of participatory urban interventions, such as asphalt art applied to school routes, demonstrates that sustainable urban mobility can be effectively promoted when design processes actively involve local communities, including children and students. The co-creation of urban spaces not only enhances the functional quality and safety of infrastructure but also fosters a sense of ownership and engagement among residents, contributing to the social sustainability of the city. By integrating aesthetic, educational, and safety considerations, such interventions highlight the potential of small-scale, temporary, and cost-effective measures to serve as pilots for broader urban planning strategies.

Moreover, the combination of sustainable mobility initiatives and urban green infrastructure reinforces the resilience and livability of medium-sized cities. Streets and public spaces, when designed as multifunctional environments, can simultaneously accommodate mobility needs, environmental objectives, and social interaction. The evidence from case studies, such as the Kavala school routes project, suggests that participatory and tactical urbanism approaches can provide measurable benefits in terms of safety, environmental awareness, and behavioral change, while also serving as replicable models for similar interventions in other urban contexts. These findings underline the importance of integrating participatory, sustainable, and climate-responsive planning into the ongoing evolution of urban environments.

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