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CIDCO SMART CITY LAB @NIUA

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Background
In order to conserve and maintain some mangroves in the Northern part of Navi Mumbai and increase awareness in the public about various ecological aspects, CIDCO has taken up the project of development of wetland centre for area along Palm Marg at Nerul.

Concept of a Wetland Centre
A wetland centre is a natural history learning centre situated in a natural wetland setting that would offer amazing natural and cultural experience to the visitors through interactive displays and the natural settings. It will be an opportunity for students for ‘out of classroom’ learning experience. The centre would provide opportunity for recreation for the residents of the city.

Location of NMMWC
An area of 289 ha has been identified in Nerul, Sarsode & Sonkar villages for this project. Out of this 289 ha, about 200 ha is declared as protected forest & transferred to forest Dept. Govt. of Maharashtra. The Balance area is a part of holding Sarsole & Sonkar villages for this project. Out of this 289 ha, about 200 ha is declared as protected forest & transferred to forest Dept. Govt. of Maharashtra. The Balance area is a part of holding.

Phase I
Planning of this phase involving various services such as biodiversity, communities, Engineering survey etc. already completed which includes community training of the locals and preparation of conceptual master plan for Mangroves Wetland Centre. Cost Rs. 65 Crores

Phase II
Planning is yet to receive clearances from MIZNA. The total estimated project cost for the Phase II development is Rs. 65 crores (approx.).

Phase II Development involves land development, construction of wetland centre building having amphitheatre, exhibition areas, research centre etc., development of Botanical garden, construction nature trails within the mangroves etc. Phase II development is yet to receive clearances from MIZNA. The total estimated project cost for the Phase II development is Rs. 65 crores (approx.). Phase II work shall commence only after getting the forest clearance and CEO Clearance from the respective departments and on finalization of Master Plan by appointing an architectural firm for preparation of working drawings and detailed estimates. The project is expected to be completed in four years after necessary environmental clearance.

Project Period
2019

Project Details
The Project is planned to be carried out in two phases viz. Planning, Construction & Operations. The Wetland centre is to be developed jointly by CIDCO, Forest Dept. Govt. of Maharashtra, Conservation Action Trust (CAT) which is Mumbai based NGO.

CIDCO Smart City Lab participated and helped organize a national level Preparatory Workshop for 150 smart cities, under the CITIES program. The program is launched by Ministry of Housing and Urban Affairs (MoHUA) and financed by the French Development Agency (AFD) and the European Union (EU).

CIDCO Smart City Lab spoke at a consultative workshop ‘Capacity Building for Digital Strategies and Solutions for Smart Cities in India’ organized by the World Bank and All India Institute of Local Self-Government (AIILSG). Siddharth Pandit, Chair, CIDCO Smart City Lab, spoke about UJJWAL - the One Stop Shop Solution for CIDCO's training management system.

The training cell conducted fourth, fifth and sixth sessions of ‘Vimarsh’ with the training attendees to discuss their training and post-training experiences.

CIDCO Smart City Lab spoke at a consultative workshop ‘Capacity Building for Digital Strategies and Solutions for Smart Cities in India’ organized by the World Bank and All India Institute of Local Self-Government (AIILSG). Siddharth Pandit, Chair, CIDCO Smart City Lab, spoke about UJJWAL - the One Stop Shop Solution for CIDCO’s training management system.

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Development of Parks and Open Spaces

Background
The development of open spaces and its accessibility to all forms an important part of the social infrastructure which is an important index for development of Smart Cities. The open spaces of a city play an important role in the overall wellbeing of its residents. They are rightfully called the lungs of a city, and are a good measure of a city’s health quotient. Navi Mumbai is no different.

The first Development Plan document for Navi Mumbai was published in 1979. The land-use plan of Navi Mumbai is based on the concept of Nodal developments strung along mass transit corridors. The open space system is governed by ‘city-level’ and ‘nodal-level’ open spaces. City-level open space system comprises huge expanses of lands earmarked as Regional Park Zones, while the nodal level greens are achieved through pockets of open spaces earmarked amidst residential neighbourhoods. Besides these, the drainage system of Navi Mumbai, based on Dutch method of reclamation interspersing nodal areas with a network of channels and holding ponds also add up to the visual open space in the city.

Location
Most of the Townships (Nodes) towards the West and North of Navi Mumbai are developed and hence handed over to Navi Mumbai Municipal Corporation for maintenance and upkeep. The Nodes to the East and South of Navi Mumbai are partially developed and still with CIDCO. There are 6 such nodes viz. Kharghar, Panvel, Kalamboli, Karanjade, Ulwe, and Dronagiri. These are developing nodes which have not yet reached population cap. This project aims at these upcoming nodes.

Scale
The term ‘open spaces’ includes gardens and parks, play grounds (common and those attached to schools), tree belts and plantation areas and incidental, odd shaped open spaces.

Following is the hierarchy and categories of open spaces in Navi Mumbai

City level
• Regional Park Zones
• Holding ponds (visual, but unusable open spaces)
• Stadia / Large public spaces

Nodal Level
• Gardens and Parks
• Play grounds / Playfields
• Plantation areas and linear open spaces
• Incidental open spaces / odd shaped spaces

Cost
Nis. 65 Crores

Date of Commencement
December 2013

Date of Completion
2016

Detailed Scope
All open spaces have already been duly categorised, and many of them have also been developed. For the master planning, the open spaces were first sub-categorised based on the status of development. Undeveloped spaces, developed but requiring refurbishing, and those that are developed and maintained. Based on this, a statement is prepared for all open spaces.

I) Playgrounds:
A typical cross-section is prepared for all play grounds. It specifies the following:
• Tree plantation areas with the type of trees to be planted (outer ring of higher foliage trees followed by an inner ring of shorter, thicker foliage trees)
• Jogging / walking tracks all along the periphery of the play ground, and cross-crossing, whenever the space permits
• Sitting areas/benches at regular intervals
• Cricket pitch and skating rink, depending on size of playgroup
• Open play area in every playground for other play activity

Playgrounds are being designed simultaneously for Panvel, Kalamboli and Kharghar Nodes using this typical cross section and allocation of sports activity as per size.

II) Gardens and Parks:
The gardens and parks in all nodes are divided into four categories,
• Gardens/Parks developed and maintained
• Gardens/Parks freshly designed and drawings sent
• Gardens/Parks typical design to be followed
• Gardens/Parks to be taken up later

For category i, gardens are identified, designed prepared by the Special Projects section and sent.
For category ii, gardens are identified, typical designs have been prepared by the Special Projects section and those are to be followed.
For category iii, gardens identified have to be checked and hence shall be taken up later.
For category iv, gardens identified have to be Freshly Designed and drawings sent.

Typical Designs to be followed

Following are the plans for status of Gardens/ Parks and Playgrounds

The designing of these spaces (basically tree plantation, seating and walking pathways) shall be taken up after they get surveyed. The linear open spaces and plantation on avenues can be directly handled by horticulture sector, while rotaries and street furniture, etc. can be done by respective nodal engineering section. Not Included:
• School Playgrounds
• Ulwe, Dronagiri and Taloja plots (23 nos.)
• Linear Open Spaces in Panvel (18 nos.)
• Parks in Kharghar, as plots under HT corridor, Central Park and Golf course

Progress
The onsite work for many Gardens and Playgrounds has already begun and is in progress. The development of base concept and proposal for master planning of open spaces started in December 2013, and the drawings were prepared for execution by June 2014. The actual work of preparation of tender, etc. began after that.

Benefits
Development of Open Spaces will activate these plots, thus they will be beneficial for the public. They will act as active public spaces for citizens of all age groups and encourage active lifestyle.

Development of these open spaces will add to the available land for active recreation in southern nodes i.e Kharghar node (1.5 Ha), Panvel Node (7.0 Ha) and Kalamboli Node (5.3 Ha). They will also increase the number of developed playgrounds for younger to play that contain various activities like cricket pitch, skating rink, etc.

Development of open spaces will increase the space available for active recreation, thus will improve the quality of life of people since more number of people belonging to all age groups will visit these gardens and playgrounds.

List of Open Spaces in Southern Nodal Areas

<table>
<thead>
<tr>
<th>Size (sq.m)</th>
<th>Leveled ground</th>
<th>Seating</th>
<th>Single row of plantation</th>
<th>Cricket Pitch</th>
<th>Pathway/jogging track</th>
<th>Skating Rink</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1000</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>1000-4000</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>4000-8000</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>&gt;8000</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

List of Open Spaces in Southern Nodal Areas

<table>
<thead>
<tr>
<th>No.</th>
<th>Node</th>
<th>Garden</th>
<th>Park</th>
<th>Linear Open Spaces</th>
<th>Playgrounds</th>
<th>Total</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kharghar</td>
<td>9</td>
<td>8</td>
<td>12</td>
<td>10</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Kharghar</td>
<td>27</td>
<td>9</td>
<td>17</td>
<td>14</td>
<td>67</td>
<td>Includes 150 Ha. under Central Park &amp; Golf Course</td>
</tr>
<tr>
<td>3</td>
<td>Panvel</td>
<td>18</td>
<td>15</td>
<td>18</td>
<td>10</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dronagiri</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ulwe</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>12</td>
<td>Based on the SF reconciliation done recently</td>
</tr>
</tbody>
</table>

Total | 62 | 30 | 18 | 47 | 41 | 198   |
You have recently attended a course on Leading with Empathy, Problem Solving and Decision Making - Indian Institute of Management Lucknow

Ms. Jagran Kilarke, Manager (Rehabilitation) 
Creativity, Problem Solving and Decision Making - Indian Institute of Management Lucknow

26th – 30th November 2018

You have recently attended a course on Leading with Empathy, Problem Solving and Decision Making. How was your experience?

I have attended a training course that was held at IIM Lucknow. It was a four-day course that covered various aspects of leadership, problem-solving, and decision-making. The course was very well-structured and covered a lot of ground.

What was the best part of this training?

The best part of the training was the practical exercises that were conducted. We were divided into small groups and were given real-life scenarios to solve. This helped us apply the concepts we learned in the classroom to real-world situations.

What did you learn from this training?

I learned a lot about how to be an effective leader, how to solve problems, and how to make decisions. The course also helped me to develop my interpersonal skills.

What is your overall evaluation of this course?

I found the course to be very useful and informative. It was well-organized and the faculty was very knowledgeable. I would definitely recommend this course to others who are interested in leadership and management.

How do you think this course helped you in your current role and how do you relate this course to your day-to-day life personally as well as professionally?

The course has helped me to become a better leader and a better decision-maker. It has also helped me to think more critically and to solve problems more effectively.

Do you think this course helped you in your current role and how do you relate this course to your day-to-day life personally as well as professionally?

I definitely recommend this course to all CIDCO officers especially DO and above.

How is the programme different from other programmes you attended?

This course was different from other programmes in that it was more technical than management. This programme is purely for managerial skills and how to manage the employees to be more effective in their jobs.

What do you think other CIDCO employees would benefit if they went for a similar course?

I am sure all the employees would benefit from this course. It would help them to be more technical in their work and to solve problems more effectively.

What was the best part of this training?

The best part of the training was the practical exercises that were conducted. We were divided into small groups and were given real-life scenarios to solve. This helped us apply the concepts we learned in the classroom to real-world situations.

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Non-Rival Pluralism in community participation

Public Spaces has a positive impact on one’s Natural Expressions of diversity (common, Community’s collective life) They enhance public safety and safety They are tools for gender and age-friendly cities Public Good Individual and social well-being Private good

Source - Tan, Bekkering and Corp, 2014

Figure 1: Three dimensions of sustainability

<table>
<thead>
<tr>
<th>Environmental (Care for nature)</th>
<th>Social (Social happiness and Quality of life)</th>
<th>Economic (Prosperity to people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excludable</td>
<td>Non-excludable</td>
<td>Public Good</td>
</tr>
<tr>
<td>Private good</td>
<td>Common resource</td>
<td></td>
</tr>
<tr>
<td>Natural Monopoly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

They are a key element of (PPS, 2012):

- Individual and social well-being
- Community’s collective life
- Expressions of diversity (common, natural and cultural)
- A foundation of their identity

Every community has some public spaces; they may or may not be apparent. They can be in the form of a plaza around buildings, a park with benches and walkways, a boulvard with sidewalks, a library, museum, community halls, even the spaces found between private spaces (PPS, 2012). Spaces like these are mostly under-valued and undervalued assets. Public spaces are also an extension to the communities. They are the barriers of urban civility. Civility here, attributes to both citizen’s behaviour as well as the collective behaviour of the community (UN Habitat, 2016).

Public spaces facilitate social capital, economic development, impact physical and mental health and community revitalisation (PPS, 2012). In urban areas, they play a vital role in improving the quality of urban life in three ways: environmentally, socially and towards one’s health (Haslem, Akmaniza, & Nasir, 2015). They help restore the environment, allow community to meet up and make urban dwellers be able to engage in physical activities. Therefore, planning and designing public spaces is critical for sustainable urban development.

India being signatory to Sustainable Development Goals (SDGs) 2030, is accountable for creation of ‘Sustainable Cities and Communities’. Navi Mumbai Smart City plan intends to achieve dual purpose of environmental sustainability and enhancing quality of life of residents through smart solutions. It has taken several initiatives such as Infrastructure innovation: LED lighting, Grey Water Pipeline, Water Leakage Prevention System; Development of natural open spaces: Nature Park, Mangrove Park, Regional Park; Environmental monitoring, publishing Environmental Status Report, etc.

Figure 2- Components of a Self-organising sustainable public space

Source - Tim, Bekkering and Corp, 2014

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A list of geographers are noting that the idea of 20th century ‘planned city’ is getting transformed into an understanding of ‘city as a self-organising system’ (Portugali, 2000). Planners no longer deal only with resource planning and ecological benefits but work around a complex interrelationship between different components of environmental, social, economic and technological interventions (Iqbal, 2012). Many factors like technological developments, modification of the production process, cluster of public activities, etc. affect the dynamics of user’s needs and their preferences (Amund et al., 2014, Scott, 2012). With this new discourse, people are now realising that cities are constantly shaped itself by its occupants; in a never-ending process of transformation, growth and adaptation (Emden, Broekman, Faenro & Ufahr, 2012). Planning, in all cases, works as a juxtaposition between a present condition and a desirable future (Hasley, 2004), both of which keeps changing over the course of time.

This exchange and confrontation between the different worlds is more productive when there is public participation (active or passive) involved during space transformation and management. In any public space, multiple stakeholders with their individual interests and interpretations are present. To achieve long-term benefits and to preserve the stakeholders’ interests and rights, effective community participation plays a meaningful role (Abbott, 1996). It plays a decisive part in developing a relation between the community, other stakeholders and the design of the space (Amund et al., 2010). A balanced involvement of public in decision-making process provides a long-term support to policy implementations, investments or proposed concepts of land use plan (Agenda 21, 1992; Navarah et al., n.d.).

Along with public participation, a public space works around specific parameters or principles around which a development model is produced. Following are some of the parameters that a development model should include (UN Habitat, 2013):

- Public Spaces has a positive impact on one’s health and quality of life.
- They enhance environmental sustainability.
- They promote income, investment and wealth creation.
- They promote equity and social inclusion.
- They are tools for gender and age-friendly cities.
- They enhance public safety and safety perception.

This issue will further discuss these parameters in detail. It will take one or more of the parameters discussed above and explain with different case studies of development of public spaces in India and around the world.
Public Open Spaces and Sustainable Development Goals

- Coherence of SDGs with Public Open Spaces: Targets, Actions and Benefits

Public Open Space help achieve safe, inclusive, resilient, and sustainable cities and have been identified as a specific target under the 11th SDG. They act as strong tools in sustainable development by providing environmental, social, economic and health benefits to the city. The data sheet here represents the potential of public spaces to contribute to several sustainable development goals.

The inner most circle in the wheel shows the SDGs related with public spaces. The middle circle represents the specific targets of the respective SDGs that can be achieved through public spaces development. The outermost circle shows the benefits on the basis of three categories of public spaces markets, open spaces and streets. The suggested actions to obtain these results are shown outside the wheel connected with the respective SDGs.

Reference:
Designing Gender Sensitive Public Spaces

Case Study of Public Spaces in Vienna

Introduction
Gender equality is not only a fundamental human right, but a necessary foundation for a prosperous and sustainable world (United Nations, 2018). UN Women defines gender equality as equal rights, responsibilities and opportunities for women and men (UN WOMEN, 2018). Providing equal access to education, public spaces, health care, decent work, and representation in decision-making processes ensures sustainable development (United Nations, 2018).

Perceptions of gender equality differ between men and women, societies and countries of different developmental status. Globally, many countries have achieved important milestones towards gender parity, however developing countries like India still face women safety as the basic issue in gender equality. Gender-based violence in urban areas can be attributed to factors such as poverty, discrimination, exclusion and lack of gender mainstreaming in urban development leading to public spaces and structures not catering to all genders equally (Lagoni, 2015).

We have previously looked into gender mainstreaming in housing sector and women safety audits in India. This article talks about the importance of gender equality in planning and design of public spaces. The article focuses on case studies from Vienna describing the implementation of gender sensitive practices in their public spaces.

Gender Equality in Public Spaces
Public spaces enable women and girls to shape their own environment, and other marginalised groups (transgenders, migrants, etc.) to participate in public life (ULC, 2016). Though they are meant for everyone to use regardless of their gender or age, women use public parks and streets lesser than men (Harrv, 2018). In India, it is an issue that women tend to limit their participation in public space to day time in markets or parks in urban areas (Shakti, 2017). Reported cases of physical and psychological harassment in parks, streets and public transports have raised the levels of fear or vulnerability among them (Phadke, 2012). Studies show that women prefer active public spaces with characteristics of safer perimeter, cleanliness and safety (Elshenoffenasi et al., 2018). They perceive lack of proper lighting, deserted roads, absence of street vendors and stores as unsafe situations. Public spaces that ensure comfort, accessibility and safety through features like clean toilets, proper lighting, etc. are preferred by women, elders and children (PIWAK, 2011).

Gender equality in public space can be achieved by accommodating features that improve women’s safety (UNIFEM, 2015). Planning and designing should put special focus on (ULC, 2016; UNIFEM, 2010):

- Proper lighting
- Landscaping
- Visibility
- Clean toilets
- Motorised and Pedestrian traffic
- Signage
- Safety for personnel
- Proximity to other public spaces and emergency services
- Access to public transportation
- Mixed-land use
- Women’s participation in decision making

Case study - Gender Equality in Public Spaces of Vienna

Vienna, the capital city of Austria functions as its economic, cultural and political centre. It has been focusing on gender mainstreaming while designing its public spaces, housing, mobility and infrastructure since 1990. The gender mainstreaming concept is being incorporated mainly in the design of streetscapes, public squares and public parks (Damyanovic, Reminwald and Weikmann, 2013).

Gender-sensitive Public Parks Designs: Re-design of Einsiedler Park and St. Johann Park

A need to redesign Einsiedler Park and St. Johann Park was perceived by the City of Vienna when girls aged between 10 and 12 were found using parks less. By focusing on their interests, gender sensitive solutions were implemented to make the parks safer and better in these spaces (ULC, 2015). The main objectives of the project were to (Policistransfer metropolis.org, 2018):

- Motivate girls and young women to use the parks more often
- Improve safety perception in the parks
- Improve elements to attract elderly and parents with little children, and
- Have intense professional exchange of ideas during the planning phase.

The city of Vienna selected the design proposals of Tilia planning office and Koselika planning office for Einsiedler Park and St. Johann Park respectively through a design challenge. By 2021, detailed planning for re-structuring and re-designing the parks was done and renovation works were completed (Policistransfer metropolis.org, 2018).

Gender-sensitive planning measures
The participating consultancies conducted meetings and workshops with residents, mothers, representatives of schools and kindergartens in the district, etc. to identify joint goals for the project. They paid attention to girls’ interests specifically to develop strategies for encouraging their involvement in public activities (Policistransfer metropolis.org, 2018). Several gender-sensitive design elements were introduced in these parks, such as (Harth, 2018):

- Football cages were converted for activities that accommodate both genders; in this case, badminton and volleyball courts
- Hollows in the meadowland were converted to be used as arenas, for ball-games, gymnastics and sitting together
- Multifunctional play areas
- Efficient lighting was provided on the main pathways
- Park benches ensured that the rules are followed
- Good visibility and clean-cut organisation of footpaths
- Well-maintained public toilets

Impacts
The projects witnessed considerable physical and social impacts over time. Physical transformations such as open common areas, gender-neutral activity field, places for group-chatting, etc. motivated women and girls to spend more time in the park. Features like visibility in main avenues and proper lighting improved the safety aspects also (Policistransfer metropolis.org, 2018). Noticeable presence of women of all age groups was found in St. Johann’s park (Harth, 2018).

Looking at the response, City of Vienna implemented pilot projects of gender sensitive re-design in other parks of the city. On similar concepts, gender sensitive design elements such as structured footpath network, efficient illumination, multifunctional places, multifunctional leas, etc. were incorporated in Rudolph-Bednar Park (Damyanovic, Reminwald and Weikmann, 2013).

Gender-sensitive public square design: re-design of Christian Broda Platz
Public squares are another focus area for gender mainstreaming in the planning of public spaces in Vienna (Chalaby, 2017). On submitting the winning entry for a gender-sensitive architectural competition, architects Bieder and Weikmann redesigned the Christian Broda Platz in the 6th district of Vienna. The team designed the square by paying attention to direct walking routes, playing equipment, barrier free toilets, drinking fountains, etc. The pilot project resulted in a generous use of the public space by all genders among youth, children and senior citizens (Damyanovic, Reminwald and Weikmann, 2013). Similar measures were adopted in Linzer Platz of the 23rd district also to achieve a gender-sensitive design.

In addition to these projects, gender mainstreaming is also incorporated in designing walkways. A survey conducted by City of Vienna in 1992 identified that females use public transit and pedestrian paths more than males. As a result, city planners adopted steps to improve pedestrian mobility and access to public transport (Forfar, 2013). This includes 26 street lighting projects, widening of sidewalks and barrier free designs by the City of Vienna Women’s Office (Chalaby, 2017).

Conclusion
Over the years, re-designing several parks and public squares in Vienna has resulted in an inclusive city planning model. Certain design elements such as multifunctional play areas, raised platforms to sit and chat, etc. are easily transferable and can be installed in other places. Ensuring safety through efficient lighting and multiple activities in any public space is an important factor in gender-sensitive planning. From the cases of gender mainstreaming in public spaces explained here, it is evident that through effective planning measures, public spaces can have equal utility and benefits for everyone.

In India’s diverse social setting, women’s safety and factors for comfort are often neglected while designing public spaces like parks, streets, markets, urban plazas, malls, etc. However, several positive initiatives to improve the safety of public spaces are being taken by many Indian cities. Apps such as SafetiPin are useful for women safety audits. The data acquired is used by the police and PWD to augment facilities, such as lighting in public spaces. Government missions like INJURM seeks to promote planned urban development and safe public spaces in India (2005). In patriarchal economies like India where women’s interests are conventionally under-represented, there is still a lot to achieve.
The Economy of Public Markets

**Case study of Pike Place Market, Seattle**

**Introduction**
Sustainability and quality of public spaces depend on the financing model used for their creation, management and maintenance. As public spaces have direct effects on attractiveness of cities and increase property values, many theories consider local governments as the principal stakeholders investing in public space projects (Hugo, 2012). However, responsibility of management of public spaces should not be vested with the local government alone.

Public space entities rely on one or more revenue sources such as economic development organisations, merchant’s associations, universities, non-profit informal volunteer groups, daily visitors, commuters, etc. (Tzousw, 2017). As public funding for building and maintaining public spaces is inadequate in many communities (Nage, 2017), cities strive to approach with innovative funding sources to supplement the local budget (UCSD, 2016; Action Canada, 2015). Each public space has its own model for funding and management specific to their needs and vision. This article concentrates on public markets and will discuss the case study of Pike Place Market in Seattle.

**Models of Funding and Management of Public Spaces**
Models of funding can be generally grouped under three categories (Stavel, 2012):

1. **Institution Based** – where (institution(s) and/or city is responsible.
2. **Public Private Partnership** – where corporate partners or a group of stakeholders are responsible.
3. **Grassroots Partnership** – where volunteer led community groups are responsible.

The eight models of funding identified by CBAC space, London are CBAC space (2006):

1. **Traditional** public funding – by the local authority from its general revenue budget.
2. **Multi-agency public sector funding** – by two or more government departments or agencies (health, crime, education, etc.) to meet cross-cutting targets.
3. **Taxation initiatives** – from levies on properties and/or property taxes.
4. **Planning and development opportunities** – funding ensured by planning agreements for new commercial and residential developments.
5. **Bonds and commercial finance** – from loans repaid by local businesses or residents.
6. **Income generating opportunities** – from revenue income such as licensing and franchising, sponsorship, entry fees and fines.
7. **Endowments** – long-term funding from the interest gained on investments in assets such as property or the stock market.
8. **Voluntary and community sector involvement** – funds raised by non-profit organisations.

In addition to the above, models such as event based, self-governing special assessment districts, etc. are also identified as innovative mechanisms. It is possible for two or more financing models to co-exist in a single project (San Francisco Planning, 2016). Therefore, it is important to understand how the economics of a public space is managed, where multiple sources of funding and multiple financing models generally co-exist.

**The Economic Value of a Public Space**
A high-quality public space has significant impact on the economic life of urban centres (CBAC Space, n.d.). The direct economic benefits of public spaces are (CBAC Space, n.d.; Berenne, 2016):

- **Property value**: adjacent to a park or green space increases.
- **Businesses**: prefer locations adjacent to public spaces.
- **Footfall**: in local retail increases and indirect benefits are:
  - **Positive impact** on general, physical and mental health reduces the public health care cost.
  - **Savings through natural ventilation,** etc.

**Public Markets as Public Spaces**
Public markets, generally owned and operated by public or non-profit entities, are intentional and diverse combination of shops/stalls serving a community’s daily shopping needs and showcasing its culture. They typically sell locally grown or produced commodities (Zanerli, 2017).

Public markets are always relevant to planners seeking a multipurpose tool for social, economic and community development. For example, the Chicago’s Maxwell Street Market is a municipal policy tool established to address unemployment, enhance food security and incorporate new immigrants (Morey, 2009). Similarly, the Portland Public Market House, Maine set in two levels of a mixed use building provides a neighbourhood meeting place, serves local cuisine prepared in a community kitchen and thereby benefitting the local economy (Barron, 2016).

Public markets help in improving the quality of life of a community (Poppy, 2010). They provide benefits to urban land markets, community health, ecology, environment, expansion of businesses and promote income-earning opportunities (Morales, 2009; IPM, n.d.)

**Benefits of public markets**

<table>
<thead>
<tr>
<th>Figure 1: Benefits of public markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides economic opportunity</td>
</tr>
<tr>
<td>Promotes public health</td>
</tr>
<tr>
<td>Links urban and rural economies</td>
</tr>
<tr>
<td>Creates active public space</td>
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<tr>
<td>Brings together diverse people</td>
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**Figure 1: Categories of models of funding.**

<table>
<thead>
<tr>
<th>Institution Based</th>
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**Case study of Pike Place Market, Seattle**

The Pike Place Market is located in the Belltown neighbourhood of Seattle, Washington, USA opened in 1907. It won the Rudy Bruner Award for Urban Excellence in 1987 (Langton, 1990). The market (CNT, 2015):

- **acts as small business incubator** (occupies over 300 small businesses)
- **improves economic development**
- **connects local farmers to consumers** (130 stalls for local producers)
- **provides social services like medical clinic, preschool, etc.**
- **provides affordable housing**
- **improves community cohesion**
- **preserves historic buildings**
- **acts as tourist spot**

**Funding and management**
The Pike Place Market is run by ‘Pike Place Market Preservation and Development Authority’ (PDA) since 1973 (CNT, 2010). PDA is a non-profit, public corporation chartered by the city of Seattle in 1973 to manage 80% of the properties in the nine- acre Market Historical District. PDA acts as a public steward to the market whose council members are appointed by the Mayor, making it more accountable and transparent (Tumbl, 2016).

**Impacts of a transformative public market**
In due course of time, Belltown neighbourhood changed from a small industrial arts district to a place hosting trendy restaurants, boutiques, responsibilities, residential towers, warehouses and art galleries (CNT, 2010). The market itself has expanded to more levels and now also occupies antique shops, comic book sellers, etc. The public market district has become a strong neighbourhood community providing homes for nearly 500 low-income seniors, it also provides services like medical clinic mostly serving poor, HIV positive, elderly or financially troubled patients. Friends of Market, Historical Commission, Pike Place Merchants’ Association, Market Foundation, etc. are a few of the community partnerships/collaborations existing in the market (CNT, 2010). It has formed a new public space as part of the market front expansion adding up to socially active public spaces in the city.

**Similar Example**
Ann Arbor Farmers Market in Detroit, a public market for local produce, food and crafts, is owned by the City of Ann Arbor and run by the Parks and Recreation Department. 1/3rd of the market’s operating cost is from City’s General Fund and 2/3rd from vendors’ fees making it a good institution-based funding model. Eastern Market in Detroit has 70% of its funding covered by vendors’ fees and rest by the city. It utilizes public funding from cooperate like W.K. Kellogg Foundation. The market is run by a board of directors from private, public and non-profit sectors (CNT, 2010).

**Conclusion**
The case study of Pike Place Market shows that public markets benefits in many ways:

- by connecting local farmers with the consumers directly,
- creating jobs, and
- providing active public spaces.

They provide economic development, community cohesion and overall social development. PDA Council utilised the revenue from rental sources for meeting the expenses in operation and maintenance of the market. In addition, using revenue surplus and bonds for new developments, makes it a sustainable model.

**Further reading**
For more information on PIKE SPACE MARKETS, visit pikeplacemarket.org and pikeplace.org.
Street Revitalization

● Giving the Space Back to People

Introduction
Urban street designs let traffic, whether pedestrians, bicycles or motor vehicles, go through the city efficiently. This has been the case for many years, but recent urban renovation processes have evolved ideas contrary to this (Moudon, 1993). Residents as well as the governments are now more aware of the negative effects of the prevailing automobile culture since the industrial revolution. It is certain that increasing urban traffic is problematic in many ways. These problems relate to equity, economic efficiency, loss of urban living space, noise and air pollution, accidents, urban landscape, noise and vibration, energy consumption, social cost to the communities, commercial competitiveness, etc. (European Commission, Directorate-General for the Environment, 2004, p.11). Cars and infrastructure dominate the urban landscapes, and sub-sequently urban space designs prioritize car traffic. Drivers in the past had to make their ways through pedestrians and other road users, who are now doing the contrary on car-dominated roads. The word “sidewalk” somewhere indicates that pedestrians are not the main users anymore and rather automobiles are the primary users of a road. People see numerous lives taken away in road accidents, as many as 1.25 million deaths every year (WHO, 2015). In the space that belonged to them in the first place. The same people also question the deteriorating air quality directly affected by these automobiles.

However, recently many cities especially in Europe have started challenging this idea with “right to the city” movement (Lefebvre, 1968). With the rise in travel behaviour, create opinions for a greener city, and achieve some of the statistical goals such as:
1. 50% of all the residents visit the street,
2. 75% of the visitors to the street are satisfied with the project,
3. 90% of the visitors get a positive attitude about sustainable travel.

Method
A number of initiatives were taken during this time. For example, Driving was banned except for permitted cases (transportation services, taxi, postal delivery, unloading of goods), and the street was painted with several colours as a path for soft mobility, street furniture such as decorative benches, flower pots, and sandboxes and other placing facilities for children were placed, and spaces for various fun activities were also provided. Events with various topics, from a market to a social discussion, were also organized.

Figure 3 shows the plan of summer street design. Along the colored bike path, there are various kinds of street furniture and space to walk around. Car parking slots are converted into bike parking, and lack of car parking is compensated by extra parking areas.

Evaluation of the project was done through questionnaires to visitors and businesses, interviews and studies of the activities happening. A heavy focus was put on public opinion, in order to improve the project in the future.

From the evaluation, it was found that 92% of the visitors were satisfied with the project and wanted it continued in the coming years, whereas 5% of the visitors were not satisfied and did not want it to happen again (Utvärdering Sommargatan 2018). Two businesses reported increased profits during summer while 5 experienced no changes and 5 experienced decreased profits.

The project was also beneficial to the municipality as it provided opportunities to work inter-sectionally through communications with various departments, while other projects may mainly involve internal problem solving skills.

Conclusion
There is an increasing need for measures to solve urban traffic. It is associated with various issues such as environment, health, safety, equity, etc. At the same time, many more micropoliticians are now looking at streets not only as space used for traffic but as a potential area where social and cultural interactions can happen. The concept of lively streets and shared space go well with these trends, often with positive results in various ways. Municipalities should reconsider the role of streets in order to solve various common urban issues while getting their residents to critically think about the quality of life.

1. Banning/restricting Motor Vehicles
One of the common fears among business owners is that a lack of car traffic might result in reduced number of customers and increased difficulties with logistics (e.g. transporting products) (STP, n.d.). Despite this fear, many cities have started banning motor vehicles from the street to enable free movement of pedestrians and cyclists. In order to prevent heavy impacts on business operations, certain vehicles such as delivery trucks are allowed either all day or only at a certain time of the day. Public transportation vehicles and taxis are also often allowed in the space to ensure the mobility for everyone.

2. Decorating The Space
Decoration is another important element used for turning streets into a livable space. This can be done by simply placing street furniture such as benches so people can stay rather than go through, and a more sophisticated method is to add an element of “plaging” in the design. Benches can look colourful and artistically shaped, or there can even be a small playground for children. In some cases, streets are painted, making the street a big canvas.

3. Public Participation
Taking public opinion in decision making is another important element for a successful revitalisation. Designers and planners may not always be aware of the current needs and wishes of the resident, and it is advised to directly communicate with them as well. Publics around planning also tend to avoid risks, and drastic changes are not likely to be made easy. It is therefore important to include the public, which can convince the municipality that there is an actual need to such new designs.

Public hearings are often done through the municipality’s website so input can be sent anonymously and easily from anywhere, but they can also take a form of public meetings where anyone can share and discuss their concerns and ideas with others, including planners and project managers. The latter is especially effective towards the later step of the project, where the municipality can present the summarized public options and discuss them deeply in person with the residents.

Case study (Luleå, Sweden)
During summer (from May 26 until August 19 in 2018), a short stretch of a street (about 100m) in the city centre of Luleå, Sweden is converted into a pedestrian/cyclist/lair zone. There are various kinds of street furniture and street art (such as painted road). This was done by the city of Luleå to change and raise awareness of the residents’ travelling behaviour.

Background
60% of short trips (2-4 km) and 1/3 of very short trips (less than 2 km) in the city are done by automobiles. The city of Luleå is working to change car-dominant cityscapes and move towards more sustainable alternatives of transportation. As a first step towards this goal, the city encourages sustainable travel.

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Image 1: Entrance of the summer street
Source: Google Maps

Figure 2: Street before conversion

Image 2: Entrance of the summer street
Source: beobuild.rs, discoveredinplay.com

Figure 3: street design plan

Figure 4: painted road to create special space

Figure 5: Seating areas with playful design

Figure 6: Path for soft mobility

The content of this article does not reflect the opinion of NIUA. Responsibility for the information and views expressed lies entirely with the contributing author.

Sustainable Transportation Researcher
MSc in Urban Studies, University of Amsterdam

References

Transforming a Landfill Site

A case study of Koparkhairane’s Nisarg Udyan

Urban decision makers, often consider adaptive reuse of abandoned or formerly contaminated lands, such as former military bases, brownfields and landfills, while looking for more parkland for social, environmental or economic activities. These land uses provide the required land acreage in close proximity to urban settlements and play a role in establishing the identity of a sustainable city (Vogt, 2015). Around the world, landfill sites have been the focus of urban redevelopment projects over the time as seen in Millennium Park in Boston, Shalini Meadows-Conna Park and Freshkills Park in New York City and World Cup Park in South Korea.

In Indian context, the Nisarg Udyan (Nature Park) in Koparkhairane, Navi Mumbai is one of the better examples of urban space transformation project improving the quality of life of the residents. The park serves as a recreational space for the citizens as well as a safe niche for the biodiversity. Spread over an area of 127 Hectares, this park was a landfill until 1999. After 10 years, it has been transformed into an appealing recreational space offering more opportunities than a typical park. This article further discusses the case study of Nisarg Udyan and its transformation process.

The Transformation Process

The transformation of this area initiated in order to address the grievances of residential population near Koparkhairane landfill area. This initiative was in accordance to the instructions given by Maharashtra Pollution Control Board (MPCB) and directives of the High Court (Jilani & Sanjeev, 2011). Scientific closure of this dumping ground containing 20 lakhs M.T. garbage was completed by NMMC in 2008. A network of wells was laid to collect trapped landfill gas (LFG) and a flaring unit was installed at the site to burn the LFG. A leachate collection tank was also constructed to collect the leachate and is treated before disposal. Treated sewage water from the sewage treatment plant is now being used for watering the lawn through a sprinkler system.

The development of the park happened in three phases:

1. Phase 1 - In the process of converting the open dump yard into a garden, grass layer of 22000 sq. m, area was laid during 2013-2014.
2. Phase 2 - A jogging track was set up for the citizens residing in the nearby localities.
3. Phase 3 - Infrastructure like public conveniences, pergolas, dedicated sitting areas and open gym were constructed

Value addition under TERI’s Eco-City Project

Navi Mumbai Eco-City Project was launched with a vision to develop Navi Mumbai as India’s first Eco City. It worked on the principles of sustainable development through integrating high carbon consumption strategies and appropriate utilization and conservation of natural resources. TERI WRC has signed MoU with NMMC in 2012 to set up projects under Eco-City Programme with focus on Biodiversity Conservation, Green Buildings, Urban Farming, Energy Conservation and Water Conservation.

To create environmental awareness, 15 leitkorns and 4 large boards were installed in Nisarg Udyan, having information about biodiversity in the locality such as birds, butterflies, sparrows and mangroves. The story of the park, resulted from the transformation of a landfill is highlighted in one of these boards.

What Does The Space Offer?

Active and Passive Recreation

The park has ample spaces for active and passive recreation. The active spaces include uninterrupted pathways, long spread lawns, open air gymnasium, indoor recreation area, etc. People regardless of their age or gender use the space for jogging, morning/ evening walks, yoga, sports, etc. Passive spaces like covered (Pergolas) and non-covered sit outs are popular amongst residents in a city.

Water Conservation

To tackle the challenge of maintaining such a large area, reuse of treated water is implemented assuring environmental sustainability. As per NMMC, 205 MLD sewage undergoes treatment every day and discharges 202 MLD treated water into the sea. Around 2 MLD treated water from the adjacent STP is used for irrigation in Nisarg Udyan (The Indian Express, 2018).

Niche for Biodiversity

Natural vegetation (mangroves and mangrove associates) around landscaped area houses several resident and migratory bird species such as Egrets, Yellow Wagtail, Brown Shrike, Black Drongo, Red Munia, Prinias, etc. The park provides grassland, woody and wetland habitat for other species like Jackal as well.

Impacts

The impact analysis of Nisarg Udyan was done on similar lines of Day’s Sequential Model of Decision Making (1992). The model (also known as AIDA: Attention-Interest-Desire-Action) is often used in marketing to describe the steps a customer takes in the process of purchasing a product. According to the four steps of AIDA:

1. A person first acquires information about the place
2. He/she develops interest
3. The person develops a desire to visit, and
4. Finally takes an action, i.e. visiting the park.

Similar to the Theory of Planned Behavior (Ajzen, 1985), AIDA model provides framework for understanding phases of cognitive process that simulates behavioral reactions. A similar study was also done by Vogt, et al. (2010) to assess the success of Freshkills Park, New York. They examined the impacts of proximity and experience with the local history.

On similar lines, responses of residents to the transformation of Nisarg Udyan were assessed. It was found that responses about the space before the transformation were only negative, owing to the foul smell, pollution and the unhygienic surroundings. Only after 2008, when the residents noticed (attention) that the transformation process has been completed, they developed an interest to witness the difference. Influenced by the quality of transformed space and its benefits, they developed a desire to visit again. After being familiar, they indulged in healthy actions at the park as part of daily routine.

This park is a good example of creating a productive land use out of underutilized land. Proximity plays an important role here, since the group of people who once complained about the waste dump-yard gained maximum benefits after transformation. As this is the largest park within Koparkhairane and Ghansoli nodes, people within 2-3 km proximity tend to visit Nisarg Udyan frequently for recreation. This project also highlights the importance of complimenting land uses towards alleviating the lifestyle of the residents in a city.
Public Spaces as Promoters of Equity and Social Inclusion:

- Case Study of Libraries and Cultural Festivals

As cities grow and densify, access to well-designed public spaces becomes an important asset but a challenge for the poor, minorities and vulnerable groups. These spaces include urban centers, parks, squares, and valley bottoms. In this context, social equity refers to provision of generous and good quality public spaces in order to make it accessible to people of all socio-economic backgrounds regardless of their class, age, gender, race or ethnic differences. Public spaces act as promoters of equity and social inclusion by making space for people from all social classes to interact and thereby reducing the economic and social segregation prevalent in a society (UCLG, 2016). Informal economy nature in these places and should be dealt carefully to provide space for entrepreneurship (UNESCO, 2017).

While planning for inclusive cities, adequate housing, well-connected public transport and transportable public spaces are required. It is essential to focus on (UCLG, 2016):

- Rebuilding districts in an integrated way
- Providing disadvantaged urban areas with quality public spaces
- Transforming public land use
- Encouraging social mixing in housing
- Removing architectural barriers that isolate, stigmatise, or exclude people

In this article, we look into role of libraries and cultural festivals in promoting equity and social inclusion in public spaces through a few case examples.

Libraries As Inclusive Public Spaces

Libraries are traditionally regarded as information and knowledge centers. Since information is widely accessible online today, the traditional role of libraries has now changed to play an important role in community spaces (Tan, 2017). They are meant as a pivot for information, learning and cultural discourse (Civica, 2016). As shown in the following table, libraries as heart of the community and place to connect with people (Civica, 2016).

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment rate</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Average monthly income</td>
<td>147,000 pesos (INR 3500)</td>
<td>160,000 pesos (INR 3600)</td>
</tr>
</tbody>
</table>

Having a vast amount of users, libraries act as socially inclusive public spaces by engaging all age groups to the community. Importance of provision of public libraries is identified by many local governments as an inclusive planning strategy to revitalize and transform communities (Him Min, 2007).

Case 1: Biblioteca Espana, Medellin, Colombia

Medellin, the capital of Antioquia province, Colombia, is often described as a violent city owing to the series of political and drug related events happened over the last two decades. It is home to many Colombians internally displaced by political violence who are socially excluded in terms of access to basic civic amenities and public spaces (Holmes and Pineres, 2013). Despite the city’s history of conflicts, Medellin also has been recognised for its proactive efforts to use public spaces as a tool for quality of life improvement (Sertiń, 2010).

Biblioteca Espana (Spanish Library Park) was a part of the mayor’s social inclusion program that targeted two of the poorest and most isolated neighbourhoods of the city – ‘Popular’ and ‘Santa Cruz’. Both the neighbourhoods are densely populated with standard of living. Statistics shows that (Municipio de Medellín 2010; Municipio de Medellín, 2011).  

- Quality of housing: 99.8% of Popular and 99.9% of Santa Cruz are classified as low/ very low/ slum
- Education: 61.2% of Popular and 56.6% of Santa Cruz have primary or lower level of education attainment
- Unemployment rate is 40% and average monthly income is 147,000 pesos (INR 3500) in both the neighbourhoods,

In this way, we look into role of libraries and cultural festivals in promoting equity and social inclusion in public spaces through a few case examples.

Case 2: The Idea Store, Tower Hamlets Borough, London, UK

Tower Hamlets is one of London’s most diverse boroughs with more than 37% of the population of ethnic minorities and 32.9% from the age group of 16 to 24. By 2009, the Tower Hamlets library system was ranked 3rd in London and 4th in England for percentage of residents using library services, based on the participation data for National Indicator 9 (Atari, 2017).The 2006/07 Public Library Survey (PLS) of users over the age of 16 demonstrated that Tower Hamlets Idea Store attracted users of all ages from different background. 54.8% of the total users were from ethnic minorities and 32.9% from the age group of 20 to 24 (Tower Hamlets Council, 2009).

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Urban agriculture is a multitasking activity, reinventing the human relationship with nature through environmental awareness. Communities involved in urban agriculture not only reduce the risk of groundwater pollution, but also sequester carbon in the soil. It is an activity of producing, processing and distributing food and other agricultural products complimented by recreational, educational and informative walks. This innovative policy underlines the provisions of Navi Mumbai Disposal of Land under Right of Ways (RoW) for power transmission under Power Corridor (MSEB) and land falling to encourage public participation in land restoration:

1. Passive Public Participation by contributing towards judicial use of the public space and enabling multipurpose use by bringing diverse stakeholders together: Events organised in Agro Garden attract people from different parts of the city, they come together mostly for learning and recreation. Community meetings and social events create a sense of ownership and responsibility towards judicial use of the public space and enabling multipurpose use by bringing diverse stakeholders together.

2. Active Public Participation by:
   a. Encouraging Functional Participation in groups to meet predetermined objectives related to a project after major decisions have been made.
   b. Encouraging Interactive Participation in joint analysis, development of action plans, and formation or strengthening of local institutions.
   c. Mobilizing Participation by taking initiatives independent of external institutions to change systems. They develop contacts with external institutions for resources and the technical advice they need, but retain control over how resources are used.

The participative public decision-making and maintenance creates a sense of unity and responsibility towards judicial use of the public space and enabling multipurpose use by bringing diverse stakeholders together.

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Urban agriculture as a concept is often employed to address social and environmental sustainability in cities. It is an activity of producing, processing and distributing food and other agricultural products complimented by recreational, educational and informative walks. This innovative policy underlines the provisions of Navi Mumbai Disposal of Land under Right of Ways (RoW) for power transmission under Power Corridor (MSEB) and land falling to encourage public participation in land restoration:.

1. Passive Public Participation by contributing towards judicial use of the public space and enabling multipurpose use by bringing diverse stakeholders together: Events organised in Agro Garden attract people from different parts of the city, they come together mostly for learning and recreation. Community meetings and social events create a sense of ownership and responsibility towards judicial use of the public space and enabling multipurpose use by bringing diverse stakeholders together.

2. Active Public Participation by:
   a. Encouraging Functional Participation in groups to meet predetermined objectives related to a project after major decisions have been made.
   b. Encouraging Interactive Participation in joint analysis, development of action plans, and formation or strengthening of local institutions.
   c. Mobilizing Participation by taking initiatives independent of external institutions to change systems. They develop contacts with external institutions for resources and the technical advice they need, but retain control over how resources are used.

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