SHARINGCITIES

Smart booklet

Digital Social Market

Designing services which enhance connections between cities and citizens

SHARINGMI

TABLE OF CONTENTS

List of acronyms

DNO	Distribution Network Operator
DSM	Digital Social Market
DSR	Demand-Side Response

LIGHTHOUSE CITY KEY

	Lisbon
	Royal Borough of Greenwich, London
	Milan

WHAT?

A Digital Social Market (DSM) is a platform, usually linked to a mobile phone app, through which cities can engage with residents and encourage sustainable behaviour by offering rewards. The DSM creates a virtuous circle between city and citizen, whereby citizens (residents, commuters, tourists, students) participate in sustainable behaviour such as bike sharing, walking, community activities and reducing energy use. The city and citizens both gain through the associated benefits such as improved air quality, reduction in traffic congestion, improved health and community cohesion.

Citizens are rewarded for their actions through mechanisms designed to support other important social indicators. For example, points gained from sustainable behaviour can be used for discounts in shops, which supports local commerce, for making micro-donations to local schools and charities, and for peer-to-peer recognition when points are displayed publicly in online communities.

WHY?

The strategic focus of the DSM is to engage and inspire citizen-level behaviour change in support of city sustainability objectives.

Governments and city authorities are coming to terms with the fact that in order to stimulate new behaviours towards a sustainable future, their solutions will require the alignment and support of societies willing to embrace and experiment with change. Quite simply, coordinated citizen participation is essential to the prosperity of our cities.

The DSM provides greater clarity around socially and environmentally oriented issues for both city leaders and citizens alike. It helps to convey complex ideas in an accessible way and makes behaviour change more reachable.

The DSM is one of the first platforms of its kind, designed to link cities, citizens, businesses, non-governmental organisations, charities and universities directly to sustainability guidance, gamification, and reward mechanisms. These partnerships are crucial if we are to secure a prosperous future for our societies. Finally, the platform provides cities with data that can be used to help with better city-wide efficiency and decision making.

ENVIRONMENTAL VALUE

The DSM in Milan, 'SharingMi', is the community that puts together people who share their sustainable habits and experiences, gaining points that can be used on green local rewards. This local community helps to make Milan a better place in many ways:

» It helps users to get inspired and obtain information about green habits from other users;

» It helps local partners to grow, as they are promoted directly on the app;

» It creates not only a virtual, but also a physical community, promoting green events happening in Milan.

ECONOMIC VALUE

The Sharing Cities approach is unique as it forms a value chain which places social and citizen needs first; the Digital 'Social' Market is driven by the needs of city users, of fostering meaningful connections with citizens, in order to lead with change, not profit.

The delivery model allows citizens to register for free. In the case of Milan and Lisbon, in exchange for their actions, users are rewarded through points which can be redeemed in local businesses, helping those businesses to grow. Additionally, citizens can benefit monetarily because changing behaviours reduces energy consumption bills and mobility related expenses (e.g. by walking or cycling instead of using a private vehicle, they can save on fuel and parking fees). These services have been built in such a way as to allow synergies with other cities, public or private companies and charities, which leads to a business model that can benefit the city.

SOCIAL VALUE

Linked with its environmental benefits, the DSM promotes a number of social values. It promotes a deeper level of understanding of the value of community engagement and participation and most importantly, the power of small actions. The service normalises sustainable values and actions amongst citizens by providing space for dialogue and shared experiences around pro-environmental opportunities in the city. Each service has been designed with end-users in mind. The DSM enhances the appeal and adoption of sustainable behaviour by re-framing it in an engaging, compelling and enjoyable way.

INTERESTING FACTS AND FIGURES

In each demonstrator district, participants are able to access an app which (depending on the service in each city) enables users to participate in activities which provide a wide range of environmental benefits, such as energy reduction and sustainable mobility, among others. It convenes users around important environmental issues, energy reduction, and local commerce.

Over the first six months during which Sharing Lisboa operated (November 2018 – May 2019), a total of 1,260 users registered in the Sharing Lisboa app, collecting more than 850,000 points. The Sharing Lisboa DSM community also walked or cycled more than 16,000km.

In fourteen months (February 2019 – April 2020), about 1,760 users of SharingMi shared more than 23,800 green stories about sustainable habits, places, events and society. There is clearly a curiosity and an audience interested in participating in this market.

APP SHARING LISBOA

www.sharinglisboa.pt

CITIZEN INTEREST GROUP

CITIZEN

CHALLENGE HOST

REWARDING PARTNER
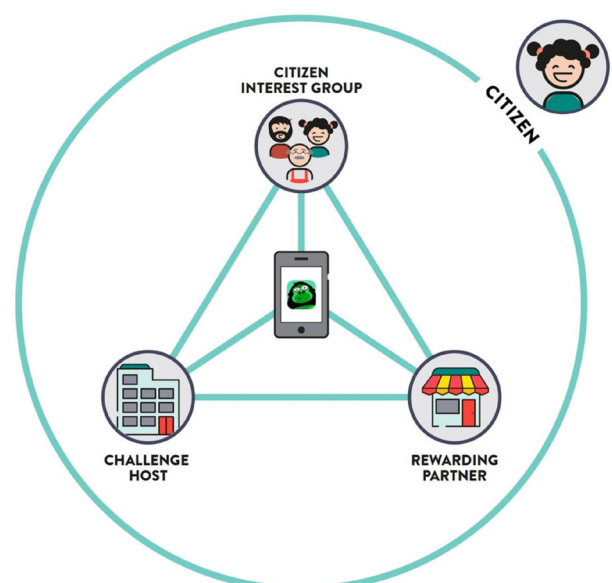
Here are three examples of how cities in the Sharing Cities project are using this technology. These different use cases all respond to local conditions and consider financial (revenues, savings), environmental (air quality, reduced CO_2), social (health, safety) and economic (local business development) values.

WHAT DO I HAVE TO DO?

Register at www.sharinglisboa.pt

Walk and cycle, charge electrical vehicles, save energy at home, answer quizzes about energy and mobility and visit local shops to earn points

Earn points and donate them to the school you choose to support

Schools also gain more points for being more energy efficient

The school that gets the most points will receive funding for it's energy refurbishment

'Greenwich Energy Hero' is a residential demand-side response (DSR) service being piloted with households to help balance demand from the electricity grid. Alerts are sent to users when demand on the electricity grid is high and supply is low, around 10 to 14 times a year. Households earn points based on how much they change their electricity use, compared to the household's individual traditional usage, when responding to these alerts. Points are converted into vouchers on a quarterly basis and can be used in two ways: participants can review and donate their rewards back into their area through local charities or community initiatives, or they can keep their reward for personal use.

The platform builds an understanding among end-users of what happens 'behind the plug.' It fosters a better understanding of the issues around peak demand and encourages and rewards citizens for taking a more active role in their electricity usage. It also removes ambiguity about how citizens can act to reduce energy challenges.

Through its peer comparison features, the platform normalises these new approaches to in-home electricity usage. This form of social modelling is essential in stimulating uptake and establishing new norms around these issues.

Sharing Lisboa was launched in October 2018 to promote environmental awareness and energy efficiency in schools. The app connects and unites citizens around activities which benefit society by focusing on 'common purposes' such as supporting schools and local businesses.

Sharing Lisboa works with three Schools in Lisbon, totalling 4,500 students (aged 13 to 15 years old), three neighbourhoods (approximately 130,000 people), and local shops and parishes. In exchange for participating in sustainable activities such as e-vehicle use, domestic energy management, walking, cycling and supporting local commerce, the platform rewards users with points which are gifted to the participating schools. The schools also generate their own points through the sustainable actions of staff and students. At the end of the school term, the school with most points wins a bursary to make sustainably focused renovations to its buildings, such as solar energy system installation or investing in more efficient lighting.

While Sharing Lisboa worked with three schools, the format of DSM can be expanded to other institutions or other causes.

The Sharing Lisboa platform helps citizens to take a more active and participatory role in their city and aligns them more closely to helping the city to meet its EU 2050 carbon neutrality targets.
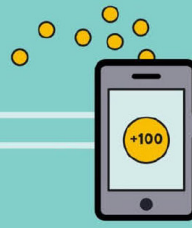
How it works for customers
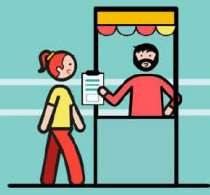
Discover   **Download**   **Do green activities**   **Gain points**   **Redeem rewards**

'SharingMi' provides the city of Milan with a community platform and app to share experiences and knowledge around sustainability issues such as mobility, energy saving, food waste reduction, sustainable lifestyles and community participation. In return for their participation, users are rewarded with points which can be redeemed to access local goods and sustainable services in shops and outlets across the city.

Points can also be earned by participating in sustainability challenges and city events organised through the platform (e.g. #MilanoPlasticFree or #MyFridaysForFuture) or by connecting the app with sustainable behaviours and fitness apps such as Apple Health, Google Fit, Spica, and Energan. The platform will also soon be connected with the Sharing Cities Urban Sharing Platform to enable enhanced decision making across city departments based on the data from SharingMi.

SharingMi provides access to a wide range of rewarding partners (both online and offline) which provide unique discounts and access to goods and services in exchange for users' reward points. These include access to sustainably focused restaurants and cafés, fashion outlets, ecological products, yoga courses and medical services.

It offers users a mean to earn points and access rewards for activities they may already be doing. This approach offers a unique way to encourage citizens to participate and reap the rewards. The platform is free to join and brings together an engaged group of citizens who are motivated to support positive impact in their city. Users can feel reassured and motivated to share their experiences with a welcoming community. The platform provides users with a voice that connects with city decision makers.

Your local context, including legislation and cultural conditions, affects the kind of DSM system that is ideal for your city, and the adjustments to the standard model that you may have to make. Here is a brief overview of key factors you will have to consider when planning your approach.

SOCIAL & CULTURAL CONDITIONS

Security
Lifestyles
Demography
Cultural heritage

In Greenwich, lifestyle habits, such as heating/cooling and occupancy patterns, play a role in the success of a residential DSR project.

Citizens are open and are early adopters of several innovative initiatives in Milan, including 'Social Streets,' which has helped enhance and reinforce local communities. Shared mobility users have grown exponentially, and engagement in participative budgeting is high. Considering the threats and opportunities, trends and municipal goals, there is a healthy capacity for working on behaviour change and supporting sustainable lifestyles in Milan.

POLITICS, POLICY & REGULATION

Political leadership
Governance
Smart city & data strategy
Citizen engagement
Legal and regulatory

Activation is a key theme in the DSM approach. The DSM can act as an enabler of existing smart city services, such as shared bicycles and electric vehicle charging. The DSM has the potential to grow awareness and speed up adoption rates amongst citizens – which should not be taken for granted. The DSM can encourage citizen engagement and collaboration; support the local economy; can be integrated with existing systems, programmes, and assets; and can balance off the relationship between tourism and city life.

Additionally, the DSM model provides an effective means for industry and business to reconsider their roles and propositions in the city and community contexts – encouraging businesses to think and act more socially and ecologically responsibly.

Political decisions regarding electricity infrastructure and organisation play a key role in a DSR digital social market. This includes:

» whether the national grid will accept the residential market into DSR programmes;
» the monetary value that the national grid assigns to kW reduction in DSR programmes;
» smart meter roll-out: the type of smart meters (e.g. frequency of readings), provisions for access to data by third parties, progress of roll-out;
» regulation on distribution and supply of electricity, and which areas are open to competition;
» support of open data policy and smart city initiatives.

CITY PHYSIOLOGY

Climate

Assets and infrastructure

Natural assets

Geography

For Greenwich, energy assets, including the make-up of the electricity grid and percentage of renewables, as well as the extent of the electrification of the heating system, are key in the amount of turndown that could be expected and the value likely to be placed on that turndown.

Climate also plays a role, as it affects heating and cooling patterns.

Milan is flat and relatively small, presenting the ideal condition for active mobility.

ECONOMIC PERFORMANCE

Market readiness

Technology

Performance

Investment

Appetite for risk and innovation

Entrepreneur ecosystem

Market readiness and commercial viability are key factors to be considered. Conduct qualitative and quantitative research to understand if there is a desire for your service from users, if the technology being used is mature enough to roll out on a wider scale, if legislation supports new technologies, and if it is commercially and environmentally viable to expand the service following the pilot period.
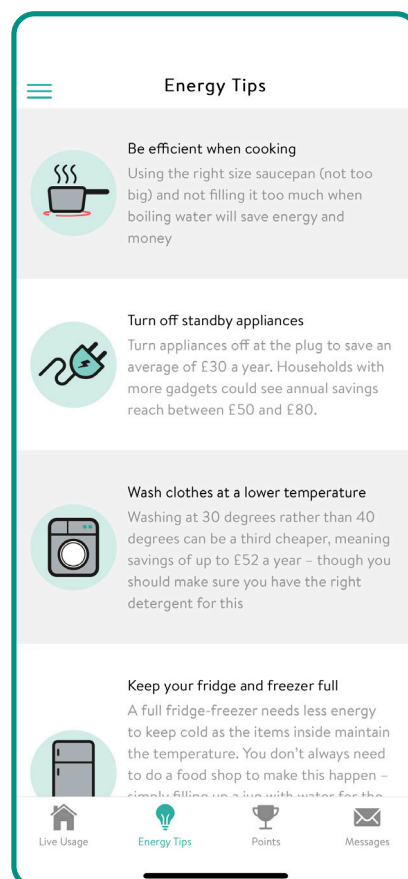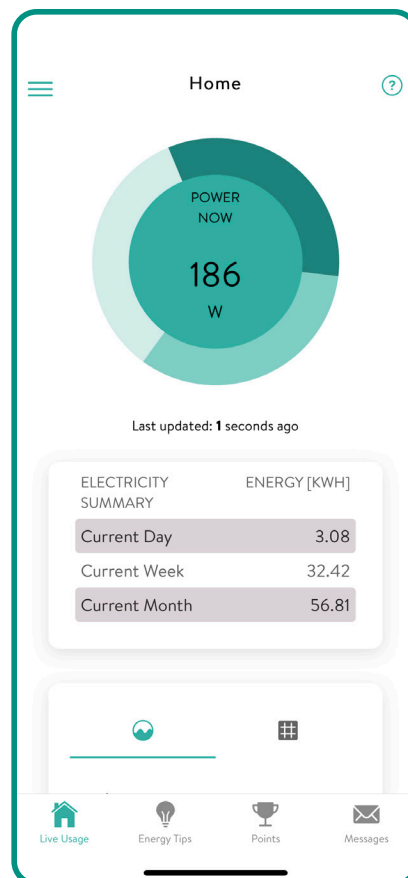
Examples of the the Greenwich Energy Hero mobile app using DSM to engage citizens and inform them on their energy consumption.

Electricity was measured via a CT clamp (device on the left) attached to the residents' electricity meters. A wireless module (device in the centre) communicated the reading to a wireless home hub (device on the right), which was connected to the residents' WiFi. Readings were taken every 6 to 12 seconds.

SharingMi was developed and implemented through collaboration of public and private organisations and institutions. Milan formed a consortium which combined a variety of expertise and organisations such as user research, concept and technical development, testing, branding, and PR (to name a few), all of which was designed to support the development, recruitment and retention of its online community.

Poliedra is responsible for the local delivery and management, working with a range of other organisations with expertise around community engagement, education, and training. Future Cities Catapult has supported Poliedra with many of the activities described above, joining the process with its expertise in service design and implementation.

The Sharing Lisboa app was co-designed using design-thinking methodologies. Within the Lisbon consortium, taking into account all the feedback obtained by the community, several sessions were promoted to collect all the use cases and define the contents of the app. Beta-testers provided continuous feedback on the app and its content and the Lisbon team met regularly with the technical team to further discuss the app and suggest changes and improvements.

The Sharing Lisboa app includes several components, such as:

» Integration with external accounts to monitor behaviour: Google Fit, Strava, EDP Distribuição, CEiiA;
» Participant History page to check progress, points, and contributions;
» Common Causes page to check schools' progress, points, and contributions;
» Thematic quizzes (sustainable mobility and energy efficiency), used to educate and motivate participants to earn more points;
» Reward Partners page to see the network of shops and offers.

Sharing Lisboa is a tool that has the potential to create synergies with several layers of society, involving citizens, companies, and state entities. Being a universal tool that each participant can customise with personal preferences, Sharing Lisboa can be a vehicle of change, not only in people's behaviour, but also in the overall functioning of the city. Sharing Lisboa integrates existing systems and platforms for communication and dissemination purposes and, most essentially, to educate citizens. Furthermore, it enables developing new services building upon existing systems and platforms, incentivising the sharing of data among its participants, whether these are residents or tourists.

Greenwich's DSM, 'Greenwich Energy Hero', was implemented in partnership with Sharing Cities partner, Kiwi Power. Kiwi Power was responsible for the technical components, including building the app and designing the technical solution, in partnership with Hildebrand. The Royal Borough of Greenwich was responsible for project management and input to project design, and Future Cities Catapult was responsible for overall work package coordination and service innovation activities.

A third party, Groundworks London, was brought on board to recruit participants and install the devices alongside a 'Green Doctor' visit which provided in-home energy saving advice and tips to residents.

Lisbon has invested over several years in the transformation of the city into a more sustainable and efficient urban context by promoting the development and implementation of solutions, measures and tools that can improve the city and its citizens' lives.

With the help of the consortium, an essential part of the development of Sharing Lisboa was the extensive user research conducted prior to its development. Diary studies were introduced in order to collect profiles of users based on their transport, energy, sentiments, and community habits.

Interviews were also conducted to gain further insight, assess users' willingness to adopt the measures and solutions, and to investigate potential incentives.

Workshops and meetings were organised with city representatives and partners.

A significant aspect of Milan's platform delivery involved GreenApes, a social network which helps to develop online communities and encourage the sharing and rewarding of positive stories. GreenApes was responsible for building the technical environment in which SharingMi functions. It worked closely with Poliedra and Future Cities Catapult to inform the process, support and manage the community and report on the impact of the project.

Milan has been working on promoting behavioural change for years, with a particular focus on mobility and housing. For mobility, on one side, creating policies and a regulatory framework for decreasing the use of personal cars, especially more polluting ones. On the other side, providing suitable options for citizens. For example, the city currently has six car sharing services, three bike sharing, five moped sharing, and, coming soon, scooter sharing and new underground lines. For housing, a €23 million call for incentivised private building retrofit was launched in 2018.

COMMON CHALLENGES AND RECOMMENDATIONS

USER TESTING

App fatigue – do citizens want another app and will they use it?

Good communications: show relevance and benefits.

Retention strategy: new features, rewards.

ENGAGEMENT WITH DNO/GRID TO DETERMINE EARLY VALUES

Reward values – residential DSR is not currently accepted or funded in the UK.

Base rewards on the current commercial sector, to avoid inflating the business model.

DESIGN APPEALING ALTERNATIVES

It's easy to reduce every city conversation to emissions levels, heavy traffic, peak energy and sedentary lifestyles – the skill is finding a language which is positive and inspiring but realistic.

Spend time thinking about your delivery – do not 'guilt' people into action – design better, more appealing alternatives.

LONG-TERM CITIZEN ENGAGEMENT

Think about the network of people you need to deliver this and get them working together from the very beginning.

Ensure that your list includes citizens or citizen interest groups. Do not just bring them along to a single workshop – make sure they are invited in for the long haul. They will not just help you test your theories and ideas, they will add legitimacy to your platform, and they will be crucial at helping with its uptake amongst the broader citizenship.

THINK ABOUT THE FUTURE

The launch of your platform is only the beginning. Retain some resources to enable you to maintain your platform after its launch.

Listen to your users, seek their feedback, develop a calendar of content and events that you can share with your users for at least six months after your launch. Think about how your digital platform might need to evolve.
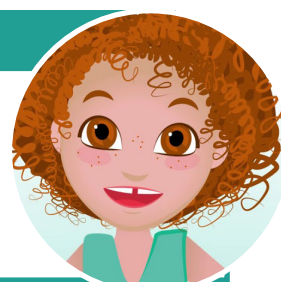
About Sharing Cities

Sharing Cities is a project to improve the lives of citizens across Europe, testing smart solutions for cleaner, more efficient cities. New systems for urban energy management, building retrofit, e-mobility and smart lampposts, are cutting carbon emissions in cities as well as making everyday life more affordable, comfortable and convenient for residents. Sharing Cities is testing and evaluating these smart city solutions together with citizens and creating channels to make them more affordable and better tailored to cities' needs. They are doing this through fostering international collaboration between cities and the private sector.

Additional information on Sharing Cities can be found on the website: http://www.sharingcities.eu

More information

Additional information and guidance about other smart cities projects can be found on the Smart Cities Information System's website: https://smartcities-infosystem.eu/solutionbooklets