City SDK – Development Toolkit for City Services

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I. INTRODUCTION

CitySDK compiles a toolkit for the development of digital services for the cities. Toolkit includes open and interoperable digital service interfaces enabling more efficient utilization of the expertise and know-how of developer communities in the city service development.

II. SCOPE AND OBJECTIVES

Helping cities to open their data and giving developers the tools they need, the CitySDK aims for a step change in how to deliver **services in urban environments**. With governments around the world looking at open data as a kick start for their economies, CitySDK provides better and easier ways for the cities throughout the Europe to release their data in a format that is easy for the developers to re-use. Taking the best practices around the world the project will foresee the development of a toolkit – CitySDK v1.0 – that can be used by any city looking to create a sustainable infrastructure of "city apps". CitySDK is much about Open Data. However, instead of traditional data storages and catalogues, it is about realtime, live, two-way open data: open interfaces. This means direct, dynamic, live contact between the citizens and the civil servants. The virtues of open interfaces are demonstrated in the Project within three Pilot domains: **Smart Participation, Smart Mobility and Smart Tourism**.

CitySDK aims at creating **open interoperable interfaces between the cities and across the borders**. SDK (Service Development Kit) refers to the tools that technology companies provide for their developers. The same concept is now introduced to cities to help them better utilize the know-how of the developer communities in developing city services. CitySDK provides a wide array of pan-European Smart City service Pilots in the Partner cities. The Partnership consists of eight European cities: Helsinki, Amsterdam, Barcelona, Istanbul, Lamia, Lisbon, Manchester and Rome – supported by expert organizations, companies and universities.

III. BETTER SERVICES FOR CITIZENS

The Project's most impactful outcome is the **creation of the pan-European, SME-driven Smart City Applications ecosystem**. Here the Partner cities act jointly to enable technological and business platform, where the SMEs, citizens, large companies and other organizations create added value. The two main obstacles for the transfer of Smart City Applications from one city to another are the lack of software tools and the lack of mental mindset that would allow for this transfer. CitySDK aims at tackling both of these challenges. CitySDK is a collection of tools and knowledge that will allow easy and rapid user-driven development of **transferable and interoperable high-quality Smart City Applications** for the SME developers, hacktivists and public ICT developers. It includes all relevant software toolsets, interface definitions, example applications, widget libraries, city-specific 'translators', and other related software and technical documentation. Strong emphasis is given on a creation of a framework that is scalable, future-proof and easily harmonizes access to regional open data as well as closed data sources and ICT systems. CitySDK is not a software platform. It is the unifying – missing – part between various Smart City software/hardware platforms and the end-user application developers.

"Whatever the Developers need to get the pan-European Smart City Applications created easily"

In this sense, the CitySDK is a sociotechnological ecosystem platform with software unification approach. In a smaller scale, this ecosystem approach is already a practise in some of the Pilot cities, where SMEs sell their smart phone applications based on the openly available public data.

IV. PILOTING THW CITYSDK v0.1

The Project focuses on three Pilot domains: Smart Participation, Smart Mobility and Smart Tourism. Within each of the three domains, a large-scale Lead Pilot is carried out in one city. The experiences of the Lead Pilot will be applied in the Replication Pilots in other Partner cities. All Pilots aim to become part of the cities' normal service infrastructure. The key enablers for this ambitious objective are:

- The true commitment and the driving role of the cities as Project Partners
- All Pilot address a real, identified and demonstrated need/opportunity: they either leverage existing prior lower technology or non-technology services, or are set up by the cities as an open co-innovation and co-design act that involves both the civil servants and the citizens in the process

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- The whole ecosystem is addressed in a way that creates business and developer ecosystem for further exploitation and innovation of services
- All foreground IPR, and all such background IPR that is needed for piloted services will be provided license-free for all the Partner cities for indefinite time of use in the Piloted services. The CitySDK concept is also foreseen to expand to other domains and cities after the Project ends.

A. Smart Participation – Citizens feedback made easier

The service enables citizens to give feedback to the municipality via commonly used virtual platforms eg web portal. Interfaces are built between the backoffice system and other platforms to enable direct flow of citizen feedback to relevant recipients in the city hall.
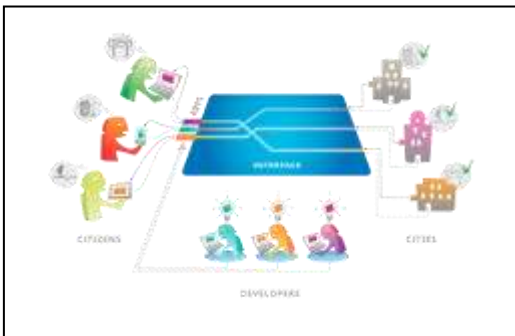
B. Services for Mobility and Tourism

The Smart Mobility domain aims to create services based on real-time traffic data combined from multiple sources. The services can be used e.g. for finding the best transport options, or for avoiding the worst traffic jams. The Smart Tourism focuses on creating various location-based mobile services for tourists. Such services guide tourists to experience the city in a new way, suggesting interesting attractions, thematic walks, or other nearby services, and utilizing various technologies, such as NFC, QR codes or geo-mapping.

V. COMMUNITY BUILDING

The number of smart phone and tablet users is growing, and our interactions are as likely to be with our local services as they are with national or even international ones. This increases citizens' expectations of the services. Therefore, in the CitySDK, eight European cities work together to produce common tools and share experiences. The participating cities have between them a population of over 30 million inhabitants – providing a large market for mobile and web applications to be developed by innovative companies, entrepreneurs and developers. The CitySDK partnership featuring the private sector, city administrations and Universities are developing the toolkit, but also engaging the developer communities in the eight Partner cities. Through "App Challenges", "Hackathons" and open data events, businesses and developers will be encouraged to build new apps that can truly travel across borders – so that a clever idea built in one city can make waves in other cities or vice versa.

I. CITYSDK PARTNERSHIP

The CitySDK project is led by Forum Virium, a not-for-profit development company, based in Helsinki, and has 23 European partners in 9 countries. Supplementing the consortium, the partner cities are members in various European and global networks providing further means for cooperation, sharing of experiences and practices, and finding synergies. These networks include e.g. Eurocities, Connected Smart Cities Network and Global Cities Dialogue.

A. Cities and city regions

Amsterdam, Barcelona, Helsinki, Istanbul, Lamia, Lisbon, Manchester, Rome

B. Private Companies

Alfamicro, (Portugal), **Gnosis Computers, (Greece)**, ISA Intelligent Sensing Anywhere, (Portugal), Lynx, (Italy), Sanoma, (Finland), TAGES, (Turkey)

C. Development and expert organizations

Forum Virium Helsinki, (Finland), FutureEverything, (UK), Waag Society, (Netherlands)

D. Network organizations

European Network of Living Labs

E. Universities and research institutes

University of Tilburg, (Netherlands), ESADE, (Spain), CASPUR, (Italy), Instituto Superior Técnico, (Portugal), Amsterdam University of Applied Sciences, (Netherlands)