

ICiNG

Innovative Cities for the Next Generation

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ICiNG is a combined EU-funded effort of three pioneer European cities: **Dublin**, Ireland; **Barcelona**, Spain and **Helsinki**, Finland. This European project seeks to improve the citizen's participation in their local government, making use of high level research on **mobile technologies** and **location-based services**. It develops the concept of a "Sensitive City", allowing cities to become more sensitive to the opinions and observations of their citizens and its own environment. Therefore, using location-based mobile technologies research, ICiNG will enhance public service delivery in support of urban communities. This position paper relates the ICiNG services designed and implemented in Dublin, as well as highlights the acceptance trial to be run in Ireland from April/2008 in Ireland.

Introduction

As cities become more populated and heterogeneous, they become increasingly more complex. Therefore, cities become significantly more and more challenging to administrate. It is, then, harder to assess and address citizens needs, since the complexity of cities encourages anonymous behaviours and seems to decrease citizen participation in local governments.

The opportunity identified by the ICiNG consortium takes advantage of a technology that is becoming increasingly pervasive – almost ubiquitous – within the European context: the **mobile phone**. Using pioneer research in mobile technologies, the ICiNG project has developed a myriad of **location-based services**, destined to assess and address specific citizen needs in our three European Centres: Dublin, Barcelona and Helsinki.

In order to create the sensitive or integrative platform among citizens and local government, ICiNG disposes of a network of environmental sensors and points of interaction for citizens' mobile devices, allowing cities to **[1]** reduce the response time by the government to public services; **[2]** ameliorate strategic city planning and **[3]** encourage the creation of communities within the cities.

The figure below illustrates the scenarios for e-government and city planning services implemented at the three cities.

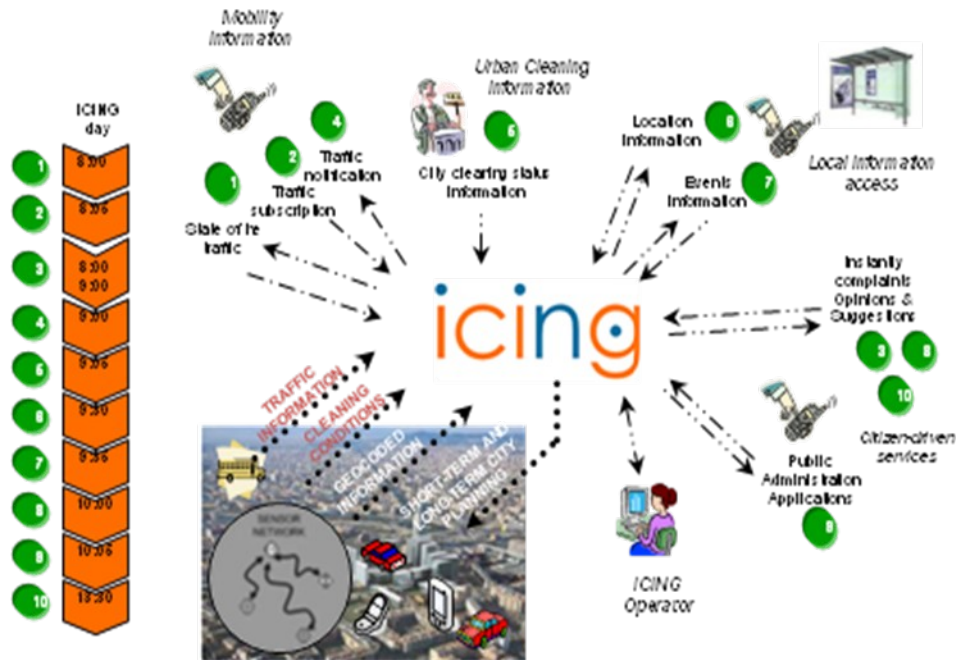


Figure 1 - Scenarios for e-government and city planning services

The ICiNG project is supported by funding under the Sixth Research Framework Programme of the European Union. Therefore, it can be easily adaptable to address the needs of other cities. More information on the project, its applications and the exploitation plan in Europe can be accessed in the web site <http://www.fp6-project-icing.eu>

ICiNG in Dublin

The ICiNG services were designed to address specific needs at each of the participant cities, using the same platform. ICiNG uses a layered Service Oriented Architecture (SOA), which can offer m-government services in the cities, in a

customized way. Each city has chosen a set of services that the City Councils validated as important and necessary to be implemented in each city. In Dublin, the ICiNG project implemented the Issue Tracker system.

The figure below represents schematically the “Accessibility Tracker” service developed in Dublin, using the citizen’s point of view.



Figure 2 - Issue tracker service in Dublin

Mary is walking in the park and notices trash on the ground. She uses her mobile phone to take a picture of the trash, sending it to the ICiNG system. Her location is automatically identified by the system, and the picture she took (and optional comments) will be sent to a city web page called Urban Mediator. There, Mary’s information can be visualized and edited by her, or by other participants of the community. Mary’s picture and comments can be also used by the City Council to identify issues that should be addressed in the city, as well as to provide feedback to the citizens.

The web-based service **Urban Mediator** allows information sent by the citizens to be automatically uploaded to an environment on the web, designed specifically for each city. This tool allows the City Councils to visualize and control the areas of the city demanding to local government attention, signaled though the input of the citizens. At the same time, it allows citizens to visualize information input by themselves and other citizens, as well as update and contribute on information regarding community issues.

Hence, the ICiNG Dublin service is focused on assessing and addressing their citizen’s inquiries concerning their accessibility issues. For the future, as illustrated here, the Dublin City Council intends to apply the ICiNG system to address waste management aspects throughout the city of Dublin.

Technology acceptance study in Ireland

In order to determine the level of acceptance of the ICiNG application in Dublin, the Digital Media Centre at Dublin Institute of Technology (DIT) is conducting a high level user acceptance trial among the DIT students and local community. The study will be conducted together with the Moby TV project acceptance trial, by the author of this position paper.

The acceptance user trial aims to inspect aspects beyond system usability, which has been inspected since the early phases of the project, at all the cities

participating on the consortium. The acceptance trial inspects the context of usage of the system in Dublin, as well as the frequency of usage by students at the Dublin Institute of Technology and local community. The results will serve as a feedback for not only Dublin services, but also for the other ICiNG cities, to improve technology marketing techniques for the system, as well as its adoption throughout Europe.

Conclusion

The ICiNG consortium accesses cities and citizen needs through a multi-modal and multi-access platform. Making use of pioneer mobile technologies research and location-based services, it seeks to make the Public Administration more sensitive to the local communities, which interact and avail of services created by their local government, directly from their mobile phones.

Doing so, ICiNG allows local governments to address citizen's requests concerning the cities, not only for small and simple city structures, but also for complex and highly populated ones. **This is the first step to empower citizens in their right to participate in their government.**

About the author

Janaina is a PhD researcher at Digital Media Centre, at Dublin Institute of Technology, in Ireland. She is originally a Computing Engineer, with specialization in Industrial Systems, graduated at the University Of Campinas, UNICAMP, in Brazil. She continued her studies at the Kungliga Tekniska Högskolan, the Royal Institute of Technology, KTH, together with the University of Stockholm, in Sweden, obtaining the title of MSc Engineering and Management of Information Systems. She now participates on two high-tech projects in mobile development in Dublin, while undertaking her PhD degree in Dublin.
