

# A holistic approach to Smart Cities: articulating technology and citizen engagement

Introduction

David Ménascé

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**Electronic version**

URL: <http://journals.openedition.org/factsreports/4296>

ISSN: 1867-8521

**Publisher**

Institut Veolia

**Printed version**

Date of publication: 1 June 2017

Number of pages: 22-23

ISSN: 1867-139X

**Electronic reference**

David Ménascé, « A holistic approach to Smart Cities: articulating technology and citizen engagement », *Field Actions Science Reports* [Online], Special Issue 16 | 2017, Online since 01 June 2017, connection on 01 May 2019. URL : <http://journals.openedition.org/factsreports/4296>

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# 2. A HOLISTIC APPROACH TO SMART CITIES: ARTICULATING TECHNOLOGY AND CITIZEN ENGAGEMENT



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*Part 2 sets out to identify the mechanisms for urban transformation that ICT (Information and Communication Technologies) offer in terms of optimizing mechanisms for achieving balance between bottom-up and top-down, physical and digital, technological innovation and social change.*

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Two articles describe experiences in southern hemisphere cities, illustrating how self-organization creates smart cities.

City dwellers in poor and emerging economies now enjoy better access to ICT: according to the International Telecommunication Union, penetration rates for mobile phones exceed 85% and 40% for internet access.

Unlike in OECD countries, where smart cities involve creating new uses and often involve top-down integration of ICT into planning policies, the advantage cities in emerging economies have is that informal practices and habits are already in place, and are usually very well established. This makes them ideal testbeds for new smart cities, since ICT do not need to be used to create new ways of doing things but to leverage improvements to existing ways of doing things, helping residents to upgrade systems they themselves have created.

This new trend in favor of what can be termed informal 2.0 is seen in the emergence of applications dealing with transportation or public safety, as shown in the first two articles about Kenya, looking at Digital Matatus and Ushaidi. The Digital Matatus project, for example, has mapped Nairobi's network of informal minibuses, matatus, for the first time. Mapping the matatu network revealed that behind the superficially disorganized informal minibus sector lies a well-designed and organized network in terms of the spatial division of routes, timetables, stops, and so on. Informal is not a synonym for irrational, but is closer to what we might term invisible rationality—a form of rationality ICT can make visible.

But a snapshot alone is not enough to improve the system. This is where the role of public authorities and innovative actors becomes essential: Nairobi City Council's future-forward open data policy has helped to accelerate the process and kick-start the creation of applications that can really make an impact. This convergence of traditional, in the form of solutions from the informal sector, and digital has led to the emergence of a new form of hybridized innovation, where ICT empowers residents to improve informal practices they themselves helped to shape.

In the same way, but using methods common to cities in OECD countries, analysis of the Nice and Lisbon cases shows how a carefully nurtured mix of political will, technological innovation and citizen involvement from the earliest stages is capable of genuinely transforming a city and creating cities that are truly intelligent.

This multi-layering of digital and physical approaches and interactions between top-down and bottom-up are prominent features of the final example studied, The Food Assembly (La Ruche Qui Dit Oui! in French). This initiative is based on neighborhood units and local organizers and aims to rethink short food supply chains in major cities.

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**David MÉNASCÉ**  
Coordinator

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