smart cities

MDPI

Editorial

Introducing *Smart Cities*: A Transdisciplinary Journal on the Science and Technology of Smart Cities

Pierluigi Siano [1,*], Isam Shahrour [2] and Silvano Vergura [3]

[1] Department of Industrial Engineering, University of Salerno, Via Giovanni Paolo II, 132, 84084 Fisciano SA, Italy
[2] Civil and geo-Environmental Laboratory, University of Lille, 59650 Villeneuve d'Ascq, France; isam.shahrour@univ-lille1.fr
[3] Department of Electrical and information Engineering, Polytechnic University of Bari, 70126 Bari, Italy; silvano.vergura@poliba.it
* Correspondence: psiano@unisa.it; Tel.: +39-089-964-294

Received: 14 July 2018; Accepted: 14 July 2018; Published: 17 July 2018

1. Introducing a New Transdisciplinary Journal

The concept of a smart city includes a high degree of information technology integration, but goes beyond the use of ICT for better resource use and less emissions. It means smarter urban transport networks, upgraded water supply and waste disposal facilities, and more efficient ways to light and heat buildings. It also encompasses a more interactive and responsive city administration and safer public spaces, and meets the needs of an ageing population. To speed up the deployment of these solutions, in July 2012 the European Commission has initiated the European Innovation Partnership (EIP) on Smart Cities and Communities that will bring together European cities, industry leaders, and representatives of civil society to smarten up Europe's urban areas. 370 commitments (from more than 3000 partners) have been received to fund and develop smart solutions in the areas of energy, ICT, and transport for making our cities more attractive and creating business opportunities. The reliance of society on the use of ICT devices and systems is increasing, with over 8% of all electricity consumption and 4% of all CO_2 emissions (also, one must consider that TV and media that are now translated onto ICT devices and systems). Energy consumption and carbon dioxide emissions from expanding ICT use are unsustainable and will impact heavily on future climate change. Communications consumes significantly more energy per bit of information than any logical calculation inside an ICT system.

On the other hand, the so-called Internet of Things (IoT) scenario foresees that an ever-increasing number of smart, mobile, sensing, and communicating devices will be dispersed into ordinary appliances and tools of common use. To meet the performances of foreseeable energy harvester generators, the amount of power required by such devices needs to be significantly reduced. Energy consumption could be minimized if smart communications minimizing the amount of data being transported are used over other techniques. The development and fast deployment of new communications systems with low energy consumption per bit are essential to circumvent the enormous increase in data volume from cloud, and especially high definition video.

Whilst the direct contribution to CO_2 emission from ICT devices might be small, ICT devices have the potential to contribute significantly to the reduction of CO_2 in transportation, heating and cooling, building control, and manufacturing in a new vision of the city.

For autonomous systems, significant improvements in energy harvesting and energy storage at a small scale would also provide disruptive solutions to the use of smart sensors for a host of applications in personalized healthcare, environmental monitoring, industrial monitoring, security, and transportation. Such applications have the potential for significant reductions in energy

consumption and CO_2 emissions. This target can be reached also by the use of sustainable energy, and, in particular, renewable energy systems must be increased to power the majority of ICT systems.

The smart city solution concerns also the improvement of services related to education, health, culture, and sport through the use of the digital technology for the creation of on-line services, communication platforms, and the sharing of data and information. It offers a significant opportunity for economic development through the design, production, and installation of smart devices and objects; the construction of platforms for smart city management, and the proposition of new services.

2. Smart Cities: Aims

Smart Cities is an international, open-access journal that provides an advanced forum for the dissemination of information on the science and technology of smart cities. It publishes reviews, regular research papers (articles), communications, perspectives, syntheses, monographs case reports, data descriptors, technical notes, and collections of the best conference papers (adequately extended and improved) in all areas of research concerning smart cities. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers so that the full experimental results can be reproduced. Manuscripts regarding research proposals and research ideas are particularly welcome.

A further unique feature of this journal is that electronic files and software providing full details of the calculation and experimental procedures, if unable to be published in a normal way, can be deposited as supplementary material.

3. Smart Cities: Scope

The Scope of Smart Cities includes the following:

- Electrical engineering for smart cities: smart grids, smart buildings, smart homes, smart lighting, renewable energies, power electronic for smart cities, energy market, and blockchain.
- Computer engineering and information technology engineering for smart cities and smart enterprises: ICT infrastructure and information management in smart cities; IoT architectures, protocols, and algorithms; IoT device technologies, IoT network technologies; cloud computing; autonomic computing; data management; intelligent data processing and big data management for smart cities; real-time and semantic web services; context-aware systems for smart cities; and Industry 4.0.
- Cyber-physical systems for smart cities.
- Virtual reality for smart cities.
- Smart hospitals and health informatics for smart cities: smart health, e-health, digital health, telehealth, and telemedicine.
- Transport and mobility: intelligent transportation systems and vehicular networks, smart mobility, electric mobility, smart parking, traffic congestion, city logistics, and people mobility.
- Measurements engineering for smart cities: networks and communications, advances in smart grid sensing, sensor interface and synchronization in smart grids, multi-sensor data fusion models for smart grids and smart cities, traceability and calibration of distributed sensing grids, distributed and networked sensors for smart cities, wireless sensor networks, embedded sensing and actuating, radio frequency identification (RFID), mobile internet, and ubiquitous sensing.
- Civil engineering for smart cities: smart city architecture and infrastructure, environmental engineering for smart cities, smart water management, sustainable districts and urban development, waste management for smart cities, smart agriculture, and green houses.
- Weather analysis, forecasting, reporting, and flood management for smart cities.
- Mechanical sciences and automobile engineering for smart cities.
- Applied science and humanities for smart cities.

- Retail for smart cities: supply chain control, NFC Payment, intelligent shopping applications, smart product management, etc.
- Security, privacy, and emergencies in smart cities, cryptography, and identity management.
- Smart Living: pollution control, public safety, welfare and social innovation, culture, and public spaces.
- Smart urban governance and e-government for smart cities.
- Business and social issues for smart cities: smart economy and business model innovation in smart cities, marketing strategies for firms offering new services in smart cities, and green and blue economy.
- Experimentation and deployments: real solutions, system design, modelling and evaluation for smart cities, pilot deployments, and performance evaluation.
- Trends and challenges in smart cities.
- BigData; data storage, data analysis, governance, and visualization.
- Smart sensors, design, use, and data transmission.
- Social sciences such as smart governance, economic model, innovation social acceptability, law, and privacy.
- E-governance, on-line smart services.
- Smart maintenance.

4. Conclusions

In closing, on behalf of *Smart Cities*' Editorial Board and Associate Editors, we welcome you to your new forum for sharing Smart Cities science perspectives, science, terminology, and case studies.

Funding: This research received no external funding

Conflicts of Interest: The authors declare no conflict of interest.