

Book review

Smart rules for smart cities, managing efficient cities in euro-Mediterranean countries

*E. Riva Sanseverino, R. Riva Sanseverino, V. Vaccaro and G. Zizzo, Springer International Publishing, Switzerland 2014
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What rules do a city need to become a smart city? Written by several Italian experts in the field of renewable energy and the European framework for those purposes, this book tries to answer this question. In a journey of eight chapters, the book explores the experience of European cities, and their efforts to becoming the so called smart cities. In each chapter, the reader will be able to discover the concept of what a smart city is and its implications. This publication provides a general overview of the state of the art. The reader will realize that despite the regulations, there are many pending questions in the implementation of actions for energy efficiency. Key insights of the legal and technological current frameworks for this matter are provided, along with examples of how Euro-Mediterranean cities have started to live a process of redefining themselves.

As this redefinition covers a wide range of activities, from understanding concepts to following up measurements, it presents us the actual experiences in cities with a great amount of historical heritage. Those were founded using the traditional model of a western European city, and they are now highly energy-consuming urban areas. The book contains, to some extent, description of mechanisms that cities are integrating to improve the quality of living by reducing

energy consumption. This process has come along as a result of the efforts being made to implement measures and reach energy efficiency goals that were imposed by the European Union (EU) via the directive 2010/31/EU. Environmental and energy challenges are seen as one of the most important and high-priority issues to face in Europe and in the world, during the next coming years.

According to the book, the paradigm of the evolution of modern cities and the human necessity of energy have more importance than ever. Modern cities require new and different codes, where technologies and citizens are the key players. To support the latter, the authors give us cities of Italy, such as Palermo and Sicily among others, where modern developments must be done on top of old buildings and legacy structures that are no longer suitable for the modern way of living. Italy is exposed as an example of a country with cities that need to incorporate a better urban planning for the future. The contemporary city is a strategic resource for sustainable development, but it is also a place with a high concentration of serious problems and events that contribute to environmental degradation.

Recognizing that, eventually, energy will be a world issue, there are two main considerations. Two chapters devoted to how to manage energy and how to finance the new sources of it. Investing and making profit of energy, to reinvest again on it, is a cycle that is believed to be virtuous. But one of the issues that one will

find reading this publication is, the difficulty to turn energy efficiency actions into actual cash flows. Those actions entail a saving at the end of the day. The issue is how they can be financed and by whom. The approaches to solve it may vary from priorities in each city. According to the European framework and its regulations, there are six areas to evaluate and to invest in the smartness of a city. These six are economy, people, governance, mobility, environment and living. All of them are closely related and highly dependent on one another.

Italy has chosen to tackle them using an open approach. Each city uses a tool to evaluate all the areas and make investments according to its own priority. An interesting conclusion comes up; in Italy, urban mobility is the most financially supported area. In Italy, there are two means to get finance, and it depends on the figure, private or public. For public entities, Italy has *Conto Termico* which pays incentives for public investment in the building industry[1]. On the other hand, private entities can take advantage of tax deduction by using *Titoli Di Efficienza Energetica*[2]. The title certifies that a certain reduction of energy consumption has been attained in the housing industry. However, the book does not describe in detail how it is done. Despite the efforts, Italy acknowledges the lack of knowledge to implement energy efficient measures, and this could explain why the national plan is quite open, but within the boundaries of the EU regulation.

Two examples a bit more detailed are, the Sicilian region and a prototype house in Palermo, both in Italy. Sicily has an ongoing plan that is promoting the adoption of Local Plan Actions that should identify and adequate a set of concrete actions for energy efficiency, mainly, again in the building sector. The Sicilian model and how it compliants with the national laws is described intensely.

Thus, the reader finds that the Energy Annex to the Municipal Building Codes in Sicily is reviewed with a technical eye. The aim of the authors is to make sure there is no free interpretation and it compliants with the national regulations.

For the case study carried out in Palermo, Italy, the regulatory and scientific frameworks are followed. The economic evaluation about the impact of active and passive measures is carried out. The economic impact of some measures for energy efficiency using automation of technical infrastructures was studied. Two tools were used in the technical economy study: building automation control (BAC) and technical building management (TBM). At the end, the reader gets a very deep analysis of the energy consumption in that experimental facility. The reader will notice that all the measures are focused on the building code which is a focal point of the building process, where political, technical and procedural aspects collide.

Other models of energy efficiency are offered to us, and they can be found in northern countries within the EU. Sweden uses three key features to evaluate the feasibility and the smartness of a city: smart governance, smart mobility and smart energy. The first one tries to turn the governmental functions of an office-centric mode to a citizen-centric working mode. The second one supports the availability of public transportation and also provides support of old transportation modes as bicycles. The third one is focused on all essential functions of the city supplied by energy. Sweden is aiming at Stockholm to be a fossil-free city by 2050[3].

This publication introduces the idea that innovative approaches should rely on the fact that the first objective to be reached is the management of energy resources. Such management

must be, in most cases, reached by technical features based on information and communication technology (ICT). The best example is the Amsterdam City Model. This project cooperates with IBM, Cisco, Accenture and Philips. The focus of sustainable solutions lies in three main areas: the entrepreneurs, the public space and the logistics. Amsterdam is the world leader of promoting electric mobility[4].

The reader can see that cities are being transformed from service providers to platform providers where data are one of the engines. From the juridical point of view, this paper unveils, “there are no laws governing smart cities as a single phenomenon in an organic and comprehensive way, there are no Smart City statuses, no single definition of smart city” (Riva Sanseverino *et al.*, 2014, p. 30). Data protection is an essential compliance issue, and the book is true when it states, “Advocating data protection is due to exercise 2 things: protection of individual and by doing that increasing the chances of establish a successful smart city” (Riva Sanseverino *et al.* 2014, p. 33).

This publication is very helpful in terms of getting an understanding of the context of the problem. The book also draws upon the fact that the EU is one of the main actors in the path to sustainable development. The clearest signal is that European cities are implementing bottom-up measures for the building sector. And if one is wondering what bottom-up is, the book uses it along with the concept of top-down as well as other building-related vocabulary as a backbone. Consequently, linguistic jargon is explained with cleanliness and by making use of a lot of references dating back to 2006 and all the subsequent years until now. Almost in each chapter, there are references from papers and research done in the EU and the governmental bodies within the EU that are working on it. The book is also rich in giving

us an overview of the technical documents, legal documents and Web pages.

Having a great deal of information circumscribed to the European context, the book takes and gives the best of it to the so called European Old World. Shall this book be useless outside that context? An asset of the book could be that other cities all over the world can learn from this experience. This is an opportunity to explore what Europe is looking at when it comes to renewable energy. Approximately 3.3 billion people that form 50 per cent of the world population live in the cities. By 2050, 70 per cent of the people will live in cities. India, China and Africa have experienced the highest rates of urban growth. With those numbers, sharing experiences is an exercise of linking ecosystems and networking cities, which according to this title is an important key for the infrastructure in the global economy.

In the same order of ideas, a lesson learnt from the book, useful for other cities, is that a smart city has a proactive society; one where the citizens are highly engaged with the decision processes. A passive society is not suitable for implementing measures. Cities should consider that the role of the ICT in becoming a smart city is recognized, but they should also acknowledge what the limitations are. To some extent, a smart city requires investment in ICT, and, at the same time, it does not mean that ICT is the only investment. The best investment and one of the first is the humankind, its education and its participation. As many other new fields of knowledge, cross competencies are required. For this one, knowledge in the fields of urban administration, planning, construction and energy management are needed for creating a smart city. A task force in any city, considering this topic, should include people from all these spheres of knowledge.

The book also includes more sections such as a smart cities atlas, explanation of how to create local rules for sustainable building construction, guidance on economic evaluation of the impact of building and passive measures for energy efficiency. The book has a multidisciplinary perspective. The first half is about general concepts that are very easy to read and understand. The second half of the book is even more complex than the first one. Those interested in an eventual transition to smart cities will find the complexity that other cities have faced in doing so. Many aspects including legal, technical, regional, national, strategic and human development should be taken into consideration.

There are two chapters of the book where technical and legal words would become hard to follow for those newcomers that do not have enough grasp and experience in the topic. Terms used for the legal framework that wraps it in Europe, requires a good amount of knowledge to follow the reading. The book has a case study of the economic impact of measures for energy efficiency in Sicily, Italy. It explores the automation infrastructures as well as implementing passive measures concerning building materials and techniques. For that, and all the previous characteristics described, the book should be taken as an example very well limited. The boundaries are clear by reading the title of the book and one cannot expect more than that. However, the very last part of the book is an open invitation to all of us to take part as actors for changing our interactions with the city we live in. According to the authors, nowadays, we have a true smart ecosystem for improving social innovation, not only by increasing the infrastructural smartness, but also by rethinking the

city metabolism through efficient urban cycles.

Despite the fact that the book has concepts, examples, frameworks, protocols and other aspects one should consider when thinking about a smart city, there is a very important emphasis. The concept goes beyond the technology and infrastructure. It is about human development and equality. It is about culture, and culture is a localized feature of any society. Living in a smart city involves humans as actors, as doers and as the main goal. A smart city is a newborn expression; the meaning is still fuzzy. It is taking the precise meaning after the results of implementing it in different regions around the world.

Notes

1. The full text of the Italian ordinance can be found at (Italian only) www.gse.it/it/Conto%20Termico/Pages/default.aspx
2. This is also known as “Certificati Bianchi”, the full regulation can be found at (Italian only) www.gse.it/it/CertificatiBianchi/Pages/default.aspx
3. Sweden is on its way to reach by 2050, more information about Stockholm can be found at <http://international.stockholm.se/governance/vision-2030/>
4. More information can be found at www.amsterdamsmartcity.com

Reference

Riva Sanseverino, E., Riva Sanseverino, R., Vaccaro, R. and Zizzo, G. (2014), *Smart rules for smart cities, Managing Efficient Cities in Euro-Mediterranean Countries*, Springer International Publishing.

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**Alain Oudot de Dainville, faut-il
avoir peur de 2030? (Need we
fear the year 2030?)**

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The horizon of the year 2030 seems to have intrigued an impressive variety of futurists and scenario developers. This book is among them. Retired Admiral Alain Oudot de Dainville left military service in 2008, after 42 years, as France's Chief of Naval Operations. The author is known for questioning the validity of strategies selected in historic military undertaking – even some in which he was involved – and their effects on future inter-nation relations in a fast-globalizing world. He emphasizes that “[t]he century that we recently closed has left more martyrs and victims of the ideologies of war than all the rest of humanity's history” (p. 57).

The author foresees further growing complexity in such relations, exacerbated by terrorism and piracy, cyberwar, epic natural disasters, Chernobyls, epidemics, illegal immigration and the unanticipated sequels of any of these threats to security or defense. “Yet there is a great tendency today, especially in the pacifist European Union, to develop strategy while disregarding [. . .] one of its weightiest elements, that of menace” (p. 137). Indeed, one of the salient facets of asymmetric warfare, itself clearly defined only about 20 years ago, is that former codes and constraints (chivalry, the Hague and Geneva conventions) no longer suffice. Military behavior in war zones is now judged a posteriori: one recalls the Dutch peacekeepers who in 1995 witnessed the Serbian massacre of thousands of Bosniaks

near Srebrenica, or the use of armed drones by US forces to assassinate selected personalities in Pakistan, Somalia and Yemen.

Formulating a strategy will depend on the nature and extent of a developing crisis. Its context may be variable, necessitating adjustments of the political choices to be made. “This will implicate actors from all the fields of activity concerned – diplomats, economists and financiers, the military [. . .] All will not act within the same time frame; economists will offer shorter-term proposals while agents from the world of culture will adhere to a longer term in order to propagate [. . .] influence. Military strategy is thus foreseen as an effort coordinated between political leaders, those who determine [a strategy's] aims, and the military, those knowing how to exploit the means”.

“But beware of the pitfalls of our time”, continues our naval author, “whereby knowledge can cede to the benefit of appearance” (p. 140). Today's French President François Hollande, for example, has set as objectives both the security of the nation “as well as being at any moment able to respond to appeals from allies to participate in peaceful actions [. . .]” (p.141).

As strategy at the global levels evolves, Admiral Oudot does not see the rising rivalry between China and the USA leading to an armed conflict. On the contrary, to him the cold war is a phenomenon of the past, turbid century. China now risks becoming too expensive as the world's workshop and, thus, losing some of its overseas markets – handed over to fast-developing India – despite an overall Chinese economy which may soon surpass that of the USA.

Where do foreseeable shifts in the impacts of spreading jihadism and unceasing terrorism leave Europe? The European Union today has a skeletal diplomatic and international security corps. Known as the European External Action Service (EEAS), this body of functionaries should become eventually 6,000 strong, serving a total population of a half-billion citizens, as authorized by the Treaty of Lisbon's Article 27 (2009). Yet, is it not a military establishment?

Author Oudot continues, "We are thus awaiting a revolution in European military affairs; this can come only from the leadership, rather than from the base [. . .] This will probably require a serious, frightening threat [. . .] Will Europe's Sleeping Beauty then awaken from her lethargy? [. . .] The menace is real: financial, economic, industrial

and social crises combined with tension between the North and the South [i.e. Europe and the developing world] will lead to confrontation in different forms [. . .] roundabout the year 2030" (p. 192).

Admiral Oudot de Dainville, as a military intellectual, has assembled a thoughtful and possibly prescient essay. He has reported reasons for fearing, indeed, the advent of the year 2030. Your reviewer finds it perhaps noteworthy and not merely incidental to add that the French defense budget, already overcommitted because of French support actions in the sub-Saharan nations of Mali and the Central African Republic, was again reduced in early 2014.

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