

Cities: The Juncker Commission should not miss this key to growth, jobs and the environment

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In Jean-Claude Juncker's mission letters to his new team of Commissioners and Vice-Presidents-designate, one issue was missing: that of cities, or more particularly, 'smart' cities. Smart cities or 'cities of the future' is more than a hyped buzzword about new smart technologies; it stands for the concept of increasing productivity and resource efficiency by the integration of hitherto separate infrastructures through ICT and 'Big Data'. Should this concept come into its own, it will do so first and primarily in cities. Europe's urban areas generate some 85% of Europe's GDP, are responsible for 80% of the energy consumed and generate – directly or indirectly – 75% of Europe's greenhouse gases. Cities are increasingly seen as being central to any solution to Europe's economic, social, energy or environmental challenges.

It is no coincidence that cities are presented as a global priority in the newly published "Better Growth, Better Climate" report released by the Global Commission on the Economy and Climate.¹ The economic returns of boosting urban resource productivity (i.e. increasing efficiency) are estimated to be not only considerable but the *main drivers* of growth.

¹ (<http://newclimateeconomy.report/cities/#section-81-content-140>).

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This stands in contrast to President Juncker's Political Guidelines, which present a rather static view of the strategy of structural change, industry and economic drivers. It puts smart cities down as a secondary issue, thereby foregoing the potential for economic growth as well as the reduction of GHG gas emissions. This view will also miss the opportunity to put the "consumer at the centre of the energy system", as the Strategic Energy Technology Plan (SET-Plan) Roadmap² suggests. Most analysts would agree that consumers will play a crucial role in the new energy system.

The Commission therefore risks failing to capture the rapid technological changes and emerging new businesses that inevitably blur the borders between 'sectors'. Is *Google Nest* an energy or an ICT company? Will the successful business model for electrical cars continue to create value for car manufacturers or other parts of the value chain?

While the Commission has never fully embraced the concept of 'smart cities', the last Barroso Commission did at least 'allow' it a place in the research programmes and the SET-Plan. The concept was also anchored as part of "smart and inclusive growth" in the Europe 2020 Strategy - the mission statement of the previous Commission. On a more operational level, smart cities, under pressure from the European Parliament, have been added to the SET-Plan. As a result, the European Commission has created a European Industrial Initiative, complete with a High-Level Group: the Stakeholder Platform, which has formulated a Strategic Implementation Plan. Smart cities are also one of the priorities of Horizon 2020 with a budget of €92m for 2014, in addition to funding of €98m for energy efficiency and €375m for mobility and transport; the last two covering many aspects of smart cities. However, this R&D-oriented approach is not sufficient for smart cities to emerge because it does not acknowledge the real importance of cities or tackle some of the biggest barriers to their development.

Why 'smart' matters

One might think that the absence of smart cities on the list of priorities is tactical or operational. Indeed, 'smart cities' means different things to different people and the concept is difficult to translate into policy guidelines. A Commission that wants to keep things simple has a point in doing away much-hyped concepts such as these. Nevertheless, there are reasons to worry.

- The first reason is Juncker's focus on energy prices, rather than costs. As research by the Commission itself and CEPS³ shows, Europe has always had high energy prices. But Europe's comparatively high energy efficiency has meant that its energy costs have been low, or at least bearable, making Europe's industry very competitive.

² (http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm).

³ COM(2014) 21 final, (http://ec.europa.eu/energy/doc/2030/20140122_swd_prices.pdf); CEPS (2014), "The Composition and Drivers of Energy Prices and Costs in Energy-Intensive Industries: The Case of Ceramics, Glass and Chemicals" (<http://www.ceps.eu/book/composition-and-drivers-energy-prices-and-costs-energy-intensive-industries-case-ceramics-glass>).

Europe is getting closer to the physical limits of energy efficiency, making additional investment to reach the 30% energy-efficiency target ever more costly. However, energy efficiency in the built environment and smart grids still have great potential, essentially through smart applications enabled by integrated infrastructures, i.e. the real meaning of smart cities. According to McKinsey,⁴ investment in energy-efficient buildings and lighting, energy-efficient street lighting, efficient waste management, rooftop solar power, and combined heat and power have a rate of return of between 18% and 30%; the potential to reduce energy costs by 24-36% and emissions by 28-49%. There is considerable space for a flourishing industry and large cost reductions through smart energy systems. There is also ample opportunity to shift costs from operational expenses such as fuels to productive investment. Rolling out new broadband, although welcome, will not be enough; there is more to new markets than simply investing in ICT infrastructure.⁵

- The second reason for concern is Juncker's rather narrow view of what is 'strategic'. Industry and services are changing fast and we are increasingly seeing how existing businesses in the public and financial sectors are unable to handle change. New business models and structures are emerging and traditional industries are reinventing themselves, often in the context of 'smart' technologies. Much of this is taking place through the integration of formerly isolated infrastructures and the use of rapidly increasing data availability (Big Data). Many new businesses are less bound by geographical borders or physical presence. Policy needs to adapt and keep pace with change much faster than before.

The seeds for businesses such as the new *Google* or *Apple* probably already lie in Europe but require space and time and the ability of the EU to create an enabling environment for them to flourish. In addition to the development of the right skill base and regulatory framework, integrated solutions are needed, such as in energy, buildings, transport and ICT. Traditionally isolated infrastructures have to evolve into highly integrated systems on various scales: residential and commercial; district, city and community; and regional and national. Making successes of already emerging businesses in the EU, such as *Smart Home*, *Green Wave*, *Energy@Home*, *Bluecar*, *Uber*, among others, will depend on how well this integration works.

Is Europe missing another opportunity?

In the past, the European Commission focused its efforts on technological innovation and some promotion for energy efficiency financed by, for example, the structural funds. This is a welcome start and should be continued. Uncertainties surrounding the scaling of newer technologies are indeed one of the major barriers to smart city technology deployment.

⁴ McKinsey & Company (forthcoming) "Unlocking the Value of Green Districts", New Climate Economy, call for evidence submission.

⁵ The forthcoming report by the International Electrotechnical Commission (IEC) on "Orchestrating Smart Cities" shows the importance of cities in determining the economic future of every continent.

Much of the work required on smart cities is, however, not about direct public intervention and subsidies but about removing a number of barriers, i.e. enabling the development of new business models and governance practices. Presently, many cities' opportunities cannot be realised because of a lack of administrative capacity, outdated building regulations and ill-suited financing and procurement models. The European Commission can play a pivotal role by facilitating this process at European level, through technical assistance, commonly agreed targets and regulatory reforms.

Time to think about coordination and a regulatory framework

Smart cities cannot be implemented or mandated top down but need coordination and an enabling regulatory framework. Coordination is an obvious task for the European Commission. More importantly, the European Commission – possibly at Vice-President level – should facilitate the development and acceleration of investment in integrating smart technologies from ICT, transport, energy, among others. The European Commission, notably the three Commissioners on Climate Action and Energy, Transport and Space, Digital Economy and Society have a major role to play to work together and remove numerous barriers to develop a suitable regulatory framework.

Coordination tasks:

The European Commission should first focus on the following:

- Continue to support pilot projects through grants and innovative finance to focus on the demand side and nurture business models;
- Create one or more platform(s) to develop guidelines for cities to better plan and expand inter-city cooperation on programming and governance.

The regulatory framework

The role of the European Commission will be more important with regard to the regulatory framework. We suggest the following priorities:

Energy price signal

- Create energy price signals to encourage and assist cities to invest in smart grids and energy efficiency. This must include a price signal for demand response (i.e. consumers reacting to price signals) and CO₂.

Public procurement

- Develop methodologies for lifecycle costing (including wider social benefits) in public procurement processes in the context of cost-benefit analysis;
- At the same time facilitate training programmes to increase the skills of administrations to cope with the new public procurement processes;
- Promote and expand innovative and pre-commercial procurement, i.e. promoting the procurement of innovative solutions by the public sector.

Finance

- Expand the use of financial instruments that are adapted to the integrated technology markets. A particular focus should be on de-risking investments;
- Create a new instrument of smart city (municipal) bonds guaranteed by the EU budget to finance large integrated projects (along the same lines as the project bonds initiative) to leverage the funding flows required;
- Put smart cities and integrated territorial planning at the forefront of the 2016 review process of the EU budget interventions.

Operability:

- The EU, led by the European Commission, should help develop the necessary rules (through directives or regulations) for open access to data. 'Open access' means publicly accessible, non-proprietary and transparent data in compliance with nationally applied rules and regulations. This is a task for the Commissioner for Digital Economy and Society.
- Interoperability for integrated infrastructure will require the development of standards to promote quality and interoperability. A key element is the continuation of developing standards, such as the ongoing work in smart grids (Mandate 490) to avoid any overlapping, duplication and potentially conflicting standards, and to allow interoperability between devices applied in smart grids and smart cities.

We consider that the Commissioner most appropriate to coordinate the work on smart cities would be the Vice-President for Jobs, Growth, Investment and Competitiveness, due to the horizontal nature, the business relevance and the potential growth impact in this area. This would first require a general coordination function and second, a lead to ensure that the regulatory framework is enhancing rather than hindering smart cities and their projects.

Smart cities and their projects could become a catalyst for economic and social development. For this to happen, Europe will require a new type of integrated infrastructure, a new urban governance and policy structure, as well as new finance and business models. Successful projects will eventually develop into new business models and companies. While the European Commission cannot mandate or regulate this top down, it has a role to play in nurturing new initiatives to allow Europe the possibility of developing its own *Google* and *Apple*.