

Smart Cities in Italy:
an opportunity in the spirit
of the Renaissance for a new
quality of life
Research Summary



Power and productivity
for a better world™



The European House
Ambrosetti

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10-point summary

1. **“Smart Cities” are an effective response to today’s needs which have become crucial thanks to the rapid, pressing trends seen throughout the world.**

We are experiencing an era of tremendous change. Major discontinuities are impacting the geopolitical and economic framework, as well as the daily context in which we live and work. We are headed towards a **“new world”** which will have **new needs**:

- Development of more integrated and inclusive urban models.
- Strategic management of natural resources.
- New models of mobility.
- Better quality of life.
- Greater valorization of senior citizens.

As always, urban systems – whose **sustainability** is faced by challenges and threats – will be at the center of change. Simply repeating in the future what was done in the past will not be enough. The **city must be re-thought**, starting from its basic premises and traditional organizational structures. Smart cities offer a very promising answer to this need and represent an important step in the **social and cultural change** required. More intelligent and efficient urban systems are not an option – they are an **absolute necessity**.

2. **Innovation is a crucial factor for responding to new needs and quickly attaining a number of objectives, but it must be approached from an implementational standpoint.**

The development and success of cities have always been **inextricably tied** to innovation. In fact, urban technologies, systems and infrastructure must be continuously adapted to needs as they arise. This connection is **destined to grow** in the future and it will be increasingly necessary to not only connect physical systems and digital technologies, but also interconnect the technologies themselves. The result of this linking up could be the birth of new uses for instruments that are already available. However, the challenge will be guaranteeing that technologies are **truly** able to provide an effective response to the problems of citizens and business: there must be a **clear plan** when adopting technologies. Smart cities cannot be only a technological challenge. Above all, they must be a **social challenge**.

3. **In our view, the “smart city” is an urban model that minimizes efforts around “low level” needs and effectively satisfies “higher level” needs to guarantee an elevated quality of life while optimizing resources and areas for sustainability.**

A transition is currently underway from satisfying primary, material needs

(physiological, safety, emotional, esteem) typical of consumer societies, to satisfying “higher” needs typical of global, post-consumer societies: awareness (individual and of the world), sustainability of choices (satisfying individual needs while avoiding compromising the ability of future generations to satisfy theirs), equilibrium, self-actualization and personal growth.

These types of needs can only be satisfied by more advanced smart cities. A smart city is, for us, an urban model that can guarantee a high quality of life and personal and social growth of individuals and business, while optimizing resources and areas for sustainability.

4. **The Italian smart city of tomorrow is a challenge to be faced today, an opportunity to “re-invent” Italy by retrieving a strong concept for the future, yet without forgetting the past.**

Italy is not isolated from the changes in progress. Smart cities – direct descendents of the Renaissance **ideal city** – are an opportunity to place the valorization of urban areas once again **at the center of the national agenda**. Even more so in this period when opportunities are scarce. From this standpoint, the marked fragmentation of smart city initiatives undertaken in Italy would not seem to work. It risks being “**intelligent acupuncture**” incapable of generating complex, broad-based changes – changes which, moreover, do not need to be futuristic. The competitive advantages emanating from an artistic and cultural heritage the entire world envies Italy, must evolve from being a valid tendency and ability to cooperate (when we want to), to becoming a source of profit. In fact, they will provide the opportunity to formulate a **distinctive** and **original** Italian concept of smart cities.

5. **Winning these challenges requires a “smarter” country, but multiple smart cities do not necessarily make the country smart.**

Individual sector-related policies, individual and isolated projects which tend to be self-organized and individual technologies applied as part of a more general, highly-diversified array of generically-labeled “smart” initiatives do not make an area truly smart. Technologies, projects and policies must be part of a commonly-held idea to avoid the clear risk of weakening the potential of the concept and undermining efforts towards it. For Italy to benefit overall, **critical mass** and **cohesion** are essential.

6. **The challenge calls on the central government to bring together the various forces involved, provide a focus for disparate initiatives and “capitalize on” local entities on a range of levels.**

By definition, a smart city **cannot be a standardized** product. It is the result

of a delicate equilibrium of factors which, most of the time, are unique and unrepeatable. However, **systemic guidelines** and the **means** to implement them (uniform rules, methodology and, above all, standards, to create technological compatibility promoting smartness among local areas) are needed. Widespread ferment should be coalesced into a **country-wide project** (in other words, a national perspective and related national strategy with a top-down orientation) which insures:

- Monitoring of focus and coordination to provide long-term support to local smart-related activities.
- Impartial stimulus and guidance.
- Strong leadership.
- Continuity in basic choices.

7. **The success of the project lies in a strategic management approach and, in particular, through monitoring national trends using a unified reference model.**

The systemic approach must be translated into concrete and measurable goals (**priority macro-goals**) for easy verification of results. Key elements in an optimal reference model – of which a sample application is offered – to evaluate smart city performance should be:

- A metric of the **benefit to citizens**, not the city's (physical/non-physical) facilities, a typical factor used by more traditional methods in measuring and comparing cities.
- "Smartness" defined in terms of **completeness** (an award for good results under all aspects, penalization for excellence in individual areas).
- Identification of relevant **key actions** to improve performance in order to develop policy guidelines.

8. **A national informational/awareness campaign is urgently needed to reach a wide base in the short-term because smart-related issues are familiar to few and risk being perceived as "elitist".**

The public **is not involved** in smart-oriented innovation projects: only 1 Italian out of 5 knows the meaning of the term "smart city". Given the **major social implications** of this area which will revolutionize our way of experiencing cities, launching any kind of process without the public being adequately informed, prepared and motivated in terms of the potential and benefits is absolutely necessary (social networks are the best way to do this). Communication must emphasize the concept of **inclusion**. Above all, a "**public engagement**" process focused first and foremost on case studies is critical.

9. **To become “smarter” Italy must invest 3 percentage points of GDP each year, from now until 2030, but a “smarter” country is worth up to 10 points in GDP annually.**

The redesign of urban system functions inherent in the smart city concept **activates** significant **innovative, industrial and financial resources**. From now to 2030, maintaining the current performance level will require (at the very minimum) that Italy make a **22 billion euro** investment in technology each year. But with questionable results, because many smart-related goals are already codified by international institutions, which means conforming with these is inevitable. Transforming Italy into a “smarter” country requires a considerable commitment: **50 billion euros** per year (which drops to **6 billion euros** per year if the initiative is focused on only the **10 main cities**). Nonetheless, the introduction of innovative technologies would trigger a recovery of efficiency, available time, productivity and a reduction in transaction costs that translate into additional growth for the country of **8-10 GDP points** a year (without counting non-quantifiable returns in terms of international competitiveness and image, social cohesion, creativity, innovation, spread of knowledge and livability).

10. **Towards these goals we have formulated 7 proposals that constitute a basic plan of action.**

- Proposal 1: Define a vision for Italy and a strategy for attaining it, while reaffirming the guiding role of the national government.
- Proposal 2: Prepare a national governance plan for smart-related issues which provides guidelines for action and coordinates cross-group interests.
- Proposal 3: Launch the Italian version of the European partnership model for smart city innovation.
- Proposal 4: Create an award for the first 5 cities that attain the maximum level of “smartness”, measured in terms of actual benefits for their citizens.
- Proposal 5: Formally commit to ending or definitively concluding a number of still-incomplete initiatives directly and/or indirectly connected to the smart city concept.
- Proposal 6: Promote (already) available and low-cost smart solutions that can produce significant progress in the short term.
- Proposal 7: Set a challenging goal (for example, increase the “really free” time of Italians by 10% in 5 years) to overcome the “elitist” perception of smart-related issues, influence expectations and create consensus.

Executive summary

Study goals and approach

1. The entire world is currently experiencing an epoch-making social/economic transition and those countries that will emerge from it are those capable of **“intelligently” approaching** fundamental economic, social and governance issues.
As part of this process, smart cities will become – and to an extent already are – the leit motiv for the future.
Intelligence is, in fact, the evolutionary phase that our urban systems have been lacking. But being “smarter” has become **urgent** if we want to respond to the changes currently in progress and meet newly-emerging needs, as well as guide the traditional model of society (today in crisis) towards a **new economic and social reality**.
2. Although local government has been involved in independent initiatives for some time, on a national level Italy has gotten a late start in this area and its small number of large metropolises would seem to be a weakness.
3. But in reality, this presumed weakness is a **point of strength**. In a context like Italy’s, it would be absurd to think of transforming its urban centers – seeped in a heritage going back millennia – into futuristic megalopolises.
It has a cultural and artistic heritage envied by all, together with one of the most solid foundations of social capital anywhere in the world – both aspects which should actually be exploited. In fact, they offer the opportunity to formulate a **unique** and **original** concept of smart cities within the context of a **“smarter” country**, today indispensable to merge the competitiveness of the country as a whole with the well-being of its citizens.
4. A “smarter” country **is not optional**, it is a necessity because the world will change in any case, whatever choices we make (or fail to make). Initiatives can be taken on different levels, but failing to take action means condemning ourselves to gradual decline on the world scene and continuing to delay is also, implicitly, a type of choice.
5. This study was undertaken to contribute to the debate and initiatives involving the opportunities the smart city concept offers Italy, and it includes a strategic perspective that both political leaders and the public will find useful as they work together to make the choices required.

This study is part of a research initiative by The European House-Ambrosetti for the improvement of the Italian economy



Through this study ABB is continuing its analysis of strategic sectors initiated with the 2011/2012 study “Trends in global energy efficiency”

A country that is “smarter” brings together competitiveness of the country as a whole with the well-being of its citizens: today, this is a choice that must be made

What Italy must do to become “smarter”

6. Cities have always been at the center of change, **leading protagonists** in the economic and social development of our planet, but never before the sources of opportunity and challenge they are today.

The world is undergoing profound and rapid change and urban systems face challenges and threats to their sustainability

7. Balancing the inevitable and hoped-for development of local areas and urban systems with a model that is **truly sustainable** is the strategic challenge of tomorrow. It is clear that simply repeating what was done in the past will not be enough. **The city must be re-thought.**

8. Smart cities offer a very promising answer to this need and represent an important step in the **social and cultural change** required.

The smart city approach has its roots in the concept of ideal cities that reached its height during the Italian Renaissance, an age which united beauty, social organization and enlightened government. In fact, smart cities incorporate and amplify the positive aspects of city living and eliminate the negative ones, thanks to "intelligent" planning of key spheres. Urban systems of this type are not an option – they are an **absolute necessity.**

9. In Italy, the seeds of change seem to have been sown, for example, the interest of many local governments in this area, launching of initiatives and debate on a national level. However, the overall impression is one of:

- High **fragmentation** and **dispersion** of initiatives.
- Tendency to **organize initiatives in isolation.**
- Extremely disparate nature of solutions under the generic heading of "smart".

The clear risk is that of weakening the potential of the concept and undermining efforts towards it.

10. In our view, efforts should be placed, first of all, in coalescing the widespread ferment for a **country-wide project** (in other words, a national perspective and related national strategy) that is centrally coordinated and which:

- expresses a **common focus** for a "smarter" country and establishes **shared goals**;
- clarifies the **role** of each institutional level while sanctioning strong leadership;
- guarantees the **continuity** of basic choices, beyond established terms of office (at all levels);
- may be set by each local government – or coalition of local authorities – on the basis of the specific characteristics and interests of the local area.

Central government has a clear policy role: coalesce efforts and provide a focus for the various initiatives

Top-down coordination approach

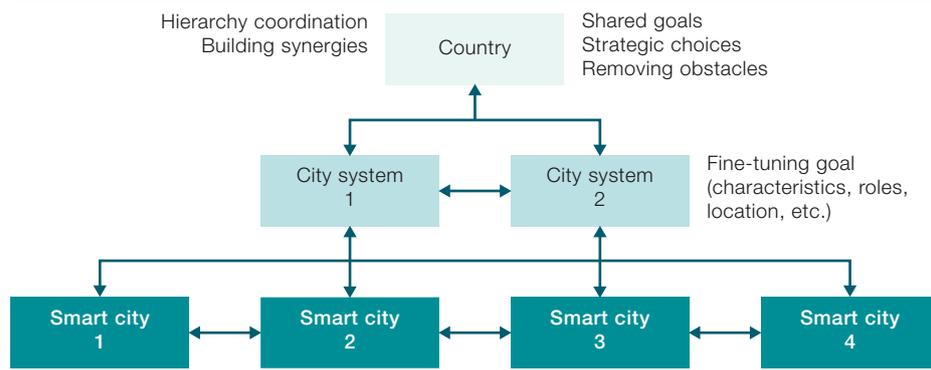


Figure 1

11. Alongside a centralized focus, **the means** to achieve this are also needed: uniform rules, methodology and, above all, standards, to provide for compatibility of smart technologies between **local areas**, preventing duplication of systems, services and bureaucracy that vary from city to city and have trouble communicating with each other.
12. This formed the basis for the elaboration of **7 proposals** aimed at optimizing conditions for Italian cities to become "smarter" in the years to come. These proposals should be seen from the standpoint of their potential effects on the country's entire economic/social system:
- Initiatives to remove those factors that inhibit competition on an international level (Proposals 5 and 6).
 - Initiatives to bridge the gap with leading countries in this sector internationally (Proposals 3 and 4).
 - Initiatives to create competitive advantages (Proposals 2 and 7).
- In addition to the above, there is a proposal that forms the basis for the entire plan (Proposal 1).

7 operating proposals were formulated to make the country "smarter"

Proposal 1: Overall strategy for Italy

- Define a vision for the country and a strategy for attaining it (political, social and economic project for Italy), within an international context.
- Confirm the role of the national government as the central coordinating body and promoter of the general context (rules, method, etc.).

Proposal 2: Smartness governance

- Prepare a national governance plan for smart-related issues which provides guidelines for action and defines a unified approach for all smartness-related questions.
- Bring together the special interests of national and local institutions and business, making them more synergic and coordinated.

Proposal 3: Italian smart city innovation partnership

- Launch the Italian version of the European partnership model for smart city innovation and concentrate available resources on a limited number of high-potential projects.
- Stimulate teamwork between business, local government and financial institutions.

Proposal 4: “Smartest City” award based on a shared model

- Create an award for the first 5 cities that attain the maximum level of “smartness”, measured in terms of actual benefits for their citizens.
- Create competition among local areas and foster sharing of experiences, while at the same time enhancing awareness of the “smart” issue throughout Italy.

Proposal 5: Fine-tune existing initiatives

- Formally commit to ending or definitively concluding a number of still-incomplete initiatives directly and/or indirectly connected to the smart city concept.
- Insure that all initiatives – often stalled over the years for lack of coordination and/or communication between institutional players – are moving in the same direction.

Proposal 6: “Quick win” in the short-term

- Quickly produce tangible results by promoting (already) available and low cost smart solutions.
- Send a clear message to the public about the benefits that can be obtained, through concrete demonstrations of what is possible (actions speak louder than words).

Proposal 7: Increase the “really free” time of Italians by 10% in 5 years

- Set a challenging (performance) goal in an area that is clearly advantageous for citizens in order to demonstrate to them in a concrete and tangible way the potential benefits of the smart concept for their lives.
- Show the seriousness of governmental commitment.

When taking action, probable resistance to change should be taken into consideration

13. It is likely that **psychological resistance to change** could arise during the implementation of the above proposals:
 - Limited ability to “work together” through sectorial and horizontal integration of the various players involved. This aspect impacts most on Proposals 1, 3, 4, and 7.
 - Opposition of “interest groups” to potential changes in laws, despite the awareness that current legislation does not provide adequate support for the technological changes smart cities require (in particular, for Proposal 6).
 - Tendency to be caught up in their own “particular” situation and to continue to defend their own interests instead of creating cohesion around important and common issues (useless infighting). This risk is particularly high for Proposals 2 and 5.

14. The innovation produced by smart cities can be seen on a number of different levels:

- Activation of manufacturing supply chains.
- Regaining efficiency.
- Time savings for citizens, business and public administration.
- Cascading multiplier effect for infrastructure and system investment.

15. To become “smarter” Italy must invest 3 percentage points of GDP each year, from now until 2030, but a “smarter” country is worth up to 10 points in GDP annually.

The smart country **approach** outlined here is **modular**: in other words, it offers the system the possibility of opting for intermediate trajectories in terms of immediate smart-based evolution of all Italian urban centers.

Smart cities offer revolutionary opportunities for economic, social and technological change

Investment and returns for a smarter country ¹

Area	INVESTMENTS (billion €/year)				Area	RETURNS (Efficiency recovery on current costs – billion €/year)		
	Current trend 2030		Smart 2030			Optimization margin	Smart 2030	
	Italy*	10 cities**	Italy***	10 cities****			Italy***	10 cities****
Energy	9.5	1.4	8.9	1.3	Energy	20-30% ^(a)	8.9-13.3	0.013-0.019
Construction	2.4	0.3	7.2	1.0	Construction	10-50% ^(b)	4.4-20	0.0063-0.029
Mobility	5.4	0.8	8.2	1.2	Mobility	10-20% ^(c)	44.5-55.5	0.064-0.08
Resources	4.7	0.1	4.3	0.6	Resources	10-15% ^(d)	1.6-2	0.0023-0.0029
TOTAL	22.0	2.6	28.6	4.1	Public ^(e)		2.4	0.0035
Total smartness investment/year			50.6	6.7	Public Administration ^(f)		2.3	0.0033
% GDP			3.2%	0.4%	Spinoffs for national industry/economy ^(g)		64.3	9.3
					TOTAL		128-160	9.3-9.4
					% GDP		8-10%	0.6%

(*) Minimum amount of investment required for the current performance level of the country.

(**) Minimum amount of investment required for the current performance level in the top ten most populous Italian cities.

(***) Investment for smart evolution of the country.

(****) Investment for smart evolution of the top ten most populous Italian cities.

Figure 2

Source: TEH-Ambrosetti based on Energy Lab Foundation data, 2012

¹ (a) Estimates for savings from the adoption of measurement technologies for consumption and quality of electrical power supplied. Source: website of the Ministry of the Environment; (b) Estimates for (partial or full) residential energy renewal initiatives. Source: ENEA, “Rapporto annuale efficienza energetica”, 2011; (c) Estimates for the application of Intelligent Transport Systems. Source: European Commission, “Intelligent Transport Systems in Action, action plan and legal framework for the deployment of intelligent transport systems (ITS) in Europe”, 2011. (d) Savings estimates from the adoption of water consumption measurement technologies and estimates for energy recovery from waste. Sources: The Climate Group, Arup, Accenture, Horizon, University of Nottingham, “The new economics of cities”, 2011; Nomisma Energia, “Potenzialità e benefici dall’impiego dei Combustibili Solidi Secondari nell’industria”, 2011; (e) Time savings from digital public services, including transport-related cost/time savings. Only those citizens with internet connection. This estimate does not take into consideration less crowding in public offices, less traffic and, as a consequence, the decrease in pollution made possible through the lower use of vehicles. Source: I-com, “R-innovare l’Italia”, 2012; (f) Estimates of cost savings for personnel and supplies through digitalization of the following municipal services: multichannel payments, vital certificates and sending of computerized documents to the business affairs desk. Source: Osservatorio eGovernment, 2012; (g) Average annual amount from direct and indirect effects on Italian manufacturing supply chains that could be activated, 2013-2030. Source: Energy Lab calculations, July 2012.

The overwhelming majority of the population has no idea what a smart city is: this opportunity must be communicated

16. Additional benefits, not quantified in this report, are:
 - Country **image** and international **competitiveness**.
 - New impulse towards social cohesion and local identity.
 - Greater spread and availability of **knowledge**, increase in **creativity** and innovation.
 - Overall **livability** of urban centers.
17. For the opportunity represented by smart solutions to be fully accepted, a **mass-based awareness-raising** and **communication** effort is **urgently required**.
18. In fact, according to the results of a specially-prepared survey,² 4 Italians out of 5 do not know what a smart city is. Nonetheless, just being aware of the concept influences the level of openness to it, a sign that the idea is a valid one.

Familiarity with the “smart city” concept

Have you ever heard the term “smart city”?



Figure 3

Source: TEH-Ambrosetti based on CRA data, 2012

Given the **major social implications** of this area, launching any kind of process without the public being adequately informed, prepared and motivated in terms of the potential and benefits is absolutely necessary (social networks are the best way to do this). Communication must emphasize the concept of **inclusion**. Above all, a “**public engagement**” process focused first and foremost on case studies is critical.

² The survey was conducted by CRA-Customized Research Analysis in July 2012 using the Telepanel method, with a sample of 2,130 individuals based on the entire Italian population over 14 years of age.

What being “smart” means

19. There is no single, generally-accepted definition of smart city. Over the last decade, the term “smart” has indicated in turn a digital city, a socially-inclusive city and a city that insures **improved quality of life**.
20. Today, it has taken on **multiple meanings** that vary depending on who is proposing it. The only unifying factor seems to be the concept of **sustainability**.

A smart city is a sustainable city – for everyone

Main definitions of smart city by stakeholder category and focus area

	Mobility	ICT	Environmental sustainability (energy, construction, land, water)	Quality of life	Smart society (education, health care, participatory governance)
Government					
EU SET plan			■		
EU Smart Cities and Communities Initiatives	■	■	■		
Digital agenda for Italy	■	■	■	■	■
MIUR calls for bids	■	■	■		■
Academia					
Vienna polytechnic	■	■	■	■	■
MIT SENSEable Lab		■	■	■	■
Caragliu et al. (2009)	■	■	■	■	■
Harvard	■	■	■	■	■
Business					
ABB	■	■	■	■	
Alcatel	■	■	■	■	
IBM	■	■	■		■
Siemens	■	■	■		
Cisco	■	■	■	■	■
Accenture		■	■		■

Figure 4

21. Like the various definitions, the **initiatives** for spreading the concept are also **proliferating**, both internationally and within Italy (although with some delay).
22. European initiatives include:
 - **Covenant of Mayors**: an independent initiative of European municipalities launched in 2008 with 4,200 participating towns and cities (including over 2,000 in Italy); its goal is to reduce CO₂ emissions more than 20% by 2020.
 - **Strategic Energy Technology Plan (SET Plan)**: strategy which identifies the priority actions to be taken *to accelerate development of low carbon emissions energy technologies*.

- **Smart Cities and Communities Initiative:** industrial initiative, outlined in the SET Plan, to support the realization of projects in three areas (electrical and transportation networks and energy efficiency in the building sector) in dozens of European cities committed *to reducing greenhouse gas emissions 40% by 2020*.
 - **Smart Cities and Communities European Innovation Partnership:** formed to contribute to the creation of multi-sector strategic partnerships between European cities and business, it involves the transportation, energy and ICT sectors.
23. On an Italian level:
- The **Ministry of Education, Higher Education and Research** has issued to-date two calls for bids involving smart cities, with funding totaling 920.5 million euros. The specifications for these calls for bids are in the process of being drawn up.³
 - **Piano Nazionale per le Città (National Plan for Cities)**, prepared by the Ministry for Infrastructure and Transport as of August 2012; with a budget of 2 billion euros, it is aimed at urban renewal.
 - And finally, through its activities, **ANCI** (Associazione Nazionale Comuni Italiani – National Association of Italian Municipalities) is offering to head up nation-wide action to make successful experiences available to all, and provide support to towns and cities in a range of areas.
24. Throughout the world, there are many examples of smart city solutions – or at least those identified as such. However, an all-round smart city does not seem to exist yet, only applications of the concept in specific and limited areas.
25. Smart cities can also represent an opportunity for Italy, as long as technology, projects and policies are placed at the service of **a strong, shared idea of the future of Italy**.

This vision must take into account the fact that society is changing.

A transition is currently underway from satisfying primary, material needs (physiological, safety, emotional, esteem) typical of consumer societies, to satisfying **“higher” needs** typical of global, post-consumer societies:

- **Awareness** (individual and of the world).
- **Sustainability** of choices (satisfying individual needs while avoiding compromising the ability of future generations to satisfy theirs).
- **Self-actualization**.
- **Personal growth**.

These types of needs can **only** be satisfied by more advanced **smart cities**.

A smart city minimizes the effort for “low” needs and (efficiently) satisfies “higher” needs

³ The Steering Committee for the Digital Agenda for Italy has produced a series of strategic documents on this issue that are part of the proposals to the national government for the Digitalita decree.

Hierarchy of needs (Maslow) and relation to strategic goals of individual country systems

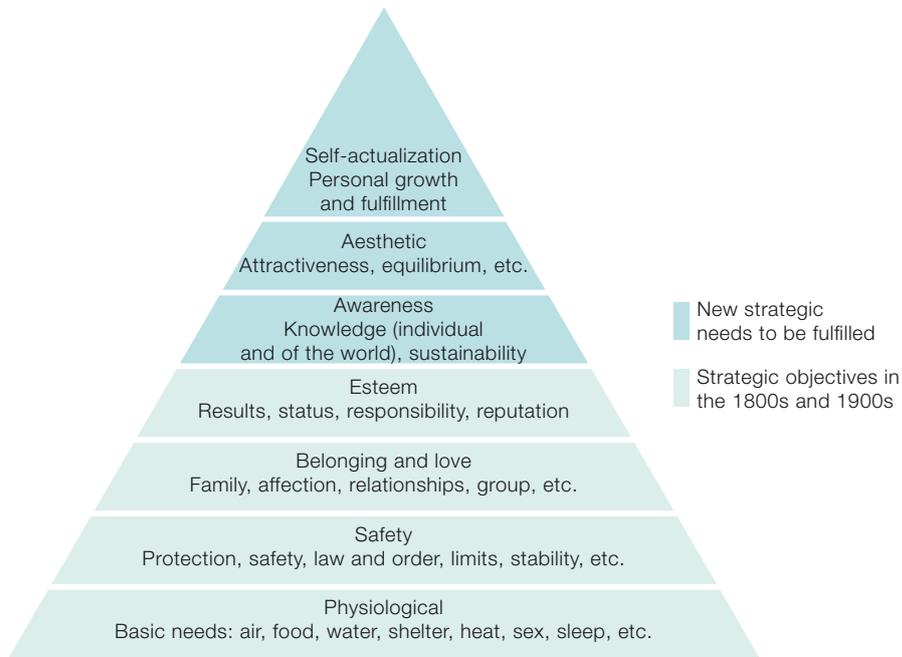


Figure 5

Source: TEH-Ambrosetti based on Maslow A., 1943

A smart city is, for us, an urban model that can guarantee a high **quality of life** and personal and social growth of individuals and business, while optimizing resources and areas for sustainability.

26. Smart cities are the response to new strategic needs that will impact on what cities of tomorrow will be like. In fact, **new needs** are taking shape, made crucial by rapid, inevitable global trends:

- More integrated and inclusive urban models are needed because development is increasingly urban-centric.
- Strategic management of natural resources is vital because current consumption models are accentuating the scarcity of some resources.
- New models of mobility should be developed because taking on new challenges using past methodologies and approaches is a losing strategy.
- To face the acceleration and complexity in daily life, there is strong demand for enhanced quality of life in all its forms.
- The opportunity also exists to actively build on the potential of senior citizens who are independent and living longer.

A smart city can respond to new needs made crucial by rapid, inevitable global trends

Innovation is a crucial factor for responding to new needs, but must be interpreted from an implementational standpoint

27. **Technology** and **innovation** have always played a **central role in the development of cities** and it is clear that this role will grow in the future: not only integration of modern digital technologies into physical spaces, but also the interconnection of technologies with each other will open up new opportunities. However, the challenge will be guaranteeing that technologies are **truly** able to provide an effective response to the problems of citizens and business: there must be a **clear plan** when adopting technologies. Smart cities cannot be only a technological challenge, above all they must be a **social challenge**.

How smart Italy is today and how smart it could be in the future

28. The smart city is the result of a radical, all-round transformation process of the urban system. A strategic approach is essential. We need an effective vision translated into a limited number of measurable goals (to avoid becoming abstract visionaries and losing focus).

29. We have developed a **reference framework** (priority macro-goals and result indicators) to evaluate smart city **performance** on the basis of a **unified** approach, and to offer a tool to support the choices of city governments.

A “smarter” country is an evolutionary path that must be monitored utilizing a unified reference model

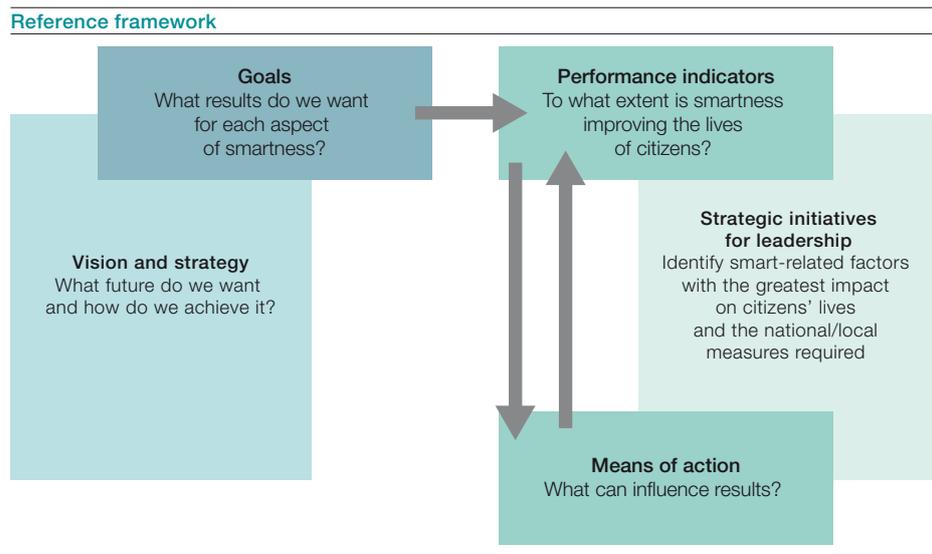


Figure 6

30. The key elements of this approach are:

- A "smartness" metric that expresses **benefit to citizens**, not the city's (physical/non-physical) facilities, *a typical factor used by more traditional methods in measuring and comparing cities.*
- The use of **key actions** to improve urban performance in order to produce policy-related information for developing **strategic initiatives**.
- Logic from which to define the complete, all-round **smartness** of an urban system (penalizing excellence in individual aspects alone).

Ranking of main urban centers (scale 0-100)

City	Smartness indicator	Score
1 Milan	✓	50.8
2 Rome	✓	49.7
3 Venice	✓	42.5
4 Bolzano	!	36.0
5 Bologna	!	34.3
6 Genoa	!	34.2
7 Trieste	✗	33.1
8 Turin	✗	33.0
9 Palermo	✗	32.7
10 Naples	✗	31.4
11 Verona	✗	31.1
12 Florence	✗	28.2
13 Bari	✗	22.6

Legend:
 ✗ : highly problematic
 ! : moderately problematic
 ✓ : no problem areas within the factors examined

Figure 7

Source: prepared by CERTeT-Bocconi for The European House-Ambrosetti. 2012

31. As an example, when the model is applied to major Italian cities, Milan, Rome and Venice receive high marks.

32. Analyzing individual indicators provides an interesting view of the **potential for optimization from a smart perspective** of the urban systems examined, with ample margins regarding integrated and inclusive mobility, resource sustainability, urban greenery and conservation of the ecosystem. On a policy level, what emerges is the opportunity for development of "smart" mobility plans that induce a cultural change, first and foremost. Just as important are energy policies and related technologies.

