



**Scanning Smart Cities in Romania**  
**Second Edition, September 2018**



INNOVATE NETWORKS. RE-DESIGN BUSINESS

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## 1. SMART CITY INDUSTRY NEWS

The smart solutions turn-key integrator Vegacomp Consulting brings an updated report, with new information, strategies and smart projects that emerged in the country between March and September 2018, six months after publishing its first scanning of Smart City projects in Romania.

*"We have been present in the Smart City solutions and services market since 2015, and this spring of 2018, we have started developing the first comprehensive study and the first updated report on the evolution and adoption of Smart City in Romania. Now, six months after the first edition of the report, we have identified both new solutions with a high level of replication and new projects, strategies and municipalities that complement the Smart Cities landscape in Romania. In fact, Smart City Strategy is the key phrase of this updated edition of the report," says Cornel Bărbuț, CEO of Vegacomp Consulting.*

The Smart City market, started in 2009, was worth billions of dollars in 2017. In Romania, there is a shy start and a building-up market in the Smart City area, which is still not fully understood, hard to define and still relatively difficult to accept, from the perspective of the authorities.

If, at the beginning of March, we were talking about a Smart City market that exceeded 216 projects in Romania, six months later we add 100 new initiatives to the list, either at the projects stage, under implementation or already completed.

To the first set of cities described in the first edition of the report, new names - such as Avrig, Hunedoara or Odobești are added, showing that the speed of the Smart City deployments is not directly related to the size of the municipality that adopts the new generation of services.

## 2. METODOLOGY

The methodology, like in the first edition of the report, includes the collection of information from public sources that covered the subject over the past year, but this time the paper places more emphasis on first-hand information provided by municipalities. Data provided by companies, obtained through direct interviews with representatives of Smart City solution providers in Romania, is also used.

The current version of the Scanning Romanian Smart City Report already gathers information on 41 large, medium and small cities in the country that currently have 316 Smart City projects in the planning phase, in progress or already completed.

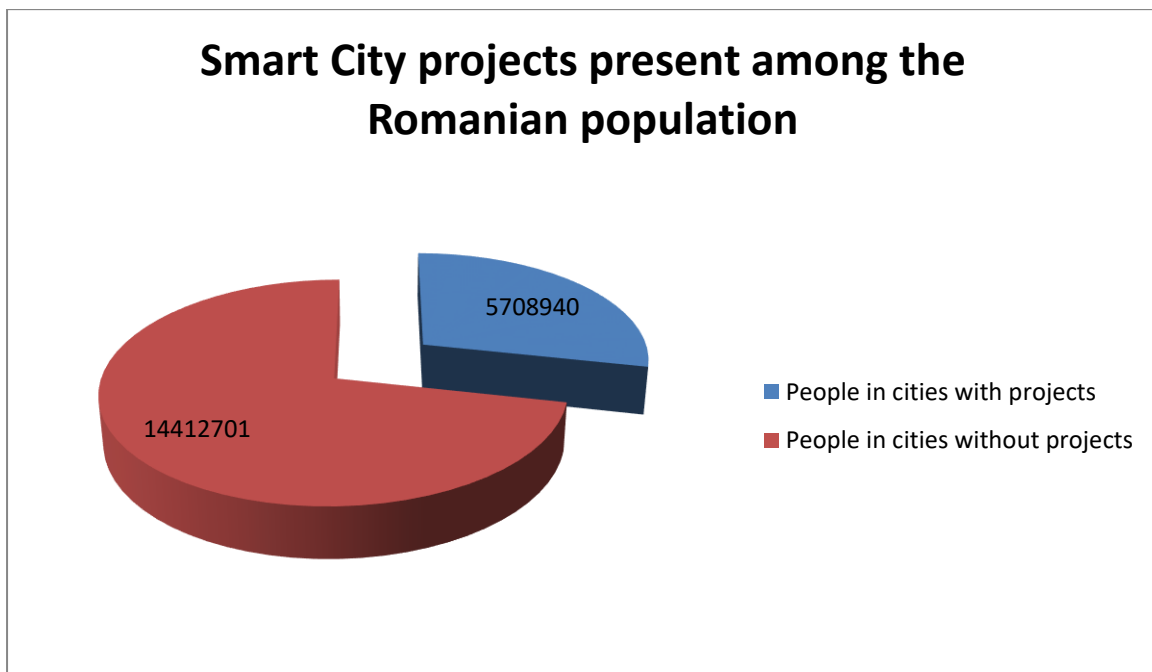
Vegacomp Consulting will periodically update and reinforce all the information contained in this new version of the document, in order to continually present an accurate image of the Smart City development in Romania.

Smart City projects retain their classification in the same six Verticals, consistent with recent EU reports: Smart Economy, Smart Mobility, Smart Environment, Smart People, Smart Living and Smart Governance.

### 3. CITIES INCLUDED IN THE REPORT

The list of cities entering the Smart City race is continuously evolving and currently includes 41 municipalities such as Alba Iulia, Arad, Avrig, Bacau, Bals, Botosani, Brasov, Bucharest, Bumbesti-Jiu, Călărași, Cernavodă, Constanța, Cluj-Napoca, Deva, Fălticeni, Galați, Giurgiu, Gura Humorului, Hunedoara, Iași, Mangalia, Mioveni, Mizil, Moinești, Odobești, Oradea, Piatra Neamț, Reșița, Seini, Sibiu, Slatina, Suceava, Targoviste, Târgu Jiu , Târgu Mureș, Târgu Neamț, Târnăveni, Timișoara, Tîrgu Bujor and Tulcea.

*"The cities in the list now sum up a total of 5,708,940 people, the equivalent of over a quarter of Romania's population, according to the latest census. We see, however, a relatively small increase in the adoption of Smart solutions, among the population that was not yet covered. In addition, most new Smart City projects and solutions are developing in already covered areas, and access, as the geographical area does not expand much, remains limited in terms of progress," says Bărbuț.*



The top ten cities, based on the number of projects planned, being implemented or delivered, are Alba Iulia (103 projects), Hunedoara (23), Oradea (19) Cluj-Napoca (18), Avrig (15) Bucharest (13), Piatra-Neamț (12), Brașov (11), Arad (11), Sibiu (11), Constanța (11).

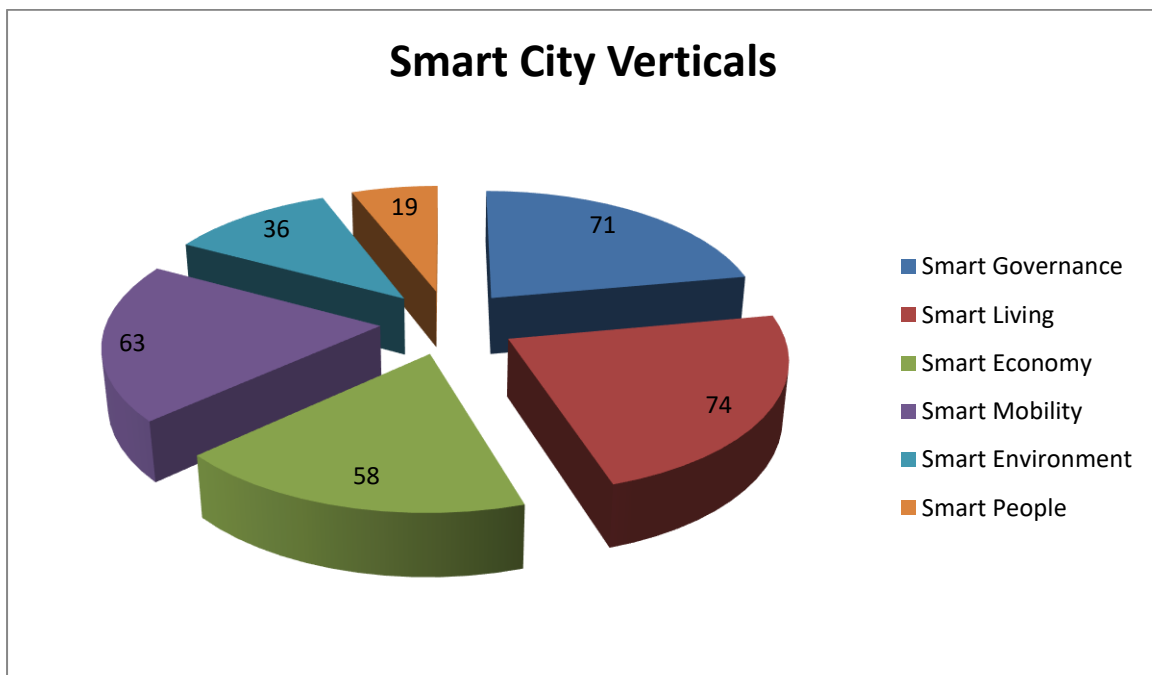
Among the cities that embrace Smart City in both an innovative and geographically-significant way, we can mention:

- Alba Iulia, who takes the Smart area straight to the blocks of tenants, through a management application for real estate administrators
- Avrig, with a project targeting urban contribution to tackling climate change
- Hunedoara, with an electronic investment map

#### 4. SMART CITY PROJECTS RANKING BY VERTICALS

Vegacomp Consulting has ranked the Smart City projects according to the Smart City verticals recognized at European level and has developed a national ranking of Smart City verticals, based on the number of projects implemented.

The new leader is the Smart Living Vertical, with 74 projects, which takes the first place from Smart Governance, leaders of the charts in spring, now reaching 71 projects. Places three and four are occupied by Smart Mobility, with 63 projects, and Smart Economy, 58 projects, both equal categories back in March. Smart Environment, with 33 projects, and Smart People, with a low growth, up to just 16 initiatives, follow at a considerable distance.



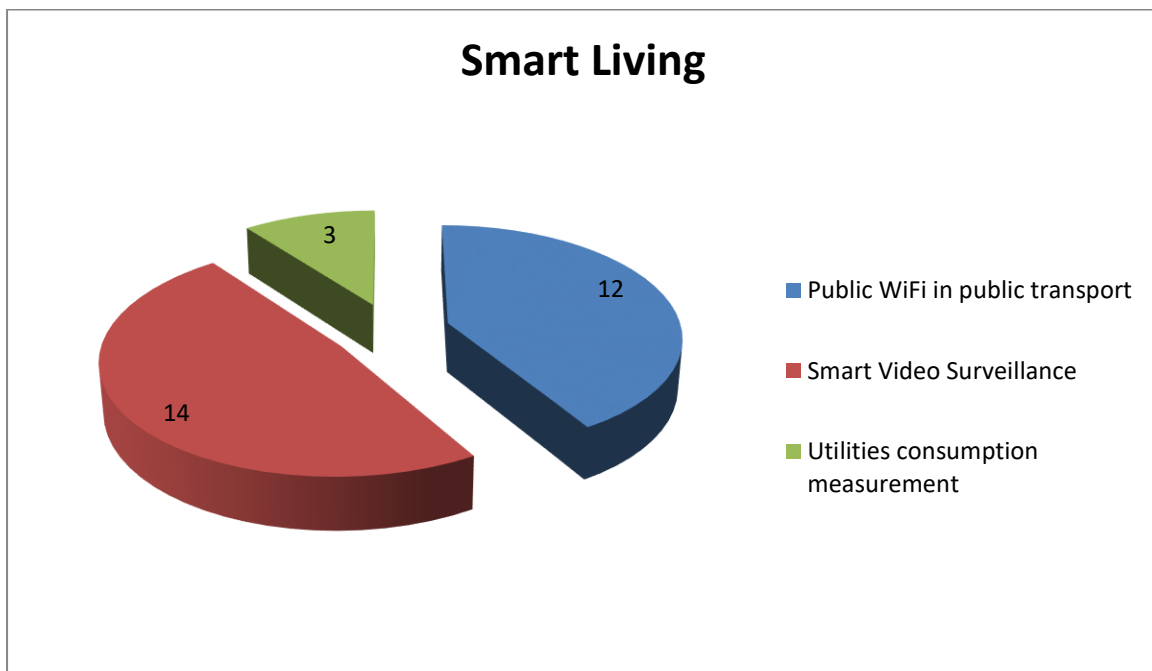
## 5. SMART CITY SOLUTIONS IN ROMANIA, BY VERTICALS

The most popular Smart City solutions identified in Romania and also globally scalable include street lighting, smart parking, video surveillance and public WiFi services, followed, on the medium term, by traffic management systems, waste management and various sensors, such as environmental ones, used to monitor air quality.

### SMART LIVING

Intelligent solutions that increase the comfort of the residents are the new leader of the Smart Verticals ranking and are found, on a growing scale, in the cities of Romania. The most spread solution, easy to replicate and adapt, regardless of the size of the local community, is the public WiFi internet, in the major points of interest in cities, both outdoor and indoor - one of the most commonly adopted solutions of the Smart Living concept, in Romania.

High the top is also a popular solution derived from the one described above - the installation of WiFi internet services in public transport, along with smart video surveillance, which stands out in the ranking, from the next solution - measuring and managing the utility consumption.

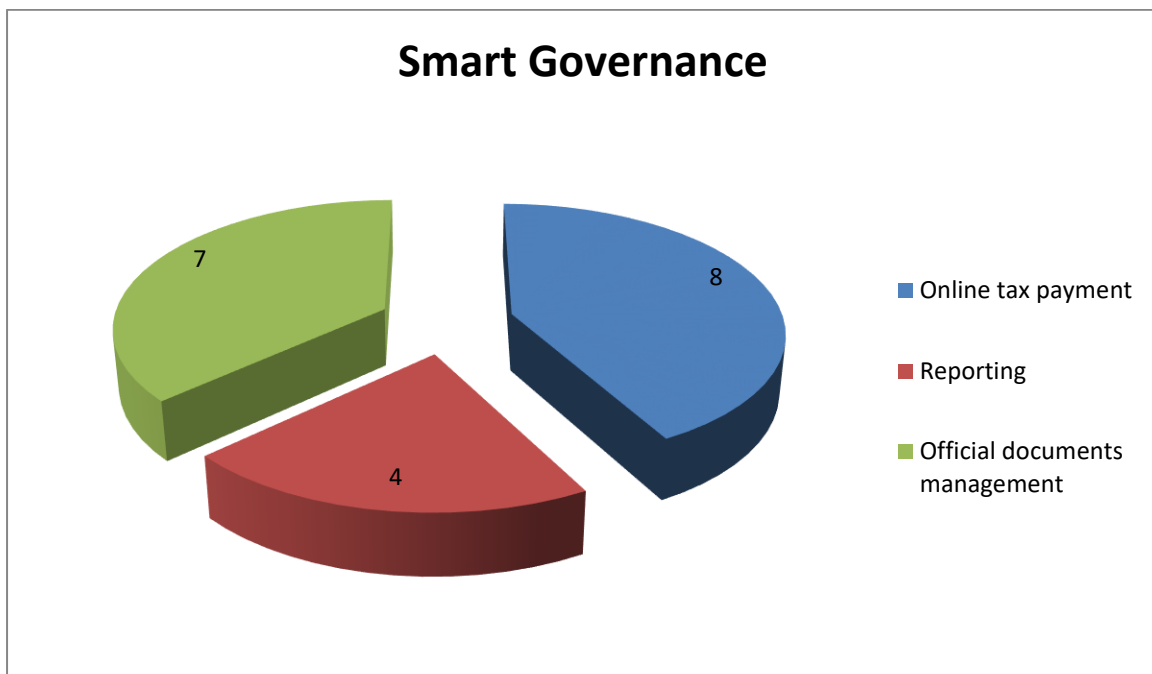




## SMART GOVERNANCE

With already 25 Smart Governance solutions, Alba-Iulia has strengthened its leadership position at national level and now imposes the adoption trends as well as the moves towards Smart Governance with more automation, fewer errors and better results both for both the public administration, and the benefit of the population.

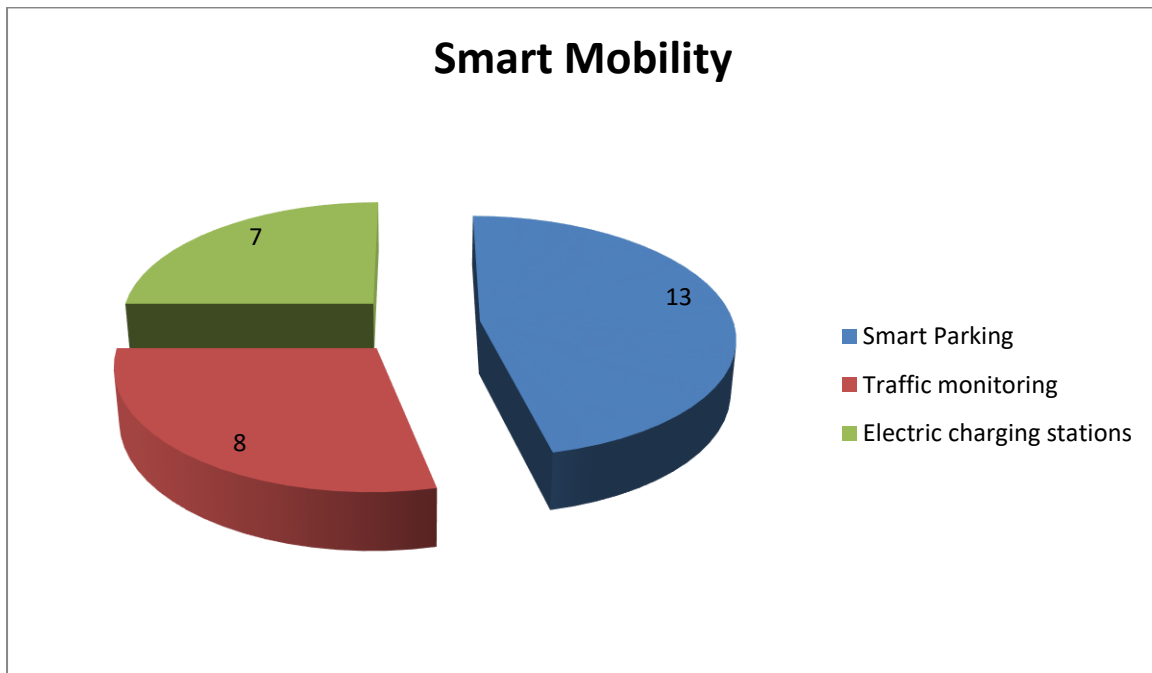
At national level, the most common projects in this area include, in this edition: online payment of taxes, interaction with the city hall and residents reporting various issues, and management of official documents such as permits, notifications, and certificates.



## SMART MOBILITY

Even if the vertical rose and took over the third place in the ranking, we do not see major changes, in terms of number of solutions adopted or implemented, but rather a series of purchases or donations of electric vehicles. Whether we are talking about more efficient and faster transport, about on-the-go connectivity, electric cars that communicate with each other and about centralized mobile applications or mobile applications that make it easier for the public to access two or more points of interest, Smart Mobility takes steps, first as a test and, gradually, in more extended areas, in the cities of Romania.

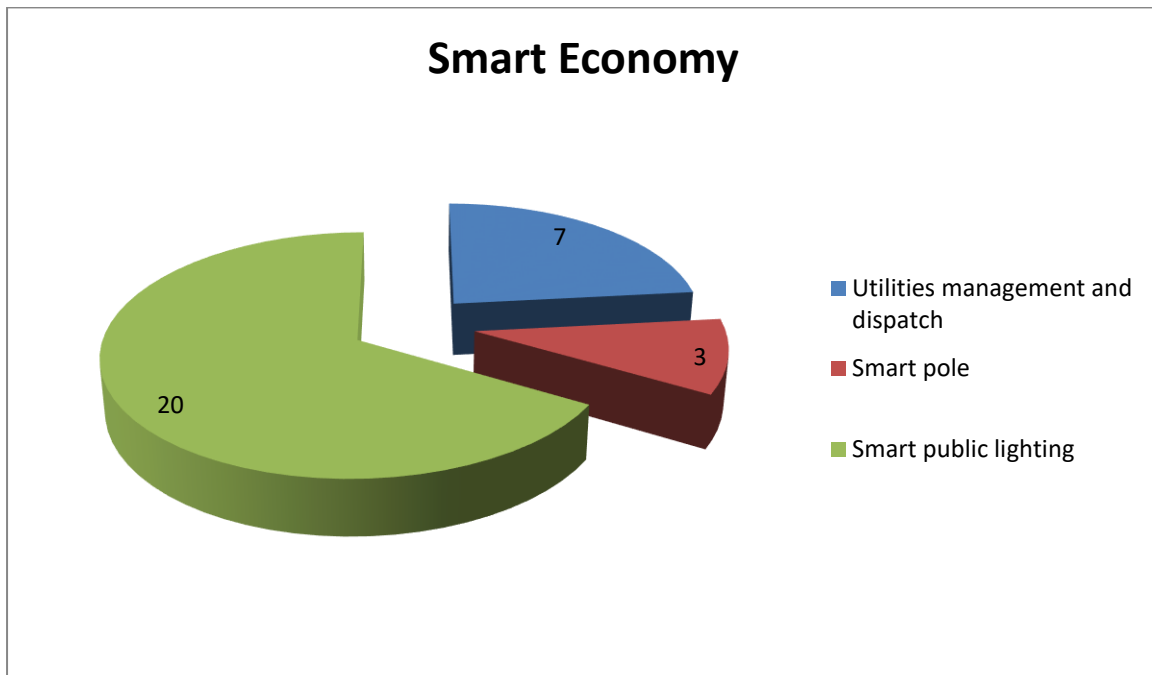
We also identify, amongst the various projects in this area, the same deployment of solutions like: parking optimization and payment, traffic monitoring, public transport fleet monitoring, or charging stations for electric cars.



## SMART ECONOMY

With a presence outside the top 3 of this report, intelligent solutions designed to simplify the lives of residents, but also to generate medium and long-term savings, along with better resource management, traceability and, last but not least, increased energy efficiency are adopted by a large number of municipalities monitored by this report.

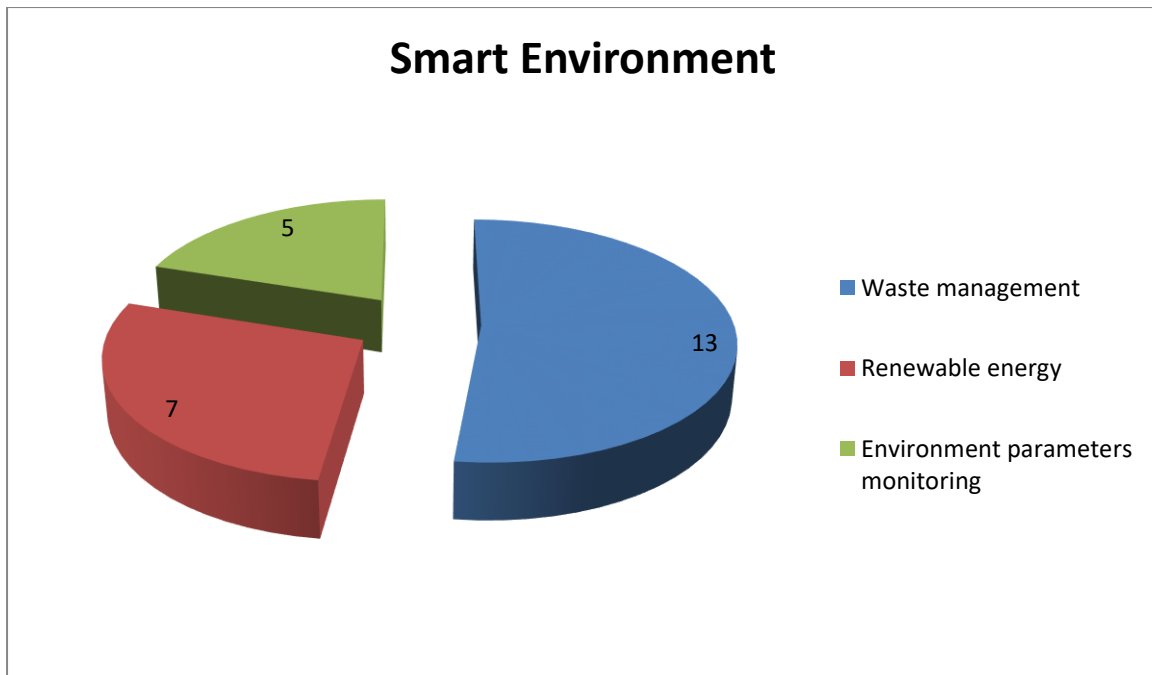
The top is driven, by far, with a growing gap versus the following solutions, by the intelligent public lighting, adopted on larger or smaller surfaces by most municipalities. In the ranking, metering and reporting systems for utility consumption follow, with a modest evolution over the last six months, and the podium is closed by the smart poles that can either emit WiFi or carry photovoltaic cells, or communicate in real time the parameters of the meters mounted on them.



## SMART ENVIRONMENT

Technology evolves to both enhance and protect the environment, as well as to provide more and more intelligent elements to the public in open, public spaces.

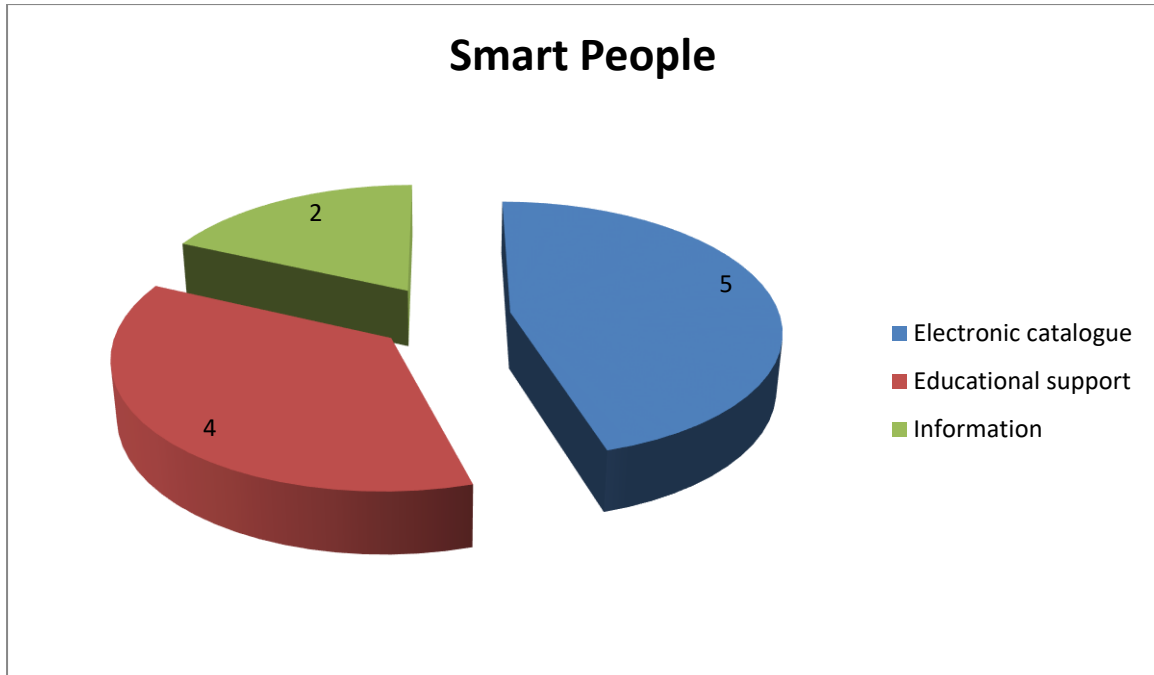
At national level, solutions of this type involve an above average complexity, and adoption is still geographically limited, by accessibility. We notice a speed-up in terms of solutions for smart waste management, renewable energy - which has the highest increase by adoption level in the last six months among the municipalities in Romania - and monitoring of various environmental parameters.



## SMART PEOPLE

Education and public information are one of the global priorities in the Smart City area, but in Romania, this research again shows it as the last one by adoption, punctually implemented, often as a pilot project, in educational units that have the necessary resources to innovate, in the communities more open to new, effective and measurable solutions.

Outstanding areas, although not significant by evolution in the past six months, include information systems for citizens, e-catalogs for pupils and educational support for various knowledge development areas.



## 6. SMART CITY STRATEGIES

We are opening a new chapter of the report, dedicated to Smart City Strategies adopted by local municipalities. In each edition of the report, we will present a set of strategies, from municipalities varying both in size and geography, but also with different objectives.

If, at the level of Bucharest, the City Hall has started the tender for the Smart City Strategy in December 2017, was won by Deloitte Romania this spring, other cities have done significant steps in this regard, including: Târgu Mureş, Cluj-Napoca, Oradea, Iaşi, Constanţa, Turda and Satu Mare.

### ALBA IULIA

Perhaps the best known city in Romania when it comes to Smart City, Alba Iulia has a strategy that combines the component of utility objectives with - a differentiating element on the Romanian market - a quantitative objective for the implemented solutions.

The uniqueness of the project lies in the fact that all the intelligent solutions agreed in collaboration protocols with 35 private companies are implemented and tested in Alba Iulia on the companies' own budgets and ensure interoperability with other providers of intelligent solutions for the municipality.

The aim of the project is to pilot 100 smart solutions for Romania's 100 years anniversary, thus providing a digital foundation for development, a work experience generating good practice models in the local administration and a team of specialists able to provide consultancy and help any other interested municipality. The project currently (n.r. September 2018) counts 103 solutions agreed with various partners.

The goal of the project is to turn Alba Iulia into a smart city, an exhibition of intelligent solutions that operate in a real environment within the Alba Iulia infrastructure, which can be visited by tourists or the Romanian public throughout the year 2018, when Alba Iulia is at the heart of all events dedicated to the celebration of the 100th anniversary of the Romania's Great Union.

### HUNEDOARA

The municipality is aware that digitization is a mandatory element and, although the town hall is the initiator of the strategy, it considers that the synchronized efforts of the entire local community are needed.

Increasing the general level of knowledge, the promotion of open technologies, electronic standardization and interoperability, as well as the increase of cyber security are among the objectives of the municipality.

Some of the completed and ongoing projects include:

- Video surveillance systems for citizen safety - 2011
- Mobile Interactive Application - 2017
- Investment Map - 2012
- Issuing of free passes - via SMS and web portal - 2015
- Electronic archiving - 2017
- Request tracking / submissions - 2005
- Online payments with bank card - 2010
- Ticketing system - 2016
- Integrated informatic system
- Free WiFi access point in Tineretului Park
- Live video camera
- Anti-burglary video surveillance systems
- Optimized pedestrian alley
- Upgraded official site
- Web Portal and Electronic Payment
- Self-service terminal
- Computerized application for payment terms notifications, tracking mechanism
- Participatory budget
- Management of activities
- Modernizing transport through investments in environmentally-friendly public transport
- Ecologic public lighting

- Revitalized historic center
- Support regeneration of the city

### **ODOBEȘTI (VRANCEA)**

The city of Odobesti aims to develop a wireless network that will cover the entire area of the locality and integrate the following concepts: GIS - utility networks monitoring and land and road property limits - smart parking, electronic catalog, wireless surveillance camera, smart-points for standard documents and forms, the city's electronic map, online TV channels, media archives, streaming camera for live city videos, virtual tour of the city.

Odobești has implemented, up to now, the wireless Internet network, which covers about 70% of the city's surface, and the electronic catalog, while wireless internet has been introduced in all schools in the city. The implemented projects are:

- Electronic catalog - Odobești Technological Highschool
- Electronic catalog - Odobești Technical High School
- Integrated wireless system acquisition

### **SLATINA**

The municipality aims to reconnect the historic center, peripheral districts and major public spaces to the urban circuit, thus increasing the functionality, competitiveness and attractiveness of the city. At the same time, in order to strengthen its position as a regional center, Slatina will invest in the development of human capital and modernization of public infrastructure and services.

To this end, in order to develop, at the level of 2020, Slatina undertakes the following actions:

- Sustainable Urban Mobility Plan for the Slatina Municipality
- Developing a network of intelligent and autonomous local public transport stations - Intelli Bus Hub Net
- Integrated project to modernize the public transport system
- Integrated payment system for community services, including public transport
- Integrated urban traffic and mobility management system and rules enforcement, safety and security



- Support system to facilitate pedestrian transport

## 7. COMPANIES INVOLVED IN SMART CITY PROJECTS

We currently have active, in Romania, the world's two leading Smart City solutions providers: Siemens and CISCO.

In addition to these names, the list of companies identified as involved in Smart City projects includes, but is not limited to: Aquatim, Avitech, BCR, Cluj IT - Arxia, Cluj IT - Cloud Soft, Cluj IT - Hyper Media, Cluj IT - Life is Hard, Cluj IT - Optima & Artsoft Consult, Cluj IT - Parking Plus, Cluj IT - Solar Eco Systems, Cluj IT - Trencadis, Dahua, Direct One, Eco Mobilitate, Enel, ETA2U, Euro Jobs, Fast Order, Flash Lighting Services, Industrial Software, IT Center for Community, KMW Services, Luxten, Microsoft, Mobilis, Nova Apaserv, Orange România, Parkomatic, Romstal, Telekom România, Siemens, TPark, UTI, Vegacomp Consulting, White City Code, ZTE

## 8. THE SMART CITY EVENTS MARKET

The list of companies identified as involved in organizing Smart City events includes, but is not limited to:

- ARSCM, Romanian Smart City and Mobility Association, smart city events leader, with two editions of Smart City Urban Projects, the Smart City Magazine quarterly, Smart City caravan (launched on September 22, 2017 and landed in Bucharest, Brasov, Iasi, Piatra Neamt, Alba Iulia and Deva), Smart City courses (the first "Introduction to Smart City" course, held in Bucharest, February 21-23, 2018; the second in Bucharest, June 27-29, 2018).
- SNSPA (five annual Smart Cities Conferences)
- Mobile Communications (two editions of the Smart City - Future City conference in 2013 and 2016, the first Smart City in Romania eBook published in 2016)
- Smart Cities of Romania (three annual edition of "Smart Cities of Romania" exhibition fairs, usually organized at Polytechnic)
- Concord Communication, together with the National Foundation of Young Managers and Good News (events organized in the country: 30-31 May 2017 in Bucharest, 20 September 2017 in Calarasi, 24-25 October in Bucharest and 3 National debates in 2018: 23 March at Iasi, 16-17 May in Bucharest and 8-9 October in Alba Iulia)
- The Diplomat (two Smart Transformation Forum editions, the third being scheduled for September 27, 2018)
- Different Angle Cluster together with the Embassy of the Netherlands in Romania (two Different City - Smart City editions in Bucharest and one in Constanta)
- ROMANIA-SMART (two Jump to Smart editions)
- Siemens (Siemens Siemens City Edition 2018, January 31, 2018)

## 9. FINANCING SOURCES FOR SMART CITY PROJECTS

The funding sources for the Smart City projects implemented so far in Romania are:

1. Local budget - for example, for the the strategies in Cluj-Napoca, Oradea, Târgu Mures, Sibiu or the Smart City Audit in Târnăveni,
2. European funds - LED street lighting projects, i.e. the project by Siemens for Alba Iulia,
3. Private sources (companies - Smart City solutions providers) - in Alba Iulia, for example, all solutions are provided with the funds of private companies,
4. Other states - USA, with the Smart Campus project in Politehnica in Bucharest (ISPE is the consultant of the American consulting company for this project)

## 10. CONCLUSIONS

The Smart City market in Romania is still in its infancy, but it is on the rise, even if the evolutionary level is not spectacular.

The multitude of events with and about Smart City in 2017 generated an awareness of the Smart City phenomenon among local and central authorities that were planning to allocate local budgets for profile projects in Romania in 2018. There is also a growing trend towards learning and theorizing Smart City concepts.

The over 300 nationally implemented Smart City projects represent an early stage of this concept - a phenomenon that has huge growth potential - and represent an image of the development of the Romanian society and economy in the current European and global context.

Smart City in Romania attracts experienced foreign suppliers of solutions, such as Siemens, CISCO, ZTE, but also private companies and Romanian startups. The growth of the Smart City market is expected to continue, which will also generate the development of solutions and projects by Romanian companies outside the Romanian borders. At the same time, we estimate an increase in the number of Smart City solutions providers with international experience on the Romanian market, as well as a competition between Romanian cities to attract Smart City investors and providers in the coming years, in order to contribute to the advance in the quality of life of the inhabitants.

Founded in 2004, Vegacomp Consulting, a turn-key integrator, builds on a team of over 25 years of experience in telecommunication, especially in fiber optic networks, in Romania and internationally, and focuses its projects on solutions development that combine telecoms and energy.

Vegacomp Consulting brings forth innovative solutions for the development of future networks, generated by its own R & D department, both in the country and abroad. The company has been focusing its work on LoRa technology for the past two years and has been active in the Smart City industry since 2014.

More information is available at [www.vegacomp.ro](http://www.vegacomp.ro).

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