ROMANIA
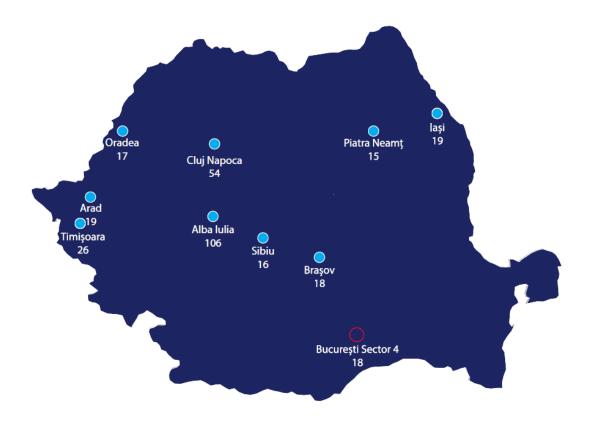
Looking at the top 10 smart cities in the country, we notice the distance of Cluj to the second place, followed by Timisoara on the podium. The next group of 7 cities with 15-19 projects is very close, from which we expect significant increases in the near future.

We note that the number of people from city halls dedicated to Smart City projects and infrastructure is increasing, but also that **seven cities are fighting to become the first intelligent city in Romania**.

Nr.	City	Total projects	Smart Economy	Smart Mobility	Smart Environment	Smart People	Smart Living	Smart Governance
		594	84	188	42	29	121	130
1	Alba Iulia	106	24	17	8	8	24	25
2	Cluj Napoca	54	4	20	7	3	12	8
3	Timisoara	26	5	9	1	1	6	4
4	Arad	19	2	5	1	5	1	5
5	Iasi	19	2	5	1	0	7	4
6	Brasov	18	1	6	1	1	3	6
7	Bucuresti Sector 4	18	2	7	0	0	5	4
8	Oradea	17	1	8	1	0	4	3
9	Sibiu	16	5	5	0	0	2	4
10	Piatra Neamt	15	1	6	2	0	3	3

The pandemic forced cities to become more intelligent. The technology industry has been mobilized in an exemplary fashion during the pandemic, faced with difficulties, and it has shown it can be a real help in everyday life through a variety of novel solutions. And here we are talking about a variety of means, from following the degree of infection online to even drive-through tests in motion for the greatest flow of tests in a short time.

During this period, the following four development priorities have been identified in Romania:

1. Digitization of public institutions, in particular - sharing information online with citizens to solve as many problems as possible: **Smart governance**
2. Health – tele-medicine solutions: **Smart living**
3. Security – monitoring, maintaining social distance: **Smart living**
4. Education – moving online: **Smart People**

During the pandemic, Smart City events market has evolved and passed online, with at least two constant events appearing with many followers, which also confirm changes to Smart City solution providers through online transitions and video content:

• UrbanizeHub Romania – Urban Talk Live 18 Video about Smart City

(https://urbanizehub.ro/orasele-viitorului/and https://www.facebook.com/search/top/?q=urbanizehub%20romania

• Romanian Smart City Association (ARSC) - 5 online events type webinar

https://www.facebook.com/AsociatiaRomanaSmartCity

Financing Sources for Smart Cities Projects

Recently we have seen the European funds used massive for Smart City projects. Many city halls used European funds for infrastructure projects such as water, lighting or video surveillance and added elements specific to a Smart City project. It is therefore quite difficult to draw from such a project the value dedicated to a Smart City project.

Consequently, the cumulative value of all Smart City projects present in this report is not clear, having only a few projects with clear values for each project. Instead, we are certain that the aggregate value of all the projects involving the Smart City projects identified in this report is 1.644.966.939 euros, cumulated from 195 projects.

Besides the European Structural Funds, we have two cities, Arad and Iasi, which have gained the support of the European Commission through the smart cities challenge, which is much more than a source of funding, through the experience, knowledge and information that the two cities have benefited from.

Smart City Solutions Adopted in Romania

SMART MOBILITY

The leader of the latest editions, as a project adoption, keeps his position and even distanced himself massively from the next vertical, which shows Romania's priority over the last 3 years

Projects generally involve more efficient and faster transport, but the focus is essentially on electricity – charging stations for electric vehicles and purchases of electric transport dominate this

vertical, and a positive aspect is the important presence of traffic management systems, among the first solutions adopted. The interest for the past is less popular solutions to optimize and pay the parking, and the bike sharing solutions also lose ranking positions, a feature of a market maturity and a passage beyond the simple solutions in the Smart City area – this contradicts, partially boasts the momentum of the charging stations.

SMART GOVERNANCE

And in the area of Smart governance, more responsibility and involvement is emerging in relevant local solutions with a clear purpose – efficiency, and a step further away from the city's timid application attempts, with a map, a few photos and phone numbers. At national level, smart governance is starting to mean more automation, the online shift of municipal flows, and more doors open at any time, from a laptop or smartphone, to the inhabitants.

The fight, at the level of the preferred solutions, is tight in three between electronic collection of taxes, reporting by citizens and managing and making documents more efficient.

SMART LIVING

In Romania of 2020, the Smart living component could be divided into two main categories: Free WiFi and the rest. Adoption of any other solution, including intelligent video surveillance, is only a quarter closer to the explosion of free WiFi solutions.

In fact, the easy entry point to the Smart world, the installation of a WiFi router and free access to a park, public building or tourist area, is firmly dominated by Smart living vertical. Somewhat surprising, promotion and tourism solutions are also taking place on the podium and, this time, we also make a special mention of a set of solutions outside the podium – the wise solutions in the health and medical field, very close to getting third place, to be followed in the future, they are very good for major adoption increases.

SMART ECONOMY

With a constant presence in top 3, in the first editions, as early as March 2019 the vertical Smart economy was leaving the podium and, in 2020, it still holds the same place 4. What is free Wireless for Smart Living is Smart public lighting for Smart Economy. The solution dominates authoritarian the category, far from the following most popular options – the utility management and the intelligent component designed to develop the event and promotion areas.

SMART PEOPLE

Education and information for the public is one of the global priorities in the Smart City area, but in Romania it is the third consecutive time that the data collected shows it as the last adopted, implemented on a one-off basis, often as a pilot project, in educational establishments with the resources to innovate and in communities that are more open to new, efficient and measurable.

Areas that take shape, although they do not have a significant development in the measured period compared to other vertical areas, include information systems for citizens, along with information about the general health of the city.

SMART ENVIRONMENT

Technology is evolving to both enhance and protect the environment and to provide the population with more and more intelligent elements in open, public spaces. At national level, such solutions involve a level of complexity above average, and adoption is still limited geographically or in terms

of addressing. We see that solutions are taking the ground for smart waste management – considerably more than the previous report, renewable energy and monitoring of the various environmental parameters. This vertical contains virtually the greatest success in terms of the impact of Smart City solutions on citizens through air quality stations. The example in Bucharest, with private air quality monitoring networks that helped citizens at the beginning of 2020 to move both Bucharest City Hall and the Environment Ministry to take measures, is perhaps the greatest success of the impact of Smart City projects in Romania. It is notable that these air quality monitoring stations were mounted without PMB consent and therefore we have not included them among the Smart City solutions in this report except those that were put in agreement with the city hall.

Main Actors

We have now seen in Romania as the most active global providers of Smart City solutions on DELL technologies with safe City solutions, after seeing Siemens and CISCO involved in the previous years. We also see an exit from this Smart City market by ZTE.

In Alba Iulia there were 45 companies that tested Smart City solutions, and in this edition we have identified 104 companies providing Smart City solutions, of which the first three companies are Telekom Romania with 26 projects, Cluj IT Cluster very active with 21 projects and Orange with 15 projects implemented. It comes behind Electrogrup, part of e-Infra group who has the Direct One company and NETCITY Telecom company and it shows the biggest ambition trough his dedicated team of Smart City projects.

Ranking of first 10 Smart City solutions provider:

Nr.		Total projects	Smart Economy	Smart Mobility	Smart Environment	Smart People	Smart Living	Smart Governance
		295	48	79	24	14	64	66
1	Telekom Romania	26	4	7	2	1	12	0
2	Cluj IT Cluster	21	4	2	1	2	6	6
3	Orange	16	6	0	2	1	4	3
4	Electrogrup	12	0	8	2	0	1	1
5	Life is Hard	12	1	2	0	3	5	1
6	Industrial Software	8	0	0	0	0	0	8
7	Microsoft	6	2	2	0	1	0	1
8	Intrarom	6	2	1	1	0	2	0
9	Integrisoft Solutions	6	0	0	0	0	0	6
10	Huawei Technologies	6	1	2	1	0	2	0

Besides companies, there are also Smart City NGOs and clusters involved in the market. Among the active NGOs, we list ARSC – the Romanian Association for Smart City, which has over 250 members, UrbanizeHub (https://urbanizehub.ro/) and Pitesti Smart City: (https://www.pitestismartcity.ro/).

The first highly involved cluster is the Cluj it cluster, https://www.clujit.ro/about-us/, which is approaching 100 members, and since 2019 the cluster SCORE – Smart cities of Romania cluster has emerged: https://www.scorcluster.ro/.