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SCIA

MAPPING OF SMART COUNTIES, CITIES AND VILLAGES IN ROMANIA

5TH EDITION, JUNE 2021

THE DIGITALIZATION OF COMMUNITIES IS EXPANDING IN ROMANIA

TABLE OF CONTENT

1
INTRODUCTION pag. 3

2
SMART CITY MARKET NEWS pag. 4

3
METHODOLOGY pag. 6

4
THE SMART CITIES SCANNED IN THIS EDITION pag. 7

5
CLASSIFICATION OF PROJECTS BY SMART CITY VERTICALS pag. 13

6
SMART CITY PROJECTS RANKING BY VERTICALS pag. 14

7
SOURCES OF FUNDING FOR SMART CITY PROJECTS pag. 18

8
THE STATE OF THE DIGITALIZATION OF THE COUNTIES IN ROMANIA pag. 20

9
CAN RURAL ROMANIA BE DIGITALIZED? pag. 21

10
SMART CITY PRIVATE SOLUTIONS pag. 22

11
SMART CITY INTERVIEWS pag. 23

12
SUPPLIERS WITH IMPLEMENTED SMART CITY PROJECTS pag.29

13
SMART CITY EVENTS MARKET. Sharing knowledge between cities pag.30

14
A SELECTION OF SMART CITY SOLUTION PROPOSALS pag.33

15
CONCLUSIONS pag. 47

REFERENCES pag. 48

CHAPTER 1

INTRODUCTION

A new edition of the Smart City Scan in Romania, the fifth, with a new name: Mapping of Smart Counties, Cities and Villages in Romania finds us in the already second year of the pandemic context. And as the global pandemic situation has overturned global calculations, situations and hierarchies, the Smart City area could not remain neutral to change, either.
Specifically, you will see in this report by Vegacomp Consulting a positive aspect, especially in terms of the administration's response to the needs of distancing and de-bureaucratization: the Smart Governance vertical, occupying the second position in the ranking, has no less than 226 projects that we hope to make life easier for the inhabitants.
But, as in the previous reports, we also have the eternal perdants - Smart Environment and Smart People, on already common positions, at the bottom of the rankings. The environment and the people, absolute priorities in a society that knows its values and allocates its resources to future generations are neglected by the Romanian Smart City industry. The reasons? We can already guess: the slightly more difficult potential monetization or not as "immediate" as expected by industry players, the mirage of solutions from other verticals, which have already demonstrated their viability, the lack of understanding or openness of the decision-makers or why not even the lack of vision.
What else do we see in this edition more than ever Intelligent mobility solutions - from the car, bike, scooter and ride-sharing, to the electrification of the public transport network and the much needed but still insufficient charging stations for electric cars.
If we switch the discussion from the area of the chosen solutions to their geography, at city level, we notice that the Smart City engine, once turned on, keeps a dynamic that is hard to match. The big cities, which have already tasted the efficiency of Smart City solutions and have taken concrete steps in this direction keep their lead, the top 10 is composed of almost the same names, with some shifts in overall position, but the aggregated gap versus the ones outside the top is growing.

The nice surprises come from medium and small cities, which sometimes impress with their ambition and openness to the adoption of Smart City solutions. And here, a slightly smaller but more cohesive local community, along with a more open administration, which moves more agilely than larger and perhaps too bureaucratized cities can bring forth smart solutions for the benefit of residents.

You will still find an up-to-date snapshot of the Romanian Smart City market and starting with this year the Romanian Smart Communities market, with its improvements, shortcomings and promises. And as before, we do not stop here - we will periodically update this image to reflect the reality as thoroughly as possible.

CHAPTER 2

SMART CITY MARKET NEWS

The turn-key smart solutions integrator Vegacomp Consulting continues the scan of Smart City projects in Romania and with the fifth edition is expanding the scan to Smart Counties and Smart Villages, focused on the data collected until April 30, 2021. Everything, in a period when the spotlight was focused on the public administrations in Romania, more than ever.
We aim, after the first five years of scaning and analysis of the Smart City and Smart Communities projects, to say which projects have proven their worth over time and which projects or attempts have not stood the test of time. Although we've asked the city halls through the questionnaire sent to communicate the status of the previous projects, we found three items that we propose to follow-up on and eliminate as much as possible from Smart City projects:

- Lack of evaluation and monitoring of finalized projects;
- Lack of maintenance - and maintenance culture;
- Lack of practice in the lessons learned.

Without detours, we've divided things into two clear categories meant to motivate the actors involved in the Smart City market:

Good examples:

Smart Economy:

- Orange Fab, an acceleration program for startups that changes the lives of communities, organized by Orange Romania, with a deadline of June 6, 2021: https://www.orangefab.ro/cities-of-the-future/ .

Smart Education:

- Smart City 2030, an education program for high school students about Smart City, developed by the Romanian Smart City Association (ARSC) in Sector 6 (2 editions) and in Sector 4 (in 2020): https://orasulinteligent2030.ro/

Poor examples:

Smart Governement:

- CJ Constanţa: the County Hall responds to our request on 23.04.2021, bearing the registration number 13836 / 13.04.2021, with an attachment in the "2021 File" format, which is not part of or is not compatible with the Office suite (doc or xls) or pdf and admits that their software responds to citizens in this way. What kind of digitization is one that provides answers that the average applicant, with a standard level of PC literacy, cannot even open?

The global Smart City market is continuing to evolve at an accelerated pace with an average annual growth estimated at 14.8% by 2025, while the market is expected to reach $ 820.7 billion according to the report Markets and Markets (1). In 2025 50% of Asia's smart cities are estimated to be Chinese, while Europe will have the largest investment in Smart City projects in the world. India aims to reach the top 100 smart cities in 2022.
If we ask ourselves if there is a 100% smart city in the world, now we can only say that several studies have been done in this regard. Perhaps the most famous of these is the Cities in Motion Index, developed by IESE. The most recent one dates from October 2020 represents the seventh edition and analyzes 174 cities in 80 countries, according to 10 main indicators and respecting the ISO 37120 standard. The study which also includes the city of Bucharest at chart line 103 brings Paris to 3rd place, replacing Amsterdam, and estimates that Europe will have 300 Smart Cities in 2020(2)

There are about 1,000 cities in the world with a population of over 500,000 and the question is justified - when will all these cities become smart? Or, at least, when will 80% of them become intelligent?
Similarly, we ask ourselves: when will we have the first truly Smart City in Romania and which one will it be? We are currently witnessing a competition between cities - an extremely beneficial thing. And, after the phase of small pilot projects was exceeded in Romania, we gravitate between Smart City development strategies and projects with European funds, which should also contain Smart City components.
We noticed that a strong emphasis falls, at the European level, over the next period, on Innovation and Public Procurement. We note the competition initiated by the European Commission - "European Innovation Procurement Awards", which has 3 categories, with a prize of 75,000 Euros for the winner of each category and as a deadline for this first edition the date of July 29, 2021. (3)

If in our first edition, in March 2018, the number of Smart City projects in Romania identified in the report was 216 and we estimated a market valued at 30 million Euros. In the second edition, in the fall of 2018, we were already talking about a Smart City market that exceeded 300 projects realized in Romania, while in March 2019, in the third edition of the report, we reached 331 initiatives in the project stage, under implementation or already completed. In 2020, we noted 594 Smart City projects and a market valued by multiple sources at over 120 million Euros, and currently, in 2021 and still in full pandemic context, we reach the milestone of 860 projects in Romania, gathered from 124 cities, compared to 87 last year.
As novelties of the Smart City market in Romania, we note the extension of Smart City developments at the level of communities: counties and villages (rural areas).
We signal the notable appearance of the first standard about Smart City, published in Romanian on December 31, 2020, by ASRO: SR ISO 37120 "Sustainable cities and territorial communities. Indicators for urban services and quality of life ". This standard is a translation of the second edition of the ISO 37120 standard from 2018, which is improved compared to the first version from 2014. We recommend deepening and using this standard as a working tool in the development of all Smart City projects in Romania. The standard can be acquired online.

"These indicators can be used to track and monitor the progress of urban performance. In order to achieve sustainable development, the entire urban system must be considered. For an optimized future planning, it is recommended that current use of resources and their efficiency be taken into account when planning future developments. The indicators and associated methods of analysis in this document have been developed to help cities:
a) measure the performance over time of the management of urban services and quality of life services;
b) learn from each other by comparing a wide range of performance measurements and
c) support the establishment of a policy and the setting of priorities."

We have noticed a significant increase in the response rate of the local authorities as follows:
- City halls: 202 responses out of 324 (62%) of which 116 city halls also submitted projects compared to only 106 responses out of 324 (33%) last year;
- County Councils: 33 answers out of 41 (80%) of which 16 had projects.

We consider the doubling of the response rate from the city halls as a consequence of the 4 years of presence of this report which was awarded by the Romanian Smart City Association on December 20, 2020, at the fifth edition of the Smart City Industry Awards, with the Social Innovator Award.
(Source: https://romaniansmartcity.ro/https-romaniansmartcity-ro-campionii-galei-scia-5-2020/)

CHAPTER 3

WORK METHODOLOGY

The methodology of this edition was optimized by collecting data from three sources of information and verifying them: city halls, suppliers, media. We sent addresses to 324 city halls in Romania of which 202 cities completed the questionnaire and we collected data from 6 other city halls from other sources, in 2 or even 3 rounds. We added next to Bucharest 7 city halls in this report, for accuracy and a better breakdown. The report includes information taken from city halls and other sources, between March 1 and May 15, 2021.
The information from the city halls was also doubled by the second layer of data, from the websites of the municipalities, from the providers of Smart City solutions, as well as from the appearances in the media regarding the communicated Smart City projects. As the last step, we have a set of information obtained through direct interviews with representatives of Smart City solution providers in Romania, most of them not being communicated until the date of publication of this report through the media.
The current version, the fifth edition of the Smart City Scan in Romania, already accumulates information about 124 large, medium and small cities in the country that currently have, in the planning phase, in progress or already completed, 860 Smart City projects. We consider a margin of error of 10% in the collection of our data - more precisely, we estimate that in reality there are more Smart City Projects by about 10%, compared to those identified by us - because currently Smart City projects are carried out by non-centralized city halls and we notice over time a lack of communication between departments.
Vegacomp Consulting will annually update and consolidate all the information published in this new version of the document, in order to permanently present a correct image of the development of Smart City and Smart Communities in Romania.
The identified Smart City projects retain their classification in the same six Smart City Verticals - Smart Economy, Smart Mobility, Smart Environment, Smart People, Smart Living and Smart Governance, in line with European Union reports.
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What is a Smart City project?
"A smart city is a place where traditional services and networks are made more efficient by using telecommunications and digital technologies for the benefit of its citizens and the economy", according to the European Commission's page on Shaping Europe's digital future (4) .
We have included, in this Radiography, the projects that have the following characteristics:

- They are intended for the inhabitants of a city;
- They are delivered in partnership with the city halls;
- They perform at least three simultaneous functions - for example, changing an old street light with one based on LED is not a Smart City solution, unless the project also includes remote management and remote control options of the LED lights;
- They bring a clear improvement compared to the traditional solutions, for the comfort of the inhabitants;
- They are integrable - can be added to applications of the City Hall or of third parties;
- They are scalable - can be replicated quickly and easily in other city halls.

What projects are not Smart City ones?

- Replacement of classic street lights with LED ones, as a single action;
- Replacing traffic lights with LED ones, just because they look better and have lower electricity consumption. In order for this to be a Smart City solution, they need to communicate their permanent status to a dispatch center and also to communicate with neighboring traffic lights, for a mechanism adapted to traffic fluidization;
- Installing a number of surveillance cameras in a locality is not a Smart City solution, if it is a closed system and the cameras communicate to a dispatcher in a closed circuit. The solution is a Smart City one, if the images include other automated usage options, such as: fire / smoke alert, running a red light at an intersection and other possible scenarios.

From this edition on we report the emergence of Smart City projects developed for cities or communities that are not delivered along with the City Hall or are done with the City Hall but the City Hall did not report them to us but which are useful to the residents - in Chapter 10.

CHAPTER 4

THE SMART CITIES SCANNED IN THIS EDITION

The list of cities entered in the Smart City race is evolving rapidly. We reached a total of 124 cities, presented in the ranking below, with the mention that, in the situation of the Capital, for accuracy, we've measured 7 distinct mayoralties:

No.	City	Number of projects	Smart Economy	Smart Mobility	Smart Environment	Smart People	Smart Living	Smart Governance
		860	99	260	64	37	174	226
1	Alba Iulia	106	24	17	8	8	24	25
2	Cluj Napoca	58	3	21	8	3	12	11
3	Iasi	56	4	17	13	2	10	10
4	Bucuresti	39	1	14	2	0	11	11
5	Bucuresti Sector 4	35	2	10	1	1	10	11
6	Arad	29	2	7	2	6	3	9
7	Sibiu	27	5	10	3	0	3	6
8	Oradea	26	1	9	1	0	10	5
	Timisoara	26	5	9	1	1	6	4
9	Brasov	18	1	7	1	1	2	6
10	Botosani	15	3	2	0	1	5	4
	Deva	15	0	4	1	0	8	2
	Hunedoara	15	0	2	1	0	7	5
	Piatra Neamt	15	1	5	2	0	5	2
11	Baia Mare	13	2	5	1	1	1	3
	Constanta	13	1	6	1	0	4	1
	Galati	13	3	6	1	0	2	1
12	Bistrita	11	2	6	0	0	0	3
	Slatina	11	1	8	0	0	1	1
13	Avrig	10	2	0	5	0	3	0
14	Giurgiu	9	1	2	0	1	1	4
15	Calarasi	8	0	7	0	1	0	0
	Focsani	8	1	7	0	0	0	0
	Ploiesti	8	2	4	0	0	0	2
16	Bacau	7	1	2	0	0	1	3
	Craiova	7	0	4	0	0	0	3
	Fagaras	7	1	3	0	1	1	1
	Satu Mare	7	1	2	0	1	0	3
17	Aiud	6	1	1	0	0	2	2
	Harsova	6	0	1	0	1	1	3
	Odorheiu Secuiesc	6	0	3	0	0	1	2
	Ramnicu Valcea	6	0	3	0	0	1	2
	Resita	6	2	2	0	0	0	2
	Sfantu Gheorghe	6	1	4	0	0	0	1
	Targu Mures	6	0	4	0	0	0	2
18	Alesd	5	1	1	0	0	2	1
	Bucuresti Sector 2	5	0	0	0	0	0	5
	Bucuresti Sector 3	5	0	0	0	1	1	3
	Buzau	5	0	2	0	0	0	3
	Drobeta Turnu Severin	5	0	2	0	0	1	2
	Medias	5	0	1	0	0	0	4
	Moinesti	5	1	1	0	0	1	2
	Pitesti	5	0	3	0	0	1	1
	Slobozia	5	0	3	0	0	1	1
19	Abrud	4	0	1	0	0	1	2
	Bucuresti Sector 1	4	0	0	3	1	0	0
	Cernavoda	4	1	0	3	0	0	0
	Dej	4	0	2	0	0	1	1
	Ghimbav	4	1	1	0	0	1	1
	Navodari	4	1	2	0	0	0	1
	Sighisoara	4	1	0	0	0	1	2
	Suceava	4	0	3	0	0	1	0
	Targu-Jiu	4	0	1	1	0	1	1
	Turda	4	0	1	0	1	0	2
	Zalau	4	0	2	0	0	0	2
	Alexandria	3	1	2	0	0	0	0

20	Beius	3	0	0	0	0	1	2
	Bicaz	3	1	0	0	0	1	1
	Braila	3	0	2	0	0	1	0
	Gheorgheni	3	1	0	0	0	1	1
	Horezu	3	1	1	0	0	0	1
	Mizil	3	1	0	1	0	0	1
	Negresti	3	0	0	0	0	1	2
	Odobesti	3	1	0	0	1	1	0
	Petrosani	3	0	0	0	2	1	0
	Roman	3	0	0	0	0	1	2
	Sebes	3	0	0	0	0	1	2
	Simeria	3	1	0	0	0	2	0
	Sovata	3	0	2	0	0	1	0
	Topoloveni	3	0	2	0	0	1	0
21	Agnita	2	0	1	0	0	0	1
	Bailesti	2	1	0	0	0	0	1
	Bals	2	1	0	0	0	0	1
	Beclean	2	0	0	0	0	1	1
	Bucuresti Sector 5	2	0	0	0	0	0	2
	Campia Turzii	2	0	1	0	0	0	1
	Chitila	2	0	1	0	0	1	0
	Curtea de Arges	2	0	2	0	0	0	0
	Dorohoi	2	1	0	0	0	1	0
	Gura Humorului	2	0	1	0	0	1	0
	Iernut	2	1	0	0	0	0	1
	Magurele	2	0	0	0	0	0	2
	Talmaciu	2	0	0	0	0	1	1
	Targu Neamt	2	0	0	0	0	1	1
	Tarnaveni	2	1	0	0	0	0	1
	Tulcea	2	0	2	0	0	0	0
	Urziceni	2	1	0	0	0	0	1
	Vaslui	2	0	1	0	0	0	1
22	Barlad	1	0	0	0	0	0	1
	Bucuresti Sector 6	1	0	0	0	1	0	0
	Bumbesti-Jiu	1	0	0	1	0	0	0
	Busteni	1	0	0	0	0	0	1
	Comanesti	1	1	0	0	0	0	0
	Cugir	1	0	1	0	0	0	0
	Curtici	1	0	0	0	0	1	0
	Falticeni	1	0	0	1	0	0	0
	Gherla	1	0	0	0	0	0	1
	Huedin	1	0	0	0	1	0	0
	Isaccea	1	0	0	0	0	1	0
	Lugoj	1	0	0	0	0	0	1
	Lupeni	1	0	0	0	0	0	1
	Mangalia	1	0	0	1	0	0	0
	Marasesti	1	0	0	0	0	1	0
	Marghita	1	1	0	0	0	0	0
	Miercurea Ciuc	1	0	0	0	0	0	1
	Miercurea Nirajului	1	0	0	0	0	1	0
	Miercurea Sibiului	1	0	0	0	0	0	1
	Mioveni	1	1	0	0	0	0	0
	Moreni	1	0	0	0	0	1	0
	Oltenita	1	0	0	0	0	0	1
	Orastie	1	0	0	0	0	1	0
	Pascani	1	0	0	0	0	0	1
	Pecica	1	1	0	0	0	0	0
	Predeal	1	0	0	0	0	0	1
	Recas	1	1	0	0	0	0	0
	Reghin	1	0	0	0	0	0	1
	Rovinari	1	1	0	0	0	0	0
	Saliste	1	0	0	0	0	0	1
	Stefanesti - AG	1	0	0	0	0	0	1
	Targoviste	1	0	1	0	0	0	0
	Targu Bujor	1	0	0	1	0	0	0
	Targu Lapus	1	0	0	0	0	1	0
	Targu Secuiesc	1	0	0	0	0	0	1
	Vatra Dornei	1	0	0	0	0	0	1
	124							

Looking at the top 10 smart cities in the country we notice that the first two places are unchanged compared to last year's situation, with Alba Iulia and Cluj-Napoca on the first two positions. Iași ranks third, followed by Bucharest - but only at the level of central city hall because cumulated with the six distinct sectors, the Capital leads the ranking, Bucharest Sector 4 and Arad.
We further note that the number of people in city halls dedicated to Smart City projects and infrastructure is increasing. We consider that we will move to the next stage of Smart City development only when in Romania the municipalities will have at least one person dedicated to Smart City projects and when we will have new jobs, such as Data Manager, Data Analyst, Traffic Officer or Smart City Infrastructure Manager in the organizational chart.

At the level of **medium-sized cities** the ranking already shows us some of the names that led the Smart City industry and the adoption of smart solutions, a sign that innovation and leadership can appear in more agile organizations, not necessarily larger, more bureaucratic or more numerous ones.

No.	Middle City	Number of projects	Smart Economy	Smart Mobility	Smart Environment	Smart People	Smart Living	Smart Governance
		393	50	131	20	19	76	97
1	Alba Iulia	106	24	17	8	8	24	25
2	Arad	29	2	7	2	6	3	9
3	Sibiu	27	5	10	3	0	3	6
4	Oradea	26	1	9	1	0	10	5
5	Botosani	15	3	2	0	1	5	4
	Piatra Neamt	15	1	5	2	0	5	2
	Deva	15	0	4	1	0	8	2
	Hunedoara	15	0	2	1	0	7	5
6	Baia Mare	13	2	5	1	1	1	3
7	Bistrita	11	2	6	0	0	0	3
	Slatina	11	1	8	0	0	1	1
8	Giurgiu	9	1	2	0	1	1	4
9	Ploiesti	8	2	4	0	0	0	2
	Focsani	8	1	7	0	0	0	0
	Calarasi	8	0	7	0	1	0	0
10	Bacau	7	1	2	0	0	1	3
	Satu Mare	7	1	2	0	1	0	3

The Smart City phenomenon also penetrates **small towns**, bordering the Smart Village concept. Here, although the solutions are not numerous, the concentration of cities is higher with equality on several positions, at the Top 5 level.

No.	Small City		Smart Economy	Smart Mobility	Smart Environment	Smart People	Smart Living	Smart Governance
		185	29	35	13	7	40	61
1	Avrig	10	2	0	5	0	3	0
2	Fagaras	7	1	3	0	1	1	1
3	Odorheiu Secuiesc	6	0	3	0	0	1	2
	Aiud	6	1	1	0	0	2	2
	Harsova	6	0	1	0	1	1	3
4	Medias	5	0	1	0	0	0	4
	Slobozia	5	0	3	0	0	1	1
	Moinesti	5	1	1	0	0	1	2
	Alesd	5	1	1	0	0	2	1
5	Turda	4	0	1	0	1	0	2
	Dej	4	0	2	0	0	1	1
	Navodari	4	1	2	0	0	0	1
	Sighisoara	4	1	0	0	0	1	2
	Cernavoda	4	1	0	3	0	0	0
	Abrud	4	0	1	0	0	1	2
	Ghimbav	4	1	1	0	0	1	1

But what do the city rankings look like for each Smart City vertical? We can see the dominant municipalities in each Top 5 listed below, in this report.

Smart Governance

No.	City	Smart Governance
1	Alba Iulia	25
2	Cluj Napoca	11
	Bucuresti	11
	Bucuresti Sector 4	11
3	Iasi	10
4	Arad	9
5	Sibiu	6
	Brasov	6

Smart Living

No.	City	Smart Living
1	Alba Iulia	24
2	Cluj Napoca	12
3	Bucuresti	11
4	Iasi	10
	Bucuresti Sector 4	10
	Oradea	10
5	Deva	8

Smart Economy

No.	City	Smart Economy
1	Alba Iulia	24
2	Sibiu	5
	Timisoara	5
3	Iasi	4
4	Cluj Napoca	3
	Botosani	3
	Galati	3
5	Bucuresti Sector 4	2
	Arad	2
	Baia Mare	2

Smart Mobility

No.	City	Smart Mobility
1	Cluj Napoca	21
2	Alba Iulia	17
	Iasi	17
3	Bucuresti	14
4	Sibiu	10
	Bucuresti Sector 4	10
5	Timisoara	9
	Oradea	9

Smart Environment

No.	City	Smart Environment
1	Iasi	13
2	Cluj Napoca	8
	Alba Iulia	8
3	Avrig	5
4	Sibiu	3
	Cernavoda	3
	Bucuresti Sector 1	3
5	Bucuresti	2
	Arad	2
	Piatra Neamt	2

Smart People

No.	City	Smart People
1	Alba Iulia	8
2	Arad	6
3	Cluj Napoca	3
4	Iasi	2
	Petrosani	2

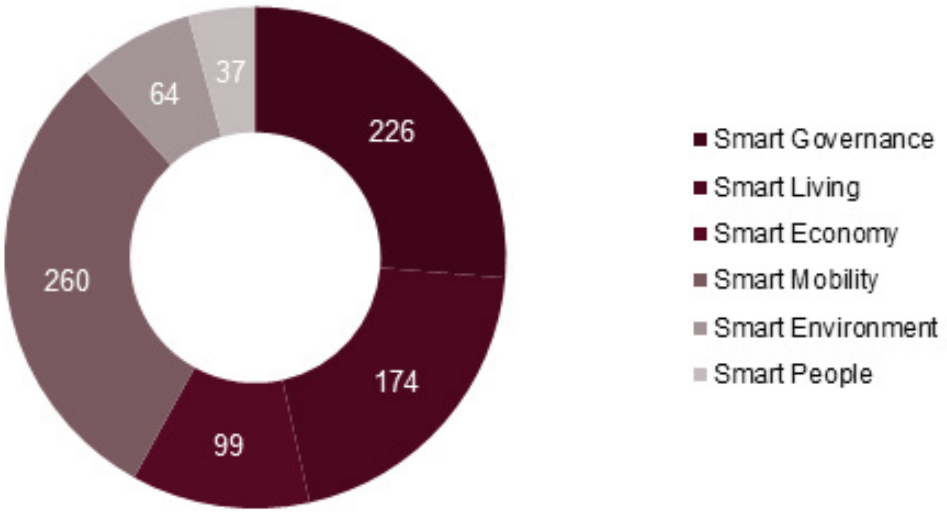
CHAPTER 5

CLASSIFICATION OF PROJECTS BY SMART CITY VERTICALS

Vegacomp Consulting continues to rank Smart City projects according to the verticals recognized at the European level and has prepared, this year as well, a national ranking of the Smart City verticals based on the number of projects implemented so far.

The old leader is also confirmed by this edition and the position is even strengthened by the pandemic context - the Smart Mobility vertical which stands out significantly today especially in the context of increased attention to safety and health, which is reflected in transport - covered by no less than 260 projects, almost 75 more than in the previous report. At relatively constant distance follows Smart Governance with 226 projects, up from last year's 130 projects, a vertical that consolidates its second position in the ranking. The podium is completed by Smart Living with 174 projects, the equivalent of an advance of 53 initiatives, compared to 2020. Smart Economy maintains its fourth place with 99 projects and a slight advance of 15 initiatives. The last two positions are also held by Smart Environment with 64 projects, up from 42 in 2020 and Smart People respectively, with only 37 initiatives and an advance of just 8 new projects during the last 12 months.

The leadership position, clearly consolidated for the second consecutive year, reflects the continuous desire and again the need to find a solution to a major, persistent problem of Romania – the lack of mobility infrastructure, accentuated by the social distancing rules and the effects of the pandemic which make intelligent transport a priority for the safety of the inhabitants who have not yet found a decisive solution.



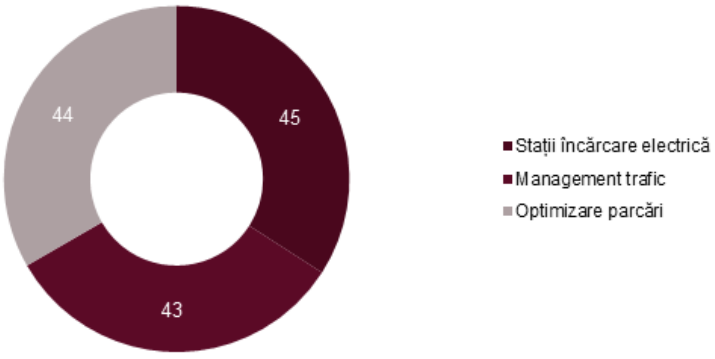
CHAPTER 6

SMART CITY SOLUTIONS ADOPTED IN ROMANIA, ON VERTICALS

The most popular Smart City solutions identified in Romania and at the same time the most frequently used worldwide are this year as well: smart public lighting, smart parking, charging stations for electric cars, traffic management systems, modern and intelligent stations for public transport, video monitoring and provision of public WiFi services.

SMART MOBILITY

The leader of the previous editions by adoption of the projects maintains in 2021 its position at a relatively constant distance from the next vertical which shows the priority of Romania over the last four years, massively accentuated by the pandemic context.
Generally, the projects involve more efficient and faster transport but the focus is eminently on electricity through the charging stations of electric vehicles in a close fight with the intelligent optimization of parking lots and smart traffic management systems.
We also see public transport initiatives via electric vehicles or bike-sharing developments along with the expansion of bike lanes.
Beyond being just another simple alternative to the usual means of transport Smart Mobility is a concept built on the principles of flexibility, efficiency, safety, technology with low environmental impact and integration, regardless of the variety of means of transport.
More and more cities see benefits in the pillars on which Smart Mobility is founded as a direction and begin to integrate the vertical from the municipal planning phase by optimizing and improving their Urban Mobility Plans, outdated in format and outdated in utility. Each city has a limited road structure and Smart Mobility brings a layer of efficiency through optimization - transport merging, monitoring, traffic planning and management, alternative transport, sensors and computer applications designed to measure congestion and provide alternatives.

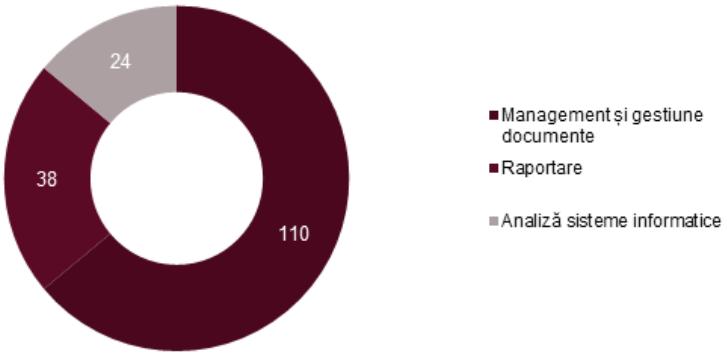


SMART GOVERNANCE

The pandemic context, the reduced mobility of the population as well as the limitation or responsibility of physical interactions were drivers for accelerating the authorities, on their way to de-bureaucratization, the democratization of access and digitalization. And in 2021 there is a greater responsibility and involves relevant local solutions with a clear goal - efficiency.

The fight at the level of preferred solutions is tight, between the management and efficiency of documents – dominant leader, up from only the third position in 2020, reporting by citizens and analysis, optimization or implementation of information systems in public administration.

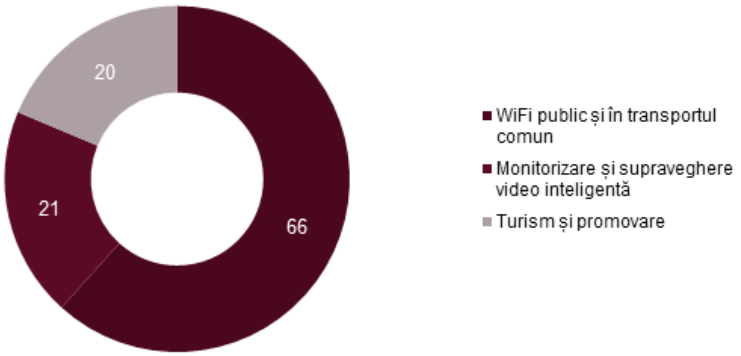
At national level, smart governance begins to mean more automation, the switch to online for municipality flows and more doors open at any time, from laptop or smartphone for residents.



SMART LIVING

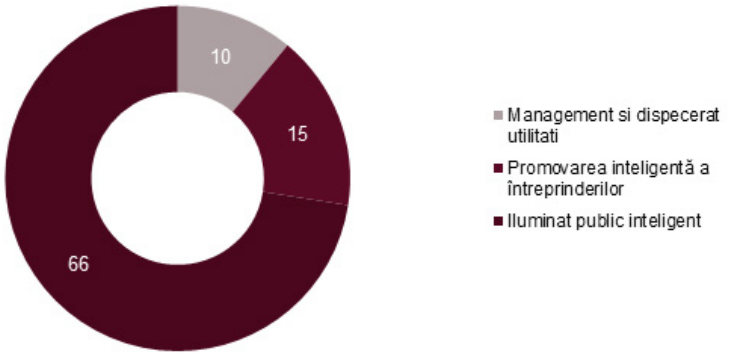
In Romania, in 2021, in the second year of the pandemic, the Smart Living component remains unchanged and can again be divided into two main categories: free WiFi and the rest. Smart video monitoring alone takes timid steps with a big step forward but only covering over a third of all free WiFi solutions.

The easy entry point into the Smart world, the installation of a WiFi router and free Internet access in a park, public building or tourist area, certainly dominates the Smart Living vertical. And this year the podium is completed by the promotion of tourism solutions - areas severely affected by the pandemic which are making a huge effort to recover.



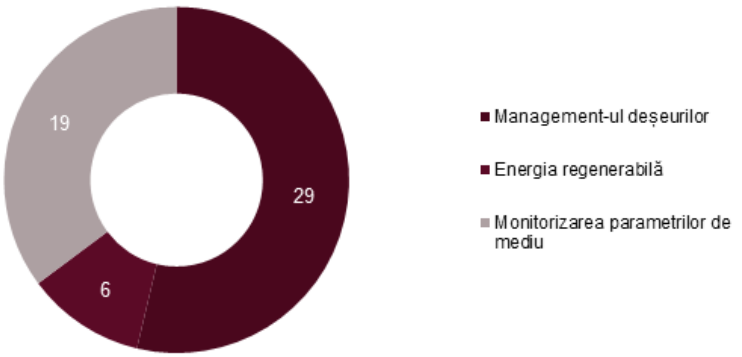
SMART ECONOMY

Immediately below the top 3, this vertical maintains the same 4th place, but shows signs of positive evolution. Even in a pandemic context, some things do not change, and what free WiFi means for Smart Living is Smart Public Lighting for Smart Economy even at a larger gap than all other solutions. At a great distance, in the back, are the following the most popular options - smart business promotion and utility management.



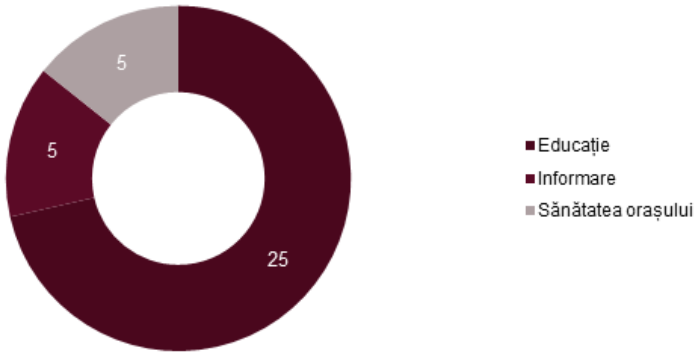
SMART ENVIRONMENT

Technology is evolving both in order to enhance and protect the environment and to provide the population with more and more intelligent elements along with the necessary protection in open, public spaces.
At a national level, the solutions of this type are involving an above average level of complexity and the adoption is still limited geographically or by level of addressability. We noticed that 2021 does not bring major changes within one of the relatively inert verticals, at a national level, and the basic solutions aim, now allthesame, at intelligent waste management, monitoring of various environmental parameters and renewable energy.



SMART PEOPLE

Education and public information are among the global priorities in the Smart City area, but in Romania it is almost an unfortunate tradition and already the fourth consecutive time when the collected data show it as the last in terms of adoption, implemented punctually, often as a pilot project, in scarce education facilities that have the resources to innovate in more open, efficient and measurable communities.
Among the areas that take shape, although they do not have a significant evolution in the measured period, compared to other verticals, we see information systems for citizens along with information about the general health of the city.



CHAPTER 7

SOURCES OF FUNDING FOR SMART CITY PROJECTS

In the last year the implementation of Smart City projects was almost exclusively from European funds. At the level of city halls there is still a clear need to classify costs and revenues on a separate and distinct budget line called Smart City, as an investment of the city at least for all projects financed from the local budget.
As a result of the financial difficulties of the city halls in the last period, even the private companies have invested very little in Smart City projects. However, through projects following the example of those described in the future Chapter 10, private companies have developed Smart City projects without the involvement of city halls and we are convinced that some of these initiatives will be replicated by city halls shortly.

It is natural to wonder where the sources of funding for Smart City projects will come from in the coming years if there is still so much talk about the field.

- Structural Funds ROP 2021-2027: The concept of Smart City supported by the ROP through Priority Axis 2 - A region with Smart cities, which aims to support the digital transformation of the regional economy and areas of public interest, and reap its benefits for citizens and businesses:
  https://www.fonduri-structurale.ro/stiri/25264/smart-city-conceptul-de-oras-inteligent-sustinut-prin-por-2021-2027
- European Innovation Council has several funding lines, according to EIC Work Program 2021 (5):
  - » Open Funding (classic project calls);
  - » Strategic challenges - dedicated to specific technological innovation for the transition to a green, digital and healthy society;
  - » Pathfinder - for science-towards-technology research;
  - » Transition - for innovative activities that go beyond the phase of ideas of principle;
  - » Accelerator - for the go-to-market and scaling phase of startups;
  - » European Innovation Ecosystem - supports the actors involved in innovation activities to collaborate in Europe;
  - » Awards.
- The French Embassy organizes a contest with prizes for the Sustainable City. During the conference of May 17-18, 2021, the French Embassy in Romania launched the 2021 edition of the competition of good practices on sustainable cities for local authorities in Romania with the support of Renault Groupe and Carrefour Romania. This competition aims to support initiatives in local communities in Romania (counties, municipalities, cities, villages) that are part of the dynamics of sustainable development and ecological transition in terms of 1) Waste management, energy efficiency and circular economy; 2) Urban mobility; 3) Water and sewerage; 4) Urban reconversion and rehabilitation of heritage. The files must be sent by September 3, 2021, at the latest to the Cultural Cooperation and Action Service / French Institute of Romania. The regulations of the project competition in French and Romanian and the application form in Romanian can be consulted on the website:
  https://ro.ambafranceorg/A-treia-edi%C8%9Bie-a-concursului-de-bune-practici-pe-tama-ora%C8%99elor-durabile
- Smart City II Venture is the second investment fund focused on smart city technologies launched by Eurazeo. The investment fund reached 80 million euros at the first closing, with prospects for further growth.
  (Sursa: https://www.startupcafe.ro/finantari/finantari-startup-fond-glovo.htm)
- Grants from Norway and EEA - nine active projects:
  https://eeagrants.org/countries/romania

It remains to be seen how fast and smart the city halls representatives are in order to attract as much money as possible in the coming years.
In other countries, we see talks about various innovative models for financing projects for communities.
According to the Smart Cities World magazine from 7.05.2021 (6), cities are looking for funding for environmentally friendly Smart City projects.
Green financing options will also become more and more part of the financing mix.
After causing the stagnation of many smart city projects around the world in 2020, the Covid-19 pandemic will also prove to be the catalyst for accelerating programs, through incentive and recovery packages.
Although technology does not have all the answers when it comes to helping cities recover and rebuild better, world leaders recognize the important role that the smart component must play.
Recovery and resilience packages are also in the spotlight.

The European Union has promised an unprecedented € 1.8 trillion package to help the continent recover, with the next element of NextGenerationEU funding the recovery and resilience instrument. This will provide EUR 672.5 billion in loans and grants available to support EU countries' reforms and investments. Its ultimate goal is to make European economies and societies "more sustainable, resilient and better prepared for the challenges and opportunities of environmental and digital transitions".

Government funding is ideal for projects that have low economic viability but cover a strong social need.
Eco-financing is a new term we will get used to in the future.
In addition to incentive financing, green banks and other more sustainable financing models will become part of the mix. A green bank is a public, semi-public or non-profit institution that offers a variety of financial products focused, in particular, on climate mitigation projects such as renewable energy and energy efficiency programs.
Banks are also launching greener and more socially responsible financing initiatives, which aim to support the private sector in financing smart city technologies.
In our country, attempts to help with funding or public-private partnerships (PPPs) are interpretable, debatable and contestable, due to the sad history and political failures of recent years but we hope to catch up in the next period via the quality and verticality of the people who implement projects in all existing environments. An increase in the diversification of funding sources to reduce dependence on European funds and increase inventiveness and productivity.

CHAPTER 8

THE STATE OF THE DIGITALIZATION OF THE COUNTIES IN ROMANIA

We noticed beyond the contagious effect of the trend called Smart City and the competition between cities, a factor called NEED. The need for digitization in the last year has also determined the county authorities to take measures to change, especially since some people from the local administration – mayors, namely - have moved to the county administrations.
After Cluj and Ilfov, which have initiated county digitization approaches, looking towards a Smart Territory, other counties followed. In this first report, we had counted 29 projects from 15 County Councils, out of the 33 that responded to our requests, based on the Law no. 544 for institutional transparency. A good response rate of 80%, which shows, once again, the degree of non-compliance with transparency and response deadlines in the country.

As examples we have the following counties:

- Cluj aimed, in September 2020, to become the first smart county by 2025, through a project with a total value of 2.8 million lei without VAT.
  https://www.transilvaniabusiness.ro/2020/09/23/apare-conceptul-de-smart-county-il-vrea-clujul/
- Bacău county aimed, starting June 2020, to implement a project with European funds called "Bacău Smart County" in 30 months, with a total project value of 3,369,338 lei
  (http://82.77.1.3/dm_cj/portalweb.nsf/AllByUNID/judetul-bacau-implementeaza-proiectul-bacau-smart-county-0000558a?OpenDocument).

Another idea worth noting is the trend of alliances between cities - such as the Alliance of the West, between Cluj-Napoca, Oradea, Timisoara and Arad, or between several localities – the Rodna area, or metropolitan areas that still have such great potential for sustainable development. An interesting thing to follow is the extension of digitalization at county level of the related infrastructure, as well as of the projects that will materialize over the next period.

CHAPTER 9

CAN RURAL ROMANIA BE DIGITALIZED?

The extension of digitalization at the level of Smart Villages is led by Ciugud, a locality near Alba Iulia which has 8 Smart Village projects out of a total of 69 projects gathered in this report chapter at its first edition from 59 communes.
For Ciugud, the source of financing Smart Village projects were European funds, also used for the most widespread WiFi project carried out through WiFi4EU in 2,170 localities in Romania (7).

If at urban level we hope that the digitalization will advance quickly with two vulnerable categories - pensioners and people on the brink of poverty, at the rural level the things are more complicated and the deadline by which digitization would find itself at home is much longer. From the projects carried out so far and the experience of others, the essential role of the school is obvious. Through the digital school, both for students and later for their parents and grandparents, the effects of the digital transformation of society will be able to penetrate the urban environment as well as through the business environment.
Our country's agriculture has great potential and virtual markets are growing while Agriculture 2.0 is preparing to take off in the coming years.

The question and challenge remains: can rural Romania be digitized? Or how long will this process take? Concrete actions are expected shortly.

CHAPTER 10

PRIVATE SMART CITY SOLUTIONS

The speed of implementation of Smart City solutions and projects in Romania is still low, given the multitude of problems and needs of communities where existing technology can be used, especially in areas such as construction which is at the far end of digitalization.
Bureaucracy, corruption and the lack of a legal framework corresponding to public-private partnerships are the main causes of the brakes imposed by the system to the Smart City solutions. However, recently we noted several private companies, some along with local, privately funded authorities which prove to be examples of good practice and demonstrate that many good things can be done through these public-private partnerships in today's Romania.
Next up, we will present some of these projects with Smart City solutions, finalized or in progress, in Romania.

- In the vertical of Smart Education, we note a project initiated by Steinbeis Transfer Management - a company specializing in technology transfer and internationalization of companies, among others - for financial education for high school students which rewards high school students across the country for business plans, including smart communities area through the Early Innovators Business Plan Competition (http://early-innovators.eu/proiectul).
- **„Grădinescu"** – the project through which Kaufland reinvents the concept of hypermarket in Romania and proposes a new model of responsibility. In addition to their aesthetic and educational role, roof and outdoor gardens also bring environmental benefits by purifying the air and reducing pollution, noise and humidity regulation. The initiative comes in the context in which urban agriculture or "balcony gardening" is an increasingly common occupation and can be extended to public buildings and office buildings. (8)
- **"Growing Kindergartens"** - Urban Farms developed by Kaufland (9)
- **Renovatio** has installed the first national infrastructure of electric car charging stations, in partnership with Kaufland in shopping centers from West to Eastern Romania and continues with another partnership with OMV through which they want to install 40 fast and ultra-fast charging stations until the end of 2022
- **OMV Petrom** , through the "Andrei's Country" project, invests 4.6 million Euros for the planting of 1.5 million seedlings throughout the country, in the period 2020 - 2023 which contains Urban Forests (including Bucharest, Sector 1) and an educational forest (10). We also mention here the RO SMART project, which has had funding of 1.3 million Euros in the last two years, for 100 projects for environment, education and community development: https://www.omvpetrom.com/ro/sustainability/social-responsability/tara-lui-andrei-
- **"Efficient Romania"** – a private project of national public interest sponsored by OMV with 4 million Euros for the period 2019 - 2022 to promote energy efficiency https://www.romania-eficienta.ro/
- **The World Bank** has several urban development projects that it supports in our country with Ilfov and Cluj counties, with the city halls of Bucharest and Brașov such as https://www.worldbank.org/ro/country/romania/brief / romania-urban-development https://www.worldbank.org/ro/country/romania/brief/romania-urban-development
- **"Smart forest"** solution developed by Vodafone together with the NGO Rainforest Connection "First Smart Forest" in Covasna County: https://www.romania-insider.com/smart-forest-romania-vodafone-2021
- In Remetea commune from Harghita county, I discovered a **"Smart Rural Areas"** project with 20 interesting Smart solutions: https://www.smartrural21.eu/villages/remetea_ro/
- **Mastercard** with **"Market on the road"** (https://piataladrum.ro/) comes to the aid of local producers and brings buyers to them via GPS. Using Waze, buyers can purchase goodies from the country and pay by card.

CHAPTER 11

SMART CITY INTERVIEWS

ADRIAN FLOREA
CEO ELECTROGRUP

Adrian Florea is an experienced executive with over 20 years of professional experience in telecommunications in all key areas - from technical to marketing, strategy and general management. Throughout his career, he has launched over 300 products and services in the B2C and B2B markets in projects with budgets of millions of euros and has managed complex teams of over 300 employees.

1. How can you define, in a few words, the stage of Smart City projects implemented in Romania until today?

SmartCity projects implemented or being implemented have increased in complexity and implicitly value. We also have cities that implement, in parallel, complementary projects, with coordination between them. We have seen a greater interest in preparing the implementation and we welcome these steps. Therefore, more maturity in implementation.

2.What are the most powerful lessons learned from the Smart City projects you have worked on, or seen?

There is still a lot of bureaucracy and non-alignment between the project actors - the combination of beneficiary-utility companies-other local public companies-cadastre does not work (for now) perfectly. I would send the people involved in these projects to Project Management courses. We would all speak the same language and understand projects alike. For example, a PMP certified project manager is required, it gets implemented, talks about the critical path of the project and no one reacts.

3. What do you consider to be the biggest failures or the weaknesses of the Smart City projects implemented so far in Romania to know what to avoid in the future?

Long durations between feasibility study and design or poor design. And the lack of coordination between authorities at the time of design. Likewise, the idea that the best projects are the cheapest also I think is wrong. The competence of the companies that implement these projects is hard to gain after many investments. The beneficiary gives a vote of confidence to the implementers whatever they may be. And then he realizes that he sticks to know-how, experience and financial strength. Therefore, I believe that the selection criteria should also be revised.

4. Who do you consider to be the beneficiaries most interested in Smart City projects in Romania and with immediate needs?

I think it's a combination of city hall - citizen. Citizens have become more informed, see immediate needs, have access to information on solutions implemented in other cities, while city halls think about the (longer) term.

5. How do you see the evolution of the Smart City concept in the coming years in Romania?

I think that the premises from which the ideas of urbanism and city design started until today will change. Until now the cities were designed car-centric (car access, road network and highway connections) and from now on we will go to citizen-centric cities - read pedestrian access. Cities will have to give back large spaces to citizens - historical areas, central and administrative areas, parks, I would place them under the umbrella of urban regeneration - meaning here a much better and denser public transport network, park & ride solutions, bike systems- sharing, CCTV systems in dense urban architecture and much more. Romania is not at all at the beginning with such systems and Electrogrup is among those companies that have implemented or are in the process of implementation with such projects. We have the know-how, we have experience, we are waiting for the authorities to take the necessary steps in this direction.

ANDREI CARABELEA
MAYOR OF PIATRA NEAMT

A husband, father and citizen who for 12 years discovered the vocation of involvement. Through volunteering or politics, he learned that the changes needed in the community happen with the involvement of everyone and that the best results are achieved with the work of a team aligned with vision, mission and values.

1. How can you define, in a few words, the stage of Smart City implemented projects in Romania until today?

From my point of view, a smart city is, first and foremost, a green city that makes the most of its resources, including state-of-the-art technologies. Piatra Neamț and several cities in Romania are brilliantly fulfilling the first condition but now they are taking the first steps towards understanding and using technology. Therefore, the orientation towards Smart City at a national level is still in its infancy even if there are localities that are in the process of implementing projects that collect data and use them automatically.
They are bold cities which implement major Smart City projects that start from a modern and ecological public transport with ultra-smart waiting stations and reach the digitalized administration. In Piatra Neamț we are implementing smart city projects, such as: urban mobility project aimed at modernizing the main mobility corridors with a dedicated lane for public transport; electric buses; ultra-smart waiting stations; intelligent traffic management system; intelligent lighting that adapts to traffic conditions; bike-sharing systems; bicycle tracks; smart street furniture; video monitoring system, air quality monitoring system, traffic and occupancy monitoring in waiting stations, etc. Also, through a complex digitization project, we break down the barrier between citizens and the administration by coming in front of them with more accessible, visible and efficient services.

2. What are the strongest lessons learned from the Smart City projects you have worked on or seen?

Perhaps most importantly, I understand that this concept of Smart City means more than smart projects. In these 6 months of office, I have noticed many times that the administration means complex and cumbersome procedures. People who beyond all these cumbersome procedures are putting even more of a brake on efficiency; thus, all these obstacles stubbornly oppose any simplification process that Smart City projects often cause. Therefore, Smart City represents a new paradigm, the one in which we put technology at the service of people, in complementarity with the administration. We are here to serve the public interest and in the simplest words our mission is to make people's lives better. And this can be easily done through technology from automating the relationship with institutions, reducing waiting times, fast and modern transport, protecting the environment. So we are talking about time and efficient resources.

3. What do you consider to be the biggest failures or weaknesses of the Smart City projects implemented so far in Romania to know what to avoid in the future?

The rush to copy models implemented by others without taking into account the specifics of each locality and the various features. We also saw various projects done quickly without taking into account the integration or the realities in the field: for example, the use of indoor-outdoor sensors; adding new devices with cables and related attachments on poles, accentuating the chaos of cables; gondolas leading to nowhere although it would have been very easy to solve this equation. There are many such examples but the good part is that we share these experiences with other administrative units as well as with the organizations that have taken on the mission of defining directions and avoiding failures.

4. Who do you consider to be the beneficiaries most interested in Smart City projects in Romania and with immediate needs?

Every citizen, every entity that at some point benefits directly or indirectly from the effects of a Smart City project. Whether it's a family, an institution or an NGO. The immediate needs are simple: safety, efficiency, environmental protection. Any project implemented in this direction should start from here. Without defining the citizen as the main beneficiary any Smart City project will be a failure.

5. How do you see the evolution of the Smart City concept in the coming years in Romania?

In the post-pandemic world, completely different from the normal we know, Smart City technologies can prove essential to protect the health, to cover new needs and unique roles. Technology is one step closer to ensuring our existence, not just evolution.
If today an efficient administration means people at the service of the citizens, in 2030 it will mean technology at the service of the people.

GRAȚIAN MIHĂILESCU

FOUNDER URBANIZE HUB

Grațian Mihăilescu founded Urbanize Hub, a global community of experts passionate about urban development, sustainably and intelligently. He is an expert, consultant with over 15 years of experience at the national and international level, specialized in European studies, international relations and development, being a fellow in Germany, Italy, Belgium and Hungary..

1. How can you define, in a few words, the stage of Smart City implemented projects in Romania until today?

I believe that Romania needs Education, Openness, Transparency, Collaboration and Involvement at the level of the urban ecosystem. These terms are valid for the administration but also the citizens. Then, the administration needs Vision, Planning and Implementation. In the medium and long term. Then we can barely talk about Smart City projects that have an impact. You can't plant seeds if you haven't prepared the ground and if you don't have devices and people who know how to use them.

2. What are the strongest lessons learned from the Smart City projects you have worked on or seen?

The lessons learned are of several types. Some are related to services. Some companies offer different services: from security to digitalization, to urban mobility, to pollution, etc. The administration buys these services, without necessarily understanding the medium and long term impact, without necessarily having a vision, without having qualified people to walk with the software or to process certain data, without understanding how to integrate them in the smart city concept. That's why I think you need a strategy at the beginning, some internal capabilities at the administration level and then start implementing projects. But in our country, things are done under pressure from private individuals, without necessarily having a positive impact on the citizens living in the city but rather from selling some private services to the administration.
Then there are the innovative projects which are not necessarily taken over by the administration. Last year, we organized the first Innovation Laboratory in the field of urban mobility for Galați, Brașov and Timișoara, where we held competitions for solutions to be taken over by the administrations there. Although we had partnerships with the City Halls of those cities, although there was openness and collaboration, none of the over 10 solutions became practical. Because when you work with the administration, the things don't happen overnight, it's a bureaucratic process and there are a lot of legislative barriers, which you have to understand how you can get through.

3. What do you consider to be the biggest failures, or the weaknesses of the Smart City projects implemented so far in Romania to know what to avoid in the future?

I said above. The pursuit of immediate profit, without taking into account real needs, without having a clear vision and strategy. Lack of collaboration, transparency. Lack of specialized people in the administration in different fields related to smart cities. Here, I give you an example: now money will be offered on digitization. PUGs will eventually turn into GIS databases. Or you, if you don't have people who know how to work in GIS and justify future interventions and development projects for the community, what do you do with that GIS? There are examples of big cities that have GIS and do not use it. In the future, we intend to provide technical assistance in the development of these databases and their use and utilization. But the needs are much greater.

4. Who do you consider to be the beneficiaries most interested in Smart City projects in Romania and with immediate needs?

First of all, the public administration must understand that any project it generates must be for the citizen and in his support. Therefore, it is vital that, in the future, any major investment or project is made in a collaborative and participatory process with the community. Then, the adoption rate of the project will be higher from the citizens, because practically they also contributed to its realization. People still don't think like that in Romania with a few small exceptions. So, the citizen and the community are the final beneficiaries of these projects. The administration is just a facilitator who needs to make sure that the investment is good for the community and supported by the community.

5. How do you see the evolution of the Smart City concept in the coming years in Romania?

I think there is still a lot of work in Romania in this regard. There will be many financial opportunities in this area but I am afraid that the administration is not ready yet and I am afraid that money will be wasted in the coming years. I'm kind of optimistic, but I think that's the reality. Now. It takes much more to develop Romanian cities around this concept. It will be a battle and a competition for resources in the next 10 years. On human and financial resources. The cities that understand this and will draw on these resources will be the ones that will win. Cities that do not understand the urban transformations that Romania is going through, and what opportunities they have and how to approach them, will lose. Unfortunately, their number will be much higher than the number of pro-active cities.

CHAPTER 12

SUPPLIERS WITH IMPLEMENTED SMART CITY PROJECTS

Currently, we have noticed that some Smart City solution providers that are very active do not appear in the questionnaires completed by the city halls we received. We also see the dynamic market of suppliers in which some have withdrawn while others remain in the market and many new suppliers of all categories appear (Romanian and international companies).

In Alba Iulia, 45 companies had tested Smart City solutions and in this edition we have identified 123 companies providing Smart City solutions in the answers received from city halls of which the first three companies are Telekom Romania with 26 projects, Cluster Cluj IT very active with 21 projects and Electrogup, currently part of the e-Infra group that also owns Direct One and NETCITY Telecom and shows great ambitions through the team dedicated to Smart City projects with 17 implemented projects. The ranking of the top 9 suppliers is presented below:

No.	Company	Total proiecte
		295
1	Telekom Romania	26
2	Cluj IT Cluster	21
3	Electrogrup	17
4	Orange	16
5	Life is Hard	12
6	Industrial Software	8
7	Microsoft	6
8	Intrarom	6
9	Integrisoft Solutions	6

In addition to companies, NGOs and clusters are also involved in the Smart City market. Among the active NGOs, we list ARSC - Romanian Association for Smart City, which has over 250 members, UrbanizeHub https://urbanizehub.ro/ and Pitesti Smart City: https://www.pitestismartcity.ro/.
The first extremely involved cluster is the Cluj IT Cluster, https://www.clujit.ro/about-us/, which is approaching 100 members, and since 2019 the SCOR Cluster - Smart Cities of Romania Cluster has appeared: https: // www.scorcluster.ro/, which organizes on June 8, 2021, a webinar on “Platforms for managing Smart City solutions”: https://scorcluster.ro/ro/inregistrare-webinar/.

CHAPTER 13

SMART CITY EVENTS MARKET . SHARING KNOWLEDGE ACROSS THE CITIES

In the last year, the event market has changed dramatically and after a period of exclusively online events we are registering more and more hybrid events with mixed participation (physical and online). Some conferences have disappeared. In addition to Smart City solution providers we also have media providers or necessary information about the Smart City market in Romania in the last year.
We present below the list of entities identified as involved in organizing Smart City events for all those who want to learn more about Smart City in concrete terms and possibly choose the right event for launching or presenting Smart City solutions shortly:

1.Jump to Smart and SMARTiCITY - hybrid events during the pandemic

- From City to Smart City. Bucharest 4-5 November 2020;
- Cities and communities. Vision 2030. Oradea February 4, 2021;
- Cities and communities. Vision 2030. Piatra Neamţ March 18-19, 2021;
- Green and digital Romania. Bucharest, May 11-12, 2021;
- Cities and communities. Cluj - Napoca May 20-21, 2021;
- The march of Eco cars - 3 editions.

https://www.jumptosmart.ro/orase-si-comunitati-cluj-napoca
https://www.jumptosmart.ro/smarticity

2.ARSC (Romanian Association for Smart City) - online events during the pandemic

- Consistent and constant series of weekly Smart City webinars reached episode 41;
- Smart City Industry Awards - 5 editions (2016 - 2020);
- Academia Primarilor - academiaprimarilor.ro - Academia Primarilor, the first academic program in Romania dedicated exclusively to local administration, which professionally approaches public administration, in theory, practice and with many models of good practice. The program took place in two series of 8 weeks each, between June and December 2020 and prepared 65 students - decision makers from the local administration. Each of the course series ended with a graduation ceremony (August 30, November 28) with the participation of lecturers, the Head of Mission in Romania, Mr. Arthur Den Hartog, graduates and all those involved in organizing the program. Participants improved their knowledge and skills as leaders, better prepared, better performing, acting with integrity, professionalism and care for the community. The Academy of Mayors program was realized by the Romanian Association for Smart City, with the support of the Embassy of the Kingdom of the Netherlands in Romania.
- Launch of the Smart City Romania Platform. The Romanian Association for Smart City has launched Smart City Romania, the first platform dedicated to the Smart City industry in Romania. The Smart City Romania platform (www.smartcityromania.ro) is a complete industry platform of the same name, which integrates all important players in the field: public institutions and local administrations concerned with developing, optimizing and improving the quality of life of citizens, private companies offering products and Smart City services and renowned experts, whose specializations cover all relevant areas of the Smart City industry.

https://romaniansmartcity.ro/webinar-smart-city-romania/

3.SNSPA - online events during the pandemic

- Smart Cities Conferences, eight editions, last on 3-4 December 2020.
- Securing Smart Cities International Conference, 2 editions on April 2, 2020, and April 22, 2021http://snspa.ro/smart-cities-2020/

http://snspa.ro/smart-cities-2020/

4.Smart Cities of Romania – online events during the pandemic

- "Smart Cities of Romania", six annual editions of expo-conferences, the last being on November 4, 2020.

5.Concord Communication – online events during the pandemic

- Smart City Debate - 11 editions, the last two being on June 22-26, 2020, Smart Cities Days and Strategic Development for Smart Cities on March 11, 2021, and with Smart Cities Days scheduled for May 25-27, 2021;
- Education Summit - March 18, 2021;
- Smart City - German Cities, an event organized for the National Foundation of Young Managers on November 25-26, 2020;
- Energy Summit - November 19, 2020;
- Building & Construction Summit - August 20, 2020;

https://concordcom.ro/evenimente-trecute-2/

6.Dutch Embassy - online events during the pandemic

- In partnership with UrbanizeHub, the embassy organized an online campaign, entitled "Smart City Modeling", with eight weekly live podcasts.

https://www.dutchcycling.nl/en/

7.French Embassy

- CCIFER – Sustainable City Conference - on November 19, 2020,

https://www.ccifer.ro/ro/evenimente/agenda/e/event/conferinta-orasul-durabil-dincolo-de-criza-provocari-si-oportunitati.html

- The 5th edition about Resilience and the green transition on May 17-18, 2021

https://www.ccifer.ro/ro/evenimente/agenda/e/event/conferinta-orasul-durabil-rezilienta-si-tranzitie-verde.html

8.AHK Romania - Cities of Tomorrow - 6 editions + Follow Up Brochure (edition 7), the 8th edition is scheduled for September 13-16, 2021
https://www.citiesoftomorrow.ro/

9.The Diplomat
a. Smart Transformation Forum, 5 editions, the next being on September 9, 2021, Bucharest;
b. Digital Transformation Conference:
i. Energy & Utilities - March 24, 2021;
ii. Banking & Fintech - September 29, 2020.
c. The Circular Economy Roadmap 2021 - February 16, 2021;
d. Grid integration of Electric Mobility Forum 2020 - November 18, 2020;
e. Automotive R&D Power Breakfast on July 2, 2020, and Romanian Automotive Forum & Awards on November 24, 2020.

https://www.thediplomat.ro/dmevents/

10. Energynomics – a consistent series of webinars, including a 5th edition campaign on Energy Digitization and Energy Efficiency, including DigitALL 2021 on February 18, 2021:
https://www.energynomics.ro/en/eveniment-energynomics/digitall-2021/

11.PRIA Conferences: PRIA Urban Innovation & E-mobility - April 15, 2021,
https://priaevents.ro/pria-urban-innovatione-mobility-2021/

12.H.appyCities - podcast. Cities on the Record, 5 podcast episodes
https://soundcloud.com/cities-on-the-record

13.Business Review - online. Rising cities. Smart future 2020, three editions, last on November 18, 2020 - online
https://business-review.eu/past-events

14.GOVNET Conferences with 2 events: UrbanTech Increasing safety in cities through Technology, Transport and Lighting - March 18, 2020, and COVID SAFE 2021 - Recovery Forum on February 11, 2021:
https://govnet.ro/events/view

Magazines:

1.ARSC:
- Smart City Magazine - reached no. 16

2. 2. Concord Communication: Ghidul Solutiilor Smart City – 3 editions (2018-2020), together with Newsweek Romania magazine

In this event market, an area of education (Preparing a Smart Workforce) necessary for the training of future specialists is beginning to take shape.

SNSPA is the first academic institution to award diplomas recognized by the Ministry of National Education for the specialization “Public Innovation and Smart City Strategies”. The first course was held on 2-6 November 2020 and the next course is scheduled for 24-28 May 2021: http://smartcitiesevents.eu/events/courses.

CHAPTER 14

A SELECTION OF SMART CITY SOLUTION PROPOSALS

ELECTROGRUP'S SMART PROJECTS FROM 2020, A PLATFORM FOR ROMANIA'S EVOLUTION IN 2021

Electrogrup

From the first truly integrated Smart City project in Romania, to the smart developments in Câmpia Turzii, Oradea, Bistrița and Cluj-Napoca, Electrogrup makes, in 2020, a tour de force in the smart development of the country and accelerates the adoption of Smart City, establishing the bases for Romania's smart expansion in 2021.

In last year's first quarter, after exploring the Smart City market and attending numerous specialized conferences and pilot projects, Electrogrup made the transition from concept to implementation of the first project in Romania that sets out the integration of several Smart City solutions, thus covering the essential infrastructure components of a smart city - from mobility and urban architecture, to measuring road traffic and environmental quality, all integrated into a single platform, located in a modern command center in Piatra Neamț.

The solution is an important first step taken by a city in Romania, in the race to become a smart city, and the impact will be seen in the increased quality of life in Piatra Neamț, which is basically the main objective of sustainable urban development. Thus, the new waiting stations for public transport will be equipped with WiFi, multimedia touch screens, USB ports for charging smartphones, photovoltaic panels, smart cameras that allow video analysis and traffic monitoring, environmental sensors, traffic information for passengers, all of them remote operated through a command center.

The beginning of the year also came with the start of works for the runway and beaconing system of the new Ghimbav-Brașov Airport. This will be the only airport in the country that will have a beacon system with LED lamps. The lamps that make up the beacon system have the role of delimiting the runway and the surfaces of airport movement and to provide visual landmarks for the pilots. At Ghimbav both build-in lamps in the runway and above-ground lamps will be installed, which outline the perimeter of the runway, the runway and the boarding-disembarking platform. For this project the company used technology from ADB Safegate, one of the most important manufacturers in the global market.

The second quarter of the year came with the announcement that Electrogrup will design and execute the modernization works of the urban mobility infrastructure in Câmpia Turzii, with a significant Smart City component. Here, the company will modernize the street infrastructure on the city's mobility ring, which involves the design and construction of roads and sidewalks, the construction of bicycle lanes and the implementation of a Smart bike sharing system, along with the integration of bus stops in the urban landscape.

The third quarter of the year represents the moment when Electrogrup and its partners start the development of a large intelligent urban mobility project in Bistrita. It's aim is the major development of the smart mobility in the city and includes: turnkey implementation of an adaptive traffic management system; an intelligent video surveillance and access control system; an advanced command center, for the management of the implemented intelligent systems; an intelligent management lighting system; modular bus stations and information panels in stations, along with computers and on-board bus displays. The project also covers the civil works component necessary for the implementation of the mentioned systems.

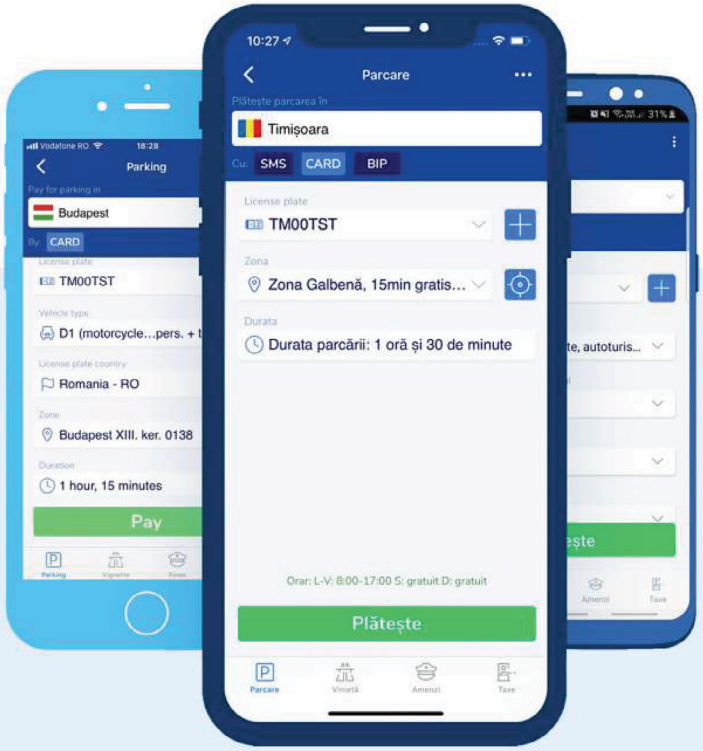
At the same time, in October the company inaugurates a smart parking in Oradea, a spearhead of technological evolution.

Meanwhile, the company has started a project to develop the video surveillance system in another big city in the country. Its aim is to expand the city's surveillance system, with over 500 video cameras, but also to arrange a dispatch and a video wall for a 24/7/365 transmission. The main targets of this project are to increase the safety of the citizens, to monitor road traffic, to protect public investment objectives and to provide reports, obtained through image analysis based on Artificial Intelligence, in order to optimize the traffic.

Each new step taken in 2020 is a continuation of the company's efforts to achieve integrated projects that combine smart verticals and bring Electrogrup closer to the goal of becoming the number one integrator in the Smart City market in Romania.
Electrogrup has developed, as General Contractor, complex projects in several construction sectors, in Romania and abroad, in countries such as Germany, Poland, Belgium and the Netherlands. Electrogrup is also one of the most active providers of turnkey Smart City solutions for public administrations and private companies.

ELECTROGRUP.RO

TPARK



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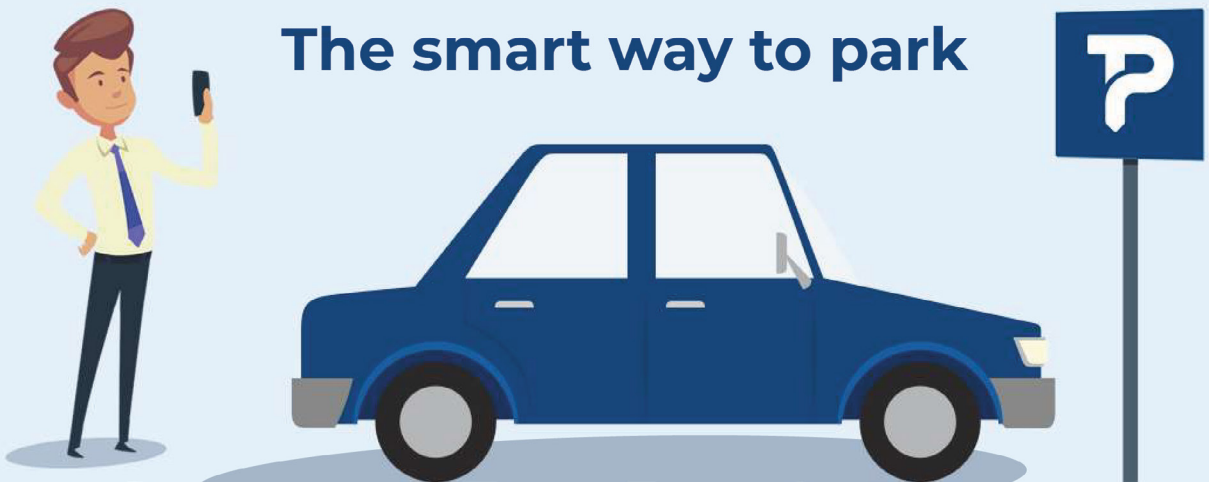
Parking | **Vignettes** | **Fines** | **Taxes**



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Reducing operating costs

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Quick verification of payments

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HOW TO MAKE A CITY SMARTER, GREENER, HEALTHIER, MORE RESILIENT, AND MORE SUSTAINABLE IN AN EASY WAY?
THE DUTCH FAVOURITE SOLUTION:
MORE BIKING & LESS DRIVING

Kingdom of the Netherlands

Why do it?

Cycling is the most sustainable and flexible transport method. Its fuel supply cannot run out. It is accessible for almost everyone, in any location. It doesn't require mass participation. It isn't dependent on massive public funding for viability. It is efficiently scalable. The only thing you need is some modification of the infrastructure and traffic laws to support it. Hence, choosing to cycle for transport is a smart, long-term choice.

With 27% of all traffic movements done by bike, The Netherlands is the bicycle champion of the world. So,

How did we do it?

Cycling has always been popular in the Netherlands. Since the 1960s, however, car ownership and car usage have increased significantly and bicycle usage has fallen, reaching an all-time low in 1978. Cities began to struggle with congestion, air pollution, a poorer quality of life and many traffic accidents. As a result, the governments decided to develop a large array of measures to promote cycling, walking and traffic calming, such as:

- Reducing car access to city-centres and create car-free areas;
- Making parking in city-centres more expensive;
- Constructing cycle paths and reducing road space for cars;
- Facilitating cycling through cycle network planning, road design, signalling,
- parking and enforcement;
- Reducing maximum speed on the majority of urban roads to 30 km/h or less;
- Promoting cycling to encourage the use of bikes and discourage car-use.
-

How much and how far?

Currently, in the Netherlands

- 17 million inhabitants own 23 million bicycles, running along over 3,000 kilometres of segregated cycle tracks;
- there are 14 million journeys by bicycle every day, mostly commuters to work and school;
- people are cycling over 15 billion kilometres per year (as much as travelling by train);
- the average cycling distance is 3 km;
- 15% of all journeys between 10 and 15 km are made by bicycle (more than by public transport, over the same distance)!
- there are already over 500,000 bicycle parking spots at train stations, but these are not enough. Public authorities plan to build another 100,000 bicycle parking spaces around train stations throughout the Netherlands by 2025, in order to eliminate the national shortage in parking spaces.

The Dutch are passionate about CYCLING, but also about INNOVATING. We continuously search for ways to improve cycling conditions, cycling safety, and of course, the bicycle itself.

Power to the streets

It's an idea so ingenious, yet so simple, that it's a wonder no one's had it before: the SolaRoad is a surface for bike paths and roads that acts as a solar panel to provide electricity for homes, electric vehicles and street lighting. With almost 140,000 kilometres of public roads in the Netherlands, there is quite a lot of surface area that could be put to use in this way. One pilot bike path is already in use in Nuenen, erstwhile home to one Vincent van Gogh. The Van Gogh Path is inspired by the painter's much-loved Starry Night and uses the energy it generates in the daytime to produce thousands of twinkling little stars at night.

Air-cleaning bicycles

The air around us is becoming dirtier, especially in the world's larger cities. At the same time, we have to deal with massive traffic congestion. Dutch entrepreneurs want to collaborate with governments, students and companies to make a smog-free city and get people out of their cars and use greener forms of transportation. Dutch artist Daan Roosegaarde is one of those entrepreneurs. He designed a bicycle that sucks in polluted air, cleans it, before pushing it back out into the atmosphere. This 'smog-sucking' bike is a straightforward concept. As you pedal the bike, it sucks in the dirty air, cleans it and thrusts the air back out. It creates a pocket of clean air in front of the cyclist to ride into. The aim is to encourage people to use their cars less and cycle more.

Plastic bicycle paths

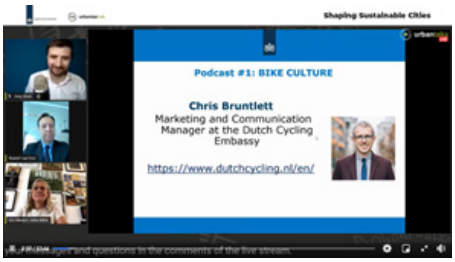
The world consumes 350 million tons of plastic every year. Much of it ends up on landfills or gets incinerated. Europeans alone generate 25 million tons of plastic waste, of which only 30% is reused or recycled. Dutch company PlasticRoad wants to help to reduce this waste by building bicycle paths made from recycled plastic. Dutch town Zwolle's 30-meter bicycle path, contains about 218,000 plastic cups and is 3 times more durable than a regular asphalt bike path. The road surface is manufactured with a significant amount of recycled plastic but will ultimately be made from 100% recycled plastic.

Smart traffic light recognizes approaching cyclists with help radar

Cyclists can drive faster and safer through green lights at the Pythagoraslaan-Archimedeslaan intersection in the Rijnsweerd office park in Utrecht. A bicycle radar recognizes approaching cyclists and measures the number of cyclists and their speed. The radar forwards the information received to the smart traffic light that is located at the intersection, so that the traffic light turns green sooner or stays green longer. It is the first time that a radar has been used for this.

NETHERLANDS AND ROMANIA, PARTNERS FOR SMART, SUSTAINABLE, GREEN, AND HEALTHY CITIES

The Dutch Embassy in Romania has "smart and green cities development" as one of its priorities, with a special focus on SMART MOBILITY THROUGH CYCLING. Since 2016, a number of events, seminars, trade missions, and bilateral exchanges between the Netherlands and Romania have either been directly organized by the embassy or supported in different ways.



Despite the pandemic, we managed to continue our bilateral cooperation. In 2020, we continued our activities online. In partnership with UrbanizeHub, the embassy organized an online campaign, entitled "Shaping Sustainable Cities", with eight weekly live podcasts. Eight experts from the Netherlands shared their knowledge, experience and know-how during the 2-month campaign that enjoyed a lot of attention from the Romanian public.

First podcast was about "Bike culture". Besides explaining why everybody loves to bike in the Netherlands, this first session has introduced to the audience Dutch Cycling Embassy https://www.dutchcycling.nl/en/, a vast network of public and private organizations from the Netherlands who wish to share their expertise on building what supports the Dutch cycling culture to those interested.

.

This very first podcast was also the inspiration for a pilot-project related to biking in the city of Iaşi. Encouraged by a very active local civil society, but also by the openness of local administration, the Embassy of the Kingdom of the Netherlands in Romania has decided to attract the organisation Dutch Cycling Embassy into a

partnership that will result in June 2021 into a ThinkBike Workshop in the city of Iaşi. A first fruitful online discussion took place on November 24th, 2020, when Ambassador Roelof van Ees, discussed with the main local actors, including the mayor, prefect, county council president, school inspectorate, local police, biking NGOs, about the current situation of cycling in Iaşi, and how important is to improve cycling infrastructure, and find the best solutions to encourage people to bike more, and drive less.

In March 2021, the Romanian Ministry of Environment, Waters and Forests, launched the Green Friday initiative. This is a plan of measures that aims the replacement of the personal cars with bicycles, electric scooters, electric cars or by walking on Fridays. The ministry hopes to convince as many of Romania's community members as possible.

Well, no need for much convincing work in our case. The Dutch embassy in Bucharest saluted ministry's initiative, and we are proud to say that some of our colleagues are already biking to work, and not only on Fridays.

Email us
BKR-EA@minbuza.nl and let's bike together!

DIGITAL TRANSFORMATION IN/OF THE TRANSPORT INFRASTRUCTURE: FROM EXECUTION TO OPERATION

A smart city also means a smart infrastructure. In a context where infrastructure management authorities face increasing challenges – compliance with ever higher quality standards, pressure on budget efficiency, various legislative constraints – there is a need for solutions that are a real support for the life span of an infrastructure project.

These digital solutions are designed to optimize operations, help plan a sustainable infrastructure and aid us stay in control of any risks that may threaten its safety.

Finally, moving towards a paradigm of digital innovation and transformation helps us make better and more informed decisions, adapt in real time, build a more resilient infrastructure that gives us all a better quality of life.

Here are some digital solutions by Sixense and their contribution to a smart infrastructure.

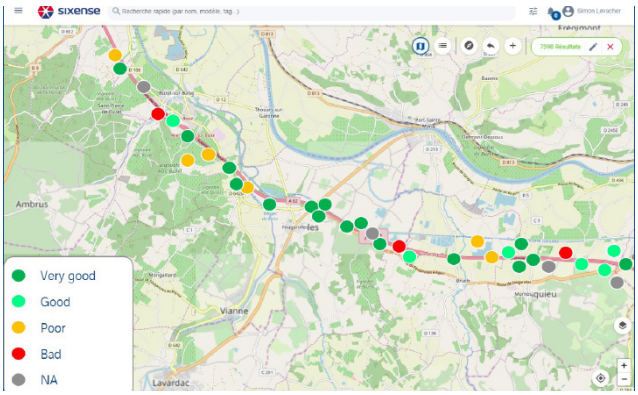
Execution period. Digital solutions for project management

The long-term health of an infrastructure project begins with the execution stage. Therefore, its good planning is a critical process, which generally has countless challenges, including the involvement and alignment of many stakeholders, respectively the need to speed up the execution process.

We can respond to these key challenges with digital project management solutions, such as Beyond ProcessManager by Sixense, which facilitates collaboration between all actors involved in a project, by digitizing important processes during the execution period.

Beyond ProcessManager helps:

- Improve and streamline collaboration between all parties involved in the project;
- Better and transparent integration of operations at the execution stage;
- Data sharing among all key stakeholders, as well as real-time data access;
- Increase productivity over the entire project by simplifying and automating operations;
- Provide an optimal record of all necessary documents during the project;
- Eliminate paperwork, thus also the risk of data loss or mismatch between information;
- Ensure adequate risk management at each critical point.



Period of operation. Infrastructure maintenance solutions

An infrastructure project should be built to last for the next 50, even 100 years. Therefore, the operational stage and the way in which the maintenance of the infrastructure is ensured are essential, in order to extend its life span.

In the long run, aging and natural degradation of the infrastructure, but also other factors from the outside environment (vibrations, bad weather conditions etc.) or even human–caused incidents can affect its stability. A 2019 report by the World Bank shows that we could save up to 4.2 trillion dollars over the life of an infrastructure by planning its resilience from the start (the study is valid for developing countries, so it also applies to the local context).

What is to be done, and what can help us? The solution Beyond Digital Asset by Sixense contributes to the optimization of all operations in the stage of exploitation of the infrastructure.

Beyond Digital Asset helps:

- Plan the repair and inspection activities;
- Support decisions related to the prioritization of budgets allocated for maintenance operations;
- Follow-up in infrastructure for detecting critical risks and their preventive approach;
- Provide accurate knowledge of the health of the infrastructure project in real time;
- Access to up-to-date data on the structural parameters of the managed infrastructure;
- Automate reporting and statistics;
- Optimize infrastructure maintenance costs.
-

About Sixense Romania

Our mission is to optimize and extend the life span of the built heritage, through integrated expertise and digital, personalized, and innovative solutions, by being in close collaboration with designers, consultants, infrastructure managers and other construction professionals.

We have been present on the Romanian market for over 10 years and are part of Sixense Group, a world leader in the field, with solid expertise in the development and use of state-of-the-art technology and digital tools for the construction industry.

Some examples of the projects in our portfolio include the following: the First section of the Subway Line 5, Bucharest (automated instrumentation & real-time geotechnical and structural monitoring, data management), the tunnels of Danes and Sighișoara (instrumentation & geotechnical and structural monitoring), Subway Line 4, Bucharest (instrumentation & structural monitoring in operation), the new Bridge at Agigea (structural monitoring in operation), the National Rugby Stadium Arcul de Triumf (automated & real time instrumentation and monitoring system), Steaua Football Stadium (automated & real time structural instrumentation and monitoring system), Târnava Bridge (structural & real time instrumentation and monitoring system) etc.

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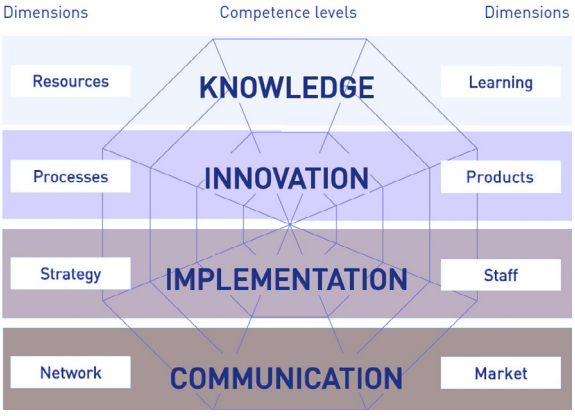
AM I SMART?
ANALYSE, EVALUATE AND DEVELOP YOUR COMPETENCIES.

Steinbeis Transfer Management
Steinbeis Network Romania

Smart cities need innovative solutions from smart enterprises. Citizens of smart cities need attractive jobs. Companies are, therefore, challenged to play an important role in urban development. How can companies meet these requirements? No secret: it is all about competencies. Steinbeis Romania helps you understand and strengthen your own competencies, and prove them according to the German standards.

I want to be a smart enterprise

Go for a quick check: it is online, it is free. And if you like the concept, we can discuss how you can go deeper in analysing the competencies of your enterprise, in order to positioning yourself as solution provider for smart cities. The Enterprise Competence Check (ECC) is developed by Steinbeis Germany. It is targeted to businesses of every size and industry.



I want to be a smart city

A Gestalt theory assumption, according to which „one plus one can be greater than two" (referring to how networks effect), is based on the aristotelic principle according to which the whole is greater than the sum or its parts. City administrations are full of experts in various departments. The smart linking of this decentralized expertise leads to synergies. You can benefit to a maximum from innovative networking. Steinbeis Romania supports the creation of such networks, according to the German model of Learning Energy Efficiency Networks. The same methodology can be applices in every key area, e.g. smart energy; smart building; smart mobility; smart infrastructure; smart technology. And the impact is even stronger, when going for inter-municipal networking, e.g. by connecting with other cities (national and international).

Steinbeis in Romania

Steinbeis Transfer Management (STM) in Bucharest is the head office of a growing network of technology transfer centers,located at universities in Alba Iulia, Bucharest, Cluj-Napoca, Galati, Iasi, Suceava, Targoviste and Timisoara. Partners and customers of STM benefit from interdiciplinary competencies and transnational connections. For more than 15 years, STM follows the principles and methodology of the Steinbeis model Germany. Steinbeis is an international network spanning roughly 1,100 technology transfer enterprises. This network encompasses 6,000 experts. STM is connectd directly to Transfer Centers in Stuttgart region (Germany), Vienna (Austria) and Uzhgorod (UKraine).

FOR MORE INFO:
WWW.STEINBEIS-ROMANIA.COM
WWW.STEINBEIS.DE

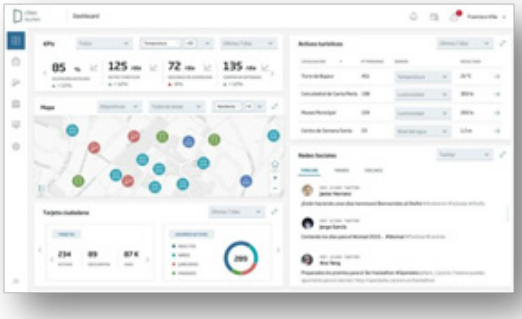
SMART CITY PROJECTS WITH MINSAIT

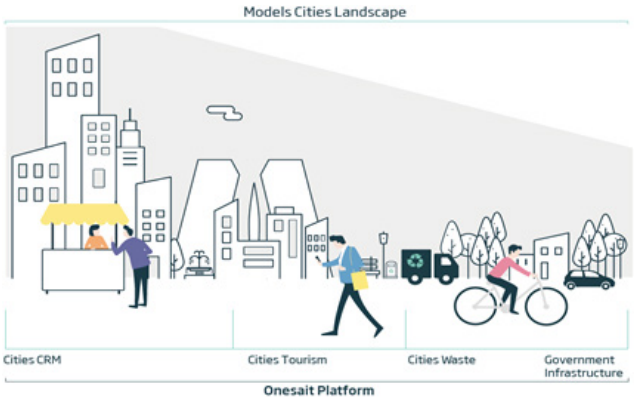
minsait
An Indra company

Minsait is one of the few global companies capable of providing a comprehensive solution for Smart Cities, which includes everything from citizen services, transport and mobility, infrastructure and eco-energy, security and emergencies, to the implementation of an urban platform to integrate and manage city information.

The company has developed more than 120 projects in this field worldwide. Our team of consultants is available at any time for a discussion or a detailed presentation of the Smart City solutions developed by Minsait.

mong the Smart City solutions developed by Minsait and successfully implemented we mention below:





onesait government cities CRM	onesait government cities landscape	onesait government cities tourism	onesait government cities waste	onesait government cities	onesait platform
– soluția care gestionează comunicarea între cetățeni și primărie. Avantajele acesteia se regăsesc pentru ambele părți: primăria cunoaște nevoile și interesele cetățenilor, iar aceștia beneficiază de o comunicare directă, eficientă și optimizată cu autoritățile locale.	– centrul virtual de smart management care gestionează toate evenimentele în timp real, îmbinând informații din diverse servicii și departamente publice pentru a îmbunătăți luarea deciziilor.	– model global pentru smart managementul destinațiilor turistice. Astfel, turistul va avea acces la oferte dinamice, proactive și adaptate necesităților proprii.	– soluția inovatoare pentru managementul deșeurilor. Utilizarea acesteia îmbunătățește viața de zi cu zi a locuitorilor orașului, optimizează gestiunea locală a deșeurilor și încurajează participarea locuitorilor la acțiunile specifice de curățenie din orașul lor.	– integrează toate resursele de informații ale orașului și ajută la gestionarea optimă a acestora. Cheia succesului prin folosirea acestei soluții Minsait este transformarea resurselor în planuri de acțiune care îmbunătățesc gestiunea serviciilor publice și a relațiilor cu cetățenii.	– platforma tehnologică de ultimă generație care stimulează atât dezvoltarea a noi modele de business, cât și transformarea digitală a sistemelor tradiționale. Soluția colectează și procesează largi volume de date din diverse surse în vederea luării unor decizii în timp real.

About Indra

Indra (www.indracompany.com) is one of the leading global technology and consulting companies and the technological partner for core business operations of its customers world-wide. It is a world-leader in providing proprietary solutions in specific segments in Transport and Defence markets, and a leading firm in Digital Transformation Consultancy and Information Technologies in Spain and Latin America through its affiliate Minsait. Its business model is based on a comprehensive range of proprietary products, with a high-value focus and with a high innovation component. In the 2019 financial year, Indra achieved revenue of €3,204 billion, with more than 49,000 employees, a local presence in 46 countries and business operations in over 140 countries.

About Minsait

Minsait, an Indra company (www.minsait.com), is a leading firm in Digital Transformation Consultancy and Information Technologies in Spain and Latin America. Minsait possesses a high degree of specialization and knowledge of the sector, which it backs up with its high capability to integrate the core world with the digital world, its leadership in innovation and digital transformation, and its flexibility. Thus, it focuses its offering on high-impact value propositions, based on end-to-end solutions, with a remarkable degree of segmentation, which enables it to achieve tangible impacts for its customers in each industry with a transformational focus. Its capabilities and leadership are demonstrated in its product range, under the brand Onesait, and its across-the-board range of services.
For further details, please contact us **lcaraiman@minsait.com.**

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FIVEPLUS®
energize your business

FOR OVER 15 YEARS WE HAVE BEEN INVOLVED IN DIGITAL PROJECTS AND SOLUTIONS, GROUPED UNDER THE CONCEPT OF SMART CITY, GOVERNANCE, MOBILITY, LIVING

Smart Governance, projects that involve increasing the transparency of governing acts, reducing bureaucracy and keeping citizens as much information and implications in administrative decisions as possible

DOCPLUS, document management solution
Tool for public institutions and SME companies, for efficient coordination between departments, branches in different geograpfical locations, with access to real-time data and optimal exchange of information.

DIGITAL SIGNAGE, an innovative environment for disseminating information
It is similar to a billboard or information board that you find displayed in a public space. It is 100% digital and allows you to display more information at the same time, stills and videos.
Transform the display system into an extremely efficient communication channel, in tune with the new trends and expectations of customers!

Smart Living, projects designed for communities

MAGAZINPLUS, a project dedicated to local communities that want to capitalize on online commerce
„Turnkey" solution, a marketplace platform, which allows merchants to quickly open an online store, directly on the platform.

EPLACE EVENT, a modern solution for booking seats at tables
It is dedicated to hotels, restaurants, event centers, to offer customers a smart approach to various events organized. It offers an experience of comfort and control to both the management and the staff responsible for organizing the events, the clients.

Smart Mobility is the vertical in which we use technology to collect and provide information to users interested in improving urban mobility processes

PARKING AUDIT SERVICES, parking regulation development and assistance for the implementation of software solutions in parking management
- Collection of needs related to parking (residential parking and public parking)
- Development of parking strategy
- Proposal for a Regulation on the organization and operation of public car parks
- Short, medium and long term action plan
- Support for the implementation of software solutions for parking management
- Measures for the complete digitization (paperless) of parking services - parking meters, video cameras, parking sensors, mobile applications, electronic payments, etc.

PARKING DATA, Parking Digitization solution
Ensure a collection of public and private parking spaces, display them to citizens and initiatives of entrepreneurs interested in using the managed data.
Data is collected and managed in real time on available spaces, through direct integration with parking systems.
The display of parking places on the map is intuitive and allows finding out specific details about the number of available parking spaces - occupancy, places for people with disabilities, charging stations for electric cars, but also the payment methods allowed, etc.

Important benefits for drivers, partners and entrepreneurs
- Accurate data and statistics for parking optimization
- Support and high-performance equipment for digitizing parking lots
- Advice and powerful tools for the most profitable parking

FivePlus Solutions is an partner open to innovation, technology and know-how, with 1,000+ projects and 300,000+ hours in business consulting, application development, websites, web promotion, technical support.
We currently collaborate with (non) governmental organizations, public administration, multinationals, private service or production companies, SMEs.
We develop and implement customized software solutions for document management and process automation.
We use, within the Online Marketing Agency, a variety of tactics, such as developing websites, directing traffic to the site and promoting the business to a wider audience.

We help partners who have Smart City, Economy, Mobility, Environment, Living, People solutions to promote and reach citizens through specific online marketing campaigns.

WWW.FIVEPLUS.RO, OFFICE@FIVEPLUS.RO

SOCIAL ASSISTANCE VOUCHER – THE PROPER SOLUTION FOR PEOPLE IN NEED

Up ROMANIA

Romania has the second-highest rate of the population at risk of poverty or social exclusion, among the European Union countries. A third of the population is in this situation, according to Eurostat data published in 2020. Data also show that Romania took over the red flashlight in terms of childrens' income. Over 35% of the population under the age of 18 suffers, in this case.

Certainly, reducing the level of these indicators implies the involvement of all public decision-makers and requires social programs developed at the national level. Social assistance vouchers are an appropriate solution that can be directly implemented by local public institutions and non-profit organizations.

Up Social is not just a safe method of social integration, but also a quick and easy one to be implemented by any institution, regardless of its size or budget. It also fits perfectly with the social programs established at the national, regional, or local level.

Up Social assistance vouchers can be used in projects developed at the community level, which pursue various objectives, such as: ensuring equal opportunities for vulnerable groups, access to education, health services, projects related to sport, sustainable development, professional upskilling or reskilling, various programs adapted and consistent with the mayor's strategy..

Up Social – a Solution for Communities

Public institutions that choose to grant social vouchers to persons or families in need have the guarantee that the received funds are used by the beneficiaries only for the proposed purpose. To ensure the proper use of the amounts offered, we can specifically mention on the vouchers the scope of use: food, hygiene and pharma products, medical services and equipment, construction materials, clothing and footwear, supplies, educational activities, or products for children under one year.

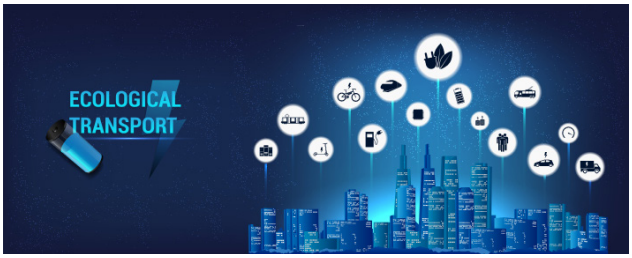
Up Social Advantages

Public institutions that choose Up Social have the flexibility to use the solution for any type of social program, an desirable facility in terms of logistics, reporting of used funds, but also a guarantee that users will use the tickets only for the established purpose. Moreover, social assistance vouchers can be personalized. In turn, the beneficiaries of Up Social vouchers have access to indispensable products and services, which help them to improve their quality of life and reduce the risk of social exclusion.

Social vouchers are 100% taxed and are also a stimulus for local trade. They are simple to use from a logistical point of view, they ensures the use of funds only for the established purpose, and the reporting is done transparently.

In its almost 20 years of activity, Up Romania has developed a network of commercial partners throughout the country, so that the use of Up Social vouchers is an efficient and simple system to implement.

A leader of the social assistance vouchers market, Up Romania is a reliable partner for local and central authorities, proving its transparency and professionalism over the years during which various social assistance and urban mobility programs have been developed through the Up Social vouchers.



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THE PR AGENCY OF CHOICE FOR SMART PROJECTS

PRORA
COMUNICARE · IMAGINE

Born from an extended successful experience in journalism and corporate communication, with strong results for both companies in Romania's top 10 by turnover and for Romanian businesses that broke the first billion lei income threshold, the Prora project brings a meaningful experience in communication and image management to the use of Romanian companies, projects and entrepreneurs.
We know how to communicate, what to communicate, and we have the necessary means to provide more efficiency in the communication process of every business. We consolidate and build, on a day to day basis, the image of entrepreneurs, projects, products and companies.
Throughout our first three years of growth on the Romanian PR and Communication market, large companies, innovative start-ups, as well as already established entrepreneurs have chosen our services:

- Citylink
- easySales
- E-INFRA
- Electrogrup
- Global Vision
- Myki
- Netcity Telecom
- Nova Power & Gas
- Provident Financial România
- Red Bull România
- Sloop
- Storis
- Sweet & Safe
- Țiriac Auto
- Vegacomp Consulting

Starting from the very first edition, we are an integral part of the Romanian Smart Cities Scan and we combine our content creation experience with a thorough understanding and analysis of the local smart solutions market. Our aim and catalyst is to clearly state the benefits of the Smart City adoption and to contribute, directly or indirectly, to an increased awareness for the relevant projects that benefit every citizen.

We are always available to talk about how to best communicate the smart projects, at a - www.prora.ro and silviu.nicolescu@prora.ro

CHAPTER 15

CONCLUSIONS

The Smart City market in Romania is growing rapidly, with an advance of almost 50% over the previous year - 860 Smart City projects, compared to 594 in 2020, fueled by the pandemic context and the need for forced digitization for schools and many other services.
In this issue, we've extended the mapping of the Smart City market to smaller communities, Smart Villages, with 69 inventoried projects, but also larger, County Councils, with 29 Smart Territory or Smart County projects.
The financing of Smart City projects needs diversification and a legal framework corresponding to future developments without depending exclusively on European funding - which is still necessary both from local budgets and from private funding.
We consider that in Romania the Smart City market is at the laboratory level with many pilot projects and we have signals that it is possible that, from 2022, we will move to Smart City 1.0, with integrated projects, visible and beneficial to citizens.
It is necessary that while getting closer to the 1,000 Smart City projects landmark, verification and validation occurs, run by third parties, for the previously declared projects, which may no longer work in the hope of learning from the experience of previous attempts.

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Company founded in 2004, Vegacomp Consulting, turnkey integrator, is based on an experience of the team of over 28 years in telecommunications, especially on fiber-optic networks, in Romania and internationally and focuses its projects on solution developments that combine telecommunications and energy. Vegacomp Consulting brings both in the country and abroad innovative solutions for the development of the networks of the future, generated by its own Research and Development department. The company has been focusing its activity for the last two years on LoRa technology and has been active in the Smart City field since 2014. More information is available at www.vegacomp.ro.

The solutions offered by Vegacomp Consulting for the development of smart communities are the following:

1. Consulting

a. Smart subscription 1 - 1,000 lei for 5 hours of online consulting
b. Smart subscription 2 - 2,000 lei for 10 hours of online consulting
c. Smart subscription 3 - 4,000 lei for 20 hours of online consulting
d. Personalized VIP subscription - to order, with the agreed value

2. Personalized training for Smart City / Village / County dedicated to local and central public authorities, as well as to companies eager to expand their portfolio of products and services in the Smart City or Smart Community area

3.Implement the Smart City as a Service key. We start from the theme and needs of the local public authority, its citizens and integrate all suppliers necessary to deliver an integrated Smart City / Smart Village / Smart County product, new, complete and functional.

Vegacomp CONSULTING

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