

Practitioner Perspectives

Cluj-Napoca Digital Transformation Strategy

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Cluj-Napoca is the second biggest municipality in Romania (after Bucharest, the capital) and one of the European cities with the fastest economic development. This rise, increasingly evident in the last ten years, was underpinned by the two strategy development plans (2007-2013 and 2014-2020) coordinated by the College of Political, Administrative, and Communication Sciences.

The IT sector in the city is one of the main drivers of this economic growth. One of the two IT clusters in Cluj-Napoca estimates that 1 in 11 employees works in a company that can be defined as part of the "knowledge-based economy" (KBE). Thus, it is no surprise that digitalization is one of the chief concerns of the local government and the businesses in Cluj. The need for a comprehensive plan for the community's digital transformation became more evident in the last five years.

The College of Political, Administrative, and Communication Sciences acquired extensive expertise and experience in strategic development at local, regional, and European levels. The City Hall and IT companies in Cluj, reunited in the Consultative Council for Entrepreneurship and Innovation in IT (a

semi-formal outfit that brings together the local government, companies, and academia), asked the college to coordinate the development of the Digital Transformation Strategy for the city in 2019.

The process of developing this strategy was an iterative one. After a period of data analysis and the formulation of the first draft (the autumn of 2019), all the subsequent versions of the document were created with the community's help. The response from the stakeholders was enthusiastic. In the end, dozens of companies, NGOs, public institutions, and hundreds of people were involved in articulating and transforming the document into the current version.

The result is a living strategy that will adapt to the changing environment and integrate new developments, be they technological or societal. A case in point is how the COVID-19 pandemic impacted the strategy in more ways than one. It derailed the plan of launching it in 2020. It also showed the importance of digitalizing the interactions between service providers (both public and private) and clients and emphasized the need for more and better data collection.

The following sections present a condensed executive summary of the strategy.

Goals

This strategy hinges on the central idea of integration. Therefore, the city must embed digital transformation in its long-term development. This challenge needs to be approached proactively, in a participatory, innovative, and flexible way. This is necessary for a field where the pace of innovation and change is swift. Hence, only the programmatic and substantial cooperation within the community can bring positive results. The current medical crisis has also proven that public institutions that manage to integrate technology into their strategic and operational processes are the ones that have better prospects of adapting to shock, transforming, and being resilient. Developing a coherent

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digital transformation strategy would offer Cluj a significant competitive advantage at national and international levels. Such a transformation will also naturally allow it to connect with the city's critical strategic factors.

This strategic document is a living one and will adapt to and grow with the changes brought about by the new technologies in society.

Thus, these changes are inevitable. It is up to the community in Cluj to choose how these changes will be integrated into the large-scale plan on the continuous improvement of the quality of life in Cluj-Napoca. In addition, the strategy does not belong to one institution or another but to the whole community. The involvement of all relevant stakeholders, be they private companies, universities, not-for-profit institutions, local public institutions, or citizens, is expected.

Moreover, this strategy aims to support the development of the elements that make Cluj-Napoca a city where citizens enjoy living. It also makes it an attractive community for visitors from both within the country and abroad and a desirable destination for businesses and start-ups. The key strategic factors that are at the base of the development of the community – universities, participation, and innovation – are and will continuously be influenced by digital transformation. Last but not least, this strategy needs to contribute to the establishment of a sustainable and resilient community that can continue to offer the citizens of Cluj-Napoca an ever-growing quality of life and one that can rapidly adapt to future events, even unforeseen ones. The following strategic principles are core to the city's digital transformation.

Strategic Principles

- The digital transformation strategy has as prime objectives the growth of the quality of life for citizens and the prosperity of the Cluj community.
- The digital transformation strategy is an integral part of the broader vision of the city (based on the quality of life,

innovation, universities, and participation). From the start, this project is thought of as a part of the strategic development plan of the city and is interconnected with other sectorial documents.

- This strategy is an instrument, an enabler, and not a purpose in itself.
- The strategy is capable of integrating and synchronizing the energy and projects in this area of the community on an intelligent community platform.
- The strategy must include an institutional vehicle (a permanent organizational structure) that can permanently promote it and can ensure its implementation.
- The strategy is based on a continuous consultation and communication process with the community.
- The strategy will be built on cybernetic security and the protection of citizen's data so that digitalization effort is not affected by security incidents and violations of citizens' rights relating to the protection of personal data.
- The strategy will undergo a permanent actualization through a functional and coherent mechanism.
- The strategy will lead to developing institutional capacities and capabilities, including resilience in adaptive and transformative capacity, based on innovation and digital technologies.
- The digital transformation strategy needs to be realistic, flexible, and permanently open to necessary changes given the rapid evolution of the strategic environment.
- The strategy must facilitate an integrated approach to the digital transformation in the Cluj-Napoca community to support the prime strategic objectives and direction, in a synergistic relationship with the other strategic and programmatic

documents. The strategic digital transformation effort needs to be permanently connected to the vital strategic factors of the city:

-Digital innovation in key areas such as ICC (Innovative, Creative, Competitive), knowledge-based economy (KBE), Local Public Administration, Public Health, Entrepreneurship, Environment, Culture and Creative Industries, Mobility.

-Universities as research and development (R&D) and technological transfer hubs, providers of the specialized human resources, and educational services dedicated to bettering digital competencies, analysis, synthesis and strategy formulation capabilities, and entrepreneurship stimulants of groups within the community. Universities are a central element in public health and community resilience, with significant contributions to projects in the mobility and environment protection domains and others.

-Participation – The digital transformation strategy needs to facilitate integrated and organic participation of actors (citizens, the local public administration, the business environment, universities, civil society) when it comes to both the improvement of the quality of public and private services, as well as the furtherance of transparency enhancement and democratization of local governance. Another objective is forming an innovative ecosystem based around the local administration by involving the most relevant players and building an intelligent community platform. Digital Innovation Hubs, whose activity domain and projects pertain to Cluj-Napoca, will be essential for this process.

Considering the above, the city's strategic priorities include the following:

Strategic Priorities

-Being citizen-centric – the needs of the citizens, not the needs of the institution, are taken as the starting point.

-The creation of a favorable economic environment for private companies and support for start-up development.

-Stimulating the medium and long-term development of a regulation framework (this can include Local Council Charters, national laws, Government Decrees, Ministry Decrees, etc.) that can create the legal context necessary for digital development (Cluj Digital Law Package).

-Involving the relevant IT&C actors (citizens, companies, local and central authorities, educational institutions, clusters, digital innovation centers, nonprofits).

-Recognizing the essential role of education in general, mainly digital education, especially for public servants, but also for citizens.

-Prioritizing innovation in all fields and forms (technological, social, process-related, etc.), especially innovation that leads to or facilitates the creation of digital services.

-Interoperability, service integration, and open data sets.

-Emphasizing cybersecurity.

-Improving and optimizing communication, information exchange, and inter-departmental, inter-institutional, citizen-institution co-participation.

-Connecting makes a difference – being ready to connect by default (from the onset, projects and applications need to be prepared for interconnectivity; technological investments need to offer increased measurement and analysis capabilities and offer improved support for decision-making; minimizing supplier lock-in; technology or infrastructure should be made a priority; access to data generated and stored by applications needs to be unrestricted; an explicit technological transfer process from supplier to beneficiary needs to be included; open code source should be used as much as possible).

-Flexibility and adaptability of the strategy. Technology is a means subordinated to the users' needs and local policies.

Hence, the strategy has a central concept, vision, factors and objectives, and implementation and operational projects. These are briefly presented below.

Central Concept

Technology is an enabler for meeting the needs and desires of citizens and the community – i.e., people want a better quality of life, which can be achieved with the help of technology. A smart community can learn and evolve rapidly, and digital transformation involves significant changes in the use of technology and organizational structures, organizational culture, and community leadership.

Vision

Cluj-Napoca will organically integrate technology into the life of the community to sustainably increase the quality of life of the people of Cluj-Napoca and the prosperity of the local, metropolitan, and regional community. The digital transformation will use all available resources and involve enduring partnerships, citizens, the public sector, academia, private companies, clusters, non-profit organizations, and innovation centers.

For the strategy to be successful, the whole process must be understood as an intelligent community platform (ICP) that allows the continuous, connected, and active interaction and participation of different stakeholders in the digital transformation process within the defined strategic framework (vision, objectives, strategic directions).

The success of the digital transformation strategy will not rely on the rigid pursuit of specific projects but on the capacity of the intelligent community platform to build a dynamic that allows the creation, selection, implementation, and strategic integration of digitalization initiatives from inside or outside the Cluj-Napoca community.

Key Strategic Factors

1. Smart living – Integrating digital technologies in the community's life.
2. Digital skills and inclusion.
3. Interconnected digitalization.

Strategic Objectives

Transversal Strategic Objective: Sustainability and Resilience

1. Improving public services.
2. Developing the digital infrastructure.
3. Evidence-based decision-making.
4. Participation and transparency.
5. Citizen data protection and cybersecurity.

The objectives below are not independent. They are linked to each other, and their areas of action intertwine. They can be understood not as pillars but as knots in a net, connected. If needed, these can be updated within the implementation process of this strategy. Additionally, the implementation of these objectives will be accompanied by a series of key performance indicators (KPIs), whose operationalization will be the new Chief Innovation Officer (CIO).

Implementation and Operational Projects

Understanding the implementation and operationalization of the strategy needs to be done in a context-specific to digital transformation, which places the strategy in a long-term development frame, and concentrated on the construction of a smart community platform capable of permanently uniting the existing community energies.

For the strategy to be successful, in terms of implementing operational projects, there is a need for an institutional vehicle coordinated by a Chief Innovation Officer at the City Hall level, which disposes of personal human resources and can unite local stakeholders and representatives on his board. This board will have a tactic and operational role and

permanently coordinate with the Entrepreneurship and Innovation in IT Consultancy Council.

Once the strategic framework is defined and can offer objectives and a primary strategic direction, operationalization becomes a critical element of the successful implementation of the strategy. In a field as dynamic as digital transformation, it is useless to establish long-term lists of operational projects rigidly. A more flexible and practical approach is the development, within this strategic framework, of continuous construction processes of operational projects that connect with the strategic objectives and priorities of the city. Therefore, projects will be structured in three distinct areas:

1. Core projects (capable of widely affecting the community in the medium and long term, in digital identity, urban data platform, mapping of internal processes, the degree of digitization, or digital innovation hubs).
2. Operational projects (flexible portfolios) that appear periodically are limited to strategic objectives and are permanently connected with technological and environmental developments.
3. Pilot projects (proof-of-concept) in which ideas from the community can be quickly tested, scaled if successful, or abandoned if not appropriate at the time. Supporting the City Hall for the construction of the initial infrastructure is essential.

The success or failure of this strategy will ultimately be determined by:

- How the community will get involved in suggesting, implementing, or supporting projects and how well this project can be integrated into the framework this strategy proposes.
- The quality of the new institutional vehicle created inside the city hall to coordinate the implementation of this strategy.

- The speed at which this document can be adapted to changing conditions and the flexibility through which new ideas can be integrated into the overall strategy.

The process of formulating the strategy has brought together stakeholders from the community. The iterative process was based on their input and was, at the same time, a first step towards building the necessary network of institutions, organizations, and people that will be essential in defining and implementing the necessary projects. The response from the community to the strategic document was overwhelmingly positive. Cluj-Napoca is one of the few Romanian cities that can count on such an engaged community, without which such a process would have been impossible. Inside the City Hall, an institutional vehicle for coordinating the implementation is being created, and close cooperation with all interested stakeholders will be essential for the strategy's success.

References

Cluj-Napoca City Hall (2021). Cluj-Napoca Digital Transformation Strategy. Retrieved from: https://en.digitalcluj.fspac.online/wp-content/uploads/2021/04/executive-summary_en2.pdf.