# Public Management Reform: Towards Improving Strategic Development in Cluj-Napoca by Fostering Triple Helix Interactions

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## ABSTRACT

Drawing upon the argument that managing strategic development in a knowledge society requires public administration to set up a consistent framework of public management reform, this paper argues that (1) strategic planning and (2) Triple Helix interactions between academia, government and other societal actors enable policy capacity building. However, the integration of innovative strategies into a robust policy framework is dependent upon the local context. Exploring the case of Cluj-Napoca, Romania from a public management perspective over a 5-year timeframe provides valuable insights into the community's strategic approach to development. Grounded on established paradigms of public management reform, this thesis investigates the existence of official statements regarding the intention to collaborate of Triple Helix actors to determine to what extent is collaboration explicitly stated as a strategic objective. Secondary data consisting of strategic documents of selected organisations was analysed. The findings reveal that Triple Helix actors in Cluj-Napoca explicitly state their intentions to collaborate with each other, often showing overlap between official statements, thus indicating a high extent of strategic coherence. This suggests a tendency of actors to converge towards the integration of interests, resources, and strategies, therefore increasing the likelihood of policy capacity development.

*Keywords*: public management reform, strategic planning, Triple Helix interactions, policy capacity, local community development

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### **1. INTRODUCTION**

Public sector management is at the forefront of a long-standing debate in scientific research. The challenges facing public administration in developing adequate public policy and public services are plentiful, and their performance is influenced by many factors, varying from socio-economic, technological, political, environmental, or legal factors.

The efforts of the public sector to address these challenges were driven by public management reforms. The use of performance management and measurement emerged as powerful techniques in supporting public administration to deal with a multitude of complex decision-making processes such as strategic planning, budgeting, management, implementation, monitoring or evaluation. The reform efforts improved performance in some contexts, while in others ended in failure. Insights into government capacity to tackle issues that go beyond the control of government led to novel perspectives on public management.

The emergence of public governance emphasizes a change of paradigm in the public realm. A shift from government to governance, and from local government to local governance occurs, and the boundaries between public, private, and non-profit spheres are becoming increasingly blurred (Bovaird & Loeffler, 2009). Involvement of external actors in decision-making in addition to government itself is central to governance, becoming a bridge between spheres (Van Kersbergen & Van Warden, 2004). The interaction between actors pursuing common goals can provide suitable policies and problem-solving strategies for public issues. Thus, a key instrument used in public governance is institutional collaboration, performed through strategic alliances, networks and public-private partnerships. Apart from institutional innovations, other innovations also contribute to reforming the public sector.

Technology has rapidly gained momentum in the public sphere. In developed countries, the deployment of Information and Communication Technology (ICT) capability in shaping strategy enables governments to gain competitive advantages. The use of digital technologies such as e-government, e-democracy, or knowledge management tools increases public performance and participation in decision-making (Bovaird & Loeffler, 2009). Therefore, public governance can play a critical role in capacity building. A systematic study of Triple Helix interaction is therefore a great opportunity to advance the understanding of collaborative public governance in driving development.

#### 1.1 Scope of research

This paper explores the existence of strategic intentions to collaborate of stakeholders in Cluj-Napoca, Romania. The research is concentrated on the timeframe comprised between 2014-2018 and analyses the evolution in time of official statements towards collaboration from strategic documents. We argue that a high degree of strategic collaboration between Triple Helix actors (i.e. academia, local government, business sector, and NGOs) can strengthen policy capacity. This, in turn, contributes to community development. There are two specific objectives of this study: (1) To investigate the existence of official statements articulated by academia, local government and other societal actors in Cluj-Napoca that indicate intentions to collaborate; and (2) To explore the way Triple Helix interactions can enhance policy capacity in Cluj-Napoca.

Policy capacity can play an important role in addressing the issue of local development. To understand how stakeholders, shape the dynamics of community development path in Cluj-Napoca, two factors expected to determine policy capacity will be explored, namely (1) strategic planning and (2) Triple Helix interactions. We shall now briefly define the concepts. The term *"strategic planning"* refers to the methodical process of clarifying organisational mission, vision, and objectives to increase performance (Poister & Aristigueta & Hall, 2015). *"Triple Helix"* can be loosely described as a strategy focused on stimulating collaboration between university, government, and industry to achieve performance (Etzkowitz & Ranga, 2009). The term *"policy capacity"* is generally understood as the process by which communities deal with their development needs by improving the management of capabilities and resources (OECD, 2006; Wu & Ramesh & Howlett, 2015). However, understanding how policy capacity is being developed requires a conceptual framework. Reform has been instrumental in our understanding of how managerial techniques such as strategic planning and institutional collaboration contribute to policy capacity development.

A considerable amount of literature has been published on public management reform (Bouckaert et. al., 2008; Pollitt & Bouckaert, 2011; Bovaird & Loeffler, 2009) and several crosssectional studies suggest that an association exists between reform and strategic planning (Barati-Stec, 2015; Demirkaya, 2015; Hintea & Profiroiu & Ticlau, 2015, 2019; Junjan, 2015; Ruano 2015; Van Ravensway & Hamlin, 2015). Research has shown that public administrations lack or have limited capacity to act. This matter was exacerbated in Central and Eastern Europe by the lack of decentralized management structures and strategic thinking towards decision-making. In most cases, this was a result of centralized governance pursued by the totalitarian regimes. However, the past thirty years have seen increasingly rapid advances in public management reform, and the changes experienced by Central and Eastern European administrations were unprecedented. Therefore, generating consistent theoretical and practical knowledge in this area is of great need.

The synthesis of reform experience in Romania remains a major challenge. This indicates a need to understand the strategic approach of stakeholders towards development. Quantitative analyses of Romanian public administration performance received considerable attention from scholars (Garboan & Sandor, 2007; Mora & Antonie, 2012; Lee, 2009; Profiroiu & Tapardel & Mihaescu, 2013; Surubaru, 2016; Tiganasu & Incaltarau & Pascariu, 2018). However, much less is known about the way public management reform has been approached at local level, and which factors underpin performance, most likely due to a lack of, or a limited amount of data. This paper explores the way official statements of stakeholders in Cluj-Napoca indicate the intention to collaborate with each other to enable performance. We focus on tackling matters which raise interest among scholars and practitioners while, at the same time, allow room for future improvement of public administration if proper investigation is conducted. This is a strong argument for pursuing research in the current topic, representing the main driving force to propel us in this area.

The importance and originality of this study derives from its concern with exploring the pattern of Triple Helix interaction between academia, public administration and other societal actors in Cluj-Napoca based official statements to collaborate. This pattern is expected to enhance policy capacity to perform, thus stimulating community development. It is hoped that current empirical research will provide an opportunity to advance the understanding of robust policy capacity as a result of Triple Helix interactions. The longitudinal analysis of developments from formally expressed positions will generate fresh insights into the dynamics of the local community in Cluj-Napoca. Therefore, the findings should make an important contribution to the field of public administration.

#### **1.2 Research Questions**

The analysis revolves around the research questions, which represent the pillars of this thesis. They reflect the intellectual and practical goals of the researcher, and the commitment to science. Accordingly, we focus on the phenomenon of interest, namely the pattern of Triple Helix interactions in Cluj-Napoca, by addressing one main research question and a set of three sub-research questions. We approach Triple Helix interactions from the perspective of strategic intentions of collaboration articulated by academia, local government, and other societal actors in the strategic documents. Therefore, we use the statements of collaboration as a proxy measure for collaboration itself. The main research question (MRQ) is designed to explore the existence of official statements regarding the intention of actors to collaborate in Cluj-Napoca, referring to all Triple Helix actors. The importance of the current study derives from being the first to investigate this topic. The official statements are relevant because they acknowledge the awareness of local actors of the need to collaborate, and thus the will to collaborate. The main research question is displayed below:

# **MRQ**: To what extent do Triple Helix actors in Cluj-Napoca explicitly state their intention to collaborate with each other as a strategic objective?

Addressing this empirical question allows us to examine the cumulated statements of stakeholders towards collaboration and explore the factors that engendered performance in local public governance in the period comprised between 2014-2018. The outcomes of interaction will be acknowledged and/or predicted based on the longitudinal evidence. Recommendations for improvement and further research will be made, where necessary.

A threefold set of sub-research questions (SRQ) is then addressed. Each of the SRQ's allows us to describe the strategic intentions of actors towards collaboration in each institutional sphere separately. Therefore, we approach the statements on collaboration derived from strategic documents from three perspectives, as follows: (1) academia, (2) local government, and (3) societal actors. The outcomes will be acknowledged and critically assessed through the lens of theory. In conclusion, we attempt to corroborate the results obtained from each SRQ in order to assess to what extent there is an overlap between the sets of statements, if they indicate coherence and to what extent they can contribute to policy capacity. A systematic description and analysis of the longitudinal statements will therefore capture the strategic importance of Triple Helix interactions, allowing us to accurately make inferences about the pattern of interaction. The sub-research questions are displayed below:

**SRQ1**: To what extent does academia in Cluj-Napoca explicitly state its intention to collaborate with local government and other societal actors as a strategic objective?

**SRQ2**: To what extent does local government in Cluj-Napoca explicitly state its intention to collaborate with academia and other societal actors as a strategic objective?

**SRQ3**: To what extent do societal actors (i.e. business organisations, NGO sector) in Cluj-Napoca explicitly state their intention to collaborate with academia and local government as a strategic objective?

#### **1.3 Scientific and societal relevance**

This study is scientifically relevant because it elucidates the way public administration, academia and other societal actors articulate their intentions to collaborate in the local Romanian context. Despite the importance of Triple Helix collaboration to development, a systematic understanding of how Triple Helix contributes to public management and governance in Central and Eastern Europe is still lacking from the perspective of public administration field. Although, the application of Triple Helix concept has proven its effectiveness in some settings, there seems to be a knowledge gap in the field since research is mostly restricted to U.S. experience with most studies focusing on Triple Helix in leading areas such as Silicon Valley (Etzkowitz & Dzisah, 2008; Etzkowitz, 2013; Etzkowitz, 2015). Our endeavor is to discover whether Triple Helix interactions are effective in Cluj-Napoca.

To the best of our knowledge, however, no single study has investigated Triple Helix interactions in Cluj-Napoca based on longitudinal monitoring of formally stated intentions towards collaboration in the area of public administration specific to my domain of expertise. This indicates the need to derive a scientific understanding on this topic. Altogether, Triple Helix interactions could be a reasonable solution to public sector's bottlenecks and community challenges. It is expected that observing the interactions between academia, government, and other societal actors might lead us to gain valuable insights into the potential of the Triple Helix phenomenon at local and regional level. Therefore, the scientific relevance of this study derives from the exploration of Triple Helix interactions in Cluj-Napoca.

The societal relevance of this inquiry derives from its capacity to generate useful knowledge. The study offers some important insights into matters concerning the local community in Cluj-Napoca such as the efforts of actors to strategically formulate coherent statements based on collaboration that can provide a better understanding of how Triple Helix interactions can enhance policy capacity and stimulate local community development. The aspiration to provide a useful account of Triple Helix interactions in Cluj-Napoca motivated us to engage in a process of scientific observation and knowledge acquisition, that intends to fill a gap in a topic for which prior scholarship has not yet managed to determine an answer. The findings might be further used by other researchers and practitioners. In addition, we expect that, if maintaining the same conditions, this pattern can be extended to other similar contexts thus having an inspiring social impact for other municipalities in Romania. This would considerably increase the potential of overall development. Representing a matter of interest now and in the long run, the research topic could guide us to find suitable solutions for other theoretical and practical issues. From this perspective, the study may be considered an impetus for further research.

The remainder of this paper is structured into four chapters. Chapter two presents the theoretical framework upon which the research relies by providing an overview of recent theory on public management reform, and describing the paradigms employed in the analysis (i.e. New Public Management, Neo-Weberian State and New Public Governance). It then continues to lay out the conceptual dimensions of the research by examining the concepts of (1) strategic planning, (2) Triple Helix interactions and (3) policy capacity. The third chapter is concerned with the methodology and context of study, encompassing the following processes: case selection, data collection methods, operationalization, data analysis, validity and reliability, ethical considerations and methodological issues. Chapter four presents the results of document analysis, highlighting the most significant findings. Finally, the fifth chapter is meant to provide a discussion on the policy implications of the findings and recommendations for future research, a key step ultimately leading to the conclusions.

### **2. THEORETICAL FRAMEWORK**

The purpose of this chapter is to establish the grounds of the thesis by introducing the theoretical framework. The literature review is structured in three sections: (1) Paradigm of public management reform; (2) Conditions for developing policy capacity and (3) Policy capacity. Section (2) encompasses the variables *strategic planning* and *Triple Helix interactions*, deliberately selected for further exploration. Section (3) touches upon the policy capacity's multiple dimensions (i.e. analytical, operational, political) at three levels: individual, organisational, and systemic. Drawing upon criteria proposed by Wu & Ramesh & Howlett (2015) for the operationalization of policy capacity, we explore the way Triple Helix interactions can enhance policy capacity in a local setting.

Research into public management reform has a relatively short history. Only in the past thirty years have studies of public management started to inquire and generate knowledge on patterns of public management reform. The insights gained are explicitly contextualized, depending on economic, political, or legal factors, as well as on specific tools employed in various settings (Pollitt & Bouckaert, 2011). Therefore, generalizations do not fit this concept. In addition, globalization and technological developments require governments to change their mode of governing to be able to face challenging tasks more effectively. According to Babbie (2011:59), reform may be regarded as a *"desirable alteration of social structures"*. However, we recognize the definition suggested by Pollitt & Bouckaert (2011: 2) to be more comprehensive because it refers to both structures and processes as having the core purpose to improve performance:

"Deliberate changes to the structures and processes of public sector organizations with the objective of getting them to run better".

Scholars have developed paradigms to explain how reform took place in different settings. We must therefore acknowledge that any variation in terms of performance and development is determined by contextual factors. Representing key drivers of policy capacity, strategic planning and Triple Helix interactions are the conditions expected to enhance development, if properly deployed. For a better understanding of changes that enable governments to reform the traditional mode of governing and develop capacity, three paradigms were selected to explain public management reform.

#### 2.1 Paradigms of Public Management Reform

Public governance is increasingly affected by public management reform. Accordingly, paradigms of public management reform can explain various patterns of governance. The social construct "public management reform" was assiduously articulated by Pollitt and Bouckaert (2011) and extensively analyzed in their book "Public Management Reform. A comparative analysis: New Public Management, Governance and the Neo-Weberian State". Their findings are chronologically reviewed below.

#### a. New Public Management

Historically, the efforts to improve performance were first conducted by the British and American administrations. The paradigm is now recognized as *New Public Management* (NPM). NPM has been an inspiring path also for other countries due to its focus on key processes contributing to the metamorphosis of the public sector into a business-like ecosystem. The key aspects of management are retrieved in reforms that rely on public management and performance measurement, specialization of organizational units and personnel and promotion of competition through market mechanisms (Pollitt & Bouckaert, 2011). According to Pollitt and Bouckaert (2011), the use of performance indicators, targets, and contracting out are fundamental tactics that ensure positive outputs and outcomes. These traits assert the inclination of NPM paradigm towards achieving efficiency and responsiveness to public needs. Therefore, citizen satisfaction is inherently related to this paradigm, determining the probability of success of a reform.

#### b. Neo-Weberian State

The shortcomings of NPM urged Western European welfare countries to drive a new pattern in public management reform. This paradigm is known as *Neo-Weberian State* (NWS) (Pollitt & Bouckaert, 2011). The approach was initially developed by countries willing to embrace objectivity and equity in delivering professional public services (i.e. Germany, France, The Netherlands). The main purpose was to establish a competence-based administration, sensitive to public needs that confer legitimacy to its actions. Adhering to NWS vision also meant preserving intact the qualitative character of the European social model, ensuring social justice within society. Pollitt and Bouckaert (2011) highlight hierarchy as the coordination mechanism within the states pursuing NWS. Therefore, hierarchy is viewed as a necessary evil, without whom change would not be feasible.

#### c. New Public Governance

In the light of new technological developments, *New Public Governance* (NPG) is the most recently developed paradigm. By drawing on this paradigm, Pollitt & Bouckaert (2011) advocate the importance of increased participatory approaches to governance. In addition to government itself, other stakeholders are highly encouraged to get involved in decision-making. The formation of collaborative structures such as networks or public-private partnerships represent the novelty of this paradigm. Deliberate collaboration and consultation are determining factors of effectiveness and legitimacy. Therefore, collaborative governance is viewed as a key element that may steer the path of modern society through flexibility and aggregated resources (Pollitt & Bouckaert, 2011; Ansell & Gash, 2007).

Thus far, the elements encountered in the paradigms of public management reform emphasize the resource management, the organizational structure, and the performance management and measurement systems (Pollitt & Bouckaert, 2011). The contribution of these elements of reform to accomplishment of objectives denote a strong connection between strategy and performance itself. In fact, strategy is designed to increase performance. Three hypothetical mechanisms strengthen this relationship, according to literature (Bouckaert et al., 2008). Firstly, there should be a pressure for performance implemented through management instruments (i.e. strategic planning, evaluation systems and/or market-type mechanisms). Secondly, specialization for performance should occur through restructuring. Thirdly, participation for performance should serve to increase satisfaction with public service. In addition, transparency and openness of the public administration are thought to be important attributes of the reform process (Pollitt & Bouckaert, 2011). They have legitimacy-enhancing effects on authority, making it more accountable to citizens. By contrast, the lack of transparency and openness are likely to jeopardize trust, being often associated with corruption and bad governance (Walker & Boyne & Brewer, 2010; Dragos & Neamtu, 2007).

Although pertaining to a limited number of (mostly developed) countries, the taxonomy advocated by Pollitt & Bouckaert (2011) is relevant for this study because it provides valuable information on key dimensions of reform. This can be illustrated briefly by the introduction of strategic management instruments and performance indicators, a higher support for development and innovation, but also by increased collaboration between stakeholders. Some of these dimensions of reform will emerge throughout the analysis, emphasizing their contribution to capacity development. It is therefore vital to understand the broader context in which reform takes place, because reform significantly impacts grassroot elements of society.

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#### 2.1.1 Justifying public management reform

There are several justifications for carrying out public management reform. This study focuses on five reasons why governments decide to change: 1. Reduce wasteful public expenditure; 2. Reduce bureaucracy; 3. Improve public services; 4. Harmonize regulation; 5. Rising expectations of the community. We shall now discuss them more extensively.

A first recurrent theme in reforming public administration concerns the need to reduce public expenditure (Pollitt & Bouckaert, 2011). Budget cuts are often associated with increased efficiency if suitable technologies are used. Otherwise known as budget reform or public financial management, this aspect concerns all layers of governance. Walker & Boyne & Brewer (2010) describe financial discipline as the capacity of administration to accommodate spending and saving to a strategic plan designed to achieve goals. The success of such a measure depends on the ability of the organization to accurately forecast future developments. At the same time, it involves the ability to maintain a tight control on all decision-making processes and navigate with a firm hand through budget constraints. Satisfying these factors is expected to contribute to reform effectiveness.

A second justification concerns the need to reduce burdensome bureaucracy (Pollitt & Bouckaert, 2011). Awareness of *red tape* and plans to cut through it may act as a goal and a motivation for pursuing reform. Manifested through excessive rules, regulations and procedures, *red tape* negatively influences government performance, often leading to delayed progress (Walker & Boyne & Brewer, 2010). On top of that, it also encourages corrupted behavior, therefore hindering socio-economic development. Data from several studies suggest that decentralization and management strategies could mitigate the harmful effects of bureaucracy (Pollitt & Bouckaert, 2011; Walker & Boyne & Brewer, 2010).

A third justification invokes the need to improve design and performance of public policies and services (Pollitt & Bouckaert, 2011). This represents a leitmotif in justifying public management reform. Citizen satisfaction with public services and institutions becomes a target of public administration (Pollitt & Bouckaert, 2011). The continuous monitoring of citizen satisfaction is likely to provide valuable feedback loops for the reformers, highlighting the most critical matters to be prioritized and dealt with.

A fourth justification concerns adhesion of European countries to international organizations (EU, North Atlantic Treaty Organization - NATO, World Bank -WB, International Monetary Fund - IMF) and the process by which national systems need to be standardized. Such entities play an influential role in advancing and financing public management reform, and especially EU integration appears to

be closely linked to public management reform. As a result of the legally binding nature of EU treaties and regulations across Member States, the requirements that involve strengthening institutional and policy capacity are therefore mandatory for new Member States (Dragos & Neamtu, 2007).

The last justification concerns public expectations. In some countries, poor governmental performance and successful Western models of good governance led to increased expectations and aspirations of society regarding quality and adequacy of public services (Peters, 2015). Low levels of trust and legitimacy of government unveil dissatisfaction with functioning of state apparatus and fulfillment of public needs (Bouckaert et al., 2008). The community's pressure towards change exacerbates tensions, constraining public administrations to change the approach to governance and perform more effectively.

Overall, the motives that justify public management reform have an overlapping character. Although the enumeration of motives is not exhaustive, it indicates the need of concerted efforts to yield tangible results. New modes to deal with challenges have been developed, involving both public, private and non-profit spheres. The following section will dive deeper into the conditions necessary to develop policy capacity.

#### 2.2 Conditions for developing policy capacity

Investigating public management reform is a continuous concern within the field of public administration. Throughout this paper, the concepts of (1) strategic planning and (2) Triple Helix interactions between academia, government and other societal actors are at the heart of our understanding how policy capacity building might be conditional upon these prerequisites. The interplay between these conditions, fulfilled by local actors, can establish a climate conducive to policy capacity development, and to community's development itself. However, it is necessary to clarify here what is meant by the fulfillment of conditions. On one hand, the coordination of stakeholders and activities is executed through a set of managerial instruments which help create policy capacity. A classic example of such a managerial instrument is strategic planning. On the other hand, complex problems faced by public administration can be better tackled by developing new institutional relationships with actors outside the public sector. The involvement of researchers, business and non-profit sector practitioners in governance is important and Triple Helix system illustrates this point clearly. We expect these conditions to orchestrate a favourable environment for policy capacity building. However, there are several challenges threatening the achievement of performance.

The main challenges faced by public organizations in their attempt to achieve effectiveness are twofold. Firstly, governments must ensure that reform implementation is carried out properly and uniformly. The lack of implementation capacity is thus a huge bottleneck impeding the achievement of results. Bridging the gap between adoption and actual implementation of reform requires appropriate plans, resources, and leverage mechanisms. Secondly, reform must be strategically correlated with stakeholders' goals. The lack of coherence between strategic approaches prevents performance. Together, these challenges indicate that public management reform depends upon the capacity of local government to ensure its application, both at theoretical and practical level. In the remainder of this chapter, the conditions related to adoption of strategic planning and Triple Helix interactions will be further discussed.

### 2.2.1 Strategic Planning

Strategic planning has a pivotal role in advancing public management reform. It has been asserted that adoption of strategic planning emphasizes patterns associated with reform paradigms, arguing that elements of NPM, NWS and NPG can be easily traced within the practice of planning (Hintea & Profiroiu & Ticlau, 2019). However, research has shown that practice of strategic planning is suitable not only for public agencies at different levels of government, but also for non-profit organisations, networks (i.e. partnerships, alliances) and communities in urban, metropolitan, regional or national areas (Bryson, 2010: 255).

#### Definition

Recent scholarship has widely addressed the scientific theme of strategic planning. Not rarely, strategic planning is used in relation to strategic management. To avoid any misunderstanding, we attempt to draw a fine distinction between strategic planning and the broader process of strategic management. Whereas the former is concerned with increasing effectiveness, often materializing in a strategic document, the latter integrates strategic planning along with a constellation of other key management processes. This paper focuses exclusively on strategic planning. Bryson (2010: 256) describes strategic planning as "a deliberative, disciplined effort to produce fundamental decisions and actions that shape and guide what an organisation or entity is, what it does, and why it does it". More comprehensively, Poister & Aristigueta & Hall (2015:199) define strategic planning as follows:

"The process of clarifying mission and vision, defining major goals and objectives, and developing longterm strategies for moving the organization into the future in a purposeful way and ensuring a high level of performance in the long-run".

Some writers argue that implementing strategic planning in the absence of strategic management will not lead to expected results (Vinzant & Vinzant, 1996; Hintea & Profiroiu & Ticlau, 2019). This view can be explained through a straightforward answer: the adoption of strategic plans at various levels of government is useless if they are not coherently correlated within an established framework, supporting the overall strategic plan. In contrast to this view, Barati-Stec (2015) claims that introduction of strategic planning could be regarded as an incremental improvement. The assumption here is that if a government adopts strategic planning, this change will induce efficiency (Barati-Stec, 2015; Hintea & Profiroiu & Ticlau, 2019). By contrast, Boyne & Gould-Williams (2003:116) argue that strategic planning should be "*explicit, rigorous, and systematic*", involving analytical methods based on formal processes, as opposed to incremental drifts. A closer look at the purpose, process and outcomes will hopefully offer us a more clear understanding of its strategic significance.

#### Purpose of strategic planning

The variety of purposes served by strategic planning is wide. A growing body of literature has investigated the subject in depth to determine the rationale of this mechanism. Plainly, strategic planning is designed to achieve success. This function can be achieved, according to Bryson (2010: 257), by fostering *"strategic thinking, acting, and learning"*, and determining how to build organizational capacity. Similarly, Poister & Streib (2005:45) argue that maintaining a *"favourable balance between an organisation and its environment over the long run"* is the core purpose of strategic planning.

Recently, it was acknowledged that a tendency of EU member states to pursue strategic planning is driven by the necessity to comply with funding-related legal requirements. A Romanian empirical study reveals that 68% of the local institutions implement strategic planning because it represents a prerequisite to access EU funding (Hintea & Profiroiu & Ticlau, 2019: 84). Others perceive strategic planning as a pillar of good governance, a reform instrument designed to improve performance or an attempt to formulate a robust framework for local development (Hintea & Profiroiu & Ticlau, 2019).

In the context of local governance, there are two reasons why governments implement strategic planning. One reason relates to enhancing local governance and is mainly associated with increased participation of stakeholders (Hintea & Profiroiu & Ticlau, 2019). Public, private and nonprofit actors, such as universities, business representatives or non-governmental organizations (NGOs) are encouraged to get involved in the development and implementation of strategy. Their involvement is essential, significantly contributing to the diagnosis of issues affecting the community and the identification of the most effective solutions to be utilized. The primary tools of local governments to improve public participation are surveys and consultations. The other reason of strategic planning relates to increased public performance (Hintea & Profiroiu & Ticlau, 2019). The aggregation and use of scarce resources in a strategic, cost-effective manner leads to increased levels of performance. For instance, the use of digital governance has been demonstrated to have performance-enhancing effects, therefore being a relevant tool for strategic planning (Holzer & Manoharan & Van Ryzin, 2010; Holzer & Manoharan, 2012; Carrizales et al., 2011).

#### Strategic Planning Process

The existing literature on strategic planning is extensive, often focusing on the process developed in different contexts (Boyne & Gould-Williams, 2003; Boyne & Walker, 2004; Poister & Streib, 2005; Berry, 2007; Bryson, 2010; Poister, 2010; Barati-Stec, 2015; Demirkaya, 2015; Junjan, 2015; Van Ravensway & Hamlin; Ruano, 2015; Hintea & Profiroiu & Ticlau, 2015, 2019). Thus far, a multitude of strategic planning frameworks have been developed. Some of them are tailored according to contextual conditions. A widely used strategic planning model is advocated by Berry (2007) and encompasses eight steps, as follows: (1) Plan for the strategic planning process; (2) Clarify the organization's mission, values, and vision; (3) Identify stakeholders and assess their views and needs; (4) Understanding the external and internal environments; (5) Identify strategic issues; (6) Develop goals, objectives, performance measures and action plans; (7) Devise and assess strategies; (8) Implement and build commitment to the plan (Berry, 2007: 333-340).

Building upon this model, Poister & Aristigueta & Hall (2015) identify ten phases of the strategic planning process in public and non-profit organisations. The framework consists of the following: (1) Agreement on a strategic planning process; (2) Clarification of organizational mandates; (3) Organisational mission and values; (4) Assessment of external and internal environments; (5) Identification of strategic issues facing an organization; (6) Developing strategies and measures to manage the issues; (7) Review and adoption of strategies and plan; (8) Establishing an organizational vision; (9) Implementation process, and (10) Monitoring and evaluation (Poister & Aristigueta & Hall, 2015: 203-206).

Various empirical studies observed the process of strategic planning in local communities. In France, scholars found that the process of strategic planning consists of a twofold step, emphasizing the analysis of the environment and the identification of stakeholders (Carmouze et al., 2019:20). Likewise, in Hungary, leaders consider preparation, implementation and evaluation as the most important stages of the planning process (Barati-Stec, 2015: 57). A more detailed account was found in Cluj-Napoca, Romania, where the planning process encompasses three steps: (1) Preliminary analysis, (2) Defining the vision, (3) Strategic analysis and working groups. Each of these steps was further developed and integrated into a complex strategic profile designed to pinpoint the exclusive peculiarities of the community (Hintea & Profiroiu & Ticlau, 2019: 96-102). In the United States (U.S.), strategic planning is a "community planning process" that includes the identification of actors, resources, and timelines. It consists of a twofold step, namely: (1) A comprehensive plan stage accomplished through public engagement and discussion prioritizing the objectives and (2) The adoption of the comprehensive plan by establishing a citizen's committee to work with planning staff towards creation of individual strategic plans (Van Ravensway & Hamlin, 2015: 63-64). In Spain, the planning process must (1) Identify the main urban actors, (2) Design and apply a methodology that makes consensual decision-making possible, and (3) Involve local actors throughout the process (Ruano, 2015: 72).

Despite evidence reported in these studies is not exhaustive, findings from different contexts indicate overlapping traits of the strategic planning process. Based on different frameworks encountered within literature, the main dimensions of strategic planning will be discussed more extensively in the upcoming paragraphs. The following dimensions are deemed highly relevant for the analysis: a. Clarifying organisational mission and vision, b. Assessing internal and external environment; c. Identifying strategic issues; d. Developing strategies, objectives and measures, and e. Implementation, monitoring and evaluation.

#### a. Clarifying organisational mission and vision

The clarification of mission and vision represents a primary step in the strategic planning process. Whereas the mission is essentially concerned with the basic purpose of an organisation, the vision represents the preferred future towards which the organisation is heading (Poister & Aristigueta & Hall, 2015). This is applicable to public, private, and non-profit organisations, alike. However, achieving clarity and focus of mission statement might be a challenging task for public administrations who need to meet multiple needs and requirements of community stakeholders. While some municipalities clearly articulate what they want to achieve on the long run, others are not as successful

in clarifying their intentions. On one hand, well-defined mission and vision might contribute to improved performance and effectiveness, as they provide valid and measurable ways to deal with change (Walker & Boyne & Brewer, 2010; Berry, 2007). On the other hand, mission and goal ambiguity have detrimental effects on strategic planning, undermining performance. They may negatively influence organizational commitment, job involvement and work satisfaction, diminish administrative authority and increase bureaucracy (Walker & Boyne & Brewer, 2010: 36-37).

#### b. Assessing internal and external environment

This second phase consists of carrying rigorous SWOT (Strengths – Weaknesses – Opportunities – Threats) and PEST (Political – Economic – Social – Technological) analyses by the planning staff in order to establish the challenges and competitive advantages of the community. The analysis is likely to reveal the most influencing factors on public performance. Notable examples include resources, level of policy capacity, innovation, education or the local economy. Research has demonstrated that success in public and non-profit organisations is increasingly measured by stakeholder satisfaction, thus assessing their expectations and perspective on the process might positively contribute to performance, while at the same time conveying openness (Berry, 2007).

#### c. Identifying strategic issues

This phase consists of the identification of strategic problems that threaten community development. The analytical capacity is extremely important at this point, because it reveals the ability of stakeholders and their understanding of the role that strategic planning can play in the transformation of the society. The measurement of organisational inputs, outputs and outcomes is relevant at this stage (Berry, 2007). Regarded as harmful, matters such as low policy capacity, poor infrastructure, lack of competences and limited financial resources call for resolution in order to be overcome.

#### d. Developing strategies, objectives, and measures

The accurate identification of deficiencies allows planners to focus attention on setting objectives and targets, establish priorities and develop strategies to deal with them. A well-defined set of strategic goals and objectives specifying the results to be achieved within a given timeframe is most suitable to the detriment of more ambiguous goals. The SMART concept postulates that

objectives should be Specific, Measurable, Ambitious, but Realistic, and Time-bound so that improvements can be attained (Aristigueta & Poister & Hall, 2015: 94). Naturally, this approach must be offered the necessary resources in order to guarantee effectiveness of the plan. In fact, one of the premises derived by Etzkowitz & Ranga (2009) for government intervention is to *"define clear objectives and aggregate sufficient resources to achieve them"* (Etzkowitz & Ranga, 2009: 807). The concerted action of stakeholders to improve the conditions that support socio-economic development was demonstrated to have positive effects on strategic planning, increasing commitment and conferring legitimacy (Aristigueta & Poister & Hall, 2015; Hintea & Profiroiu & Ticlau, 2019).

#### e. Implementation, monitoring and evaluation

The final phase of the strategic planning process embeds a twofold sub-process in terms of timing: the actual *implementation* and subsequent *monitoring and evaluation*. Whereas the first one requires application of a thorough action plan, the second one, if properly carried, reveals the impact of measures on performance accomplishment and offers opportunities to mend the shortcomings as soon as they occur. Developing measurement systems that monitor performance indicators such as efficiency, service quality, customer satisfaction or effectiveness is highly relevant for the strategic plans (Aristigueta & Poister & Hall, 2015). Based on performance data generated by monitoring systems, organizations may evaluate the progress of the strategic plans and adjust them according to needs.

#### The outcomes of strategic planning

There is a myriad of outcomes generated by strategic planning. Some scholars demonstrated that benefits deriving from the adoption of strategic planning include: promotion of *"strategic thinking, acting and learning"*; improved decision-making; enhanced organizational effectiveness, flexibility, responsiveness and resilience; enhanced effectiveness of broader societal systems; improved organisational legitimacy; and direct benefits for the people involved through a gradual increase in human, social, political and intellectual capital (Bryson, 2010: 255, Aristigueta & Poister & Hall, 2015: 206; Berry, 2007).

Others observed increased efficiency in public service management and a higher number of partnerships between stakeholders (Carmouze et al., 2019: 22). Similarly, the study of Boyne & Gould-Williams (2003) on Welsh local government found that strategic planning leads to service improvement. A survey conducted by Poister & Streib (2005) in the U.S. municipal governments

revealed a high degree of satisfaction reported by municipal managers on the outcomes of strategic planning. Surprisingly, approximately 90% of them argued that benefits generated by strategic planning outweighed the costs of undertaking the efforts (Poister & Streib, 2005: 54). Finally, the survey conducted by Hintea & Profiroiu & Ticlau (2019) on Romanian local governments found that strategic planning contributes to coherence in local development efforts, improved quality of local governance and access to financing sources, including EU funds (Hintea & Profiroiu & Ticlau, 2015, 2019: 94).

Attempts to correlate findings on strategic planning with elements of public management reform provide useful observations. An illustration of reform compatible with strategic planning is the performance measurement system and performance-based budgeting (Berry, 2007). In general, strategic planning is strengthened by reforms in the public sector. In particular, there are specific ingredients of reform corresponding to strategic planning. This can be seen in the NPM paradigm mainly as the employment of performance-based mechanisms and competitiveness enrichment. On the other hand, elements of NWS relate to transparency and competence-based development of the society. More compelling is the link with NPG elements translated into higher participation in decision-making and increased collaboration between stakeholders.

This sub-section has attempted to provide a brief summary of the literature relating to strategic planning in the public realm. In the review, it has been explained that purposes, process and outcomes of strategic planning may vary depending upon the context; however, similarities exist, at least from a methodological perspective. Collectively, findings provide insights into the level of understanding and commitment that stakeholders attach to strategic planning. Although little attention has been given to the financial dimension, one must not underestimate its contribution to the overall process. Providing a full account on this topic is beyond the scope of our paper. The section that follows moves on to discuss Triple Helix interactions between academia, government and other societal actors, a key mechanism guiding innovation and knowledge-based development.

#### 2.2.2. Triple Helix Interactions

Institutional collaboration is salient to governance performance. Illustrating a regional development strategy, this new paradigm focuses on incentivizing collaboration between university, government, and industry (Triple Helix) to achieve performance (Etzkowitz & Ranga, 2009). A high degree of synergy between the institutional spheres that pursue common strategic goals represents

a primary and foremost requirement for development. As a result, Triple Helix is intrinsically linked to policy capacity development.

There is a relatively small body of literature concerned with the Triple Helix concept, and it was not until the late 1990s that scholars considered this subject worthy of attention. Prior to the work of Etzkowitz & Leydesdorff (1996, 1998, 2000), the role of Triple Helix was largely unknown. Their analytical model established a dynamic framework for the interaction of various stakeholders embedded within the institutional spheres of (a) university, (b) government and (c) industry likely to provide new means for economic growth and social transformation (Etzkowitz & Leydesdorff, 1996, 1998, 2000). Drawing upon this approach, other authors questioned the usefulness of Triple Helix model (see Etzkowitz, 2003; Etzkowitz et al., 2008; Etzkowitz & Ranga, 2010; Ranga & Etzkowitz, 2012, 2013; Etzkowitz & Ranga & Dzisah, 2012; Etzkowitz & Dzisah, 2008; Ivanova & Leydesdorff, 2013; Leydesdorff & Meyer, 2010; Sa & Casais & Silva, 2018). A full account of the Triple Helix model is provided below.

#### **Origins, Definition and Dimensions**

The sources of Triple Helix interactions are twofold. The model originates from the statist and *laissez-faire* regimes (Etzkowitz & Leydesdorff, 2000; Etzkowitz, 2003). In a statist regime, government embodies academia and industry, whilst a *laissez-faire* style is more passive, involving a rigid separation of the three institutional spheres. Based on attempts to redefine responsibilities between key actors operating on the local or regional arena, the balanced and interactive model of Triple Helix is designed to replace the old modes of governance by providing a vehicle towards achieving collaborative, knowledge-based development. Triple Helix configurations are displayed in Figure 1.

A major transformation concerns the hybrid nature of Triple Helix which implies an institutional overlap in the public realm (visible in Figure 1, third configuration). Not rarely, this shift materializes in new organizational arrangements such as networks, strategic alliances (i.e. partnerships, clusters), incubator facilities, science parks, venture capitals, spin-offs (Etzkowitz & Leydesdorff, 2000; Etzkowitz, 2003). Apart from institutional innovation, this gathering of forces has a strong predilection for progress, harnessing resources favourable for other types of innovations. We may briefly recall technological innovations such as digitalisation, 5G or Internet of Things (IoT), but also economic or social innovations. Another characteristic of the model is the tendency of actors to *"take the role of the other"*, in addition to performing their traditional mission, especially when the other is weak or under-performing (Etzkowitz, 2003; Ranga & Etzkowitz, 2013).





Source: Etzkowitz & Leydesdorff (2000)

The definition of Triple Helix is as complex as the concept per se. Ranga & Etzkowitz (2013: 238) define Triple Helix systems as follows:

"An analytical construct that synthesizes the key features of University-Industry-Government (Triple Helix) interactions into an innovation system format, defined as a set of **(1) components** consisting of the institutional spheres of University, Industry and Government (i.e. R&D performers and non-R&D actors, hybrid institutions, individual and institutional innovators), **(2) relationships** (i.e. technology transfer, collaboration and conflict moderation, collaborative leadership, substitution and networking), and **(3) functions** (i.e. generation, diffusion and utilization of knowledge and innovation embedded in the Triple Helix spaces of Knowledge, Innovation and Consensus)".



#### Components

University–industry– government institutional spheres:

- R&D and non-R&D innovators
- Single sphere' and 'multi-
- sphere' (hybrid) institutions
- Individual innovators and institutional innovators

#### Relationships

- Technology
- transfer/acquisition
- Collaboration and conflict moderation
- Collaborative
- leadership
- Substitution
- Networking
- conser

Source: Ranga & Etzkowitz (2013)

### Functions

- Main function: generation, diffusion and use of knowledge and innovation
- Realized through articulation of the:
- knowledge space
- innovation space
- consensus space

#### Purpose of Triple Helix

The scope of Triple Helix interactions is wide. Pursuing this approach primarily aims at accelerating the transition from Industrial Society to a Knowledge Society (Etzkowitz & Dzisah, 2008; Ranga & Etzkowitz, 2013; Ivanova & Leydesdorff, 2013). To achieve this aim, the model emphasizes the need to consolidate the regional innovation systems (Etzkowitz & Ranga, 2010). By increasing knowledge-intensive activities, communication, and interconnectivity between stakeholders, the approach provides new means to reform society and drive development (Ranga & Etzkowitz, 2013:244). Importantly, Triple Helix also promotes *"learning processes and capabilities to secure a competitive advantage [...] linked to specific local resources"*, thus being relevant in addressing challenges of the local community. Examples include improvement of research infrastructure, human resource development, and greater innovative potential of local firms (Etzkowitz & Ranga, 2013)

#### a. University

University has a key entrepreneurial role in a Triple Helix configuration. Perceived as the cradle of research and education, and a venue where ideas proliferate with a steady pace, university possesses a wide range of valuable assets varying from specialized human resources, with high levels of competency and skills, to state-of-the-art equipment and technologies. To increase the relevance of knowledge resources for socio-economic development, education reform was thus necessary. The adoption of Research, Development, Innovation (RDI) policy measures is designed to contribute to consolidation of the Knowledge Space theorized by Ranga & Etzkowitz (2013). The success of establishing the Knowledge Space is contingent upon the *"integrative ability of the university"* to create suitable premises for collaboration between Triple Helix actors. For further exploration of pathways of education reform in the U.S., Japan, Sweden, and Brazil, see Etzkowitz et al. (2008).

It has been suggested that, in addition to research and teaching, university may also assume the mission of driving economic development (Etzkowitz & Leydesdorff, 2000). Similarly, Etzkowitz et al. (2008) talk about a "transition to the entrepreneurial university as part of a broader shift to a knowledge-based economy" (2008:681), while Etzkowitz & Ranga & Dzisah (2012) propose an innovative approach to reform the higher education curriculum design, labelled "Novum Trivium". Consisting of (1) specialization, (2) innovation and entrepreneurship, (3) language and culture studies, Novum Trivium is designed to enhance university's entrepreneurial mission, heavily relying on interdisciplinarity and commercialisation of research (Etzkowitz et al., 2008; Etzkowitz & Ranga & Dzisah, 2012: 146). Therefore, besides education training and pioneering research capabilities, latterly, the university has assumed an innovation fostering role. To fulfil this function, curricula transformed, widely adopting new disciplines, including, for example, subjects related to computer science and information technology (Etzkowitz & Leydesdorff, 2000). This led to institutional and technological innovations largely used in practice (i.e. e-governance and formation of new structures).



Figure 3. Triple Helix model

A variety of mechanisms facilitate knowledge-based development in a Triple Helix model from the perspective of university. They aim towards increasing R&D activity, capitalizing knowledge and ensuring the interaction of university with external stakeholders (i.e. technology transfer offices, academic research groups, spinoffs, consortia, interdisciplinary research centres, science parks, business incubators, start-up accelerators, venture capital) (Ranga & Etzkowitz, 2013). Noticeably, the tendency to increase R&D has been reported also in the creative industries such as arts (Ranga & Etzkowitz, 2013).

The aggregation of resources by Triple Helix partners facilitate innovation capacity development, allowing them to put in practice the conceived ideas, while at the same time adhering to local economy needs in their efforts to drive development. A better match of curricula with labour market will increase student employability, allowing qualified alumni to easily enter on the labour market and supply public and private organizations with their knowledge. Irrespective of context, the economic potential of a region is given by the availability of knowledge institutions equipped with research capabilities, and their capacity to supply the local ecosystem with qualified human resources. This represents an increasingly indispensable condition for socio-economic development; however, it might be a necessary, but not sufficient condition to change (Etzkowitz et al., 2008).

Source: adapted from Etzkowitz & Leydesdorff (2000)

#### b. Government

The participation of local government is vital for the success of a Triple Helix model. Suffice it to recall that only when the administration is willing to relinquish the traditional power to control, in favour of a long-term partnership with university and industry, would genuine transition towards a knowledge-based society be achievable. The adoption of a policy framework that supports the business environment and academia represents the basis upon which consolidation of the *Consensus Space* is produced (Ranga & Etzkowitz, 2013).

The government regulatory function materializes into policies (i.e. innovation policy, cluster policy) designed to enhance dialogue and collaboration between stakeholders and contribute to consensus building. By way of illustration, Ranga & Etzkowitz (2013) show that promotion of collaborative governance measures may occur through (1) new platforms of institutional communication (i.e. public consultation and feedback), (2) inclusion of actors in brainstorming, problem analysis, strategy formulation and review, (3) aggregation of resources and negotiation of shared purposes etc. The regular meetings of the *Knowledge Circle of Amsterdam* designed to develop strategies for enhancing knowledge-based development constitutes an example of this kind (Ranga & Etzkowitz, 2013: 251).

This dynamic policy perspective, performed in collaboration with partners, can generate a much higher impact in the process of reforming the innovation system. To stimulate innovation activity, Ranga & Etzkowitz (2012:1437) recommend government to provide "stronger incentives to increase and better coordinate countercyclical stimulus for R&D'' (i.e. tax credits, subsidies, public venture capital, smart public procurement). Some governments enacted legislation aimed at improving technology transfer (i.e. Law to Strengthen Industrial Technology, Law to Promote Transfer of University Technology, National University Corporations Law in Japan), while others shifted focus towards incentivizing stakeholders to participate to knowledge-based firm formation such as the Agency for Innovation Systems – VINNOVA in Sweden (Etzkowitz et al., 2008:688-689). In Brazil, government fostered innovation through a business-like approach by providing incentives for the creation of technological transfer offices in university, bolstering incubators and science parks, and encouraging firms to become R&D-intensive (Etzkowitz et al., 2008:687). Albeit occurring in totally different contexts, the approaches to governmental institutional innovation reform are similar, and must be perceived as such. Overall, government increasingly becomes the advocate of technology transfer, facilitating innovation and learning, and having a direct influence on development, while simultaneously building a balanced relationship with the institutional spheres of academia and industry.

#### c. Industry

Industry has a considerable impact on socio-economic development in a Triple Helix model. The transformation towards a knowledge-based society occurring in industry is directly related to innovation. Firm formation, development of intellectual and entrepreneurial potential, and generation of competitive advantages are among the mechanisms through which industry contributes to the consolidation of *Innovation Space* together with academia and government (Ranga & Etzkowitz, 2013).

Innovations in industry are widespread. Industrial organisations increased R&D expenditure (i.e. creation of R&D divisions) and largely invested into in-house training and development programs (i.e. Cisco Networking Academy, Intel Educator Academy, Apple University) (Ranga & Etzkowitz, 2013:246). However, investments are mostly scattered in areas with high economic potential that allow firms to benefit from profit contingency. Regions with prominent IT-based academic specializations supplied by local universities are in the spotlight, enjoying considerable attention from both domestic and foreign investors. Etzkowitz & Ranga (2010:3) argue that capitalizing on a region's knowledge resources represents state-of-the-art strategy towards achieving knowledge-based regional economic development. Assuming that universities play a key role in knowledge and technology transfer, they represent pull factors, thus increasing the likelihood for businesses to move in the area. In this vein, universities are likely to bridge the gap between demand and supply of human resources on the labour market, contributing to socio-economic development. On the other hand, business sophistication not only unveils the level of competitiveness of a region, but also the ability of government to supportively align its strategic planning to local conditions and adopt a consensual approach to decision-making in accordance with industry and academia. This view is supported by Etzkowitz & Leydesdorff (1998), who argue that local conditions provide resources that allow Triple Helix actors to work in a network mode.

Institutional innovation in industry may take various forms. Examples of hybrid arrangements in this institutional sphere include industrial liaison offices, business support institutions (i.e. science parks, business and technology incubator facilities, start-up accelerators), financial support institutions (i.e. public and private venture capital firms, angel networks, seed capital funds) and other strategic alliances such as clusters and networks (Ranga & Etzkowitz, 2013: 244; Etzkowitz, 2003). These innovations have become increasingly popular elements of the regional growth infrastructure. The synergistic approach to knowledge-based development has not only the purpose to promote innovation and entrepreneurship, but also to aggregate resources and capabilities for ideas to be effectively transferred into the market. The ultimate desideratum of these synergies is to increase the relevance of knowledge and innovation systems in addressing socio-economic challenges.

Collectively, theory shows that Triple Helix interactions are a viable solution to regional development (Etzkowitz & Ranga, 2010). Triple Helix actors are influenced by innovation in two ways: internally, within each of the three institutional spheres, and externally, by enhancing the relationship between them (Etzkowitz & Leydesdorff, 2000). The "*hybridization*" of elements from academia, government, and industry allows Triple Helix actors to reconfigure themselves in new institutional arrangements that are more suitable to accomplish the function of "*production, transfer and application of knowledge*" (Ranga & Etzkowitz, 2013: 238). New patterns of relationships are established within the institutional spheres, including technology transfer, collaboration and conflict moderation, substitution, and networking. For instance, the substitution portrays entrepreneurial universities engaging in technology transfer and firm formation, specific to industry; governments providing public venture capital also specific to industry; or industry developing in-house training and development, a traditional task of university.

The transition towards a knowledge-based society is characterized by the juxtaposition of the institutional spheres, culminating with the formation of *Knowledge*, *Innovation* and *Consensus Spaces*, as conceptualized by Ranga & Etzkowitz (2013). The emergence of strategic alliances such as networks, clusters, or science and technology parks with incubation facilities provide important insights into the potential of enhancing the relationship between academia, government, and industry. The aggregation of resources confers partners the capacity to build a sustainable ecosystem capable of addressing complex societal challenges and stimulating development. However, the effectiveness of Triple Helix interactions is context dependent. Regional circumstances and development stage may influence the successful transition towards a Triple Helix system (Ranga & Etzkowitz, 2013).

Broadly speaking, Triple Helix interactions are likely to induce several paradigmatic shifts that have salutary effects on socio-economic development. Ranga (2011) identifies seven regional shifts, as follows: (1) shift from an exogenous development strategy focused on attracting companies towards an endogenous strategy focused on enhancing the local ecosystem; (2) shift from general regional development potential towards *smart specialisation* of regions emphasizing specific competitive advantages; (3) shift from innovation as private sector-specific process towards innovation as a broad process with societal implications (emphasis on education and employment); (4) shift from monodisciplinary research towards interdisciplinary research; (5) shift from top-down innovation strategy towards bottom-up partnerships; (6) shift from competing regions towards collaborating regions based on win-win approaches (i.e. consortia); and (7) shift from closed to open innovation systems, clusters and networks. This all-encompassing inventory of shifts caused by the interaction of academia, government and industry capture the complexity of Triple Helix innovation occurring at individual, organisational and societal level.

From a public management reform perspective, Triple Helix system fits better into the NPG paradigm. Its emphasis on participatory, collaborative approach of stakeholders represents the allembracing leitmotif of reform. Elements of NPG such as emergence of networks, strategic alliances, and public-private partnerships (PPP) that engage actors from university, government, and industry are widely regarded as solid underpinning for future development. Accordingly, innovation is viewed as a mechanism that connects the spheres, while also troubleshooting issues. High degrees of flexibility, effectiveness, and legitimacy specific to NPG might be associated with Triple Helix given the orientation of stakeholders to operate in a network mode.

### 2.3 Policy Capacity

The investigation of policy capacity is a continuing concern within the field of public administration. Scholars have shown interest in establishing the factors contributing to capacity development and the challenges impeding it (Caiden, 1973; Gargan, 1981; Painter & Pierre, 2005; Parsons, 2004; Verhoest & Bouckaert, 2005; Peters, 2005, 2015; Dragos & Neamtu, 2007; Walker & Boyne & Brewer, 2010; Bachtler & Mendez & Oraze, 2014; Wu & Ramesh & Howlett, 2015; Surubaru, 2016; Christensen & Lægreid & Rykkja, 2016; Christensen & Lægreid, 2019; El-Taliawi & Van der Wal, 2019). Recent developments in social, economic, and technological field have heightened the need to increase policy capacity to be able to face novel challenges.

### 2.3.1 Definition

The salience of policy capacity towards genuine socio-economic development is incontestable. The academic literature on *capacity*, often labelled also "*policy capacity*", "*administrative capacity*", "*managerial capacity*", "*institutional capacity*" or "*governance capacity*" has revealed the emergence of several definitions. In this thesis, we focus on "*policy capacity*" due to its potential to provide insights not only on what it can do, but also on how to deploy various resources and capabilities to enhance it (Wu & Ramesh & Howlett, 2015). Perceiving the concept from a government perspective, scholars defined capacity as follows:

"Ability of government to develop, direct and control its resources to support fulfilment of policy and program responsibilities" (Walker & Boyne & Brewer, 2010:47).

"Set of skills and resources or competences and capabilities necessary to perform policy functions" (Wu & Ramesh & Howlett, 2015:166).

*"Institutional capacity of a government to formulate and carry out plans, policies, operations, or other measures to fulfil public purposes"* (Dragos & Neamtu, 2007:634).

"Ability of government to strategically integrate competing and opposing forms of knowledge and coordinating the multiplicity of organisations and interests to form a coherent policy fabric" (Parsons, 2004:44).

"Ability to anticipate change; develop programs; attract, absorb, and manage resources; evaluate activities; and apply lessons to future activities" (El-Taliawi & Van Der Wal, 2019:4).

This evidence shows how the term is defined by scholars in different ways, albeit they incline towards similar meanings by reinforcing the importance of resources in building capacity and the leadership role assumed by government. We seek to adopt a broader perspective on policy capacity. To substantiate this view, we argue that OECD definition reflects concept complexity more thoroughly, being more suitable, forasmuch as it encompasses other societal actors in addition to government itself, while also stressing the need of strategy in the pursuit of reform.

"The process by which individuals, groups, organizations and societies increase their abilities to perform core functions, solve problems, define and achieve objectives; understand and deal with their development needs in a broad context and in a sustainable manner" (OECD, 2006).

### **2.3.2** Dimensions of policy capacity

Understanding the process of developing policy capacity is relatively straightforward. A qualitative investigation by Wu & Ramesh & Howlett (2015) suggests an explanatory theory for nine dimensions of policy capacity that goes beyond the state apparatus. Accordingly, actors from private and non-profit sector are considered. The taxonomy is designed to offer a supporting structure, underlying the usefulness of resources and capabilities management for the achievement of public ends. The operationalization of policy capacity is performed from a nine-fold perspective, consisting

of three sets of capabilities (analytical - operational - political) and three sets of resources (individual - organizational - systemic) assessed at each level. The multidimensionality of policy capacity allows us to track what arises from the combinations of skills and resources at each level (Wu & Ramesh & Howlett, 2015).

Analytical-level capacity has the purpose to ensure technical viability to policy actions (Wu & Ramesh & Howlett, 2015). A great deal of this capacity originates from good judgement, as well as from careful and systematic examination of facts and information. The potential of this capacity to produce policies with a high degree of accuracy is likely to cause a higher percentage of performance, thus contributing to goal achievement. The following resources are required to achieve analytical capacity: (1) availability of individuals with analytical capacity (individual level), (2) machinery and processes for collecting and analysing data, and commitment to evidence-based policy (organisational level), and (3) scientific, statistical and educational facilities (system level) (Wu & Ramesh & Howlett, 2015: 168-169).







**Operational-level capacity** has the purpose to ensure alignment of resources with policy actions (Wu & Ramesh & Howlett, 2015: 168). This type of capacity is most-commonly associated with the implementation process. The effectiveness of implementation is therefore dependent on how well the two elements are harmonized. The following resources are required to achieve operational capacity: (1) ability of individuals to perform key managerial functions (individual level), (2) political-institutional environment and internal organisation of public agencies (organisational level), and (3) coordination of governmental and non-governmental efforts to address collective problems (system level) (Wu & Ramesh & Howlett, 2015). By contrast, systemic failures and lack of guidance might jeopardize coordination and implicitly, the outcomes. Drawing upon literature on innovation systems,

Cai & Pugh & Liu (2015:19) argue that the following systemic failures may hinder development: infrastructural failure, transition failure, path dependency failure, legal system failure, social institution failure, network failure and capability failure.

**Political-level capacity** has the purpose to obtain and sustain political support for policy actions (Wu & Ramesh & Howlett, 2015: 168). Government output is an accurate determinant of legitimacy (Gilley, 2006; Rothstein, 2009). This type of capacity might be a relevant indicator of how government is likely to contribute to consensus building by ensuring a higher degree of participation to governance processes. The following resources are required to achieve political capacity: (1) political knowledge and acumen of individuals that encourage engagement of private and non-profit stakeholders (individual level), (2) development of learning relationships with governance partners and citizens (organisational level), and (3) level of trust in political, social, economic and security spheres that legitimate policy action (system level) (Wu & Ramesh & Howlett, 2015).

The evidence reviewed in this section suggests a pertinent role for policy capacity in the context of local governance. A legitimate impact on development requires concerted efforts of public, private, and non-profit sectors in addressing local issues. We have seen from the literature review that most capabilities and resources are emphasized as inputs to development, thus having a key role. We observed that policy capacity deals with governance process in its entirety, going from strategic planning to implementation and evaluation, and achievement of performance urge stakeholders to demonstrate high capacity at all levels.

The major catalysts for increasing policy capacity are human and financial resources, knowledge, and skills, but also the underpinning infrastructure. By contrast, personnel and skills shortage, system inadequacy and social fragmentation may obstruct capacity building thus hindering development. The actual process or throughput is complex, and activities carried depend, to a high extent, on the quality and quantity of the input infused. Performance requires suitable strategic approaches and leadership, as well as effective monitoring, implementation, and evaluation systems. (Gleeson & Legge & O'Neill, 2009). The execution of planning by combining resources and capabilities in multiple dimensions will most probably lead to tangible outputs and outstanding outcomes.

In all instances, a public management reform perspective on policy capacity exhibits a matching with the whole range of reform components retrieved in NPM, NWS and NPG paradigms. Accordingly, this suggests the existence of a close relationship between capacity and reform. For NPM, policy capacity is recognized a competence-based driver of change inducing performance outputs such

as efficiency in the provision of public services. This relates it to analytical and operational capacities. In a similar way, the NWS paradigm provides leadership and highly trained policy professionals, touching upon the operational, analytical, and political capacities. Elements that fit the NPG paradigm concern the collaborative efforts of public, private, and non-profit actors towards attaining governance effectiveness through participation and pooling of resources. Dealing mainly with operational capacity, but covering also the analytical and political capacities, the NPG paradigm has a strong inclination towards collaboration and innovation, paving the way for sustainability.

#### Theoretical framework

This chapter provided a summary of the literature relating to public management reform, strategic planning, Triple Helix interactions and policy capacity. The selection of these concepts for the analysis is not casual. We argue that a strong relationship is gradually being developed between the components, characterized by a paradigmatic shift in public administration which contributes to improving public management and governance. In Figure 5, we provide an outline of the theoretical framework and the expectations deriving from it.



Figure 5. Theoretical Framework-derived expectations

Source: own adaptation based on theoretical framework

The starting point for societal change emphasizes public management reform that is aimed at changing the role of public administration within society to respond more effectively to needs and challenges. To better understand the various trajectories of public management reform, three paradigms were employed in the analysis: NPM, NWS and NPG. We focused on key dimensions of reform such as performance management and measurement and explored the collaborative approach to public governance. Whereas the former dimension is concerned with selecting the most appropriate strategy designed to increase performance, the latter dimension involves the inclusion of actors from private and non-profit spheres within the governing process in addition to government itself.

# Expectation 1: New Public Governance provides a suitable grounding for developing public management reform at local level

While each of the discussed dimensions of reform embedded in the paradigms can be reconciled, to a certain extent, with a governance perspective, we claim that NPG provides a suitable grounding for developing public management reform at local level. The justification lies in its potential to provide both institutional and policy innovation solutions to modern socio-economic and technological challenges through a flexible and collaborative approach to governance that involves actors from public, private, and non-profit spheres.

# *Expectation 2: A robust strategic planning framework based on clear mission, vision and objectives leads to higher policy capacity to implement public management reform.*

The evidence reviewed suggests that success of public management reform is dependent upon the capacity of government to ensure its application. Managerial tools such as strategic planning influence the achievement of performance. Thus, a robust strategic planning framework based on clear mission, vision and objectives can lead to higher policy capacity to implement public management reform. This expectation is displayed in Figure 5 through a one-directional arrow that shows how strategic planning causes policy capacity. Yet, strategic planning is a necessary but not sufficient condition to generate policy capacity.

# *Expectation 3: A balanced framework of Triple Helix interactions pursuing innovation-based strategy leads to higher policy capacity to implement public management reform.*

It has been demonstrated that impact of strategy on performance is greatest when internal and external factors are in alignment, and when prospecting public organisations allow for decentralized decision-making (Walker & Boyne & Brewer, 2010). This involves the inclusion of other societal actors in decision-making. The Triple Helix system of innovation emphasizes a balanced relationship between academia, government and industry and is therefore consistent with this approach. The interactions between the institutional spheres offer valuable insights into how a knowledge and innovation-based approach towards development contribute to reforming the society, thus leading to higher policy capacity. This expectation is displayed in Figure 5 through a onedirectional arrow that goes from Triple Helix interactions towards policy capacity.

# *Expectation 3a: A strategic approach intertwined with Triple Helix interactions increases the likelihood of policy capacity development.*

The adoption of strategic planning and Triple Helix represent necessary conditions to enhance policy capacity. The relationship between these conditions is displayed through a bi-directional arrow emphasizing *innovation-based strategy*. This suggests that not only strategic planning determines Triple Helix interactions to develop, but also Triple Helix interactions shape strategy through innovative mechanisms such as new institutional arrangements (i.e. networks, partnerships, clusters, technology transfer offices, interdisciplinary groups) that favour new platforms of communication (i.e. public consultation, brainstorming, strategy formulation and feedback) or technological innovations (i.e. digitalisation, IoT, e-governance). We argue that adopting a strategic approach tightly intertwined with Triple Helix interactions between academia, government, and industry increases the likelihood of high capacity development. Therefore, strategy and Triple Helix collaboration interact and influence one another in an iterative process that helps create policy capacity. A higher policy capacity can ensure a suitable application of reform, better addressing socio-economic challenges, which in turn will most probably lead to economic growth and social development.

Thus far, the thesis focused on the two conditions required for developing policy capacity. This chapter has analysed the benefits of adopting strategic planning and Triple Helix interactions in public governance, while also showing the shortcomings arising from their flawed or limited implementation. Having discussed the conditions favourable for a genuine change, the next chapter moves on to describe the research methodology.
# **3. METHODOLOGY**

This chapter discusses the methodology used in the research. The mode of observation is based exclusively on non-numerical methods of scientific inquiry. The use of qualitative research is a well-established approach within the field of public administration.

To better understand the methodological approach undertaken in this study, we structured the chapter as follows: 1. Case selection, 2. Data collection methods, 3. Operationalization, 4. Data analysis, 5. Validity and reliability and 6. Ethical considerations and methodological limitations. In addition to clarifying the methods of social inquiry, the section "Context of study" provides more information on the phenomenon under study.

# **Context of study**

In this paper, we discuss from a managerial perspective the case of Cluj-Napoca, Romania. Cluj-Napoca is located in the North-West region of Transylvania and is the third largest city in Romania, after Bucharest and Iasi, with a population of 307.957 inhabitants (World Bank, 2020). The socioeconomic profile of Cluj-Napoca and its hosting region is highly dynamic. According to the National Forecast Commission (2019), in 2019, Cluj county registered a 6.1% growth in GDP (50.4 billion RON), with Cluj-Napoca having the highest GDP per capita after the capital city Bucharest (15.011 euro). The unemployment rate in Cluj county was 1.2% in 2019 with only 46.000 inhabitants being unemployed.

The dynamic labour market, versatile private business environment, NGO sector and market competition make Cluj-Napoca an attractive metropolis. In 2018, there were approximately 39.000 Small and Medium Enterprises (SME) in Cluj county with 30.242 SME's in Cluj-Napoca alone, ranking second after Bucharest (Actual de Cluj, 2018; listafirme.ro). Moreover, Cluj-Napoca is an attractive Information and Communication Technology (ICT) hotspot and an emerging hub for Research and Development (R&D) and innovation, as well as for foreign direct investments (European Commission, 2020). In addition, there is a very large number of NGOs (5260 in Cluj county) that address issues from a wide array of domains (listainstitutii.ro). Therefore, the city benefits of a vibrant business and NGO sector that contribute positively to the dynamism of the city.

Cluj-Napoca is also an important educational and multicultural centre, being home to six public and five private higher education institutions listed in world university rankings. From a public management perspective, Cluj-Napoca has implemented reforms at an early stage, being among the first cities to adopt strategic planning and management. By way of illustration, Cluj-Napoca was arguably the first city in Romania to adopt participatory budgeting at the initiative of the City Hall (Development Strategy, 2014: 1279).

From a human development perspective, the city of Cluj-Napoca registers an outstanding performance also in terms of quality of life (Quality of Life Index, 2020). According to current Quality of Life Index (QLI) by city, Cluj-Napoca ranks 3rd (152.38) within Eastern Europe, following Brno (162.69) and Prague (159.52), while at the national level it ranks first out of four Romanian cities included in the index (QLI, 2020). The QLI reports aggregate individual indicators for over 200 cities across the world, for 8 dimensions of quality of life: 1. Purchasing power, 2. Safety, 3. Healthcare, 4. Cost of living, 5. Property price to income ratio, 6. Traffic commute time, 7. Pollution and 8. Climate. These indicators are, to a great extent, directly or indirectly related to public management and performance of public services.

Overall, the conditions in Cluj-Napoca permit the investigation of Triple Helix relationships. Therefore, analysing the case of Cluj-Napoca by focusing on the pattern of Triple Helix interaction based on official statements to collaborate is stimulating.

## 3.1. Case Selection

Deciding whether a case is examined or not represents a primary step in research. It is essentially oriented towards narrowing down the multitude of cases that might be suitable for analysis due to their peculiarity or similarity with other cases. The non-probability sampling technique employed in this research is purposive. The selection of subjects was conditional upon the availability of data.

Grounded in one of the unobtrusive research paradigms, this research takes the form of a case-study. The case selection procedure is deviant because the model does not fit into the patterns of the mainstream attitudes and behaviours (Babbie, 2011; Seawright & Gerring, 2008). By referring to the level of formally expressed statements to collaborate, the case of Cluj-Napoca demonstrates a noteworthy value among other municipalities of its size. Therefore, selecting this case has a twofold goal: (1) To investigate the existence of official statements articulated by academia, local government and other societal actors in Cluj-Napoca that indicate the strategic intention to collaborate; and (2) To explore the way Triple Helix interactions can enhance policy capacity in Cluj-Napoca.

The unit of analysis is the Triple Helix interaction in Cluj-Napoca based on officially stated positions to collaborate. The individual organizations that make up the Triple Helix model are our units

of observation. They constitute the local community. The interactions among them are relevant for the analysis, as they are likely to yield valuable insights into how strategic intentions to collaborate affect policy capacity development.

The research design is longitudinal, involving data collected at different points in time. We examine the unit of analysis within a 5-year timeframe starting from 2014 until 2018. The adoption of a longitudinal approach allows us to trace and compare the changes occurred over time and explore the factors which influenced this result.

The research setting is Cluj-Napoca and represents the environment where organizations perform their activities, being shaped by structural, institutional, or cultural aspects. These contextual aspects are likely to influence Triple Helix interaction in Cluj-Napoca and elsewhere. To better address this potential influence, we approached the unit of analysis from a threefold perspective: academia, local government, and societal actors (i.e. business and NGO sector). This confers the opportunity to acquire a broader perspective on the results.

## 3.2 Data collection methods

Data collection is a fundamental process within social science. Research data for this thesis were collected from document analysis. Drawing upon strategic documents from public, private, and non-profit organisations in Cluj-Napoca, we used qualitative analysis to gain insights into the extent of strategic intentions to collaborate. The analysis of strategic documents can help us acquire a deeper and fuller understanding of the phenomenon observed, but it could also provide information regarding the lessons learned by the organizations from mismanagement. The benefit of this approach lies in the opportunity to study social behaviour over longer periods of time based on the volume of data available.

The process of document analysis was conducted in 2019/2020. Three sets of actors were included in the analysis: 1. Academia, 2. Local Government and 3. Societal Actors. The organization categories reflect the three central pillars of the Triple Helix architecture. The third category consists of a twofold type of societal actors: business organizations and NGOs. Having the intention to narrow down the wide array of industrial sectors, this thesis will mostly focus on the information technology (IT) industry. Selection criteria for the organizations to be included in the analysis were the following: membership in one of the three organization categories, online availability of publicly accessible strategic documents, and fitting of published data into the timeframe 2014-2018.

Following the criteria enumerated above, a total number of n= 41 organizations that matched the selection criteria were included in the analysis. Out of 41, there were 8 public institutions. Academia counted 6 higher education institutions representing all the public universities in Cluj-Napoca, namely: (1) Babes-Bolyai University (UBB), (2) Technical University Cluj-Napoca (UTCN), (3) Iuliu Hatieganu University of Medicine and Pharmacy (UMF), (4) University of Agricultural Sciences and Veterinary Medicine (USAMV); (5) Art and Design University (UAD) and (6) Gheorghe Dima Music Academy (AMGD). The remaining 2 public institutions were: (7) Cluj-Napoca City Hall and (8) Cluj-Napoca Local Council.

The private sector was represented by 24 organisations from the IT industry. The following organisations were analysed: (1) AROBS Transylvania Software, (2) NTT Data Romania, (3) NET BRINEL, (4) ARTSOFT Consult, (5) CODESPRING, (6) FORTECH, (7) Software ITC Cluj, (8) LIFE IS HARD, (9) NORDLOGIC Software, (10) ENDAVA, (11) ARXIA, (12) AVITECH, (13) EFECT.RO, (14) LOLA Tech Romania, (15) ONE IT, (16) AGORA Consulting, (17) PITECH+ PLUS, (18) OPTIMA Group, (19) HYPERMEDIA, (20) INTERTECHNICA, (21) ETA2U, (22) ALTOM, (23) CENTRUL DE INFORMATICA and (24) AVANGARDE Software.

The non-profit sector was represented by 9 organisations. The following organisations were included in the analysis: (1) ARIES Transylvania (Romanian Association for Electronic Industry and Software), (2) Civitas Foundation for Civil Society, (3) Cluj IT Cluster, (4) Transylvania IT Cluster by ARIES, (5) Transylvania Creative Industries Cluster, (6) Transylvania Lifestyle Cluster, (7) Intercommunity Development Association – Cluj Metropolitan Area (IDACMA), (8) Cluj Start-ups and (9) SPHERIK Accelerator. Most of the NGOs included in the analysis deal with the ICT industry, except Civitas Foundation for Civil Society and IDACMA.

To narrow down the research, documents were searched from January 2014 until December 2018. Three types of official documents were considered, as follows: strategic plans, operational plans, and annual reports. In total, there were 56 official documents identified. Of the 56 documents, 49 were retrieved from the academic sector, 1 from the local public administration (Development Strategy of the Municipality of Cluj-Napoca 2014-2020), 5 from the NGO sector (i.e. annual reports of Civitas Foundation for the Civil Society), and finally, only 1 from the private sector (i.e. annual report of NTT Data Romania). The available data was downloaded by the researcher and processed, by using Word and Atlas.ti. There was a scarcity of publicly available strategic documents on the websites of private companies and NGOs. For those organisations where no data from official documents were available, the websites were examined.

The language of the official documents, except one written in English (NTT Data report) was Romanian. Website data was bilingual in some cases (Romanian English), or multilingual in other cases (Romanian English German Hungarian). In most cases, the preferred language was English. Given the heterogeneity of subjects pertaining to public, private and non-profit organizations, data was collected with careful consideration to their background and the mission they must fulfil by the nature of their organization.

# **3.3 Operationalization**

We perform the operationalization process by specifying the procedures used to measure various dimensions of our theoretical concepts. Determining the suitable indicators allows us to describe the pattern of interaction in Cluj-Napoca based on expectations derived from theory. The measurement instruments will be discussed in the following paragraphs.

Various levels of measurement exist in document analysis. For the purpose of this thesis, the nominal categories "Academia", "Local government" and "Societal Actors" were used to describe the strategic intentions towards collaboration in each institutional sphere of the Triple Helix model. A full list of strategic documents considered for analysis is available in Table 1 in the Appendix. The business and non-profit organisations had little or no strategic documents, therefore data was extracted from the websites and reported in Tables 14 and 15 in Appendix 7.3. Data retrieved within documents was stratified longitudinally (2014-2018), whenever possible. A systematic document review was conducted on the strategic topics that were found relevant for the analysis. The topics selected for further exploration are visible in Table 2 in the Appendix. To determine whether Triple Helix actors that enact strategic documents are likely to formulate strategic intentions to collaborate in Cluj-Napoca, techniques such as extracting relevant paragraphs, tracing key words, or searching for contradictory cases were employed. The paragraphs below describe the specific procedures used for each of the three categories.

### a. Academia

Several indicators were used to measure strategic intentions of academia in Cluj-Napoca towards collaboration with local government and other societal actors. They were selected based on the potential to provide an indication of the pattern of interaction between local stakeholders. In pursuit of achieving a higher accuracy, descriptive data were generated on strategic planning dimensions retrieved in the strategic plans issued in 2016 (i.e. 1. Organizational mission and vision; 2. Assessment of internal and external environments; 3. Identification of strategic issues; 4. Development of strategies, objectives and measures; 5. Implementation, monitoring and evaluation). To determine the occurrence of these dimensions across documents we used, where possible, the Search tool in PDF documents by typing keywords such as "mission", "vision", "strategic objectives", "preliminary analysis", "strategic issues", "strategies", "measures". Data is displayed in Table 3 in the Appendix. This technique helped us understand whether the strategic intentions towards collaboration were explicitly stated by universities in mission and vision statements, strategies, objectives, or measures. It is hoped that this procedure would allow a deeper insight into the documents.

In addition, observations on the strategic intentions towards collaboration with other local actors were generated also from operational plans and annual reports. To perform this task, however, the strategic topics were filtered according to their relevance. Table 2 in the Appendix shows the strategic dimensions considered for analysis. To gain an understanding of the university intentions to collaborate with other Triple Helix actors at municipal level, we measured the following indicators: "Partnerships in RDI", "Curricula update in accordance with labour market demands", "Establishment of new structures", "Participation to events", "Networking", "Increase collaboration with PA and socio-economic environment" and "Insertion of students on the labor market". We traced across documents the occurrence of key words such as "research", "innovation", "development", "technology", "curricula", "entrepreneurship", "technological transfer", "internships", "cluster", "partnership", "collaboration", "interaction", "cooperation", "community", and "participation". The coding scheme is visible in Table 3 in the Appendix. These codes can serve as an indication of the university intentions towards building or strengthening collaborative relationships. The relevant segments of text containing this type of information were extracted from the documents, analysed and included in cumulative tables in Appendix 7.1. The use of ordinal ranking ranging from extremely open to collaboration to extremely reserved to collaboration was designed to refine the level of measurement.

#### b. Local government

Similar indicators were used to measure strategic intentions of local government to collaborate with academia and other societal actors. The City Hall and Local Council of Cluj-Napoca elaborated a consistent strategic plan for the period comprised between 2014-2020, encompassing a total of 1319 pages. This was the only strategic document included in the analysis. Descriptive data

was generated for various strategic planning dimensions (i.e. 1. Organizational vision; 2. Assessment of internal and external environments; 3. Identification of strategic issues; 4. Development of strategies, objectives and measures; 5. Implementation, monitoring and evaluation) to see whether strategic intentions towards collaboration were explicitly stated by the public administration. To perform this task, however, the strategic topics were filtered according to their relevance. Figure 8 in the Appendix 7.2 shows the strategic dimensions considered for analysis (1. People and community, 2. Innovative, creative, competitive city and 3. Good governance) and those excluded due to low relevance. To explore the strategic intentions of the public administration to collaborate with other Triple Helix actors at municipal level, we measured the indicator "strategic directions and objectives" in the textual data with a focus on Entrepreneurship, innovation & creative Industries; Higher education; IT and e-governance; Local economic development; Participatory democracy; Associativity, philanthropy and volunteering. Key words such as "research", "innovation", "development", "technology", "entrepreneurship", "cluster", "partnership", "collaboration", "interaction", "cooperation", "community", and "participation" were searched in text with the Search tool. The coding scheme is displayed in Table 3 in the Appendix. To understand the intentions of local public administration to facilitate interaction with the business environment, non-profit sector and academia, paragraphs containing relevant information on public policies were extracted from text and analyzed.

## c. Societal actors

This group has a twofold category, namely private businesses and NGOs, mostly focused on information technology (IT). Whereas in the former category we included 24 organizations, the latter category consists of 9 organizations. In contrast to previous categories, however, few downloadable public strategic documents were retrieved on the websites. Excepting NTT Data, who published a Corporate Social Responsibility (CSR) report, and 5 annual reports published by Civitas Foundation for Civil Society, none of the organizations had any published downloadable documents on their website. The topics from Civitas reports selected for analysis are visible in Table 2 in the Appendix.

To generate descriptive data, strategic information was searched directly on the website of each organization. Table 14 and Table 15 consist of a list of organisations from business and NGO sector, respectively and their websites. The indicators "mission, vision and strategic objectives" and "contribution to local community" were used to explore the strategic intentions towards collaborating with academia and local government. Data were sought within website data by searching for keywords such as "mission", "vision", "strategies", "strategic objectives". "research", "innovation",

"development", "technology", "entrepreneurship", "cluster", "partnership", "collaboration", "interaction", "cooperation", "community", "participation", "internship", "curricula", "events", "networking", "projects", "activity". The coding scheme is visible in Table 3 in the Appendix. To understand the strategic intentions of business and NGO sectors towards collaborating with academia and local government, sections containing relevant information were extracted from the websites and analyzed. Data was structured in Table 14 and 15 and reported in Appendix 7.3.

# 3.4 Data analysis

The coding process is crucial in qualitative data analysis. The key role of data analysis is to assist us with discovering the pattern of interaction between Triple Helix actors in Cluj-Napoca based on officially stated strategic intentions to collaborate. Data analysis was performed through a coding process primarily concerned with classifying and categorizing our data. The coding scheme is displayed in Table 3 (Appendix). For this analysis, segments of text were extracted from each of the 56 strategic documents, as well as from the websites of organizations who did not publish official strategic documents. Then, we performed the segmentation of paragraphs, sentences, phrases, and themes into categories, which were subsequently described and labelled with codes. The main organizing principle was the set of research questions formulated in the Introduction. In those cases where likeness between two or more elements was found (i.e. events, interactions, objects), we grouped them into themes and further integrated them in tables. Data management and analysis were performed using Microsoft Word and Atlas.ti.

Data was analysed separately for each institutional sphere. **Firstly**, from academia perspective, the sub-research question "*To what extent does academia in Cluj-Napoca explicitly state the intention to collaborate with local government and other societal partners as a strategic objective?*" was answered by summarizing and critically assessing the observations on strategic intentions to collaborate gathered from document analysis. The coding scheme is displayed in Table 3 in the Appendix. **Secondly**, from local government perspective, the sub-research question "*To what extent does local government in Cluj-Napoca explicitly state the intention to collaborate with academia and other societal partners as a strategic objective?* was answered by summarizing and critically assessing the observations on strategic intentions assumed by the local public administration towards other societal actors in the strategic document. It was investigated whether organizations under scrutiny conveyed similar approaches regarding statements on strategic collaboration and if they correlated the strategic approach to local conditions in order to achieve their objectives. The coding scheme is displayed in Table 3 in the Appendix. **Thirdly**, from business and NGO sector perspective,

the sub-research question "To what extent do societal actors (i.e. business and NGO sector) in Cluj-Napoca explicitly state their intention to collaborate with academia and local government as a strategic objective?" consisted in summarizing the observations on strategic intentions towards collaboration from strategic documents and website data. The coding scheme is displayed in Table 3 in the Appendix.

The summary of observations from the above sub-research questions were then comparatively scrutinized to highlight contrasting results. We performed this function by making use of a framework adapted from Babbie (2011, 2016). Several techniques were used to discover potentially significant patterns of relationships. Firstly, analyzing the **frequency** or the recurrence of an action at regular intervals might indicate a path worthy of attention. Secondly, the **magnitude**, both in terms of size and intensity could be a relevant indicator for the analysis. Thirdly, by examining **structures**, we could gain a grasp of the way constituent parts are organized, whether different dimensions can be distinguished or if they mutually interact. Fourthly, analysing **processes** could result in a clearer understanding of the unfolding of a phenomenon, whether there was an order among the elements of structure or if the occurrence was random. Fifthly, investigating the **causes** that precede or determine the phenomenon under study can provide clues towards the results. Finally, the examination of **consequences** resulting from an action could guide us in achieving a deeper understanding of the changes it produces or how it affects the stakeholders involved.

The deliberate investigation of these indicators increased the likelihood that various patterns could be distinguished, ultimately guiding us to answer the main research question *"To what extent do Triple Helix actors in Cluj-Napoca explicitly state their intention to collaborate with each other as a strategic objective?"* by aggregating the findings obtained from sub-research questions. Attention was paid to potential discrepancies between the initial expectations derived from theory and the cumulative contextual data on Triple Helix interactions. Findings are expected to provide a clear indication of the extent of strategic intentions towards collaboration in Cluj-Napoca and the influence they have on policy capacity development.

# 3.5. Validity and reliability

Validity and reliability concerns are important to research. They are designed to ensure quality of measurement. On one hand, we conceptualized strategic planning, Triple Helix interactions and policy capacity to ensure measurement validity. Then, we used "strategic intentions towards collaboration" as a proxy measure for outcomes in each institutional sphere observed, namely academia, local government, and other societal actors. The outcome expected is policy capacity development, therefore by covering all aspects of "strategic intentions towards collaboration" in multiple spheres, content validity is ensured.

On the other hand, to ensure measurement reliability, we provided a thorough explanation of the operationalisation and coding process, following criteria derived from the theoretical framework. This principle was applied also for the selection of strategic documents. To ensure precision, we performed measurement of the "strategic intentions towards collaboration" for each organisation separately, which allows for specific distinctions between institutional sphere to be made. In the case of academia, there were 49 documents available, which permitted us to assess the "strategic intentions towards collaboration" multiple times for the same organisation, over an extended timeframe (2014-2018). This process ensured stability, as well as consistency given that we measured the same phenomenon, and the answers were related. Inter- and intra-coder reliability were not doable due to the lack of resources within the scope of the Master thesis. Overall, the researcher endeavoured to meet both the measurement validity and reliability conditions to provide accurate observations.

# 3.6 Ethical considerations and methodological limitations

In qualitative research, there is a need to conform to ethical standards due to potential bias originating from the research methodology employed in human inquiry. The ethical norms required in field research do not apply in document analysis because no direct interaction with the informant occurs. The inclusion in the analysis of all public universities and the main bodies of local government (i.e. City Hall and Local Council) in Cluj-Napoca decreases the potential for selection bias.

However, there are several methodological limitations in this study. Firstly, one limitation concerns the selection of business organisations and NGOs mostly from the IT sector with only two exceptions (i.e. Civitas Foundation for Civil Society and IDACMA) which deal with socio-economic issues. Future research may explore the strategic intentions to collaborate of organisations from other industrial fields, such as agriculture or manufacturing industry. Secondly, the non-probability n=41 of the case analyzed in this paper may not provide an accurate and precise representation of the population to whom it pertains, thus limiting generalizability. Thirdly, over-relying on keyword counts in content analysis might also be a serious drawback. Finally, the findings are based on formally expressed positions, therefore what we observed in strategic documents might not accurately reflect the reality in Cluj-Napoca. Future research is encouraged to conduct interviews or surveys to gain an

understanding of the real extent of strategic collaboration between academia, local government, and other societal actors.

Overall, there were scarcely any risks towards biased findings and obtrusiveness as there was no direct interaction with the informants. From this point of view, document analysis employed in this paper is methodologically advantageous. However, the researcher devotedly adhered to ethical and methodological principles in pursuing social research. Aspiring towards scientific relevance and validity, the current thesis shall disclose the endeavor of the researcher towards impartiality for specific methods and research findings. It is therefore hoped that findings will disclose relevant and valuable insights into the field of public administration. Limitations being acknowledged, the upcoming chapter moves on to describe the findings of the current investigation.

# 4. RESULTS

This chapter will present the research findings based on three proxy measures for collaboration formulated as sub-research questions at the beginning of this thesis. The framework of Triple Helix will assist us in elaborating the findings for each of the three helices: academia, local government, and societal actors.

# 4.1 Insights from Academia

The first sub-research question is:

To what extent does academia in Cluj-Napoca explicitly state the intention to collaborate with local government and other societal partners as a strategic objective?

To answer this research question, findings from 49 official strategic documents of six public higher education institutions based in Cluj-Napoca will be discussed. A full list of strategic documents included in the analysis is available in Table 1 (Appendix). The sub-chapter is structured as follows: firstly, it describes the synthesis and evaluation of results from public strategic documents issued by universities by year (2014-2018), then it reviews the key aspects of the strategic planning frameworks, highlighting official statements to collaborate, as well as main challenges, strategies and pitfalls. Finally, it concludes by providing an answer to the first sub-research question.

#### 4.1.1 Developments in 2014

The analysis of strategic statements towards building collaborative relationships from the perspective of academia reveals a plethora of insights. Five broad themes emerged from the analysis towards which academia conveys increased preoccupation: (1) establishing partnerships in the Research, Development and Innovation (RDI) field, (2) updating curricula in accordance with new technology developments and labour market demands, (3) establishing new structures, (4) participating to events and networking, and (5) improving collaboration with public administration (PA) and socio-economic environment. Apart from USAMV, from which no data is available, most universities touched upon these themes. The results are presented in Table 4, Appendix 7.1.

Firstly, concerns regarding scientific research were widespread in most documents. The objectives relating to this direction were deemed by universities of tremendous strategic importance.

To this end, an orientation towards interdisciplinary approaches to problems was detected. Indeed, interdisciplinary research involving two or more different subjects or areas of knowledge requires academics to interact with people from other fields in finding solutions to issues that impact the community. Not surprisingly, these interactions where exchange of ideas takes place are top routes to creativity, and often materialize into collaborative projects and partnerships. The establishment of partnerships in the RDI field surfaced mainly in relation to UBB and UTCN, and to a limited extent also to UAD. This theme came up for example in discussions of research with technological transfer component. Both UBB and UTCN acted in furtherance of this objective by institutionalizing the practice to become an integral part of the organisation. This approach facilitated interaction with the socio-economic environment, while at the same time boosting RDI potential due to increased capacity to implement research for solving problems of the community. Therefore, for universities, research projects became an important channel of interaction with other societal actors operating at local level.

Secondly, universities showed increased preoccupation to align their curricula to business needs. This approach has, at least, two implications. On one hand, the introduction of new specializations and study programs, which are in accordance with cutting-edge technologies ensures a higher level of adaptation of university to socio-economic dynamics. This result, as shown in Table 4 (Appendix 7.1) is significant at UBB level, which reported the creation of specialization *Information Science* through a 3-year sponsorship from local private sector, as well as in the case of UTCN, which reported the development of laboratories in partnership with economic agents. On the other hand, tailoring curricula to specific requirements of the business sector might secure a higher and faster insertion of students on the labour market. Efforts to increase the likelihood of achieving strategic objectives by employing the analysis capacity in collecting, analysing and interpreting data related to the indicator "*professional insertion of students on the labour market*" is one of the methods used by academia to more effectively connect education to the market. The results by university vary greatly, in terms of reporting this indicator; however, they were collected and included in Table 4 (Appendix 7.1) for a clear overview of the accomplishments.

Thirdly, a common theme emerging from strategic documents was the setting up of new structures. This approach offers new opportunities for universities to build bridges between the institutional spheres and facilitate interaction. Out of six universities, three confirm the practice through statements (UBB, UTCN, UAD). Data shows that establishment of new structures, such as internal structures, consortia, clusters, networks, business accelerators, incubators, spin-offs or start-ups were designed to serve a threefold purpose: 1. To stimulate knowledge and technological transfer (i.e. Office of Technological Transfer @ UBB, Centre for Technological and Knowledge Transfer @ UTCN); 2. To ensure that students and alumni are given appropriate counselling and professional

orientation services for a better integration into socio-economic environment (i.e. Career Centre, Alumni and Relation with the Business Sector @ UBB, Office of Counselling and Career Orientation @ UTCN, Centre of Information, Counselling, Career Orientation and Alumni @ UAD), and 3. To promote university in the socio-economic sector by fostering collaboration with business and public administration (i.e. Cluj IT Cluster, SPHERIK). Although Cluj IT Cluster and SPHERIK were established in 2012 and 2013, respectively, the inclusion of university in those structures represented a critical juncture for building local cohesion. Not only academia adhered to these structures, but it also contributed to their establishment, thus indicating a more substantial role of university as partner in relation to other societal actors. The results below confirm this view:

*"UBB was represented* [...] at the establishment of structures of local and regional interest, in which it became a founding member: Cluj IT Cluster, SPHERIK, Cluj Cultural Capital 2021 [...]" (UBB Annual Report, 2014:54).

"Regarding collaboration [...], the channels of relation with the socio-economic environment developed in 2014 by UTCN favoured a better and, implicitly, mutually profitable interaction with international companies, companies from the region, associative structures of companies (cluster-type structures) and organizations that support entrepreneurship development" (UTCN Annual Report, 2014:128).

Fourthly, participation to events and networking facilitate institutional interaction and form the basis for synergistic partnerships. Exposure to environments designed to foster innovation and entrepreneurship, promote creativity and aggregate interests altogether can open new avenues of mutual collaboration between stakeholders for tackling major challenges facing the local community. The results show that in 2014 universities actively participated and organized events such as fairs and workshops (i.e. *Cluj Innovation Days, 3 Day Start-up, Start-up: from Idea to Business, Pro Invent, Entrepreneurs on stage*); company presentation campaigns; associations, consortia and cluster meetings (i.e. Association of Cluj Universities, UNIVERSITARIA Consortium, Cluj IT Cluster) and many others. A full list of the events by university is provided in Table 4 (Appendix 7.1.). The participatory and entrepreneurial approach adopted by university encourages not only its integration across localbased networks, but it also promotes the integration of vision at municipal level.

Finally, a relevant objective that recurred throughout the dataset was to increase collaboration with public administration and socio-economic environment. The intention to collaborate with other societal actors was reported in five out of six universities. The development of public-private partnerships (PPP) that favour placement of students in internships, student practice and even employment (i.e. UMF) has frequently emerged from the data. Nevertheless, a stronger tendency to collaborate was observed in the cases of UBB and UTCN, who reported meetings with the

City Hall of Cluj-Napoca and NGOs (i.e. Cluj- European Youth Capital 2015, Cluj- European Cultural Capital 2021), collaboration in local and regional interest structures (i.e. Cluj IT Cluster, SPHERIK) and with foreign and autochthonous businessmen within Cluj International Club. Worth highlighting is also the participation of UTCN in the projects "*Brained City – Innovative Development through Computerization of Urban Cluj-Napoca Ecosystem*" and "*Cluj Innovation City*" (also UBB) within Cluj IT Cluster.

### 4.1.2 Developments in 2015

Turning now to the evidence retrieved in 2015, documents show that universities in Cluj-Napoca continued the activities performed in the previous year, and in some cases, they improved them or commenced new ones. Data was available from all universities except USAMV. The achievement of successful correlations between higher education, research and socio-economic environment remain frequent themes in the rhetoric of universities also in 2015. Otherwise known as the "knowledge triangle", the objectives relating to this goal are prerequisites for reforming academia and building a sustainable local ecosystem. Universities integrated differently this objective into their strategies, albeit they all gravitate around the same scope, namely: the achievement of successful synergism to better support socio-economic development in Cluj-Napoca. Data is visible in Table 5 (Appendix 7.1).

Scientific research activity was granted widespread attention in 2015. Work meetings with members of the scientific community, patenting and concluding research partnerships with socioeconomic actors became more frequent across universities, with 4 out of 5 universities reporting the existence of research projects in partnership (UBB, UTCN, UMF, UAD). However, the degree of specificity in terms of RDI-oriented activity and performance is higher in the case of UTCN. Its reports are seeking to reflect as accurately as possible the current situation. As such, UTCN acknowledged the consolidation of its position of advanced research and education university in 2015 as a result of three main factors: **(1)** harnessing research results in the techno-economic environment by concluding cooperation agreements with other universities and private companies (i.e. achievement of 10 patents), **(2)** institutional orientation towards economic sector needs, and **(3)** high impact of Centre of Technological and Knowledge Transfer (CTKT) activity. For example, CTKT carried out information services and industrial property (IP) consultancy via the Centre for Promotion of IP Protection (PATLIB); organized technological transfer events addressed to academia and private sector; promoted and integrated research structures within networks that support the transfer of R&D results towards the market and clusters (UTCN Annual report, 2015). The process of reforming the higher education system continues also in 2015. Strategies such as developing new specializations and restructuring study programs in accordance with market demands (i.e. implementation of interdisciplinarity) were adopted by all universities except AMGD. The acute need to improve the educational capacity and increase the relevance of higher education for the labour market was further exacerbated by the necessity to ensure a higher integration of graduates on the labour market. However, some faculties exhibited reluctance towards developing interdisciplinary study programs, according to UTCN annual report (2015). Nevertheless, UTCN management took measures to alleviate resistance to change and even developed courses at the request of economic agents (e.g. EU-funded project management; Emergency and Resource Allocation Management etc).

The analysis showed that UBB and UTCN contributed to the establishment of new structures in 2015. Whereas UBB supported the creation of the Association of Advanced Materials, Micro- and Nano- Technologies (ADMATECH), UTCN was more prolific, becoming founding member in nine clusters and associations, namely: Cluj IT Cluster, Transylvania IT Cluster, Transylvania Furniture Cluster, Transylvania Energy Cluster, AGRO-Food-Ind NAPOCA, Electrotechnical Cluster – ETREC, ADMATECH. This result indicates that societal actors in Cluj-Napoca convey strong collaborative intentions for the achievement of strategic objectives.

Participation to events occupies a prominent position in the higher education's strategy to give utterance to its mission in society. In 2015, universities attended two main types of events: (1) scientific and artistic manifestations (i.e. conferences, symposiums, congresses, workshops, masterclasses, competitions, festivals, education fairs, summer schools etc), and (2) entrepreneurship and innovation-related events (i.e. *Entrepreneurs on stage*, Pro Invent, entrepreneurship development program FASTTRAC, job fairs, company presentations, consultancy activity, workshops, entrepreneurship training actions @ business accelerator SPHERIK, information campaigns on EU-funded research projects etc.). Whereas most universities got engaged in scientific and artistic manifestations, the latter type of event was exclusively pursued by UBB and UTCN. This result clearly reveals a stronger inclination of UBB and UTCN towards building a collaborative environment which encourages creativity and knowledge management, always with an eye on bridging the gap between higher education and the business sector. This, in turn, can alleviate access of universities to capital resources, thus consolidating not only their potential, but also their capacity to adapt to technological and societal changes.

Finally, collaboration of university with public administration and other societal actors was maintained also in 2015, with relatively limited fresh projects and partnerships. In addition to

institutional collaboration within events of public interest (i.e. *Cluj- European Youth Capital 2015, Cluj European Cultural Capital 2021*, PROIS NV events, *10 for Cluj etc.*), cluster-type structures such as Cluj IT Cluster (i.e. Cluj Innovation City project; EU-funded project *"Innovative Development via Computerization of Urban Ecosystem"*), and the already popular partnerships that support placement of students in internships and student practice, there were reported three supplementary channels of interaction with the socio-economic environment. More specifically, UBB reported the execution of publications, analyses, impact assessments, documentations, and crowdfunding actions in collaboration with partners from the socio-economic environment. Although, some discontent was caused by the repeated amendments brought to national legislation by the government, which caused risk and uncertainty among the academic community, UTCN managed, despite this hindrance, to overcome difficulties by intensifying the relationship with local societal actors, attaching a great significance to its involvement in networks such as Enterprise Europe Network (EEN) and Regional Centre for Promotion of Industrial Property Protection (PATLIB).

In contrast to previous evidence, documents show that AMGD, and UMF to a limited extent, were predominantly resuscitating interest for international collaboration as opposed to local, by making use of instruments provided by the EU such as the Erasmus mobility. Furthermore, alike UTCN, the university transparently reported that some of its objectives were not accomplished due to burdensome legislation, as the following result shows:

"Romanian legislation is rigid regarding the accreditation of new specializations in foreign languages, but AMGD keeps its interest for this objective searching for solutions to problems that now impede the implementation of the new study program." (Section Non-accomplished goals in AMGD Annual Report, 2015:28).

With AMGD being explicitly reserved in the relationship with the local community due to its vocational, niche-oriented profile, the analysis moves forward to discuss the findings from 2016.

## 4.1.3 Developments in 2016

The opening of 2016 represented an important milestone for 5 out of 6 universities under scrutiny, as they set out their agendas and published strategic plans for the timeframe 2016-2020 (UAD, UBB, UMF, USAMV, UTCN). In terms of strategic planning dimensions, the documents specify the mission, vision, objectives, and strategies proposed by each university. Complemented by specific measures, performance indicators and, in some cases, by targets, the plans reflect the visionary thinking of the institutions aiming to take Cluj-Napoca to the next level of socio-economic

transformation. Similarities were identified predominantly in terms of mission statement, objectives, and strategies. The results are shown in Table 6 (Appendix 7.1) and will be discussed in the following paragraphs.

Mission statement, vision and strategies represent key aspects of management. Academia has a relatively unique, noble mission within society, and universities in Cluj-Napoca have vividly portrayed it in the strategic planning. The findings on strategic mission reveal that generation and transfer of knowledge oriented towards the needs of the community are vital for enhancing society development. This view has been widely echoed and reported in all the documents. To achieve this mission, strategies such as (1) education, (2) scientific research, innovation, and technological transfer, (3) relation with socio-economic environment were proposed. More broadly oriented, the vision of academia in Cluj-Napoca seems to converge towards ensuring performance in education, substantiated by innovative scientific research. Accordingly, the provision of services to the community is expected to enhance development.

Strategic objectives pay attention at improving the factors leading to the accomplishment of mission and vision. A variety of perspectives were expressed by universities in Cluj-Napoca in terms of milestones to be attained. However, we found that four were the most acute challenges and corresponding response objectives, extensively touched upon in the documents, as follows: (1) strengthen the correlation of specializations with labour market demands, (2) accelerate technological and knowledge transfer towards socio-economic environment, (3) emphasize the importance of student practical training, and (4) promote institutional development and collaboration.

The first objective is intended to redesign core processes in accordance with socio-economic dynamics to improve effectiveness, efficiency, and quality of education. The second objective aims at bridging the traditional gap between research and practice by fostering implementation of research results into industry to achieve progress and benefit the community. As a result, the creation of technological transfer units facilitates the partnership between research and practice and structurally reinforce collaboration. Similarly, the third objective pinpoints the practical character of education, that targets transversal competence development via internships and student practice. It is safe to assume that availability of adequate skills, ability and expertise would guarantee a faster insertion of graduates on the labour market. Finally, the fourth objective addresses the critical need for institutional collaboration through public-private partnerships (PPP) to generate capacity and problem-solving capability for issues facing the community. In fact, PPP's are a straightforward way for unlocking resources and driving socio-economic development. The stated high level of university participation in clusters, networks and common projects with other societal actors represents the

most notable result of this tendency, as it shows their concerted effort to consolidate institutional development by virtue of collaboration relationships for the sake of economic growth and sustainable development.

With respect to developments occurring in 2016 (see Table 7, Appendix 7.1.), the analysis of documents revealed some notable achievements in addition to existing ones, highlighting that USAMV launched its strategic planning framework and operational plans starting with 2016. In terms of RDI partnerships, universities consolidated patenting and technological transfer activity, as well as increasing the number of interdisciplinary research projects with third parties. For instance, 17 RDI units of UBB provide innovative services to the community. The reform of curricula was maintained by universities also in 2016, backed up by meetings with representatives of the socio-economic sector, as well as permanent analysis and evaluation of knowledge and competences required for a proper integration of students on the labour market after graduation.

Results show that new structures were established in 4 out of 6 universities. UBB formally instituted the Office of Management of Cognitive and Technological Transfer and STAR UBB – Scientific and Technological Advanced Research Institute, designed to ensure UBB excellence and academic competitiveness. We observe similarity of STAR UBB with H-STAR at Stanford University, which could potentially offer possibility of comparison and further exploration. Likewise, UTCN created the Consultative Committee, an interface responsible with ensuring close collaboration between UTCN and the socio-economic environment and participated to the foundation of 3 new innovative clusters (i.e. Transylvania Creative Industries Cluster, DRIFMAT, ECO Cluster). Similarly, USAMV established its own Centre of Information and Technological Transfer and became member in 4 cluster-type and R&D organisations (i.e. AGRO Food Ind NAPOCA Cluster, TREC, Cluj IT Cluster). Finally, AMGD created a Centre of Information, Counselling and Career Orientation to facilitate insertion of students on the labour market. Participation to scientific and artistic manifestations and increasing collaboration with public administration and socio-economic environment was pursued also in 2016. However, it can be seen from data in Tables 3 and 4 (Appendix 7.1.) that intention to collaborate with public administration and other societal actors is relatively comparable. Yet, it should be noted that data was filtered according to predetermined criteria such as the explicit statements on intention of universities to collaborate with Triple Helix actors at local level. Upon a more in-depth inquiry into the strategic planning frameworks, which is by no means exhaustive, we found that universities reported significantly more the intention to collaborate with the business sector and NGOs than with the local public administration. Overall, this shows that university is more inclined to establish collaboration relationships with organisations from private and non-profit sector rather than with those from public

sector, presumably because the business ecosystem provides a potential fruitful avenue for accessing resources and enhancing development, therefore more effectively serving their mission.

#### 4.1.4 Performance in 2017

In 2017, we observe a growing tendency towards 4 out of 5 items under analysis: establishing partnerships in RDI field, updating curricula in accordance with labour market demands, participating to events and networking, and finally, increasing collaboration with socio-economic actors. The rhythm of establishing new structures has slowed down, however not entirely. Changes were made at UTCN by institutionalizing the Department for Relationship with Socio-Economic Environment, at USAMV by establishing a Student Entrepreneurial Society and at AMGD by creating a Centre of Research and Artistic Creation (INTERART), respectively. Table 8 (Appendix 7.1.) presents the findings from 2017.

The frequency of interaction has been intensified in the RDI field. Results in Table 8 (Appendix 7.1.) show that new strategic institutional mechanisms were developed at UBB (i.e. HRS4R – Human Resource Strategy for Research; smart specialisations on R-UBB platform) and UTCN (i.e. *Innovation Labs*, OPENERP application) to consolidate excellence in research. In addition, UTCN and UBB statements encouraged more vividly the patenting activity and further facilitated knowledge and technological transfer by increasing the number of meetings, events and partnerships with universities, research institutes and private organisations. The promotion of interdisciplinary research surfaced in all documents.

Despite relatively few developments were registered in the case of curricula, it is worth mentioning that, without exception, universities in Cluj-Napoca were permanently evaluating and aligning their educational plans and curricula to labour market needs, often in collaboration with representatives from the socio-economic environment, as in the case of UBB and UTCN. In addition, the introduction of programs such as *Entrepreneurial University* and *Innovation Labs* show an increased interest of academia towards consistently incorporating entrepreneurial education into the system.

As we already mentioned, participation to events and networking continued also in 2017. This pattern has become increasingly common in academia. Notable examples include workshops (i.e. Expo Marathon 2017, UMF Days), mentoring, start-up, and innovation events (i.e. Pro Invent 2017, Cluj Innovation Days 2017, Open Innovation 2.0. Conference, PRIA Innovation Conference), scientific and artistic manifestations, job fairs (i.e. AGRIBUSINESS), masterclasses that have set the pattern for

trying to solve problems within academia. Either designed to increase visibility of research results, entrepreneurship or student employability, the evidence is crystal clear: events are a great venue to increase the extent of interaction of university with Triple Helix actors.

The increased number of partnerships reveals the tendency of academia to increase collaboration with public administration and socio-economic environment. We found several new developments in the documents issued in 2017, as follows: (1) institutional development project *Mutual learning workshop* conducted by UBB gathered representatives from business environment, local public administration, NGO sector, teaching staff and students; (2) UTCN implemented *Smart Dreamers* – an online platform for student employment opportunities and *Companies' Podium* – a platform that facilitates collaboration between UTCN and the private sector. In addition, the number of partnerships for internships, student practice, private scholarships and other mutual projects is continuously growing, as it is the participation of universities in integrative-type structures, such as clusters.

### 4.1.5. Developments in 2018

A breakthrough in RDI was achieved in 2018. The critical need for digital transformation promoted by the EU led at the end of 2017, beginning of 2018 to the establishment of the digital innovation hub" Transylvania iHub 4.0" – a key instrument designed to gather relevant stakeholders and promote digitalisation by means of collaborative projects. The creation of Transylvania iHub 4.0 by key local stakeholders, including universities (UBB) was expected to increase the likelihood to address challenges of digitalisation thanks to increased institutional capacity to implement change. A higher speed up of digitalisation at local level involves a faster transfer of knowledge into the market, which may contribute to improved economy, ultimately leading to a higher quality of life for citizens.

"[...] Office for Management, Technological and Cognitive Transfer (OMTTC) has been involved with other key actors of the regional innovation ecosystem in creating the premises for the development of a Digital Innovation Centre, which will operate in the North-West Region of Romania. In this regard, a Memorandum for the creation and development of the Transylvania iHUB 4.0 Digital Innovation Hub was concluded [...]" (UBB, Annual Report, 2018:31).

Apart from performing their regular functions, universities continued to dedicate themselves to a series of institutional actions that promote cross-sector cooperation such as: (1) continuously updating the curricula (i.e. introducing new study programs and smart specialisation strategies, developing master programs in collaboration with private firms, courses held by specialists from business environment), (2) organizing and participating to events (i.e. Pro Invent 2018, Cluj Innovation Days 2018, Cluj IT Days 2018, Innovative Networking, Demo Day, Expo Marathon 2018), (3) stimulate patenting and nurture entrepreneurship, innovation and knowledge transfer (i.e. Labs, UBB4SOCIETY&ECONOMY, Entrepreneurial University, Innovation HEINNOVATE, LEARN2DO4ENTREPRENEURSHIP, Start-up Plus), (4) strengthening collaboration through mentoring, internships and student practice. Table 9 (Appendix 7.1.) provides more information on the results. The increased preoccupation of academia towards better correlating education with the socioeconomic environment is highly echoed by the indicator "professional insertion of students on labour market" (see Table 10, Appendix 7.1.) adopted by almost all universities under analysis, except UAD. The primary aim is to optimize the educational process, which in turn would enhance public performance. This practice emphasizes the mutual effort of academia to achieve coherence and consistency between institutional spheres and is generally compatible with public management reform. Finally, the statements show a visible intensification of the number of partnerships and interactions with public administration and socio-economic organizations.

## 4.1.6. Answering the first sub-research question

The evidence discussed thus far supports the idea that academia states its collaborative endeavours by increasing the frequency of interaction with the business environment, NGOs, and, to a certain extent, also with the local government. Statements related to establishment of collaboration relationships with external actors in strategic planning matters such as RDI, curricula, professional training, networking, or public services demonstrated to have positive effects on the performance of the local economy, often culminating with the creation of new structures. This trend was nurtured by the academic institutions in the period 2014-2018, gradually consolidating the relationship with economic agents, NGO sector and local public administration by increasing the number of meetings, mutual projects and partnerships concluded.

The attendance of academia in partnerships is crucial for community development. The results, visible in Appendix 7.1, reveal an increasing tendency of academia towards concluding partnerships with other societal actors. From a pragmatic perspective, this pattern has, at least, two advantages for socio-economic development. On one hand, the internal institutionalization of

scientific collaboration is mediated through technological and knowledge transfer structures. Purposely designed to bridge the gap between theory and practice and between academics and practitioners, this approach can facilitate pumping of research results into the market, thus increasing the degree of their utilization in new, improved products, processes, and services. The capacity to absorb research results is fundamental as it might ensure the progress of community through the appropriate application of research-derived solutions for issues at stake. Closing the gap between research and practice is therefore of vital importance. Despite significant improvements were stated, this demeanour remains a challenging task. On the other hand, the external participation of academia to the establishment of clusters, spin-offs, start-ups, business accelerators or incubator facilities is extremely important. These collaborative mechanisms that facilitate pooling resources are expected to ensure effectiveness, therefore the likelihood to maximize economic growth and social development is potentially higher.

Taken together, these patterns of institutional adaptation suggest that collaboration relationships are important to enhance development understanding, gradually leading to a change of paradigm in society. It is reasonable to assume that a novel paradigm essentially based on strategic collaboration, innovation, and sharing resources may facilitate progress because it increases capacity to perform. In a knowledge-based society aiming to generate development, the reconciliation of both, internal and external collaboration is required to pave the way towards a sustainable local innovation ecosystem. However, the results are encouraging, showing that academia in Cluj-Napoca is thriving to make collaboration the dominant paradigm upon which socio-economic development is based.

To answer the first sub-research question *"To what extent does academia in Cluj-Napoca explicitly state the intention to collaborate with other societal actors as a strategic objective?"*, the results from the document analysis indicate that academia in Cluj-Napoca explicitly states its intention to collaborate with local government, business and NGOs as a strategic objective. The results also capture a new role for academia in fostering socio-economic development. As their activity is increasingly impacting the economy, universities strategic approach to development is largely based on objectives targeting to increase performance of education, scientific research and services provided to the community.

# 4.2 Insights from Local Government

The second sub-research question is:

To what extent does local government in Cluj-Napoca explicitly state the intention to collaborate with academia and other societal partners as a strategic objective?

To answer this research question, results from the Development Strategy 2014-2020 of the Municipality of Cluj-Napoca will be discussed. The sub-chapter is structured as follows: firstly, it shortly describes the strategic planning framework adopted by the local government in Cluj-Napoca, focusing on the vision, objectives and measures, then it moves on to discuss the main challenges and pitfalls, and finally, it provides an answer to the second sub-research question.

## 4.2.1 Development Strategy of the Municipality of Cluj-Napoca

Strategic planning is becoming increasingly important in the public sector nowadays. Public organizations have shown a growing interest on its application, mainly due to its capacity to offer new perspectives in dealing with change (i.e. Triple Helix). Municipalities struggling to keep up with the pace of change are now largely adopting strategic approaches, seemingly recognizing their valuable input to overall government effectiveness. The analysis of the case of Cluj-Napoca revealed some valuable findings, which will be discussed in the upcoming paragraphs.

The Development Strategy of the Municipality of Cluj-Napoca 2014-2020 is the result of a highly demanding and complex process carried out by experts from industry, academia and local government between February 2013 and December 2014. The planning process was entirely based on a rigorous methodology agreed upon beforehand, with the preliminary analysis at the outset. *"Quality of life"* and *"structural involvement of local community expert groups"* are at the heart of the strategy. Perhaps the most interesting aspect related to the strategic planning process of Cluj-Napoca is represented by a mutual endeavour devoted by the local community towards defining and pursuing strategic goals in a concerted manner, involving all the parties that might influence, or be influenced by the strategic plan.

The joint work has been concluded with a 7-year strategy highlighting relevant dimensions that are likely to influence city development on the long run. In summary, 8 strategic dimensions (SD) were defined, as follows: 1. People and community; 2. Innovative, creative, competitive (ICC) city; 3. Good governance; 4. Green city; 5. Urban development and spatial planning; 6. Culture and local

identity; 7. Healthy city and 8. Safe city. Due to subject relevance and time constraints, we perform the analysis of the strategic dimensions People and community, ICC city and Good governance, highlighted in red and illustrated in Figure 8 (Appendix 7.2.).

Each strategic dimension was pursued by a predetermined number of working groups (WG) in charge for carrying out analyses of the local environment and consequently define policies in compliance with county, regional, national, and European strategic frameworks. In total, 28 WG's were formed, and each of them drafted a report, using SWOT and PEST tools to identify potential strategic problems, key strategic factors, and sources of competitive advantage. Examples of WG's pertinent to this thesis were *WG Higher* Education, WG *Associativity and Philanthropy, WG Local economic development, WG IT, WG Entrepreneurship and innovation in the community,* WG *E-government* and *WG Participation*.

Noticeably, the results show that *WG Higher Education* included at least one representative from each of the six public universities in Cluj-Napoca. Likewise, depending on the sphere of activity, other WGs involved representatives from both academia and other societal actors such as local NGOs, private companies, or members of local clusters and hubs (Cluj IT Cluster; Cluj Hub). Each strategic dimension has been operationalized by sets of objectives, operational programs, and specific measures, as well as monitoring, evaluation, and implementation systems. A likely explanation for the involvement of individuals with expert knowledge in their field of activity might be the result of public management reforms adopted by the Municipality. Knowledge management and outcome measurement (i.e. decentralized decision-making) became facilitating factors, thus contributing to increased capacity of the administration to deal more effectively with local development challenges.

## 4.2.1 Configuration of vision and strategic objectives

The preceding assessment of the environment carried by local experts provides evidence of the strategic issues faced by the community in Cluj-Napoca. The local setting is characterized by various problems such as (1) Lack of cohesion and strategy coordination, (2) Insufficient application of technology, (3) Public perception on community development dominated by an outdated paradigm, (4) Corruption and "political clientelism" phenomena, (5) Low capacity of public administration and community to attract investors and support local entrepreneurship, often generated by *red tape*, administrative incoherence, deficient business infrastructure and low accessibility to funding opportunities (Development Strategy, 2014: 266-267). The consequences emerging from lack of cohesion and coordination negatively impact various aspects of governance, including resource

allocation, communication, implementation, monitoring and evaluation. In addition, they may jeopardize the relationship between labour market demand and (educational) offer.

Firstly, to tackle these issues and achieve public performance, the Municipality conceived a sophisticated vision based on local specific factors, supported by ancillary strategic objectives. Figure 6 provides an overview of the results obtained from the strategic document. The dimensions under scrutiny were highlighted in orange.



Source: (adapted from Development Strategy of the Municipality of Cluj-Napoca)

This figure is quite revealing. Unlike in other public organizations, the vision is a set of factors supported by broad statements, rather than a single statement, referring to the basic purposes of the administration on the long run and the means to accomplish them (Poister & Aristigueta & Hall, 2015). In pursuing this vision, the city relies on concepts such as *good governance, academic excellence,* and *interconnected community network* to achieve its goals, placing *quality of life* at the heart of the vision. The administration also states that *innovation, higher education* and *participation* are at the core of community transformation, pinpointing that a blend of these strategic factors may exert powerful effects on development, for they are now the guiding principles upon which the strategy is based.

Secondly, strategic objectives represent important milestones for the community. The formulation of a limited number of objectives should be, according to the Municipality, realistic, measurable and time bounded. Additionally, they need to specify responsibilities, employ coherent implementation of policies, and be integrated (Development Strategy, 2014: 5). In terms of similarities, the characteristics of these strategic objectives are comparable, at least at a theoretical

level with the SMART objectives (i.e. the acronym SMART stands for specific, measurable, ambitious, realistic and time bound) reported by Poister & Aristigueta & Hall (2015) in that they try to avoid ambiguity by clearly specifying timeframes, responsibilities and feasible indicators to measure performance. The results obtained from analysis of strategic objectives suitable for the purpose of this thesis (i.e. relating to official statements to collaborate with other actors) are summarised and displayed in Figure 9 (Appendix 7.2.).

The first blue arrow located in the upper left in Figure 9 (Appendix 7.2.) consists of a twofold strategic direction, encompassing "Entrepreneurship and innovation", as well as "Creative Industries". Although the latter pertains to the strategic dimension Culture, which has not been considered for analysis, it has nevertheless been included due to its focus on collaborative private organizations operating in the field of information technology (IT). Several objectives stated by the Municipality are thought to lead to innovation-based entrepreneurial performance, including (1) doubling the number of start-ups, (2) supporting local entrepreneurs, (3) align academic curricula to labour market demands and (4) attract public resources (Development Strategy, 2014: 271). However, a strong entrepreneurial system requires to develop a sustainable partnership between public and private organizations, thereby becoming a preeminent strategic objective to pursue. As such, the Municipality proposed to nourish the relationship between community stakeholders by enabling innovative instruments such as Cluj Innovation City, CREIC (Regional Centre for Excellence in Creative Industries), e-governance or Smarter City. They represent business support structures and projects for urban development. A probable explanation for this might be that cooperation platforms mentioned above are a result of the increased awareness of the Municipality on the need to bridge the gap between technological innovation and technology transfer towards market. By facilitating interaction between local actors, Cluj-Napoca is thereby pledging to remove barriers from the way of local development.

The second strategic direction in Figure 9 concerns *"Higher education"*. The educational sector in Cluj-Napoca represents a valuable employer and supplier of competency, knowledge, and human resource at local level. Contrary to expectations, the analysis revealed that the local educational system was facing in 2014 a significant number of bottlenecks. This is illustrated briefly by a set of strategic issues stemming from the preliminary analysis carried out by experts and is displayed in Table 11 (Appendix 7.2.). For example, poor collaboration between academia and local actors, insufficient adaptation of study programs in accordance with labour market demands, inadequate use of research, lack of entrepreneurial culture or limited inclusion in interdisciplinary scientific and technological networks were among the most acute issues preventing academia to achieve performance.

Several strategic objectives were developed by the Municipality to address these issues. Seven of them have been included in Figure 9 (Appendix 7.2). Not surprisingly, they coincide, to a large extent, with those retrieved in the strategic documents of academia. Results show that stated objectives in the field of higher education generally aim to (1) harmonize study programs with economic dynamics and labour market demands, (2) contribute to socio-economic and knowledge development, (3) enhance technological transfer activity and better stimulate entrepreneurship and innovation (Development Strategy, 2014: 890). Yet, to effectively fulfil these objectives, it is of utmost importance to adopt collaborative approaches towards establishing long-term strategic partnerships with community actors and build capacity to perform. This pattern of institutional adaptation has frequently emerged from data analysis, often in relation to innovative arrangements such as "*Cluj Innovation City*". Therefore, "*Cluj Innovation City*" becomes one of the ideal venues where strategic efforts of academia, administration and industry are concentrated.

The third strategic direction is represented by "IT and e-governance". It has commonly been assumed that digital governance might be a contributing factor to public management reform due to its potential to improve stakeholder interaction and public performance. In the context of local governance, strategic issues such as the lack of e-governance strategy and organizational culture, limited resources or inadequate regulation have been stated by the Municipality to represent a hindrance, therefore preventing development (Development Strategy, 2014: 851). The results, as shown in Figure 9, indicate that formulating a consistent implementation strategy backed up by an ample supply of resources and proper legislation can lead to expected outcomes. In other words, egovernance might lead to increased transparency and effectiveness of public governance. In this context, the Municipality is likely to increase the degree of performance due to its strategic relationship with the ICT sector in Cluj-Napoca. To achieve these objectives, several operational programs, including digital literacy, consolidation of IT infrastructure, increasing transparency of decision-making or ensuring adequacy of internal processes and procedures were listed in the strategic document (Development Strategy, 2014: 859-862). It is safe to assume that successive increases in number of IT companies, clusters, and innovation hubs, but also the collaborative civil society may facilitate the successful achievement of e-governance in Cluj-Napoca.

The fourth strategic direction included in the analysis is "Local economic development". Many of the strategic issues in this field stem from the politico-administrative system and the business environment. Burdensome bureaucracy, instability, lack of involvement, lack of competence, lack of transparency, lack of competitiveness and low level of innovation were identified by the Municipality as drawbacks to development (Development Strategy, 2014: 761). Statements on the strategic objectives designed to respond to these issues are numerous and aim at improving knowledge-based

capacity and competitiveness. More specifically, they concern (1) increasing local economic competitiveness, (2) improving local state apparatus performance, (3) consolidate local human capital, (4) increase RDI capacity, (4) attract investors and resources (Development Strategy, 2014: 762-766). A detailed list of complementary operational programs and measures designed to increase the rate of effectiveness is provided in the Table 12 (Appendix 7.2). What stands out in the table is the overall business-friendly approach stated by the administration, culminating with the pursuit of "*an active partnership between administration, business sector and academia*". There is a clear trend of increasing coherence between local stakeholders by engaging in various common projects at metropolitan level.

Moving forward to the fifth strategic direction "*Participatory democracy*", we discovered the following result. Local government in Cluj-Napoca knowingly recognizes the valuable input of local community to public governance, by organizing frequent public consultation sessions with experts from the business environment, NGO, academia, and the public. Whereas, participation of local community to decision-making is necessary for participatory democracy, the willingness of public administration to relinquish its *command and control* function in the detriment of a highly cooperative approach is crucial. In Cluj-Napoca, policy formulation and problem-solving capacity supplied by the community appear to have a considerable contribution to local decision-making. This pattern is clearly reflected in the strategic objectives defined by the Municipality to increase participatory democracy, and include, among others, **(1)** the creation of participative arenas (i.e. public meetings) and **(2)** the formulation of cooperative economic policies (Development Strategy, 2014: 576-578). The Municipality essentially designed them to facilitate public participation in decision making and agenda setting. A transparent and participatory strategic planning and policymaking provides mechanisms to build consensus and conceive sound policies.

Finally, "Associativity, philanthropy and volunteering" is the last strategic direction and relates to the NGO sector. Findings from examination of strategic data revealed the following objectives as being relevant in this field: (1) stimulation of intra- and inter-sectorial partnership between NGOs and other community actors; (2) increasing NGO impact in key sectors (i.e. public authority, private companies), (3) create a funding mechanism to strengthen sustainability of the local NGOs and (4) create an information/training system for organizations by using community expertise from academia and business environment (Development Strategy, 2014: 319-324). These results reflect, to a high extent, the importance attached by local public administration to the local NGO sector, suggesting that expertise and stakeholder cooperation can drive local development.

### 4.2.2. Main Assets of Cluj-Napoca

In addition to the already mentioned key strategic factors (i.e. participation, innovation, higher education), other sources of competitive advantage of Cluj-Napoca such as *"centre of excellence in medicine"* or *"demographic dynamism"* were stated as having a significant contribution to overall goal achievement (Development Strategy, 2014: vii). Although the list is not restricted to these, focusing on the whole range of statements on competitive advantages is beyond the scope of this paper. Thus, we devote a closer examination to those competitive advantages which may confer us a higher understanding of how institutional collaboration is perceived at municipal level.

#### a. Participation

*Participation* is a highly debated dimension of democracy nowadays. This is mainly due to its potential to redefine the parameters of legitimacy for government actions and beyond. Statements indicate an elevated level of public participation in Cluj-Napoca. This result suggests that community involvement in local governance provides tremendous opportunities to develop new relationships among the key stakeholders of the urban ecosystem, as well as to increase the level of trust in local government institutions. This, in turn, would strengthen community influence on the process of public policy at local level. To the best of our knowledge, Cluj-Napoca was arguably the first city in the country to adopt participatory budgeting at the initiative of the City Hall (Development Strategy, 2014: 1279).

### b. University

The factors contributing significantly to increasing community participation are twofold: (1) academia and (2) a high and sophisticated number of NGOs. Whereas the former is a valuable source of intellectual capital, the latter represents a "hub of expertise, a pole of good practices and a supplier of capital and funding" (Development Strategy, 2014: vii). Both university and the civil society are stated as strong assets of Cluj-Napoca. On one hand, university contributes to socio-economic development by ensuring supply of education, training, and research, preventing shortage of specialized human resource. On the long term, concentration of intellectual capital has enormous potential for economic growth and social development, also through entrepreneurship. On the other hand, NGOs address pressing issues and sensibly stimulate change, often by inoculating seeds of grassroot collaboration.

#### c. Innovation

Innovation represents the steering mechanism towards socio-economic development. High levels of innovation resulting from RDI activities performed by academia and private companies can lead to a higher economic competitiveness on one side, and an increased level of community welfare on the other side. Although in the past, the innovation performance of the Romanian innovators was modest, it is now better understood that innovation can play a crucial role in capacity development at all levels. Thereby, local public administrations began to incorporate innovation policies in their development strategies. Findings show that Cluj-Napoca did likewise, by adopting and actively stimulating innovation-based policies and technological transfer in both the public and private sector. Moreover, in the quest for increasing economic competitiveness, the Municipality went a step further by strategically placing the clustering potential of the local economy in the spotlight. Encouraging cluster formation was one of the measures prescribed for economic competitiveness. However, the administration not only aimed to transform Cluj-Napoca into a national pole of innovation but was willing to propel the city towards an advanced level of performance by developing its research, innovation, and technology transfer capacity. In pursuing the goal of becoming a forthcoming "hub of innovation in Central and Eastern Europe", results show how the local authority clearly states its intention to act as facilitator by taking the following measures: (1) facilitate strategic partnership between Municipality, regional authorities, business sector and R&D organizations; (2) harness the available expertise in education, R&D, finance and business; (3) partnership with investors, business sector and financial sector to identify ways to provide funding for innovation; (4) facilitate creation of research centres, and (5) create know-how sharing programs (Development Strategy, 2014: 765).

The integration of these dimensions is done by reinforcing a collaborative and entrepreneurial climate within the local community. Deemed as a key strategic direction by the Municipality, entrepreneurship is a challenging process, borrowed from the private sector, responsible with discovering new opportunities for development. The great desideratum of the local public administration to build a solid entrepreneurial ecosystem was achievable by building a robust public-private partnership (PPP). Therefore, the statements show that the administration undertook measures to strategically gather key actors in Cluj-Napoca and stimulate their interaction by creating the ideal conditions required for boosting development.

#### 4.2.3. Strategic intentions of public administration towards collaboration

The degree of collaboration assumed by public administration is a salient indicator of public performance. In other words, the existence of strategic intentions towards building institutional collaborative relationships with other societal actors are likely to generate performance. A possible explanation for this might be that community challenges could more effectively be solved if jointly tackled. To measure the extent of strategic intentions assumed by local government in Cluj-Napoca, we made a brief inventory of the findings discovered throughout the dataset. Fundamentally, all the interactions steered directly or indirectly by the Municipality were considered. The results are visible in Table 13 (Appendix 7.2.).

The exploration of strategic intentions revealed rather significant results in terms of extent and impact on local socio-economic development. The fragments extracted from the strategy of Cluj-Napoca clearly show that efforts of local government to facilitate the creation of synergistic relationships between local stakeholders are abounding. Accordingly, this approach supports the achievement of strategic objectives. The existence of strategic intentions towards collaboration was identified in various spheres, including planning methodology, strategic directions, implementation, monitoring and evaluation mechanisms or specific strategies (i.e. *Higher education, People and community, Local economic development, Good governance, ICC city, Participatory governance, Creative Industries*). Unquestionably, intentions to collaborate were widespread also in other fields such as *Sport, Culture, Environment* or *Health*, yet, analysing such fields was beyond the scope of this paper.

Leadership played a key role in Cluj-Napoca. The Municipality assumed the role of leader and community facilitator in, at least, three ways. Firstly, through statements decentralizing decision-making. The introduction of inclusive and participatory institutional mechanisms was a motivating factor within community that contributed significantly to increasing the number of interactions. Primarily coordinated by the local authority, most management processes including planning, budgeting, policymaking, implementation, monitoring or evaluation of public projects are carried out in partnership with local stakeholders. Notable examples of participatory instruments are (1) public meetings and (2) cooperative economic policies promoted by local government to improve public decision-making. The formulation and public problem management is achieved, according to documents, via consultation networks and expert decision-making from the NGO sector. The use of community expertise, either voluntary or remunerated, developed institutional trust capital and social capital, thus creating a milieu favourable to dialogue and participation. Not only did this strategy

confer transparency, accountability, and legitimacy to public governance, but it also enhanced depoliticization of the administration.

Secondly, through statements encouraging a strategic partnership between public administration, academia, and the business environment. The capacity to proactively steer organisations towards achieving a mutual goal at community level is a matter of leadership. Despite the challenges related to public resources, often limited or inadequate to drive genuine society transformation, the Municipality used institutional mechanisms for leverage, cleverly bridging the interaction between local stakeholders and supplying them with necessary instruments to increase their capacity and work in a network mode. The statements on the promotion of (1) entrepreneurship and clustering initiatives, (2) stimulation of research, innovation, and technological transfer policies and (3) consolidation of human capital through training and expertise networks illustrate this point clearly. The process occurred also in the opposite way, meaning that university and business environment assisted local government in building policy capacity required for achieving its objectives.

Thirdly, through statements relating to application of direct and indirect incentives to increase investments. Creative problem-solving requires leaders to fully exploit the potential of available resources to open new avenues for innovation. The establishment of *TEAM* Centre (Technology, Evolution, Entrepreneurship, Microenterprises), *CREIC* (Regional Centre for Creative Industries) and involvement of the administration in cluster agglomerations such as Cluj IT Cluster (i.e. project *Cluj Innovation City*) support this argument. Whereas, TEAM project was designed to support the development of entrepreneurs (i.e. start-ups via incubation programs and business-accelerator initiatives) and aid the transfer of technology among business and academic sectors, *CREIC* and *Cluj Innovation City* aim to support R&D-oriented businesses and provide incentives for performance (Development of IT-based innovative technologies by concentrating the capital. The observed increase in RDI policies, technological transfer and entrepreneurship could be attributed to the aspiration of the local public administration to transform Cluj-Napoca in an international pole of innovation, trying to be responsive not only to local market conditions, but also across international markets.

Overall, these results provide important insights into how strategic planning occurs in a local setting which is by no means ordinary. On the contrary, Cluj-Napoca seems, from a local government perspective, an ideal setting to achieve sterling public management and performance by making use of collaborative mechanisms such as promoting cluster and innovation policy or engaging in partnerships. The effort and leadership assumed in statements by the Municipality to implement a

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win-win mindset among local stakeholders may increase the extent to which parties commit themselves to the strategic plan, while generating a complex network of relationships able to steer the community towards a favourable direction.

#### 4.2.4 Answering the second sub-research question

To answer the second sub-research question *"To what extent does local government in Cluj-Napoca explicitly state the intention to collaborate with other societal actors as a strategic objective?"*, the results of the strategic document analysis indicate that local government in Cluj-Napoca explicitly states collaboration with academia and other societal actors as a strategic objective. There is an observed increase in the openness of the local public administration towards engaging with local stakeholders in collaborative networks with the purpose of enhancing socio-economic development. Evidence shows that, to a large extent, statements of local government in Cluj-Napoca proactively encourage Triple Helix collaboration.

This result could easily be attributed to a paradigm shift in the way public governance is perceived by the community. It is almost certain that working groups consisting of experts from academia, local government and private sector facilitated the change of paradigm by encouraging collaboration and demonstrating that a partnership between public, private and non-profit organizations may generate a sustainable local ecosystem, both socially and economically. What is striking about this result is the harmonious intertwining of strategic plans adopted by local stakeholders. This suggests that a relatively strong relationship exists between the strategic objectives pursed by the Municipality and those pursued by academia, indicating that there is a common effort towards increasing the level of public coherence and effectiveness in the implementation of strategy. Similarities were found in all the spheres of interest promoted by university and local government, alike.

# 4.3 Insights from Societal Actors in Cluj-Napoca

The third and last sub-research question of this thesis is:

To what extent do societal actors (i.e. business and NGO sector) in Cluj-Napoca explicitly state their intention to collaborate with academia and local government as a strategic objective?

To answer this research question, results from the statements of societal actors in Cluj-Napoca will be discussed. Due to the scarcity of public strategic documents, data on their websites has been included in the analysis. The findings obtained from data analysis are displayed in the upcoming paragraphs under a twofold sub-section: business and NGO sector. The sub-chapter is structured as follows. Firstly, it provides a stakeholder analysis. Secondly, it describes the synthesis and evaluation of mission statement, vision, and strategic objectives of the organizations, whenever available. Then, it assesses the contribution to local community development. Ultimately, it provides an answer to the research question.

## 4.3.1 Business sector

We currently investigate the strategic intentions to collaborate of 24 Small and Medium Enterprises (SME) operating in the local IT field. Table 14 (Appendix 7.3.1.) displays the list of stakeholders assessed in the context of Cluj-Napoca.

Cluj-Napoca is widely regarded as an avantgarde tech and innovation city in Central and Eastern Europe. It became a haven for business investors, growing more than tenfold in the last decade only (Sebastian, 2019). Its reputation derives from the highly performant information technology (IT) business sector, which is by far the most prominent contributor to the local economy (Sebastian, 2019). In recent years, the local IT sector has been continuously expanding due to a large availability of resources and facilitating conditions that enable building of a sustainable business ecosystem. The most likely contributing factors to this result are local universities that supply specialized human resources, the business sector itself and a business-friendly public administration.

### a. Mission, vision, and strategic objectives

The core purpose of an organisation is articulated by defining the mission. The main line identified in mission statements is the customer-centric perspective. The primordial priority of most, if not all the organisations, is to identify client's needs and creatively craft tailor-made solutions required for a successful result. The strategic approach adopted by private IT organisations predominantly emphasizes the importance of quality, excellence, and sustainable partnerships, interwoven with innovation and cutting-edge technology. This lever is thought to contribute to maximizing competitive advantages, thus ensuring customer satisfaction. Short mission statements such as *"Bring your ideas to life."*, *"We build, we innovate. We learn."*, *"Bring innovation. Enjoy life!"* 

or "Your ideas, our mission." confirm the client-oriented approach and praise digital transformation to achieve performance.

The visionary endeavours of an organisation are articulated by defining the vision. Contextually, most of the organisations under analysis envision a profitable and rewarding future for their businesses, often achieved by the agency of long-term collaborations. This result is evident in the case of CODESPRING and NORDLOGIC Software, which state *"Build great strategic partnerships."* and *"Partnering with our customers gives us the opportunity to express our passion for technology and innovation while delivering beyond expectations."*, respectively. Likewise, INTERTECHNICA aims to *"[...] ensure long-term profitable collaboration models with our customers"*. Similarly, albeit more ambiguously, Agora Consulting and ETA2U state their endeavours for profit, as follows: *"We believe in a world of harmony and abundance [...]" and "To become the preferred supplier of business customers in Romania"*. Thus, statements towards collaboration exist, indicating a fruitful path for success.

The strategic objectives define specific achievements to be reached. No extensive evidence was found in the stakeholder analysis. Only a few reported objective statements on their websites. However, the existing data is highly suggestive and meaningful. For instance, ARTSOFT Consult aims at *"total customer satisfaction"*, while NORDLOGIC Software's goal is *"Making our customers happy"*. A more compelling example comes from LIFE IS HARD, whose stated objective is to *"Improve the life of people, business environment and communities"*. Although vague, the objective implies a farreaching orientation towards higher quality of life, not only for them and the client they serve, but also for the community in which they are embedded.

### b. Contribution to local community development

Finally, the contribution to local community development is a useful indicator of stakeholder collaboration. Table 14 (Appendix 7.3.1.) provides an overview of the results. In terms of cluster involvement, results show that out of 24 SME's under analysis, 9 are members of one cluster, 10 of two clusters, 4 of three clusters and 1 is involved in five or more clusters. The high rate of participation denotes a strong community involvement, given that clusters are non-profit organisations actively taking efforts towards improving socio-economic conditions in a setting. Except OPTIMA Group and LOLA TECH for which no statements related to collaboration or community involvement were found, the other organisations reported valuable information for the analysis. Four main patterns emerged, as follows: **(1)** partnerships with universities in the provision of internships, student practice
opportunities and mentoring, (2) partnerships with public authority and private organisations in service delivery, (3) organize academies, post-graduate training programs and events, and (4) perform research in collaboration with societal actors.

Firstly, statements on the provision of internships and mentoring were widespread. More than half of the organisations reported the existence of partnerships with universities in this field. We may shortly recall NORDLOGIC Software, LIFE IS HARD, CODESPRING, AROBS Transylvania Software, Endava, AVITECH, AGORA Consulting, INTERCHNICA (i.e. *PRACT-IT*), ETA2U, NTT Data Romania (i.e. *Transylvania College*), ARTSOFT Consult etc. These opportunities are extremely valuable for student professional careers, helping them to acquire experience and shape skills and competences required for future integration on the labour market. Therefore, they are expected to influence their prospective of employability.

Secondly, statements on the provision of software services to both public and private organisations were frequently reported. At least 6 companies confirmed this pattern, including AROBS Transylvania Software, Software ITC Cluj, EFFECT.RO, ONE IT, CENTRUL DE INFORMATICA (i.e. ALEX application helps public authority to improve exploitation of budgetary resources) etc. The innovative services provided to the public sector often concern consultancy in digitalisation, *smart city* strategies (i.e. *URBIVEL* project, city virtual reality tour) or ways to develop the local business infrastructure.

Thirdly, statements on the organization of academies, post-graduate training programs and events were relatively recurrent throughout the data. This pattern is related to a strong partnership with universities and NGOs and is mainly intended to bridge the gap between academia and the IT industry. More than 8 companies confirmed this pattern. Notable examples include NTT Data Academy, AGORA Management Academy, ACADEMY+PLUS or Learning and Development Programs (i.e. *Talent Management Senior, Team Lead Development, Technical Guru).* Interestingly, the curricula for the NTT Data Postgraduate Training Program in Computer Science was jointly designed by NTT Data Romania and UBB, while the program *"Discover your passion in IT"* was developed by an NGO together with 10 software companies based in Cluj-Napoca. Similarly, the events organized by the organisations are plentiful, ranging from scientific conferences to workshops and seminars. A full list of the events may be retrieved in Table 14 (Appendix 7.3.1). Solely PITECH PLUS reported the establishment of one spinoff (i.e. YOUNIFY) and two start-ups in Cluj-Napoca (i.e. *Parking Plus, Fast Order*).

Finally, statements on performing research projects in partnership with societal actors were relatively frequent. This pattern came out, for example, in the case of companies investing in the creation of R&D departments (i.e. AROBS Transylvania Software, AVITECH, Software ITC Cluj,

HYPERMEDIA, ETA2U Innovation Division) and Technological Transfer Offices (i.e. ETA2U), or simply carrying research activities (i.e. NET BRINEL, ARTSOFT Consult). Results show that NET BRINEL actively performs this activity, mainly in close collaboration relationships with universities. It carried research in collaboration with UTCN and implemented educational projects for UBB (i.e. UBB online portal), and UMF (i.e. UMF electronic bulletin board), respectively.

Statements regarding the intention to collaborate were found also at HYPERMEDIA and ETA2U. The former has a very strong collaboration with university in R&D projects ranging from technological development based on advanced research (i.e. prototypes, pilot systems, technological transfer), as well as fundamental and applied research on interactive systems and virtual collaboration - HYPERCLOUD (i.e. e-learning, e-business, e-health). It provides customized services for universities, business entities and public authorities through its innovative products such as HYPERTALK CAAS (i.e. collaboration as a service), HYPEREDU and HYPERTRAINING (i.e. interactive educational services: virtual library, project-based learning, virtual classroom and laboratory, interactive tutorial), HYPERTALK WEBMEETING, HYPERTALK WEBINAR, HYPERTALK HELPDESK etc. The latter aims to bring new solutions into society through its ETA2U Innovation Division by focusing on novel concepts such as IoT or smart mobility and organizing technology transfer activities through its Technology Transfer Centre. The next section moves on to discuss the results from the NGO sector.

#### 4.3.2 NGO sector

Non-profit organisations play a crucial role in advancing community development. In Cluj-Napoca, the large number of NGOs (5260 in Cluj county, according to listainstitutii.ro) represents a central pillar in the local ecosystem, along with the public administration, academia, and the business sector. This is mainly due to their considerable expertise, strategic perspective, and involvement in the community. There are different types of purposes served by the NGOs operating in Cluj-Napoca, varying from social, environmental, ITC, to good governance or economic and the list goes on. However, the NGOs serving the ITC sector distinguish themselves through statements defending the public interest of the ITC community in a manner that inspires determination and perseverance. Data shows that the flourishing IT landscape in Cluj goes hand in hand with the development of the NGO sector. We aim to find out to what extent do NGOs convey their intention towards institutional collaboration, how it affects community development and how local conditions enhance the development of cluster-based entities. To better understand how the non-profit sector impacts strategic collaboration, we described and analysed nine of the most influential NGOs operating in Cluj-Napoca. Table 15 (Appendix 7.3.2) displays the results.

#### a. Mission, vision, and strategic objectives

The main line identified in mission statements in the NGO sector in Cluj-Napoca is to support the growth of the local ecosystem and increase development capacity of the community by promoting collaboration, innovation, and quality of life. Table 15 (Appendix 7.3.2) displays the NGO sector analysis in Cluj-Napoca. The strategic statements of most organisations emphasize mutual benefit as a chief priority. Mission statements such as "[..] Promote innovation in processes, design of products and services to increase competitiveness on international level, creation of a partnership culture based on trust and dependability, promotion of the Romanian IT market, founding lasting public-private partnerships for the mutual benefit of the cluster's members and of the society in general." (Cluj IT Cluster), "Support and facilitate the growth of the start-up ecosystem in Cluj and Romania" (Cluj Startups), "Stimulate and support Cluj Metropolitan Area's prosperity and wellbeing" (IDACMA) or "Connect start-ups with strategic resources and support the growth of the local ecosystem" (SPHERIK Accelerator) support this argument.

Vision statements in the NGO sector follow, to a certain extent, the same pattern. Table 15 (Appendix 7.3.2) displays the NGO sector analysis in Cluj-Napoca. For instance, Civitas Foundation for Civil Society formulated a motivational vision that encourages both citizens and public institutions to engage in collaborative action: "[...] We believe in the power of communities and civic involvement. We also believe that citizens and local administration must come together to transform initiatives into projects, plans into reality and development opportunities into prosperity". Similarly, IDACMA envisions to "become a magnetic hub for RDI and IT services, a favourable environment for entrepreneurs, professionals and youth".

Statements on strategic objectives are articulated by the NGOs in Cluj-Napoca in a relatively general manner. However, their formulation reveals a strong orientation towards collaboration between institutional spheres and capacity building. Examples include: "strengthen digital society by promoting ICT, represent the common interest of the ICT community in interactions with other stakeholders" (ARIES Transylvania); "develop administrative capacity, community development and good governance" (Civitas Foundation for Civil Society); "stimulate R&D, develop common resources, invest in human resources" (CLUJ IT Cluster); "train human resources for advanced technology and strengthen institutional capacity" (Transylvania IT Cluster); "increase RDI capacity by stimulating cooperation between research institutions and enterprises, support potential of creative industries and its application in public and private sector, promote and encourage entrepreneurship, identify opportunities for collaboration, develop partnerships at home and abroad in order to achieve the objectives of the association" (Transylvania Creative Industries Cluster), "develop activities that

*improve lifestyle, increase quality of life and implement partnerships"* (Transylvania Lifestyle Cluster). A full list of statements on strategic objectives formulated by the NGO sector is visible in Table 15 (Appendix 7.3.2).

#### b. Contribution to local community development

The activities and instruments enabled by NGOs in Cluj-Napoca facilitate communication, collaboration, and interaction between the local actors. Statements show that organisations create strategic partnerships (i.e. Community Knowledge Platform community.clujit.ro, Transylvania Digital Hub), support business development and entrepreneurship (i.e. Cluj Innovation City), shape public policy and facilitate implementation in collaboration with other stakeholders, collaborate with academia (i.e. internships @ Cluj IT, RDI projects), facilitate access to training and specialisation, organize events and networking (i.e. Cluj innovation Days, ITECH Transylvania, Cluj Tech Industry Awards, Idea Challenge – Hackathon – Solutions for Cluj Smart City). Table 15 (Appendix 7.3.2) displays an extensive list of activities that contribute to local community development.

Overall, the results indicate that Cluj-Napoca is hosting a very dynamic and robust non-profit sector where civic engagement reaches high levels in a wide array of industries. Although we analysed only a limited number of NGOs due to space constraints, the sector is booming and provides adequate coverage to numerous domains ranging from clusters (i.e. AGRO Transylvania Cluster, Transylvanian Furniture Cluster, Transylvania Taste Cluster, TREC Cluster), start-up hubs, coworking spaces and communities (i.e. Cluj Hub, Fresh Blood. Health, TECH'N Trade, Start-up Grind Cluj, Silicon Forest), foreign business clubs (i.e. German Business Club Northern Transylvania, Francophone Business Club in Cluj, Italian Business Club of Northern Transylvania, Japanese Business Club in Transylvania), business associations (Advantage Austria, Association of Spanish Companies in Romania, Belgian-Romanian Business Association, British-Romanian Chamber of Commerce, League of Romanian Entrepreneurs, Netherlands Romanian Chamber of Commerce, Business Women Association), accelerators, incubators and investment structures (i.e. Gap Minder, Tech Accelerator, Risky Business, CULTUREPRENEURS). In addition, Cluj-Napoca accommodates science parks (TETAPOLIS – Science and Technology) and industrial parks (Cluj Innovation Park, CREIC and TEAM business centres, TETAROM I, II, III, IV), hosts start-up and tech events (i.e. Start-up Weekend, TECHSYLVANIA, Cluj Innovation Days, Code Camp, IT Days), consortia (i.e. Northern Transylvania Clusters Consortium) and many more (Cluj Business Magazine, 2020). The existence of this eclectic mix of overlapping structures engaged in managing change in Cluj-Napoca constitutes the ultimate infrastructure required for the innovation ecosystem to develop and flourish. An overview of this ecosystem is displayed in Figure 7.



Figure 7. Overview of innovation ecosystem in Cluj-Napoca

Source: Cluj Start-ups website (https://clujstartups.com/overview-cluj-tech-startup-support-organisations/)

Statements reveal a high level of civic engagement and leadership which represents a factor that determine the success of the ecosystem. The capacity of civil society to address public needs by deploying existing resources and exploiting local-specific competitive advantages for developing partnerships and other collaborative mechanisms designed to accomplish common objectives is worthy of recognition. Cumulatively, not only does the NGO sector strengthen the innovation ecosystem, but it also creates jobs, accelerates transfer of knowledge, empowers local society, and generates higher revenues for the local budget, thus having a direct impact on socio-economic development.

#### 4.3.1.1. Answering the third sub-research question

To answer the third sub-research question "To what extent do societal actors (i.e. business organisations and NGO sector) in Cluj-Napoca explicitly state the intention to collaborate with academia and local government as a strategic objective?", the results of the website data analysis indicate that statements of the business and NGO sector in Cluj-Napoca show high degrees of strategic intentions to collaborate with academia and local government. Overall, we found that within the private and non-profit environment in Cluj-Napoca, statements show a high degree of open-

mindedness. The observed increase in high-tech businesses, start-ups, accelerators, incubators, investment structures, clusters and innovation hubs could be thus attributed to the influence of strategic collaboration in managing the community. Table 14 and 15 (Appendix 7.3.1) provide a revealing glimpse of how the local business and NGO ecosystem works. We interpreted this data from three perspectives: organisational, network and community level.

At the organisational level, statements show that each company developed its own business strategy guided by market demands, long-lasting partnerships, and cutting-edge technologies to successfully accomplish the purpose of the organisation. There is a very strong business rationale underlying diversity, especially in the field of software development which is inherently related to technological innovation and digital transformation. Unequivocally, innovation has become an increasingly sophisticated concept, and businesses seem to grasp every opportunity to fully exploit its growing potential. As such, in their attempts to creatively solve issues that matter for the society, companies focus on providing tailor-made solutions designed to increase efficiency, profitability and customer satisfaction aided by innovation and technology. Although we investigated a wide business spectrum across various industries, ranging from software development, consultancy, training, testing, business analysis or automation to outsourcing, a different, yet overlapping and often convergent rhetoric is visible within the results. Interestingly, the innovation strategy is sublimely intertwined with the technology strategy, both being integrated into the local business poetry.

At the network level, the statements are important in terms of consistency. Membership in local and/or regional IT clusters or associations represents a leitmotif running through the dataset. In all cases, businesses are affiliated in at least one such entity, and in some cases, they are members in more than one. The significance of this result bears several implications. Firstly, it implies that, in addition to their own strategic trajectory, members pursue a shared mission to achieve common goals. For instance, the stated mission of Cluj IT Cluster is to increase competitiveness, create a partnership culture and promote the IT market, while the purpose of ARIES Transylvania is to promote the professional and commercial interests of its members and strengthen their representation. Secondly, cluster formation feasibility and functioning are due to a local environment favourable to new forms of collaboration and the determination of administration to create a local innovation hub. Statements of local administration support facilitate strategic alignment and confer legitimacy, thus strengthening the position of the network on the market.

At the community level, statements show that most private organizations are involved in projects that have a direct or indirect impact on the society. Recurrent elements were the internships, mentoring, academies, and postgraduate programs made available by various companies. However,

the occurrence of other events such as R&D-based collaboration, provision of services to public and private organisations, organisations of events (i.e. workshops, conferences, seminars) is also worth considering. Not rarely, statements on financial support provided by companies for education, health, culture, or social causes, denote that private sector in Cluj-Napoca is deeply involved in the life of the community.

Taken together, the results suggest an association between Triple Helix interactions and development. Findings from societal actors' statements confirm the existence of a collaborative approach on governance that is genuinely guiding Cluj-Napoca's community towards a higher level of development. In this setting, the stakeholders play a crucial role, for they are stimulating innovation-based development by facilitating institutional collaboration and building innovation capacity. Under these conditions, the statements formulated by the organisations pertaining to Triple Helix system tend to create an overall symbiosis. The results in this chapter indicate that strategic efforts of Triple Helix actors in Cluj-Napoca incorporate a multitude of common elements which make this symbiosis successful. The next chapter moves on to discuss the conclusions that could be drawn from the given findings.

### **5. CONCLUSIONS**

This thesis has explored the existence of official statements of Triple Helix actors regarding the intention to collaborate in Cluj-Napoca. We have argued that a high degree of strategic intentions to collaborate between academia, local government, business, and NGOs can strengthen policy capacity by improving the operational, analytical, and political capabilities at individual, organisational and systemic level. This allows the local ecosystem to respond to societal challenges more effectively. The study invoked societal challenges such as education, competitiveness, labour market, RDI, human resource, and development. The capacity to successfully overcome these matters means, from a public management perspective, achieving public performance.

However, the old modes of public management and governance became obsolete in the context of modern society. We have seen that attempts of governments to improve their performance were largely derived from the NPM and NWS proponents consisting of elements of reform such as introducing performance management and measurement or increasing specialisation for performance. Recent scholarship has demonstrated that reform based on these paradigms was doomed to failure, especially in Central and Eastern Europe due to inappropriate systems to accommodate such reforms (Bouckaert et al., 2008). The influence of context on public management relates also to the way public administration perceives the act of governance. The extent to which other societal actors, including academia, business and NGO actors are a key part of the context in which public management occurs is a matter of strategic choice (Walker & Boyne & Brewer, 2010). This study was designed to determine the strategic statements of the community in Cluj-Napoca, arguing that technological developments and the need to engage public, private and non-profit stakeholders in governance - an approach that influenced the emergence of the NPG paradigm - should be granted greater attention by both practitioners and scholars of public management.

The aims of the present research were to examine the official statements articulated by Triple Helix actors in Cluj-Napoca regarding the intention to collaborate; and to explore the way Triple Helix interactions can enhance policy capacity. The first aim was addressed by describing and analysing the strategic statements of various actors from academia, local government, business, and NGO sector towards collaboration. The empirical evidence allowed to determine whether statements indicated a high extent of collaboration-based interaction between the organisations, or if there was less interaction, in this latter case, also by specifying the factors influencing the result. The findings clearly shown that most statements explicitly confirm that collaboration is a strategic objective in each sphere. The results and answers to the corresponding sub-research questions were provided in the Results chapter.

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The second aim of this study was addressed by illustrating statements of actors from universities, public administration, business, and non-profit sector in Cluj-Napoca that engaged in (novel) relationships such as technology transfer, collaboration and conflict moderation, collaborative leadership, substitution, and networking. Some of these relationships specific to Triple Helix occurred throughout the analysis, facilitating the transition towards a Knowledge society by building the infrastructure and institutional ecosystem over time. Statements on this new orientation of actors in Cluj-Napoca increase the likelihood to enhance policy capacity because they are founded on the principle of collaboration, thus inherently related to joint efforts and resources to carry common actions. These arguments lead us to answer the main research question.

### 5.1 Answering the main research question

This thesis has been focused on analysing formal statements to collaborate of Triple Helix actors in Cluj-Napoca. The main research question was "To what extent do Triple Helix actors in Cluj-Napoca explicitly state their intention to collaborate with each other as a strategic objective?". We argued that a strong relationship exists between public management reform, strategic planning, Triple Helix interactions and policy capacity, deriving three expectations from theory. Our first expectation that NPG paradigm provides a suitable grounding for developing public management reform at local level has been confirmed by statements from local government development strategy. The statements indicate a strong inclination of public administration in Cluj-Napoca towards adopting public management reforms predominantly based on the NPG paradigm. The participatory institutional mechanisms enabled by the administration (i.e. public meetings, cooperative economic policies etc) and increased orientation towards innovation-based collaboration support this argument. The second and third expectations, which represent necessary conditions to enhance policy capacity were also confirmed by our findings. Based on the statements of document analysis, we draw our conclusions that academia and local government in Cluj-Napoca explicitly state their intentions to collaborate with each other and with other societal actors (i.e. business and NGO sector). This pattern has been also confirmed by statements on website data in the case of most organisations from the NGO sector (see Cluj IT Cluster, Transylvania IT Cluster, Transylvania Lifestyle Cluster etc), and to a lesser extent, in the case of business organisations. In the latter case, a customer-oriented approach was prevailing in the strategic statements, however the findings relating to their activities revealed statements related to increased involvement in networks and in the community, often through partnerships with local government, academia (i.e. student internships, technology transfer, mentoring) and NGO sector (i.e. cluster activity), as well as through networking channels (i.e.

workshops, seminars, conferences). Therefore, the findings from strategic planning frameworks of most stakeholders indicated statements that emphasize a perceived importance of collaboration.

This leads us to address the expectation 3a which suggested that a strategic approach intertwined with Triple Helix interactions increase the likelihood of policy capacity development. From a formal perspective, the high extent of stated intentions to collaborate increases the potential to enhance policy capacity due to concerted efforts and aggregated resources (individual – organisational – systemic) and capabilities (analytical – operational – political) combined at each level. Relevant examples include, among others, the networks ARIES Transylvania, and Cluj IT Cluster that aggregate the resources and capabilities of most organisations analysed in this study, thus building upon the analytical, operational, and political capacity at systemic, organisational and individual level. Their interactions can therefore increase the likelihood to generate policy capacity. From a practical perspective, however, how well Triple Helix actors can translate the officially stated rhetoric into action remains to be demonstrated. Therefore, the current findings could not establish the relevance of a strategy based on Triple Helix interactions towards enhancing policy capacity in practice. This can be a fruitful area for further research.

#### 5.2. Policy implications

Several policy implications can be derived from this research. Our findings based on official statements to collaborate established, from a local perspective, the way Triple Helix interactions increase the likelihood to enhance policy capacity in Cluj-Napoca, by providing explicit mechanisms to guide strategic efforts.

- 1. Consistent policy responses and concerted efforts are essential to develop solid relationships between Triple Helix actors. Theoretical evidence from this study suggests that Triple Helix practice is aimed at adjusting the strategic approach of stakeholders into a knowledge-based strategy aspiring towards reforming the innovation system. This shift, however, required consistent policy responses from local government in Cluj-Napoca, whose statements have proactively stimulated the transition by adopting a supportive policy framework in accordance with academia, business, and NGO sector.
- 2. The formulation of public policy requires context-specific strategic approaches. Statements on various public policies were promoted by local government in Cluj-Napoca. They include, among others, innovation policy, higher education policy, business policy or cluster policy and have significant implications for local and regional development. The policies designed to

enhance the local ecosystem were focused on local-specific competitive advantages such as academic excellence, good governance, and interconnected community networks. To encourage the participation of stakeholders in policymaking, statements showed that public administration enabled participatory institutional mechanisms such as public meetings and cooperative economic policies. These measures contribute to consensus building.

- 3. Innovation policy is crucial for the success of a Triple Helix. Statements regarding innovation policy were highly promoted by local government in Cluj-Napoca. Measures consisted in supporting entrepreneurship, RDI and knowledge and technology transfer among business and academic sector, provide incentives for performance and subsidies, or increase the number of start-ups. The innovative mechanisms enabled by the Municipality included *Cluj Innovation City*, TETAPOLIS Science and Technology Park (i.e. incubators, coworking spaces, laboratories, R&D facilities, cross-disciplinary platforms, business support services), CREIC (Regional Centre for Excellence in Creative Industries) and TEAM (Technology, Evolution, Entrepreneurship, Microenterprises), and TETAROM Industrial Park. The concentration of capital in these structures may increasingly improve collaboration relationships between the institutional spheres and increase the likelihood of policy capacity to perform, thus having socio-economic implications.
- 4. Higher education policy is one of the pillars that facilitates transition towards a knowledge-based Triple Helix ecosystem. Statements regarding higher education policy were extensively addressed by local government. Our findings showed an increased orientation in statements towards harmonising academic curricula in accordance with labour market demands, enhancing technological transfer activity, or stimulating entrepreneurship and innovation through hybrid organisations (i.e. technology transfer offices, interdisciplinary research centres, science parks). These results reveal that a grassroots education reform is being developed in Cluj-Napoca, which institutionalize a new mission for universities, that of contributing to socio-economic development. Despite significant policy improvements were made at local and regional level, we found statements revealing that stakeholders in Cluj-Napoca sometimes had to cope with the burdensome national policy framework. This reveals inconsistency among the central, regional, and local levels of government, and the need for increased decentralization and political autonomy.
- 5. Business-friendly policy is important to consolidate the relationship between business sector and public administration. Business policy played an influential role in the strategic statements of local government. The administration in Cluj-Napoca assumed a businessfriendly approach towards the business environment, setting objectives designed to

consolidate the business ecosystem. Statements on policy measures were focused on building the business infrastructure by supporting science and technology parks, industrial parks, startups via incubations programs, business accelerators (i.e. TETAPOLIS, TETAROM I, II, II, IV, CREIC, TEAM), by creating a network of training and expertise suppliers, by increasing accessibility of business funding resources, by applying incentives to increase investments, by increasing the level of involvement in decision-making and reducing bureaucracy for new business. Other statements were designed to promote strategic partnerships between academia and business, involving business in the educational process (i.e. curricula update, seminars, workshops, internships), facilitating creation of research centres and stimulating common research projects.

6. Cluster policy is important to consolidate the relationship between NGO sector and public administration. Statements regarding cluster policy were extensively promoted in Cluj-Napoca. Findings showed that local government measures were aimed at increasing the clustering potential of the local economy, especially in the ICT field. The promotion of entrepreneurship and clustering initiatives at local and regional level culminating with cluster formation was identified as a key factor likely to increase the likelihood of achieving economic competitiveness. Statements on the high number of clusters established in Cluj-Napoca (more than 13) and the high rate of participation of SME's, academia, and government in these structures denote strong interconnectedness of the community.

The relevance of these Triple-Helix-derived strategies have significant policy implications at local and regional level. Firstly, they provide a robust framework for local and regional governments aiming to drive socio-economic development. This approach should be provided the necessary resources and regulatory conditions required to enable Triple Helix interactions. Secondly, a development approach with a vision focused on local specific factors rather than internationally oriented can be strengthened by adopting a Triple Helix strategy. An improved knowledge management and stronger relationships between local stakeholders from academia, local government and industry is required.

Thirdly, a strategic approach promoting Triple Helix innovation system resonates with the European Union's (EU) policy framework (Ranga & Etzkowitz, 2013). Consider, for example, the renewed EU industrial policy that recognizes (1) clusters as powerful economic development tools supporting innovation (i.e. industrial cluster policy facilitates cluster cooperation within the EU through the European Cluster Collaboration Platform), (2) smart specialisation platform that strengthens innovation in EU regions by helping regional policy-makers to develop and implement

research and innovation strategies for smart specialisation, (3) innovation hubs and knowledge innovation communities that support cluster activity, or (4) start-up initiatives (European Commission, 2020).

Finally, the adoption of a Triple Helix strategy has policy implications on various policy fields. A suitable environment for the adoption of a Triple Helix configuration, as conceptualized by Ranga & Etzkowitz (2013), requires fulfilment of conditions that relate to its components (i.e. availability of R&D and non-R&D actors, hybrid institutions, individual and institutional innovators), development of new relationships (i.e. technology transfer, collaboration and conflict moderation, collaborative leadership, substitution, networking) and capability to perform the key functions of knowledge, innovation and consensus. We might shortly recall measures supporting policy fields such as collaborative governance (i.e. public meetings and other shared decision-making processes), economic policies (i.e. fiscal, investment, taxation), social (i.e. employment, labour market), education and training, knowledge, science, and technology etc. Therefore, the insights gained from this study may be of assistance to policymakers, researchers, business managers and NGO members, alike.

The limitations of this study derive from its focus on formally expressed positions and the concentration on the IT field only. Firstly, the findings are based on official statements from document analysis, therefore our observations might not accurately reflect the reality in Cluj-Napoca. Further research is encouraged to conduct interviews or surveys to gain an understanding of the real extent of strategic collaboration between academia, local government, and other societal actors. Secondly, the selection of business organisations and NGOs mostly from the IT sector might not provide an accurate and precise representation of the population to whom it pertains, thus limiting generalizability. Further work may explore the strategic statements towards collaboration of organisations from other industrial fields, such as agriculture or manufacturing industry to determine if the pattern is similar. Finally, a cross-sectional study could be useful to assess the pattern of Triple Helix collaboration at national and international level.

#### 5.3. Agenda for future research

The findings shed new light on the potential of Triple Helix interactions at local level. Statements from the findings suggest that a strategic partnership between academia, local government, and other societal actors focusing on the consolidation of the innovation ecosystem can enhance policy capacity, therefore contributing to community development. The work contributes to existing knowledge on Triple Helix systems by providing empirical evidence that confirms, at least at rhetorical level, the effectiveness of Triple Helix concept that has been put in practice. Therefore, seen from the perspective of New Public Governance (NPG) paradigm, the empirical findings provide a new understanding of the impact of public management reform on performance. Statements from actors in Cluj-Napoca demonstrate that policy capacity can be enhanced through a locally suitable strategy based on strategic collaboration between academia, local government, business, and NGO sector. Notwithstanding, several issues need further investigation.

The findings provide the following suggestions for future research:

- 1. Assessing the performance of strategic collaboration between the Triple Helix actors in periods of crisis and instability (i.e. COVID-19 pandemic). Triple Helix interactions have been assessed in a relatively stable context and period (2014-2018). The effects of the global financial crisis of 2008 were already diminished and there were no other external factors that could have had a strong influence on performance. A further study is needed to assess the effectiveness of Triple Helix interactions in times of crisis and instability, such as in the case of the COVID-19 pandemic, to determine if the policy capacity of stakeholders is able to provide appropriate solutions to cope with the crisis and to mitigate the devastating effects of the pandemic in a timely manner.
- 2. Exploring the potential contribution of the Quadruple and Quintuple Helix frameworks of innovation to policy capacity and socio-economic development. This study was grounded in the Triple Helix theory, although we also included the NGO sector. The Quadruple and Quintuple models were developed recently by scholars and include, in addition to academia, government and industry, also media and cultural institutions (Quadruple Helix) and the natural environment (Quintuple Helix).
- **3.** Measuring the extent of Triple Helix interactions between academia, local government, and societal actors from other industrial fields. Our analysis focused mostly on IT organisations as the IT landscape in Cluj-Napoca is highly dynamic and provides data required for analysis. This field was deemed relevant for the purpose of the thesis also due to its increased orientation towards performing R&D and innovation-related activities. Further work needs to be done to establish whether organisations from other industrial fields such as communication, manufacturing, agriculture, energy, or finance confirm the practice.
- 4. Extrapolating beyond the local ecosystem in Cluj-Napoca. The focal point of this thesis has been the local community in Cluj-Napoca. However, further research could be conducted, also through interviews and surveys, to determine the effectiveness of strategies based on Triple

Helix systems in other municipalities in Romania (i.e. Bucharest, Timisoara, Sibiu, Brasov, Oradea, Iasi, Constanta) or beyond the national boundaries (i.e. Budapest, Prague).

#### 5.4. Conclusions

The following conclusions can be drawn from this thesis. The salience of a public management reform based on NPG paradigm matches the needs of a Knowledge Society and has been demonstrated beneficial in Cluj-Napoca's local ecosystem. The study has provided the first comprehensive assessment of strategic statements of organisations from academia, local government, business, and NGO sector towards building collaborative relationships. The findings show that Triple Helix actors in Cluj-Napoca increasingly state their intentions to collaborate with each other, thus indicating a high extent of strategic coherence, at least at declarative level. Results suggest an outstanding role for innovation-based policies in promoting socio-economic development. Therefore, statements emphasize that a novel perspective on development based on Triple Helix collaboration and the promotion of innovation is being gradually adopted by stakeholders in Cluj-Napoca. To conclude, this research suggests a tendency of academia, local government, business, and NGO sector in Cluj-Napoca to converge towards the integration of interests, resources, and strategies. This pattern contributes to policy capacity development. The findings might help overcome the criticism of the NPG paradigm by providing fresh insights into how the Triple Helix framework enhances policy capacity and guides socio-economic development at local level.

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# **7. APPENDICES**

Table 1. List of strategic documents included in the analysis

No.	Type of document	Number of pages
1	UBB Annual Report 2014	65
2	UBB Operational Plan 2014	17
3	UTCN Annual Report 2014	176
4	UTCN Biannual Operational Plan 2014/2015	28
5	UMF Operational Plan 2014	9
6	UAD Annual Report 2014	53
7	UAD Operational Plan 2014	11
8	AMGD Annual Report 2014	153
9	Development Strategy Municipality of Cluj-Napoca	1319
10	Civitas Foundation Annual Report 2014	55
11	UBB Annual Report 2015	68
12	UBB Operational Plan 2015	25
13	UTCN Annual Report 2015	174
14	UMF Annual Report 2015	128
15	UMF Operational Plan 2015	10
16	UAD Annual Report 2015	52
17	UAD Operational Plan 2015	11
18	AMGD Annual Report 2015	161
19	Civitas Foundation Annual Report 2015	66
20	UBB Annual Report 2016	65
21	UBB Operational Plan 2016	26
22	UBB Strategic Planning 2016-2020	35
23	UTCN Annual Report 2016	162
24	UTCN Blannual Operational Plan 2016-2017	49
25	UTCN Strategic Planning 2010-2020	30
20	USANV Operational Plan 2016 LISANV Stratogic Planning 2016 2020	10
27	LIME Appual Report 2016	76
20	LIME Operational Plan 2016	20
30	LIME Strategic Planning 2016-2020	7
31	LIAD Annual Report 2016	40
32	UAD Operational Plan 2016	10
33	UAD Strategic Planning 2016-2020	28
34	AMGD Annual Report 2016	163
35	Civitas Foundation Annual Report 2016	32
36	UBB Annual Report 2017	70
37	UBB Operational Plan 2017	29
38	UTCN Annual Report 2017	134
39	USAMV Operational Plan 2017	14
40	UMF Annual Report 2017	78
41	UMF Operational Plan 2017	12
42	UAD Annual Report 2017	38
43	UAD Operational Plan 2017	7
44	AMGD Annual Report 2017	218
45	Civitas Foundation Annual Report 2017	40
46	NTT Data CSR Report 2017 (English)	62
47	UBB Annual Report 2018	77
48	UBB Operational Plan 2018	33
49	UTCN Annual Report 2018	196
50	UTCN Biannual Operational Plan 2018/2019	64
51	USAMV Operational Plan 2018	29
52	UNIF Annual Report 2018	//
53	UNIF Operational Plan 2018	23
54	UAD Annual Report 2018	41
22	ן אויוסט אוווועמו גפטטון 2018	100

56	Civitas Foundation Annual Report 2018	23

Source: UBB (ubbcluj.ro), UTCN (utcluj.ro), UMF (umfcluj.ro), USAMV (usamvcluj.ro), UAD (uad.ro), AMGD (amgd.ro), Municipality of Cluj-Napoca (primariaclujnapoca.ro), Civitas Foundation for Civil Society (civitas.ro)

### Table 2. Inclusion of strategic themes in the analysis (by organisation and by type of document)

Organisation	Type of document	Strategic dimensions		
UBB	Strategic plan 2016-2020 Operational plans Annual reports 2014-2018	Mission & vision Goals & strategic objectives: Education Scientific Research Relation with society and involvement in the community Management Performance indicators Education Scientific Research Relation with society: business environment, fundraising, student practice & alumni Strategic management Professional insertion of		
		graduates on the labour market		
UTCN	Strategic plan 2014-2020	Mission & vision Strategic objectives: Education Scientific Research Relation with socio-economic environment Management		
	Biannual operational plans Annual reports 2014-2018	Education RDI & technological transfer activity Collaboration with socio-economic environment Professional insertion of graduates on labour market		
USAMV	Strategic plan 2016-2020	Mission & vision Strategic objectives: Management Didactic activity Human resource Partnership with students RDI & technological transfer		
	Operational plans 2014-2018	Management Education Human resource Research EU-funded projects		
UMF	Strategic planning 2014-2020 Operational plans Annual reports 2014-2018	Strategic objectives Education Scientific Research Students		
UAD	Strategic planning 2014-2020	Mission & strategic objectives Education Scientific Research & Artistic creation Students		
	Operational plans Annual reports 2014-2018	Education Scientific Research & Artistic creation Management		
AMGD	Strategic planning	-		

	Annual reports	Research activity		
	2014-2018	Professional insertion of students on labour market		
		Scientific & artistic events		
Municipality	Development strategy 2014-2020	Methodology		
of Clui-		Strategic profile of city (Vision Key strategic factors Competitive		
Nanoca		advantage strategic issues strategic directions)		
Nupocu		Synthesis of strategic directions		
		Synthesis of operational programs		
		Sectorial strategies:		
		Associativity, philanthropy & volunteering		
		Participatory democracy		
		Local economic development		
		Creative Industries		
		IT & e-governance Higher education		
Civitas	Annual reports	Community development and good governance, Entrepreneurship		
Foundation	2014-2018	and social economy		
for Civil		Consolidation of civil society		
Society				
NTT Data	Corporate Social Responsibility	CSR Policy		
Romania	Report 2017 (CSR)	Education		
		Social		

Source: own adaptation based on strategic documents from academia, local government, business and NGOS

# Table 3: Coding scheme

Category	Theme	Description	Codes	Example
ACADEMIA	Strategic	Participant indicates	Mission	"Collaboration relationships
	planning	the willingness to	Vision	with socio-economic
	framework	collaborate with local	Strategies	environment in the region on
		government and	Objectives	educational dimension,
		other societal actors	Measures	research or knowledge
		in strategic planning		services" (UTCN Strategic plan,
		statements		2016)
	Partnerships in	Participant indicates	Partnership	"UBB will stipulate
	RDI	the willingness to	Collaboration	partnerships with institutional
		collaborate with local	Cooperation	structures of civil society to
		government and	Interaction	promote, transfer and apply
		other societal actors	Research	the results of scientific
		in RDI partnerships	Innovation	research" (UBB Strategic plan,
			Development	2016)
			Technology	
	Curricula	Participant indicates	Curricula	"UBB will provide a
	update in	the willingness to		predominantly
	accordance	collaborate with local		interdisciplinary education,
	with labour	government and		adapted to current societal
	market	other societal actors		challenges, by initiating and
	demands	in updating curricula		developing new curricula at all
				levels, proactively connected
				to labor market requirements
				[] development of student
				competencies will be
				supported through
				internships" (Objective 1, UBB
				Strategic plan, 2016)
	Establishment	Participant indicates	Entrepreneurship	"Establish 2 technological
	of new	the willingness to	Technology transfer	transfer offices" (Objective,
	structures	collaborate local	Cluster	USAMV Operational plan,
		government and		2018)
		other societal actors		

		in establishing new		
	Participation to	Particinant indicates	Events	"Establish mentoring programs
	events and	the willingness to	Workshops	with business sector"
	Networking	participate at events	Conferences	(Objective, USAMV
	Ũ	and networking	Symposiums	Operational plan, 2018).
		together with local	Seminars	
		government and	Mentoring	
		other societal actors	Networking	
	Increase	Participant indicates	Cluster	"Consolidation and
	collaboration	the willingness to	Internships	development of relationships
	with PA and	collaborate with local	Partnership	with organizations from the
	socio-economic	government and	Collaboration	socio-economic environment
	environment	other societal actors	Interaction	with the purpose to involve
		those already	Cooperation	dovelopment" (Objective 2.2
		mentioned	Participation	UTCN Strategic plan 2016)
	Insertion of	Particinant indicates	Insertion of	"Adapt educational offer to
	students on the	the willingness to	students on the	needs of socio-economic
	labor market	increase insertion of	labor market	environment" (Objective 3.4.
		students on the labor		UTCN Strategic plan, 2016).
		market by matching		
		educational offer with		
		demands of socio-		
		economic		
		environment		
LOCAL	Strategic	Participant indicates	Vision	"Cluj-Napoca defines its
GOVERNMENT	planning	the willingness to	Strategies	development in terms of
	framework	collaborate with	Objectives	quality of life of its inhabitants.
		academia and other	Measures	Ciuj-Napoca will be a space for
		societal actors in		achievement with active
		statements		citizens a creative complex
		statements		dynamic, and competitive
				economic environment, able
				to use resources in an
				integrated manner and to
				offer a sustainable
				development of the
				community." (Development
	654	<b>D</b>	<b>D</b>	strategy 2014)
	SD1:	Participant indicates	Research	"Develop a public-private
	Entrepreneurshi	the willingness to	Innovation	partnership to generate a
	p, innovation &	academia and other	Technology	ecosystem " (Development
	Industries	societal actors in SD1	Entrepreneurshin	strategy, 2014)
	SD2: Higher	SD2, SD3, SD4, SD5,	Cluster	"Improve communication
	education	SD6 statements	Partnership	between universities and
			Collaboration	business sector through Cluj
			Interaction	Innovation City"
			Cooperation	(Development strategy, 2014)
	SD3: IT and e-		Community	"Decision-making transparency
	governance		Participation	through e-governance"
				(Uperational program,
	SD4. Local			"Active pertnership DA
	ACONOMIC			husiness environment
	develonment			academia" (Operational
	acvelopment			program. Development
				strategy, 2014)
	SD5:			"Participatory budgeting
	Participatory			(Development strategy, 2014).
	democracy			

SOCIETAI	SD6: Associativity, philanthropy, and volunteering	Participant indicates	Mission	"Cluj-Napoca is a hub of expertise where local organizations present themselves in the role of leader" (Development strategy, 2014)
ACTORS	planning	the willingness to	Vision	partnerships."
	framework	collaborate with	Strategies	(CODESPRING website)
1. Business		academia and local	Objectives	
organizations		government in	Measures	
		strategic planning		
2. NGO sector	Dorthorshins in	statements	Dartaarshin	LIDDIV/EL research project in
	Partnerships in RDI	Participant indicates the willingness to collaborate with academia and local government in RDI partnerships	Partnership Collaboration Cooperation Interaction Research Innovation Development Technology	URBIVEL research project in collaboration with UTCN (NET NRINEL website)
	Establishment of new structures	Participant indicates the willingness to collaborate with academia and local government in establishing new structures	Entrepreneurship Technology transfer	Founding member of ARIES Transylvania, Transylvania IT Cluster, TREC Cluster, Transylvania Lifestyle, Cluj IT Cluster (NET BRINEL website)
	Participation to	Participant indicates	Events	Cluj Innovation Days 2014, Cluj
	events and	the willingness to	Workshops	Tech Industry Awards,
	Networking	participate at events	Conferences	Iransylvania MegaHack @ Cluj
		together with academia and local government	Networking	website)
	Increase	Participant indicates	Cluster	AGORA Internship (AGORA
	collaboration	the willingness to	Internships	Consulting website)
	with PA and	collaborate with	Partnership	
	academia	academia and local	Collaboration	
		government in other	Cooperation	
		already mentioned	Community	
		an easy mentioned	Participation	

Source: own adaptation

# 7.1. Appendix Academia

Table 4	Develo	nments	in	2014
TUDIC 4.	Develo	princinco		2014

University	Establish partnerships in RDI	Update curricula in accordance with labour market demands	Establishment of new structures	Participation to events/ Networking	Increase collaboration with PA and socio- economic environment
UBB	-Stimulate patenting	-Establishment of	-Office of	- "Entrepreneurs	-Meetings with City Hall
	& technological	new specializations	Technological	on stage"	of Cluj-Napoca on
	transfer through OTT	and study programs	Transfer (OTT)	-Presentation	tripartite collaboration
	-Bolster RDI potential	(e.g. Informatics-	-Innovation &	campaigns	issues in economic field
	by engaging in	created via a 3-year	Technological	(Bombardier,	-Collaboration with
	consortia, clusters,		Centre in Cluj-		foreign/autochthonous

	spin-offs, start-ups, business accelerators (1 <sup>st</sup> spin-off created) -Research orientation towards key strategic research themes & promote cooperation with economic partners in research projects	sponsorship from local private sector) - Integration of IT industry requirements to increase graduates 'employability	Napoca (Danube Transfer Centre) -Cluj IT Cluster, SPHERIK, Cluj Cultural Capital -Career Centre, Alumni & Relation with Business Sector	Emerson, Sykes, BRINEL) -Events and WG in RDI field (Association of Cluj Universities, UNIVERSITARIA Consortium, Cluj IT Cluster, Cluj Innovation City, HP, IBM) -Project University in the community. Continuous education for the benefit of community.	businessmen @ Cluj International Club -Develop PPP that favour placement of student internships and student practice -Collaboration in regional/local interest structures: Cluj IT Cluster, SPHERIK -Crowdfunding platform
UTCN	-Collaboration in RDI & applied research with private companies: Fortech, HP, ARXIA, VW, IBM, Eckerle, Pirelli, Emerson, Siemens, Microsoft, Bosch, Electrolux, Infineon etc -Consolidate technological transfer research -Consolidate university position via synergic collaboration between research structures, diversified educational offer & interdisciplinary RDI with impact on economy	-Continuous adaptation of curricula, in accordance with the latest technologies -Development of laboratories in partnership with economic environment	-Centre for Technological & Knowledge Transfer (CTKT) -Innovation & Technological Centre in Cluj- Napoca (Danube Transfer Centre) -Office for Collaboration with Industry -Cluj Innovation City -Office of Counselling & Career Orientation	-Cluj IT Cluster activities, Cluj Innovation Days 2014 -Launch entrepreneurship programs <i>"FASTTRAC"</i> and <i>"3 Day Start-up"</i> -Pro Invent 2014	-Supply post- university/training programs to SME's -Collaborate in Cluj IT Cluster (all WG's): "Brained City- Innovative Development through Computerization of Urban Cluj-Napoca Ecosystem" & "Cluj Innovation City" -Collaboration with PA and NGO in "Cluj- European Youth Capital 2015", "Cluj- European Cultural Capital 2021" and "PROIS NV" -Develop PPP that favour placement of student internships & student practice -Institutional development (digitalisation)
USAMV	No data	No data	No data	No data	No data
UMF	-Promote interdisciplinary research themes & conclude partnerships	-	-	-Summer school, training workshops, exhibitions of inventions, scientific manifestations	-Develop collaboration protocols with public health & research institutions that favour employment and training of resident students
UAD	-Establish research centres within faculties & correlate study programs with artistic creation and research activity - Research projects in collaboration with	-Expandandimproveeducationaloffer(newstudyprograms)-EU-fundedprojects:1.Evidence-basedpoliciesand	-Centre of Information, Counselling, Career Orientation & Alumni - Department of Analysis and Provisional	-Expositions, workshops, fairs, fashion galas, summer schools, conferences	-Develop partnership relations with institutions and profile companies -Realize consortia with other universities

	UBB & UTCN (no details)	on labour market; 2. Ensure quality in higher education via empowerment and audit & 3. Improve quality of national high education system in accordance with knowledge-based society change and	Management of Labour Market Demands		
AMGD	Scientific	labour market dynamics		- "Start-up: from	-Contracts with City Hall
ANGD	-scientific manifestations (symposiums, conferences, educational concerts, mastery courses, workshops, demonstrative lessons etc)		-	- start-up: from idea to business" -Artistic practice -transition of young artist towards labour market	& Local Council & socio- economic entities in research activity, artistic creation & interpretation -Collaboration with NGO's

Source: Strategic documents of UBB, UTCN, UMF, UAD, AMGD (2014)

# Table 5. Developments in 2015

University	Establish partnerships in RDI	Update curricula in accordance with labour market demands	Establishme nt of new structures	Participation to events/ Networking	Increase collaboration with PA and socio-economic environment
UBB	-Work meetings with local scientific community members - Partnerships for common, relevant research themes	-Develop new specializations	-Support establishme nt of Association Advanced Materials, Micro and Nano Technologie S ADMATECH	Entrepreneurs on stage, Pro Invent - Job fairs, company presentations, consultancy activity, workshops, information campaigns on EU-funded research projects	-Collaborate with local PA on tripartite collaborations in the economic field & with Association "Cluj-Cultural Capital 2021" -Represented within local interest structures (Cluj IT Cluster, Cluj Innovation City, PROIS NV) -Publications, analyses, expertise, impact assessments, documentation in partnership with partners from socio-economic environment - 4 projects funded by business community & UBB alumni (crowdfunding) - Partnerships for internships & student practice
UTCN	-Consolidate its position of advanced research & education university -Harness research results in techno- economic sector (conclude cooperation agreements with universities/firms) -achieved 10 patents	-Restructure study programs to increase graduate integration on labour market -Faculties' reluctance towards developing interdisciplinary study programs	-UTCN becomes founding member in 9 clusters: Cluj IT Cluster; Transylvania IT Cluster; Transylvania Furniture Cluster:	-Support entrepreneurshi p development program FASTTRAC entrepreneurshi p training actions by participating to the business accelerator SPHERIK and	-Good interaction with firms, clusters & organizations that support development of entrepreneurship -Supply training services to SME's -Collaboration with PA & socio- economic environment: <i>Cluj-</i> <i>European Youth Capital 2015, Cluj</i> <i>European Cultural Capital 2021,</i> PROIS NV events, <i>10 for Cluj</i> etc -Conclude partnerships for internships

	-CTKT activity: information service & IP consultancy via PATLIB; organized technological transfer events addressed to academia & private sector; promote & integrate research structures within networks that support transfer of R&D results towards market & clusters -Institutional orientation towards economic sector needs (local collaborations)	-Developed courses at the request of economic agents (e.g. EU-funded project management; Emergency & Resource Management)	Transylvania Energy Cluster; AGRO-Food- Ind Napoca; Electrotech nical Cluster ETREC; Association PRELMET Transylvania ; Association Advanced Materials, Micro and Nano Technologie s - ADMATECH	PRO-Invent events - Organize job fairs	-Channels of relation with socio- economic sector: Enterprise Europe Network (EEN) & Regional Centre for Promotion of Industrial Property Protection (PATLIB) -Implementation of institutional development projects funded from EU structural funds (6), including <i>"Innovative Development via Computerization of Urban Ecosystem"</i> (Cluj IT Cluster)
USAMV	No data	No data	No data	No data	No data
UMF	-EU-funded research projects -Promote interdisciplinary research fields & conclude project partnerships with institutes /firms	-Adapt education to ensure real opportunity of integrating graduates in socio-economic life	-	-Scientific manifestations (symposiums, congresses, education fairs) - UMF Days -Junior Summer University	-Mainly international collaborations
UAD	-Research projects in partnership with UBB and UTCN, Renault etc	-Extend educational offer (study programs in foreign languages -Revise disciplines structure/content to meet socio- economic demands -Continues EU- funded projects (improve higher education capacity, support socio-economic development & increase relevance for labour market	-	-Scientific & artistic manifestations	-Emphasize the need to consolidate interaction between university, socio-economic sector & public structures via EU-funded projects
AMGD	-Research laboratories -Centre of Research and Artistic Creation of Faculty of Musical Interpretation	-	-	-Scientific & artistic events: conferences, symposiums, festivals ( <i>Modern Cluj</i> ), competitions, courses, masterclasses, workshops	-Mainly international collaborations

Source: Strategic documents of UBB, UTCN, UMF, UAD, AMGD (2015)

# Table 6. Strategic planning frameworks

University	Mission, vision, and strategies	Objectives	Contribution to local community
UBB	Mission: "UBB is a comprehensive university of advanced research and education aiming towards training young people for contemporary society and for the future. Respecting the trinomen of the modern university - education, research and services addressed to the community, the general mission of the university is to generate and transfer knowledge." Vision: "UBB assumes a complex role to ensure a performant education, an innovative, avantgarde scientific research nationally and internationally, as well as supplying the community with specialized services." Goal: Ensure progress of human knowledge through learning and investigation with the purpose of innovation for improving functioning of the society. Strategies: Education, Scientific research, Relation with society and involvement in community	<ul> <li>-Ensure interdisciplinary education adapted to current challenges &amp; correlate curricula to meet socio-economic demands (also by monitoring insertion of students on labor market)</li> <li>-Support transversal competence development via internships &amp; professional practice</li> <li>-Ensure research contribution to institutional development by supporting performance centers &amp; innovative projects</li> <li>-Support knowledge transfer, patenting &amp; stimulate spinoff creation</li> <li>- Develop services, partnerships &amp; projects for/with local PA, NGOs &amp; business environment oriented towards solving major issues</li> <li>-Provide consultancy to firms, civil society &amp; PA</li> <li>-Increase level of public dissemination and use of research results</li> <li>-Participate in cluster structures and develop crowdfunding</li> <li>-Involve university in community</li> <li>-Correlate strategic &amp; operational objectives with available resources</li> </ul>	-Supplies the community with qualified graduates, development projects and solutions to major problems. -Contributes to local development from a social, economic, cultural, political point of view through involvement to community life, engagement in public sphere, identification of knowledge-based solutions, provision of consultancy & expertise to community.
UTCN	Mission: "Develop value in people, processes and products, pursuing achievement of a high quality advanced scientific education & research, in specific fields, in national and international context, addressing needs of the intellectual, professional and social development of the individual and the progress of the Romanian society." Vision: At process level: maturation, consolidation, and stability in performance. Strategies: Education, Research, Relation with socio-economic environment	<ul> <li>-Update educational plans in collaboration with socio-economic environment to meet labor market demands</li> <li>-Focus on practical character of education</li> <li>-Approach PhD. research themes in cooperation with socio-economic environment (identify needs, implement, and validate solutions, encourage patenting)</li> <li>-Assume an active role in relation with socio-economic environment for technological transfer, consultancy &amp; conduct common research projects</li> <li>-Develop RDI infrastructure (participate to project development of <i>Cluj Innovation City</i> &amp; TETAPOLIS)</li> <li>-Develop institutional, strategic, regulatory framework to consolidate relationship with socio-economic organizations for regional and society development: establish communication channels, organize events that contribute to development of collaboration relationships &amp; facilitate knowledge transfer, develop partnerships in services, participate in clusters &amp; other cooperative networks</li> <li>-Institutional development with organizations of socio-economic sector</li> </ul>	-Supply qualified human resource on labor market -Generate & disseminate knowledge via RDI, transferable into products, technologies, and solutions -Factor of economic growth and welfare -Involvement in community life
USAMV	Mission: "Provide higher education professional training and knowledge production through scientific research and innovation." Vision: "USAMV aims to be a pole of excellence and contribute to technological, cultural, social and economic development at local, regional, national and European level	-Correlate teaching with research, innovation, and service provision towards community -Promote cooperation at institutional level -Promote a modern, knowledge-centered educational process, in accordance with societal needs (reform curricula in accordance with labor market demands, improve problem-solving education and applied research, narrow specializations)	-Supply qualified human resource -Contribution to technological, cultural, social, and economic development

	through provision of qualitative	-Establish BDI partnerships to access ELI funding	
	services dialog with society and	- Develop applied research innovation &	
	adaptation to its needs "	technological transfer with private sector	
	Strategies: Scientific research	(operationalize communication platform between	
	innovation & technological transfer	USAMV-private sector to facilitate interaction	
	Management Didactic activity	conclude RDI & technological transfer	
	Infrastructure	nartnershins, canitalize research results via	
		entrepreneurial approach, promote tripartite	
		narthershins for professional training/research)	
		- Amplify interdisciplinary research	
		-Establish new research centers	
		-Increase educational RDI and technological	
		transfor capacity (also by participating to Smart	
		City Clui Innovation City & optropropourship)	
	Mission: Contribute to the	Improve quality and efficiency of education	Supply qualified
OWF	development of society through	training and research in accordance with	-Supply qualified
	aducation and research in the field of	domands (also surrisula)	numanresource
	modical sciences and the promotion of	Intercify relationship with social ocenomic sector	
	the universal values of culture	through more officient orientation towards	
	Strategies: Education Learning	innovation, knowledge transfer and discomination	
	Scientific recearch Students	(participation in <i>Chui Innovation Citul</i> )	
	Scientine research, Students	(participation in <i>Ciuj Innovation City</i> )	
		- Develop common, interdisciplinary, and	
		Ctimulate creativity innevation and	
		-stimulate creativity, innovation, and	
		Cuerentee norferment functioning of lunguided	
		-Guarantee performant functioning of knowledge	
		Ensure chills and competency required on labor	
		-Ensure skins and competency required on labor	
	Mission, "Drovido high quality	Encure quality of education & research contered	Supply qualified
UAD	Mission: Provide high-quality	- Ensure quality of education & research centered	-Supply qualified
	education to those who intend to	professional insertion of students on labor	
	arts and contribute to development of	professional insertion of students on labor	-improve socio-
	and contribute to development of	Blanning adaguately structuring and correlating	economic
	society through artistic creation and	-Plaining, adequately structuring and correlating	environment
	the community as well as hy	curricula in accordance with socio-economic	
	the community, as well as by		
	Stratogics: Education Scientific		
	research & artistic creation. Students	-Institutional conaboration.	
	research & artistic creation, students	-Increase student practice opportunities by	
		developing partnerships with local institutions and	
		husiness sector	
		-Consolidate and intensify collaboration with	
		nartners from economic sector academia art &	
		research institutions & local decision-making	
		factors via nartnershins	
AMGD	_		-
AWOD			

Source: Strategic planning frameworks of UBB, UTCN, USAMV, UMF, UAD (2016)

Table 7. Developments in 2016

Unive rsity	Establish partnerships in RDI	Update curricula in accordance with labour market demands	Establishment of new structures	Participation to events/ Networking	Increase collaboration with PA and socio-economic environment
UBB	-Consolidate applied research via OMCTT -Reorganize RDI activity to ensure academic competitiveness - obtained 2 patents & submitted 6 patent requests -23 research projects with third parties -17 RDI units provide innovative services to community (PSYTECH, MATRIX, SKYRA platforms)	-	-The Office of Management of Cognitive and Technological Transfer Scientific and Technological Advanced Research Institute – STAR UBB → ensure excellence and academic competitiveness (world-class university)	-Organize company presentations, seminars, thematic workshops with private firms -Mentoring program "Meet the Future You" in partnership with firms	-Periodical meetings with firms -Collaboration protocols concluded with private companies for student internship programs, jobs, student practice and private scholarships -Represented within local interest structures: Cluj IT Cluster ( <i>Cluj</i> <i>Innovation City</i> ), PROIS NV, Cluj- Cultural Capital 2021
UTCN	-Improve research management process -identify excellence fields & cooperation opportunities in interdisciplinary field -Harness research results in techno- economic sector via CKTT (Implement research projects in cooperation with economic agents) -7 patents obtained & submitted 9 patent requests	- Updating and correlating educational offer to labour market needs & demands	-Consultative Committee of UTCN-interface between university & socio-economic sector -3 new clusters: Transylvania Creative Industries Cluster, DRIFMAT (Distributed Research Infrastructure for Materials, Applications and Technologies of the Future) & ECO-Cluster	-Organize technological transfer events for academia & economic sector -Pro Invent 2016 - Academic Vs Private events & meetings -studies & market research	-Consolidate collaboration with academia & business -Technological transfer partnership agreements in progress: URBIVEL, MICROINV, PARTENERIC (Partnerships for Knowledge & Technology Transfer to Develop Specialized Integrated Circuits to Increase Energy Efficiency of New Generations of Vehicles) -Participation within cluster-type structures, establishing -Partnerships with local administration and professional associations -Organized student practice and internships to local private companies Common events & meetings with +50 organizations of socio- economic environment on updating and correlating educational offer with labour market demands, student practice & internships at local firms, technological & knowledge transfer by equipping labs, research & consultancy contracts, courses held by specialists from private sector
USAM V	-Develop RDI and technological transfer -Promote research- based education and problem-solving & better integrate research, innovation & services	Reform curricula based on annual evaluation of study programs & labour market dynamics	-Centre of Information and Technological Transfer -Became member in 4 cluster-type and R&D	-Organize scientific manifestation s: symposiums, specialized fairs	-Develop entrepreneurial management (stimulate initiatives that attract funding for institutional development (research, training, technological transfer projects) -Improve collaboration with academia & socio-economic

	-Multidisciplinary collaboration in research, services & technological transfer projects		associations: AGRO Food Ind NAPOCA Cluster, Transylvania Energy Cluster, Cluj IT Cluster (Cluj Innovation City)		environment via partnerships with universities/consortia, local authority & socio-economic sector (i.e. study programs, HR professional training, research & consultancy, analysis reports, strategy making) -Organize work meetings with economic agents
UMF	-30 research projects awarded via competition -2 patents -out of 172 research projects in progress, 1 with third parties & 1 transfer to economic agent -Promote interdisciplinary research fields -Support patenting activity by providing consultancy and financial aid	Update curricula in accordance with labour market dynamics & knowledge evolution in medicine -New specializations	-	-Scientific and manifestation s: conferences, seminars, congresses, symposiums - Interdisciplina ry summer school -Organize event Ideas of inventions	-Internationally oriented (Erasmus mobility) -Conclude partnership agreements with institutes/centres/firms for project competitions
UAD	-Stimulate research activity -Interdisciplinary research and artistic creation	-Analysing and permanently updating curricula in accordance with student professional development needs for integration on the labour market -Diversify & create new (practical) specializations -Analysis of knowledge and competences required for integration of students on the labour market	-	-28 events: exhibitions, conferences, workshops -Expo Marathon 2016 and UAD Graduates Exhibition (funded by City Hall and Local Council Cluj)	-Concluded 31 agreements and partnership declarations for projects conducted at local, regional and national level -Collaborate with firms in student practice/students' theses -Develop partnerships with autochthonous and foreign organizations -Maintain relationship with socio- economic environment via mass- media
AMG D	-Research & innovation fields: research and artistic value of vocal and instrumental creation, modern concepts of musical education, innovation in autochthonous compositional creation, researching and harnessing of zonal musical folklore and promoting it nationally and internationally, interdisciplinary connection between music & other knowledge fields, musical management	-Promote interdisciplinarity	-Centre of Information, Counselling & Career Orientation	-Scientific and artistic events: conferences, symposiums, festivals, courses, masterclasses	-Internationally-oriented collaborations (Erasmus) -Funding requests for artistic projects submitted to Local Council of Cluj-Napoca

and marketing,		
computerized and		
communication		
technologies in music,		
computer-assisted		
musical composition		

Source: Strategic documents of UBB, UTCN, USAMV, UMF, UAD, AMGD (2016)

# Table 8. Developments in 2017

Unive rsity	Establish partnerships in RDI	Update curricula in accordance with labour market demands	Establishme nt of new structures	Participation to events/ Networking	Increase collaboration with PA and socio- economic environment
UBB	-Consolidate excellence: Establish modern institutional mechanisms for HR involved in research: HR Award (HRS4R strategy), R-UBB Platform increased by 4 new smart specialisation units (in total 58) -UBB RDI units including strategic infrastructure elements enrolled in ERRIS for collaboration & participation in networks -4 new patents submitted by OMKTT -9 agreements, fellowship, innovative services with partners (NTT Data, EON, AEGON)	-Evaluating & permanently updating curricula -Open courses -Strategic objective of developing course portfolio on Lifelong learning (Academic writing, technical entrepreneurship, digital competence training for staff, workshop with business representatives to identify needs & create courses for business environment	-	-Company presentations, 22 thematic workshops -Mentoring program "Meet the Future You" - 5 career fairs -Pro Invent 2017, Open Innovation 2.0, Risky Business Student Challenge -Start-up your Ideal- innovative networking organized by STAR- UBB & OMKTT	-Fundraising: 66 private scholarships awarded by firms (NTT Data) -212 collaboration partnerships concluded: facilitate internships, jobs & student practice & private scholarships -Institutional development project: "Mutual learning workshop"-type meetings with representatives from business, local PA & civil society, teaching staff & students -Represented within local interest structures: PROIS NV, Cluj IT Cluster ( <i>Cluj</i> <i>Innovation City</i> ),
UTCN	-Support development of conceptual and product solutions via the program "Innovation Labs" -Improve management process of scientific research by adapting OPENERP application for projects, regulating research activity & developing support centre for H2020 projects -Develop information & consultancy services in IP, organize	Develop master programs in collaboration with socio-economic actors (Renault Technologies Romania, Robert Bosch, Porsche Engineering Romania, Dacia Automobiles) -Courses held by private specialists ("Autonomous driving: Technology, Dynamics & Control", organized by the Department of Automation of the Faculty of Automation and Computers from UTCN, in partnership with Robert Bosch)	- Department Relationship with Socio- Economic Environmen t (developme nt of institutional , strategic, regulatory framework)	-Cluj Innovation Days 2017 -workshops: "2 <sup>nd</sup> Workshop of International Network for Higher Education in Engineering -INHEE" hosted by UTCN - "PRIA Innovation Conference 2017", "Open Innovation 2.0 Conference 2017"	-Consolidate & develop relationship with socio- economic organisations for society development -Implement online platform "Smart Dreamers" (student employment opportunities) -Facilitate student practice & internships to local companies (Robert Bosch) -private scholarships awarded by private companies (Robert Bosch, Renault Technologies Romania)

	technological transfer events for academia & business, integrate research structures in networks -113 research & technological transfer contracts with business sector -7 patents obtained & submitted 11 new -Facilitate knowledge & technology transfer by equipping labs, research/consultancy contracts, courses	-WorkshopDigitalGoogle-digitaltrainingprogramorganizedinpartnershipwithUTCN(StudentEntrepreneurshipEntrepreneurshipSociety)-WorkshopfinancialeducationorganizedbyBCR inpartnershipwithUTCN-ProgramsEntrepreneurialUniversity&InnovationLabsdesignedtodevelopentrepreneurialeducation&trainingofstudentsforlabourmarket			-participation to cluster- type structures & events: Transylvania Creative Industries Cluster, Cluj IT Cluster, Transylvania IT Cluster by ARIES -Participate in associations & cooperation networks between academia & socio-economic environment -Participate in common local development projects -Develop <i>Companies'</i> <i>Podium</i> to facilitate collaboration between UTCN & business
USAM V	-Promote collaboration in multidisciplinary research, services & technological transfer	Reform curricula -Develop research-based & problem-solving education required by socio-economic environment -Better integrate students in applied research	-Student Entreprene urial Society – promote entreprene urship	-Organize mentoring & start- up projects sessions & business ideas -Scientific manifestations: symposiums, job fairs AGRIBUSINESSJOB	-Improve cooperation with academia & socio- economic environment by concluding partnerships with universities, consortia, PA, business -work meetings with economic agents & development of existing collaborations
UMF	-1 patent achieved -Promote interdisciplinary research fields: organize meetings & conclude partnerships with universities/institutes /firms for open competition projects	Ensure education adapted to student needs, providing real opportunity of integration into socio- economic life -Update curricula in accordance with profession dynamics & knowledge evolution	-	-Scientific manifestations, educational fairs, workshops -Pro Invent -UMF Days (thematic workshop)	-Internationally-oriented collaboration
UAD	-	-Project curricula in accordance with professional development needs for integration on the labour market -Analysis & update of curricula according to student feedback -New specializations -Interdisciplinary fields (art, technology & science achieve new dimensions on relationship between knowledge & artistic creation)	_	<ul> <li>-49 events:</li> <li>exhibitions,</li> <li>conferences,</li> <li>workshops</li> <li>-Expo Marathon</li> <li>2017 &amp; UAD</li> <li>Graduates</li> <li>Exhibition</li> <li>(institutionally</li> <li>funded by City Hall</li> <li>&amp; Local Council of</li> <li>Cluj-Napoca)</li> </ul>	-47 agreements & partnerships concluded for projects conducted at local, regional, national level
AMG D	-Development policy of AMGD prioritizes development of flexible research & artistic creation structures that ensures quality of professional training from interdisciplinary	-Modified statute of student artistic practice to optimize curricula -Increase quality of education by adding new study programs & improving curricula -ameliorate courses by analysing training &	-INTERART (Centre of Research & Artistic Creation) (Objective: organize artistic activity	-Scientific & artistic events: Conferences, symposiums, festivals, concerts, competitions, workshops, masterclasses	-Reconsolidate institutional image & extend partner network by concluding 14 partnerships with mass- media, extend bilateral agreements & increase Erasmus mobility
and transdisciplinary	development of abilities	within	-Establish	collaboration	
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perspective	required for integration	AMGD)	relationship	os with other	
-17 research labs	on labour market		faculties	& socio-	
	-harmonize study plans		economic	environment	
	with labour market		allows harn	essing student	
	demands		artistic	& scientific	
			practice (	organized by	
			AMGD via	partnerships	
			with other i	institutions)	

Source: Strategic documents of UBB, UTCN, USAMV, UMF, UAD, AMGD (2017)

### Table 9. Developments in 2018

Unive rsity	Establish partnerships in RDI	Update curricula in accordance with labour market demands	Establishme nt of new structures	Participation to events/ Networking	Increase collaboration with PA and socio-economic environment
UBB	-HRExcellenceinResearchdue toUBBinstitutionalengagementtowardsimprovingHRpolicymanagement-ConsolidateRDIbyestablishingmoderninstitutionalmechanisms:implementCHARTER&CODEforResearchers,projectTeaching & Learning in aHumboldtianUniversity-R-UBB Platform-obtained 5 patents, 9requests submitted-Identify& accessfunding for cognitive/technologicaltransfer,innovation&entrepreneurshipviaHubforDigitalInnovation	-Permanently update curricula -New study programs -Develop innovative competency & entrepreneurship via UBB4Society&Econo my program, subprogram Risky Business UBB Student Challenge -training program Optimization of Teaching & Learning in Humboldtian University	-Hub for Digital Innovation – Transylvani a IHUB 4.0.	-Pro Invent 2018, Cluj Innovation Days 2018 -Stimulate patenting under UBB Invent auspices: Innovative Networking (open sessions organized by STAR-UBB & OMKTT) -private sponsorships for workshops, conferences, promotion campaigns (Hungarian/German study lines) -scientific conference of UNIVERSITARIA Consortia PhD's -Research/Innovation program H2020: <i>Circular Economy &amp; Sustainable Development</i> <i>Opportunities</i> -Acceleration program C-Voucher <i>-Entrepreneurial</i> <i>Discovery</i> workshop in Robotics & Future Technologies	<ul> <li>-71 new collaboration protocols for student practice &amp; internships &amp; jobs</li> <li>-35 meetings with socio- economic actors &amp; 7 thematic workshops</li> <li>-8 partnerships concluded with consortia for project submission (i.e. ENDAVA, OPTIMA, Terra Analytic etc)</li> <li>-7 collaborations (contracts, research agreements, fellowship, innovative services) with third parties</li> <li>-Participation within clusters</li> <li>-Attract mentors from private sector</li> <li>-Openness towards community – social insertion (by organizing public events)</li> </ul>
UTCN	-Dynamize relationship with socio-economic field for technological transfer, consultancy & common projects -Increase RDI management, infrastructure (i.e. EXNANOMAT, CLOUDUT projects), excellence via CKTT	-Master programs in collaboration with private firms (i.e. Renault Technologies Romania, Robert Bosch, Porsche Engineering Romania) -Courses held by specialists from industrial sector (i.e.	-	-13 international conferences organized in UTCN: AQTR, MIKE, ROCHI, ROEDUNET, AMMA, MEDITECH etc) -Huawei ICT & Robotics Competition - <i>Demo Day</i> Workshop -Entrepreneurship & economic	-70% collaboration agreements more than in 2017, 30% more partnerships contracts -Common institutional development projects with socio-economic organizations & student practice, master programs etc -ANTREDOC- Entrepreneurial

	-Encourage cooperation in interdisciplinary fields by organizing meetings with universities, research institutes & socio-economic actors -288 research & technological transfer research projects -obtained 10 patents, submitted 11	Autonomous Driving: Technology, Dynamics, and Control in collaboration with Robert Bosch) Entrepreneurial University, Innovation Labs, HEINNOVATE programs -Develop multidisciplinary innovative projects from idea to product via knowledge transfer from experts from private sector to students		development in a changing community -Pro Invent 2018, Cluj Innovation Days 2018 & Cluj IT Days 2018 -support workshops with experts from socio-economic sector	competences and excellence in research in doctoral/postdoc programs & Start launched for successful career- in partnership with Robert Bosch
USAM V	-Boost consultancy, research & technological transfer potential (new products/services) -Update offer of research services & consultancy -Establish 2 technological transfer centres -EU funded projects: Knowledge Transfer Partnerships & student practice (HEADSTART) & jobs (LEARN2DO4ENTREPRE NEURSHI & Start-up Plus)	-Update of curricula & accreditation of new study programs	-	<ul> <li>organize scientific manifestations (i.e. 17<sup>th</sup> Symposium Perspective for 3<sup>rd</sup> Millennium Agriculture), workshops, seminars, fairs (i.e. RIUF, Pro Invent 2018, AGRARIA, GAUDEAMUS)</li> </ul>	-Optimize cooperation with socio-economic sector (authority, firms) via agreements -work meetings with economic agents -Pursue entrepreneurial management -Carry analyses/expertise for local environment -Diversify list of private partners that accept students for specialized practice & facilitate graduates' employment -Participate in local foreign business club's activity -Establish mentoring programs with private firms
UMF	-18 patents obtained -201 in-progress research projects (2 with third parties, 1 transfer towards economic agent) -Stimulate participation to scientific events to disseminate research results -Identify & promote interdisciplinary research fields	-Ensure education adapted to student needs for a proper integration in socio- economic life -Update curricula	-	-49 scientific manifestations -Workshops (i.e. Bayer), interactive seminars -UMF Days	-Cooperation in consortia with local (UBB, USAMV, UTCN) & international universities -Develop collaboration protocols with public & private institutions of health/research to increase employability -Conclude PPP for projects in open competitions -Periodical meetings Cluj IT Centre, MEDHACK
UAD	-Availability & interest of UAD towards high quality research made it become a reliable partner for research institutions & organizations (UBB, UTCN, Renault etc)	-Analysis & continuous update of curricula in accordance with student feedback for a better integration on labour market	-	35 scientific & artistic events: exhibitions, conferences, workshops -Expo Marathon 2018 & UAD Graduates Exhibition (both funded by City Hall & Local Council of Cluj- Napoca)	-40 agreements & partnership projects with public/private local stakeholders (i.e. Romanian Academy- Cluj branch; Cluj Radio; ORIGO Cultural Association; VISUAL ART/NEON Product/Art Museum & IDEOVATE – student practice)

AMG	Update plans ir	-	-22 scientific & artistic	-INTERART meetings with
D	accordance with		manifestations: 6	local stakeholders
D	labour market		conferences &	
	demand		symposiums, 16	
	-Focus on results		festivals	
	learning, scientific	:	-student contest of	
	research & higher		artistic management	
	education		in entrepreneurship	
	qualification		style	
	-Modify studen		-conferences,	
	practice statute to		masterclasses	
	improve			
	educational process			
	-New courses			
	-Ensure quality o	:		
	professional			
	training by focusing			
	on			
	interdisciplinarity			

Source: Strategic documents of UBB, UTCN, USAMV, UMF, UAD, AMGD (2018)

#### Table 10. Indicator "Professional insertion of students on the labour market"

University	2014	2015	2016	2017	2018
/Year					
UBB	Bachelor: 60.2%	Bachelor: 64.6%	Bachelor: 64, 01%	Bachelor: 65.4%	Bachelor: 62.9%
	Master: 80.6%	Master: 84%	Master: 83.30%	Master: 83.8%	Master: 79.5%
	PhD: 85.8%	PhD.: 85.7%	PhD.: 87.6%	PhD.: 90.2%	PhD.: 82%
UTCN	73%	77%	82%	81%	79%
USAMV	-	-	-	-	-
UMF	-	75.5 %	337	358	421
UAD	No data	No data	No data	No data	No data
AMGD	Bachelor:	Bachelor:	Bachelor:	Bachelor:	Bachelor:
(by level	90.16%/78%/83.8	73%/95%/83%	47.16%/75%/85%/85.29%	49%/81%/79%	50.84%/86.66%
of study/	%	Master: 94%,	Master:	Master:	Master:
faculty) *	Master:	77%/90%	84.21%/81.81%/100%/81.	77%/85%/89%	94.45%/63%/88%
	65.38%/100%/90.4		25%		
	%				

Source: strategic documents of UBB, UTCN, USAMV, UMF, UAD, AMGD

\* The professional insertion of students at AMGD is calculated based on level of study (Bachelor/Master) and faculty (Bachelor-level: Faculty of Musical Instruments & Theoretical Faculty; Master-level: Faculty of Musical Interpretation – Instruments & Faculty of Musical Interpretation – Canto and Musical Performing Arts & Theoretical Faculty).

Exceptions: In 2014, 2015 and 2017, 3 faculties at both bachelor and master levels were included in the analysis of professional insertion of students on the labour market, while in 2016, there were 4. In 2018, we observe that at bachelor-level, only 2 faculties were included in the analysis, while at master-level, 3.

#### 7.2. Appendix Local Government



#### Figure 8. Strategic dimensions

Source: adapted from Development Strategy of the Municipality of Cluj-Napoca



#### Figure 9. Strategic directions and objectives

Source: Development Strategy of the Municipality of Cluj-Napoca 2014-2020

Table 11.	Identification	of strategic	issues in	Clui-Napoca	's higher	education
TUDIC II.	lacification	or strutegie	155005 111	ciuj nupoco	Jingher	cuucution

No.	Identification of strategic issues in Higher Education
1.	Insufficient diversity, adaptation, and orientation of study programs towards labour market demand
2.	Insufficient valorisation of research through innovation and use of HR in relation to existing infrastructure and lack of real technological transfer towards businesses
3.	Lack of entrepreneurial culture and reluctance towards the formation of spin-offs, business incubators, insufficiently supported by the public administration
4.	Insufficient collaboration between academia, local public administration, and business sector by means of technological transfer, consultancy and expert service provision
5.	Insufficient inclusion in local interdisciplinary networks such as scientific and technological parks through RDI projects

Source: Development Strategy of the Municipality of Cluj-Napoca 2014-2020:890

#### Table 12. Local economic development strategy

Operational programs	Measures
Ameliorate quality of local governance	Reduce bureaucracy, increase transparency and efficiency
Increase efficiency and transparency of resource allocation and use	Performance and participatory budgeting, prioritization
Periodical consultation with business sector	Organize meetings/workshops/consultations with business sector; develop business-oriented services, create a TH-based consultative structure
Support Cluj entrepreneurs	TEAM Centre- develop an industrial logistic park to facilitate entrepreneur development and technological transfer between academia and business, support start-ups / business accelerators
Support R&D businesses	CREIC project and Cluj Innovation City
Support business sector	Create partnerships administration-financial institutions-economic agents to facilitate access to funding resources; apply incentives
Active partnership between administration-business sector- university	Increase training level of workforce and graduates
Support local/regional clustering initiatives	Conduct <i>cluster analysis</i> and <i>input/output analysis</i> studies to identify the clustering potential and support association initiatives

Source: Development Strategy of the Municipality of Cluj-Napoca 2014-2020

### Table 13. Strategic intentions of public administration towards collaboration

No.	Sphere of influence	Strategic intention to collaborate
1	Strategic planning	Execution of sectorial analyses carried out by community experts grouped in specialized
1.		weit
	methodology	WG'S
2.	Strategic directions	1. Assume a strategic partnership between community & universities in Cluj
		2. Stimulate partnerships between NGOs and other community actors
		3. Develop inclusive & participatory institutional mechanisms/instruments

		4. Develop monitoring systems coordinated by local authority in partnership with other
		stakeholders
		5. Increase economic competitiveness by:
		<ul> <li>Encouraging the clustering potential/initiatives of local economy</li> </ul>
		<ul> <li>Use new technologies as integral part of community development</li> </ul>
		-Stimulate innovation & technological transfer policies in public/private sectors
		-Stimulate creative industries
		-Develop an ICC-type economy. Structurally integrate research in local economic
		development
		6. Create an integrated vision and mechanisms for institutional cooperation in urban
		development and spatial planning
3.	Implementation,	Based on a partnership between public administration and community, bringing partners
	monitoring &	together at least 3 times/year
	evaluation	
	mechanisms	
4.	"Good Governance"	WG Participation & E-government gathered people from UBB & Cluj IT Cluster
	strategy	IT & E-governance strategy: Operational programs carried in partnership with external
		consultants (digital literacy, create integrated, open 11 infrastructure, adequate internal
		processes/procedures of PA for e-governance, implement communication infrastructure,
		update existent II infrastructure, decision-making transparency through e-governance,
<b>F</b>	"ICC City" Strates	euucale citizetis for use of e-governance services)
5.	ice city strategy	hotwoon mombers of LITCN. Cluip IT Cluster and Cluip Hub. Cluip IT Cluster along associations
		AF companies 6 universities and 11 public institutions. The surpose of this estimates
		45 companies, 6 universities and 11 public institutions. The purpose of this entity is to
		maior projects
		-Entrepreneurship & innovation in the community strategy: Development of PDP to
		generate a stable entrepreneurship ecosystem
6.	"Participatory	-Promote participatory democracy arenas via public meetings and cooperative economic
•	aovernance"	policies to improve public decision-making
	strategy	-Formulation & public problem management achieved via consultation networks and
		expert decision-making from NGOs
		-Operational programs: Participatory Budgeting, Participatory monitoring & evaluation of
		public projects, Participatory urbanism, Political collective education through e-
		governance process, Public policy, Social economy
		-Building business infrastructure: industrial parks & business incubators (TETAROM I, II, III,
		IV; CREIC and TEAM projects). Focus on partnership between local government – private
		companies.
7.	Urban development	1. Program for economic competitiveness (exhibition & congress centre, IT City, Business
	& spatial planning	Incubator)
		2. Program for SME's activities: equal conditions for production/services for large
		companies & SMEs as a basis for development of sustainable economy of Cluj
		3. Cooperation policy for spatial development between higher education, research &
		economic environment. Projects strengthen technological & scientific profile of the
		municipality, ensuring development partnership between academic & private sector in
		research and implementation investments in the field of non-polluting industries and
		A Believ for increasing the economic value of land and buildings. Strongthening an
		4. Policy for increasing the economic value of failur and buildings. Strengthening an
		of non-nolluting and business production activities and by using new forms of competition
		concertation and trade
8.	"Higher education"	Education:
•••	strategy	1. Connect education with economic system & labour market
	57	2. Extend educational offer as intensification of relationships with socio-economic
		environment
		Scientific research:
		-Promote excellence in research process at collective level of producing, disseminating &
		using knowledge
		-Establish priorities in scientific research in accordance with HR, infrastructure, tendency
		in science
		-Organize interdisciplinary centres and a Research & Sustainable Development Pole
		targeting the restructuring of scientific research activity
		-Finalize project for participation to scientific-industrial park activity

		-Establish partnerships with big companies towards harnessing excellence in research for
		renewal of Cluj industry
		-Establish university excellence centre network & integration in EU networks
		-Improve research management & harness research results via cognitive/ technology
		transfer activity
		-Organize Office for Creation and Innovation in Cluj university & stimulate patenting and
		technologies transferrable towards economy
		Harmoniza curricula in accordance with labour market demands & society development
		dynamics & European strategies
		-Improve communication between universities & business environment through <i>Clui</i>
		Innovation City (academic-industrial concentration), TEAM Centre, CREIC
		-Stimulate entrepreneurship in university by creating business incubators (spin offs) &
		consortia in partnership with private companies
		-Integrate Cluj universities in European networks via research centres & institutes
9.	"People and	Associativity, philanthropy & volunteering strategy: develop trust capital in relation to
	community"	community groups, use expertise through voluntary participation/paid specialized services
	strategy	towards community, increase social capital by creating an ambiance favourable to
		dialogue and participation between organizationsOperational program:
		1. Stimulate partnership between Cluj-based NGOs & other community actors
		2. Increase NGO impact in Key community sectors
		community development
		4.Create information & training system using community expertise from university and
		organizations
		Projects: support informal communication mechanisms & network/partnership formation;
		new partnerships in key fields (networked lateral governance) using NGO expertise with
		holistic approach on community problems;, stimulate development of new organisations,
		stimulate participation of NGO practitioners to post-university programs, use
		development opportunities by organizing conferences in Cluj to support organisations
		principles for operationalization of projects. Collaboration, transparency & participatory
10.	"Local economic	-Strategic directions:
10.	"Local economic development"	-Strategic directions: 1. Business-friendly city (openness of PA towards business environment, ameliorate local
10.	"Local economic development" strategy	-Strategic directions: 1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in
10.	"Local economic development" strategy	-Strategic directions: 1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase
10.	<i>"Local economic development"</i> strategy	-Strategic directions: 1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making
10.	<i>"Local economic development"</i> strategy	-Strategic directions: 1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making 2. Invest in HR to create competency (consolidate local human capital & increase socio-
10.	"Local economic development" strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate consolidate to create to competency)</li> </ul>
10.	"Local economic development" strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate economic agents to organize student practice)</li> <li>3. Attract, ratain &amp; support investments (Cluic hub o inpovation): development RDI &amp;</li> </ul>
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10.	<i>"Local economic development"</i> strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate economic agents to organize student practice)</li> <li>3.Attract, retain &amp; support investments (Cluj- hub o innovation): development RDI &amp; technological transfer capacity, facilitate strategic partnership between PA-regional authority-business environment-R&amp;D organisations, partnership with investors, business/financial sector to identify funding mechanisms for research, facilitate creation</li> </ul>
10.	<i>"Local economic development"</i> strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate economic agents to organize student practice)</li> <li>3.Attract, retain &amp; support investments (Cluj- hub o innovation): development RDI &amp; technological transfer capacity, facilitate strategic partnership between PA-regional authority-business environment-R&amp;D organisations, partnership with investors, business/financial sector to identify funding mechanisms for research, facilitate creation of research centres between university &amp; private companies, create know-how sharing</li> </ul>
10.	<i>"Local economic development"</i> strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate economic agents to organize student practice)</li> <li>3.Attract, retain &amp; support investments (Cluj- hub o innovation): development RDI &amp; technological transfer capacity, facilitate strategic partnership between PA-regional authority-business environment-R&amp;D organisations, partnership with investors, business/financial sector to identify funding mechanisms for research, facilitate creation of research centres between university &amp; private companies, create know-how sharing programs, increase clustering level of local economy (ICT), extend business infrastructure</li> </ul>
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10.	"Local economic development" strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate economic agents to organize student practice)</li> <li>3.Attract, retain &amp; support investments (Cluj- hub o innovation): development RDI &amp; technological transfer capacity, facilitate strategic partnership between PA-regional authority-business environment-R&amp;D organisations, partnership with investors, business/financial sector to identify funding mechanisms for research, facilitate creation of research centres between university &amp; private companies, create know-how sharing programs, increase clustering level of local economy (ICT), extend business infrastructure by supporting 1)start-ups via incubation programs, 2)business accelerators, 3)local/regional clustering initiatives, 4)create network of training &amp; expertise suppliers, 5)increase accessibility of business funding resources &amp; reduce bureaucracy for new business, 6)industrial parks, 7)partnerships PA-economic agents to facilitate access to funding resources, 8)identify &amp; apply direct/indirect incentives to increase investment, 9)support business involvement in social initiatives &amp; events</li> <li>Operational programs:</li> <li>Periodical consultation of business environment on local economic development issues</li> <li>Support program for Cluj entrepreneurs, exporters &amp; R&amp;D businesses</li> <li>Support program for clui entrepreneurs, exporters &amp; cleaning economic development issues</li> <li>Support program for clui enterpreneurs, exporters &amp; seminars, workshops, internships, student practice), stimulate common research projects</li></ul>
10.	"Local economic development" strategy	<ul> <li>-Strategic directions:</li> <li>1. Business-friendly city (openness of PA towards business environment, ameliorate local governance): develop custom services for business based on issues/needs reported in meetings/workshops, develop clujbuisness.ro website, service digitalisation, increase business environment level of involvement in decision-making</li> <li>2. Invest in HR to create competency (consolidate local human capital &amp; increase socio-economic welfare): strategic partnerships between academia – business (stimulate economic agents to organize student practice)</li> <li>3.Attract, retain &amp; support investments (Cluj- hub o innovation): development RDI &amp; technological transfer capacity, facilitate strategic partnership between PA-regional authority-business environment-R&amp;D organisations, partnership with investors, business/financial sector to identify funding mechanisms for research, facilitate creation of research centres between university &amp; private companies, create know-how sharing programs, increase clustering level of local economy (ICT), extend business infrastructure by supporting 1)start-ups via incubation programs, 2)business accelerators, 5)increase accessibility of business funding resources &amp; reduce bureaucracy for new business, 6)industrial parks, 7)partnerships PA-economic agents to facilitate access to funding resources, 8)identify &amp; apply direct/indirect incentives to increase investment, 9)support business involvement in social initiatives &amp; events</li> <li>Operational program for Cluj entrepreneurs, exporters &amp; R&amp;D businesses</li> <li>Support program for business environment on local economic development issues</li> <li>Support program for business environment</li> <li>Active partnership between PA-business environment–university by creating mechanisms involving business in the educational process (seminars, workshops, internships, student practice), stimulate common research projects between university &amp; businesses, and collaboration for curricula update, internships, student</li></ul>

	1. Increase administrative capacity by creating consultation & decision-making structures
	together with other local stakeholders
	2. Promote IC through poles/IC incubators (CREIC, Cluj Innovation City, Liberty Park) & new
	forms of labour (collaboration, co-working, social entrepreneurship, freelancing, DIY)
	3. Promote IC through events (organize fairs, exhibitions, conferences etc)
	4. Technological literacy
	5.Readiness for e-governance: create periodical consultation structures/sessions between
	PA, IC sector, civil society
	6.Intranet Cluj
	7. Creativity for Masses – Intranet Cluj: facilitate public presentation of
	technology/creative products
	8. Public Data
	9. Operationalize CREIC -Smarter City strategy
	10. Operationalize Living Labs system -Smarter City strategy
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Source: Development Strategy of Municipality of Cluj-Napoca 2014-2020

# 7.3. Appendix Societal Actors

# 7.3.1 Appendix Business Organisations

Table 14. Business sector anal	ysis in	Cluj-Napoca
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No.	Stakeholders	Mission statement, vision, and strategic objectives	Contribution to local community development
1.	AROBS Transylvania Software	Mission/vision/objectives are missing AROBS is a Romanian IT solution provider of ready-to-use systems and tailor-made software for industries such as automotive, IoT, life sciences or enterprise solutions based on the latest technologies.	Member of ARIES Transylvania, Transylvania IT Cluster & Cluj IT Cluster (not a member as of January 2016). AROBS R&D Dept. delivers software solutions to public and private sector. The innovative projects support education sector and <i>smart city</i> concepts via digitalisation. Internship programs for students
2.	NTT DATA ROMANIA	Vision: "Customer, vision and teamwork. Innovation and continuous improvement are at the core of NTT DATA's vision and strategy, which leads to a continuous portfolio expansion." NDR is an IT service provider and system integrator, delivering outsourcing services across diverse industries: public sector, automotive, banking, manufacturing etc	Member of ARIES Transylvania & Transylvania IT Cluster Top employer & shaper of IT talent. NTT Data Academy; Leading University collaborations with UBB (Sponsorships, research projects, hosting university classes and laboratories, providing necessary infrastructure); Postgraduate Training Program in Computer Science (curricula jointly designed by NTT Data and UBB); Learning and Development Programs ( <i>Talent Management Senior,</i> <i>Team Lead Development, Technical Guru</i> ). CSR report (2017) shows involvement in community and provision of financial support for education, sport, environment, social, culture, health. Collaboration with local universities and partners is designed to bridge the gap between academia & IT industry: 1. "Discover your passion in IT" -joint program developed by "For IT" Association & 10 software companies in Cluj, including NTT Data; 2. Practical internship Transylvania College; 3. Workshop "From the beginning of the career to success, HR management in the context of digitalisation" in collaboration with UBB: 4. "School

			differently" program; 5. UBB Bachelor Road Show; 6. Participation to UBB Opening of academic year 2017- 2018; 7. Free WIFI Union Square Cluj; 8. "10 for Cluj" Gala; 9. Graduation Day; 10. Cluj Press Gala; 11. " <i>Circle of Donors</i> " in collaboration with Alfa Group Association; 12. " <i>PATRIR &amp; PREVENTIS</i> " in collaboration with PREVENTIS Association; 13. Hosting scientific sessions; 14. UAD Fashion Design Gala; 15. Fusion project with UAD (art & business in a space dedicated to creativity); 16. Medical Elites Gala; 17. International Congress for Students and Young Dentists etc.
3.	NET BRINEL SA	Their poetry: "Bring Innovation. Enjoy life!At BRINEL we strongly believe in digitaltransformation. We implement innovativesolutions for effective work, for you to havemore time to enjoy life!"BRINEL is an IT provider of softwaresolutions, services and businessapplications for various sectors: publicadministration, education, finance andinsurance etc.	Founding member of ARIES Transylvania, Transylvania IT Cluster, TREC Cluster, Transylvania Lifestyle, Cluj IT Cluster (not a member as of January 2016); member of Chamber of Commerce and Industry Cluj. Collaboration with local universities: 1. URBIVEL project (Advanced Technologies for Smart Urban Electric Vehicles)– research in collaboration with UTCN; 2. Implementation of UBB online portal; 3. Implementation of UMF electronic bulletin board.
4.	ARTSOFT Consult	<ul> <li>Mission: "Our core mission is to provide top- class software development and related consulting and business process outsourcing services using cutting-edge technologies, robust development tools and client- oriented approaches"</li> <li>Objective: total customer satisfaction.</li> <li>AC is an IT provider of custom software development, consulting and IT &amp; BPO for various industries: public services, health, education, automotive, finance etc</li> </ul>	Founding member of Cluj IT Cluster & ARIES Transylvania Involvement in R&D projects Internship programs in collaboration with UTCN and UBB Organizes training workshops and seminars for employees Community involvement through partnerships & memberships, participation to various events.
5.	CODESPRING	<ul> <li>Vision: "Build great strategic partnerships."</li> <li>Mission: "Provide high-quality expertise and efficiency for full software development lifecycle"</li> <li>CODESPRING is an IT service provider of software development solutions in banking &amp; finance, education, services etc.</li> </ul>	Member of Cluj IT Cluster (not a member as of January 2016) Organizes Summer Internships and Mentoring programs
6.	FORTECH	Mission: "We aim at enabling our clients to gain competitive advantage with our software engineering expertise, team extension and capacity to scale. On this path, we rely on our people, processes and 3 guiding principles: reliability, respect and striving for excellence." FORTECH is an IT provider of software outsourcing for automotive, IoT, healthcare eCommerce financial sector	Member of ARIES Transylvania, Cluj IT Cluster & Transylvania IT Cluster Partnerships with academia (UBB, UTCN) Social purpose: committed to support the community and invest in education ( <i>"Discover your</i> <i>call in IT</i> program"), social & healthcare and sports
7.	SOFTWARE ITC CLUJ	Mission, vision, and objectives are missing SIC is an IT company specialized in computer technology, computer science and applied electronics (e-health, e-learning, e- business, e-administration etc).	Member of Cluj IT Cluster Tradition in research activity Collaboration with local companies, universities and public authority

8.	LIFE IS HARD	Mission: "We set out to become the most important partner of the Romanian business environment in the direction of digitizing SME's in order to generate the most efficient management processes" Objective: Improve the life of people, business environment and communities LIH is an IT company specialized in development and implementation of applications in healthcare, IoT, finance, enterprise mobility, business automation.	Member of Cluj IT Cluster, Transylvania IT Cluster & ARIES Transylvania Community involvement: consultancy, mentoring. Support for start-ups Smart city projects (City apps)
9.	NORDLOGIC SOFTWARE	<ul> <li>Mission: "Your ideas, our mission. We craft, we build, and we love what we do."</li> <li>Their poetry: "Partnering with our customers gives us the opportunity to express our passion for technology and innovation while delivering beyond expectations"</li> <li>Goal: "Making our customers happy."</li> <li>NORDLOGIC is an IT service provider of custom software and product development, software architecture, quality assurance, project management, business analysis, maintenance and support for finance, IT, NGOs, education, healthcare, services, manufacturing etc</li> </ul>	Member of Cluj IT Cluster Contribution to community development by providing internship programs for students
10.	ENDAVA	Purpose:"We exist to create an environment and a culture that breeds success by caring for our customers as individuals and enabling our people to be the best that they can be."Their poetry:"We don't simply deliver projects. We work closely with you to understand your challenges, the demands the market is making on your organisation and design, build, operate and support the secure, scalable platforms that position you as a disruptor within the marketplace."ENDAVA is an IT service provider of digital transformation consultancy, software development and automation solutions in various industries: finance, insurance, healthcare, telecommunications, media etc.	Member of Cluj IT Cluster Contribution to community development through Internship and graduate programs and schools, student competitions and events for various disciplines in partnership with technical universities
11.	ARXIA	Mission, vision, and objectives are missing ARXIA is an IT system software provider of TYPO3 projects that are widely used by universities, public administration, and private companies	Member of ARIES Transylvania & Cluj IT Cluster Fosters development of local community by organizing annual TYPO3 conference in Cluj-Napoca, facilitating Code Sprints, hosting annual TYPO3 Summer Camp.
12.	AVITECH	Their poetry: "We are constantly working to improve our company's offerings - competencies, quality of services, internal processes, so that we can offer the most innovative and competitive solutions, in	Member of Cluj IT Cluster Creation of R&D Dept. (2014) designed to increase competency and design in-house solutions in modern fields: energy efficiency, intelligent transport systems, <i>smart city</i> , IoT.

		response to challenges and needs of the	Close collaborative relationships on research themes
		clients. We commit ourselves to fulfil our	with local universities in Cluj-Napoca
		responsibilities with great rigor and to carry	EU-funded research projects
		out our activity, always, with integrity.	Implemented projects for USAMV, UBB
		AVITECH is an integrator of professional	
		solutions of installations, automation,	
		audio-video security, and IT&C.	
13.	EFECT.ro	Mission, vision, and objectives are missing	Member of Cluj IT Cluster
		EFECT is an IT service provider of virtual	Clui-Napoca
		servers, IT maintenance, data backup,	
		monitoring systems etc	
14.	LOLA TECH	Mission: "Our mission is to build brilliant	Member of ARIES Transylvania & Transylvania IT
	KUWANIA	deliver profit inspiration and efficiencies	Cluster
		long into the future"	
		LT is an IT software service provider of web	
		solutions and enterprise-level software	
15.	ONE IT	<b>Mission:</b> "We aim to understand the real	Member of Transvlvania IT Cluster & ARIES
		needs of each client and to develop	, Transylvania
		sustainable partnerships, based on trust and	Focus on technological innovation for business
		professionalism, which will result in	development and regional community development
		result of using IT technology to the highest	Clui-Napoca, including UTCN, TETAROM, Clui County
		quality standard."	Council etc
		ONE IT is an IT product and service provider	
		of system integrated solutions for industry,	
16.	AGORA	<b>Vision:</b> <i>"We believe in a world of harmony</i>	Member of ARIES Transylvania & Transylvania IT
	CONSULTING	and abundance, with happy, competent and	Cluster
		authentic people. We see people and	AGORA Management Academy program
		companies as a balanced combination in steel structure hig heart and wide smile "	AGORA Internship program for students
		steer structure, big near and while sinne.	
		Mission: "How do we get to live in the world	
		we believe in? We put our talent and	
		experience in the service of those we work with we are partners of good and had	
		weather, we put competence and well-done	
		work before money. We work with a	
		competent team that has a 360° perspective	
		on business. We know both the client's and consultant's position and we know from	
		experience the operational or managerial	
		challenges of organizations."	
		AC is a provider of strategic management	
		organizational transformation, HR &	
		recruitment, managerial coaching, career	
4=		counselling, leadership, and management).	
17.	PIFECH PLUS	Ineir poetry: "We build. We innovate. We	Member of ARIES Transylvania, Cluj IT Cluster and
		needs."	ACADEMY+PLUS program launched in 2014 is a CSR
			education project (peer-to-peer programming
		PP is an IT service provider of software	school), having the mission to "form tomorrow's IT
		solutions and digital transformation	specialists through a free study-program with practical modules"
		automotive, HR and education, public	

		administration, banking, healthcare, luxury, retail, ecommerce etc.	Established 1 spinoff (YOUNIFY) and 2 start-ups (Parking Plus and Fast Order).
18.	OPTIMA GROUP	Their poetry: "We aim to be an innovative company and to offer people behind it the opportunity to develop their ideas in an environment that inspires and motivates them. An environment characterized by competence, cooperation, and progress. We call this "the spirit of the organization." OPTIMA is a provider of software solutions and inventory services for organizations in the public sector, retail, finance, etc.	Member of Cluj IT Cluster
19.	HYPERMEDIA	Mission: "Our mission is to help you turning your business into success." Their poetry: "Bring your ideas to life." HYPERMEDIA is an IT service provider of software development and IT consultancy, focusing on digital transformation, IoT, video collaboration tools, multimedia interactive systems, cloud computing, big data, mobile development and web platforms. HYPERMEDIA delivers services in the field of telecommunications, business, education, media etc.	Member of ARIES Transylvania & Cluj IT Cluster Strong collaboration with university in R&D projects: 1. Technological development based on advanced research (prototypes, pilot systems, technological transfer); 2. Fundamental and applied research on interactive systems and virtual collaboration (e- learning, e-business, e-health); 3. HYPERCLOUD-EU- funded project focusing on developing innovative video collaboration technology and its application in education and training, healthcare, business. HYPERMEDIA Internship program Products: 1. HYPERTALK CAAS (collaboration as a service) is a customized service for business entities, universities and public institutions; 2. HYPEREDU & HYPERTRAINING (provides interactive educational services: virtual library, blended assessment, problem and project-based learning, virtual classroom, interactive tutorial, virtual laboratory, individual study support); 3. HYPERTALK WEBMEETING; 4. HYPERTALK WEBINAR; 5. HYPERTALK HELPDESK.
20.	INTERTECHNICA	Vision:" INTERTECHNICA envisions a business that focuses on creating software business solutions that address the needs of the customers at the individual level. Processes and technologies must support business at the personal level so we will be able to ensure long-term profitable collaboration models with our customers." Mission: "With a customer centric attitude and an innovative approach to IT challenges, INTERTECHNICA delivers solutions that will maximize the customer's strategic business advantages. Our work allows our customers to stay totally focused on their core business while we take care of their IT needs." INTERTECHNICA is an IT service provider of software development/business analysis.	Member of Cluj IT Cluster INTERTECHNICA provides innovative e-learning infrastructure for a major internship program (PRACT-IT) in collaboration with 40 companies, UBB and Cluj IT Cluster E-learning system platform implemented also at UTCN
21.	ETA2U	<ul> <li>Vision: "To become the preferred supplier of business customers in Romania."</li> <li>Mission: "Having customer orientation as priority, ETA2U undertakes the mission to supply professional IT products and services as integrated solutions of hiah auality.</li> </ul>	Member of Cluj IT Cluster ETA2U Training Centre Division offers a wide range of IT courses ETA2U Innovation Division (goal: bring new solutions into society through research and innovation) participates in joint projects on themes such as IoT, smart cities, smart mobility, industry etc. and

		adapted to the customer's needs, delivered	organizes technology transfer activities through its
		in time and at the most competitive prices."	Centre for Technology Transfer (CTT)
			ETA20 Community Support Division provides job
		ETA20 is an TT system integrator and	practice opportunities for students and support with
		provider of software solutions for local	degree thesis.
		authorities, automotive, education,	
		research, nealthcare, banks and financial	
22	417014	Institutions, energy, and public utility etc.	Marshan of ADIEC Transitions in Q. Christer Churchen
22.	ALTOW	Goal: Start a company that would provide	Nember of ARIES Transvivania & Cluj II Cluster
		specialized software testing services for	Delivers courses for Cluj II Cluster members
		davancea evaluation of client's software.	Provides workshops, tarks at conferences etc
		ALTOM is a software company that provides	
		testing for various indicators: performance	
		usability accessibility compatibility	
		security testing, automation development.	
23.	CENTRUL DE	<b>Mission</b> : "We want to become a long-term.	Member of ARIES Transylvania and Transylvania IT
	INFORMATICA	reliable partner for our clients, offering a	Cluster
		wide range of training and certification	Contributes to community development through
		services as well as software solutions at high	training & competence acquisition
		standards and appropriate costs. Our	(INFOCERTIFICATE application, Testing Centres
		solutions are tailor-made and adapted to	Prometric, Pearson VUE and Android ATC).
		your requirements to ensure satisfaction	Assists public institutions to improve their
		and a good business development."	performance by using software solutions (i.e. ALEX
			application helps public authority to improve
		<b>Objective</b> : "From the desire to provide	exploitation of budgetary resources)
		qualitative and updated services, in	
		accordance with current market demands,	
		our objective is to establish partnerships	
		and collaborations with nationally and	
		globally renowned companies to ensure the	
		services they need by using the latest	
		technologies."	
		CDL is an IT service provider of software	
		solutions training and cortifications for	
		nublic and private organisations	
24.	AVANGARDF	Mission: "We're helning husinesses	Member of ARIES Transvivania & Transvivania IT
	SOFTWARE	embrace the digital gae by creating reliable	Cluster
		software, crafted to their particular needs	Creation of CITY VR TOUR. a virtual reality
		and plans. Having the arowth mindset at the	application implemented in Clui-Napoca and
		core of our business, we empower our	currently used by City Hall
		employees to deliver outstanding solutions	Provides solutions and tools for advanced learning
		and excellent customer experience. We	that enhance and support educational environment.
		strive to bring innovation and excellence to	
		our customers by continuously evolving and	
		improving in everything we do."	
		AS is an IT service provider of software	
		development and consultancy in e-health	
		education, automotive, travel, games etc.	

Source: websites of software organizations: www.arobs.com; https://ro.nttdata.com/; www.brinel.ro; www.artsoftconsult.ro; www.codespring.ro; www.fortech.ro; www.Softwareitccluj.ro; www.lifeishard.ro; www.nordlogic.com; www.endava.com; www.arxia.com; www.avitech.com; www.efect.ro; www.lola.tech; www.one-it.ro; www.agoraconsulting.ro; www.pitechplus.com; www.optima.ro; www.hpm.ro; www.intertechnica.com; www.eta2u.ro; www.altom.com; www.centruldeinformatica.ro; www.avangarde-software.com

# 7.3.2 Appendix NGO sector

No.	Stakeholders	Mission statement, vision and strategic	Contribution to local community development
		objectives	
1.	ARIES Transylvania (Romanian Association for Electronic Industry and Software)	Mission: "Promote the professional and commercial interests of members in the Northwest region of Transylvania by strengthening their representativeness and authority at national level. [] we aim to accelerate the work of ARIES Transylvania in this geographic area, to get involved in IT sector related activities, to establish collaboration between specialized companies, to promote local interests nationally and internationally, to access funds available under various funding programs" Objectives: (1) contribute to strengthening digital society by promoting the role of ICT (2) represent the common interest of the ICT community in interactions with other stakeholders With a wide-ranging network encompassing more than 85 members, ARIES Transylvania aggregates the public and private spheres, gathering in the same arena universities, research institutes, local government, private companies, catalyst organisations, and innovation entities. The motivation behind joining forces might be the willingness to improve local governance by intensifying R&D and knowledge transfer, sharing best practices, and generating enhanced operational and lobby capacity of the ICT community in public decision-making. The synergistic interactions would finally increase ICT- based strategic development.	<ul> <li>-Association has a high-profile activity that supports business development &amp; entrepreneurship, contributes to policymaking and implementation, creates strategic partnerships, collaborates with academia in various fields of interest, facilitates access to training &amp; specialization programs, provides relevant information on EU-funding opportunities, participates to &amp; organizes professional events such as conferences, workshops, debates, forums, seminars</li> <li>-Promotes regional clustering potential by actively contributing to the development path of innovation-based clusters (establishment of Transylvania IT Cluster by ARIES Transylvania strongly supports this argument)</li> <li>-Increased participation to high-ranked trade fairs and events between 2014-2018 together with other partners:</li> <li>1.Cluj Innovation Days 2014</li> <li>2.Mobile World Congress 2015 (Barcelona, Spain) 3.CEBIT 2015/2017 (Hannover, Germany)</li> <li>4.Cluj Tech Industry Awards 2016</li> <li>5. Hannover MESSE 2017</li> <li>6.Hacking Health HACKATHON 2017 (Bucharest)</li> <li>7.Digital Romania International Forum II – "Startups in 4.0 Industries" 2017 (Bucharest)</li> <li>8.Smart City Forum (Cluj-Napoca) 9. Transylvania Tech Industries" 2017 (Bucharest)</li> <li>8.Smart City Forum (Cluj-Napoca) 9. Transylvania Centre)</li> <li>10.Transylvania MEGAHACK @ Cluj Hub</li> <li>11.EU-Asia Gateway 2018 – The 4<sup>th</sup> Transylvania International Clusters Conference</li> <li>-Projects completed between 2014-2018 (reflect the efforts to increase partnerships through collaboration):</li> <li>1.Establishing Cluster of Creative Industries Transylvania</li> <li>2.Project to win the title of ICLUJ-NAPOCA – European Capital of Innovation</li> <li>3.Idea Competition (Hackathon) – Solutions for Cluj Smart City</li> <li>TECH Transylvania</li> <li>5.Education and Awareness of IT Equipment Manufacturers and Users in Environmental Protection Information Relay Centre</li> <l< th=""></l<></ul>
			-Ongoing projects (majority funded from Horizon 2020 funding):

Table 15. NGO sector analysis in Cluj-Napoca

			<ul> <li>1.Innovative Digitalised Transylvania – An Excellence Model Through Development</li> <li>2.E-delivery Access Point</li> <li>3.ROCK-Regeneration and Optimisation of Cultural Heritage in Creative &amp; Knowledge Cities</li> <li>4.Becomes Consultant Organisation in Neptune Project (2017)</li> <li>5.Copernicus Relay</li> <li>6.EO CLIMLAB</li> <li>7.BISNET Transylvania – Enterprise Europe Network</li> <li>8.Appointed Regional Contact Point for Horizon 2020 Tool for SME's (2014)</li> </ul>
2.	CIVITAS	<b>Mission</b> : "To increase the development	-Foundation's activity inheres in addressing issues
	Foundation for	building success models that trigger well-	-Organisation is voluntarily guided by the concept
	<b>Civil Society</b>	being".	of "community" with a very enlightening
		Vision: "Our vision is that people in local communities can improve their daily lives	approach that asserts the need to enhance the level of participation and collaboration between
		by getting involved in innovative and	local community stakeholders to effectively reach
		sustainable social impact programs. We believe in the power of communities and	societal common goals
		civic involvement. We also believe that	Civitas include, but are not limited to the
		citizens and local administration must	following projects:
		into projects, plans into reality and	enterprises", launch the online community
		development opportunities into	platform ongcluj.ro dedicated to civil society
		objectives:	2015: "SOLIDART Changemakers Festival" 2015-2016: "Active citizenship for good
		(1) developing administrative capacity	transparent local governance"
		(2) community development & good	2015-2017: "Agricultural High schools- Local Hubs small and medium sized farms development".
		(3) civil society empowerment	"Competencies for Agencies for Sustainable Site
		(4) social economy & entrepreneurship	Conversion" 2017: "Supporting Local Action Groups (LAG) in
			Building and Implementing their Local
		Civitas Foundation is one of the long-	Development Strategies", "ONG Fest Civic Break
		Napoca. With more than 25 years of	Cluj-Napoca 2017-2019: "Facilitators Network for the
		activity devoted to sustainable	Development of Cooperative Organisations –
		development projects designed to improve the life of the local community.	COOP NET" 2018-2021: "Start-up @ CENTRU". "New
		it contributed greatly to shaping the	Entrepreneurs" (Civitas, Projects)
		society and reforming public	-Despite project implementation is not
			bring together numerous participants interested
			in fostering community development, including
			of the private sector alike.
3.	Cluj IT Cluster	Vision: "Cluj IT Cluster envisions to	-Community instruments designed for sharing
		become one of the most credible suppliers from Central and Eastern	resources, knowledge, or project management, in alignment with EU strategic agenda:
		Europe for innovative services and	1.Community knowledge platform
		products, as well as for organisational support systems, with the majority of its	<u>community.clujit.ro:</u> tacilitates communication, collaboration & interaction between members
		members able to be competitive on	enabling collaborative work and disseminating
		national and international markets."	information about activities and projects carried
		innovation in processes, design of	sponsorship requests or partnership proposals)
		products and services to increase	2.Platform that facilitates sharing of HR on
		competitiveness on international level, creation of a partnership culture based on	temporary or project basis between members enabling them to foster & stimulate collaboration
		trust and dependability, promotion of the	

<ul> <li>4. Transyvani T</li> <li>Mission: "To meet the needs of the 'I manifest and structural participating paradinating participating partingating participating participatin</li></ul>			Romanian IT market, founding lasting	3. Project Management Office Platform (tool for
<ul> <li>Transylvania T Custer by ARIES</li> <li>Transylva</li></ul>			public-private partnerships for the	project & team management)
<ul> <li>and of the society in general."         <ul> <li>Objectives:</li></ul></li></ul>			mutual benefit of the cluster's members	-Projects aimed at enhancing competitiveness &
<ul> <li>4. Transylvania IT Cluster by ARIES</li> <li>Mission: "To meet the needs of the drawna transite to correct the forwards tructure in a submitter to provide training services of the drawna to the previous section at amount of the previous section at amount of the previous section at amount in the previous section at amount of the previous section at amount in the previous section at amount participating competitivenes of the ecranalis of the transitional in the previous section at amount participating competitive section at amount in the break of the error in the section in Rouse at amount in the previous section at amount participating competitive section at amount in the break of the error in the previous section at amount participating competitive section at amount in the break of the error in the section in Rouse at intersect of Rouse and at the delexing of the error in the resources of the error in the resources in the relation in the previous section at amount participating competitive section at amount and the delexing of the error in the resources of the advanced technology. Activity: "Optimizing communication in the field."</li> <li>4. Transylvania IT Cluster is an antity founded by ARIES training services in numerative and antitude and advanced technologies according to new trenship. Transylvania IT Cluster is an antity is sport for innovation services in various a submit development of a new at an outpart in galance and antituting and the section in Rouse and anterprementalization in the field."</li> <li>Activity: Wo providing inneutation in the field."</li> <li>Activity wo providing interanization in field and an interpretere involute the</li></ul>			and of the society in general."	number of strategic partnerships in the IT
<ul> <li>1) consolidate position on the market and stimulate exposito by designed innovative products</li> <li>(2) support for the industry (2) support for the industry (3) stimulate research &amp; development (4) develop common resources (5) increase involvement of Cui international projectly-base (5) increase involvement of Cui international consultation the entry of Cui international consultation international catalyst organisations that endeavour catalyst organisations that endeavour improve the condition of local community in which members are embedded by promoting innovation, boosting competitiveness off Tsecton is Acabilishment of Clui Innovation Cliv (high- technology business complex designed to consulty in which the Cliv Hall of Cui-hapoca, business partners)</li> <li><b>1</b> Transylvania IT</li> <li>Mission: 'To meet the needs of the Ti- among participating members</li> <li><b>4.</b> Transylvania IT</li> <li>Mission: 'To meet the needs of the Ti- engenging cluster in raining huma resources by strengthenia; of erring cluster in raining huma resources by strengthenia; flow within and auside the cluster, offering training errorizes in advanced technologies carcering to new training the field.''</li> <li>Mission: 'To meet the needs of the Ti- engenging cluster in raining huma resources of the advanced itechnology and strengthen its institutional congerty.'' Activity: 'Dytiming communication the field.''</li> <li>Mission: 'To meet the needs of the training &amp; international activity applicability conducting and strengthen its institutional congerty.'' Activity: 'Dytiming communication the field.''</li> <li>Mission: 'To meet t</li></ul>			Objectives:	industry:
<ul> <li>and stimulate exports by designing innovation ecosystem of Cluij IT through smart specialisation towards structural transformation appecialisation of the structural transformation appecialisation structure, create transformation appecialisation structure, create stansformation structure, appecialisation structure, appecialisation structure, create stansformation appecialisation structure, create stansformation structure, appecialisation structure, appec</li></ul>			(1) consolidate position on the market	1.CRONOS (designed to strengthen the
<ul> <li>Innovative products         <ul> <li>(2) support for the industry</li></ul></li></ul>			and stimulate exports by designing	innovation ecosystem of Cluj IT through smart
<ul> <li>(2) support for the industry         <ul> <li>(3) stimulate research &amp; development (4)</li> <li>(4) intrease involvement of Cuj investing in human resources</li> <li>(5) investing in human resources</li> <li>(6) increase involvement of Cuj investing in human resources</li> <li>(7) investing in human resources</li> <li>(8) investing in human resources</li> <li>(9) investing in human resources</li> <li>(10) investing in human resources</li> <li>(11) investing in human resources</li> <li>(12) investing in human resources</li> <li>(11) investing in human resources</li> <li>(12) investing in human resources</li> <li>(12) investing in human resources</li> <li>(12) investing in human resources</li></ul></li></ul>			innovative products	specialisation towards structural transformation
<ul> <li>(3) stimulate research &amp; development (4) develop common resources (5) investing in human resources (6) increase involvement of Cluj IT members in large international projects by expanding the network of partners Cluj IT is a cluster-based entity founded in 2012 Consisting of 45 companies of Cluj IT Cluster in collaboration with other stakeholders (designed to consolidate the local IT community in which members and catalyst organisations that endeavoir membedded by promoting innovation, boosting competitiveness of IT sector and building sustainable public privide training systement of technology &amp; innovation- based on the technology based sectors and the construction of intellectual capital for development of technology &amp; innovation- based in the previous section sectors studied in the previous section and intervention of the companies studied in the previous section and increased and promoting the image of the custer, <b>Cluster by ARIES</b></li> <li><b>1 Tansylvania IT</b> <b>Cluster by ARIES</b></li> <li><b>1 Mision:</b> "To meet the needs of the TT market of having available and improved anong participating members</li> <li><b>4. Transylvania IT</b> <b>Cluster by ARIES</b></li> <li><b>1 Mission:</b> "To meet the needs of the TT market of having available and improved and promoting the image of the custer," <i>Objective:</i> "Development of a strengthening and promoting the image of the custer," <i>offering training services in advanced technologies, training of professen a dvanced</i> technology and strengthen its institutional capacity." Activity: "Optimizing communication fow within and a uside the cluster, <i>offering training services in advanced technologies, training of professen a dvanced</i> technologies, training of professen and unsprove the innovided in the objection activity by providing internalization fow within and auside the cluster, <i>offering training services</i> in advanced technologies, training of professen and the the involvedieg in advanced technologies according to new trends in the field."</li> <li>Tran</li></ul>			(2) support for the industry	and intellectual property-based
<ul> <li>Transylvania IT</li> <li>Cluster by ARIES</li> <li>Transylvania IT</li> <l< th=""><th></th><th></th><th>(3) stimulate research &amp; development (4)</th><th>internationalization of the IT sector in Romania)</th></l<></ul>			(3) stimulate research & development (4)	internationalization of the IT sector in Romania)
<ul> <li>(5) investing in human resources</li> <li>(6) increase involvement of Cluj IT</li> <li>stategic relationships opportunities by expanding the network of partners</li> <li>by expanding the network of partners</li> <li>Cluj IT is a cluster-based entity founded in 2012 consisting of 45 companies</li> <li>constitution of local catalyst organisations that endeavoir</li> <li>detrogeneration of intellectual capital community in which members are embedded by promoting innovation, boosting competitiveness of IT sector and building sustainable public privile</li> <li>detrogeneration of intellectual capital for development of technology &amp; innovation- based products)</li> <li>Sinternships @ Cluj IT (framework for relevant work experimed for Adove students)</li> <li>detrogeneration of adove students)</li> <li>detrogeneration of adove students)</li> <li>detrogeneration of cluster.<sup>1</sup></li> <li>Cluster by ARIES</li> <li>Mission: 'To meet the needs of the IT market of having ovaliable and improved competent resources by strengthening and promoting the image of the cluster."</li> <li>Objective: 'Development of a new emerging cluster in training human resources for the advanced technology and strengthen its strutual capacitary for within and outside the cluster,'' offering training services in advanced technologies according to new trends in the field."</li> <li>Transylvania IT Cluster is an entity founded by ARIES Transylvania in 2013 based on principles of Quadrupe Hei subsequently expanded tis portionia activity by provides rianing conditions, promoting professional &amp; sustainable development. Knowledge 3. Information Relay Centre 3. Unproving working conditions, promoting professional &amp; sustainable development. Knowledge 3. Suby Nanaia Science Model Througe Development.</li> <li>Cluster Dravistic Study and services in various support for innovation services in various fields ranging from consustancy.</li> <li>Subsequently expanded its portioni acti</li></ul>			develop common resources	2.IT Executives Club (ensures development of
<ul> <li>(6) increase involvement of Cluj IT</li> <li>facilitating interaction &amp; communication</li> <li>betwers in arge interactional projects</li> <li>by expanding the network of partners</li> <li>by expanding the network of partners</li> <li>Cluj IT is a cluster-based entity founded in</li> <li>2012 consisting of 45 companies, 6</li> <li>universities, 11 public institutions dar and angements with national &amp; international business partners)</li> <li>universities, 12 public institutions dar and catalyst organisations that endeavour to improve the condition of local</li> <li>establishment of Cluj Innovation City (high-technology business complex designed to consolidate the local IT community in which members are mobedded by promoting innovation, boosting competitiveness of IT sector and building sustainable public private show that the City Hall of Clu/Napoca.</li> <li>UBB, UTCN and most of the companies, 5:</li> <li>UBB, UTCN and most of the companies, studied in the previous section are among participating members</li> <li>among participating members</li> <li>differing training services in deliver.</li> <li>differing training services in davanced technology: and strengthen its institutional capacity."</li> <li>A transylvania IT Cluster is an entity founded in sprover and strengthen its institutional capacity."</li> <li>A transylvania IT Cluster is an entity founded in the objective: "Development of a new menerging cluster in training to moverting transitional capacity."</li> <li>A transylvania IT Cluster is an entity founded in sprover and strengting custers in davanced technologies. training &amp; institutional capacity."</li> <li>A transylvania IT Cluster is an entity founded in the objective "Development of the chorage scaces ing turvas.</li> <li>Contributes greatly to the creation of strategic partnerships. Porosonal in the field."</li> <li>Transylvania IT Cluster is an entity founded in the objective intraining barotices of cl</li></ul>			(5) investing in human resources	strategic relationships opportunities by
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<ul> <li>Cluji Ti sa cluster-based entity founded in 2012 consisting of 45 companies, 6 universities, 11 public institutions and catalyst organisations that endeavour to improve the condition of local community in which members are embedded by promoting innovation, boosting competitiveness of IT sector and building sustainable public private studied in the previous section are among participating members</li> <li>Transylvania IT Cluster by ARIES</li> <li>Mission: "To meet the needs of the Cluster and promoting the image of the cluster," Opicitive: "Development of a new emerging cluster in training human resources for the advanced technology and strengthen its institutional capacity;" Activity: "Optimizing communication flow within and outside the cluster, offering training services in advanced technologies carding to rew trends in the field."</li> <li>Transylvania IT Cluster is an entity founded by ARIES Transylvania in 2013 based on protoing services for human resources of the IT sector; it has a subsequently expanded its portfolio activity at public and improved in chinologies according to new trends in ther knowledge in advanced technologies according to new trends in the field."</li> <li>Transylvania IT Cluster is an entity founded by ARIES Transylvania in 2013 based on principies of Quadrupie Helix, Initially created with the objective to provide training services for human resources of the IT sector; it has subsequently expanded its portfolio activity by portion start-ups.</li> <li>Opiertive: Dreate in sector, it has subsequently expanded its portfolio activity by providing internalization, facilitating collaborative projects: 1.Partnerships of Student Pracite Sculives publices of Quadrupie Helix, Initially created with the objective to provide training services for human resources of the IT sector, it has subsequently expanded its portfolio activity by providing internalization, facilitating collaborative projects: 1.Partnership for Student Pracite Sculives Didder and ther stakeho</li></ul>			by expanding the network of partners	3.yearly editions of Cluj Innovation Days powered by Cluj IT Cluster in collaboration with other
<ul> <li>Consisting of 45 companies, 6 community &amp; facilitate development of strategic arrangements with national &amp; international business partners)</li> <li>arrangements with national &amp; international business partners</li> <li>d. Transylvania IT</li> <li>Cluster by ARIES</li> <li>A. Transylvania IT</li> <li>Mission: "To meet the needs of the 1T market of having ovaliable and improved training &amp; improvement of Hard Toulist (esigned to contribute to innovative development of the urban ecosystem in Cluina activity: "Operetory and strengthen its institutional capacity."</li> <li>A. Transylvania IT</li> <li>Mission: "To meet the needs of the 1T market of having ovaliable and improved training &amp; improvement of Hard Toulist in adopting international business partners)</li> <li>A. Transylvania IT</li> <li>Mission: "To meet the needs of the 1T market of having ovaliable and improved and promoting the image of the cluster."</li> <li>Objective: "Development of a new emerging cluster in training human resources for the advanced technology and strengthen its institutional capacity."</li> <li>Activity: "Optimizing communication flow within and autside the cluster."</li> <li>Ordering training services in advanced technologies according to new trends in the field."</li> <li>Transylvania IT Cluster is an entry to the freating of professions in universities to update and strengthen the field."</li> <li>Transylvania IT Cluster is an entry to reduce and strengthen the bipetive to provide training services for human resources of the IT sector, it has subsequently expanded its portfolin activity by providing internatization, activity by providing internatization, activity by providing internatization, activity by providing internatization, facilitating collaborative projects (Cluber Market of Cluber Section of Strategic Development for Cluber Provide training services for human resources of the IT sector, it has subsequently expanded its portfolio activity by providing int</li></ul>			Cluj IT is a cluster-based entity founded in	stakeholders (designed to consolidate the local IT
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<ul> <li>4. establishment of Cluj Innovation City (high-community in which members are embedded by promoting innovation-basing competitiveness of IT sector and building sustainable public private based products)</li> <li>5. Internships @ Cluj IT (framework for relevant work experience for 400-students)</li> <li>4. Transylvania IT Cluster by ARIES</li> <li>Mission: "To meet the needs of the IT market of having available and improved competent resources by strengthening and promoting the image of the cluster." Objective: "Development of a new Objective: "Development of a catewity: "Optimizing communication for subporting start-ups. offering training services in advanced technology access for the advanced technology or participating to events and identifying business synergies, accessing flow within and outside the cluster, offering training services in advanced technology and strengthen to its institutional capacity." Activity: "Optimizing of professors in universities to update and strengthen their knowledge in advanced technologies, training of professors in universities to update and strengthen their knowledge in advanced technologies, training of professors in universities to update and strengthen their knowledge in advanced technologies, training of professors in universities to update and strengthen their knowledge in advanced technologies according to new trends in the field."</li> <li>Transylvania IT Cluster is an entity founded by ARIES Transylvania 1021</li> <li>based on principles of Quadruple Helix. Intervaling in the specific of Scillaborate on cluster resources of the IT sector, it has subsequently expanded its portfolio</li> <li>based on principles of Quadrupt Helix. Intervaling cluster in transylvania 201. Intervaling for Scillaborate on general cluster members and other stakeholders, as well as providing internalization. Scillaborate ransylvania 4 and sourced induced by providing internalization. Scillaboratine movation services in various fields ranging from consultan</li></ul>			catalyst organisations that endeavour to	business partners)
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<ul> <li>embedded by promoting innovation, boosting competitiveness of IT sector and building sustainable public private partnerships. To name a few, findings, show that the City Hall of Cluj-Napoca. Next Generation Brained City" (designed to contribute to innovation extudied in the previous section are anong participating members</li> <li>Transylvania IT</li> <li>Mission: "To meet the needs of the IT morket of hoving available and improved for academ accordance with market demands &amp; collaborate in adapting the image of the cluster." Objective: "Development of a new emerging cluster in training human resources by strengthening and promoting the image of the cluster." Objective: "Development of a new emerging cluster in training human resources for the advanced technologie, training of professors in universities to update and strengthen their structurals in accordance with market accessing flow within and outside the cluster." Offering training of professors in universities to update and strengthen their knowledge in advanced technologies, training of professors in universities to update and strengthen their knowledge in advanced technologies according to new trends in the field."</li> <li>Transylvania IT Cluster is an entity founded by ARIES Transylvania in 2013 based on principles of Quadruple Helix. Initially created with the objective to provide training services for human resources of the IT sector, it has subsequently expanded its portfoli cancel vaphate and strengthen transylvania is collaborative projects invarious subsequently expanded its portfoli conving vorking conductions promoting technologies according to provides training services in various subsequently expanded its portfoli converts or increase resources of the IT sector, it has subsequently expanded its portfoli convoltion services in various fields ranging from consultancy, egovernance, education or intelligent varianting services in various Sculated Created model thoreybation of the cluster in the provide training services in</li></ul>			community in which members are	technology business complex designed to
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<ul> <li>4. Transylvania IT Cluster by ARIES</li> <li>A. Transylvania IT Cluster by ARIES</li> <li>Transylvania IT Cluster Provides training &amp; improvement of HR market of having available and improved competent resources by strengthening and promoting the image of the cluster."</li> <li>Objective: "Development of a new emerging cluster in training human resources for the advanced technology and strengthen its institutional capacity."</li> <li>Activity: "Optimizing communication flow within and outside the cluster. offering training services in advanced technologies according to new trends in the field."</li> <li>Transylvania IT Cluster is an entity founded by ARIES Transylvania in 2013 based on principles of Quadrupte Helix. Initially created with the objective provide training services for human resources of the IT sector, it has subsequently expanded its portfolio activity by providing internalization, facilitating collaborative projects</li> <li>Dipathership for Student Practice 2.Opportunities. Development Knowledge</li> <li>Dipathership for Student Practice 2.Opportunities. Development Torism City 6.Dipathership for Student Practice 2.Dipathershipfor Student Practice 2.Dipathership for Student Practice 2.Dip</li></ul>			boosting competitiveness of IT sector and	for development of technology & innovation-
<ul> <li>Transylvania IT Cluster by ARIES</li> <li>A. Transylvania IT Cluster by ARIES</li> <li>Transylvania IT Cluster by Providing internalization facilitati</li></ul>			building sustainable public private	based products)
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		pharmaceutical. With a network composed of more than 100 organisations, the cluster's activity is reasonably ambitious in scope.	10.LEARD2DO4ENTREPRENEURSHIP/Partner Start-up 11.E-Delivery 12.REFLOW 13.INNOCAP Transylvania 14.Transylvania Living Lab 15.ROCK- Regeneration and Optimization of Cultural Heritage in Creative and Knowledge Cities 16.BISNET Transylvania- Support Network for Business and Innovation in Transylvania 17.Earth Observation (EO) 18.CLIMLAB -2017: establishment of Transylvania Digital Hub (initiative developed by Transylvania IT Cluster in collaboration with Municipality of Cluj-Napoca, UBB, UTCN, Regional Development Agency North-West, Transylvania Creative Industries Cluster & other relevant stakeholders in the region) Its mission is to identify collaborative projects for digitalisation, aiming to stimulate technologically innovative capabilities in order to deliver products and services in the European Digital Single Market.
5.	Transylvania Creative Industries Cluster	Mission: "Support the development of Transylvania members by identifying and promoting initiatives capable of generating innovative products and services, and the creation of research, development and innovation (RDI) projects to strengthen the cluster itself." Objectives: (1) Increase the capacity for RDI by stimulating cooperation between research institutions and enterprises, and increase business access to RDI (2) Support the potential of creative industries and its application in the public (administration, education, health) and private sector (business, citizens) (3) Promote & encourage entrepreneurship by proposing relevant solutions in the field (4) Represent the interests of creative industries by attending events (forums, symposiums, conferences, seminars, debates etc) (5) Creation of tools for effective management and optimal channels of information (6) Identify opportunities for collaboration, including financial support through various programs, partnerships, tools and/or banking (7) Attracting resources (investment, EU funds, state aid schemes) for development of the creative industries (8) Develop partnerships at home & abroad to achieve the objectives of the association	-Cluster focuses on (1) fuelling innovation & (2) creating collaborative mechanisms. -By guiding research & collaboration strategically, it facilitates implementation of creative solutions to local needs & by supporting the potential of creative industries, new entrepreneurial initiatives & business may emerge, which will contribute to the creation of more jobs and more revenues for the local budget -Stimulate local talent, triggering grassroot movements & creative ideas for development -creation of Transylvania Creative Industries Cluster provides valuable insight into how local stakeholders address the challenge of socio- economic development by adopting local specific, social mechanisms to generate enabling conditions for its accomplishment.

		Establishment of Transvilvania Creative	
		industries cluster marked a pivotal	
		moment in the history of Romanian local	
		governance. Since its inception in 2016,	
		the cluster has been at the forefront of	
		creative industries development,	
		including software, electronic games,	
		advertising arts and crafts design	
		fashion film theatre and other arts	
		honofitting groatly from high oppones	
		benefitting greatly from high openness	
		and responsiveness ratios both, at the	
		institutional and business level. There are	
		currently 43 organisations taking part in	
		this partnership, including public	
		institutions (i.e. City Hall of Cluj-Napoca),	
		private companies and catalyst	
		organisations (i.e. BRINEL), universities	
		(UAD, UBB, UT) and other R&D entities.	
		The cluster is chaired by HAD	
6	Transvlvania	Mission: "To improve quality of life	-Strong commitment of cluster members to
0.	Lifestyle Cluster	integrate and support SME's develop	development of scientific & technological
	Lifestyle cluster	research and innovation units and to	approaches aiming to ophance community's
		implement parts are in a supplier of high	approaches anning to enhance community's
		implement partnersnips in parsait of myn	Quality of file
		Standards of Ilving.	-Wembers created a climate of collaboration with
		Objectives:	universities, public institutions & Sivie's looking
		1. Develop activities that improve	for partnerships designed to increase quality of
		lifestyle, increase quality of life and	life
		implement partnerships	
		2.Enhance innovation capacity and	
		international competitiveness of SME's	
		and RDI units	
		3. Apply advanced technologies, concepts,	
		and structures, testing and validating	
		results	
		4.Provide consultancy, training,	
		coaching design and services required in	
		innovation process	
		5 Consolidate and undate knowledge	
		5. Consolidute and update knowledge	
		through practical training	
		6.Increase interaction between cluster	
		members by optimizing communication	
		flow	
		7.Attract new SME's and RDI units by	
		promoting the cluster nationally and	
		internationally	
		8.Participate to consortia for the	
		implementation of projects in the field of	
		improving quality of life and lifestyle,	
		environmental management and	
		protection. RDI. concept testing and	
		validation"	
		Established in 2014. Transvlvania	
		Lifestyle Cluster is composed of 52	
		organisations encompassing SMF's and	
		37 large companies universities & 5	
		research institutes & 10 other econystem	
		actors The cluster is focused as	
		actors. The cluster is focused on	
		high standards of living for the sitility	
-	Internet	Nision "To become a superstation by the	
7.	ntercommunity	vision: to become a magnetic hub for	-Activities contribute to strengthening local
	Development	KDI ana II services, a javourable	ecosystem & sareguarding public interest by
	Association –	environment for entrepreneurs,	

	Cluj Metropolitan Area (IDACMA)	professionals and youth. The place where you develop, succeed and raise your children." Mission: "Stimulate and support Cluj Metropolitan Area's prosperity and wellbeing of its citizens." <b>Purpose</b> : "Sustainable development of Cluj Metropolitan Area by jointly carrying out development projects of regional or local interest and jointly delivery of public services." <b>Objectives</b> : 1. "Encouraging socio-economic development with an integrated approach on economic growth, social development and environmental protection, while exploiting the growth pole status of Cluj-Napoca Municipality 2. Coordinating spatial development in accordance with development of infrastructure 3. Encouraging development of an internationally competitive market economy 4. Increasing quality of life and promote territorial, economic, and social cohesion 5. Promoting protection of the environment, with rational use of natural resources and the conservation of biodiversity 6. Stimulating innovation and the use of ICT in developing a sustainable growth pole 7. Improving & developing transport, telecommunications & energy infrastructure, and coordinating the development of public services"	increasing competitiveness, modernization, and quality of public services: (1) elaboration and implementation of a coherent sustainable development strategy (2) project development in partnership with national and international stakeholders (3) elaborate technical-economic documentations for funding (4) promotion of economic growth strategy (5) attract foreign & domestic direct investments (6) promote and support local SME's activity (7) develop, modernize & improve public services (8) develop human resource -Participation to <b>projects</b> : 1.URBACT III_REFILL ( <i>Reuse of open spaces by local innovators</i> ) 2.EUCANET ( <i>European City Agency Network for citizenship, inclusion, involvement, and empowerment of communities through the urban transformation process</i> ) 3.New Generation Skills ( <i>Unlocking the potential for business and social innovation in the Danube Region by equipping your people with new generation skills</i> ) 4.TRAM ( <i>Regional action plan for a sustainable urban mobility</i> ) 5.STARDUST ( <i>Holistic and integrated urban model for smart cities</i> ).
		of Cluj-Napoca, the association is composed of the Municipality of Cluj- Napoca and 20 villages from the Cluj county	
8.	Cluj Start-ups	Mission: "To support and facilitate the growth of the start-up ecosystem in Cluj and Romania." Cluj Start-ups is a non-profit organisation founded in 2012. The initiative vividly integrates creativity and learning, being well suited to local conditions, while satisfying the need of infrastructure and capacity building.	-Activity nurtures the fast-growing creative community in Cluj-Napoca, transforming entrepreneurship & pioneering programs into feasible new businesses -Ongoing <b>activities</b> 1.Start-up Club 2.Start-up Time - <b>Meetups &amp; events</b> 1.Start-up a la Cluj 2.Mentoring Hours 3.Start-up Drink abouts 4.Start-up Europe Week 5."The Good, the Bad, the Reality Check about Start-ups" -Support for other tech-oriented communities: 1.Cluj.Al 2.Fintech Camp Cluj 3.Fresh Blood 4.Start-up Weekend Cluj 5.Transylvania Angels Network

			-Involvement in star-up conferences:	
			1.Code Camp	
			2.IT Days	
			3.Dev Talks	
			4 TECHSYLVANIA	
			-Provides innovators with know-how support.	
			visibility & access to a wide-ranging network of	
			partners, including investors, incubators,	
			accelerators, markets, mentors, event organisers	
			or professional workforce.	
			-Provides funding & mentoring to tech start-up	
			founders under the auspices of Transylvania	
			Angels Network, a partner of Cluj Start-ups	
			-Effectiveness measured by outputs (70+	
			meetups/events, 5000 community followers, 30+	
			partners) & outcomes achieved (200 start-ups in	
			Cluj)	
9.	SPHERIK	Mission: "To connect start-ups with	-Activity promotes entrepreneurial education &	
	Accelerator	strategic resources and support the	mindset, contributing to business growth &	
		growth of the local ecosystem."	innovation ecosystem development, while	
			increasing the likelihood for successful start-ups	
		SPHERIK Accelerator is a non-profit	by leveraging strategic PPP's & access to capital.	
		organisation launched in 2013, aiming to	-Devotes time to shaping public policy together	
		support the local ecosystem by pooling	with other stakeholders	
		together resources and stakeholders,	-SPHERIK teams up with networks of mentor and	
		from universities to private companies	partner organisations, including Google,	
		and local government.	Microsoft, UT, UBB, USAMV, Cluj Start-ups, Cluj IT	
			Cluster, ARIES Transylvania, Start-up Europe and	
			many others, building long-term partnerships and	
			capacity	
Source:	websites of	NGOs: <u>www.aries-transilvania.ro;</u> <u>www</u>	.civitas.ro; <u>www.clujit.ro;</u> <u>www.transilvaniait.ro;</u>	
www.creativetransilvania.ro; https://sites.google.com/site/transilvanialifestylecluster/; www.adizmc.ro ;				

www.clujstartups.com; www.spherikaccelerator.com