

Romania Competitiveness Toward 2050: Wargaming-based Lessons and Guide

*Will Romania continue to be a low-cost production hub for Europe? Or will we be inspiring others through innovation and know-how?
Will Romania manage to retain and even bring back emigrated talent and workforce? Or will we remain a handful of people in a beautiful yet dusty country somewhere in the East?*



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Abstract

The following paper aims at providing a holistic view upon the changes Romania, a developing country with an uncertain but promising future, could witness with respect to its competitive and comparative advantages by the year of 2050. The analysis of Romania's current position focuses on human and technological capital, two areas with untapped potential. To answer the overarching question, namely Romania's regional positioning in the upcoming three decades, our team deployed a Wargame framework – a three-phase simulation including groups of actors such as Romania's State & Public Authorities, Citizens, Business Environment, academic and not-for-profit landscapes, as well as two other nation-level players, namely Core Europe and the Visegrad Group. To this end, considering high-level macroeconomic and behavioral variables, the participants took long-term decisions based on what they have believed posed the best interest of the groups they were representing. After reviewing the actions present in the wargame, this paper concludes that a representative proportion of the players involved reached a consensus in that Romania can bridge the gap with Core Europe and Visegrad by shifting its future focus towards 4 distinct areas, namely education, infrastructure, entrepreneurship and technological investment, whilst highlighting a partial interdependency of the later emerging on the appropriate management of the first three areas.

Foreword

Two years ago, our partners from A.T. Kearney Romania wrote “Romania 2050: A vision for the country of our children”. They looked at how our society would develop and whether a significant change (of economy, of mindset, of society as a whole) will be possible in Romania not only in the short term, but also over the years to come. They decided to look beyond the immediate future – at where Romania will be in 2050, when our children, the first newborns of 21st century Romania, will be grown-ups. They wanted to answer a simple question: Will we be a role model country in Europe, an inspiration for other countries? Moreover, what would make that possible? The paper concluded simply that the way we did things is not sustainable and continuing so we will likely remain behind, while others will progress. Stop finding excuses, look forward, build a vision where we want to be, start changing... is what they said.

This year Romania’s Centennial is celebrated. And we don’t see much change, yet.

We, Aspen Institute Romania and the Bucharest Office of the German Marshall Fund of the US, said that on Romania’s Centennial celebration, Romania deserves to have a Brand. To finally have clear vision about our country’s future brand, a vision about what our comparative advantages in the region and in Europe will be over the next generations – more than just looking inside at what we do; and translate that into what and how to change in the short and medium term. We realized that first, no macroeconomic forecasting on such a long period of time can be considered realistic, and at most it is a mere gamble. Secondly, it’s not only about what we should do. It’s also about what we and others in Europe do. Hence, together with our partner A.T. Kearney Romania, drawing from their project experience in organizing business Wargaming strategy sessions, we put all these to the test and organized **Romania’s Centennial Wargame**.

In short, we used the Wargaming framework to understand how the different actors, Romania as State, Business Environment, Citizens, Academia & NGOs, but also our neighbor countries (the Visegrad Group) and Core Europe, will all act individually, together or against each other when faced with different scenarios, towards becoming more competitive and developed. While we learned important lessons, which we present in this paper and believe stand as a good lesson learned and guide for all actors in our society, and especially for the political actor to act upon (regardless of political orientation!), one thing was constantly revealed during our Wargame exercise: we are still myopic, focusing too much on the present; even when we learn from the past.

Sincerely,

Aspen Institute Romania, German Marshall Fund Bucharest Office & A.T. Kearney Romania

Where we are today, at a glance

Within the recent past, a consensus has been reached in that Romania represents a ‘catch-up nation’, whereby the country is predicted to narrow the income and infrastructural gap with its more developed counterparts. And while facing a GDP growth rate of +4%, compared to the Core Europe’s average of 2%, our future growth and development, like for the rest of the European nations, will be driven by our country’s future competitiveness. While global and regional uncertainties exist, while complexity in policy and political decision-making rises, and while we all know where we are in macro terms in society, in education, health, natural resources and agriculture, or referring to the long-debated underdeveloped infrastructure, we reflect below on Romania’s current sources of comparative advantage **focusing on human and technological capital**. In fact, these two factors were the major themes that brought this whole exercise together.

1. How can Romania reduce emigration, and encourage repatriation of citizens living abroad? Could immigration be a right possible approach for covering the workforce gap that is more and more acute across sectors?

Why this question and focus? People are arguably the most valuable asset a nation has. And without human capital, as a comparative advantage of the nation, likely no other comparative advantages, existing or potential, can be fructified.

2. How can Romania position itself as a provider of high-value technology production or services, versus maintain a position focused on low value-add (ex. outsourced services) and overall low-cost production hub?

Why this question and focus? Because without technological know-how and innovation, or at least top competitiveness in the quality of wider technological production and services, likely a nation remains at best a low-cost production hub for others, kept in the trap or vicious circle of lower salary levels relative to others, otherwise risking losing the ‘low-cost’ advantage.

The myth: A nation’s competitiveness can steam from endowment factors like capital or land and resources (we can be “Europe’s Agrarian” after all).

The truth: Without human capital, likely no other comparative advantages or endowment factors, existing or potential to be developed, can be fructified nor to mention increased.

In terms of human capital, Romania’s low unemployment rate of 4%, compared to the European Union’s overall 10%, and average salary of €515, nearly 4 times lower than that of Core Europe counterparts and 1.5 times lower than the Visegrad average, position the country on paper as a low-cost productive nation. While this has enabled Romania to face a slow but steadily increasing level of FDI, the country struggles with a large gap in labor force across multiple sectors, and in labor force abilities, facing a skilled to unskilled labor ratio of 0.20, lower than the Visegrad and Core Europe averages of 0.32 and, respectively, 0.40. In large, this situation has been caused by inadequate education especially in the country’s rural areas, and arguably due to salary levels and minimum wage policies. Failing to retain Romanian talent and workforce is seen in the 3,5 million Romanians that have emigrated and live today abroad, in the hope for a better (financial) life. (In addition, birth rates have fallen steadily putting Romania at the bottom of the rankings in Europe

and globally.) To this end, with a 3% migration rate of skilled workers, equal to that of the Visegrad region, it is the 12% migration ratio of unskilled labor and the low employment level of 63.9% (bottom six within the EU) that drive personnel shortages across sectors of the country's economy, such as agriculture, infrastructure & construction, wider industry, services and hospitality. In addition, the low share of employees on a limited duration employment contract relative to European levels (1.4% compared to 14.2%) is arguably another cause of labor shortages, high stability for employees and low incentives to perform well current jobs, as well as the low mobility of labor force (at least within parts and regions of the country).

As previously mentioned, a nation's degree of competitiveness is not inherited and does not only stem in its labor pool but is also driven by the country's level of innovation and technological know-how advancement. In this regard, Romania has recently become a promising European destination for tech investors, leading to a growth in the size of the ICT sector of 5.6%, higher than the EU's average of 5%. Furthermore, this segment of the economy currently records a 6% share of Romania's GDP, compared to the 3.9% average levels within the European Union and the Visegrad countries. However, while expanding, the country's domestic ICT sector size remains limited at €5 bn, in relation to the European Union overall value of €580 bn. Whilst attracting the interest of tech giants such as Microsoft, Oracle and IBM, 90% of Romania's ICT sector is still comprised of outsourcing low-end support services, coding and application management, and the sector is currently facing challenges in transitioning from outsourcing to high-added value services. Romanian is ranking significantly poor in R&D investment value, continually decreasing State's investments and interest in R&D, and displays a low Innovation index rating of 38, compared to Visegrad's 44 and Core Europe's 52¹.

The myth: A nation's competitiveness can steam from attracting foreign direct investments, from (re)building factories, from real capital, from being THE production hub (see China).

The truth: We are very far away to become the next 'China' of Europe, first. Second, without technological progress (know-how, innovation), a nation likely will remain trapped in a vicious circle of lower salary levels relative to others, otherwise risking losing the 'low-cost' advantage.

The challenge described above translates to other sectors of the economy due to a limited number of Romanian-based start-ups and scale-ups, caused, amongst others, by an underdeveloped environment for both funding and support – Romania has a high start-up birthrate, of about 12%, compared to European average level of 10%, but is facing a start-up survival rate of 40%, significantly lower than that of European counterparts. Despite this, recent years have witnessed positive change through growth in the country's number of start-up incubators, interest of new investment funds, agreements with the European Investment Fund for financial resources dedicated to entrepreneurs (which came as part of the European Commission's pledge to support Romania's transition), and other start-ups and SME dedicated support programs, both private and public. However, with recent efforts to develop country's entrepreneurial ecosystem in building

¹ For comparison purposes, at global level, Switzerland ranks highest with an index of 66,3, while Yemen lowest at 14,6

stage, Romania still lags in the Entrepreneurship index, scoring a low 38, compared to Visegrad's 44 and Core Europe's 55².

In closing of this brief review of where we are we can't help thinking of the term "growth", which is in everyone's focus. We need to grow, grow faster than others, and so on. And so we did for a good while, and still do. Yet income inequality also grew in the last decade, placing Romania among the five EU countries with the highest inequality levels. The general health of the population is low, and we do not spend on it. In fact, private or public spending, whichever, we spend on health less than all our neighbors do. Education in the last decades also decreased, looking at school enrollment ratios, while quality of education and its results are also debatable. And lastly, there is overall quite a debate whether, especially in today's world, GDP is a good measure to look at.

The myth: Higher economic growth relative to European peers will make us close gaps and catch up European welfare levels.

The truth: Only economic growth does not bring real economic development, and while we may catch-up some neighbor countries, social inequality will rise, further splitting the country in two.

As such, we put to the test – to the Wargaming test – how will the different actors of society, like State/Government/public authorities, citizens, business environment, Academia & NGO, react and move forward in the face of these developments, to build and secure Romania's future competitive advantages – and which. Moreover, this was tested relative to other countries in the region, name the Visegrad group of countries, and to countries in Core Western Europe.

And the results are, in short, not surprising, from our point of view. We let you decide further if so.

² For comparison purposes, at global level, USA ranks highest with an index of 85, while Chad lowest at 9

What is Wargaming, and how we used it

Wargaming originated in the military as a strategy game used for conflict simulations, various types of military operations or full-scale military exercises. In business, Corporate of Business Wargaming is an adaptation of this concept, applied to simulate moves and counter-moves in business setting (ex. moves and counter-moves between competitor firms). The reasons for using Wargaming framework are multiple, namely it allows you (the firm, the decision makers): to see how different competitors react to your/others' moves, or to market changes – and see from their perspective your strategy; to recognize weaknesses in your original strategy; to think creatively about the future; to gain new insights about existing and not yet identified drivers and issues; to be prepared for unexpected events; to reduce risk; overall to build more robust strategies that take into consideration higher levels of uncertainty, ambiguity, volatility or complexity in the market place, all in a safe 'training' or test environment. In fact, it has been recognized as so useful, that militaries across the world and Fortune 500 companies often use it as strategy validation/review tool.

Leveraging A.T. Kearney's experience in deploying Business Wargaming exercises for their clients, we decided to team up and organize a Wargame at country level, from an economic point of view – more specifically, from the point of view of countries' competitive or comparative advantages. In the same time, we recognized that a simple wargame between countries would be insufficient – simply because we have at stake also different actors and debates internally – between public, private, citizens, business environment and so on.

We chose a remote location and for 2 days in a row, we played. The 'players' in the wargame were: The State/Public Authorities, The Citizens, The Business Environment, The Academia & NGOs, and also two country-level players: The Visegrad Group of countries (Poland, Hungary, Czech Republic and Slovakia) as one player, and Core Europe (Germany, France, Italy and Spain) as another player³.

To ensure we have a balanced objective implication in the game, we invited as participants key decision-makers from all relevant stages: from the political stage and public authorities, from the business, from the academia, and so on.

Rules and mechanics of the wargame

Each team representing a certain player received from the beginning the same set of 'actuals' – a high-level set of macroeconomic data, showing where Romania, Visegrad Group and Core Europe are today (see Appendix 1). It is of less relevance if we captured all aspects and details – we believe we captured all relevant ones, what the players needed to know as departure point in their planning and strategies, and their actions. Yet each player had a difference set of possible actions to make.

- The State/Public Authorities:
-

³ To maintain organizing complexity at a manageable level, each country-level player played the role of the four countries all at once

- The Citizens:
- The Business Environment:
- The Academia & NGO:
- The Visegrad Group:
- Core Europe:

As in real life, we let the players make separate plans, discussed or not between themselves, make alliances or not, and so on and their combinations. The only rule was: once that is done, it cannot be undone, and the round is finished. Each round was simulating a period of circa 10-15 years. Meaning, the players made their plans and moves for the next 10-15 years, and afterward we looked what happened, at the impact of their actions. We repeated that for 2 more rounds, so 3 rounds in total.

And again, as in real life, as nobody has time and resources to do all desired things, each 'player' had a limited pool of money (units) to spend/invest and allocate between its actions in each round, however they wanted, and how much they wanted, yet with an additional cap to each action (i.e. you cannot say you invest the entire public budget only in infrastructure, just because infrastructure is bad). In short, we made sure through the model that utopic situations won't be reached, and players will be 'forced' to make trade-offs and choose between desired actions, just like in real life. Each of their actions and their impacts were further simulated with a high-level model, and presented at the end of each round, in terms of the increase or decrease in the initial set of indicators.

Furthermore, what the players were not explained in detail from the beginning, were all the possible effects of their actions, effects our model had accounted for, just as they happen in real life – at least not in very much detail, beyond few basic macroeconomic principles and relationships. Some investments don't bring the expected effect without other actions, same action may have a positive effect in an indicator and a negative effect in other, and so on. And such 'surprising' for the players yet real possible outcomes were further explained only after each round, to test also if they will learn from the 'unforeseen' or 'overlooked' aspects or mistakes, for the next round. In addition, the fact that each of their actions had its own slightly different magnitude of impact in a same indicator sometimes (ex. investing same number of units in infrastructure and in agriculture & resources may bring different magnitude of effect in welfare increase or migration decrease, even if both actions impact both indicators). Lastly, they did not know from the beginning that some players' actions, name the State, may influence the resources in units available to play of other players, namely the Citizens and the Business Environment, from one round to the other – again, as it happens in real life (ex. increase taxes, and people or companies will have less to spend).

What the wargame exercise was about, and its intentions

When we talk about wargame, we talk about a tailor-made simulation, not a conventional form of analysis or detailed macroeconomic forecasting. We were interested in how the actors will plan,

act, discuss between them, collaborate or not. We wanted to understand if they will learn from some mistakes, or if they will avoid other mistakes. We were interested to see if they will have biases, emotions, and so on. We wanted to combine human decision-making with a high-level set of quantitative measures and changes.

The wargame made a high-level modeling of the developments between countries on few indicators (macro, comparative advantages, welfare, etc. – see Appendix 1). It looked on long term developments and evolution of the country overall, so beyond the typical short-medium term aspects (ex. inflation, interest rates) – going beyond the normal macroeconomic cycles implications.

The wargame model was a simplification of real life macroeconomic effects – and that we say it loud. It was of less importance if an effect was +10 or +15% up. It mattered that the effect was “up” – and how players will react to that. Some impacts were qualitatively assessed based on the moves of players, especially special moves like alliances. Lastly, the model aimed at rather identifying ‘big mistakes’ or ‘big moves’ and their consequences, not incremental effects and trying to improve balanced across all sets of indicators.

What the wargame exercise was not about

The wargame model was not about a real modeling of macroeconomic variables and decades-long forecasting – and that we say out loud as well. Its purpose was not to explain what will happen in short term and to solve today’s ‘burning issues’ (where today refers to today, or the ‘today’ of the round and time horizon players were in at each round). For simplification reasons, and for forcing those trade-off decisions of players, relationships studied between actions and effects were not meant to be exhaustive, but merely the most important ones. They represented only an indication, for the purpose of the game. We did not touch inflation and interest rates, for the reasons mentioned above. We did not model what people spend money on or consume. And we did not model differences between economic sectors or industries, other than separating countries’ comparative advantages in human capital, capital, resources, infrastructure, entrepreneurship, and so on, again for simplification reasons.

1. Round 1 – “Fight?”

Put in front of the question 'what do we want?', the Romanian citizens struggled to answer at first, reaching the conclusion that “we want to achieve a better standard of living, like in other developed countries”. The grass is greener on the other side, but how do we get on the other side? What can we do to achieve this and what should we focus on? Surprisingly (or not really), the citizens positioned themselves in a passive role, considering that the impact of their individual actions will be limited in the numerous development needs of Romania to improve their own welfare.

We expected the players to take strong, different positions on areas of development, however critical topics arose in the negotiations on which everybody agreed on.

The myth: The Romanian Citizens, State, Business Environment, Academia & NGO’s, together with Visegrad Group and Core Europe, all want to achieve different things and it will be difficult to find common ground in negotiations.

The truth: We are all working towards the same goals.

Faced with increased threats on their own territories (i.e. immigrants, constant threat from Turkey on the refugee issue, ageing population, high unemployment in different EU regions, such as Spain especially in the young segment of the population), Core Europe is continuing to support and to search for solutions to move less developed countries, such as Visegrad countries and Romania, towards the European standard.

Since the fall of the communist regime and even more after joining the European Union in 2007, Romania has faced one of the worst brain drains out of all European countries. The need of stopping this exodus (qualified and non-qualified) is the most burning issue of Romania. This together with the unskilled work force becoming obsolete, not economically competitive due to advancements in technology, found all players agree on a clear action plan. The educational system in Romania should be completely redesigned and public-private investment in life-long learning, professional schools and in a dual education system are critical, all backed-up by Core Europe through agreed higher allocation of EU funds. NGO’s and Academia underlined the need of civic, economic, financial and entrepreneurship education - the people need to become ‘better citizens, not only citizens who pay their taxes’. ‘Train the trainer’ initiatives, using the know-how from abroad will develop skilled people who can spread their knowledge to lower levels and will help grow high-skilled personnel, instructed in the spirit of the new educational system. However, the State fears that Academia and NGO’s action plan is only declarative and that little initiatives will come through in results.

A few other critical areas of development emerged in the negotiations. How do we avoid the ‘middle income trap’ and how do we reduce economical gaps between different regions in Romania, rural and urban? Investment in R&D and infrastructure are essential to ensure that we achieve better competitive advantage as a country, since our main advantage now is that we have cheap workforce and this can only hold for so long. Public-private partnerships are a must, transfer of know-how from business towards the state is an efficient way of working towards the same end

goal. Investment in R&D is necessary to create higher-value added products and to reap the fruits of R&D locally (i.e. leverage developed agriculture to produce bio-juices). Core Europe supports the Romanian State by increasing allocation of funds on infrastructure (i.e. efficient railway transportation to neighboring countries, to connect to rest of Europe) and any business sector which has potential to create high value-added impact. The investment in infrastructure will also diminish the current ceiling of available jobs (especially high-skilled), since most are generated by large corporations, which are not willing to invest in Romania due to higher cost of operating here, resulting from poor infrastructure.

Citizens are worried that poor governance will continue and ask for support from Core Europe. Nonetheless, Core Europe does not want to get involved too much in each government's politics and underlined the need that Romanian citizens should more vehemently hold the Romanian Government accountable in matters where they agreed to act.

The business environment is urging for more fiscal and legislative predictability and lower bureaucracy. Public administration has to move to the 21st century, by digitalization and standardization of all procedures, which currently give too much liberty to administrative workers and destabilize the private environment (i.e. 'alternative legislation'). Interestingly, the business environment agreed on all governmental measures, understood the need of training the citizens and investing in R&D, however was willing to invest or co-invest in these directions, always conditional to receiving incentives from the state. Of course, ideally these measures should be supported by the state, but if business understands these needs, doesn't investing independently make sense?

Important to note that Visegrad had identified the same problems as Romania, striving to catch up with more developed countries such as the ones in Core Europe. Core Europe did not agree to give certain benefits to Visegrad Group, in detriment to other less developed countries. However, Visegrad and Core Europe agreed on increasing tariffs for countries outside EU, as retaliation for similar measures taken by the United States, while maintain current low levels with each other. After all, this is one of the core drivers of the European Union and otherwise would have a negative impact for both parties and end up in an uncontrollable downward spiral.

All in all, first round of negotiations saw collaboration between all players involved, which resulted in continued economic growth and an improvement in all economic indicators. It seems as though we all know in what direction we should move and that we should move together. The critical question is: 'Does this cooperation hold in real life?' and I think we can all agree on the answer here.

2. Round 2 – “Reconsider?!”

The second round debuts with recurring themes from the first - the players maintain their individual objectives and continue to apply similar measures to reach them, despite the fact that they have not yet proven to be entirely successful and that players have been rotated through teams to bring new optics.

The myth: If we remain consist to our individual policies, we will reach our objectives on the long run

The truth: If we do not build common policies with other groups of stakeholders, we will not reach our objectives on the long run, even if we all have the same objectives

The State continues to ponder - “how do we put Romania on a higher rank in the value chain?” The entire group agrees that a critical step towards reaching this goal is ensuring proper connectivity of the country with Visegrad and Core Europe, which would further fuel our growth by ensuring continuous investments from these countries into Romania. An increase in business partnerships will arise from this and the areas with the highest potential are viewed as aerospace and defense. The players expect that this will trigger the development of Romania into a technology hub which in turn will prove to be country’s new brand.

Technology is a focus point that resurfaces in the round as the Business Environment plans its moves. It pushes Core Europe to support the development of technology capabilities in the country through aids in the development of technology centers, investment in R&D and training. In response, Core Europe pleas for more involvement of Business in enforcing the State’s measures. An agreement is reached and the Business Environment invests significant resources in assisting the States which, in turn, can only support through limited resources as it has numerous other areas to focus on.

The involvement of Visegrad is requested by both State and Business Environment in supporting the development of connectivity for Romania. The request is met with agreement and in exchange the Visegrad group asks for support in entering the Romanian market. Specific measures such as a common strategy and action plan for the Danube, partnerships for infrastructure development in both areas and development of logistics hubs in Romania were agreed upon. The measures should help Romania reach its infrastructure goals and facilitate market entry for Visegrad. However, when time came for resource allocation, the parties did not follow through consistently.

NGOs and Academia group together with Citizens also remain stable in terms of objectives and had most common ground in their strive towards improving education and higher standards of living. This policy proved useful for all players in the game showing a positive effect on education over the impacted period of time, which was a secondary objective of all the other Romanian players. However, NGOs and Citizens need to grasp their importance in helping the other parties reach the connectivity, technology and R&D objectives as well as how reaching these objectives would further impact them back in terms of attaining their own desired outcome, namely, sustainable higher standards of living.

All negotiations had a novelty effect on the parties involved and, as a result, allocation of resources changed after discussions were held compared to initial allocation. The effect? Most areas of interest for the parties were positively impacted, in some cases Romania managed to surpass Core Europe and Visegrad. Areas such as entrepreneurship and infrastructure development still did not reach the desired state showing an imbalance in application of measures. However, the overall state of the country is moving towards significant improvements.

The new question arising is “How long can we maintain this “happy” status-quo?” and “How will our remaining weak points affect us further on?”. History has proven that time has quite a large bag of tricks in terms of disrupting stability so let’s see where that takes us.

3. Round 3 – How do we react to major disruptions?

Round 3 brought an environmental change which is reshuffling the whole world order - the global temperature increased by 1.5 Celsius degrees.

In 2035-2050, Romania has a high number of immigrants and is facing the same challenges as Core Europe is confronting today. There have been significant positive leaps in health technology and we are able to address most existing diseases from today (i.e. cancer), but other diseases have appeared, caused by shifting lifestyle of a large part of the population. African population has doubled, and Core Europe will have to continue to invest in increasing energy efficiency and independency. Melting glaciers has shifted the importance of ports, with Baltic sea ports becoming more important and Rotterdam port less important. 30 to 40% of Siberia's territory has become arable land due to climate change, shifting economic power especially since food scarcity is now an issue. Rome, Cape Town have submerged underwater, but Netherlands has not, since they invested hugely for decades to mitigate raising water levels.

The myth: All countries in Europe are developed, safe and stably growing. On the long-term we will only continue to grow and we will maintain our core values.

The truth: A 'black swan' event (or even less uncertain) will always change everything.

All European actors shifted their perspective to an increased protectionist vision and less collaboration is expected. Citizens are feeling the negative changes, uncertainty is huge and they are worried that the state is overwhelmed and will not be able to handle the current situation. Immigration issues, pressure on the labor market and pension schemes and increased unemployment cannot be overlooked. There are tensions in society, with political nationalism rising, extremists view emerging and increased risk of terrorism.

With the new ethnic and demographic structure, Romania should completely rethink its economic and social strategy. These changes are urging for fast, effective vocational training more than ever. State and business have agreed on massive fiscal incentives to support this. NGO's & Academia and the State agree that measures have to be taken to move immigrants to where there is need for work force and to focus on light integration programs for them. However current experience in Europe (particularly France and Belgium) shows that 'separating' immigrants in specific regions makes it much more difficult to apply inclusiveness measures in the long-term. Business, State and NGOs and Academia are willing to help citizen retrain, ensuring quality in Academia and are looking again towards Core Europe for best practices. State is willing to give fiscal incentives, 0% taxes for training.

Citizens are requesting a functional, protection infrastructure. A social and inclusiveness fund and a protective system for social intervention is agreed on by all parties in Romania. State is also giving 5% of its resources for the army, to limit risk of revolution and to ensure public order and is making military service obligatory. However, Business believes that the populist measure of the state will be bad for the business environment on the long-term completely destabilizing the market.

Investment in R&D is still seen as the major fuel for the economy and the state is willing to invest 20% of its resources in R&D. Business environment has much more competitive products and receives the support from the State through export stimuli's. The need to invest in irrigations systems, healthcare to solve new health issues is critical.

Even if all become protectionist, Visegrad and Romania found common ground in negotiations, seeing the opportunity of collaborating, investing jointly in R&D in health, energy and agriculture (e.g. de-salination devices) and agreeing to create a new alliance Balkanigrad. The immigration and need of integration is a regional issue and it's easier to manage jointly.

Third round found all players facing difficult challenges and in need of urgent action. Long-term investment in health and education until now mitigated the negative evolution in these areas, however new challenges arose. The protectionist views manifested in front of new threats, somehow diminished as negotiations progressed, all players understanding that collaboration is key to facing them.

After Action Review – conclusions, lessons learned, guide

The simulation brought to our attention plenty of ideas and observations that we hope to be channeled in the future towards reaching Romania's goal, mainly regarding the human capital and technological advancement goals which we identified as essential when designing the Wargame.

We observed that the group participating in the Wargame simulation, a group which we consider representative of the players defined (Citizens, State, Business, NGO/Academia, Visegrad and Core Europe), has reached consensus regarding 4 areas that would help Romania bridge the gap vs. more developed European countries. These 4 areas are: **education, infrastructure, entrepreneurship and technological investment**, with the later also coming as a by-product of a good management of the first three areas.

1) Investment in education

Faced with an education index of 77/100 vs. 85/100 in Core Europe and Visegrad, Romania must not only adapt to the accelerated development of education methods, but also catch-up to the standards requested by its citizens who traveled and live(d) abroad. To this we add the imperative brought to our attention by the local business sector which wants to be competitive regionally or by foreign companies/investors that are looking for next destination for their funds, choosing between Romania and other countries. To achieve this, the private sector counts on a skilled workforce, partially developed through a better education.

During the wargame simulation, players tackled this challenge, doubling the growth pace of the education index when compared to benchmarks, by consistently investing in civic, financial, entrepreneurial and technical education. In turn, Romania managed to bridge the gap, by having a more skilled workforce at home and by keeping more people from leaving the country and attracting more back home, as more opportunities for life long development become available.

Among the actions taken we highlight the following:

- **Civic, financial and entrepreneurship education classes** for students (and not only) empowered by NGOs, Academia and Business environment
- **State – Business partnership to significantly increase the number of schools in Dual educational system**, particularly in underdeveloped areas
- **State – Business partnership to invest in research** to build new capabilities and to avoid talent drain
- **More exchange programs and investment in 'Training of Trainers'** to improve the quality of teachers and ensure alignment to the latest trends in education

2) Infrastructure development

When it comes to infrastructure, it became immediately clear during the simulation that Romania must shift its track record of lack of progress and inefficient spending to support its ambitious

development plans. With a development index of 4.3 vs. 6.1 in Core Europe, Romania is obviously starting from another league, yet it is expected to close the gap vs. Visegrad (at 4.8 currently).

With most of investment coming from the State to improve infrastructure and the Business outlook depending on the development of the local infrastructure, during the simulation the Business representatives negotiated drastically to get commitment from the State to reposition Romania on the regional map through better infrastructure.

Among the ideas the generated highest commitment of resources we observed:

- **Strategic allocation of resources to the main regional routes**, maximizing Romania's role as a regional port (e.g. route Nadlac- Constanta)
- **Redesigned procurement process** to address inefficiencies of previous infrastructure development initiatives

3) Entrepreneurship development

With a start-up birth rate of about 12%, compared to European average level of 10%, Romania seems to have done the first step to make entrepreneurship attractive. Nevertheless, to capture the impact of the entrepreneurship spirit, all players agreed on optimizing the survival rate (currently lower than European average) through further investment.

On this topic, below are few general agreement:

- **Optimal allocation of resources** – including further focus on underdeveloped regions with higher unemployment rate, shift of investments from services to manufacturing/production and better monitoring of investments
- **Development of an entrepreneurial ecosystem** – including attracting more private investors to ensure growth capital, favorable taxation and decreased bureaucracy
- **Further investment in ICT education** – provide funds for research, maintain high standard of education, train the next generation of professors

4) Investment in technology

Without a doubt, the start of the 21st century bears the peak of the digital revolution, with technological developments ranging from e-commerce to blockchain & artificial intelligence driving globalization, and, indirectly, impacting our daily lives. To this end, while the recent past has seen investment levels in technology rise significantly within multiple nations, Romania still lags behind due to a variety of factors, including amongst others bureaucracy, inadequate infrastructure and the inability of the educational system to adapt to the current needs of employers.

Although Romania has recently become a promising destination for tech investors, with its ICT sector now standing at 6% of GDP, compared to 3.9% average levels within the EU and Visegrad region, the country is challenged by low levels of innovation. Facing low levels of R&D and scoring

an Innovation index rating of 38 compared to Visegrad's 44 and Core Europe's 52, Romania's ICT sector is having difficulties to shift from outsourcing support services to providing high-added value services. However, investment in technology does not only refer to the ICT sector, but also relates to equipment which can improve production processes, hence potentially attracting higher levels of foreign direct investment.

During the wargame simulation, the players aimed at tackling the issues mentioned above, managing to grow the country's innovation index at a rate larger than that of Visegrad but similar to Core Europe's, through a focus on higher state and business spend on technology acquisition and R&D.

The most notable actions taken were the following:

- **State - Focus on developing innovation levels through providing subsidies** for the acquisition of novel production equipment, as well as for R&D performed by both enterprises and Academia.
- **Businesses - Increased investment in technology and higher spend on R&D**
- **NGOs – Supporting entrepreneurship** by collaborating to attract funds to create not-for-profit tech start-up incubators

More than in real life, the set-up allowed players to establish clear goals and adhere to them without considering the complexity of real life decision factors and negotiations. Moreover, it gave them the opportunity to focus on long term goals while ignoring the day to day issues that sometimes require their full attention and investment. Nevertheless, often players found it difficult to always match their intentions with the actual allocation of resources. This observation is just a reminder that, **to ensure top performance, Romania should often review the progress of its actions and investments vs. initial goals. To get there, we consider essential the support of active citizens and having governing institutions that keep count of targets achievement.**

To answer our initial question, with **focused investment in education, infrastructure, entrepreneurship and technology, we expect that Romania will manage to avoid further brain drain and move towards brain regain.** However, to achieve this, Romania needs **bold moves, consistent adherence to its targets and constant evaluation of its progress.** This will ensure that Romania becomes not only a better version of itself, but also an equal competitor of peer countries which are not sleeping and have managed to wake up slightly earlier than we did.

Sincerely,

Aspen Institute Romania, German Marshall Fund Bucharest Office & A.T. Kearney Romania

Appendix 1: List of Participants, Romania's Centennial War Game, June 15-16

Mr. Teodor Angheluș, Analyst Officer, Department of National Security, Presidential Administration of Romania

Ms. Ana Cătăuță, Aspen Fellow, Coordinator of Governance and Society Program, Aspen Institute Romania

Mr. Andrei-Marius Diamescu, Advisor to the Prime Minister of Romania, General Secretariat of the Government of Romania

Col. Marian Dorca, Chief of Service, Ministry of National Defense of Romania

Mr. Mircea Geoană, President, Aspen Institute Romania

Mr. Mihai Ghigiu, Vice-Rector, National University of Political Studies and Public Administration

Mr. Dragoș Negoită, Director, Policies and Priorities Coordination Department, General Secretariat of the Government of Romania

Mr. Bogdan Pătrașcu, Transactions and Business Consultant, Abris Capital Partners

Mr. Andrei Rădulescu, Director, Macroeconomics Analysis, Bank of Transilvania

Mr. Gabriel Rilla, Chief of Service, Strategic Planning Department, Romanian Defence Staff

Mr. Ionuț Stanimir, Communication Director, Commercial Bank of Romania

Mr. Mihai Todor, Advisor to the Deputy Director, Romanian Intelligence Service

Mr. Alexandru Trailă, Advisor on EU affairs and foreign relations at Romanian Film Centre, Eurimages

Ms. Roxana Voicu-Dorobanțu, Associate Professor, Bucharest University of Economic Studies

Ms. Irina Zidaru, Minister Counselor, Ministry of Foreign Affairs of Romania

Appendix 2: Data used as starting point for the wargame exercise

The Wargame simulation started by considering the current positioning of Romania. For this, we looked at a series of index which we tracked during the exercise with the main aim to improve Romania’s relative position vs. Visegrad and Core Europe. Below you can find all the indicators we considered.

Relevant indicators

	Romania	Visegrad	Core Europe
GDP growth ⁴	5.9%	3.40%	2%
Export/Import ⁵	5.4%	3.4%	2.3%
Population ⁶	19.7	64	252
Migration (skilled) ⁷	15%	8%	5%
Migration (unskilled) ⁸	15%	8%	5%
Income from taxes ⁹	27%	34%	38%
FDI ¹⁰	48.50	54.00	62.00
Salaries (EUR) ¹¹	515.00	742.00	1,977.00
Unemployment (% population) ¹²	4%	4.60%	10%
Workforce size (skilled) ¹³	1.04	8.93	45.92

⁴ IMF data mapper

⁵ CIA factbook

⁶ United Nations

⁷ <http://www.pewglobal.org/interactives/migration-tables/>

⁸ <http://www.pewglobal.org/interactives/migration-tables/>

⁹ OECD and Eurostat

¹⁰ <http://www.fdiattractiveness.com/ranking-2017/>

¹¹ <https://www.reinisfischer.com/average-salary-european-union-2017>
https://en.wikipedia.org/wiki/List_of_European_countries_by_average_wage

¹² <https://data.oecd.org/unemp/unemployment-rate.htm>

¹³ <https://tradingeconomics.com/poland/employed-persons>, <http://cursdeguvernare.ro/cifre-necrutatoare-romania-%E2%80%93-cu-totul-in-afara-uniunii-europene-la-numarul-de-salariati.html>

Workforce size (unskilled) ¹⁴	4.16	18.97	68.88
Workforce quality (skilled vs unskilled) ¹⁵	0.20	0.32	0.40
Education ¹⁶	77.00	85.00	85.00
Development index (Infrastructure & Tech stock) ¹⁷	4.30	4.80	6.10
Development of health system ¹⁸	76.00	82.00	88.00
Entrepreneurship index ¹⁹	38.00	44.00	55.00
Innovation index ²⁰	38.00	44.00	52.00
Welfare / happiness index ²¹	59.50	61.50	64.50
Government development level ²²	3.70	4.20	5.30

Situation and actions

To support the discussion, each group (Romania Citizen, Government/State, Business, NGO/Academia, Visegrad Group, Core Europe) received information about their current situation and a list of actions. Likewise, each player had some resources, the total amount of resources reflecting their power to influence the outcome of the country.

Based on their current situation, each group had to set their main objectives and choose from the list a set of actions to invest their resources in and thus achieve their objectives. In practice, initially all players decided on more specific objectives and actions, as described in each round. After that, each specific action was included in one pre-defined higher-level action.

1) Romanian Citizen

- **Resources:** Citizens have 30 amount of resources to spend in the first round.
- **Situation:** The Romanian citizens are mainly concerned to maximize their wellbeing and that of their family. They want to make sure they are fairly paid and that they can support their family. Citizens are concerned about their financial security and looking for opportunities to maximize

¹⁴ <http://www.zf.ro/profesii/inspectia-muncii-numarul-salariati-full-time-crescut-290-000-ultimul-an-pana-5-2-milioane-tot-obligati-le-plateasca-contributii-salariu-1-900-lei-brut-luna-normal-angajatorii-transforme-contractele-17219009>

¹⁵ <http://www.zf.ro/eveniment/pe-ultimul-loc-in-ue-doar-19-din-populatia-ocupata-din-romania-are-studii-superioare-fata-de-media-ue-de-33-15535932>

¹⁶ https://en.wikipedia.org/wiki/Education_Index

¹⁷ The average of tech. and infra. score from the WEF global competitive index (out of 7)

¹⁸ <https://www.sciencedirect.com/science/article/pii/S0140673617308188>

¹⁹ <https://www.sciencedirect.com/science/article/pii/S0140673617308188>

²⁰ https://www.theglobaleconomy.com/rankings/GII_Index/

²¹ https://en.wikipedia.org/wiki/World_Happiness_Report#2018_World_Happiness_Report

²² The institution score from the WEF global competitive index

it. They would also like to make sure that they are competitive on the workforce market and they would like to receive support to properly train.

Citizens often compare themselves with their friends and family that live abroad and would like to have similar opportunities. They would like to have better health care system, education and infrastructure. Citizens love their country and hope to find the desire opportunities at home, but sometimes they consider moving abroad.

- **Actions:**

- Workforce emigration (unskilled)
- Workforce emigration (skilled)
- Workforce immigration (unskilled)
- Workforce immigration (skilled)
- Seek average education
- Seek advanced education in Ro (non-R&D)
- Seek advanced education in Ro (R&D)
- Seek advanced education abroad (non-R&D)
- Seek advanced education abroad (R&D)
- Seek employment (unskilled)
- Seek employment (skilled)
- Seek unemployment (unskilled)
- Seek unemployment (skilled)

2) Government / State

- **Resources:** The Government / State has 50 resources to spend in the first round.
- **Situation:** The Government's main goal is to ensure steady and sustained economic growth. Romania has been facing substantial population migration in the past few decades. Now, the population has an increased number of opportunities to work abroad, therefore, the Government is trying to find ways to ensure the wellbeing of people and a good standard of living.

The Government wants to make sure that the country has low unemployment, low inflation and equilibrium of the balance of payments.

The State is thinking of developing a program of investment in public sector and in measures to support the business environment but have yet to decide which areas they will focus on.

- **Actions:**

- Invest in unskilled human capital & labor (incl education)
- Invest in skilled human capital & labor (incl education)
- Invest in technology sector (new technology, know-how, innovation, R&D)
- Invest in agriculture & resources
- Invest in infrastructure
- Invest in health
- OPEX spend (non-people related) - maintenance type
- Salaries & non-salaries spending (state FTEs, pensions, social funds etc)
- Legislative support unskilled human capital & labor (incl education)
- Legislative support skilled human capital & labor (incl education)
- Legislative support technology sector (new technology, know-how, innovation, R&D)

- Legislative support agriculture & resources
- Legislative support infrastructure
- Legislative support health
- Increase minimum salary
- Decrease minimum salary
- Raise minimum retirement age
- Support immigration from other states
- Restrict immigration from other states
- Increase taxation
- Decrease taxation
- Increase tariffs
- Decrease tariffs
- Support Citizens action via legislation
- Restrict Citizens action via legislation
- Block Citizens action via legislation
- Support Business action via legislation
- Restrict Business action via legislation
- Block Business action via legislation
- Support NGO/Academia action via legislation
- Restrict NGO/Academia action via legislation
- Block NGO/Academia action via legislation
- Collaborate with Visegrad on action
- Oppose Visegrad on action
- Collaborate with Core Europe on action
- Oppose Core Europe on action
- Agreements with other players

3) Business

- **Resources:** Business representatives have 30 resources to spend in the first round.
- **Situation:** The representatives of the business environment would like Romania to be competitive on the European and global markets.
They are a firm backer of lower taxes profit and employees to free up capital for investment and they would like to have less bureaucracy.
Business' most crucial request from the government is to have political stability and a predictive fiscal and economical environment.
Considering the technological developments, there is a need for skilled employees in their businesses. They are afraid that in the near future they won't have the necessary resources, as there is a significant trend of migration to more developed countries.
- **Actions:**
 - Invest in CAPEX (non-technology)
 - Invest in technology (ex. IT)
 - OPEX spend (non-HR, R&D)
 - HR spend (cuant.) - hire FTEs

- HR spend (qual.) - training
- HR spend (qual.) - salaries
- HR spend (qual.) - import skilled workforce
- R&D spend
- Divest CAPEX (non-technology)
- Divest technology (ex. IT)
- Cost cutting OPEX (non-HR, R&D)
- Cost cutting HR (cuant.) - fire FTEs
- Cost cutting HR (qual.) – training
- R&D spend
- Divest CAPEX (non-technology)
- Divest technology (ex. IT)
- Cost cutting OPEX (non-HR, R&D)
- Cost cutting HR (cuant.) - fire FTEs
- Cost cutting HR (qual.) - training
- Cost cutting HR (qual.) - salaries
- Cost cutting HR (qual.) - import unskilled workers
- Cost cutting R&D - research (know-how)
- Invest in Visegrad
- Divest from Visegrad
- Invest in Core Europe
- Divest from Core Europe
- Support Gov/State action
- Oppose Gov/State action
- Support Visegrad action
- Oppose Visegrad action
- Support Core Europe action
- Oppose Core Europe action
- Support NGO/Academia
- Agreements with other players

4) NGO/Academia

- **Resources:** NGOs & Academia have 20 resources to spend in the first round.
- **Situation:** The representatives of NGOs and Academia work to promote social and political change.

Their activity is diverse and has little cohesion, however, most of the work is done in the following areas:

- Educating citizens in specific area
- Supportive innovation & development
- Reallocating resources and providing opportunities to underdevelopment area
- Keeping citizens informed and critiquing government/state or businesses decisions in order to ensure best interest of the citizens

Academia's actions play a critical part in developing society, improving communities, and promoting citizen participation. One general concern is that NGOs & Academia have a very dispersed focused and hence have limited resources, hence, they should consider specific ways in which they could maximize their impact by leveraging actions of other players.

- **Actions:**

- Educate the population towards average skills
- Educate the population towards advanced skills
- Invest in technology (ex. IT)
- R&D spend
- Invest in entrepreneurship - innovative
- Invest in entrepreneurship - non-innovative
- Support Citizen action
- Oppose Citizen action
- Support Gov/State action
- Oppose Gov/State action
- Support Visegrad action
- Oppose Visegrad action
- Support Core Europe action
- Oppose Core Europe action
- Accept Gov/state funding
- Accept Visegrad funding
- Accept Core Europe funding
- Accept Business funding
- Accept Citizens support
- Support Core Europe action
- Oppose Core Europe action
- Accept Gov/state funding
- Accept Visegrad funding
- Accept Core Europe funding
- Accept Business funding
- Accept Citizens support

5) Visegrad Group (Poland, Hungary, Czech Republic & Slovakia)

- **Resources:** Visegrad Group has 50 resources to spend in the first round.
- **Situation:** The main focus of Visegrad is to promote healthy economic growth as well as reduce the gap to Europe's core countries (i.e. Germany, France, Italy, Spain) across all relevant dimensions: infrastructure and tech, innovation, health, entrepreneurship, and citizens' welfare / happiness.

Having been on a steady, constant growth for the last 25 years, the geopolitical relevance of Visegrad Group in Europe has been clearly recognized, however, it is still far from the influence and power of the Core Europe states.

Being one of the most industrialized countries in the EU, having strong ties with core Europe's business sector and having leveraged the EU dictated resources to a large extent in the past,

Visegrad aims to further increase collaboration with these countries, as the fastest means to achieve its goals.

At the same time, Visegrad realizes that growth is coming, to a large degree, also from the outer Europe / newer member States (e.g. Romania), and that securing the EU resources will be critical for advancing its goals.

There is much debate on whether collaborating with the newer member States may yield better results in the long term, given their potential for growth, and thus Visegrad's ability to benefit from increasing exports to them.

- **Actions:**

- Invest in unskilled human capital & labor (incl education)
- Invest in skilled human capital & labor (incl education)
- Invest in technology sector (new technology, know-how, innovation, R&D)
- Invest in agriculture & resources
- Invest in infrastructure
- Invest in health
- OPEX spend (non-people related) - maintenance type
- Salaries & non-salaries spending (state FTEs, pensions, social funds etc)
- Legislative support unskilled human capital & labor (incl education)
- Legislative support skilled human capital & labor (incl education)
- Legislative support technology sector (new technology, know-how, innovation, R&D)
- Legislative support agriculture & resources
- Legislative support infrastructure
- Legislative support health
- Increase minimum salary
- Decrease minimum salary
- Raise minimum retirement age
- Support immigration from other states
- Restrict immigration from other states
- Increase taxation
- Decrease taxation
- Increase tariffs
- Decrease tariffs
- Support Citizens action (ex. subsidies, legislation etc)
- Restrict Citizens action (ex. legislation)
- Block Citizens action (ex. legislation)
- Support Business action (ex. subsidies, legislation etc)
- Restrict Business action (ex. legislation)
- Block Business action (ex. legislation)
- Support NGO/Academia action (ex. subsidies, legislation etc)
- Restrict NGO/Academia action (ex. legislation)
- Block NGO/Academia action (ex. legislation)
- Collaborate with Romania on action
- Oppose Romania on action
- Collaborate with Core Europe on action

6) Core Europe:

- **Resources:** Core Europe has 50 amount of resources to spend in the first round.
- **Situation:** The Core Europe Group, representing some of the most powerful and influential countries in the world, is the key decision factor in some of the largest and most important changes in the EU since its founding.

However, as of last 5 years, Core Europe finds itself in an increasingly difficult position due to concerns voiced over by multiple member States but also Citizens regarding the effectiveness of the EU as well as the benefits being outweighed by the risks (e.g. re-distribution of the resources to less developed countries, reduced local control, burden on labor markets via intense immigration, etc.).

Moreover, Core Europe is dealing with pressing matters within their own borders of a human component, be they related to increased unemployment, lower salaries caused by massive immigration, not to mention the Arab refugees or threat of terrorism.

As the flagship members, Core Europe still considers the collaboration is essential to their key ambition of advancing internally economic growth social development but find themselves wondering which course of action will yield the best results: prioritizing Core Europe, Visegrad or newer member States (e.g. Romania).

- **Actions:**
 - Invest in RO
 - Invest in Visegrad
 - Invest in unskilled human capital & labor (incl education)
 - Invest in skilled human capital & labor (incl education)
 - Invest in technology sector (new technology, know-how, innovation, R&D)
 - Invest in agriculture & resources
 - Invest in infrastructure
 - Invest in health
 - OPEX spend (non-people related) - maintenance type
 - Salaries & non-salaries spending (state FTEs, pensions, social funds etc)
 - Legislative support unskilled human capital & labor (incl education)
 - Legislative support skilled human capital & labor (incl education)
 - Legislative support technology sector (new technology, know-how, innovation, R&D)
 - Legislative support agriculture & resources
 - Legislative support infrastructure
 - Legislative support health
 - Increase minimum salary
 - Decrease minimum salary
 - Raise minimum retirement age
 - Support immigration from other states
 - Restrict immigration from other states
 - Increase taxation
 - Decrease taxation
 - Increase tariffs
 - Decrease tariffs
 - Support Citizens action (ex. subsidies, legislation etc)

- Restrict Citizens action (ex. legislation)
- Block Citizens action (ex. legislation)
- Support Business action (ex. subsidies, legislation etc)
- Restrict Business action (ex. legislation)
- Block Business action (ex. legislation)
- Support NGO/Academia action (ex. subsidies, legislation etc)
- Restrict NGO/Academia action (ex. legislation)
- Block NGO/Academia action (ex. legislation)
- Collaborate with Visegrad on action
- Oppose Visegrad on action
- Collaborate with Romania on action
- Oppose Romania on action
- Agreements with other players

About us

About Aspen Institute Romania

Aspen Institute Romania is a non-profit, non-governmental association dedicated to promoting enlightened leadership in Romania and its region and to encouraging open-minded and informed debate among leaders about the challenges facing our societies.

The Aspen Institute Romania mission is twofold: to foster values-based leadership, encouraging individuals to reflect on the ideals and ideas that define a good society, and to provide a neutral and balanced venue for discussing and acting on critical issues affecting Romanian society and the region.

About German Marshall Fund Bucharest Office

The German Marshall Fund of the United States (GMF) strengthens transatlantic cooperation on regional, national, and global challenges and opportunities in the spirit of the Marshall Plan.

GMF contributes research and analysis and convenes leaders on transatlantic issues relevant to policymakers. GMF offers rising leaders opportunities to develop their skills and networks through transatlantic exchange, and supports civil society in the Balkans and Black Sea regions by fostering democratic initiatives, rule of law, and regional cooperation.

About A.T. Kearney Romania

A.T. Kearney is a leading global management consulting firm with 61 offices in more than 40 countries. Since 1926, A.T. Kearney has been trusted advisors to the world's foremost organizations. A.T. Kearney is a partner-owned firm, committed to helping clients achieve immediate impact and growing advantage on their most mission-critical issues.

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