Harnessing Resources-Skills for an IT Economy

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Continental Hotel]
[Executive Summary]
Harnessing Competitive Resources - Skills for an IT Economy

REPORT

On May 9, 2012, The Aspen Institute Romania organized the round table "Harnessing Competitive Resources - Skills for an IT Economy". The event continues the series of Aspen Institute organized debates regarding national competitiveness. The debates and publications series was initiated in 2011 by the Task Force on Competitiveness of the Aspen Institute Romania Economic Permanent Committee. The event is also a first in that it is a collaboration between two of the Aspen Policy Programs: Technology, Information and Society and Economic Opportunities.

The event brought together 40 representatives of foreign and Romanian universities, experts in technology and HR from the public and the business sector. Key speakers included Prof. Dr. Georg Beier, Dean Physikalische Technik/Informatik, Westsächsische Hochschule Zwickau (FH), University of Applied Sciences; Tudor Prisecaru, Vice-Rector, University Politehnica Bucharest; Cătălin Boja, Head of the Department Economic Informatics and Cybernetics, Faculty of Economic Cybernetics, Statistics and Informatics, Academy of Economic Studies Bucharest, Romania; Gheorghe Ștefănescu, Director, Computer Science Department, University of Bucharest; Ronald Binkofski, Country Manager, Microsoft Romania; Carmen Buruiană, HR Manager, BitDefender; Alin Bittel, CEO of the Romanian Office, Materna Information and Communications SRL.

The debate was the first step of Aspen Institute Romania’s effort to generate a serious, informed and influential conversation between the private sector, academia, civil society, local institutions, public and private administration, with input and influence in the area of digital economy and digital society. The objectives were to find ways to maximize what Romania has to offer in the IT&C sector, in terms of visibility, impact and capacity of the sector; to push boundaries and find where the needs of the industry, education and of the public sector as the creator of framework meet, and how we can establish Romania as a primary destination for IT&C investments.

Session I: Cooperation in the field of software engineering and software development

Romania’s strategy for the development of its IT&C sector

Before discussing how to foster competitive resources for an IT economy, participants agreed that it was important for Romania to have a general strategy for its IT&C industry. Not just a series of documents, but a policy level strategic approach. Strategic decisions need to be
made in terms of how Romania should position itself on the market and what it wants to achieve. Does it want to brand itself as a major BPO and outsourcing center hub for Europe and North America or does it want to encourage the growth of products?

Romania has established itself as a destination for outsourcing, including IT services and support, contact centers and back-office support. This is largely due to its educated, resourceful, multilingual and cheap labor pool. While it is true that in this way Romanian graduates can make use of their competitive advantage in terms of languages, this approach has its pitfalls on the long run. Given the fact that companies’ outsourcing decisions rely mainly on cost considerations and the salary expectations of the Romanian labor force are increasing, there is always the danger of a shift towards the East. If Romania wants to become the support of Europe, it needs to decrease prices and supply cheaper workforce.

On the other hand, outsourcing isn’t bad for a country as long as know-how, competition and money stay in the country and it is completed by a more complex strategy. But for that we need an internal market, which is currently lacking in Romania- there is little need for software services on behalf of small and medium enterprises. If we opt for this strategy, we should focus on small and medium enterprises because they generate the economy. Furthermore, if Romania becomes the service center of Europe, it will never be a leader. Instead it will always be dependent of the European market, on its demands.

There is a huge gap between what Romania has to offer on paper in terms of size and population, and the reality of its education, employment and economic state of play today. Romania has the size for building a much bigger economy but everyone has to play a role: companies, government, and the academia. The government has to make it as easy as possible for the companies, to ensure funds, make the structure of funds more accessible and don’t lead on the examples of big companies.

We should also reflect on what makes an industry tip so that it becomes a driver. IT is a tool, it may appear as an industry but it serves as a tool for all the other industries. What could the government and private sector do to ensure that 20 years down the road we will still have a successful IT program in Romania? Is there something we could do? Or will the market evolve naturally and eventually will tip over into a larger self-supporting cycle? The strategy should be to encourage the growth of products.
The role of universities: what should they focus on in order to meet the employers' needs?

Participants to the debate agreed that the role of universities is not to create students that are ready for employment as soon as they graduate. Given how dynamic the IT&C field is, it is hard for the universities to keep up. Rather, they should teach basic skills, broader knowledge that allows students to build on that during their career, and continue their education on the job. Universities should teach students how to learn, encourage creativity, and foster foreign languages, intercultural communication, and management skills. Basic training from the university should be complemented by the employer with its specific needs. In addition to this, employers look for candidates with leadership skills, assertive, competitive and creative.

Representatives of the business environment pointed to the fact that engineering curricula should also focus more on entrepreneurship and innovation. Software engineering graduates should have a minimum of formal education regarding what it means to own a company, what opportunities there are to start a business, what a venture capital is, what it means to have stock options, intellectual property etc.

A weakness of the Romanian education system is that it creates a small number of elites and neglects average students. We need to invest in all students, because average students drive the economy.

The academic curriculum – does it meet the interests of all students and does it prepare them for the future?

The main issue that was raised with respect to the academic curricula was their lack of flexibility. These don’t usually include optional modules and it is very difficult to create a mixed program or introduce internships, which would be very helpful in preparing students for the industry. Another challenge is finding the right answers to the needs of the new generations who are much more up to date with the technological trends.

It’s been emphasized that universities should invest more in career advice centers. Students should be more exposed to the industry and the education should focus on preparing them for an open minded business environment, building them so that they are able to adjust to the changes of the industry. For this, universities need to be anchored in the reality of the business environment.

In addition to technological skills, graduates need to be equipped with language, intercultural communication and soft skills, such as teamwork skills. The latter cannot be taught in university, they must be learned in real work. That is why it is very important to cooperate with the industry.

A further issue is that of PhD’s. Their length makes them impossible to those over 35. A suggestion was to separate the PhD into professional and scientific PhD. This way, we would open possibilities for
industrial PhDs, tasks coming from the industry, and thus give the opportunity to those working in the industry to do a PhD after a period of time.

Research in Romania – importance, challenges, financing and results

There is debate about how much the academia should focus on research. On the one hand, it is argued that the exaggerated focus on research in the academic environment ladder system leads to inefficient research programs. On the other hand, quality education and research go hand in hand. Supporters of this view favor more investment and a strategic decision on the kind of research to focus on. They stressed the need to make this field more dynamic and market-oriented and to encourage the development of clusters and incubators.

Participants to the debate suggested that research should be divided into fundamental research (which should be government funded) and applied research (funded by the private sector). The latter would serve both companies and the academia - the companies would benefit from the results produced by their investments and the academia would benefit from the opportunity of exploring new and interesting fields of activity. However, universities should become more attractive for the companies in order to be selected for this type of projects.

The government and public companies are also potential employers. It was even suggested that involving the academia should be a strategy. But to achieve this, certain gaps in legislation that make it impossible to hire universities need to be addressed.

Session II: Framework for an effective academia to workforce transition in the field of IT

Cooperation between the academia and the industry – attempts and challenges

The business sector, the academia and the government should work together to overcome the lack of trust between them and achieve a common strategic interest. In order for these partnerships to be more successful, several aspects need to be considered. The first one is the length of the projects developed in common. Objectives should be long-term oriented and there should be continuity in the projects, so as to avoid constant readjustment on behalf of universities to the requirements of companies.

Another challenge is that the academia doesn’t consider the business aspect of the partnership. It is important that universities make themselves more attractive for the companies, come up with structured business proposals, with ideas, thus increasing the chances of being selected by the company. Furthermore, universities need to become more entrepreneurial and create their own companies. Spin-offs should be encouraged by the government, through funds and the creation of a legal framework.
Further exchanges between universities and the business world could bring mutual benefits. Teachers could act as scientific advisors for the companies, thus helping them gain power and strength. On the other hand, people from the industry could be invited as guest lecturers to academic programs. Other suggestions included parallel programs done in partnership with the companies – courses, professional master programs, internships etc.

How do we put an end to brain drain?

The Romanian IT&C sector has been confronted with a serious problem over the past twenty years, namely brain drain. Many students who do internships with large companies abroad are hired by these straight after graduation, while companies in Romania seek experienced engineers. Another factor is that the Romanian education system lacks an entrepreneurial component, and does not equip students with the necessary knowledge to create a start-up, to develop a business idea, and so on. Furthermore, in the absence of business angels and venture funds to encourage software start-ups, it is even harder to stop the best people from leaving the country.

Efforts are being made in order to stop this phenomenon. Some faculties take on externally funded projects or develop project-based partnerships with companies, allowing them to involve and retain students. The problem is the short-term nature of these assignments. Another solution for “retaining brains” is to create spin-offs. Companies will want to invest in universities that make money and it will allow them to keep the best people from leaving. It was suggested to establish cooperation with other universities from abroad to see how they solved this problem.

Reform of the academia – issues, priorities, challenges.

It was widely acknowledged that the education system in Romania faced some structural challenges, part of them inherited from the communist era. Although education has undergone huge changes over the past two decades, further reform is needed in order to adapt to new realities and foster competitive human capital. However, in order to start a complex reform process, we need a holistic perspective, a national education strategy that includes both long term and short term objectives.

The first challenge, from the IT&C sector perspective, is that Romania has an industrial system of education that was very successful up to a certain point. Nevertheless, the trend worldwide is towards an informational system and we need to complete that transition as well. Access to education is another problem that has to be addressed, as large segments of the population do not make use of this right.

A further problem identified by participants to the roundtable was the lack of qualified human resources. There is a generation gap between teachers. Those close to retirement are hard to motivate to get more involved in the current trends and keep in touch with the realities of the
industry. Young teachers, on the other hand, are outnumbered by the students and don’t have enough time to get as involved as they should. The first step in improving the system is to better train those who educate. This implies better academic programs for future teachers, encouraging constant update of curricula, and adopting best practices.

One of the obstacles is resistance to change on behalf of the academic staff, both in terms of content and methods of teaching and evaluation. Experiments and small incremental changes are very important. That is why a suggested strategy was to get experimental licenses to do things differently. Successful examples can be used to impact legislation and achieve greater autonomy. However, the academia needs to be more proactive, present proposals and influence the politics in the right direction.