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Open Innovation Concept and a Success Case Study Hack'nBreak

Plenary Session 2
"Innovation support services: what companies need from their parks and AOIs"

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Executive Summary:

In August 2016 Hack'n Break was organized at Technopark Izmir, located at Izmir Institute of Technology campus. The event lasted for one week and involved hackathons, seminars, talks, and social activities. Nearly 1000 young enthusiasts and students from all over the country joined the activities and they have contributed to the success of the event. Companies sponsoring the event brought up their problems and solutions were proposed by the participants, some really contributed with creative ideas. Hack'n Break was completely consistent with the philosophy of Technopark Izmir, where we believe in open innovation through which ideas are disseminated and may be transferred to useful applications by the companies from everywhere.
In the remainder of this paper we shall summarize our understanding of open innovation and then give a more detailed description of Hack'n Break. We shall then attempt to show how Hack'n Break contributed to our residents.

Open Innovation

According to Henry Chesbrough open innovation is "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively."[51] According to this approach organizations can combine ideas developed outside of the company with the internal creativity to improve their competitiveness, react to changes in the market much faster and keep the costs under control while doing so.
Open innovation is an approach adopted by both public and the private sectors to complement their research activities. Main reason for this is that the companies have realized the difficulty of conducting all their research in their closed environments. It is not easy for the companies to allocate research funds to every creative idea. The organizations determine their product portfolio based on the current data, their vision of the future and sometimes completely on the company politics. If these foresights are not accurate, on the other hand, this may cause the company to miss the developments, risk their market share and allow competitors to enter their markets. The most valuable asset of the knowledge society, namely the experienced people, move among companies easily taking with them all the earned information and experience, and it also became relatively easy for them to find capital to set up their own companies. These developments force the companies to cooperate with these groups. Especially the IT industry is full of such examples.

It is not only the IT industry which might benefit from open innovation. According to Nesli Nazik Ozkan [52] "…. more than 35 percent of P&G's new products in market had elements that originated from outside P&G. It was about 15 percent in 2000. And 45 percent of the initiatives in their product development portfolio had key elements that were discovered externally. With connect and develop strategy, P&G's R&D productivity has increased by nearly 60 percent. Their innovation success rate has been raised to more than %100. At the same period the cost of innovation has fallen". The research and development costs have also been reduced significantly according to the same article which states that

[51] https://www.forbes.com/sites/henrychesbrough/2011/03/21/everything-you-need-to-know-about-open-innovation/#7d389a0f75f4
[52] Nesli Nazik Ozkan, "An Example of Open Innovation: P&G", Procedia - Social and Behavioral Sciences 195 (2015) 1496 – 1502

(for P&G) "R&D investment as a percentage of sales was down from 4.8 percent in 2000 to 3.4 percent in 2006".

At the same time, open innovation would allow companies to watch closely the possible "destructive technologies", support and orientate promising ones and cooperate with them in all areas. This would obviously lead to resource savings and reduce the risk of being left out of the game. In his book "The İnnovator's Dilemma"[53], C.M.Christensen has stated that disruptive technologies "…bring to market a very different value proposition than had been available previously. Generally, disruptive technologies underperform established products in mainstream markets….Products based on disruptive technologies are typically cheaper, simpler, smaller, and, frequently, more convenient to use". The bigger companies, who already enjoy a hefty market share is usually slow to understand the disruptive technologies and underestimate the impact they would create in their markets. Open innovation would reduce such risks for these companies.

Different companies from different sectors may use open innovation in different ways. One approach is improving the company's knowledge base through the integration of suppliers, customers and other stakeholders who are outside the company. This approach has been named as "outside-in process" by Oliver Gassmann, and Ellen Enkel[54]. The authors also defined an "inside-out process" which corresponds to external utilization of ideas through intellectual property rights etc. Finally a "coupled process" is defined which combines the two processes above.

In order for open innovation to flourish, it is very important to provide the necessary cultural environment. An appropriate climate can only be created with the suitable approach and values. In such an environment, knowledge and experience can easily change hands among companies. This concept, which is named as the cultural approach, assumes that the organizational infrastructure has been created for open innovation. Science parks or the technology parks (we shall be using the terms technoparks and science parks interchangeably) are the ideal environments for such an infrastructure. Science parks are organizations which aim to promote the culture of innovation and competitiveness of their entrepreneurs, by triggering and managing exchange of knowledge and technology among them. Klaus Fichter[55] states the importance of the role played by science parks in this respect: "An important development in the past decade of innovation studies has been the recognition of the role of communities outside and across the boundaries of firms in creating, shaping and disseminating technological and social innovations".

Together with cultural climate, another accompanying approach is the structural one which requires certain mechanisms to be established. These mechanisms may be the trainings, financial resources, licensing activities etc. These formal structures can easily be organized in science parks where startups

[53] C.M.Christensen, "The İnnovator's Dilemma", Harvard Review Press, 2000
[54] Oliver Gassmann*, Ellen Enkel, "Towards a Theory of Open Innovation: Three Core Process Archetypes" , https://www.alexandria.unisg.ch/274/1/Gassmann_Enkel.pdf (accessed on April 20, 2017)
[55] Klaus fitcher, "Innovation communities: the role of networks of promotors in Open Innovation", R&D Management 39, 4, 2009

and SME's can access to the know-how provided by the Technology Transfer Offices (TTO) and obtain the training and guidance required to access the funds provided by the government as well as investors.

A critical mass is usually required for open innovation to be successful. It also helps if small and larger companies coexist together in the same environment. It is a factor which supports the open innovation paradigm. In a study conducted taking Teknopark Izmir as a subject[56] it is clearly stated that, although know-how is one of the most important parameters in innovation, it is also very important that this information is shared among different parties. In this process, even in this age of connectivity, physical juxtaposition is also very useful to facilitate the transfer of information and technology, create an environment of active cooperation and networking among the stakeholders. As mentioned in[57] "Geographic proximity of on-park actors is claimed to be one of the main ideas behind the concept of science park". Science Parks are the environments to provide this proximity. They provide the companies an opportunity to work together, think together and create together. These instruments should therefore be supported for paving the way to open innovation, and technology companies of all sizes should be encouraged to work together under the same roof.

Alongside with geographic proximity, open innovation enablers are also very important. As stated by Fitcher[58], "An innovation community is an informal network of likeminded individuals, acting as universal or specialized promotors, often from more than one company and different organizations that team up in a project related fashion, and commonly promote a specific innovation, either on one or across different levels of an innovation system." Technoparks are such enablers of open innovation. But at the same time these entities must also be able cooperate with third parties to enhance the impact of their efforts. Cooperation among companies in the science parks lead to great opportunities. Organizations play a role of complementing each other in such an ecosystem. This cooperation can be triggered by activities such as breakfasts, social gatherings, or activities which directly support innovation. In Technopark İzmir we try to create such environments where companies can meet and learn about the activities of each other. One such activity we organize periodically is the 3+1 event where 3 companies and one academician introduce themselves and describe their work. As a result of this activity many business to business as well as academic cooperation were established.

Hack'n Break organization was also intended to be such an effort where we have collaborated with some activists who were willing to initiate and actively take part in one of the first open innovation camps in Turkey.Before we describe the event in detail, however, we would like to mention the situation regarding open innovation in Turkey.

[56] Tuğba Gökdoğan GÜL, Serhat ÇAKIR, "TEKNOPARKLAR VE TEKNOLOJİ ÜRETİMİ: İZMİR TEKNOLOJİ GELİŞTİRME BÖLGESİ ÖRNEĞİ", Bilgi Ekonomisi ve Yönetimi Dergisi / 2014 Cilt: IX Sayı: I

[57] Ganna Goylo, Yulia Denisova, "Open İnnovation İn Science Parks: The İnfluence Of Geographic Proximity And Other Factors On Firms' Collaboration", Master of Science in Business Administration; Strategy and Management in International Organizations Department of Management and Engineering, University of Linkopings

[58] Klaus fitcher, "Innovation communities: the role of networks of promotors in Open Innovation", R&D Management 39, 4, 2009

Open Innovation Concept in Turkey

Open innovation has not been fully understood or widespread in Turkey as yet. On the other hand, global competition, the customs regimes in effect and the necessity of introducing their products to the market are pushing the companies to seek alternative ways to innovate in order to be competitive. The customer demands are also very effective in directing the companies to innovation. The organizations are realizing that being innovative is not a luxury but a necessity that they should adopt in order to survive in the market. The incentives introduced by the governments is also an important factor which encourages companies to get involved in the R&D processes and discover the benefits of open innovation while doing so.

Scientific Research Council of Turkey (TÜBİTAK) has introduced programs targeting organizations of different sizes where they would provide financial support for innovative projects. Organization to Develop and Support the Small and Medium Enterprises (KOSGEB) is another government based organization which helps SME's and entrepreneurs to start their own businesses and provides R&D support for their innovative ideas. Organizations which are eligible for such support usually find different ways of meeting up with larger companies to market their ideas or to get investment from them.

Technology Transfer Offices are one of the other instruments supporting open innovation to become more widespread.[59] They created an environment where the academicians can meet the industry and share their ideas. It also made it possible for the faculty members to learn about the problems of the industry and propose solutions for them. The financial support programs initiated by the governments also encouraged the entrepreneurs of all ages to come up with creative ideas and realize them through the means provided by these programs. Initiating these efforts in the incubation centers within Technoparks helped these entrepreneurs to meet with companies who may need these products and opened the way for new opportunities for them.

Mobile operators and producers of durable consumer goods also utilize open innovation in order to improve their products and allow new ideas into their portfolio. We have seen examples of this during the Hack'n Break activity which we shall describe in detail in the proceeding sections. Again, a durable consumer products producer, Arçelik, one of the biggest industrial giants in Turkey, worked together with a coffee producing company for the development of a coffee machine. For the mobile operators open innovation is an inseparable part of their ecosystem as most of the value added services are created through this approach and usually the business model is such that the operators spend nothing or very little for these ideas.

We believe that through the efforts of Technoparks, Technology Transfer Offices and activities like Hack'n Break open innovation will find ground to flourish in Turkey.

[59] M.N. Özdemir, S.Deliormanlı, "Türkiye'de açık inovasyon ekosisteminin oluşmasının önündeki engeller ve çözüm önerileri" TÜSİAD–T/2013-06/542

Hack'n Break

Hack'n Break was organized on 20-27 August 2016, at Technopark İzmir. This was the First Open Innovation Camp in Turkey to bring together 150 firms in our area with the innovation ecosystem outside of the Technopark. The purpose of the activity was to organize ideathons, trainings and hackathons which would allow students, high tech workers and entrepreneurs from different disciplines get together to think, work, socialize and create in an informal environment. Communication among the participants was carried to the highest level by promoting technology-focused activities during the entire week.

Just to define briefly[60] "Hackathons are events in which computer programmers and others involved in software development, including interface designers, graphic designers and project managers, collaborate intensively over a short period of time on software projects. Furthermore, hackathons have a history of use in academia (mostly within the sciences and engineering) strongly suggesting that it could equally be applicable to arts and humanities." These are events which may take up to two days or more. Ideathons, on the other hand, are brainstorming events, these usually last anywhere from 1-5hours depending upon the number of participants. They are usually not restricted to one subject.

Although it was organized for the first time, many technology companies in Turkey and around the world, such as Google, Intel, EnerjiSA (electricity distribution company), Temsa, Logo (software company), Pınar (food producer), Hürriyet (newspaper) have supported the event. At the same time, many NGO's, public organizations and student communities took part and actively supported the activity. Vehicle Communication Security Hackathon and Energy Efficiency Hackathons were two of the many activities where the companies requested the creative ideas of the participants to compete to generate valuable ideas.

Temsa, a leading bus producer in Turkey, organized a hackathon where the participants were asked to hack their electric vehicle. There were various attacks to the system by the white hackers and the company was happy to gather valuable information from these attempts. It also led to a commercial success at the end of the activity. EnerjiSa, a power distribution company in Turkey, organized a hackathon on energy efficiency during the event. Here participants working over long hours came up with different creative ideas to improve energy efficiency.

Logo, a leading software company specialized in ERP applications, organized an ideathon where they encouraged different ideas on the new generation business applications. The event attracted many people from different age groups and backgrounds and many ideas were shared throughout the activity. Another ideathon was in the area of education where the participants discussed different ideas on the new generation education approaches.

[60] Gerard Briscoe,Catherine Mulligan, "Digital Innovation: The Hackathon Phenomenon", Creatıveworks London Workıng Paper No.6, 2014

Designer meetup was another innovative meeting where the theme was kitchen appliances. The participants were asked to create different appliances from whatever is available. One of the products was a toaster created using an iron. Again coffee machines and other creative products were displayed at the end of the day.

Turkey's first open innovation camp was completed with an open innovation conference. Around 750 entrepreneurs, professionals and students from different age groups and sectors participated in the event. Throughout this event, 65 experts and mentors shared their experiences and 36 speakers participated in the closing conference program where the theme was experiences of open innovation within the organization. During the conference inspiring presentations were given by the experts from different high tech fields.

Dr. Faruk Ozlu, Minister of Science, Industry and Technology was the keynote speakers at this open innovation conference. He stressed the importance of open innovation and also expressed the intentions of his Ministry in supporting entrepreneurs from all spheres.

Dr. Cengiz Ultav, Executive Committee Member of Vestel and President of the Board of Directors of Turkish Technology Development Fund, emphasized the importance of education as well as the role of networking and human relations in the sustainability of technological development. Ms. Gül Erol of EnerjiSa announced that they will be starting an incubation center project together with the young entrepreneurs who participated in the event.

The Break part of the event was just as colorful as the technology side. Participants were trained to do windsurfing and kite surfing. Cycling and swimming sessions help them relax in the tranquil environment. As The peninsula is famous for its food and beverages, the participants also had a chance to make the most out of the healthy food.

It was not only the Technopark which benefited from this event, but also the whole neighborhood had something to offer and they all enjoyed the visitors and their contribution to the economy. It is expected that a similar event shall be organized in the same location this year during the month of August. This time the theme will be clean energy, electric driven vehicles and industry 4.0. It is expected that over 3000 people shall be participating in the event.

Conclusion: Hack'n Break and the Technopark Izmir Companies

Hack'n Break obviously had a positive impact on Technopark Izmir, hence the companies positioned here. One of the most obvious outcomes of the event was the news coverage we got during and after the event. Local and national newspapers, as well as national television stations covered the event. The closing conference where the Minister of Science, Industry and Technology delivered the opening speech received considerable publicity. This interest of the press continued during the months following the event and some of our companies managed to get national coverage.

The other side effect was the interest by the angel investors and venture capitalists. We had many opportunities to introduce our companies to various capital groups some of which led to fruitful cooperation. We have also initiated an inventory of our companies in the Technopark and selected a number of start-ups

which might be worthwhile to introduce to the investors. The outcome of this inventory study also provided us with valuable information about our entrepreneurs.

Hack'n Break has also provided an opportunity for the companies to listen to mentors and leaders from the industry and learn about the trends in the industry. The speakers, most of which were prominent figures from the industry, contributed to the knowledge base of Technopark Izmir.

We believe in open innovation and the contribution it has to the development of technology and also to the commercial success of companies of all sizes. As Technopark Izmir we shall support all the activities which serve for this purpose which we believe will help the advancement of our ecosystem.

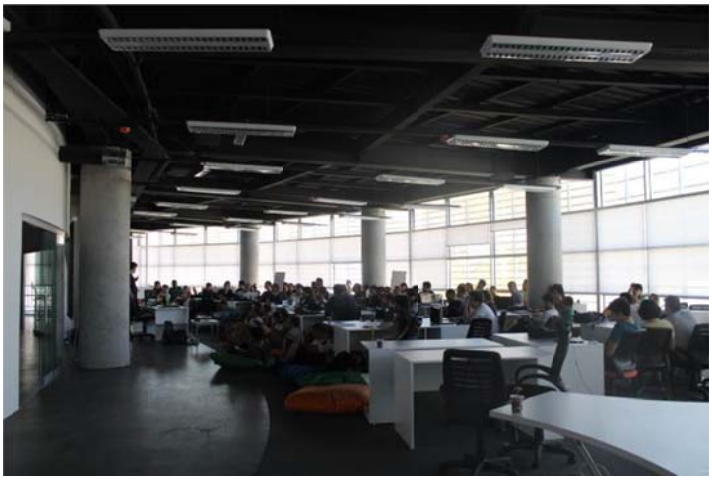

Figure 17 A view from a Hacathon

Figure 18 The open innovation conference