Open Innovation, a New Approach to Urban Management

Plenary session 5:

Open Innovation and City Challenges

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Executive Summary

Open innovation is a new topic in the field of urban studies, and, in particular, in urban management, which emphasizes on the improvement of the living environment and the quality of life through new thinking of the citizens. Open innovation also expands the vision of urban managers, planners, and directors and respects the diversity of interests in an urban scope. In this respect, with the implementation of open innovation and the application of larger capacities and the creation of a suitable platform for attracting initiatives and innovations in the urban area, great steps must be taken to increase social welfare and security and thus reduce costs and the consequent hazards. In a city with open innovation, the city will benefit from the innovations and capabilities of citizens and their creative minds in making a sustainable urban development. This, therefore, boosts the urban life.

Introduction

Among the indicators of progress in developing countries is the increase in public participation and promotion of the spirit of teamwork. In fact, all developed countries believe that their success lies in the proper participation of their citizens in the administration of the society and their presence in voluntary and public activities, which lessens the public sector ownership and raises the level of social life quality. One of the ways to increase the level of public participation and to overcome the social challenges is to benefit from ideas and innovations openly.

As Henry Chesbrough puts it, open innovation is a paradigm in which companies, in addition to internal ideas, can use external ideas.[1] They can find their advancement in technologies through the internal and external paths to the market. Unlike the traditional models of innovation, this model is based on the exploitation of ideas (either in the organization or outside of the organization). Moreover, contrary to the traditional approach, innovation is not limited to the research and development unit within the organization, and he believes that innovation is neither limited to specific people, nor specific topics, nor specific places, but innovation can be sought in all people, all places, and all topics. This paradigm emphasizes on the socialization and integration of innovation. Open innovation offers certain opportunities to reduce the cost of research and offers innovations much more quickly to the market, pointing to the collaboration between companies, individuals and government agencies to create innovative products and services, and, throughout this path, they all share the risks and rewards. This model of innovation believes that in a world with vast amounts of knowledge, companies cannot rely solely on internal research. They can benefit from innovations together with their partners.

NetFlix Company has been one of the successful open innovation initiatives. This company is active in the field of movie rentals and one of the most important challenges that this company has faced is the anticipating of customers' tendency towards various films. Given the importance of this challenge in 2006, NetFlix decided to hand over this issue to the community (wisdom of the crowd). To this end, they set up a 1-million-dollar prize for the people to design an algorithm through which the balance between the presented films and the interests of customers would be increased by 10%[2].

Four lessons can be learned from the NetFlix pattern:

- Express the challenge ahead for the crowd clearly and unambiguously, and inform the crowd of the importance of the challenge;

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[1] Henry William, Chesbrough, H. M. (2006). Open Innovation: The New Imperative for Creating and Profiting from Technology. Boston: Harvard Business Press.
2 Ashjaee, Mehdi. (2017). What is open innovation? With the example of Austria's Open Innovation document and NetFlix Company. Retrieved from Marketing and sales management:
http://cafemodiran.com/index.php/articles/sales-and-marketing-manager/2014-01-14-20-46-55/item/940-netflix

- There should be established a logical relationship between the prize and the subject matter in order to make sense out of spending time and energy to solve the problem;
- Create a sense of competition in the crowd;
- Maintain ownership and create a mechanism to respect participants' rights.

The above items can be some of the key drivers of success in open innovation. Given this example of open innovation, many urban challenges and problems can be solved. Citizens' ideas and innovations can be used to help solve urban problems and make decisions.

Challenges facing cities to implement open innovation

Governments and city authorities face complex challenges in urban management. As urbanization grows, cities are facing more and more demands for services. On the other hand, rapid changes in the global economy push the cities to try to adapt to these changes. In some cases, cities experience financial recession and residents of these cities leave the city because of the unpleasant conditions. Open innovation is one of the suggested ways to exit cities and states from these complexities and challenges and allows cities to become more capable of providing services, though the number of demands and complexities of the services they receive is increasing. Politics in cities with open innovation, as compared to the cities with closed innovation, tends to increase the average ability to promote transparency, public participation and economic innovation. In order to enhance urban participation with an open innovation approach, the culture of openness within that city needs to be trained and an ecosystem of open innovation must be promoted widely.

In societies where there is closed innovation, the lack of social participation in public affairs is very evident. The closed innovation is a view that sees success in light of imposing control. Based on this view, organizations must create, finance, build, distribute and then develop their own exclusive ideas, which requires organizations to be highly self-sufficient. This is because one can never be certain about the quality of others' ideas and in this failed approach of the urbanity, all steps are taken within the same urban complex and citizens only have one role, they are the inactive recipients of services.

One of the first steps to make urban changes is to raise citizens' awareness of urban issues. Citizens' demands that are enclosed through media, education and social movements are the starting point for all urban changes. Citizens' awareness of the responsibilities and rights that they have towards their city is vital to creating an "ideal city". When the awareness of people increases over a subject, that subject is more followed more importantly. For instance, if people become aware of the economic value of household waste recycling, they will eagerly take the necessary steps to assist in recycling the waste. For making this awareness and reducing the distance between citizens and public and local administrations and promoting interactions with the community, the implementation of an open innovation platform is necessary. In this challenge, the relationship between citizens and the municipality would be much closer through the implementation of open innovation thus to attract citizens to the decision-making process in the city.

Suggestions for implementing open innovation

Open innovation in cities can be implemented in various ways. Here are some of the suggestions for implementing open innovation in cities.

1- Holding technology and innovation challenges

One of the ways to implement open innovation is to hold technology and innovation challenges in the cities. The challenge of technology and innovation is a competition aimed at developing appropriate solutions for urban problems. In this type of competition, the municipality can find the most appropriate solutions to overcome its urban problems. Participants in the challenge of technology and innovation are the people of the community can be ranged from students, faculty members of

universities and research institutes, independent researchers, small and medium-sized enterprises to the public, and there are no prohibitions or there is no limit to the challenges involved[3].

But what is meant by a technological solution? In these types of competitions, technological solutions typically include conceptual designs or prototypes. Therefore, depending on the circumstances, the challenges can be in one or two stages, the first stage consists of conceptual plans and the second stage includes the prototypes.

Stages of a technology and innovation challenge

In general, holding each challenge involves the following steps:

1- Design a call
2- Publicize the call
3. Formulating conceptual designs
4- Reviewing and judging conceptual designs
5. Prototype development
6. Judging and announcing the winner

What are the initial conditions for accepting a proposed solution?

• Increases public welfare
• It leads to the creation of innovative ideas.

The benefits of holding technology and innovation challenges for the cities:

- Low cost: The cost of conducting these challenges is much lower than those of research and development units.
- Less risks: In the challenge of innovation, the award and, more importantly, the process of cooperation and investment only begins when the presented conceptual design or prototype has been able to meet the technical and economic criteria of the challenge.
- High speed: innovation challenge can provide a shorter time to achieve the final design or prototype, and therefore its speed is not comparable to other technology development mechanisms.
- Identifying top talent and creative ideas: The challenge of innovation allows municipalities to take advantage of all the ideas, genius, and creativity of the people, and they enjoy the massive amount of creative ideas outside of the municipality.
- Public participation: Providing public participation spaces for the citizens.

What are the benefits for the people in case of providing an appropriate solution?

- Cash awards from the municipality administration
- Income from the outcome of the work
- The attractive aspects of the challenge
- Learn and enhance personal skills
- Reputation and social acceptance
- Personal satisfaction from problem solving
- Investment and support by the municipality
- Contributing to the final implementation of the project

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[3] Industry and Technology think tank (ASEF). The idea of Technology and Innovation Challenges. Retrieved from:http://irannano.org/filereader.php?p1=main_c51ce410c124a10e0db5e4b97fc2af39.pdf&p2=static_page&p3=1 &p4=1

What are the limitations of technology and innovation challenges

- The technology challenge is a competition in itself. Therefore, despite its extensive information, no good answer may be found for it. In this case, the challenge can be repeated again.
- Very complex problems cannot be solved with the of technology and innovation challenge.
- The judges might act subjective in the assessment of ideas.

An example of the technology and innovation challenge is the online implementation of open innovation. The online implementation of open innovation is important because:

- It involves more citizens.
- It is accessible and transparent for the entire population.
- It allows citizens to monitor the implementation of actions through a website and provide access to the entire process.

Implementing open innovation in cities can be online where cities can invite citizens to participate in providing solutions to improve the quality of public services.

The E-você platform is an example of online open innovation, which has been implemented in Brazil due to lack of social participation. This platform was launched in Teresina, Piauí, from Oct. 2015 to Feb. 2016. The initiative started as a pilot project in Campinas, Sao Paulo, in 2013 and also happened in Pelotas, Rio Grande do Sul, in 2014. All cities are located in Brazil.

E-você is an open innovative platform in which cities, by creating and implementing public policies, can ask for the participation of their citizens in giving solutions to improve the quality of public services. This device enables citizens to propose solutions to the city's challenges through a win-win process. Civil society, which is actively involved in public affairs, and a government that allows citizen participation in public affairs, creates innovative ideas and cost-effective solutions to urban challenges. Challenges are raised as questions and citizens can mutually share their suggestions. In Terzina, the project had three phases: the first phase began the challenge of the city with the question "How can young people help reduce drug abuse and create a culture of peace." The goal was to invite young people to make their suggestions. At the end of this phase, a committee chose 35 ideas that were innovative, feasible, and creative in making a culture of peace. In the second phase, out of the selected 35 ideas, 10 ideas were selected by people's votes and ten of the top ideas of were cash-prized and were funded for being implemented. At the last phase, the Terzina City Council, under the co-ordination of the author, implemented the ideas. In these circumstances, young people were also invited to continue to collaborate through the platform to follow up on the actions taken and interact with other participants. Implementing such activities can be used in many urban challenges.

2- Creating centers of creativity and innovation

Creating centers of creativity and innovation in cities will lead the city to use a creative and research-based approach obtained from wisdom of the crowd to manage the city. That is because sometimes there are problems in the city that solving them requires creative methods. This kind of solution, however, is different from the classic solutions. In the classic solutions, the research unit conduct the studies and research and solves the problem, but in this way, from the very beginning, creative citizens are invited to provide solutions. The essence of the centers is to solve the greatest urban management problems with an innovative approach.

The programs of these centers can include:

- Education of citizens and acculturation in the field of open innovation;
- Attracting general ideas about the problems that citizens face in society and the ideas they have presented to solve these problems;
- Urban problems that the municipality knows about them and has not found any solution for them so far.

By using all the facilities and attracting people's participation in new solutions, these centers plan for problems, each of which has its own complexity. Therefore, a force must be used that can connect with the people and lead the system of suggestions and the people outside the organization. Using these ideas and communicating with the owners of the ideas, they must find solutions to the problems. However, doing so will require a person with an interest, perseverance and knowledge. In creativity centers, there is no need for academic education, but creative people are only needed. Maybe these people have a low level of literacy, but if they are creative people they can certainly work in these centers. The centers of creativity can be called the mastermind of the city. Some urban managers might have a political or economic approach towards such centers, but in order to direct open innovation in the cities, there needs to be innovative approach. This approach needs people's ideas and innovations, which means people are planning for themselves. The centers of creativity are therefore called the eyes and lights of the city[4], and if there is a desire to increase productivity, there is inevitably innovation in performance and new creations.

There should be a scientific flow to explain creativity in society. Always, the name of the municipality has been a reminder of the city sanitary issues, green spaces, etc. However, a new shell should be created in the municipality so that the name of municipality does not merely denote an unreasonable service provider for the citizens, but all the intrinsic activities of the municipality should be given a new and productive direction, which should be followed by knowledge and saving and preserving the resources of the city. To realize this, urban diplomacy should be exploited to take advantage of the experiences of others and move with the presence of artists, scholars, literate and educators, craftsmen and entrepreneurs in the city. In a city with open innovation, there is a sparkle and people think about it and give their ideas about that. In these cities, creativity is a value. When individuals co-operate in the planning and implementation of a process, they feel responsible about that.
Motivations for action, new ideas about changing and applying logical principles are not enough for a city to succeed in innovation. Still, the will and ability to act on new ideas and methods are needed. The following are the resources needed to successfully implement innovations:

• *Collective Will* – Political and public will to mobilize resources, take risks, and stay the course.
• *Visionary Fit* – The community's vision must resonate with its particular circumstances and possibilities, including local assets and constraints.
• *Strong Community Networks* – The existence of, and robust connections among, appropriate individuals and organizations are required to act on ideas.
• *Strategic Resources* – Resources for innovation are multi-dimensional, including: money; people with available time, expertise, skills, knowledge/information; and social relationships and spaces for networking.
• *Time* – This involves both the time required to make change, recognizing that plans unfold over long periods, and also the element of appropriate timing, which may mean speeding up processes as opportunities arise, or delaying to a more propitious moment.
• *Flexibility* – Implementing innovative ideas are, by their nature, experimental and require flexible approaches. In dynamic community situations, challenges and opportunities evolve. As such, visions, plans, and rules must be adaptable such that innovative projects can be implemented or tested-out.[5]

Discussion and conclusion

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[4] Izadkhasti, M. A. (2015) Urban problems are solved with creativity. Retrieved from The Economics Newspaper of Iran: https://www.donya-e-eqtesad.com/fa/tiny/news-3277534
[5] Duxbury, Nancy. (2004). Creative Cities: Principles and Practices. Ottawa: Canadian Policy Research Networks

Urban management, besides having a plan for the city's situation and overcoming its problems, plans the future of a city by using social partnership. The concept of participation denotes the influence of individuals and the whole community, either directly or indirectly, on urban affairs and other issues and this way they become active citizens. The people's participation in urban affairs will increase their self-esteem, social interaction, experience and skills, strengthen the characteristics of self-leadership and self-accountability, and prepares the ground for change in the city's stylization and dynamism. Finally, participation is considered a vital element in the process of sustainable development and it is referred to as a missing stone in the development process. Participation contributes to increasing a sense of competence and dignity in individuals and leads to the strengthening of the civil society. The role that people can play in preserving urban green space, preserving the city's general property, relaxing and beautifying the city and the urban landscapes, etc. is a crucial role. Urban management certainly needs the participation of the people thus to meet their needs. In order to realize the goal of social participation of citizens in the municipality, it must be based on the needs of society and the values of the community, and this empathy must be converted into co-operation through appropriate collective communication. In case of making interpersonal thinking, a suitable mechanism can be considered for co-ordination.

In fact, the municipality needs to create a collaborative atmosphere in which the public take part in urban activities, either directly or indirectly. This participation can range from the collection of information and recognition of the status quo to choosing the optimal solution and its implementation and evaluation. In fact, the structure of citizen participation in the municipality should not be just in words. Practical steps need to be taken. This partnership should not be limited but it should turn into real partnership, and this structure should seek to build capacity in all strata of the society and be people-centered, with a special emphasis on the role of the people and the degree of their intervention. In addition, the structure should include a comprehensive partnership in which citizens participate actively in all stages of decision-making and monitoring, and take the lead in issues related to their own neighborhood. Individuals should nevertheless be aware of their social responsibility and devote themselves to the community. This is important people sympathize and socialize with each other. For this reason, any effective participatory program should include an appropriate public awareness and public agenda, and people should be informed about the subject they are supposed to participate in. They must be fully aware of the whole process after they are socialized. Information can be given in a variety of ways, including summaries of instructions, exhibitions, long reports, media packages, news conferences, newspaper attachments, advertisements, introductions to citizenship groups, etc.

Among the programs and plans of a municipality, one can name the development of e-government via creating electronic offices of urban services and the use of ICTs for the formation of citizens' virtual participation, Institutionalization and acculturation of the participation of the people in urban issues, making suitable grounds for the presence of the people, motivating and familiarizing citizens through the rationalization of economic, cultural, social and political interests, and the timely, accurate and public information for people's participation and space for regular citizens' visits from the municipal programs. However, in order to succeed in tackling urban problems, people must be provided with opportunities to take part in solving such issues and this way they become able to benefit from their togetherness and solve urban problems. This is not possible but through the implementation of open innovation.

In cities where open innovation is implemented, there is a discourse change. Discourse is a set of insights and ideas that, through the words and speeches that are institutionalized, affect minds and, in terms of time and history, it even affects the consciousness of a historical period and sheds light on a people in a specific era. Nevertheless, in the first detailed study of the cities, environmental problems, social and identity traumas, and traffic and life difficulties are the most important issues facing urban management. In order to overcome these issues, the first thing is achieving a new discourse. In defining a discourse's style and choosing the best alternative, we again face the discourse -based open innovation. This discourse-based approach has two implications. First, communicating with people and urban agents, and second is learning it and engaging everyone with it. It means it needs to be institutionalized, and it will help the city pass all the issues. It is clear that what we have had before has been "words" and not a "discourse". We know well that "words" are a one-way rout, but "discourse" is an interactive issue. The focus of our discourse is on a city with open innovation. In order

to realize its relationship with global institutions, it is necessary to hold classes and meetings in order to help institutionalize this fact and there must be a strong motivation to shift "the words" into "a discourse".

However, the implementation of open innovation in cities, in addition to all the benefits in addressing urban challenges, they may also have disadvantages and weaknesses. Considering that with the implementation of this model, many solutions are proposed to solve the problem, the costs of research and testing these solutions might be high, and the likelihood of choosing any solution diminishes. In such a situation, some potential partners may become disappointed and turn to those firms and organizations with more innovative models, which might improve long-term cooperation, and, in this vein, repeated partnerships are effective on the formation of confidence in honest behaviors, and this is a relatively weaker problem in open innovation. As the number of partners increases, it makes the issue of coordination and control more complicated, which can increase organizational costs and risks. These disadvantages, along with the benefits mentioned above, need to be balanced accurately and the costs must be analyzed. An open innovation model is appropriate in cases where there is a possibility of the use of the definition of small projects with low levels of control and complexity and multiple external resources exist. However, in cases where it involves high levels of control and complexity, it is better to pursue innovative projects with limited partners.

Given that open innovation model is more complicated than the closed innovation model, social and civic participation in this model requires interaction and exchange of information. Available information can be shared across the network between participants inside and outside the organization, which can help the city's administration meet the challenges they face. The disadvantages and problems of urban management in issues such as public transportation, urban regeneration and renovation, urban marginalization, integrated urban management, sustainable incomes, environmental pollution and hundreds of other problems, surely demand a new look at the innovation process. In the planning of creative cities in the third millennium, there should be put an end to the traditional paradigm of research and development management and grease the wheels for the implementation of new urban technologies. As open innovation enters urban management, not only it minimizes the mistakes, but also improves the city's progress.

Open innovation leads to the creation of an ideal city. In the "ideal city," the knowledge of experts, as well as the views and aspirations of the people, are used in urban decisions. In these cities, citizens are involved in policymaking. In such situations, regular, responsible, accountable, and transparent people shoulder urban responsibilities. In these cities, all people in the community care about urban issues and share their resources and efforts with others in achieving their shared goals. In fact, in these cities, people are the main leaders of a society. However, the point here is that there is a huge gap between words and actions, and open innovation in cities will not be effective as long as just the "slogan" goes along. Changing insights and attitudes of senior executives, especially the R & D managers who have always summed up innovation in R & D and reverse engineering, will not happen overnight. Therefore, there might be needed radical changes of the culture and style of innovation management in cities.