IASP International Association of Science Parks and Areas of Innovation

35th IASP World Conference
on Science Parks and Areas of Innovation 2018
Isfahan, Iran

# Embracing Tyranny Of Distance: Case Of Teknopark Izmir

*Parallel session 5:*

*New roles and opportunities for STPs in cities, regions and AOIs*

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*Hosted by:*

ISFAHAN
SCIENCE & TECHNOLOGY TOWN
(ISTT)

ISBN: 978-84-09-17612-0

# EMBRACING TYRANNY OF DISTANCE: CASE OF TEKNOPARK IZMIR

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## EXECUTIVE SUMMARY

New developments in knowledge-based economy have prompted cities to focus their competitive strategies on improving innovation. This shift has increased the value of innovative districts in cities that knowledge, creativity and innovation are new buzz words in economic and social development. Third generation of Science and technology parks (STPs) and Areas of Innovation (AOIs) is highly open, place-based and socially constructed that differ from other two based on pure technological developments to increase economic growth. Therefore, there are much room for maneuver on social and environmental issues toward Sustainable Development Goals (SDGs). Following the rise of place-based innovation this study scrutinizes the role of spatial and non-spatial proximities in the development of strategies and tactics in STPs in the case of Teknopark İzmir that embracing the tyranny of distance is utmost important for its further development.

## 1. INTRODUCTION

During the last quarter of the 20th century, it has become apparent that knowledge in and of itself is sufficiently important for production, and the new growth theory and the new economic geography recognized 'knowledge' as the fourth factor of production (Romer, 1990). Therefore, knowledge related activities, including creativity as a tacit knowledge form, have become central for creating employment and wealth, and sustaining economic growth.

At the heart of new economic environment, STPs have faced with innovative processes to deliver today's needs. Traditional concept of 'technology parks' starts to be changed in terms of new urban agenda where open innovation and creativity is the driving force of the economic and urban/rural development (Yigitcanlar et al., 2008).

This study aims to introduce different strategies and tactics for embracing the tyranny of distance in the case of Teknopark İzmir as the main unit of analysis. The first assumption employed in the study is that spatial proximity is not absolute and can be seen in a multilevel perspective to better understand various local and global impacts. The second assumption is that non-spatial proximity is as much as important as spatial proximity and hence STPs cannot be considered in a vacuum.

The study has four parts. Following the introduction, the second part discusses the spatial positioning of STPs in a multilevel perspective and types of proximity to affect them. The third part covers specific strategies and tactics discussed in the case of Teknopark İzmir tackling with different types of proximity by using analysis of local policy documents and a structured user survey. The study concludes with recommendations on the need for place-based innovation and discoveries.

## 2. STPs in MULTILEVEL PERSPECTIVE: Literature review

This study employs multi-level perspective to understand the different types of proximities on the development of STPs in general and Teknopark İzmir in particular.

Distance can be thought as absolute entity in Neo-Classical economical models obtaining objective time and Cartesian space. In those urban and industrial models like Christaller's central place theory (1933) and Weber's theory of industrial location (1929), negative impacts of 'friction of distance' is tried to be minimized (Graham and Marvin, 1995). Technological revolution that covers the rapid developments in ICT based technologies has changed the

absolute notion of space and time and brings the possibility of "different spaces and different times". Technological determinist and futurist McLuhan, in 1960s, predicted that 'global village' was readily available by means of worldwide recognition of electronic mass media: "Time has ceased space has vanished. We now live in a global village". According to urbanist Melvin Webber (1964) 'community without propinquity' is possible with advances in telecommunications infrastructure. To him, in the traditional pedestrian city, the relationship with space was determined by the principle of contiguity or propinquity. People were mostly related with their geographical neighbors, and no strict separation between the living and working places. Webber claimed urban dissolution of old structures in parallel with telecommunications revolution that was rapidly gaining momentum after 1960s. Harvey (1991) asserts that by means of globalization with the aid of advanced communication and transportation technologies, '*time-space compression*' occurs referring the acceleration of economic activities leads to the destruction of spatial barriers and distances. Formation of global economy makes idea of annihilation of space by time possible. At last tyranny of distance have overcome. Network and connectivity has become as much important as accessibility to create successful global city-regions. This means excellent physical (air, sea, rail, and telecommunications) and social (firms, sectors, and institutions) infrastructure.

In production space, decentralization of industrial components (dispersion of headquarters, back offices, sales points, and inventories to the different areas) and digitalization of economic activities by ICT infrastructure was created expectations that dissolution of cities and those changes make cities obsolete in terms of economic context. However, availability of different spaces and different times creates networked understanding of space and time in which certain nodes (i.e. metropolitan cities and specialized enclaves) are flourished with the impacts of real time global flows of information, people and goods. To understand the dynamics of today's hi-tech production and R&D environment it is required to know the changing role of proximity.

The production of knowledge is today increasingly concentrated in various types of clusters, and often in forms of spatial and non-spatial agglomerations. Clusters of particular industries are explained through different approaches to proximities of activity concentrations as seen in STPs. While spatial approaches deal with the physical connectedness of firms as they take advantage of being co-located with one another to be well informed about their businesses, market and competitors, non-spatial approaches to proximity suggest that firms can also be inter-linked and connected through distant networks of supplier, service and buyers' relations.

Regarding STPs as a particular form of cluster, the spatial approach to proximity asserts that the spatial concentration of economic activity reduces transaction costs and develops more intense inter-firm relations. Storper (2000) asserts that most of the firms engaged in the same industries tend to locate to guarantee access to the latest ideas about the product and market changes and shifts. Storper and Scott (1988) and Scott (1988) claim that transaction costs are reduced via spatial proximity. Costs for obtaining the relevant information are reduced and, flow and exchange of information is accelerated. Turok (2010) refers to Gordon and McCann (2000) in his work to distinguish two spatial clustering models: pure agglomerations and industrial complex. The pure agglomeration is associated with the external economies of scale or scope driven by the other firms locating in the same area. In the model of pure agglomeration, inter-firm relations are rather short-lived. On the other hand, industrial complex (or activity complex) presented by Gordon and McCann (2000) and Iammarino and McCann (2006) suggests that spatial industrial clustering is observable in terms of its aim of reducing transactions costs, by locating close to other firms. Firms generally have complex and highly organized input–output supply chain production and consumption hierarchy in the area in which they operate.

Moreover, Scott (2000), Iammarino and McCann (2006), Gordon and McCann (2000) further their discussions towards the non-spatial proximity in clusters. Their claims are based on the social network where active collaborations between firms and other actors emerge to stimulate trust and long-term relationships. This approach eliminates the limitations of pure market relationships and short-term contracts, and enables greater level of social integration. Networks can also be built upon the distinctive history and identity of places represented by their own

associations. Another advantage of social networks is that they reduce some of the difficulties of coordination that result from fragmentation (Scott, 2000). Regardless of whether industry networks are national or international, firms may create connections with customers, suppliers, and other firms outside the cluster (Scott, 2000). Furthermore, Boschma (2005) identifies four distinctive types of proximities found in clusters: cognitive proximity (sharing a common vocabulary and conceptual framework), organizational proximity (capacity to coordinate and exchange knowledge), social proximity (micro-level social ties of friendliness and trust), and institutional proximity (macro-level routines, rules and regulations). Significant to STPs, cognitive proximity refers to a distance that is more than creation and learning occurring just on geographical location. Instead, related actors need a certain cognitive proximity in order to communicate, absorb and process new information. For Mattes (2012), if the cognitive distance is excessive, the actors involved may misunderstand each other, and have difficulty exchanging and interpreting each other's knowledge. Similarly, if too small, access to new knowledge or creativity may not be ensured so that there should be an optimal level of cognitive distance.

Storper and Venables (2002), Owen-Smith and Powell (2002) and Bathelt et al. (2004) build upon some of these theoretical discussions mentioned above as they strengthen the spatial and non-spatial perspectives by integrating them through the concept of local buzz and global pipelines. As complementary, they suggest that there are also two scales of interaction for creation within the clusters: local buzz and global pipelines.

Storper and Venables (2002) has identified the conception of 'buzz' that refers to the spatial dimension if information and communication ecology created by face-to-face, contacts, co-presence and co-location of people and firms within the same industry and place or region. This type of interaction consists of specific information and continuous updates of this information, planned or spontaneous learning processes, and shared cultural traditions and habits within a particular field. In a similar way, Owen-Smith and Powell (2002) use the notion of 'local broadcasting' and Grabher (2002) uses the concept of 'noise' interchangeably. Being in close proximity, co-located and visible enables great potentials for inter-personal translation of important news and information among the cluster actors and firms.

On the other hand, Owen-Smith and Powell (2002) employ the non-spatial stand and introduce term 'pipeline' where the channels are used in such distant relations and contacts. According to them, the creation and information accumulation does not only result from the local and regional interaction but also often obtained through strategic partnerships of inter-regional and international reach. Often, planned, systematic and decisive knowledge flows occur through these pipelines, instead of undirected and spontaneous local buzz. Unlike the local buzz between cluster firms, there is no shared trust in inter-regional and international environments that can be beneficial. Rather, the formation of global pipelines with partners in distance requires time and involves costs (Bathelt et al., 2004). Regarding the mutuality of these two concepts, local buzz and global pipelines are feeding each other and they are complementary as well (Figure 1).

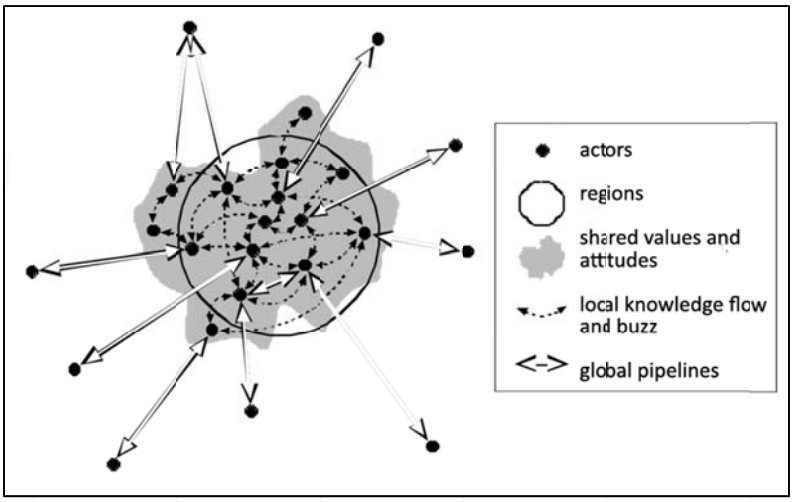


Figure 1. Illustration of Local Buzz and Global Pipelines, (Source: Bathelt et al., 2004)

### Global (Macro Level): Role of STPs in Knowledge based Economy

In closed innovation system till 2000s technological developments has seen as independent variable to support hi-tech production and hence advanced economic development. Almost all literature on innovation is based on creation of this growth by means of advance technologies in premium hi-tech locations.

Only after 2000s open innovation systems has gained momentum and hence place-based innovation, local and micro interventions based on civic engagement takes into picture as dependent variable of the whole system. Therefore, place-based innovation as in the form of living labs, technology hotspots, i-hubs, knowledge precincts in micro scale and inner-city locations (Hambleton, 2017). The most recognizable difference between these two systems of innovation is that contemporary AOIs appeared in business and service sectors due to execution of accessibility, flexibility, seamless connectivity, integrated functions; live – work- play environments. Therefore, spatial proximity has gained prominence in parallel to those above-mentioned changes in the innovation systems.

### Glocal (Meso Level): Entrepreneurial turn in Turkish Innovation Ecosystem

The various prefixes and suffixes (i.e. techno-, science-, -park, -plaza, -polis, -valley, and –topia) signifies STPs and new industrial space. In relation to the changes of urban and economic structure, technology developments are classified in three generations. The first generation has been perceived as science push whilst the second one seen as market and demand pull. Today, the third generation is based on interactive local flows located in a vibrant urban community consist of science-industry-government relations and local, regional and even global innovation activities.

In Turkey STPs has gained momentum after 2000s and largely based on second generation market and demand-pull model emerged within the frame of university-industry and government cooperation encourages R&D firms located in the surroundings of the university, contribute to science production, develop center of technology and knowledge spillover and support national and regional economic growth. This university-led development pattern created a sterile environment with series of low, discreet buildings in a quite carefully landscaped area, in a campus-like atmosphere. Today there are over 70 technology development zones in Turkey scattered through wider geographical area aiming to support balanced economic growth between geographical regions. Despite these efforts it is still valid that unbalanced socio-economic and spatial disparities among regional (east and west), city wide (metropolitan and non-metropolitan) and inner city (central locations and suburban developments) situations.

The national model is still awaiting an internationally recognized STPs, has long been reflected to the success of Silicon Valley that can be found in much more ambitious replication models over Asia supported by a large-scale real-estate development. National Knowledge Society Strategy of 2015-2018 recognizes the importance of micro-scale place-based innovation environments and pave way to establishment of living labs (currently 2, goal:20) however, macro policy concentration and place-based policy interest are still lacking.

### Local (Micro Level): Teknopark Izmir as forerunner of AOIs

Teknopark Izmir is one of the first STPs of Turkey established in 2002 and operationally started in 2004. The Park supports 800 employees working for over 157 domestic and foreign research and development (R&D) companies and an estimated value of 266 million ₺ turnover and $20 million export. The Park is located in metropolitan port city of Izmir which is the third largest city in Turkey with a population of 4.2 million inhabitants. Teknopark İzmir is a typical example of second generation STPs located inside Izmir Institute of Technology's university campus area which is approximately 40 km far from the city center. The very ideas of development of such a big scale AIOs stems from economic liberalization period of Turkey in early 1980s. A dream of hi-tech regional corridor in Turkish Riviera (İzmir's Peninsula region) supported by a world-class new university (Izmir Institute of Technology founded in 1992) and excellent physical infrastructure (İzmir-Çeşme Highway installed in 1993 and Çeşme Seaport) were the driving forces of Teknopark İzmir (Figure 2).


Figure 2. Major driving factors in foundation of Teknopark İzmir

The most preferred clusters in The Park are based on ICTs and renewable energies. While the former has provided larger concentrations in the city centers and close proximity to each other

the latter is depended on very place-based local assets which is largely available in the Peninsula Region. In the case of ICTs, Izmir largely follows a centripetal spatial distribution. In the periphery of metropolitan core the number of ICT firms are decaying. Only exception is Teknopark İzmir, just holding 8% of (52 out of 630) total ICT firms in the city (Tuğlular et al., 2013) (Figure 3).

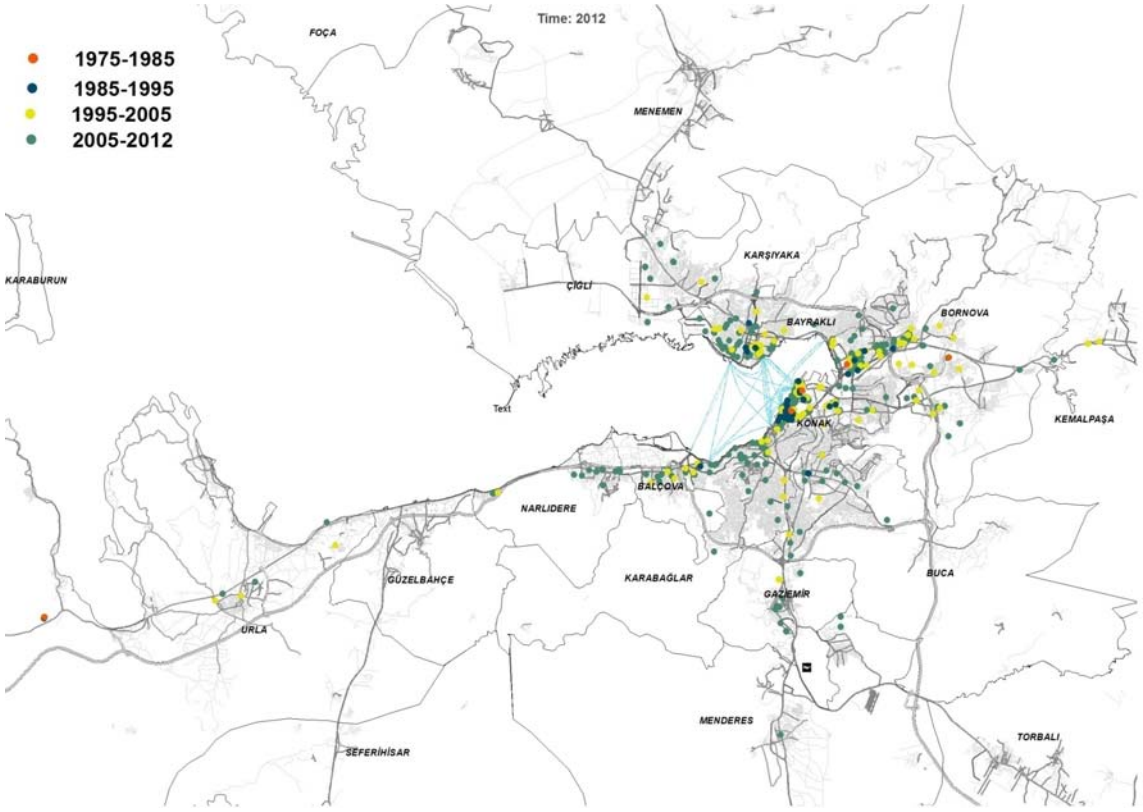


Figure 3. Development of ICT-based firms in İzmir

## 3. STRATEGIES AND TACTICS FOR EMBRACING THE TYRANNY OF DISTANCE

As a methodology, policy analysis based on written official documents and a firm-based survey to review of current trends and responses to tyranny of distance have been conducted.

Policy analysis is based on Teknopark İzmir's strategy development plan, and related sections of İzmir Peninsula Sustainable Development Strategy and Izmir Regional Plan initiated by Izmir Development Agency and Izmir Metropolitan Municipality. An informative firm-based survey has also been added to strengthen the policy analysis and to grasp the subjective dimensions of the impacts of different types of proximity. To this end, survey has been conducted by 20 technology firms from Teknopark İzmir in 2018 selected according to their size, areas of interest and duration of tenancy. The results and implications from this survey were used and elaborated in this section.

### S&T1: Coping with geographical and physical proximity

Regarding to Teknopark İzmir's relative position in the metropolitan city far from major industrial locations creates a tyranny of distance in terms of both geographical and physical proximity. User survey conducted by various technology firms in Teknopark İzmir testifies this assertion. Majority of respondents (75%) found transportation options regarding to geographical

proximity is difficult and access to affordable housing and access to entertainment and shopping facilities follows respectively.

To cope with those difficulties provided by geographical proximity Teknopark İzmir uses amenities of the region as attractors via summer camps and creative events. In terms of natural amenities, Teknopark İzmir located is one the most beautiful nature in all over the Turkey. The campus is located mountainside and also near seaside. Weather always enable to live and work smoother conditions for four seasons. Another feature of the weather is to be one of the cleanest area of the Turkey. Some nature sports such as wind surfing, trekking, scuba diving etc. are easily reachable. The nearby environment is very suitable for being an open innovation hub via this peaceful nature. Because of this, Teknopark İzmir created first Open Innovation Camp: Hack'nBreak.

Hack'n Break was organized on 20-27 August 2016 and 19-27 August 2017, at Teknopark İzmir. This event is the First Open Innovation Camp in Turkey to bring together 150 firms in innovation ecosystem outside of the Park. The purpose of the activity is 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. 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) support 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.

The Break part of the event is just as colorful as the technology side. Participants are 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 Mediterranean food. It is not only the Teknopark İzmir which benefited from this event, but also the whole neighborhood has something to offer and they all enjoy the visitors and their contribution to the local economy.

### S&T2: Embracing organizational proximity

Turkey has put much greater emphasis on increasing productivity and commercialization of R&D and innovative activities in its 10th Development Plan (2014-2018). One of the programs within the plan is; Program for Commercialization in Priority Technology Areas. The program targets various results; increasing number of technological products and brands in priority sectors, training qualified researchers and increasing their employment in private sector, increasing number of research, incubator, accelerator, technology and innovation centers, shifting technology development zones to a sector-focused structure, developing innovative entrepreneurship, enhancing technology transfer interfaces (Ministry of Development, 2010).

Besides these national priorities, İzmir's port and marine networks have utmost importance in the development of STPs in various sectoral clusters from manufacturing to service sectors. In order to assess the barriers to the economic development of İzmir, Izmir Development Agency published Izmir Regional Plan for 2014-2023. The plan encompasses the development axes, priorities and objectives established in line with the region's demands conforming to the national strategies; thus, it covers the fundamental steps to ensure achieving the vision determined for Izmir. Development axes of the plan are defined as and within the context of the development axis of strengthening the regional economy in Izmir, especially increasing the efficiency and added value generation was targeted. To this end, fundamental tools were determined as strengthening clustering, increasing the innovation and design capacity, and development of the entrepreneurship ecosystem and the business and investment environment. One of the objectives of the regional plan is "to support the transfer of university-industry research outputs into the

economic value". Within this target, the following activities were targeted; capacity for research, innovation, industrial property rights and commercialization will be developed, especially in the seven sectors with high potential for R&D and innovation, which stand out as the number of firms, employment, exports or the resources of the region as a priority for the region (Izmir Development Agency, 2014). In the regional plan, priorities and actions defined to achieve advanced technology and innovation capacity, developed entrepreneurship ecosystem. In line with these priorities, Izmir as a metropolitan city-region is aiming to increase the efficiencies of SMEs, start-ups and industry in especially clean energy, ICT and healthcare sectors.

Based on above-mentioned priorities, Teknopark İzmir established two main structures to support innovation ecosystem. First, Innovation Centre project was implemented by financial supporting of Izmir Development Agency in 2012. In this project, an Innovation Centre was established within Teknopark İzmir, including incubator for tech-entrepreneurs, renting offices for technology companies, prototyping studio and other complementary infrastructure. The Innovation Centre provides an innovative interface that will enable technology companies and entrepreneurs to work in synergy. After that, in 2014, Technology Transfer Office was established with support of The Scientific and Technological Research Council of Turkey (TUBITAK) to provide services as interface between academy, industry and start-ups in order to commercialize the researches and know-hows and new technologies obtained from academia.

Based on national, regional and local policy options Teknopark İzmir which is mainly focused on ICT, Energy and Healthcare (especially biotech and biomedical) extend its interests to make mature clusters for ICTs and renewable energy technologies (Teknopark İzmir, 2015). Therefore, geographical proximities based on local and regional context has become effective in the clustering decision of the Park.

### S&T3: Implementing cognitive and social proximity

Teknopark İzmir provides not only a peaceful and amenity-rich environment intertwined with nature but also a strong entrepreneurship and innovation ecosystem to support researchers and innovators. The entrepreneurship and innovation ecosystem provides different incubation programs for different readiness levels of research, numerous training programs under techno-entrepreneurship academy to increase the capacity and skills of the entrepreneurs, financially self-contained innovation center to support both research and development companies and young entrepreneurs. Furthermore, to increase the success rate of the startups, mentorship programs that match experienced sector representatives with entrepreneurs according to their needs and demands are offered. Since the Park is far away from the central city, important facilities such as legal advisory, accountancy services etc. are provided in stakeholders office at scheduled times. Moreover, access to both national and international funds, collaboration with industry and academia, consultancy in intellectual property and support for commercialization are given by Atmosfer Technology Transfer Office (TTO) under a single roof. Besides these value-added services, technical workshop which allows entrepreneurs to develop their first prototypes is provided free of charge. As a result, Teknopark Izmir plays as a center of attraction and interface role for entrepreneurs, investors, researchers, academicians, students, trainers and stakeholders of the ecosystem. Therefore, the beneficiaries of Teknopark Izmir exploit a peaceful and quiet nature with strong entrepreneurship and innovation ecosystem where they can find incubation programs, mentorship programs, training techno-academy, innovation center, technical workshops, stakeholders office, TTO services and finance for their business plans.

As Izmir's Peninsula Sustainable Development Strategy indicates Urla (in which Teknopark İzmir located) is very rich with knowledge and intellectual assets. This sunbelt region is home to highly influential senior talented community in the city as well as country (Velibeyoğlu et al., 2014). Teknopark İzmir is very close spatial proximity to those valuable cognitive resources. However, as indicated in Teknopark İzmir firms survey the relationship between these senior intellectual assets is very weak that 75 % of respondents indicated no relationship with them. In terms of other attributes of cognitive proximity, survey results suggested that interfirm relationships are

weak, co-creation of new projects with other Teknopark İzmir firms is below average (30 %). On the other hand, results in social proximity is highly remarkable. Almost 80% of respondent firms declares their regular interest to social organizations organized by Teknopark İzmir.

### S&T4: Exploiting institutional proximity

In terms of legal and administrative environments, there are strict regulations for governing the operations of science parks in Turkey. Complementary rules and legislations have been introduced over time and the gaps have been filled as new experiences are gained.

Initially Teknopark İzmir was the only science park in the region. It enjoyed the benefits of having no competition and demand has always been satisfactory. There are now over 70 Technology Development Zones in Turkey and 4 of them are in İzmir alone. This, and the new legal arrangements make institutional sustainability more difficult not only for the administration but also for the companies active in the zones. The administration must be strict when it comes to applying the rules but also careful not to lose the companies to the competition. The companies, on the other hand, have to cope with all the red tape, which involves submitting monthly reports and attendance sheets to enjoy tax and social security benefits.

Although it is required and expected to have these rules and regulations, it is also very important for science parks to provide an environment where knowledge and experience can easily be created and shared. It is the job of the administrative bodies of the technology development zones to create this climate. These efforts should also be supported by the governments especially if it is intended to attract international companies to the region and encourage exports. It may not be so easy to manage the recently planned 'International Technology Development Initiative' in İzmir using the current legislations and management practices.

Collaboration with the remote contacts is mere prospects of relational capital and vital for creating global pipelines. Regarding to institutional proximity, Teknopark İzmir's survey respondents suggest that half of them has no relationship with any R&D and university-based institutions. The latter part is largely based on relations with local universities. Only two firms declare their research and collaboration interests with other prominent national and international R&D institutions. On the other hand, collaboration with other STPs and AIOs is nearly non-established (90%). Therefore, institutional proximity and development of relational capital should one of the most important priority of the Teknopark İzmir's next institutional strategic development plan.

## 4. CONCLUSION

With the advancement of global networked knowledge-based economy, absolute conception of distance vanished and different spaces and different times have become ubiquitous thanks to the rapid development of smart technological systems. Therefore, spatial and non-spatial proximities in the establishment and sustainability of STPs and AIOs has to be managed carefully. To this end, Teknopark İzmir has selected as main unit of analysis that are very keen to those multilevel impacts.

Regarding to first assertion, Teknopark İzmir uses spatial proximity well in its local and regional geographical context. This creates positive implications on social and cognitive proximities among the firms. However, spatial proximity to main service industries, manufacturing regions and central part of the metropolitan city make Teknopark İzmir's daily operations problematic and coping with these challenges are needed. One of the long-term solutions lie behind the healthy development of Izmir Metropolitan Region. The estimated population of the city will be doubled its current population in 2050. This creates huge pressure on vital cultural and natural assets and new development towards peripheral regions in the form of urban sprawl that is not aligned with the Sustainable Development Goal no: 11 (covering cities and human settlements

resilient and sustainable). One possible solution is the polycentric development of Izmir city-region referring to multiple specialized nodes (i.e. university-led knowledge precinct) interlinked with each other via various form of networks (i.e. research, sea, air, ICT). The peripheral settlements belt (including Urla where Teknopark izmir is located) defined in Izmir Metropolitan Municapality's Regional Spatial Master Plan confirms this path of development. Aside from old generation and placeless innovation environments, new generation place-led innovation environments enjoy building of new connections between different sets of actors. In this sense, Teknopark İzmir should extend and open its public facilities to make rise to co-creation and co-operation among local communities and R&D firms. The Lab strategy can be thought of such place-based innovation hotspots that stimulating participation process.

Dealing with the second assumption about non-spatial proximity is the hardest one. With its own resources and small-scale interventions non-spatial proximities will not be changed spontaneously in the long run. Even the survey results confirm the necessity and urgency of developing relational capital by extending cognitive and institutional proximity. With this regard, recent 'International Technology Development Initiative' (very close spatial proximity to Teknopark İzmir) may create desired global pipeline effect in order to strengthen relational capital and remote interactions among firms and hence better institutional proximity with each other.

The case of Teknopark İzmir is exemplified the remarkable role of different types of proximity in the new strategy developments to create sustainable and resilient place-led innovation spaces. As a result, further research is needed to elaborate specific policies in the successful redevelopment of the Park in a comparative national context.

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