

ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE
ENGINEERING AND TECHNOLOGY

**THE ROLE OF LOCAL NETWORKS IN INNOVATION PRODUCTION AND
KNOWLEDGE SHARE WITH UNIVERSITY: ÇANAKKALE CASE STUDY**

M.Sc. THESIS

Elvin ÖZDEMİR

Department of Urban and Regional Planning

Regional Planning Master Programme

JULY 2012

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Thesis Advisor: Prof. Dr. Gülden ERKUT

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İSTANBUL TEKNİK ÜNİVERSİTESİ ★ FEN BİLİMLERİ ENSTİTÜSÜ

**YEREL AĞLARIN YENİLİK ÜRETİMİNDEKİ ROLLERİ VE ÜNİVERSİTE
İLE BİLGİ PAYLAŞIMI: ÇANAKKALE İNCELEMESİ**

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Date of Submission : 04 May 2012
Date of Defense : 25 July 2012

To my family,

FOREWORD

I would like to express my thanks and gratitude to my supervisor Prof. Dr. Glden ERKUT for her friendly guidance and encouragements for not only the structure of the thesis but also throughout my graduate studies, Erasmus participation process and my academic route.

I especially want to thank Dr. Mete Bařar BAYPINAR for his moral support and kind of technical help during my graduate studies and his support for participating in Erasmus exchange program. I also would like to thank Ulař AKIN for his suggestions and comments on my point of view to the thesis formation.

Special thanks go to the head and secretary of city council, urban planners of anakkale Municipality, coordinator and technique staff of GMKA, members of TSO and researchers of OM, whom I interviewed with, for their contribution.

I am grateful to my parents, Leyla and Emin ZDEMİR, for their invaluable support and belief to my studies and effort all through my education. I would like to thank to my sister Elin ZDEMİR, who provide me a tranquil circumstance for this thesis process and support me in every stage of my adventure in graduate studies.

Last but not least, I wish to thank to Murat DEMİRTAř for sharing his experiences and supporting me to be patient throughout this thesis process.

May 2012

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ABBREVIATIONS

BİSİAD	: Biga Sanayici ve İş adamları Derneği
ÇOMÜ	: Çanakkale Onsekiz Mart Üniversitesi
ÇTSO	: Çanakkale Ticaret ve Sanayi Odası
EGEV	: Ege Bölgesi Ekonomiyi Geliştirme Vakfı
GMKA	: Güney Marmara Kalkınma Ajansı
NUTS	: Nomenclature D'unités Territoriales Statistiques
RDA	: Regional Development Agency
R&D	: Research and Development
TR	: Türkiye
UIC	: University Industry Collaboration

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THE ROLE OF LOCAL NETWORKS IN INNOVATION PRODUCTION AND KNOWLEDGE SHARE WITH UNIVERSITY: ÇANAKKALE CASE STUDY

SUMMARY

This thesis presents a systematic review of research linking a networking behavior of local authorities and university with their innovative capacity. There is a need for further exploration of the relationship between networking and different forms of innovation, such as process and organizational innovation, urban innovation. Similarly, a requirement for better understanding of network dynamics and network configurations, as well as the role of third parties such as professional and trade associations.

This thesis highlights the need for interdisciplinary research in Çanakkale region. The reason underlying this subject is a critical literature on local networking and achieving innovativeness through local actors and the interaction among them. From the literature review, one question constitutes the main motive of this study: “What is the relation between local networks and capability of innovativeness”? This primer research question is asked in order to explore whether the local institutions, university – as a science – based institution – and industry – as a production incubator – can interact among them and enable collaboration to create knowledge and innovativeness.

To perceive the scope of this question, literature review on regional development, innovative networks and spatial dimensions of innovation is the initial attempt of the thesis. Moreover, to identify the role of innovation and network in regional development models, components of territorial innovation models such as innovation dynamics and regional network relations are defined. This literature review is able to light the way for determining how a region can switch to knowledge-based economy.

In recent regional development studies, industrial district, innovative milieu, learning region, regional innovation system were occurred as core elements of spatial dimensions of innovation and local variety of sectors defined as innovative agents. Belonging to this definition, knowledge creation is not only a firm issue but also technology usage and the interactions between firms, local institutions and universities are the essential points to generate the knowledge base. Collaboration strategies are used in unifying firms, local institutions and university researchers for starting and optimizing the process and outcome of R&D. Recently, these efforts have been conceptualized in terms of a Triple Helix model for research and innovation. The aim is to generate new networks of trilateral relations between government, universities and industry through dynamic processes of knowledge communication and exchange (Etzkowitz and Leydesdorff, 2000). Together with the externalities of local variety of sectors, they effect the generation of knowledge by recombination of knowledge from different industries and problem solutions with

each other. These two ways diversify local knowledge base and provide higher chance for knowledge spillovers (Lorentzen, 2005; Camagni, 1991).

Through this literature review on innovative regions, the study tries to explore the interactions between local institutions, university and industry with their capacity of creating innovation in Canakkale region. Networking approach includes not only economic perspective but also social and institutional improvements. From this point of view, the interaction that conceptualized innovation became important for local institutions, universities, industry and triggered them to implement this recent progressive strategy. In brief, this study aims to seek the effectiveness of interactions, co-operations and collaborations in development process of the region and innovative capacity of the regions.

This thesis investigates geographical embeddedness of networks and unifications of actors and knowledge-base corporations such as universities and research centers. Networking is the main concept of the thesis that is one of the recent requirements for a sustainable competitive power derived from the competitive advantages in regional development process. The other theme is innovativeness that is an indispensable concept for development studies as well. The aim is to identify the relationship between local networking and innovativeness in development process of Canakkale Region.

In this thesis, the method is carried out by in-depth interviews with researchers, administrators and collaborative partners. The field study is applied in Western Marmara region (where Çanakkale is located) and findings that belong to interviews will be analyzed to achieve a qualitative deduction. Through this methodology, it is aimed to determine if Çanakkale region is a convenient and successful area for networking and institutional collaboration. If the partners (University, NGO – City Council –, local institutions) are ready for cooperation. Moreover, if they are satisfied with the process of collaboration, do they think if they are acquiring competitive ability in the global market by innovating?

In order to understand the relation between innovativeness and networking, a qualitative field study is designed. The research method includes secondary data collection related to Çanakkale province and in-depth interviews with the stakeholders and researchers at the university. In a related context, the strategic plans of the institutions and the university have been reviewed. Local institutions such as municipality, university, Regional Development Agency, City council and Chamber of Commerce are taken as actors in local network, which establish new links to take advantage of new opportunities that emerge due to new interactions and knowledge share.

YEREL AĞLARIN YENİLİK ÜRETİMİNDEKİ ROLLERİ VE ÜNİVERSİTE İLE BİLGİ PAYLAŞIMI: ÇANAKKALE İNCELEMESİ

ÖZET

Dünya ekonomik sisteminde sürekli değişen modeller ve bu değişimlere göre artan rekabet koşullarında bölgeler, kalkınma politikalarında enformasyon çağının beklentilerini yakalamak amacıyla yenilikçilik kavramlarından son dönemlerde yoğun bir şekilde söz eder duruma gelmişlerdir. Bilgi teknolojileri, bilgi transferleri, yaratıcılık ve yenilikçilik değişen sistem içerisinde kent ve bölgelerin ekonomik sürdürülebilirliklerini koruyabilmeleri için anahtar terimler haline gelmişlerdir. Bu kavramlarla birlikte bölgesel ekonomik sürdürülebilirliğin sağlanması amacıyla sosyal ve ekonomik potansiyellerin korunması ve geliştirilmesi, hatta diğer kent ya da bölgelerle bütünleşme sürecine girilmesi gerekliliği vurgulanmıştır. Bölgesel kalkınma politikalarına bakışın değişmesiyle birlikte yenilikçilik akımı, bölgelerin gelişmesinde önemli rol oynayan aktörlerin birbirleri ile olan ilişkilerinin de evrilmesinde etkili olmuştur.

Bu tez çalışmasında, küreselleşen ekonominin beraberinde gelen rekabetçilik avantajlarının yakalanması açısından bölgede yer alan üniversitelerin bilgiyi paylaşmaya ve bilgiyi diğer kurumlar ile birlikte üretmeye ne kadar açık olduğu, bölgedeki sektörlerin yenilikçiliğe uyumu; kurumlar arası bağların/ağların gelişiminin bölgenin ekonomik gelişimindeki rolü değerlendirilecektir. Aynı zamanda yerel ağ kurulumunun yenilikçiliği etkilenen faktörleri, yenilik üretmedeki potansiyeli arttırması üzerine kavramlar arasında ilişkilendirme yapılması esas alınmıştır.

Son yıllardaki Bölge bilimi çalışmalarında, yerel aktörlerin ve kurumların ağ oluşturabilme yetenekleri, bölgelerin bilgi kapasiteleri, paylaşılan bilgi ve teknoloji, güven ilişkileri, organizasyonel öğrenme ve bilgi yaratma, kurumlararası işbirlikleri kalkınmanın önemli bileşenleri olarak ifade edilmektedir. Özellikle üniversite – kent işbirlikleri, üniversite – sanayi işbirlikleri bu alanda sıkça kullanılan terimlerdir. Kentsel yeniliğin itici güçleri ya da motorları olarak tarif edilen yerel kurumların bu süreçte katalizör görevi üstlendiğini savunan “kentsel yenilik” kavramları gündeme gelmiştir. Yerel kurumların birbirleri ile olan ilişkileri ve etkileşimleri ile yenilik yapabilme/üretim potansiyellerini harekete geçirdikleri ve bu sayede yenilik kapasitelerini arttırdıkları gözlenmektedir.

Tüm bu literatür araştırmasının ardından ortaya çıkan en canalcı soru, “Yerel ağ kurabilmek ile yenilik yapabilmek arasındaki ilişki, bağlantı nedir?” olmuştur. Tezin merak konusu ve tezde varılmak istenen sonuç bu soru ile şekillenmiştir. İçerik olarak yerel kurumlar, bilgi jeneratörü olan üniversiteler ve üretim mekanizması olan sanayi dinamiklerinin birbirleri ile olan etkileşimlerinin ve organizasyonel çalışabilme yeteneklerinin ölçülmesi hedeflenmektedir. Tezin bu amacını mekan ile bağlayabilmek için öğrenme, yenilik ve ağ kurmanın coğrafya ile olan ilişkisi, yeniliğin mekansal boyutlarını kapsayan literatürler incelenmiştir. Kentsel yenilik ve

yerel ağların bölgesel kalkınmadaki rolünü betimleyebilmek amacıyla bölgesel yenilik modelleri, yenilik dinamikleri ve bölgesel ağ ilişkileri alt başlıkları ile araştırılmıştır. Bu model sayesinde bölgelerin yenilik yaratabilme üzerinde nasıl etken olabileceklerini ve bilgi ekonomisine geçisi nasıl sağlayabileceklerini görmek mümkündür. Son yıllardaki bölgesel çalışmalarda sıkça söz edilen, endüstri bölgeleri, yenilikçi çevreler, öğrenen bölgeler ve bölgesel yenilik sistemleri bu modelin – yeniliğin mekânsal boyutlarının – farklı uygulama şekilleri olarak gündeme gelmişlerdir. Bu sistemlerde saptanan varsayımların, bilgi ekonomilerine geçişte mevcut potansiyelin salt bilgi üretimi olmadığı, yerel aktörlerin etkileşim halinde olmalarıyla bilgiyi paylaştıkları ve “birlikte öğrenme” ortamının oluşturulduğu bir sistemi kurarak ve üniversite ile bütünleşme sağlanarak mümkün olabileceği yönünde olduğu gözlenmiştir. İşbirliği stratejileri ile şirketleri, yerel kurumları ve üniversitedeki araştırmacıları bir araya getirmek amaçlanan ilk basamaktır. Bu vizyonla üniversitelerde Araştırma – Geliştirme bölümleri kurulmaya başlanmıştır. Çoğu üniversite kente ve kentteki gelişen sanayiye uyum sağlamak, bilgi ve pratiği paylaşmak üzere bu birimi etkinleştirmeyi hedefleyen atılımlar yapmaktadırlar. Üçlü sarmal model olarak bilinen – üniversite, sanayi ve devlet – model, Araştırma – Geliştirme birimlerine yasal, bilgi ve pratik yönden destek vermek üzere üçlü anlaşmaya dayanarak yapılandırılmıştır (Etzkowitz and Leydesdorff, 2000). Yerelde çeşitlilik gösteren sektörlerin bir araya gelmesi ile yeni bilgilerin yaratılması ve çeşitli yaklaşımlarla oluşturulan bu yeni bilgilerin potansiyel sorunlara ve sorulara alternative çözümlerle yaklaşılacağı düşünülmektedir. Bu farklı yaklaşımlar ile yerel bilgi çeşitlenecek ve bilgi yayılımı sağlanacaktır (Lorentzen, 2005; Camagni, 1991).

Tüm bu literatür araştırmasına göre, tez çalışması yerel kurumların ve üniversitenin ağıdaki davranışları ile yenilik kapasitesine etkilerini araştırmaya odaklanmıştır. Bu araştırma, yerel aktörlerin kent ile ilgili ne şekillerde ve hangi koşullarda fikir birliğine vardıklarına ve ne gibi yenilikler üretme girişimlerinde bulunduklarına yönelik bir merak ile başlamıştır.

İçerik olarak bu tez çalışmasında bölge bilgi kapasitenin ve paylaşımının ölçülmesi amacıyla bölgede yer alan üniversitenin yerel aktörler ile etkileşim ve işbirliği başarıları analiz edilecektir. Ağlar ve çeşitli işbirlikleri (firmalar arası, üniversite ile firmalar arası, yerel yönetim ile üniversite arası, sivil toplum kuruluşları ve üniversite arası, tüm yerel kurumlar ve aktörler arası) ekonomik kalkınmanın ve yenilikçiliğe uyum sürecinin tamamlayıcı araçları olarak varsayılmaktadır.

Bu tez çalışmasının örnek-olay incelemesi için Batı Marmara bölgesi ve ayrıntılı olarak Çanakkale kenti uygun görülmüştür. İstanbul’a yakınlığı ve son yıllarda gösterdiği bölgesel gelişme ve bütünleşme dinamikleri ile Batı Marmara bölgesi yenilikçilik ve ağ yapılanması potansiyellerinin test edilebileceği bir bölgedir. Tezin uygulama çalışması için, Çanakkale örnek alan incelemesinde birincil veri olarak kentteki yerel aktörlerle görüşme yapılacaktır. Bu görüşmelerde çoğunlukla yönetim ve teknik bölümden kişilerle irtibat kurulacaktır. Kurumların son yıllarda çokça sözü geçen “yenilik” kavramı üzerine görüşleri, diğer kurumlar ile olan etkileşimleri, ortak proje ve çalışmaları araştırılarak, değerlendirilecektir. Bu kurumlar: Çanakkale Belediyesi, Çanakkale Onsekiz Mayıs Üniversitesi, Çanakkale Kent konseyi, Çanakkale Sanayi ve Ticaret odası, Güney Marmara Kalkınma ajansı – Çanakkale Şubesi – ve sivil inisiyatif sahipleri olarak belirlenmiştir. Bu görüşmeler doğrultusunda kurumlar arası ilişkilerin kentin yenilik kapasitesini geliştirmek üzere ne kadar etkili oldukları niteleyici olarak değerlendirilecektir. İkincil veri olarak,

belirlenen tüm kurumların stratejik planları incelenerek, kurumsal vizyon ve misyonun yenilik kavramına ne kadar öncelik verdiği ve diğer kurumlarla olabilecek iş birliklerini ne kadar öne çıkardıkları incelenecektir.

Çanakkale’de son 17 yılda yerel kurumlar ve üniversite arasındaki sosyal ilişkiler oldukça gelişmiş bir şekilde devam etmektedir. Kentte koordinasyon, kurumsallaşma ve katılım kavramları Birleşmiş Milletlerin hazırladığı Yerel Gündem 21 programı ile ön plana çıkmıştır. Çanakkale bu programı uygulayarak 85 il içerisinde ön sıralara yükselen bir kent olmuştur. Bu gelişim süreci ile birlikte Çanakkale’deki yerel kurumlar ve üniversitenin uzun süredir kente ilişkin birbirinden fikir aldığı, birlikte fikir birliğine vardıkları gözlenmiştir. Üniversite – kent ilişkisinin hızla önem kazandığının da göz önünde bulundurulmasıyla Çanakkale’nin ilerleyen yıllarda yenilik kapasitesini geliştireceği düşünülmektedir.

Yapılan görüşmelerde Çanakkale Onsekiz Mart Üniversitesi’nin vizyonuna paralel olarak yenilik ve yerel kalkınmaya verdiği önemi kentteki kurumlarla yaptıkları ortak projeler ile desteklediği görülmektedir. Kentin sosyal, ekonomik ve çevresel etkisini artırmayı hedefleyen ortak projeler üretmeye yönelik gelen talepleri değerlendirdiği, aynı zamanda tüm kurumlarla olan ilişki ve etkileşimini sıcak tutmaya çalışarak moderatif ve öncü bir rol üstlendiği sonucuna ulaşılmıştır. Çanakkale Onsekiz Mart Üniversitesi Biga ilçesi’nde kurulmuş olan araştırma – geliştirme birimi ile sanayi ile olan bağıni kurmayı hedeflemektedir. Kent Konseyi ile bir arada sosyal projelerde yer alarak, birlikte kentteki sosyo-ekonomik gelişmeleri içeren yayınlar çıkararak sivil toplum kuruluşları ile etkileşim sürecinde olduğunu göstermiştir. Çanakkale Belediyesi’nin ürettiği kent ölçekli projelere danışmanlık yaparak belediye olan ilişkisini kurmuştur. ÇOMÜ rektörünün Kalkınma Ajansı Kalkınma Kurulu’nun başkanı olması ile GMKA ile organik bir bağ kurulmuştur. Tüm bu gelişmeler Üniversite’nin kent ile entegre olduğunu ve kurumlarla ilişki kurduğunu kanıtlayan göstergelerdir. Bunun yanı sıra koordinasyon ve katılımcılık kültürüne sahip olan Çanakkale Belediyesi de kentteki yerel aktörler ile ilişki içerisinde olmaya gayret göstermektedir. Üniversite’den sonra kentteki en entegre çalışan kurum olarak gözlenmiştir. Özellikle Kent Konseyi ile olan sıkı bağları kentteki sosyal sorunların çözülmesi aşamasında çok önemli bir yer edinmiştir. Dayanışma ve paylaşımın da gözlemlendiği belediye ve kent konseyi entegrasyonuna üniversite de katılım göstermektedir. Buna ek olarak, kurumsallaşmayı hedefleyen Kent Konseyi kentin sosyal ve çevresel sorunlarına odaklanarak, kent için risk oluşturan tehditleri ve gelişme gösterebilecek potansiyelleri tespit ederek bunu kentteki paydaşlar ile paylaşmaktadır. Kent konseyine ve diğer katılımcı kurumlara zıt olarak Çanakkale Sanayi ve Ticaret Odası daha çok kente gelebilecek yatırım politikalarıyla ilgilenmektedir. Sosyal ve çevresel boyutun fazlaca önemsenmemesinden kaynaklanarak Kent Konseyi ile uyum sağlayamamakta ve daha çok bu ağıdan kendini uzak tutmaktadır. Güney Marmara Kalkınma Ajansı, Çanakkale Şubesi’nde ise hem ekonomiyi hem de sosyal sermayeyi güçlendirmeye yönelik çalışmalar yapılmaktadır. Ajans’ın kurulum sebeplerinden biri olan işbirliklerini destekleme programları, kentteki yerel ağıni kurulmasına destek olmaktadır. Dolayısıyla Ajans’ın hem yerel hem küresel ölçekte rekabet edebilirliğe ulaşmak için attığı adımlar kurumlararası fikir birliklerinin sağlanması açısından önemlidir. Bu atılımlar Ajans’ın Çanakkale’de etken aktörlerden biri olduğunu göstermektedir.

Bu saha çalışması sürerken, görüşme yapılan insanlar, duruma bakış açılarına (karamsarlık veya iyimserlik), ortak çalışmalardaki tecrübelerine, yaşadıkları sıkıntı

ve elde ettikleri kazanımlara göre deęerlendirme yaptılar. Bu grüşmeler sadece bulguları yorumlamakta deęil, tezin çıkış sorusunun da evrilmesine sebep olmuştur.

Tezin sonuçlarını deęerlendirme kısmında, teorik bölümde söz edilen yerel aktörlerin kentteki yenilik kapasitesini geliştirebileceğini öne süren “kentsel yenilik motorları” kavramı üzerinde durulmuştur. Araştırma bulgularının, Çanakkale’deki yerel gelişim içerisinde yenilik ve ağların rolünü ele alabilecek gelecek bir çalışma için çerçeve kurmaya yönelik yönlendirici olabileceęi sonucuna varılmıştır. Bu çerçevede yerel ağ yapısının genel desenleri ve aktörlerin yenilięe olan bakış açılarının gelecekteki atılımları açısından etkili olabileceęi bileşenleri yer almaktadır.

1. INTRODUCTION

This thesis presents a systematic review of research linking the network behavior of local institutions, university and industry with their innovative capacity. There is a need for further exploration of the relationship between networking and different forms of innovation, such as process and organizational innovation. Similarly, a requirement for better understanding of network dynamics and network configurations, as well as the role of third parties such as professionals and trade associations. This thesis highlights the need for interdisciplinary research in Canakkale region. The underlying reason of thesis subject is a critical literature on local networking and achieving innovativeness through local actors and the interaction among them. From the literature review, one question constitutes the main motive of this study: “What is the relation between local networks and innovativeness?” This primer research question is asked in order to explore if the local institutions, university – as a sciencebased institution – and industry – as a production incubator – can interact among them and enable collaboration to create knowledge and innovativeness.

1.1 The Context and the Aim of the Thesis

Systemic changes in the world cause shifts from industrial to knowledge based economic flows in economic structure in recent decade. Through these variations, sort of new concepts become as current agendas that alter the way of development process. The most influential stem on these transformations in the system is globalization and its outputs that force the nations, regions and cities to attempt for adoption of new systems. Along with the term of globalization, competitive advantage, learning, knowledge and innovation concepts form the recent conditions and requirements for global competition environment. However, spatial dimensions of innovation are a key factor for regions, cities and nations to monitor the ability of adjustment to innovative activities and achievement of sustainable competitive

economic power. Thus, regions have to obtain the competitive advantages to sustain their competitive potential.

In recent regional development studies, industrial district, innovative milieu, learning region, regional innovation system were occurred as core elements of spatial dimensions of innovation and local variety of sectors defined as innovative agents. Belonging to this definition, knowledge creation is not only a firm issue but also technology usage and the interactions between firms, local institutions and universities are the essential points to generate the knowledge base. Collaboration strategies are used in unifying firms, local institutions and university researchers for starting and optimizing the process and outcome of R&D. Recently, these efforts have been conceptualized in terms of a Triple Helix model for research and innovation. The aim is to generate new networks of trilateral relations between government, universities and industry through dynamic processes of knowledge communication and exchange (Etzkowitz and Leydesdorff, 2000). Together with the externalities of local variety of sectors, they effect the generation of knowledge by recombination of knowledge from different industries and problem solutions with each other. These two ways diversify local knowledge base and provide higher chance for knowledge spillovers (Lorentzen, 2005; Camagni, 1991).

Moreover, globalised economic system force firms, local institutions, universities and regions to compete increasingly and compel to progress in technological evolution and creating knowledge. At that point, within the competitive environment, specific tacit knowledge and regional network relations increment the significance in success of region (Keeble, Lawson, at all, 1999). Thus, the comprehension of time, space, production process and relations altered. Because of new global conditions, requirement for knowledge and innovative relations became an important issue in this context.

The study explores the interactions between local institutions and university with their capacity of creating innovation in Çanakkale region. Networking approach includes not only economic perspective but also social and institutional improvements. From this point of view, the interaction that conceptualized innovation became important for local institutions, universities, industry and triggered them to implement this recent progressive strategy. In brief, this study aims

to seek the effectiveness of interactions, co-operations and collaborations in development process of the region and innovative capacity of the regions.

This thesis investigates geographical embeddedness of networks and unifications of actors and knowledge base corporations such as universities and research centers. *Networking* is the main concept of the thesis that is one of the recent requirements for a sustainable competitive power derived from the competitive advantages in regional development process. The other theme is *innovativeness* that is an indispensable concept for development studies as well. The aim is to identify the relationship between local networking and innovativeness in development process of Canakkale Region.

1.2 Research Questions of the Thesis

Local networks create chances to increase the innovative capacity of the region through interactions and collaborations. The intention of these interactions is to provide opportunities to regions to use their locally embedded potential and network relations for continuous innovativeness by unifying their process with knowledge based capacity of universities.

At the same time, aforementioned interactions among local institutions and university play an essential role on developing the socio-economic structure of the regions in Turkey as well. In the past 20 years, collaboration between universities, the private sector and local institutions has become more and more commonplace in development strategies in Turkey.

In the light of these studies, the research questions are considered as below:

- What roles can local institutions and university play in the transfer of knowledge, information and ideas to and within the regional partnership networks?
- How does the organization of a partnership network and the related role of the university, influence the learning and innovation that takes place?
- What kinds of innovation are likely to result from these kinds of networks?
- Is any local institution role or approach better than others in promoting long-term radical innovations needed for sustainable development?

- Which party (partner) is the leading actor in the network or during creating the innovative network?
- Finally, to display the level of innovative capacity, existing conditions; perception of innovation and local networking and expectations from the network relations with the other institutions and university are comprehend in this context.

To understand the scope of these questions, literature review on regional development, innovative networks and spatial dimensions of innovation is the initial attempt of the thesis. Moreover, to identify the role of innovation and network in regional development models, components of territorial innovation models such as innovation dynamics and regional network relations are defined. This literature review is able to light the way for determining how a region can switch to knowledge-based economy.

Furthermore, the frame of the case study is shaped by acquiring some clues from the researchers, administrators' behaviors in an interaction process and their contributions to innovative capacity. However, through these observations not only detecting alterations in production process but also beholding the adaptivity to the competitive environment of both universities, local institutions are appeared. After the review of theoretical frame and existing empirical studies, these questions are answered through the field survey. Besides, with the remarks and findings, it is possible to infer a relation between interactions among local actors and university and innovativeness.

1.3 Design of the Case Study

In order to understand the relation between innovativeness and networking, a qualitative field study is designed. The research method includes secondary data collection related to Çanakkale province and in-depth interviews with the stakeholders and researchers at the university. In a related context, the strategic plans of the institutions and the university have been reviewed. Local institutions such as municipality, university, RDA¹, City council and Chamber of commerce are taken as

¹ Regional Development Agency

actors in local network which establish new links to take advantage of new opportunities that emerge due to new interactions and knowledge share.

The collected data refers to primary data that gained via interviews. The interview is formed in three categories. The first category aims to question the perception of innovativeness in Çanakkale region by the respondents in related institutions and university. The second category tries to find out the remarks on interactions by giving grades from 1 to 5. The question “How much do you feel excited and willing to interact with each of these institutions for the sake of carry out a joint work?” is asked to characterize the degree of the relationship. In a related grading table, point 1 represents the weak relationship whereas 5 symbolizes the strongest bond. The final part of the interview seeks a significant point on the expectations of respondents about producing innovativeness via local networks. Çanakkale is a successful city on participation and institutionalization. Thereby, it is assumed that setting up an innovative network could be a tendency for each institution and university as well. The method that is conducted by in-depth interviews help to reveal a framework for further studies on the role of networks and innovativeness in local development in Çanakkale.

The respondents are chosen belonging to their authorization in the institutions. These respondents are foremost persons who are effective in interacting with other institutions. The first two of these respondents from each group supposed to be at manager status and the one that left is a technique staff at the intensive works especially in interacting with the other institutions.

1.4 Content of the Thesis

This thesis is comprised six chapters. In introduction part, the main idea of the thesis is given with the research questions and research design. Chapter 2 and 3 are the literature review part of the thesis. Chapter 2 particularly, gives information that depends on the role of creating knowledge, knowledge spillovers, the geography of innovations and innovative networks. At the third chapter, the main motive of the thesis is supported by a literature review that belong the contribution of universities to capability of innovativeness in a region and city. After these theoretical background the design of the case study takes part as a fourth chapter. At the fourth chapter, the selection of the sample area and the configuration of the interview are

explained before the implementation and interpretation part of the thesis. At the fifth chapter, the case study reveals with the implementation method and the findings of the case study. This chapter of the thesis is the explanatory part that establishes the relationship between networking behaviors of the local institutions and interactions with the university. Finally, the conclusion and evaluation chapter consist the combination of the deductions of the case study and theoretical background.

2. THE INCREASING SIGNIFICANCE OF KNOWLEDGE SPILLOVERS AND INNOVATION NETWORKS IN REGIONAL DEVELOPMENT

The conceptual base of regional development approaches on innovation and knowledge spillovers have been an increasing debate that stem from globalization for recent years. Based on this, a consistent study of literature has appeared on innovation and knowledge spillovers; however, the interest in innovation has not been limited with academia. Many regions throughout the European union, for instance, has been working on the development of regional innovation strategies in an effort, supported by the European commission, to further innovative performance in regions. Furthermore, in the case of developing countries, authorities are trying to keep up with this new progress in regional development with actual policies (Boekema, Morgan, Bakers, Rutten, 2000).

In literature review, the link between innovation, knowledge and economic growth has been studied. There has been a steady study of literature has appeared on innovation and knowledge spillovers by many geographers and economists. The literature review starts with Marshall (1890), Schumpeter (1935) and has been continued by Kuznets (1971), Granovetter (1973), and Boekema (2000). From these reviews, it is understood that, knowledge alters economic activity and economic activity alters knowledge in a reciprocal way.

Early neo-classical approaches viewed knowledge and technology as being completely exogenous to the system and that the same technological opportunities were equally available to individuals and firms in all places (Solow, 1956). Afterwards adopting the technology as a public good, in the long-run, technological progress would be the same in all part of the world that would reason convergence between different regions and countries over the long term. By contrast, new growth-theoretic models have emerged based on endogenous and neo Schumpeterian interpretations of economic growth (Howells, 2005). Along with this neo-Schumpeterian perspective in particular, not all countries or regions will be equally produce and benefit from innovations and there will be strong tendencies for

cumulativeness. Innovation will therefore be a strong disequilibrating factor in the processes of economic growth, giving rise to the pervasive differential growth rates between geographical areas (Verspagen, 1997).

Why is innovation so important for regional development? Regional development approach has fundamental facts that recent strategies can create and sustain wealth and fulfil these facts with the purpose of regional development in order to provide social, cultural and economic benefits. There are two important reasons why innovative capacity is so essential for regions, therewith why the regional dimension is important to national level innovative capacity. The first one is regarding the relation between innovative and competitive capacity, growth and economic performance and the second one is related with the fact that wide disparities occur in innovative activity between regions.

Within the thesis, innovative capacities, knowledge sharing, universities, institutional cooperation networks (network relations) are taken as important components of regional development and the interactions between institutions constitute the main interest areas. In the regional development literature “networks” are considered as required instruments for innovative capacity that depend on regional learning and knowledge sharing/creation and implementation processes. The perspectives of network are important for innovation because of learning the control of sufficient resources. In this manner, innovation requires not only the mobilization of internal and external resources but also external resources are mobilized through network relations. Network in this context includes actor and relation among them, activities, resource transfers and dependencies between them (Hakansson and Johanson 1993, p. 36). Along with the specializations and resource-based views, flexible networks emerge. With the aim of taking the opportunities, firms must be able to integrate a variety of specializations, resources, power and skills that are out of their area of control. The knowledge-based economy is a sort of network economy where innovations are created on inter-firm level. This makes the innovation network paradigm an intense debate that takes the side with embeddedness approach of socio-economic inquiry. Along with the interdependencies and interactions between actors are derived studies in this context.

To understand the general condition of regional development towards innovative capacity and innovation networks in Turkey the policies that are taken by the

national government, named science and technology policies, are studied carefully. These policies, that aim to improve the innovative capacity in Turkey, emphasize the role of university on transferring the local academic knowledge and concentration of economic activity.

The words “region” and “regional” are used widely and variously in this thesis and include, for example, within the Turkey, “region” notably Western Marmara, but also NUTS2 region TR22 that consists Çanakkale and Balıkesir. In some instances, a focused “region” is Çanakkale. This thesis explores a number of contrasting perspectives in relation to innovative capacity , collaborative networks and regions and seeks to highlight the implications of this both for policy, but also in the development of a conceptual understanding about organizational dimensions of innovativeness and geography. The intention of taking Çanakkale region is explained at the further chapters in detailed, however, due to its increasing number of student immigrants, Çanakkale has been getting far to become a university city.

The aim of this chapter is to expose an evaluation of the increasing significance of innovation, knowledge networks in regional development process. Within the literature review on this scope, spatial proximity of innovation as an important concept of regional networks is studied.

2.1 Knowledge Creation, Learning and Competitive Advantage

In his recent book, Maskell et al. (1998) displays that globalization has given augmentation to a new knowledge-based economy as a means of a process that they call “*ubiquitification*”. Depending on his discussions based on “*ubiquitification*”, many competitive advantages have been derived due to knowledge and technologies that are successfully performed by firms by copying from elsewhere on a global scale (Boekema, 2000).

Knowledge is an essential resource in the knowledge-based economy and learning is the most crucial process (Morgan, 1997). In this sense, creating knowledge provides specific proficiencies for firms and regions, besides learning is the process of creating and acquiring knowledge through firms and regions.

As it is demonstrated at figure 2.1, data concern with discriminating elements and through being in a process of evolving, data is converted to information.

Along with this processing, information becomes practical to transform into knowledge. The more knowledge is learned and embedded by individuals and organizations, the more expanded value and field of knowledge become available.

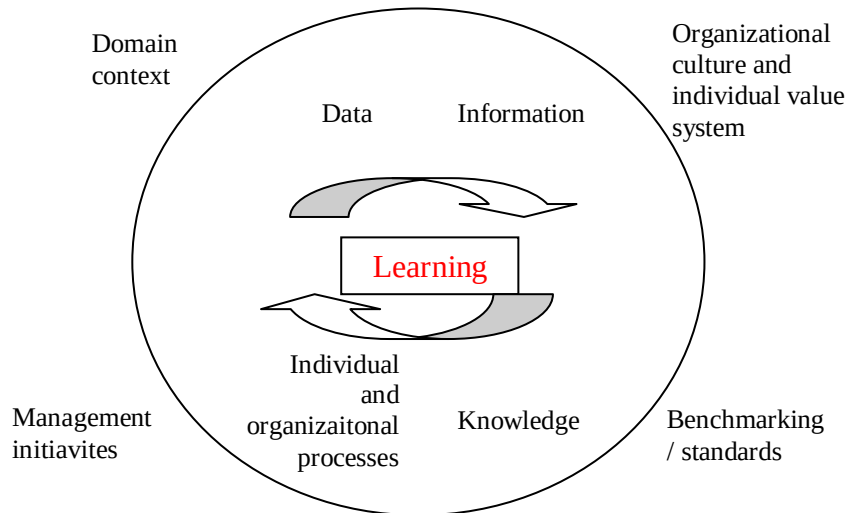


Figure 2.1 : Conceptual view of the knowledge framework (Fong, 2005).

External effects manipulate this knowledge cycle regarding to domain context, organizational culture and individual valuesystem management initiatives and benchmarking/standards. Knowledge is required to have context to become useful for an organization. Moreover, encouragements and barriers of knowledge shape the organizational culture and individual value system as well. The way of internalization and externalization of knowledge is related with individual's aspects. Management initiatives and standards influence the creation of knowledge in the organization (Fong, 2005).

A first attempt to express the process of knowledge creation and learning within and between firms was made by Nonaka and Takeuchi (1995). According to Nonaka and Takeuchi, innovation is the way of solving problems with the endogenous processing of outside information. However, innovation is the way of creating a new knowledge and information for recreating the environment. Knowledge divides into two categories in the literature (figure 2.2). Tacit knowledge, which is created nonverbally through actors and codified knowledge that is systematized within firms. Nonaka and Takeuchi (1998) put forward that these two types are both complementary. Within this context, in order to create knowledge, tacit knowledge is converted to a codified knowledge or vice versa. The mentality of this method is that

an organization should codify the tacit knowledge to make the new knowledge transferable.

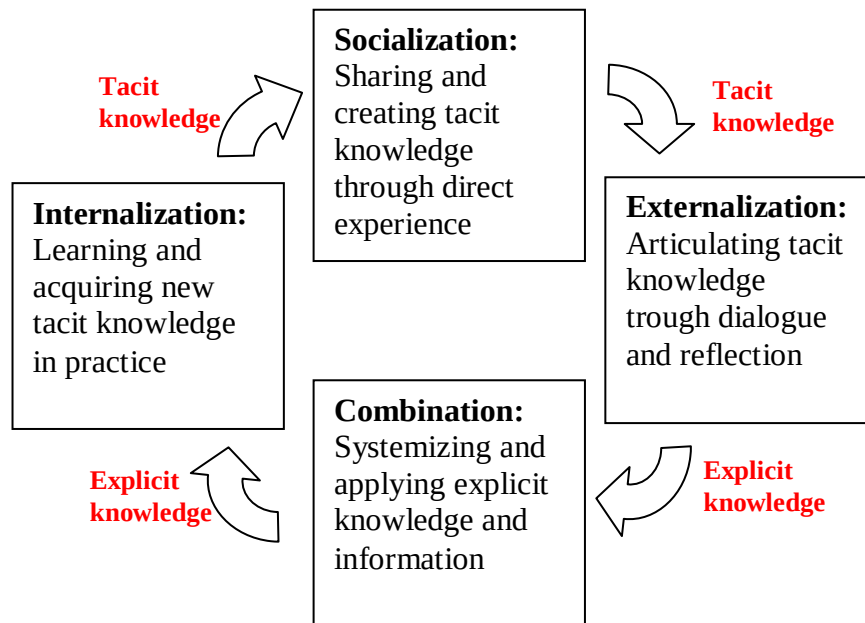


Figure 2.2 : Knowledge-conversion processes (Nonaka and Takeuchi, 1998).

Afterwards people in the organization for understanding, learning and using it, must internalize this new knowledge. Through this activation, the new knowledge has become a part of their organization's tacit knowledge. Codified and tacit knowledge are in interaction with each other, so creating a dynamic circle of knowledge conversion is paving the way for innovation (Nonaka and Takeuchi, 1995).

Knowledge and information are similar but not identical. Within three concepts, it is possible to distinguish "data", "information" and "knowledge". Data is primary information that is not converted to alternative information such as tables, articles and books. However, knowledge covers the information and data, which are structured by personal capacity and ability. Data and information can be transmitted in such personal ways, nevertheless transmission of knowledge needs personal contact in an environment of the knowledge. The use and dispersion of the information indicate the differences of "knowledge" and "information", besides "knowledge" differentiates from "Information" with its problem-definition and problem-solving peculiarities. Moreover headquarter functions, R&D labs and workers in professional services are carriers of knowledge production. Not only progressive producer services but also knowledge-intensive services play significant

role in creating knowledge and with the use of knowledge, all these give direction to the economic change and adjustment. These knowledge-based services; particularly in finance, real estate and law, are intensively take part in metropolitan areas (Lambooy, 2001).

2.1.1 Competition in the knowledge-based economy

From the competitive point of view, firms form their competitive capacity with their specific competences that they create them during the combination of tangible and intangible resources. According to Maskell et al. (1998) by means of firms' abilities and competences, competitors cannot copy or imitate all these outputs in the short term. Furthermore, they need to invest in a variety of factor such as human skills, organizational capacities, distribution and logistics, advertising, image, design, reputation and so on for the improvements of intangible resources (Den Hartog, 1997, Jacobs, 1996). In terms of producing an innovation, intangible resources, which are embedded in human knowledge, skills, experiences and organizational routines that are mobilized in new and creative forms are important from the Schumpeter's perspective.

Competitiveness is associated with the specialization. Firms and institutions have been discussing regarding to the technological development that is been processed quickly and dispersing to every field. Therefore, they have to specialize in innovative activities and technologies that constitute their core competences.

2.1.2 Learning capabilities and organizational learning

Learning is a process of acquiring new capabilities that provide more effectively comprehension depending on social, economic and physical environment. Together with incrementing various degrees of complexities, various types of learning and capabilities are emerged meanwhile.

According to Nelson and Winter (1982), learning and capabilities have been classified into "routines" and "search" to overcome different complexities. Depending on formalizing or routinizing the procedures, learning can be sourced in two ways such as tacit and explicit knowledge. Through the accumulation of experiences, it is possible to create the tacit knowledge. Learning is initially an individual process; however, it can progress through interactive interactions as in

organizations and institutional relations. Therefore, “organizational learning” stands out more and more (De Geus, 1997; Senge, 1990). Besides, interactive process of team members (particularly professional researchers) and social process (impulsive for networks of people sharing “social capital”) provided knowledge building and collective mind of organizations. Creating knowledge requires variety of efforts such as combination of technologies and social actions (Earl, 1994). Organizations are crucial at the point of arranging the conditions for learning and using the result of the process with the capacity to use and learn sort of competencies that developed through organizational learning (De Geus, 1997). Group of personal relations, who structured with common goals, forms organizations. Organizations here take role in pointing up the capability to learn with not only the accumulation of information, knowledge they create and use but also being mediator between participants. Regions are shifting from organizational structure to territorial structure that includes populations, cultures, jurisdictions and economic structure. Institutions are different in this regard as well. Institutions defined sets of rules, collective memories of the routines and values. The distinguishing parts of these structures are; institutions. Institutions are seen as guardians of trust, certainty and security, while organizations have an effective role in economic process. However, they both are continually challenged to adapt to the system continuously.

The process of learning is formed hierarchically for three kinds of actors. The first level is the individual person and the second one is the social network that clusters people to participate at the time of learning and the last level is organization (firm, school, government). Network is differ from organization in the formation of their gathering due to its loosely connected relations between individual persons and organizations (firms) with the characteristics of both kinds of relations, however they don't have a formalized structures. According to Williams these connections can be called “hybrid organizations” (William, 1985). The concept of network is changing depending on many different disciplines with different objectives (Lambooy, 1987). Genesko (1997, p. 285) figure out the network concept is enigmatic and arise in many forms and ways. In sociological and geographical literature, network is a concept of replacing the market, expressed in prices and quantities and logistic relations. In the second section of this chapter, “network concept” takes place more detailed. Apart from network concept, the following chapter reviewed the literature

of spatial dimensions of innovation. In a related context, geography impacts on innovation capacity and vice versa.

2.2 Spatial Dimensions of Innovation

As a starting point for ideas on innovation; space, embeddedness of innovation actors would display a starting point of the study. In this section, basic notions such as region, innovation, proximity and networks are explained and it is discussed that these notions are necessary to comprehend social process of innovation and globalised divided economy. In order to gain a competitive advantage, individual or networked actors improve innovation as a strategy. At the same time, the spatial extension and patterns of innovation dynamics are likely to differ from area to area through the change of process, routes and actors that are involving. However, the innovative activities are equal in all fields. The impulsive factor of the process of innovation in competitive economy is seeking the knowledge by individual firms. Because of this, they progress possible strategies for knowledge sourcing and one of these strategies is – most known and used – to establish permanent networks. The role of the networks in the innovation process is sharing and combining the abilities of the actors in each other. Additionally the capabilities and competencies of the actors that they apply for creating a new knowledge is regarding to their internal attributes in terms of knowledge and other resources (Lorentzen, 2005). In this section, geography of innovation and the networks – supplementary of innovation – is examined through literature review.

2.2.1 Geography of innovation in regional development

Innovation can be clarified as an introduction of new products, processes, and organization and management forms. Apparently, innovation here describes the improvements in technology and better methods of doing things. It can be displayed in product alterations, process changes, new approaches for marketing, new ways of distribution and new concepts of scope. Besides innovation has a supplementary process that is called interactive process. Interactive process consists a number of actors. In practice, innovation is preferred rather than being radical. R&D studies from organizational learning involve investments in developing skills and knowledge (Porter, 1990, p.45; Lorentzen, 2005). The definition of Porter on innovation draws

attention to knowledge and learning that are key concepts in the knowledge-based economy.

From the geographical perspective, region can of course be a practical, administrative and statistical area like a province or a country. According to Paasi, critical approaches define “region” as a social construct. In this sense, region is a space of action, publicity and a constructed institutional structure (Paasi, 2002).

Thereby, location and geographic space have become key factors in clarifying the determinants of innovation and technological change (Audtersch, Feldman; 2004). There is a long list of an insightful literature on spatial dimensions of innovative activity. This section gives an adequate explanation on the evaluation and pursues to the territorial innovation models that includes regional innovation systems, learning region, innovative milieu and industrial district.

Industrial district

Industrial district displays a geographically localized production system, involves small firms that are not only specialized in different phase of production but also visible in the distribution cycle of the industrial field, with a prominent activity or limited activities. The actors do not standing alone but also cooperating and contacting in order to share their knowledge and experiences with others. For that purpose, variety of relationships between firms and among local community both inside and outside of the market arises. All these relationships are established through trust and reciprocity. This organizational structure has been shaped with competition and cooperation, formal or informal institutional relations that are based on the role of historical and socio-economic attributes of the region (Becattini, 1987; Brusco, 1986, 1992; Dei Ottati, 1994; Moulaert and Delvainquiere, 1994).

Innovative millieu

The purpose of the GREMI authors for the innovative millieu concept is to seek the relational capital between firms and their environment and to realize modes of organization characterizing them (Ratti, 1992). Specifically innovative milieu is the geographical support space where the relations can be established between corporate innovation and regional development (Ratti, 1989; 1992, p. 56). The recent agenda of the GREMI elaborates the concept of apprenticeship that triggers the spillovers of knowledge between different members of the milieu that increase the innovative

capacity of the region by learning from each other. Through this learning process, they widen their perceptions about changes in their environment and try to adjust their behavior depending on these alterations. The apprenticeship dynamics and cooperative organizations of today are structured with the interaction of actors that forms the core of innovative milieu theory. As a deduction, it is possible to say that innovative milieu is a theory that converges with the more current model of learning region (Camagni, 1991).

Learning regions & Regional innovation systems

Apparently, the idea of “regional innovation systems” and “learning regions” has acquired more influence in regional studies and policies among the other territorial innovation models during the last decade. From the political point of view the importance of innovative policies has been emerged through seeking for innovation potentials of regions concerning the qualification of regions to solve the problems of economic stagnation (Audtersch, Feldman; 2004). Learning region theory is not only a general social mechanism but also related with special networks, organizations and processes. Recent forms of agglomeration arise through with globalization. This new forms are constituted around knowledge creation that provides competitive advantages in order to increase high localization in regions and strengthen the relations between firms and institutions. An underlying key source of learning region paradigm is relational capital. In the specialized cluster regards geographical proximity due to the access, transfer of tacit knowledge through the interpersonal, and inter firm connections. Besides emphasis of trust between actors emerge during these relations and become critical for the collective learning activities (MacKinnon, Cumbers, & Chapman 2002).

Along with the review of spatial innovation models, regional network relations and innovation dynamics are defined as essential components of regional development models. As it is seen at the table 2.1, territorial innovation models are relevant with these components. In these our models innovation is an important component for regional success. For industrial districts, capacity of agents is important to implement innovation however in innovative milieu model, capacity of firms through the relationships with other agents of the same milieu become important. Regional innovation system and learning region have both use interactions and cumulative process of R&D in the region as innovation dynamics.

Table 2.1 : Territorial Innovation Models, adapted from Moulder and Sepia (2003)

Territorial Innovaton Models				
	Industrial District	Innovative Milieu	Regional Innovation Systems	Learning Region
Innovation dynamics	Capacity of actors to implement innovation in a system of common value	Capacity of firms to innovate through the relationships with other agents of the same milieu	Innovation as an interactive, cumulative and specific process of research and development (path dependency)	As for RIS but stressing coevolution of technology and institutions
Regional development	Territorial view based on spatial solidarity and flexibilty of districts; this flexibility is an element of this innovation.	Territorial viewed based on milieux innovateurs and on agent's capacity of innovating in a cooperative atmosphere.	View of the region as a system of "learning by interacting\ and by steering regulation"	Double Dynamics: technological and techno-organizational dynamics; socio-economic and institutional dynamics
Types of relations	The network is a social regulation mode and a source of discipline. It enables a coexistence of both cooperation and competition Trust and reciprocity is crucial.	The role of the support space: Strategic relations between firms, its partners, suppliers and clients. Culture of trust and reciprocity links.	The network is an organizational mode of "interactive learning" The source of learning by doing is theculture of the model.	Network of agents (embeddedness) As in NIS* but with a strong focus interaction between economic and social cultural life is THA cultural structure of learning region model. *New industrial spaces

From the regional development perspective, through territorial innovation models, knowledge creation, interaction and innovative activities are acting as chief parts of the development process.

2.2.2 Spatial proximity and creating innovation networks

In recent years, economists and geographers have focused on the study of location and innovation with an empirical literature. This empirical studies investigate the phenomenon of geographic clusters, specific factors or conditions for dispersion of knowledge and information, the existence and process of local externalities. Besides these fields empirical studies on geography and innovation try to explain if these disseminated knowledge and local externalities match to particular industries or certain stages of industries' development (Feldman, 2000; pg.383).

Networks are formed by individual or organizational contacts to increase the efficiency of relations between them by their activities in market and social life. For accessing goals, firms and their connections with the others are required conditions. According to Pittaway et. al. (2004) competitiveness is the impetus for networking to achieve innovativeness. They also claim that principal benefits of networking are risk sharing, getting access to new markets and technologies; supplying new products to market, collecting supplementary skills and taking a key role. All of these beneficial goals are displayed in order to access to external knowledge. On the other hand, firms which do not cooperate, do not transfer and do not obtain knowledge formally or informally, limit their knowledge base in the long term. In addition to this, these firms have risk to lose their competencies for starting exchange relationships. For the institutional level, national innovation systems take a crucial role for the dispersion of innovations depending on the way of their networking capability. Network relations with suppliers, customers and intermediates (mediators) such as professional and scientific associations are essentials for innovation performances and their competencies. However, networks are not able to access their goals all the time. Their failures are frequently because of inter-firm conflicts, insufficiency of scale, external corruption and inadequate infrastructure (Pittaway, Robertson, Munir, Denyer, Nely; 2004).

Innovation have placed agglomeration economies and knowledge spillovers especially within in a limited spatial context. The concept of geographical proximity

and the role of the space in an innovation perspective are regarding the spatial context here. The necessity of spatial proximity is based on two reasons that explain the importance of space to innovation: (1.) Interaction is a precondition for innovation and (2.) Cooperation – relation between actors – is better for long term. Underlying significance for these assumptions is: Innovation is apparently an interactive process among economic actors. Spatial proximity among economic actors is advantageous in terms of exchange of information and knowledge. Therefore geographical proximity is even required condition for innovations that constituted by tacit knowledge (Oerlemans, Mees, & Moekema 2000).

Networks by itself do not automatically achieve learning and create innovation and competitive advantage. The social interaction that involves trust and commitment among actors and organizations are complementary for innovation. Trust is a value that is defined as a confidence that partners can work for common goals and avoid from individual opportunities manner. Morgan (1997) propounded the concept of trust as; it is a by-product of interacting rather than a precondition for a successful collaboration.

The level of trust is also a critical value for the strength of interaction and cooperation. Trust-based relations based three benefits on partners who are at the process of developing the assets. The first benefit is economizing on time and effort because one of the parties can rely on the other. The following benefit is about decreasing the risks and annulling the possibilities that is not eligible for one of the partners. The last benefit depends on trust-based relations, which is enabling for an enhanced capacity for learning because of the flow of knowledge among them (Morgan, 1997, p.30).

With the evolution process of territorial development models, the significance has shifted from firm to region. Region is defined as an operational dimension of development. Regional development models towards innovation activities have emphasized regional knowledge and local networks in this context. From 1970s, it has been a debate in economic geography that development and knowledge creation were firm issues. With the capital accumulation in the firm, technological improvement was achieved, particularly in large firms (Bell, Albu; 1999). Along with the emergence of industrial district, knowledge and production system was shift from firm to region in 1980s.

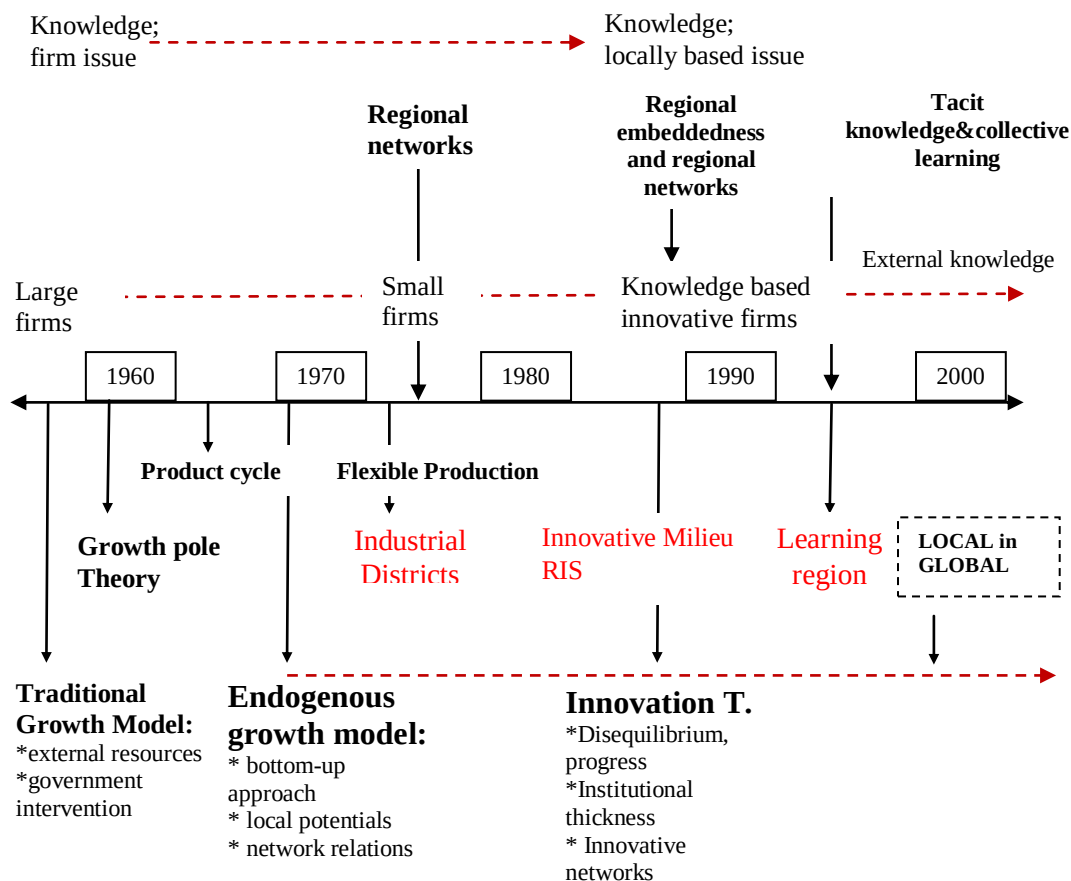


Figure 2.3 : The Increasing Role of Regional Networking, Knowledge Creation and Innovativeness in development within the Time (Karol, 2004).

Furthermore, through this transformation process, knowledge creation and innovativeness came into prominence as the substantial components of development. The importance of interactive learning and regional network were highlighted in the learning process as a long-run dynamism and sustainability of competitiveness in the region. Through this process technology and knowledge was the resources and output of the development in a regional context (figure 2.3).

Briefly, in this section it is aimed to reveal the literature on the systematic patterns between innovation and location. Interactions and collaborations among individuals and organizations in network are able to progress the potential for learning and innovation that needed for environmental transformation and sustainable development. From the empirical studies, it is supposed that local authorities, university and industry act as a mediator in the networks. This empirical studies in the literature also assert that innovation management, R&D, socio-technical transfers is proposed in the short run both take the role of mediator approach for progressive innovation in regional development process. This approach support close interactions

and collaborations in a long run via multi actor networks. Multi-actor networks are initially able to create an environment for continuous dialogue on sharing knowledge and regional development at a community level. Secondly this sort of networks encourage experimentation and learning that are required for system innovations and last but not least benefit of this network is, it lay the groundwork for strategic niche management for the improvement of system innovations and testing new technologies (Malmborg, 2006).

This thesis has an attempt for exploring the roles of local authorities, university and industry in actor-networks related to regional development, and investigating their potentials in encouraging learning and innovation regarding to regional development.

2.3 Geography of Organizational Learning: Urban Innovation

Innovation has been understood as a fundamental factor in economic growth. Economists, geographers and other social scientists have investigated the effects of innovation on economic growth, the factors associated with the production of innovations, and the geographic distribution of innovations. Jane Jacobs (1970) notes that the capacity to innovate is a product of a local environment or milieu that attracts talented people and is open and creative. Following Jacobs, this thesis argues that innovation is a joint product of human capital and creativity. The capacity to innovate is seen to be a function of a region's ability to attract human capital and to provide low barriers to entry for talented and creative people of all backgrounds.

In addition to that, an urban innovation is a type of innovation system to produce, trigger, compel innovation in the city. This section contributes the literature review of urban innovation concept. In order to understand the network behavior and innovation capacity of the city it is important to find out the framework of how local institutions turn into urban innovation engines.

Innovation has an important role in civic domains such as cities and nations. Thus, innovation here is relevant not only with economic sustainability but also social and cultural development. Therefore, a creation of an organizational atmosphere (network) which triggers and enables innovation emphasize the attention from both local practitioners, academic community, NGO, business organizations that lead all forms of organizations.

In this thesis it is described that the elements of such an atmosphere can be embedded in cities through urban innovation engines.

Today's economic system lead people into a knowledge base system. In addition, there is a growing interest in the concept of knowledge cities. Knowledge and innovation are concepts that are connected to each other strongly. Amidon (1993) stated these two concepts are close knit "knowledge innovation". "Knowledge innovation" includes creation, evolution and transformation of new ideas to marketable goods and services for the vitality of the economy and development of society. However, innovation has a crucial role not only in the business sector but also for civic domains such as cities and regions. For this reason, cities and regions have an attempt for creating an organizational climate for emerging the urban innovation engines by encouraging university, local administration, development agencies, NGOs and such local institutions.

This tendency for innovation activity to coordinate in the local or national environment is a widespread and well established goal. These cities or regions are announced as "centers of creativity" or recently expressed as "islands of innovation" as far as their capacities for economic and technological improvements (Davalier and Nijkamp 1990; European Commission 1995; Hingel 1992; Simmie 1998).

The aim of this thesis is to join the debate on the determinants of innovation in cities by examining the organizational structure of the city through a rather new approach, based on the concept of "local networking".

2.3.1 The elements of innovation activity

Innovation is a complex system that composed of many elements. These elements are decisive and effective points of creating an innovative capacity.

- *Time* : It is important to take a time to explore an idea before demonstrate it (Pinchot and Pelmann 1999).
- *Organizational structure*: organizational forms are very important for innovation. Different kinds of innovation has different attributes and needs to be successful (Damaskopolus, 2002). In urban innovation it is required to establish ties between local actors. In addition, integrated project teams, multidisciplinary teams are such organizations that enable innovation.

- *Physical space*: many innovative organizations think that a creative space – shared or private – can effect the organizational climate by different ideas, open mind, going beyond the borders (Liber 2001; Ward V. 1999).
- *Tolerance of risk*: Innovation needs learning new things and experimental actions which has not been end up yet. Leaders of such organizations never punish mistakes, they accept these risks as golden opportunities.
- *Incentive systems*: Financial incentives contribute to innovation however, the intention also should be to create an open dispute for an optimum mechanism to access innovation (Kanter et al. 1997).
- *Structured and spontaneous processes*: one of the most denoted word for innovation is serendipity (Koeing, 2000). Serendipity, experiences, researching and interactions – relations – are resources of surprises. (Cope, 1998).
- *Knowledge management*: Another other way to create more knowledge is a well management system of existing knowledge (Ruggles and Ross, 1997). Effective control of knowledge resources (experience, researches, expertise, history, lessons, practices) part of innovation.
- *Finances*: Financial Capital is a significantly important investment for translating new ideas into new products and services. Customer needs, researching the market and environment, testing the outputs are the phases of innovation.
- *Diversity*: different people generate various ideas. Diverse experiences, competencies, academic backgrounds, cultural structure, age promote the creation of new dialogues that based on multiple aspects (Naimen, 1998).
- *Attention to the future*: “The future is 14 second away” claims Edvinssons (2002) and established Skandia future center with the purpose of “turning the future into an asset”.
- *Challenge*: People’s performances on their works are better when they are challenged and facilitate an adequate content to produce solutions (Ahmed, 1998).

- *Strategy*: The vision and intention of the strategy should be very clear and understandable for all (Pinchot, 1997).
- *Conversation*: According to Nonaka's (1998) model of knowledge creation, conversation based on combination, internalization, externalization, socialization (figure 2.2).

As argued in this section, innovation is an essential challenge for knowledge economy. So that, in this section it is aimed to present a set of elements for organizational atmosphere that enable knowledge creation and innovation.

3. THE ROLE OF UNIVERSITIES IN REGIONAL DEVELOPMENT: INSTITUTIONAL AND ORGANIZATIONAL DIMENSIONS OF INNOVATIVENESS AND IMPACT OF NETWORKS

Through the last decade, there has been an incremental scientific interest in the evolution of economic growth. The accumulation of knowledge and its spillovers into productive capacity by technological change is a core scope of the new theory that includes endogenous economic growth (Romer 1986, 1990; Grossman and Helpman 1991, 1994). As it has also mentioned in the second chapter regional development has shifted from production system to knowledge and learning systems in recent years. Besides, knowledge creation, processing and learning in a system become essential resources of regional development (Castells, 1996). Within this knowledge – oriented era universities play a central role as an incubator for knowledge dissemination and creating innovation. University has come into agenda not only as producers of basic research but also by providing human capital in the higher skilled labor, in the process of regional development.

The role of universities has been progressing during 20 years. As known commonly, universities focused on teaching within a universal context of knowledge; however, it has been changing in recent years. Within this context, universities have been taken the third role in knowledge creation process and have become effective in regional economic development (Etzkowitz and Leydesdorff, 1999). Universities undertake two different tasks within this role as a transformative engine of knowledge alongside industry and local authorities. This chapter introduces a conceptualization of the third role of the universities and the variations of its roles depending on their performance in regional development. The literature point to two types of roles that are undertaken by universities; they are generative and developmental, respectively. As a conceptualization, this chapter constitutes a framework for the fourth chapter to understand the roles of universities' abilities of networking.

According to Malecki, with the focus on the link between industry and academia it is visible to see where the scientific knowledge usage is optimized. The flow of the

knowledge between both partners provides a significant diffusion of scientific and technical knowledge. Therefore, universities have been emerged as important local institutions for local economic development in terms of generating and distributing of new and applied knowledge. Through this knowledge, it is possible to reach a progress of high-tech industry and social projects for local progress by enabling employment opportunities for both sides in the surrounding area (Castells & Hall, 1994; Rees & Debbage, 1992, Acs et al., 1995; Jones- Evans & Kirby, 1994). As a result, interactions with university are efficient to create a source of technical specialization and knowledge for local institutions (Link & Rees, 1990; Westhead & Storey, 1995). A view that belonging to Doutriaux shows the process of transfer from university to industry takes a variety of forms that include cooperative works, licensing of patents and collaborations. Herein he also broadens the theory with his colleagues by emphasizing the significant role of university in technology transfer as an incubator of entrepreneurial manners. Moreover, more studies that are perceptible for new technology-based works and businesses that have been set up by scientists from universities (Doutriaux, 1991; Giannisis et al., 1991; Jones-Evans, 1996; Roberts, 1991; Samsom & Gurdon, 1993; Westhead & Storey, 1995).

Along with the improvement of western developed economies, which has been tended to the entrepreneurial activities and engaged with the facilities that are, arising from the incremental diversity of technology, has caused to an augmentation in establishing technology-based firms (Autio, 1995; Jones-Evans& Westhead, 1996; Lumme et al., 1994; Phillips et al., 1991). At the same time, universities generate a comprehensive work of scientifically well-rounded professionals who can constitute new theories and technologies for innovative ideas that can be appealed and diffused by new ventures. Throughout this interaction, a proactive approach by both academic and local institution has been developed for internalizing an entrepreneurial role.

In this chapter; emphasize on the contribution of universities to innovativeness is explained within the scope of a recent debate on increasing significance of interactions between academic, local institutions and firms. The place of university in creating innovation and the role of this knowledge concentration center for implementing the innovative activities are took part in the following sections. During this chapter, institutional and organizational dimensions of innovativeness and impact of local networks are described as keywords. The third section applies the

role of universities in cooperative relations with the local actors and institutions are introduced from the literature review. The final section draws out the point of geographical and institutional proximity of research collaboration.

3.1 Universities and Territorial Development

The role of universities in the development process of the region is increasing not only from university side but also from national policy makers' side. Concerning with the augmentation of external environment changes, university has started to evolve its approach to managing its interactions with stakeholders at the local scale. Alterations in conceptualization of regional development and local strategies, universities situate its necessity for new policies from now on. Briefly, for local and regional development surveys in many countries evidence the growing focus on university missions. In this respect, new interactions and responses influenced internal changes within university like regional offices and more specialized collaborations and associations.

Recently, local economic development strategies give a place to universities as players in the process of endogenous development. In order to supply initiatives, local institutional capacity and local development agencies have been looking to universities as providers since 1980. Universities has been started to be providers of inputs for development processes in terms of skilled labour, technology and management development during the orientation of regional strategies (Charles, 2003). Although these shifts in regional strategies, this comprehensive significance of universities both in civic or local scale has not been enough realized by both universities and local institutions, these shifts in the development strategies result in facilities for universities to be involved in the planning process of their regions. As a key player in development and incubator of learning regions, universities have gained an ability to engage in local to concretize mutual beneficial collaborations. Initially, university, itself consists the legal and institutional fundamental to participate in authorization mechanism of a region. Besides funding relationships and priorities are set through regional and national governments to protect the rights and assets of the university exemplifying with ability to own and develop a land for economic purposes (Charles et al, 2001). Secondly, the collaboration depends on the willingness and organizational capacity of the university to interact with its region. If

there is a demand and openness for emerging the embedded will, university with its academic staff and managers put forward the intentions and objectives of current agenda. Then this required to be transferred to the local institutions in the form of committees that is comprised a hybrid mechanism. At the same time, openness of local institutional networks is required to provide input from knowledge institutions and behaviors towards learning. The openness and emerging will form both sides affect the situation of the relationship. Emerging from these concepts, development of human capital is mentioned to be an important process for the localization of knowledge (Van der Meer, 1996).

Universities generate graduates for a national labor market for global and national employers and for SMEs in local labor market. However, this model has been altering via employer demands like decentralization of clusters of small business units. In addition, the increasing role of sub-contractors, suppliers and franchisees with recent implications for the competencies that required of graduates and the local competition decisions (Charles, 2003). Meanwhile regional development agencies are promoting graduate retention for improving the local stock of high-level skilled labor by establishing small firms. From this point of view, the incrementing number of local students on both undergraduate and postgraduate programmes. By means of these developments, the flow of students from higher education to local labor market affects the overall economic performance of regions.

Apart from these, university contribution to social and cultural capital is effective for democratic governance and economic access. According to Putnam et al (1993), the relationship between a society and local institutions yield socio – economic performance. Regions and localities, which have quite large and strong tied networks, have abilities for social trust and cooperation. Because of strong motive force and less ambiguity, they provide models for variety of co-operations (Putnam et al, 1993, 177). Along with this, universities classically used to be isolated from the civic institutions in many regions, although they take crucial role in the development of the decisive factors of cultural and political progress of regions. Therefore, the development of networks of local collaborations is emphasized at the point of political and cultural success of their localities (Charles and Benneworth, 2000).

Universities respond to these developments by interacting with spatially defined market. In some local and global scales, university is realized to be a basis part for

local, national and global society even it seems embedded. In this regard, it is examined that university influences society. There are four basic views of universities on definition of local communities (Goddard et al, 1994). These are:

- The relationship between institutions effects the network environment by institutional context.
- The impact of university on different scales.
- Different geographical scales determine different local service for universities.
- The perceptions of local institutions and local community.

In this thesis, it is aimed to examine the ways in which changing university-local interface is working out in Çanakkale. Besides, there is an attempt to establish a framework of comment on the implications for innovation and networking strategies.

3.1.1 The place of universities in the system of knowledge production

In recent years, policy makers and scientists have been discussing about the system of knowledge production that has gained some important changes such as sharing of the knowledge. The well known generative of knowledge is universities that can be the focus for sharing and enable to derive this knowledge for related sectors and institutions. Nevertheless, universities remain at the center of the system of diversified knowledge production; contemporaneously the other sectors such as industry, local institutions and NGOs are strongly linked to the universities.

In the way of sharing the knowledge with the physical surrounding of university such as institutions, public and private sectors and communities, the presence of scientific papers and projects provide diversification of knowledge share on different spatial units. This can be explained with the fact that new local actors in the system of scientific generation produce wider proportion of their studies and works such as projects and papers in collaboration with universities. Furthermore, during the last decade it has been observed that each sector have strengthened their connection with university by linking with higher education institutions. In this manner, universities are at the heart of the system of knowledge production (Godin et al, 2000). Through this hand in hand process with university, governments have fastened upon the requirement of strong ties between universities and society, more essentially with

business sector. Therefore policies and strategies belong to regional development have propounded university – industry relationships. These models and policies intend to create a tie between university and industry with economic incentives, which is a certain part for the linkage between university, industries and governments (Gingras et al., 1999). As it is seen from the scope of the model, universities have been at the center of the knowledge production system via these collaboration mechanisms (Gibbons et al, 1994).

In this study the attempt is to observe a growth of university integration with the local institutions, industry and society. The observation aims to find out the efficiency of the university that is seeping into the society and institutions with sharing and producing knowledge and being open for the new joint implications via collaborations. This study is taken in Çanakkale province, which is located in East Marmara region in Turkey. In Çanakkale, it is sought whether there is a stagnation or vividness in the situation of interactions of university with the civic in the system of knowledge production.

3.1.2 Patents and innovation

Recent research policies have been put emphasis on knowledge externalities in innovation systems. Even though, concept of innovation takes an important part in development processes, there is not a distinctive system to measure innovation capacity. Seeking a method for measuring the innovativeness is even more regarding for much of the economic development in the region. New knowledge that induces innovation – in production and process – takes a part in economic growth and regional development to display the crucial role of the knowledge. Thus, innovation acts in economy by being a critical point for measurement of knowledge inputs and outputs. Three main approaches are progressed to show the measures of technological changes in innovative process: (1) inputs that are involved in the innovation process like R&D expenditures, (2) outputs like the variety of inventions that are patented and (3) direct measure of innovative output (Acs et al., 2002).

In the process of understanding the measures of research and development, an input and output of innovation was emphasized during 1950s and 1960s. All along these years, R&D had problems about measuring the fiscal resources that were divided to produce innovative activity. However, in 1970s the notion of patent came into

agenda to eliminate the problem on measuring the innovative outputs. Patent is an important indicator for new technology while it is not sufficient to measure the economic value of these technologies (Hall et al., 2001). Griliches (1979), Pakes and Griliches (1980, p. 378) claim, “Patents are flawed measure of innovative output particularly since not all new innovations are patented and since patents differ in their economic impact.”

At the same time, Lundvall (1992), Nelson (1993), Patel and Pavitt (1994), Edquist (1997) and Freeman (1988) emphasized that in some specific innovation systems the technological progress in industry is affected by a number of external factors. Moreover, innovation systems cover both networks of innovative companies with research organizations and many local institutions that organize schooling, training and financial institutions. New knowledge that is used in technology and useful for economy arises from collective actions of different actors of the various interactions in network relations. There are different ways for the flow of the knowledge between actors of collaborations among universities, private sector (firms) and public institutions. Herewith the diffusion of knowledge and technology to sectors is possible by the adaptation for new technology or individual mobility within and between the public and university (OECD, 1997).

Economic geographers (Malecki, 1981; Sweeney, 1987) have been studying the spatial distribution of new knowledge creation within innovative activity; (Hall and Markusen, 1985); the dynamics of regional innovative capacities (Stohr, 1986). Along with these theories, Dorfman (1983) and Saxenian (1994) have written such case studies belonging to Route 128 and Silicon Valley. Yet another important aspect of this literature is the distribution of innovation activities in space. New knowledge and technology knowledge has tended to produce in clusters. Technological knowledge mostly has complex, ambiguous and non-codified form that it can merely be transferred by personal interactions (Polanyi, 1996; Dosi, 1988; Feldman, 1994). Geographical proximity is a critical device for flows of new knowledge among actors in innovation systems.

Thus, it is aimed to disperse the knowledge for every point in space by supplying the production of knowledge depending on the specialty of the location in order to enable the economic development.

3.2 Universities and Innovation

Regional innovation systems required key elements for education and its implications such as academic institutions and research. And within these implications, different mechanisms are identified to create an effect on economic activities. Nevertheless, the essential part of these mechanisms is mostly included academic institutions and their contribution to innovation system by producing and dispersing the knowledge. In regional development processes, policy makers have taken into account this view and have used the academic institutions as an incubator of regional innovation processes. In addition, through this method they aim to access the economic growth. It is exposed here that scientific knowledge plays an indispensable role for innovation and economic development. The literature based on knowledge production and universities put forward two main sources for knowledge dispersion such as R&D that supervising by both university and private sector firms (Nelson, 1993; Edquist, 1997).

Universities are assigned to accomplish varied functions in regional innovation system. By referring R&D activities, universities produce and collect knowledge in their habit of body. However, universities keep themselves in the background of having profit and commercializing the results of their R&D outputs. Due to its basic character, academic knowledge should to be an essential input for private sector innovative activity and should to stimulate private R&D activities (Jaffe, 1989). Therefore, it is assumed that university R&D affects on economic development is indirect while industrial R&D is mainly effective for commercial ends and willing to accomplish to apply knowledge and transform this knowledge into the products, which take part in the market or production technologies. Mere important way of transferring academic knowledge into the private sector is teaching and training students that progress the qualification of labor force as well. This method also reinforces the comprehension abilities and capacities of private sector and orient for improving innovative performance (Fritsch; Slavtchev 2007).

The spatial significance of knowledge production and universities as a generator of this knowledge is explained comprehensively in the next section. In addition, the contribution of universities to the economic growth in regions is detailed in the next second section.

3.2.1 Effects of university research on the geography of innovation

Academic knowledge is spread out via R&D cooperations with private sector firms or by facilitating services that are regarding innovation. The emphasize of university's impact on innovative capacity of private sector can be altered depending on the quality of the research and the strength of the interaction with the other actors in regional innovation system (Mansfield and Lee, 1996; Feldman and Desrochers, 2003). Therefore, only with the university presence around private sector firms cannot ensure a prominent contribution to the innovative performance in the regional innovation system. On the purpose of obtaining the significant effect of academic institutions on innovative performance, Griliches (1979) recommended the knowledge production function. According to this knowledge production, function concept Jaffe (1989) put forward a distinctive affirmative contribution of university R&D to private sector innovative performance with the corporate patents at the US state level. By that of concept, Acs et al. (1991) and Feldman (1994) clarified the strength of the impact of university research on regional innovative capacity. In relation to the scope of spatial concept, knowledge spillovers from academic institutions in USA are examined by Anselin et al. (1997, 2000) and Acs et al. (2002). They claimed the effectiveness of university on innovation performance of private sector by being geographically close to each other.

According to Autant-Bernard (2001) spatial dimension of knowledge spillovers in France at the level of NUTS-3 regions is also advocating the idea of geographical proximity. Moreover, a set of innovation surveys in selected European regions, great number of both partners from private sector and university are located considerable close to each other (Fritsch, 2003, 2005). Cooperative relationship between university and private sectors firms is a kind of bridge for spillovers. Thus this finding is underpinning the aspect of spatial scope of academic knowledge, in other words geographical proximity is essential for cooperations as well. However, it is required not to overlook the pronounced differences among regional innovative performances depending on their spatially bounded knowledge spillovers and local R&D inputs.

Consequently, it is aimed that innovative capacities can be dispersed over the boundaries and focused on own locations with a comparatively affluent knowledge accumulation.

3.2.2 Contribution of universities to innovation and economic development

Universities have not been as much as dominant like the other local institutions in regional systems; however, it cannot be mentioned that universities play no role for regional innovation. On the other side, a remarkable importance is paid to the role of universities in regional economic development. From this point of view, in a region there should be an indispensable dynamics related or connected with universities. Universities even have three dimensions of being excellent firstly in research that is expected to support the region's economic base; secondly in education for students who are willing to stay in the region and be a candidate for local skilled labor market and finally in collaboration which has strong ties with private sector firms and local institutions.

It is expected that universities should be connected with a systemic regional development policies and handle the risk of interrupted excellence of their contribution. Yet, it is not that apparent that knowledge and innovation processes within universities or other research institutions are underpinning through emphasizing regional links, promotions and partnerships. Notwithstanding this ambiguity, universities, which are locally oriented, plays significant role in region's economic agenda. However seeking for universities' linkages and roles in the innovation systems may show the universities' local impacts and links. These links include tangible and intangible interdependencies. Tangible interdependencies are seen between universities and their regions. Universities have abilities to provide employment and establish a consortium. Hence, they attract a remarkable numbers of students, business visitor, tourists and agencies who are dealing with funding the projects in regions. Further to that, for innovation and value creation of a region, regional technological innovation, academic entrepreneurship and spin offs are used as resource for firms and jobs. Therefore, those universities initially, supply spin-offs as tangible forces in the region and as engines for regional technology transfer (Benneworth and Charles, 2005; Chiesa and Piccaluga, 2000; Dahlstrand, 1997; Varga, 1998; Shane, 2004). Secondly, universities enable human capital for local provision of skilled labor through its education. In this way, university contributes the benefit of education to local people and increase the level of the competencies for labor market. The intangible interdependencies between universities and region are related with learning and expertise. Giving a place to higher education and world

popular research institutes can be a good progress in regional branding. Regarding to this idea, a region can gain a reputation for excellent research and education that can enable spillover reputations that can be a initiator for wider regional knowledge economy.

3.3 Critical Approach to Interactions among University, Local Institutions and Industry

Recent studies stand out the perpetual changes in the use of optional models of collaborations in academic field that effect the innovative performance of the region, in particular with its strategic interactions, alliances and acquisitions. Collective learning through these interactions are not only for facilitating entry into new markets and improving their abilities in achieving scale and scope economies but also explain the efficiency on the innovative performance in the region.

Table 3.1 : Types of knowledge interactions in an innovation process (Tödtling et al. 2008)

	Static (Knowledge Transfer)	Dynamic (Collective Learning)
Formal/traded relation	Market relations	Cooperation / formal networks
Informal/untraded relation	Knowledge externalities and spillovers	Milieu / informal networks

According to the table 3.1 which is adapted from Tödtling et al. (2008) classified knowledge interactions in two categories. Storper (2008) divided the interactions depending on the type of relations as traded, which is formal and untraded which is informal. Herein Storper elaborated on informal relations that consider spatial concentration of innovative industries. In addition, Capello (1999) defined the type of producing the knowledge in two categories as well. He described the knowledge transfer; static and collective learning; dynamic. Static knowledge transfer is the action of transferring the ready information or knowledge from one actor to another without any change such as licensing a kind of technology or a patent description, on the other hand; dynamic knowledge transfer enable interactive learning among actors through collaborations Camagni (1991). Market relations are regarding to purchasing technology and knowledge such as machinery or software and licenses. All these

purchased items are supposed to be in a “ready” form, so market relations take place in static relation. Remarkable local knowledge spillovers especially from universities and research institutions to firms belong to static relations as well (Audretsch and Feldman, 1996; Anselin et al.1997). There is a debate on local knowledge spillovers have arisen from diverse kinds of mechanisms such as knowledge exchanges (Feldman, 2000). Networks and milieu are diverged from previous mentioned category because they are conceptually based on an evolutionary aspect. Networks include more interactive relations between partners in an innovation process in comparison with market links. In networks, a technology or knowledge are not only transferred but also progressed collectively for the further phase and enable for an accumulation of knowledge. Thus, this continuity shows dynamism and belongs to dynamic process of collective learning (Lundvall and Johnson, 1994; Lundvall and Borra´s, 1999; Katzy and Crowston, 2008). Innovation networks differentiate at the point of having some formal aggrements or contracts (R&D cooperations), consisting formal statements on identifying roles, cost, benefits and profits. On the other side innovation, networks can also own some informal interactions among firms and organizations like in industrial districts (Asheim, 1996) and high-tech regions (Saxenian, 1994). For this informality, these relations need trust, negotiation, understanding of common problems and goals. In literature, this type of networks refers to social capital (Putnam, 1993; Wolfe, 2002) or common culture that orients the innovative milieu (Camagni, 1991; Maillat, 1998; Ratti et al., 1997). The main aspect for innovative milieu is the quick transfer of ideas and information through interactions, hence innovative milieu belongs to dynamic aspect of collective learning (Lawson, 2000).

Interactive process of knowledge production, diffusion and applications between university, local institutions and industry increase the innovation activities. In literature, Camagni (1991) mentioned about innovative milieu to put an emphasis on the interactions, Bottazzi and Peri (2003) attracted attentions on knowledge spillovers; Powell and Grodal (2005) splashed innovative networks, finally Edquist (2005) brought on innovation systems. Relating to the literature, for all these alternative models of interactions include business sector, science sector and policy actors involvement in the process. However, literature has not improved an aspect about specific knowledge sources and links for different kinds of innovation yet.

However, radical innovations are required scientific knowledge that is generated by universities and research institutions. Moreover, for accessing the exchange of the knowledge, intensive personal interactions are expected to exist in local or regional level. As underpinning this idea, progressive innovations more take place in interaction with partners from both sectors (business, scientific, local) and often settled at higher spatial scales (Bathelt et al., 2004).

In this section of this chapter, it is aimed to focus on the critical approaches to linkages among university, local institutions and industry in order to understand the collective learning within the system of innovation. Besides, the section is reviewing the literature that based on innovation networks and collaborations with such questions: which types of innovation are related to particular kinds of knowledge interactions that are identified by the kind of innovation partners and the type of knowledge transfer. Sub sections deal with the interactive innovation approaches and the types of knowledge interactions such as, university-industry collaboration and university-local institutions co-operations for innovation. In addition, subsections also tell about the characteristics and kinds of innovation partners' influence on innovation performance.

3.3.1 University – industry collaboration

Global differences in the rate of innovation are effective on regional development with respect of policy debates in economic geography. Over the past decades, many studies based on differences in innovation have been done to find out the possible determinants (Döring and Schnellenbach, 2006). Along with these studies universities as a research center is assumed to take a crucial role in innovation performance because of the localized knowledge spillovers that deal with the research in the region. In many countries, that are found the impact of knowledge spillovers in innovation process, have developed regional innovation policies based on interactions of universities and industry in a region. Moreover, the significant point of local labor markets and its spin-offs show the importance of networking between organizations as collaborative mechanism.

The goal of this this section is to review the literature relevant with the importance of both collaboration networks and its effect in regional innovation. The importance of science-based collaboration has been incrementally emphasized within the processes

of knowledge creation and its dispersion in both academia (Wagner-Dobler, 2001) and industry (Hagedoorn, 2002). Following sub-section focus on university-industry collaboration as an output of organizational and individual interactions and organizational learning process.

In recent years, relations between industrial firms and universities has been rising remarkably, however the interaction form shows differences in different technologies. University- industry co-operations have emerged as a policy in the early 1980s and have evolved as an attribute of both academic and public. A large amount of contributions to academic papers and journals in the private and public press has given a place in order to explain and justify the interactions between universities and firms (Fontana et al., 2004). Along with these relational capital universities have been establishing a focus on research and interest on industry as an observation of science. Industry side concerns more about on technical problem solving whereas university provides exchange of knowledge in techno-scientific communities within the interaction (Ponds et al., 2010).

Following subsections focus on the policy to stimulate regional innovation capabilities by university-industry collaboration models and explain how this model became efficient in openness to the innovation.

3.3.1.1 Policies to stimulate regional innovation capabilities by U-I collaboration

The intent of this section is to review of the literature based on collaborating academic research and industrial innovation strategies for starting and optimizing the process and outcome of the collaborative R&D and how much effective these local strategies for the evolution of UI relations.

University- industry interaction is addressed in many regional studies to focus on the attributes and progress of university industry relationships (Bonaccorsi and Piccaluga, 1994), and a number of articles with wide range of surveys elaborated on the field of collaboration (Fontana et al., 2005). Implementing new forms of regional differences such as collaboration between university and industry has become a key element of innovation processes in many OECD countries (Etzkowitz et al., 1998). In the light of this key element, recent regional policies conceptualized this implementation in terms of a Triple Helix model that refers research and innovation. Triple helix aims to create networks of trilateral relations between government,

universities and industry by interactions of organizations for knowledge transfer (Etzkowitz and Leydesdorff, 2000). According to Gunsekara (2006), the essential assumptions on the transfer of the knowledge are from research in academia to industrial innovation in production and processes. He also assumed that the hybrid trans-sector knowledge transfers are thus connecting different units of government, academia and industry.

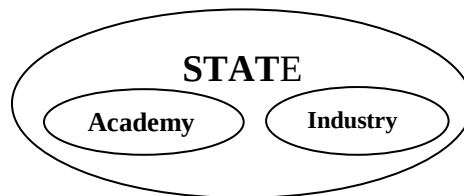


Figure 3.1 : An etatistic model of university- industry- government relation.

In the light of triple helix model, the conflict over university- industry relations are regulated by arrangements of university-industry-government. Considering the historical progress of this model or configuration; firstly government encompasses university and industry and the relation between them (figure 3.1). Samples of this model could be seen to Soviet Union or Eastern Europe with the socialism regime. Undeveloped trials are implemented in Latin America and some comprehensive applications are found in European countries such as Norway (Etzkowitz and Leydesdorff, 2000).

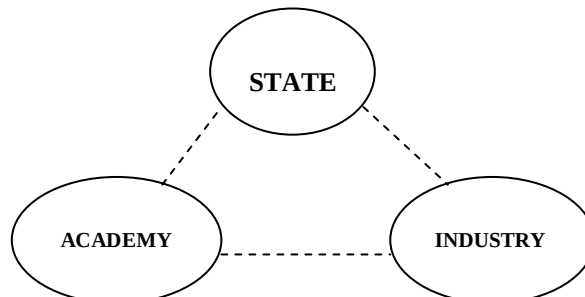


Figure 3.2 : A “laissez-faire” model of university–industry–government relations.

Next level of this configuration contains estranged institutional spheres that have concrete boundaries that separate them from each other and delimited relations among these organizations just like in Sweden by Research 2000 report and in US GUIRR, Government- University-Industry Research Roundtable, and (National Research Council, MacLane, 1996) (figure 3.2). An advanced level of these models is Triple Helix Model III that intends to establish a knowledge infrastructure by intersecting the institutional spheres with hybrid organizations that emerges at the interfaces (figure 3.3).

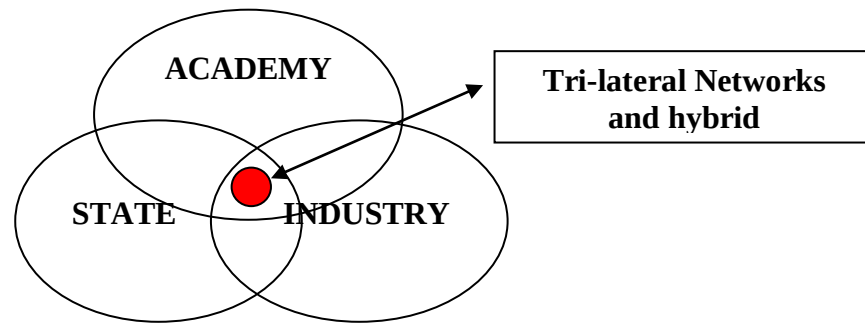


Figure 3.3 : The triple helix model of university–industry–government relations.

These models are differentiated from each other with the shape of the relations between institutional spheres. The first Triple Helix version is failed development model. In this model, innovation was not encouraged because of less “bottom up” initiatives. However, the dominance of state is decreasing in the second version of Triple Helix. Triple Helix III has being pursued by many countries to enable the innovative environment that includes university spin-offs, trilateral relations for knowledge based economic growth and strategic collaborations among firms a d science based institutions that have different levels of technology, government funding and academic researchers (Etzkowitz, Leydesdorff, 2000).

UI collaboration herewith makes mention of R&D collaborations which is structurally and conceptually related with specific field of research and structure of firm such as firm size and location (Laursen and Salter, 2002; Belkhodja and Landry, 2007; Bozeman and Corley, 2004). Concerning with R&D collaborations, regional policies that have headed towards UI collaboration, develop strategies initially to gather up actors at the same idea and make a balance between gaining R&D outcomes, secondly to optimize networks and organizational learning.

3.3.2 University – local authorities collaboration

From economic geography perspective, it is generally mentioned that sustainable development needs technical, institutional and organizational change via innovation performance. In order to achieve this goal, local actors attempt to interact among different actors to establish collaborations (Bruijn and Tukker, 2002). Collaborations, which are comprised from different organizations in networks, are described to have a mission on promoting the potential for learning and innovation, which are basic elements for regional development. According to Tukker and Bruijn, the level of

socio-technical change of innovation is the expected improvement for regional development. They tried to give a place to the structure of change of society referring with socio technical condition. They classify the structure change by three phases; (1) optimization is defined as a drifting apart from the existing position of the structure, (2) singular innovations addresses a recognizable change in socio-technical arrangements within a limited number of actors; finally (3) systems of innovation refer to socio-economic functions and relevant systems that can be efficient in structure of change.

Belonging to Fisher's approach (2001), systems of innovation contain not only regional but also sectoral and technological aspect. Systems of innovations transformed to regional innovation systems as it is in regional governance in regional development. Regional innovation systems take a significant role in knowledge-based economies (Cooke et al., 1998). However, after 1990s local authorities and private sector are interacting and establishing collaborations towards local economic development policy and local management (Dobers, 1997; Burström, 2000). Public and private partnerships (PPPs) have been set up in many countries within this movement for regional development (Rowe and Enticott, 1998; Malmberg, 2003). Public actors with the intention of developing programmes and strategies for regional development firstly establish PPPs. Initial attempt of public actors was to support SMSs with the strategies for developing their organizational capabilities within local management and meanwhile improving the socio-economic structure of the region for the local and regional business development indeed.

Through these development models, which aim to include corporations in the process by local management practices and increasing the performance, local companies and regions acquire the chance for being competitive. Thus, quality of life and regional innovation systems are key elements for regional development. As it is understood from the literature that based on regional collaborative studies local actors and institutions are key factors for initiating and performing the innovative activities in the network (Malmberg, 2003).

3.3.3 The geographical and institutional proximity of research collaboration

The relationship between scientific area and technological innovation within regional economic development has been taken into consideration in both innovation studies

and economic geography for many years. In addition, through these progresses in economic geography, a next literature has arisen, essentially on the interaction between research institutions and private firms in innovation processes. Geographers have recognized the crucial role of geography in these interaction and networking processes and put forward the localized knowledge spillovers from universities and other research institutions (Jaffe et al. 1993; Varga 1998; Anselin et al. 2000; Acs 2002). In the light of these studies, geographical proximity is supposed to be the significant factor for collaborations due to the dispersion of tacit knowledge that requires face-to-face interactions and relations. According to a number of authors (Malmberg and Maskell, 2002; Torre and Rallet, 2005 and Boschma, 2005) geographical proximity has not an adequate active role in accomplishing collaborations. Howells (2002) indicated the indirect role of proximity as a positive effect in collaboration and transfer of knowledge. Thus, geographical proximity does not included sufficient efficiency in scientific collaborations. Although collaboration in scientific knowledge production is one the prominent policy for the last decade in regional development (Canton et al. 2005), there has not been a satisfactory studies based on comprehension of geography in collaborations. A particular emphasis about research collaborations is; taking role between universities, companies and local or regional institutions (Etzkowitz and Leydesdorff 2000). At that rate, the significance of regional scale is elaborated due to its substantial association where changes in institutional context are emerged (Cooke et al. 1997). That is to say, geographical proximity can overcome the deficiencies of institutional proximity and opposite of this institutional proximity supply interactions over long distances (Boschma, 2005).

Therefore, geographical proximity is important in indirect way by accomplishing the probable problems that emerge because of differences in institutional and organizational substructure such as in university-company or university-local administrative (governmental) collaborations. The difficulties and problems appear due to the conflicts about interest or differences of insufficient institutional proximity. In order to be successful in collaborating, it is required to have a reciprocal trust to handle these problems. Thus, geographical proximity plays the important role by enabling mutual trust via dense face-to-face interactions.

4. ÇANAKKALE CASE STUDY: NETWORKING AND INOVATIVENESS

In the preceding second and third chapters, the concepts of knowledge creation, knowledge spillovers, networks and urban innovation performance are examined to structure the theoretical background of this thesis. Some of these theoretical expressions are emerging from empirical studies on local networks and innovation in particular industrial regions from various parts of the world. Many of these studies include statistical data of national and regional institutions. In addition, field surveys are covered to analyze innovative performance of the region through understanding the innovative capability of firms and institutions. Along with monitoring the innovative capacity, these studies have asserted regional and local networks, as an accompanying factor of innovation in development and innovation performance (Collinson, 2000, Koschatzky, 2000, Keeble, at.al., 1999, Cumbers, at.al., 2003). For the achievement of competitiveness, the efforts of regional networks in geographical levels are requested (Asheim and Cooke, 1998, Camagni and Capello, 2000).

According to these studies, it is remarked that, in a process of analyzing networks and innovativeness, some distinctive limitations are determined such as having difficulty to explore the informal relationships, they are: significancy in innovative performances and making the description of the innovation that belongs to the identification of its level and type. Thus, there is not a specific method for measuring the presence of innovativeness and networks.

However, the indicators, which are emerged from findings of empirical studies in literature, guided the method of the case study for analyzing the coexistence of network relations and innovation performance in Çanakkale which is selected as a case city to understand and explore the main problematic of the thesis in-debth.

4.1 Methodology: Aim, Method and Context of The Case Study

This section of the fourth chapter covers the design of the case study. The main motive, research questions and methodology take parts.

Aim

The intention of the case study is to explore the network behavior of local institutions, and university within the context of innovative capacity. A research is designed to understand how these local institutions create the consensus and how aggregate activities contribute to networking and innovating in Çanakkale. Thus, the thesis is structured around networking and innovativeness notions. In the context of the thesis, local networks are seen as a catalyzer of innovative process and along with economic development.

In this study, province of Çanakkale is handled for analyzing the type of local relations and the perceptions of innovativeness with theoretical background and with reference to innovative performance and networks. However, the significant role of university is also mentioned in the process of generating innovation. For this reason, a coexistence of university in innovation process takes place as a main theme of the thesis as well. In terms of implementing the Local Agenda 21 very successfully and working on Tourism Master Plan (Tourism Strategy – 2023 – of Turkey) are the main reasons for examining institutional relations and innovative capability in Çanakkale in terms of collective working. The second motive of preferring Çanakkale as a study field is being an ideal size for a thesis research, which aims to explain the network behavior of local institutions.

Method

Understanding the visions of local institutions and development process of the city gives hints for describing the pattern of relationship between networking capabilities and innovative capacities in Çanakkale with reference to in-depth interviews. An initial focus of the thesis is to collect different views from local institutions and university to explore network relations and collective learning capabilities for innovative performance and deciding on strategy issues at a regional level. In order to understand the relation between innovativeness and networking, a qualitative field study is designed. The research method includes secondary data collection related to Çanakkale province and in-depth interviews with the stakeholders and researchers at the university. In a related context, the strategic plans of the institutions and the university are reviewed as a secondary data. Local institutions such as municipality, university, Regional Development Agency, City Council, civil workers, R&D of

Doğtaş and Chamber of Commerce are taken as actors in local network, which establish new links to take advantage of new opportunities that emerge due to new interactions and knowledge share.

Table 4.1 : Selected institutions for the qualitative research

Institution	Position
UNIVERSITY	Dean of the Landscape Architecture Faculty
	Assoc.Prof.Dr. at Sociology Department
	Proffesor at Enginnering Faculty
	Assoc.Prof.Dr. at School of Tourism and Hotel Management
	Head of Urban and Regional Planning Department
	Biga Department of Furniture&Decoration
GMKA	Head of Agriculture and Husbandary Managament
	Coordinator of GMKA (Çanakkale)
CIVILIAN	Architect
	Journalist – “Biga Günlüğü”–Agency of AA at Biga
MUNICIPALITY	Urban Planner at Çanakkale Municipality
	Head of Public Improvements at Çanakkale Municipality
	Urban Planner at strategical planning department of Çanakkale Municipality
ÇTSO (Chamber of Commerce) NGO (City Council)	Member of Chamber of Commerce
	Secretary of Public Relations at City Council
	Head of City Council
R&D	Director of Doğtaş R&D

Table 4.1 displays the framework of institutions that are selected for in-depth interview (Appendix A.1). The interviewees are chosen considering their

authorization at the institutions. These interviewees are prominent people who are active in interacting with other institutions (Appendix A.2).

The collected data refers to primary data that gained via interviews. The interview is formed in three categories. The first category aims to question the perception of innovativeness in Çanakkale region in relevant institutions and university. The second category of the interview tries to find out remarks on interactions among institutions by rating their relationships from 1 to 5. In a related rating table (table 4.2), point 1 represents the weak tie, which means there is no interaction among the actors. Point 2 shows less weakness that explains rare interaction among the actors, point 3 describes moderate partners, 4 symbolizes strong bond that prove the coexistence of interaction and finally 5 represents the strongest bond that contains collaborative activities among them.

Table 4.2 : Rating system of institutional relations among institutions

Interviewee	Municipality	GMKA	City council	ÇOMÜ	ÇSTO
Municipality		1-2-3-4-5	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
GMKA	1-2-3-4-5		1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
City Council	1-2-3-4-5	1-2-3-4-5		1-2-3-4-5	1-2-3-4-5
ÇOMÜ	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5		1-2-3-4-5
ÇSTO	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5	

The final part of the interview seeks a significant point on the expectations of interviewees about producing innovativeness via local networks. The method that is conducted by in-depth interviews helps to reveal a framework for further studies on the role of networks and innovativeness in local development in Çanakkale.

The thesis then moves on to explore the situation of satisfactions, expectations and attempts in relation to innovative capacity and spatial strategies including collaborations with university in research and knowledge sharing, best practices, demand for cooperations.

The intention of collecting these contrasting perspectives is primarily two-fold. Firstly, to highlight the fact that by collecting different perspectives one partner

(institution) can come up with very different themes and perceptions about their objectives, role and even success of what might be described as regional innovative capacity. The second objective is related to the first, but more wide ranging in that it seeks to reveal some of controversy and ambiguity that are mentioned by different institutions (researchers and policy makers) collecting different perspectives on the role and concert of innovation policy and the regions. As such, it searches to figure out the complexity of some blurry notions that have revealed out of the debate surrounding innovation strategies and regional dimension. Thesis concludes with a wider conceptual and networking discussion.

4.2 Research Questions of the Case Study

The main research questions of the case study are determined according to the themes and findings of Chapter 2 and 3. Through these research questions, it is aimed to find out if local networks are useful for producing innovativeness and for the sake of sharing knowledge. The interview questions are prepared with reference to these research questions. Moreover, interview questions are categorized in three groups that are structured in (1) networking capabilities that deals how can network actors characterised, (2) perception of innovativeness and (3) possibility of innovative networks – institutional network setting in Çanakkale region (Appendix A.1). The institutional network setting is defined as the form of formal organisational units in the functional urban region that aim to promote strategic network within innovative activities. This can be conventional organisations such as; Chamber of Commerce, City Council, Municipality, Regional Development Agency, R&D of Doğtaş and University of Çanakkale Onsekiz Mart.

It is aimed to explore what the institutions' function is, which actors are leaders in the process of collaboration. In particular, the research questions focus on the role of regional and local governments: to what extent do they promote the development of networks through policy and how can the network linkages be characterised? To what extend is university of Çanakkale involved in local strategic networks?

The research questions are categorized in three groups:

- Research questions about innovative performances of the institutions,

- Research questions for analyzing the types of the local networks that concerns with innovativeness in Çanakkale region.
- Research questions for discovering the first attempts of innovative networks.

Innovativeness

- What are the basic approaches towards awareness and implementing innovation for each local partner?
- Is any local institution role or approach better than others in promoting long-term radical innovations needed for sustainable development?

Networking

- How does the organization of a partnership set up a network?
- How does the role of the university influence the learning and innovation that takes place?

Innovative networks – institutional network setting

- What kinds of innovation (radical or incremental) are likely to result from these kinds of networks?
- What roles can local institutions, university and industry play in the transfer of knowledge, information and ideas to and within the regional partnership networks?
- Which party (partner) is the leading actor in the network or during setting up the innovative network?

Finally, to display the level of innovative capacity, existing conditions, perception of innovation and local networking and expectations from the network relations with the other institutions and university are comprehend in this context.

4.3 The Choice of The Field

Selection of province and university are the main determinants of the case study. Moreover, these determinants are the components of network and prerequisite of innovative performance of the city.

4.3.1 Description of Çanakkale

Çanakkale is located in the Western Turkey, on the Aegean and Marmara coast.

It is one of the developing city in Turkey with its participatory policies in public administration. These policies enable the coordination of society to the city and other local institutions and collaboration culture of its socio-economic actors.

In addition, due to the Hellespont, economic activity in this part of Turkey generated through maritime and marine transportation, Çanakkale is a value of Turkey.

The city is also one of the main points for tourism with National parks and cultural values. Turkey tourism strategy 2023 take aim at Çanakkale region as a dynamic point of tourism development and define it “Troy Cultural and Thermal Tourism Development Region”. Along with these potentials and opportunities, Çanakkale displays prominent advance in regional development and openness for innovative performance to access the target level (Turkish tourism strategy 2023).



Figure 4.1 : Location of Çanakkale Province.

Another important potential of the city is the communal culture and coordination between local institutions, private sector and university. There is also a pluralistic mentality in NGO's structure. This is one of the significant engines of cooperation.

Çanakkale is a prominent city in participation and institutionalization in Aegean part of Turkey (table 4.3). According to Annual Report of EGEV², institutionalization, solidarity, coordination and participation are fundamental components of co-

² Ege Bölgesinin Stratejik Tercihlerinin ve Bölgesel Boyutta Hedeflerinin Önceliklendirme ve Konumlandırma Çalışması, 2001

operations. Institutionalization and coordination refer to organizational learning, private-public-partnership, coordination of local institutions with NGOs, becoming professional in a particular field and sharing knowledge among partners; solidarity and participations concern with trust culture, collective thinking, efficient NGO, flexibility for collaboration, effective communication among partners and participatory local administration and society.

Table 4.3 : Ranking of Çanakkale with tools for organizational behaviours (Annual report of EGEV, 2001)

Tools/ Provinces	Afyon	Aydın	Balıkesir	Çanakkale	Denizli	İzmir	Kütahya	Manisa	Muğla	Uşak
Participation Solidarity	18,8	18,6	17,3	21,3	17,8	18,0	19,6	19,4	18,8	18,6
Institutionalization Coordination	14,8	14,7	16,2	17,6	16,1	16,9	15,7	16,0	16,5	15,8

With reference to these tools from EGEV's report, Çanakkale is one of the successful cities in Aegean part of Turkey. Besides, the university – ÇOMÜ – is a young, developing university that has sort of intentions to become a well-known and dynamic university. From this point of view, the thesis seeks the prospective local network relations and willingness of innovativeness in Çanakkale.

Furthermore, according to Aksakoğlu³ (2007), Çanakkale has a communal culture with the habit of participation. In addition, she also claims in her thesis, the local institutions and society has gained the ability of collective thinking and organizational learning with the City Action plan. The local institutions such as Municipality, Regional Development Agency, City Council, Chamber of commerce

³ Yerel Kalkınmada Katılımcı Politikalar: Çanakkale Örnek Alan Değerlendirmesi

and research center of the city ÇOMÜ⁴ are considered as interview groups in the study.

4.3.2 Description of institutions: Units of analysis

Municipality is the civic institution that has dominancy on the physical and socio-economic pattern of the city. Çanakkale municipality was established in 1912. Municipality has improved itself in using information-communication technologies. Specifically, city information system, address information system, administration system, geographic information system and e-belediye are parts of the ICT system in municipality of Çanakkale. With this advance, municipality tries to keep up with the times of innovation.

RDA (Regional development agency – GMKA) is the prominent interface between private sector and local institutions in the city to encourage the entrepreneurs and institutions to involve in projects that also contains innovative intentions. GMKA was established in 2009 in Çanakkale and Balıkesir TR22 Nuts 2 Region with the 5449 numbered legislation of constitution. Since its foundation, GMKA has been trying to constitute the optimum circumstance for local actors to get together and deal with the civic problems or recent development projects on Çanakkale.

City Council concerns the problems of the city that evermore belong to the social and deals with the societal patterns of the city. City council was established in 2004 in Çanakkale. The regulation of city council was prepared based on 5393 numbered municipality legislation.

Chamber of commerce and industry gathers the entrepreneurs and firms to have a consensus on developing the industry and commerce in a region. ÇTSO aims to create an investment zone in Çanakkale to increase the global competitive power in terms of contribution to the development of the region. Member of ÇTSO indicated that production of innovative products and production processes are still limited in the region. However, it will be useful to look at the numbers of patent and industrial design applications (table 4.4). The number of patent, useful model and industrial design are determinants of effort for innovative production of the region.

⁴ Çanakkale Onsekiz Mayıs Üniversitesi

Table 4.4 : Patent, Useful Model and Industrial Design Applications from Çanakkale Region (Statistics of The Turkish Patent Institute)

Year	Patent+Useful Model		Industrial Design	
	Application	Registry	Application	Registry
1995	0	0	0	0
1996	0	0	11	7
1997	1	0	7	5
1998	1	0	12	11
1999	3	1	13	5
2000	4	0	11	12
2001	1	1	13	12
2002	0	1	20	10
2003	1	0	24	19
2004	11	0	17	14
2005	4	3	7	11
2006	6	3	12	9
2007	10	3	37	41
2008	12	4	35	31
2009	11	8	49	37
2010	7	92	41	40

According to Turkish Patent Institute data, numbers of patent and useful model applications from Çanakkale were 11 in 2004, 12 in 2008. The number of industrial design applications was 20 in 2002, 24 in 2003, 37 in 2007 and 49 in 2009. Along with the establishment of GMKA in 2009, the number of applications for patent, useful model and industrial design were started to increase with the enhancement of the local network in Çanakkale region.

University of Çanakkale – ÇOMÜ – was established in 1992 by splitting from Univesity of Trakya.

Table 4.5 : Numbers of Activities and Academic Potential of ÇOMÜ

ÇOMÜ /2007 Strategic Plan of ÇOMÜ	
Number of Students	21.592
Number of Academic Staff	931
Number of Academic Activity	1162
Number of Publications (national and international)	8047
Number of Scientific Projects	20

ÇOMÜ has 10 faculty, 6 college, 11 technical college and 4 institutions, research centers and hospital units. University of Çanakkale is the generator of knowledge and information to improve the innovative capacity of the region.

In theoretical and empirical background, it is affirmed that universities provide contributions to innovativeness and development of the region. However, university has to interact with the local institutions of the city to get involved in the societal dynamics, thus network relations start at this point.

Hence, the selection of the university is explained that on behalf of generating the knowledge and improving scientific studies are ranked as important components of development in Turkey. The other reason is, when university externalizes the knowledge, they need to interact with the institutions and related sectors to get involved in the process of implementation and become a partner of R&D or consultancy agencies. Consequently, university is an incubator for network relations along with externalizing the knowledge and generating the knowledge for the development of the region.

4.4 Findings

In this section, the capability of networking and attempts for innovative process in Çanakkale is redefined and the role of institutions is analyzed together with understanding their perceptions and expectations with the remarks of interviews. The interviews also enlighten the process of improving interactions between them and providing new ideas and project for innovation. Within this context, local institutions' network capabilities and the contribution of university to urban improvements in Çanakkale are discussed.

4.4.1 The structure of institutionalisation and coordination in Çanakkale

In Çanakkale, private sector, university and local institutions are aware of the trends on networking and innovating. So that, these local actors have been trying to catch the competitive advantage through improving meetings and collaboration processes that based on coordination and cooperation among the local actors. In order to update their agendas, local actors and university redefine their main goals for the coherence with the national and global innovation strategies. From the municipality point of

view, local action plan is the distinctive tool to provide a circumstance for a local coordination in the city⁵.

City council as an NGO, participated in this coordination mentality with Local Agenda 21⁶.

Besides, university (ÇOMÜ) has dedicated itself for a development tool of the city and has brought close together the local actors by supplying symposium and meeting in recent development studies and policies⁷.

Furthermore, regional development agency GMKA (Çanakkale Agency) elaborates the emphasis of existence of local actor at the same stage in its strategic plan as well.

However, Chamber of Commerce and industry emphasize institutionalization at the one side, whereas they give less importance to coordination with the other local actors at this point of process at the other side⁸. As far as researching the local actor's approaches on networking and innovativeness from their actual strategic plans and independent media, ÇSTO pays less attention to organizational learning and collective thinking.

Consequently, in the light of these informations from media and strategic plans the structure of institutionalization and coordination appears as a frame of the following sections.

The interviews will figure out the fundamental lines of the networking conditions and the capability of innovativeness by individual perspectives of local actors on “networking and innovativeness in Çanakkale”.

4.4.2 Strategic plans of local institutions and university

In this section it is aimed to examine strategic plans of institutions in order to understand their critical approaches on networking and innovativeness.

Çanakkale Onsekiz Mart University

Mission: “To become a university which has sustainable performance and progress?”

⁵ Yerel kültür politikaları için stratejiler, Anadolu Kültür, 2008

⁶ http://www.kentges.gov.tr/_dosyalar/sura_raporlari/kitap10.pdf

⁷ Çomü'de "Üniversite ve Kent Etkileşimi" Paneli

⁸ BİSİAD-ÇÖMÜ collaborative conference on entrepreneurship and institutionalisation

Vision: “To become a global university that creates a sustainable interaction with international academic community.”⁹

- Priorities: Participation and openness for improvement, institutionalization, cooperation and collaboration with Industry,

ÇOMÜ is willing to participate in and contribute to development process of the city. However, one of the important target emphasize on collaboration; by raising high educated human resource and intermediate member for labor force by the capacity of qualified academic staffs and researchers.

- References / Dedication: Interaction with NGO, local administration and Industry

Conferences and organizations such as workshops and meetings are important tools for interaction, especially for collaborations, to communicate with different actors in networking process. In this respect, ÇOMÜ has an efficient role to bring the institutions close together by organizing such circumstances. ÇOMÜ has promoted meetings for university-industry collaboration and cooperative workshops with public administration.

- Vision: Obviously, in the vision of university, efficient collaborations, innovativeness and sustainability take place.

The intention of university for enabling a start of collaborations and innovativeness is clearly seen from the vision sentence. The university not only dwells on face-to-face interactions to use the scientific researches and studies for civic implementations but also adds the theme of sustainability and a need of innovative capacity in the city.

Municipality

Mission: “A Municipality which is successful in urbanization by taking care of historical and natural texture, by designing contemporary physical spaces, by playing an active role in socio-cultural activities, by rendering local government participative and transparent through NGO interaction.”

Vision: “A Municipality Which Keeps Alive and Administers Çanakkale as a Civilized World City.”¹⁰

⁹ ÇOMÜ Strategic Development Plan (2008-2012)

- Priorities: Participatory local democracy, interactions between local actors, institutionalization

Municipality put emphasis on the capacity of communication with private sector and university in order to generate new joint project.

- References / Dedication: Interaction with university and Regional Development Agency

City action plan has played a significant role in the city on behalf of involvements of local actors and university. Municipality refers to university by defining it as benefit in the vision of the city. Moreover, in the city action plan, relevant local actors are brought close together.

- Vision: Basically, in their vision, municipality gives a place for the importance of cooperations with university to convert the scientific studies in to the civic field.

GMKA (South Marmara Development Agency)

Mission: “To organize and support the developmental activities of the stakeholders and activate the potential of the region through a qualified labor force. To utilize the national-international sources while raising the competitive capacity sustainable development.”

Vision: “To be an information and coordination center of South Marmara.”¹¹

- Priorities: Competitiveness, sustainability in economy.

Improvement of innovativeness, developing human resource, participation, coordination and monitoring. Importance of qualified human resource.

- References / Dedication: Especially university, NGO and all other local institutions and private sector.

The agency care about the competitive advantage of the region so that they bring “geography of innovation” to the agenda on the purpose of getting local actors’ attention on this ever-shifting regional policies.

¹⁰ Municipality of Çanakkale Strategic Plan (2010-2014)

¹¹ TR22 South Marmara Regional Plan (2010-2013)

- Vision: Apparently, they give importance to organizational learning and collective thinking on behalf of implementing the main task of development agency.

Regional development agencies are a buffer zone for local actors on the other side an incubator for bringing the local actors close together. Moreover, “innovativeness” is one of the essential targets of the agency.

City Council

Mission: “As being a Çanakkale city council, we aim to simplify the efficient achievement of urban vision for citizens in Çanakkale.”

Vision: “As being an autonomous city council, with the support of university, municipality, and governorship and with a participatory and negotiant attribute, we work for the society to enable them for taking a role actively in civic decisions and achieve the urban vision.”¹²

- Priorities: Participatory local democracy, pluralism

City council in Çanakkale concerns with the social capital and habitat of the city. In order to solve the problems that belong to society and nature they suggest getting together with the other local actors to appropriate the city and its problems with it.

- References / Dedication: Interaction with university

As being an NGO, city council, in most cases, confer with university due to its rational point of view.

- Vision: the vision includes a context about coordinating the local actor for societal issues and projects.

Have better motivation on improving the local values and supporting regional values as well with accompanying the university in Çanakkale.

Chamber of Commerce and Industry (ÇTSO)

Mission: To represent Çanakkale and Turkey at the national and international platform, to fulfill expectations of our members with objective and trustworthiness

¹² canakkalekentkonseyi.org

principles and to support them to become an efficient, qualified and developing institutions.”

Vision: as being an important agent of Turkish private sector, we aim to increase the global competitive advantage of our members by making Çanakkale an investment center, towards world’s social, economic and technological improvements and contribute to regional and national development.”¹³

- Priorities: Institutionalization, quality of human resource.

ÇTSO concerns with the quality of sectoral human resource to progress the labor force and local economy in Çanakkale.

- References / Dedication: media, university

ÇTSO does not give adequate participation to dedication or collaboration with other institutions as the other local unities in Çanakkale. Their approach is limited with the internalize issues and more about the private sector. However, at some points they propose a consultancy from ÇOMÜ for publication of chamber of commerce and industry journal.

- Vision: Competitiveness and regional development by means of investments.

According to strategic plans ÇOMÜ, Municipality and City Council are leading institutions by their missions and visions. Similar emphasizes on networking are seen GMKA and ÇOMÜ’s goals. On the other hand, ÇTSO has a weak express on interacting with other institutions. In a like manner, municipality aims to interact with university, City Council, GMKA and ÇTSO. City council has similar aspects to interactions like ÇOMÜ and municipality. However, GMKA treats as a buffer institution between all of them due to having the mentality of gathering all actors at the same stage. On the other hand, ÇTSO is isolated from this area even if just a bit. ÇSTO is more or less intending to interact with GMKA and university.

4.4.3 Remarks of different institutions on networking and innovativeness

The geography of innovation is important in order to understand the innovative network capacity of sample region with reference to institutional coordination and interactions.

¹³ <http://www.canakkaletso.org.tr/ctso/kalite.asp>

In order to analyze the innovation geography of Çanakkale, numbers of institutional approaches and perceptions on networking and innovativeness are collected by in-depth interviews.

4.4.3.1 Actual situation

The level of the interactions between institutions and university is accessed by the second part of the interview. The question “How much are you willing to interact with each of these institutions for the sake of carrying out a joint work?” is asked in order to characterize the degree of the relationship. This question helps the interviewees to figure out their rating on their interactions between each other.

Table 4.6 : Approaches of local institutions on interaction¹⁴

Rating of relationships	ÇOMÜ	Municipality	GMKA	City council	ÇTSO
ÇOMÜ		5	4	5	2
Municipality	5		3	5	3
GMKA	5	3		1	5
City council	5	5	2		1
ÇTSO	3	2	5	1	

Table shows the ranking of local institutions’ approaches in an institutional network setting in terms of their interactions, relations and strong or weak ties.

ÇOMÜ is the leading institution as a driving force of networking and creating innovativeness through combining knowledge and practice. University forms the aspect of networking in three section that are also components of sustainable development: society, environment and economy.

From the environmental perspective; NGO (city council) interacts through joint projects in order to take care natural resources and resolves the societal problems that belong to Çanakkale society. City council interacts with university on the purpose of

¹⁴ Grading: 1: weak tie, 2:less weak tie, 3: so-so tie, 4: good relation, 5: strong bond

using academic knowledge as a resource of their scientific works. According to Head of the City Council in Çanakkale and General Secretary of City Council in Çanakkale, university has a concrete relationship with municipality, due to this interaction; city council gets more close to university in order to create a trilateral relationship between them. The president of Çanakkale City Council declared that:

“Creating an environment that includes different groups, different experiences and different approaches is the way for a well-development.”

However, municipality has been established a strong tied relationship with university within many civic projects. These interactions are formed bilateral in the local network and the cooperative working has obtained with the factor of effectiveness of city action plan. The public works manager expressed that, not only for physical planning but also for community issues they have interacted with the university. Relevant examples from cooperative works are such as; ground studies, a commercial area planning, and renovation of the neighborhoods where Roman people reside.

In the last applicator project, GMKA also participated in the action plan of this renovation project. Municipality of Çanakkale put emphasis on local agenda 21 specifically. The officer of Strategic Planning department elaborated the significance of the 21 local agenda, even the process finished, during the interview. She claimed that the local interactions have been established and strengthened substantially at these times. She fortified her idea with these words:

“Collaborative process provides opportunity for the quality and diversity of an output.”

However, Dean of the Landscape Architecture Department indicated the importance of interactions between local actors by giving examples of experiences in the network. He expressed the possibility of becoming a “university city” by means of interactions with local institutions and attached importance to the essential value of university on behalf of creating knowledge and having scientific studies. He gave examples of experiences to figure out the joint works in this sentence:

“In order to become a “university city”, we have to integrate with the public and endeavor to participate at the center of resolving the civic problems by sharing the

academic knowledge in many stages such as physical planning, public needs, and local development.”

Dean of the Landscape Architecture Department described the institutional network, that university exists, as municipality, city council, army, GMKA and some foreign partnerships like Australia for the sake of creating the cultural bridge to memorialize the Anzacs.

At the same time after being established, GMKA has started to organize the coordination between local actors. The coordinator of GMKA stated that GMKA attempts to orient activities in foreign countries for local actors in terms of promoting their firms and indirectly the city and region for the sake of activating the economic structure in Çanakkale and for attracting the foreign investors to invest at Çanakkale.

At the same time R&D unit of Doğtaş factory is close with vocational school of ÇOMÜ. The R&D unit of Doğtaş and university organize activities for students such as design competitions and visits to showrooms for the development of a knowledge share. This knowledge share is reciprocal between R&D and university to gain potentials on their fields. Not only from the factory side but also from student’s side these collaborative activities feed back both of the departments in creating innovativeness and knowledge capacities. The manager of R&D at Doğtaş expresses that the capacity of university on technical area is an added-value for the department of R&D of Doğtaş. In addition to that, the researcher of furniture and decoration programme of ÇOMÜ verifies the thoughts of manager of R&D by emphasizing the improving relation between university and industry. She adds the importance of benefits of co-organizations with Doğtaş R&D by expressing the increasing success of students in recent years.

Finally, the member of board of Çanakkale Chamber of commerce remarked that the relationships between local actors are so flexible according to their structural attributes. For instance, ÇTSO can go well with GMKA at the same point. However, their intentions do not overlap with City council’s goals. Thus, the linkage between City council and ÇTSO is recognizably weak that belongs to their different aspects.

In addition, one of a private sector’s (civil actor) approaches contributes to thesis. İsmail Erten, who is an effective architect in Çanakkale, acts as a key character in dealing with civic domains and social activities with local institutions. So that his

approach – as an outsource looking – help to clarify the relationship of the local actors not only within the local institutions but also his individual collaborations with them. He interacts with City Council and Municipality often than the other institutions and university. He attempted to nine joint projects within the context of Local Agenda 21. He explains the relationship with university by emphasising the significance of the attributes of dean, rector and researchers. However, it is so obvious that he is agree on collective learning process and organizational work for the sake of local development and innovativeness. From his pointof view, collaboration process is more crucial than the output of the collaboration. Thus, from his perspective, the ability of pluralistic comprehension and solidarity are components of a success for cooperation processes.

Consequently, he comes up with an idea on cooperation based on learning and consensus process with civil and autonomous initiatives. Apart from this idea, he put forward the important role of Troia Foundation in Çanakkale. This foundation provides a library of Korfmann that includes many books based on archeology. Besides being at the process of Tourism plans, this library is a kind of helpful netwprk node for sharing knowledge and setting up a network that has a tourism targets. Related to this context, they create exhibition, which includes books on torusim in the city, at the waterfront of Çanakkale. These exhibitions – Troia and Troas – target to share the cultural potential of the city with society. He adds that:

“We are in hand in hand with City Council and Municipality in the context of sharing the publishments with society who deals with tourism and culture.”

Along with the approaches of local institutions, NGO, researchers at university, R&D of Doğtaş in Biga, journalist’s view from Biga as well as perspective of a civilian architect, the findings come up with a figure that establishes a framework of the pattern of relations among these institutions.

In figure 4.2 the closeness of the institutions are demonstrated. In this relational pattern, it is obvious that university interacts with other institutions not only for academic consultancy but also for providing social capital to the city by high skilled labor force.

In addition, a very young establishment R&D seems to help university and chamber of commerce to interact more often. Through this progress, the involvement of firms

in local development would be expected by contributing their experiences within the network. However, with the development of private public partnership (PPP), Municipality and Regional Development Agency (GMKA) are interested in relevant projects.

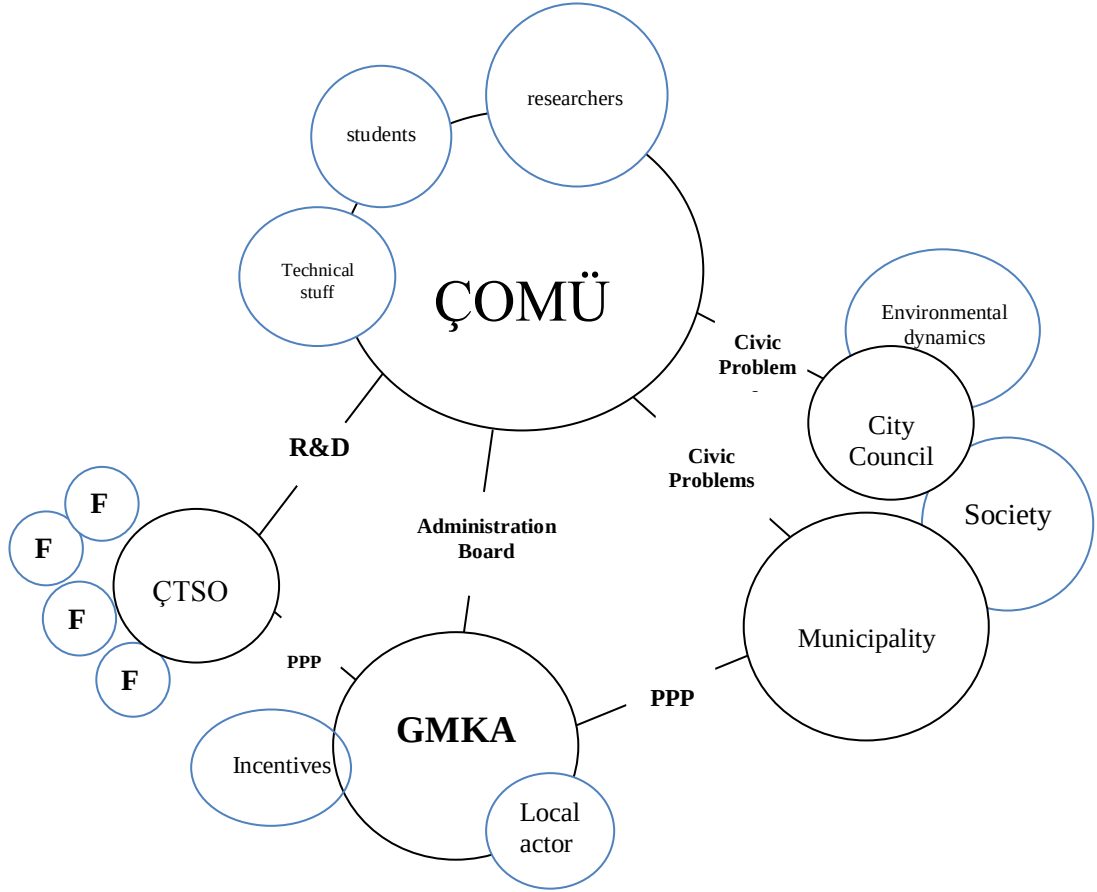


Figure 4.2 : Diagram of the interaction level of the local institutions and university.

In order to embody the relationship between the institutions and university, joint projects and interactions are appended to the appendices (Appendix A.3).

According to the interviewees' views and web site research, university is the leading network node in the institutional network setting. Obviously, there is a demand for the technical and academic knowledge support from other institutions.

Thus, behavior of municipality, City Council, GMKA and ÇTSO give university a leading character.

4.4.3.2 Future expectations

After analyzing the actual condition of the interactions between the partners/members of local network, the second stage of the case study (interview) is

modeled to understand the perceptions of actors on innovativeness. Besides, it is asked to the local actors that, what kind of expectations they have from the prospective local network. As having a sustainable development aspect, university members attach importance to the theme of innovativeness. A professor from Engineering Faculty claims that innovativeness blink of an eye to the beneficial progress and catching the current needs of development programmes. He simplified his expression with a word “contemporary”. The head of Tourism and Hotel Management department defines innovativeness as an opposite concept of conservativeness. Heads of other faculties such as urban and regional planning and sociology express their perceptions on innovativeness with the word “difference and dynamism”.

The coordinator of GMKA Çanakkale stated the need of innovativeness for the development of the region. Moreover, the main goal of the agency is, getting local actors’ attention on the actual themes that have been argued in many fields. He added the importance of innovativeness in developing with the sentence that says “Being out of the common”. In addition, he mentioned the place of innovativeness in GMKA’s strategic plan as a vision and primarily objective that should be start in Çanakkale.

A provincial agent of chamber of city planner describes the innovativeness, as “Innovativeness is a setting of changes in the space that affect the human capital”. Municipality is the administrative unit of the city that has the goals of spatial and social targets. City Council advocates the human rights and democracy in the city and tries to orient and be focus on the civic problems. The head of the City Council defined innovativeness as a theme that is attractive on the other side risky. He added to be aware and careful about the side effects of the changes in the society. However, the member of ÇTSO designated “innovativeness” as a creative process and generating more ideas that fits the needs of the actual situation and that is parallel to global changes. The perceptions expose differences belonging on the various aspects of the institutions. The approaches depend on the variables of components of development. Social, economic and environmental aspects display changes in the core of the main goals. The targeted point differs the way of thinking. Nevertheless, the original mentality of networking is to overlap the various aspects at the same point to consist all integrated ideas in the network. Moreover, networks other

intention is to gather the related institutions to let them interact each other to benefit from each other's knowledge and potential. Therefore, for local actors, institutions and university, they could be aware of the root idea that innovation needs coordinated local structure in order to create the innovative capacity in the Çanakkale region. ÇTSO can agree upon with GMKA; however, their intentions do not overlap with City council's goals. Thus, obviously the linkage between City council and ÇTSO is recognizably weak belongs their different aspects. The member of ÇTSO defined his expectation of innovativeness for the next 10 years with an emphasis on expanding the markets and enabling the agglomeration economies with more investments and institutionalization. The head of City Council added his expectation of innovation for the next years by expressing to be contemporary but with more precautions. The officer of strategic planning department at Municipality gets the attention on the participatory management model in terms of innovativeness for the next years. The coordinator of Çanakkale GMKA puts the emphasis on opening to out, abroad to be better known. Finally, the dean of Landscape architecture faculty redefined his expectation by saying "nothing is impossible".

If there were a formula for innovative network in Çanakkale, the thesis study could frame it:

Network = institutionalization + coordination circumstance + participatory aspect

Network + Human Capital+ University = creativeness of innovation

ÇOMÜ generates knowledge via high education programmes; it facilitates high skilled labor force. GMKA guides the private sector in the globalised era to become more competitive within the competitive environment with the financial supports. City council works for the social capital in the city by struggling with the corruptions in social and environmental capital. However, ÇTSO attempts to gather the private sector to have a common strategy in the local area for sectoral development of the city. In the collective thinking and organizational learning context these local institutions are anticipated to be at the same stage. Through scheduled meetings the knowledge belong to eachother gather at the same pool in an integrated way to be beneficial for each of their goals.

Along with the meetings, municipality enables urban development when ÇOMÜ approaches to become an urban university.

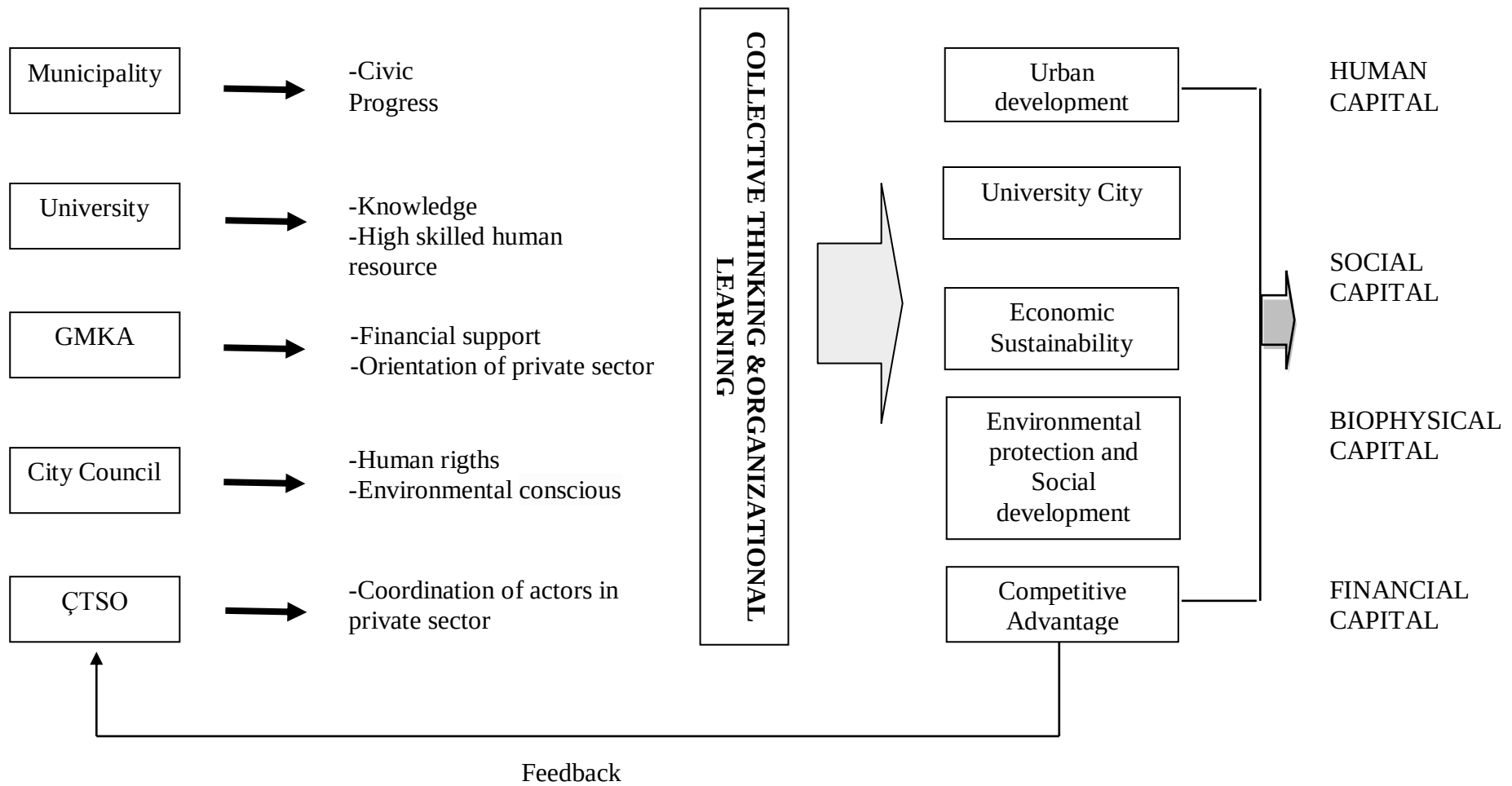


Figure 4.3 : The conceptual framework of local network's expectation in Çanakkale

At the same time, city council provide environmental protection and social development while ÇTSO sustain the competitive advantage of the city. Finally, GMKA facilitates economic sustainability. Thus, local socio-economic development is possible to be ensured throughout these coordinative relation and interactions among them by sharing knowledge and experience they have gained before.

5. EVALUATION AND CONCLUSION

The objective of this thesis is to analyze the role of local networks in innovative process of Çanakkale. For this reason, recent studies in innovation and networking paradigm, which provide essential theoretical background is critically evaluated.

The aim of this concluding chapter is to discuss to what extent this thesis has satisfied its research questions. The research questions are related to the network behavior of local institutions and university with their perceptions of innovativeness, the role of spatial proximity and the relation between networking and capability of innovativeness. Moreover, it is important to open up new discussion paths in regional studies.

Within the recent regional development models, coordination and participation are defined as important tools of local network relations and innovation activities. According to these themes, coordination and participation should take place in local networks during the innovation process to increase the organizational learning and collective thinking in the local area.

Although recent regional development approaches on innovation and networking concepts constitute the theoretical background of this study, a critical question is still on the agenda: whether local networks matter for regional innovation capacity, or not. Within the context of the thesis, it is accepted that the intentions for collaborations are not enough to provide the innovative performance and sustain the competitive advantage of the city. Knowledge is an important resource in knowledge-based economy and learning is the most crucial process for innovation performances. With respect to this theoretical background, it is remarked that if there is not adequate coordination within the network and if they do not able to participate in an organizational learning process, institutions and firms fail to establish their own capacity and capability for creating innovation. In addition to the main notion of innovative models, local knowledge potential, university, local institutions and local networks could not give response to the global competitiveness without coordination.

From the competitive point of view, firms and institutions form their competitive ability with their specific competences. Furthermore, they need to invest in a variety of factor such as human skills, organizational capacities, distribution and logistics, advertising, image, design, reputation and so on for the improvements of intangible resources (Den Hartog, 1997, Jacobs, 1996). In terms of producing an innovation, intangible resources are important from the Schumpeter's perspective. These intangible resources are embedded in humanskills, experiences and organizational routines that are mobilized in new and creative forms. Organizations are crucial at the point of arranging the conditions for learning and using the result of the process with the capacity to use and learn sort of competencies that developed through organizational learning (De Geus, 1997).

Furthermore, in innovation networks not only inter-institutional linkages but also relations with universities are important. A collaboration process with university is crucial for the sake of acquiring different kinds of knowledge and abilities in innovation process. Thus, complementary networks of local institutions are the key source of innovation.

It has been noted that the theoretical background provide a framework for the case study. Within the context of the thesis, it is accepted that local networks are essential in order to gain innovative competencies and be competitive in the globalisation environment. In this sense, the case study provides the empirical evidence of a relation between networking and innovative capabilities. What roles local institutions, university can play in the transfer of knowledge, information and ideas to and within the regional partnership networks? How organizations of a network influence learning and innovation? What kinds of innovations (scientific, urban, and radical) result from this network? Is there any local institution that has an effective approach better than other institutions in innovation process for sustainable development?

These analyses are handled in a city, which has a remarkable success in coordination, participation and institutionalisation within and among the local institutions via Local Agenda21. This communal culture stands out in the City Action Plan that indicates the attributes of coordination and participation. Çanakkale, as a participatory city, is mostly specialized on service sector such as public administration, City Council, University and Regional Development Agency.

Çanakkale, as a coordinative city, targets creating relationships between local institutions and University through interactions within cooperative projects. ÇOMÜ represents a tendency to become an urban university. In addition, The University involves in the local development process by generating knowledge and enables high skilled human capital in Çanakkale.

With reference to the research questions, which are represented in the methodology chapter, the empirical analysis and survey data in Çanakkale indicate qualitative results. The anticipated contribution of the case study is to find out to what extent these results are encompassed in theoretical discussion and to what extent they yield new research areas in regional studies. Likely, findings also indicate that Çanakkale case provides contribution to main assumptions of local development by participatory culture in Turkey.

One of the main assumptions of this thesis is that there is a relationship between innovation and networking, in which innovation is defined as the main factor of development. In addition, there are many theoretical and empirical studies that support the increasing importance of innovation activities in development. However, the relation between networking and innovation has not been handled sufficiently yet.

In the case study, networking is analyzed by some questions, such as quality of interactions, cooperative projects, and capacity to use local meetings. With reference to these questions, University is at the first ranking and Municipality follows ÇOMÜ. All empirical and theoretical studies show that among the local institutions the most important one is generating knowledge and organizational learning capacity of the institutions. Morgan (1997) states a positive linkage between knowledge and learning in knowledge-based economy. Nonaka and Takeuchi (1995) have also claim, innovation is the way of solving problems with the endogenous processing of outside knowledge and organizational learning.

Furthermore, according to the results of the case study, local institutions in Çanakkale are aware of the importance of networking. Therefore, Municipality, City Council and Regional Development Agency organize meetings. These meetings are organized with the intention of gathering local actors at the same stage and providing an actual agenda. At this stage institutions suggest to cooperate at multidisciplinary

projects not only for diversified aspects but also for financial facilities. The development policies that encourage the collaborations enable the collaborative models more attractive by providing facilities on expenditures and convenience for technical support. One of these models is University-Industry collaboration. Çanakkale as a developed service sector city does not include very efficient industry sector. University is more active in service sector and provides collaboration with service sector such as Municipality, City Council and Regional Development Agency. In addition, on the purpose of bringing local institutions close together, ÇOMÜ provides organizations such as panels, symposiums and conferences depending on civic domains or proposed projects on social capital, local economic development, rural planning, urban planning, spatial planning, urban design and recent models and strategies on regional/local development system. University, in this network, provide not only the chance to be contemporary on scientific and practical field but also high education system such as MS.c. and PhD programmes to raise high skilled labor force in Çanakkale. On the other hand, GMKA (Regional Development Agency) provides promoting the city in a foreign context by encouraging entrepreneurs and administrative managers to go abroad and create partnerships or joints to enable economic development in Çanakkale. In the light of this vision, it is obvious to see, GMKA has a tendency to expand the local network in terms of keeping the actual development models and becoming more contemporary in Turkey. At this point University and GMKA have similar goals, which aims to improve the local network through tangible tools such as expanding the local network into abroad and targetting the progress of human capital in Çanakkale. With reference to the findings through interviews, apparently ÇOMÜ and GMKA create the motive force of setting up a network within the local area.

“Innovation is creating new ideas, and without new ideas humanity makes no headway!” In other words, innovation is a necessary strategy to improve the social capital and economic environment of the city. Strategic policy makers have a significant role in understanding and implementing this required theme. Thus, in the research, the aim is to understand the perception of this leading people in a development process of the city. As a theme, innovation takes part in many strategic plans in recent years and there are many panels, which have been handled by public or private sectors, in order to present the significance of innovativeness.

In the case study, the findings demonstrate various types of definitions of innovation according to respondents. The answer most often depends on the vision of the institution. If the institution's vision is composed of economic aspect then, the description of innovation consists more economic notions such as, "innovation is having prosperity" and "innovation is the way to gain a competitive advantage". The perspective of GMKA and ÇTSO on innovation is to figure out the economic development of the city by such actions. In contrast to these local actors, City Council and Municipality associate innovativeness with social capital and physical environment. At this point ÇOMÜ plays a role as an interface between economic and social aspects. Due to being a scientific and objective institute, ÇOMÜ identifies innovation with both economic and social approaches for development. University analyzes the better and worse sides of the proposals and anticipates the future profit of the project in terms of being competitive and sustainable for social, economical and environmental domains.

The results of the case study show the significance of participation at the competitive level with innovation strategy. Although being not so open to changes, all institutions are like-minded in providing a circumstance for innovation and endeavor for forming the capability of creating innovativeness. However, in terms of implementing innovation, their approaches vary from using technology to preserve the nature. City Council and ÇTSO contradict at this point in a manner of expressing their institutional goals.

Results of the field survey show that innovation activities of institutions and ÇOMÜ have not been developed yet when considering the expected values. However, they are at the blue print stage of creating the capability of innovativeness. This may be derived of immature level of network, unformed structure of organizational learning and less improved knowledge share circumstance, rather than formal R&D studies and scientific knowledge base. However, local institutions must have access to the communication capabilities in order to do their jobs efficient in emerging Age of Information.

Moreover, in this study the capability of innovativeness is defined as a network process, in which the relationships with other partners from local institutions that play important role in the development process of the city. Networking is a crucial definition of knowledge exchange and a definite supplementary to compensate the

deficient internal resources. Successful innovative network depends on strong network relations in local and regional context.

Particularly, organizational structure and implementations can promote and provide opportunities to develop and manage social capital. In addition, experiences of institutions in collective thinking and implementing process take an important role in level of integration and interaction efficiency and scope (Newell and Huang, 2005)

Beside these results in the case study, there is also increasing awareness in Çanakkale. The conclusive remarks of interviews show that local actors are engines for the urban innovation in Çanakkale. In addition, dynamics for the innovation capability are institutions. They believe that creative thinking based on collaborative efforts of all stakeholders – policy makers, firms, researchers, and citizens – can lead to urban innovation ideas.

Consequently, the findings of this study lead us to establish a framework for further studies on the role of networks and innovativeness in local development in Çanakkale by describing main patterns of networking and innovation capacity with the approaches of institutions and joint projects. In this study, some clues about network strategies, which are efficient for the creating innovativeness, are presented. Local networks are believed to be an engine for urban innovation and local development. From this perspective, local institutions are increasingly trying to promote and improve local network. Besides, networks significantly required for innovation. Strong global competition and ever-shifting economic system with rapid technological development compel regions to produce new products, improve new production processes and increase competitive advantage. Participation is a local network, enables a region to focus on main capabilities and orient to reach resources such as high-skilled labor force, technology, collective learning, financial resources, knowledge and markets. Thus, these acquisitions provide a region to progress their competitive situation.

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APPENDICES

APPENDIX A.1 : Sample of Interview Questions

A. Section: Measurement of Perception on Innovation

1. What do you think about the concept of “innovation”?
.....
2. What kind of requirements and changes in the global context compel the people to innovate?
.....
.....
3. Do you think it is necessary to innovate for the sake of being competitive?
Or Do you prefer to keep on with traditional methods in your work?
.....
.....
4. What do you need for an innovation activity? What are the supplementary things for innovation (technology, university, high-skilled people, local Networks, collaborations, knowledge)?“
.....
.....
5. What do you think about the significance of innovation in the future? How will it change?
Keywords:
.....
.....
6. Could you give few examples of some innovative activity within your work?
.....

B. Section: Evaluation of Networking

1. How is your interaction with other institutions? Does interaction help to improve your work?

.....
.....

2. What kind of interactions do you have (collaborations, joint projects)?

Joint Projects:

.....

(A Matrix of relationship: This is a grading table form 5 to 1. If you think you have a strong bond mark as 5, and if you think you have a weak tie mark as 1. Adjust the degree of a relationship by decreasing the marking.)

University	RDA*	City Council	Municipality	Chamber of commerce

- Regional Development Agency

3. Do you have any interaction with University (ÇOMÜ)? Do you think if it is necessary for a company to collaborate with a university?

.....
.....

4. Are you seeking any partnership for collaborations or copperations?

.....

C. Section: Approaches About Knowledge Share

1. What do you think about the university involvement into civic domains? Do you think Can university determine significant projects for Çanakkale?

.....
.....

2. Do you think if knowledge share is important for local development?

.....

APPENDIX A.2 : List of interviewee

Interviewee	Position
Abdullah Kelkit	Dean of the Landscape Architecture Faculty
Cem Erdemir	Member of Chamber of commerce
Cengiz Caner	Proffesor at Enginnering Faculty of ÇOMÜ
Evrin Akman	Urban Planner at strategical planning department of Çanakkale Municipality
Gülay Sarışen	Secretary of Public Relations at City Council
İlkay Uçar	Head of Agriculture and Husbandary Managament
İsmail Erten	Architect
Mehmet Tokgöz	Member of Chamber of Commerce
Özgür Şahan Özer	Urban Planner at Çanakkale Municipality
Özleyiş Çetin	Head of Public Improvements at Çanakkale Municipality
Recai Başaran	Coordinator of GMKA (Çanakkale)
Saim Yavuz	Head of City Council
Ekrem Tufan	Assoc.Prof.Dr. at School of Tourism and Hotel Management, ÇOMÜ
Cumhur Aslan	Assoc.Prof.Dr. at Sociology Department, ÇOMÜ
Arzu Başaran	Head of Urban and Regional Planning Department, ÇOMÜ
Serten Akkaya	Biga Günlüğü –AA Biga Temsilcisi
Öğr. Ayşin Aşkın	Biga M.Y.O. Mobilya&Dekorasyon bölümü
Fatih Bayramlar	Doğtaş Ar-Ge Deposu Müdürü

APPENDIX A.3 : New Collaborations Appeared as an Output of Interactions

Projects&Interactions	Collaborators
“Wooden horse” children Toy workshop	GMKA – Municipality
Ceramic Souvenir Workshop	GMKA – Municipality
Fevzipaşa Social life Center	City Council – Municipality
Urban transformation in Roman District	ÇOMÜ – Municipality
City Action Plan	ÇOMÜ – Municipality– ÇTSO – City Council
Publications	ÇOMÜ – City Council, ÇTSO
Marina construction	Municipality – ÇTSO (support)
Children’s play ground	Municipality – ÇOMÜ
Internship for vocational high school students	ÇOMÜ – ÇTSO
Green Area projects	ÇOMÜ –Municipality
Tevfikiye Project	ÇOMÜ – Municipality
Hobby gardens	ÇOMÜ – Municipality

CURRICULUM VITAE



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