Network-based theories and internationalization of firms: applications to empirical studies

Mojtaba Hosseini and Hosseini Dadfar
Linkoping University, Sweden

Key Words
Network based theories, Internationalization, Revised Uppsala Model, ARA-Model, and Network Embeddedness.

Abstract
By using a topology of the most frequently used network-based theories on the firms’ internationalization; this paper is going to present some recommendations to correctly apply those theories in future internationalization studies. We have identified eight network-based theories that are broadly used in internationalization studies. These theories are Relationship Approach, Social Network Analysis and Network Mapping in American schools, and Industrial Marketing and Purchasing Group (IMP) Interaction Approach, ARA-Model, Network Embeddedness, Revised Uppsala Model and Network-based Internationalization Theory, which are developed by European universities.

This paper, will explain these theories, their applications to internationalization and then making some recommendations for the future empirical studies. Figures and tables are used to clarify and summarize the theories and their empirical applications.

Introduction
Researchers have been using of different basic theories to explain the internationalization of companies. For example, transaction cost approach (TCA) (Anderson 1986; Lee, Koh, and Heo 2011), resource-based view (RBV) (Mariz-Pérez and García-Álvarez 2009; Sharma 1999; Westhead and Wright 2001), network theory (Elo 2005; Fletcher 2008) and sometimes, a combination of them (Schwens and Kabst 2009). Recent studies have recommended to apply a holistic approach to explain the internationalization due to its iterative nature (Crick and Spence 2005), and insufficiencies of existing theories like RBV, networking and even contingency theory to clarify it (Axinn and Matthyssens 2002; Crick and Spence 2005). In fact, a single theory cannot fully explain and justify the internationalization strategies and process (Crick and Spence 2005). Considering these recommendations and in view of usefulness of other theories to justify some dimensions of the internationalization process, this paper has focused on network theory to describe the internationalization process.

In spite of this fact that using of networking in internationalization context needs precise strategies because of its concurrent negative and positive impacts (Tang 2011). Over the last decade, researchers have increased their attention to justify the internationalization by applying a network approach.

There are two main streams about applying networking in the context of internationalization. While some studies use of network perspective as their framework theory (Elo 2005; Fletcher 2008; Fletcher and Barrett 2001; Sydow et al. 2010), others just consider the network relationship as a variable, which may influence the internationalization in different ways (Coviello and Munro 1997; Kontinen and Ojala 2011; Zain and Ng 2006). This paper will investigate the former kind of studies to provide a clear insight about using of network perspective in internationalization studies. Hence, the question is what is the most suitable networking theory(s) to explain a given dimension(s) of internationalization?

Networking Theories and Internationalization

Networking interactions facilitate the internationalization (Kontinen and Ojala 2011), moderate the perception of risks of entering to foreign markets (Musteen, Francis, and Datta 2010), reduce the investment cost and time of process integration (Lin and Chaney 2007), and improve the
internationalization performance (Redding 1996).

Network perspective provides the best explanation for modern business models, which have focused on higher level of technology and worldwide marketing (Overby and Min 2001). In spite of the consistency of network perspective to explain internationalization in the new business models, today’s studies, have failed to provide a comprehensive framework of the effects of networking and network relationships on the internationalization process. Therefore, designing a holistic picture for understanding the role of networking in internationalization is very difficult (Musteen et al. 2010). Researchers claim that the internationalization is happened in an interactive environment that is conducted by a network of firms, which includes of focal and external actors (Awuah, Gebrekidan, and Osarenkhoe 2011). Interaction of these actors in networks, can help companies to acquire activities, resources and information that are necessary for internationalization (Awuah et al. 2011).

By reviewing the literature of networking and internationalization, this study has identified two main criteria; area of origin and context of origin, to categorize the network theories of internationalization. Area of origin refers to the geographical places of universities that develop these theories; European and American. European universities have focused on industrial networking, which originally developed to explain companies’ interactions. American universities developed some theories to justify the individual networking relationships. Later, these theories are applied by researchers to describe some organizational phenomena.

Another criterion is the context of origin; internationalization and network. Internationalization theories are emerged to describe the internationalization by applying a network perspective in their justification mechanism. These theories are originally belonged to the internationalization context. Network theories are more general perspectives that can be used in several contexts such as internationalization. These theories have more extended domains. Figure 1 shows the classification of identified networking theories.

![Figure 1: Taxonomy of internationalization-networking](image)

This taxonomy contains eight theories in four distinct categorizes. IMP Interaction Approach, ARA-Model, and Network Embeddedness are labeled as European Network Theories. American Network Theories are Relationship Approach, Social Network Analysis and Network Mapping Technique. There are two internationalization theories that have used of networking in their justification process; Revised Uppsala Model and Network-based Internationalization Approach. Surprisingly, both are settled in European category.

**European Networking Models**

This category embraces theories that are developed in European universities to describe the mechanism and elements of the industrial and individual networks. These theories are:
IMP Interaction Model

This model that is designed by Hakansson (1982) has focused on three elements of interaction; actors, atmosphere and environment. When an interaction takes place between individuals or organizations, these elements may affect it (Hakansson 1982). Therefore, to justify and explain an interaction, looking at these elements is necessary.

The primary goal of this model was to analyze the interaction between supplier and buyer in industrial markets. It can explain the short-term and long-term exchanges in the form of products, services, information, and financial or social exchanges.

Environment refers to the macro elements that influence an interaction, for example, institutional or political structures. Atmosphere points out to the microelements that affect the dyads of cooperative companies. Power, dependence, expectations and closeness are the important factors at this level.

Environment
- Market Structure
- Dynamism
- Internationalization
- Position in the manufacturing channel
- Social system

Atmosphere
- Power/dependence
- Co-operation
- Closeness
- Expectations

These factors affect the behavior of both actors. The institutionalization of the market may affect the organizations and their motivation to improve their relationships. Adaptations can also strengthen the connections between actors (Hakansson 1982).

ARA-Model

This model was presented by Håkansson and Johanson (1992) and includes three main elements in its first layer: actors, activities and resources. Actors are firms or individuals who control resources and create the value through transforming them. These three elements are strongly interdependent, so researchers should pay attention to them as a whole. The second layer of the model deals with analyzing the network relationships based on activity links, resource ties and actor bounds (Hakansson and Johanson 1992). Figure 3, shows the model.

The final purpose of this model is to justify the function of business relationships based on mentioned layers. The most important function of the business relationship is to interlink the activities in an especial manner to help the actors to transform resources for creating the optimal values (Hakansson and Johanson 1992).
Network Embeddedness Model

Halinen and Törnroos (1998) developed this approach in Finland. They argued that firms are embedded in wider business networks. These networks can affect the firms based on the relationships with other actors and their positions within them (Halinen and Törnroos 1998).

As the Figure 3 shows, there are six types of network embeddedness that researchers should consider when investigate the behavior of firms in the network context. Temporal embeddedness refers to the time. It says every company has past, present and future. History and forthcoming expectations can influence the current activities of the firm. Spatial embeddedness deals with the role of space and location on firm’s behavior. Social embeddedness, market embeddedness and political embeddedness, in turn point out to the effects of social structure, market structure and political structure on the decision-making behaviors. Technological embeddedness indicates the impact of the level of technology in the firm and industry on business activities. This model claims that by focusing on these six kinds of embeddedness and analyzing them correctly, researchers will be able to explain and forecast some behaviors of firms (Halinen and Törnroos 1998).

American Networking Models

There are three identified theories that originally are presented in the context of network by American universities and then are used in the internationalization studies. These theories are: Relationship approach

Andersen and Buvik (2002) based on the works of Dwyer et al. (1987) and Scanzoni (1979) developed a revised model regarding choosing international exchange partners. This model explains the selection of a proper international exchange partner in three continuous steps. The beginning step is the awareness, in this stage the firm tries to investigate and find all feasible partners and gaining information about their strengths and weaknesses. In this pace, the most important concern is the source of information, and firms use of different kinds of source to acquire enough information (Andersen 2002).
The next step - exploration - refers to choose the most attractive partners based on defined criteria. In this phase, attractiveness of partners and their desire to negotiate about building mutual relationships are most important points. The last step is selecting the most suitable partner who can help a focal firm to gain more benefits in the future. Trust, goal compatibility and enhance performance by cooperation are the most important consideration in this pace (Andersen 2002).

Social Network Analysis

American researchers such as Aldrich (2006), Coleman (1988) and Granovetter (1985) extended this approach to organizational studies from social science. This approach has focused on the processes and mechanisms that are used by people in social structures to access resources and information (Aldrich and Ruef 2006; Coleman 1988; Granovetter 1985). This perspective, has mainly focused on the informal relationships of actors (Granovetter 1985) and uses of different kinds of connectedness such as weak, strength, direct and indirect ties beside some structural aspect of networks like size, density and diversity to justify a network-based phenomenon (Aldrich and Ruef 2006; Coleman 1988; Granovetter 1985). One of the most frequently used concepts in this kind of analysis is the social capital that refers to the number of relationships of a special actor in a network.

Network Mapping Technique

This technique seems to be developed from the field of social networking. The main goal of this technique is to design some maps of a given actor’s network in different points of time and compare them to analyze the target behavior of that actor. The principal weakness of this technique is its ignorance to motivations and dynamisms behind the change. In fact, this approach just shows the changes and doesn't state the dynamisms and motivations underpinning behaviors (Fletcher 2008).

European Internationalization models

These theories are originally developed in the field of internationalization to justify its process and dynamism. We have identified two theories in this category. These theories are:

Uppsala Revised Model

Johanson and Vahlne (2009) revised their previous internationalization model by applying a basic networking prospect. The following figure shows the mechanism of their revised model.

![Figure 5: The business network internationalization process model (Adopted from Johanson and Vahlne, 2009)](image-url)
This model has two main parts; state variables and change variables. These parts have interaction together, and they influence each other. The upper left box of the model shows the opportunities besides the knowledge that implies to the opportunities as the most important element of the body of knowledge. The second state variable in the model is network position. Network position points out to this reality that the internationalization process takes place within a network context. The most important current activities include learning, creating, and trust-building construct one of the changing aspects of the model. This aspect points out to the learning, creating knowledge and trust building as daily activities of firms. Another changing variable is the relationship commitment decision that refers to the increasing or decreasing of commitment to the relationships (Johanson and Vahlne 2009).

The state and changing dimensions of the model provide an interaction mechanism to explain the internationalization process in a network context. Based on this model, companies in the international environment, try to improve their knowledge about opportunities via their network position. Because the internationalization is conducted in a network context, gaining success in that process return to the network position, which help companies to get unique knowledge about existing opportunities.

For getting a better network position and gaining fresh knowledge regarding opportunities, firms should focus on their routine activities. The most important daily activities in the model are learning, knowledge creating and trust building. If firms can improve their learning capabilities, gaining more useful knowledge and building truthful relationships, they settle in a position to increase their commitment to the relationships. These dynamic nature behaviors that labeled as the change dimension in the model can affect the state variables, which facilitate the internationalization process and in turn, the state dimension, will foster the dynamism of the change aspect (Johanson and Vahlne 2009).

In sum, this model justifies the internationalization of companies, in a network context, based on the interaction of two dimensions include state and change. State variable refers to long-term variables that they facilitate internationalization and changing aspect points out to short-term variables or daily activities, which support them.

**Network-based Internationalization Approach**

This model is presented and developed by Johanson and Mattson (1988) and tries to explain the internationalization of companies by considering the environment as a business network and market. Based on the model, firms are embedded in a network, and their internationalization process is completely influenced by their networks. In fact, the networks of companies, predict their international or domestic activities (Johanson and Mattsson 1988).

They defined internationalization as an evolutionary process that is conducted in three sequential stages: 1- Market expansion: finding a new position in a new market as a network, 2- market penetration: improve existing position and increase resource commitment to the network, and 3- market integration: improve harmony between different position in the market (Johanson and Mattsson 1988).

The position of the firm in the network (market) is the most important driver for internationalization. This position is defined based on two principal elements: Degree of internationalization of the firm, and degree of internationalization of the network (market). According to these two elements, they identified four market position for firms (Johanson and Mattsson 1988).

**Early Starter**: this kind of firms is positioned in a market that its suppliers, competitors and its other cooperative companies have a few international relationships, and the firm also does not have access to information about global market (Johanson and Mattsson 1988).

**Lonely International**: suppliers, competitors and other cooperative companies of this kind of firms do not have access to international market, but they have enough own experiences and knowledge about international market, which can be
used in internationalization activities. These firms have a better network position over their competitor because of their access to international markets (Johanson and Mattsson 1988).

**The Late Starter:** these firms are in an environment, which competitors, suppliers and cooperators have widespread international relationships but the company does not have enough knowledge and experience about foreign activities. In fact, these firms have indirect relationships with foreign partners via their competitors, suppliers and cooperators. Lonely starters have a weaker position than their competitors and building a tight network is very difficult for them (Johanson and Mattsson 1988).

**International among Others:** when the firm and its environment are highly internationalized, this position is shaped. In this position, both firm and its external actors have enough experience and knowledge about international markets. In this position, companies can have tight networks, which provides external resources and enables them to enter to third countries via cooperative strategies (Johanson and Mattsson 1988).

**Application of the models in internationalization**

Researchers imply to several applications and benefits of networking and network relationships in the context of internationalization. Awuah et al. (2011) pointed out to selecting foreign market, mode of entry and the level of resource commitment in international markets as some outcomes and dimensions of internationalization that are depended on the interaction of focal firms with external actors. Jones (1999) added another dimension of internationalization that can be justified by networking: speed of internationalization. Sharma (2003) exerted that the best model for explaining the internationalization of born global firms is the network approach.

The mentioned justifications are some general applications of the network approach in internationalization, but this paper tries to present specific applications of identified network theories in internationalization. Relationship Approach is a limited domain theory that developed for a very narrow target; selecting the best international partner. Therefore, it is used to explain selecting foreign market and entry mode based on choosing a proper international partner (Andersen 2002).

Social Network Approach and its concepts such as weak and strong ties, and social capital have broadly applied in the context of small entrepreneurial firms. Researchers have used them to justify the international opportunity recognition by entrepreneurial companies (Kontinen and Ojala 2011), selecting a foreign market by born global firms (Sharma 2003), international performance of new ventures (Han 2007), and their internationalization speed (Kiss and Danis 2010). Countertrade is a form of internationalization that links an import activity to an export one as a continues process, which bring

---

**Figure 6:** the network-based Internationalization Model (Adopted from Johanson and Mattson, 1988)
mutual benefits to both parties (Fletcher 1996). The most useful perspective to explain the countertrade internationalization is networking view (Fletcher 1996). Ahlström and Westerlund (1990) applied IMP Interaction Approach to justify this phenomenon while Fletcher (1996) used of Network Mapping Technique and the ARA-Model to explain it.

The life-cycle internationalization points out to the process of internationalization as a life patch that includes some improvements, difficulties and declines. Fletcher (2008) and Fletcher & Barrett (2001) employed Network Mapping technique and network Embeddedness Approach to describe this phenomenon. Network Mapping is an appropriate approach to justify the internationalization of firms during a period of time, but as earlier implied, this approach just shows the changes not dynamisms and motivations. Hence, researchers should apply it beside other models to gain a comprehensive picture of life-cycle internationalization. The best approach that it can help researchers besides Network Mapping Technique to explain this view of internationalization is the Network Embeddedness. Table 1 summarizes some of the empirical applications of reviewing theories.

<table>
<thead>
<tr>
<th>Network-based theories</th>
<th>Application in internationalization</th>
<th>Example empirical works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship Approach</td>
<td>Selecting an international partner</td>
<td>(Andersen, 2002)</td>
</tr>
<tr>
<td></td>
<td>Selecting a foreign market</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Selecting an entry mode</td>
<td></td>
</tr>
<tr>
<td>Social Network Analysis</td>
<td>International opportunity recognition</td>
<td>(Kontinen &amp; Ojala, 2011)</td>
</tr>
<tr>
<td></td>
<td>Selecting a foreign market</td>
<td>(Sharma, 1999)</td>
</tr>
<tr>
<td></td>
<td>International performance</td>
<td>(Han, 2007)</td>
</tr>
<tr>
<td></td>
<td>Internationalization speed</td>
<td>(Kiss &amp; Danis, 2010)</td>
</tr>
<tr>
<td>Network Mapping Technique</td>
<td>Besides other approaches to justify life cycle and countertrade internationalization.</td>
<td>(Fletcher, 1996) (Fletcher, 2008) (Fletcher &amp; Barrett, 2001)</td>
</tr>
<tr>
<td>IMP Interaction Approach</td>
<td>Countertrade Internationalization</td>
<td>(Ahlström &amp; Westerlund, 1990)-ERROR</td>
</tr>
<tr>
<td>ARA-Model</td>
<td>Countertrade Internationalization</td>
<td>(Fletcher, 1996)</td>
</tr>
<tr>
<td>Network Embeddedness Approach</td>
<td>Life cycle internationalization</td>
<td>(Fletcher, 2008)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Fletcher &amp; Barrett, 2001)</td>
</tr>
<tr>
<td>Network-based Approach</td>
<td>Internationalization process</td>
<td>(Chetty &amp; Blankenburg Holm, 2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Hadley &amp; Wilson, 2003)</td>
</tr>
<tr>
<td>Revised Uppsala Model</td>
<td>Internationalization process</td>
<td>(Vahlne, Ivarsson, &amp; Johanson, 2011)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Tavoletti, 2011)</td>
</tr>
</tbody>
</table>

Table 1: Empirical applications of network based theories in internationalization

The original internationalization theories like Network-based Internationalization Approach of Johonson and Mattson (1988) and Revised Uppsala Model have tried to describe the whole process of internationalization. Although, the Network-based Internationalization is used in several empirical studies as their framework theories (Chetty and Blankenburg Holm 2000; Hadley and Wilson 2003), Uppsala Revised Model seems to be gained a lower attention (Tavoletti 2011; Vahlne, Ivarsson, and Johanson 2011).

**Discussions and conclusions**

There are several network-based theories that are applied in internationalization context for examining internationalization process and some aspects or outcomes of the process. The most important original network theories that are developed by European researchers are IMP Interaction Approach, ARA-Model, and Network Embeddedness. It seems that these models and approaches are more suitable
in some kinds of internationalization like countertrade and life cycle internationalization. In fact, these approaches are applied to bring out a more holistic analysis of internationalization strategies by organizations.

In contrast with these theories that are originally developed in the context of networking and then are implemented by internationalization researchers, some internationalization-based theories are designed by applying networking perspective in their justification logic. The most important theories of this kind are Network-based Internationalization Model and Revised Uppsala Model. These theories try to describe the whole process of internationalization.

American researchers broadly present the basic theories of social networking that are shaped the underpinning of other theories. Three of them are identified in this paper based on reviewing of networking and internationalization literature. Relationship Approach explains choosing a suitable international partner by large and small companies. Network Mapping is a complementary technique that is used besides other approaches to justify some aspects of internationalization during a period of time. The most important approach in this category and the most suitable perspective for explaining the internationalization of SMEs is social network analysis. Many empirical studies have used this approach to clarify and describe the internationalization process and some different aspects of international strategies of SMEs. Therefore, it seems that the best approach for studying some aspects of SMEs internationalization is this theory.

In summary, as other researchers (Axinn and Matthysens 2002; Crick and Spence 2005) have recommended to apply several framework theories such as RBV, TCA and Networking to provide a comprehensive understanding of internationalization, this paper extends this recommendation to sub-theories of networking framework. In fact, researchers should employ one or more suitable theories based on their research goals to gain a complete picture of their determined internationalizations’ aspects.

Research limitations and direction for further research

This study is a conceptual research, which tries to review the most influential network theories in the context of internationalization. Like other conceptual studies, the first limitation is the lack of empirical data. Future studies should empirically investigate the international companies, find their dominant patterns of their internationalization and compare them with these identified theories. Another important limitation of this paper is its number of theories. In fact, this study just focuses on eight networking theories. Future researchers can find more theories and review their applications in the empirical studies of internationalization. One of the final conclusions of the study was about combining selecting theories to explain the internationalization process or some aspect of the process. Therefore, researchers can propose some implications and recommendation about synthesizing these theories in the context of SMEs or LEs internationalization.

References
Ahlström, Magnus, and Annicka Westerlund. 1990. Offset agreements. Linkoping University, Department of Management and Economics.
Coviello, N, and H. Munro. 1997. “Network relationships and the internationalisation process of small


Elo, Maria. 2005. SME internationalisation from a network perspective.


