A framework for the integration of a gender perspective in cross-border entrepreneurship and cluster promotion programmes

Quadruple Helix reports 2010:6

By

Monica Lindgren and Johann Packendorff
KTH – Royal Institute of Technology
School of Industrial Engineering and Management
Lindstedtsvägen 30, 100 44 Stockholm, Sweden

Quadruple Helix reports 2010:6

A framework for the integration of a gender perspective in cross-border entrepreneurship and cluster promotion programmes

By

Monica Lindgren and Johann Packendorff
KTH – Royal Institute of Technology
School of Industrial Engineering and Management
Lindstedtsvägen 30
100 44 STOCKHOLM
SWEDEN

Contents

1. Introduction

Quadruple Helix Central Baltic is an Interreg IV A project focusing on gender equality, entrepreneurship and ICT innovations. It runs from October 2009 until December 2011 and has eight partners from three countries. The name, Quadruple Helix Central Baltic, derives from the working model where four sectors of society i.e. public authorities, researchers, entrepreneurs and civil society actors, have come together to strengthen the tourism industry in the archipelagos of the Central Baltic Sea area. From preliminary research, the roles of the different societal sectors in the innovation system has been identified as follows (Lindberg et al, 2010):
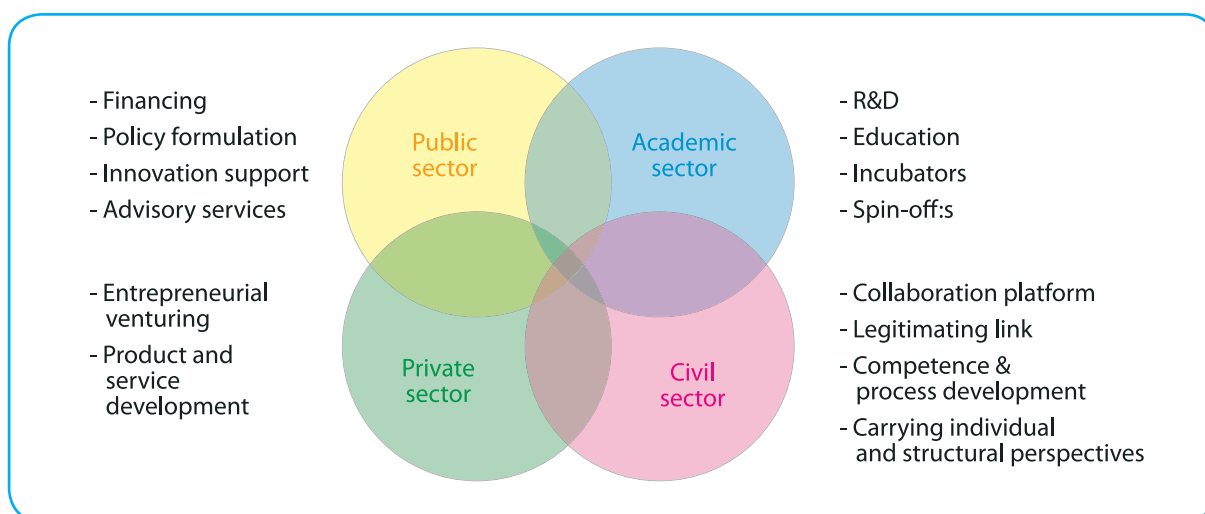
Illustration 1: A Quadruple Helix innovation system

The project is funded by the Central Baltic INTERREG IV-A programme. Quadruple Helix Central Baltic experiments with interesting investments in mobile technologies and promote collaboration across borders. It seeks the answer to questions like: How do we focus on entrepreneurship, innovation and clusters in a more gender equal way? And by doing so, what can be gained in terms of development, increased prosperity and innovation? The overall aim defined for Quadruple is to stimulate clusters in the tourist sector in the Central Baltic sea region in parallel with development of innovation support measures and implementation of methodologies for gender mainstreaming in cluster processes. Quadruple combines activities targeting entrepreneurs in the tourist sector with activities targeting, tourist and business promoters and policy makers.

The purpose of this framework report is the following

- To design methodologies for integration of a gender perspective in entrepreneurship, innovation and cluster programs.

- Producing guidelines for mainstreaming strategies and a framework for regional and cross border analysis.

2. Themes in the framework

The framework takes it points of departure in general notions of gender and gender differences in society. Thereafter, it goes specifically into the area of entrepreneurship from a gender perspective. Finally, action areas to alleviate the gender gap in entrepreneurship with reference to the Quadruple Helix approach are discussed. The report is structured in the following way:

Gender system in society
- General characteristics
- Country-specific characteristics

Entrepreneurship gender gap
- General patterns and reasons
- Country-specific patterns and reasons

Action areas
- Clustering (VIC)
- Networking (cross-border)
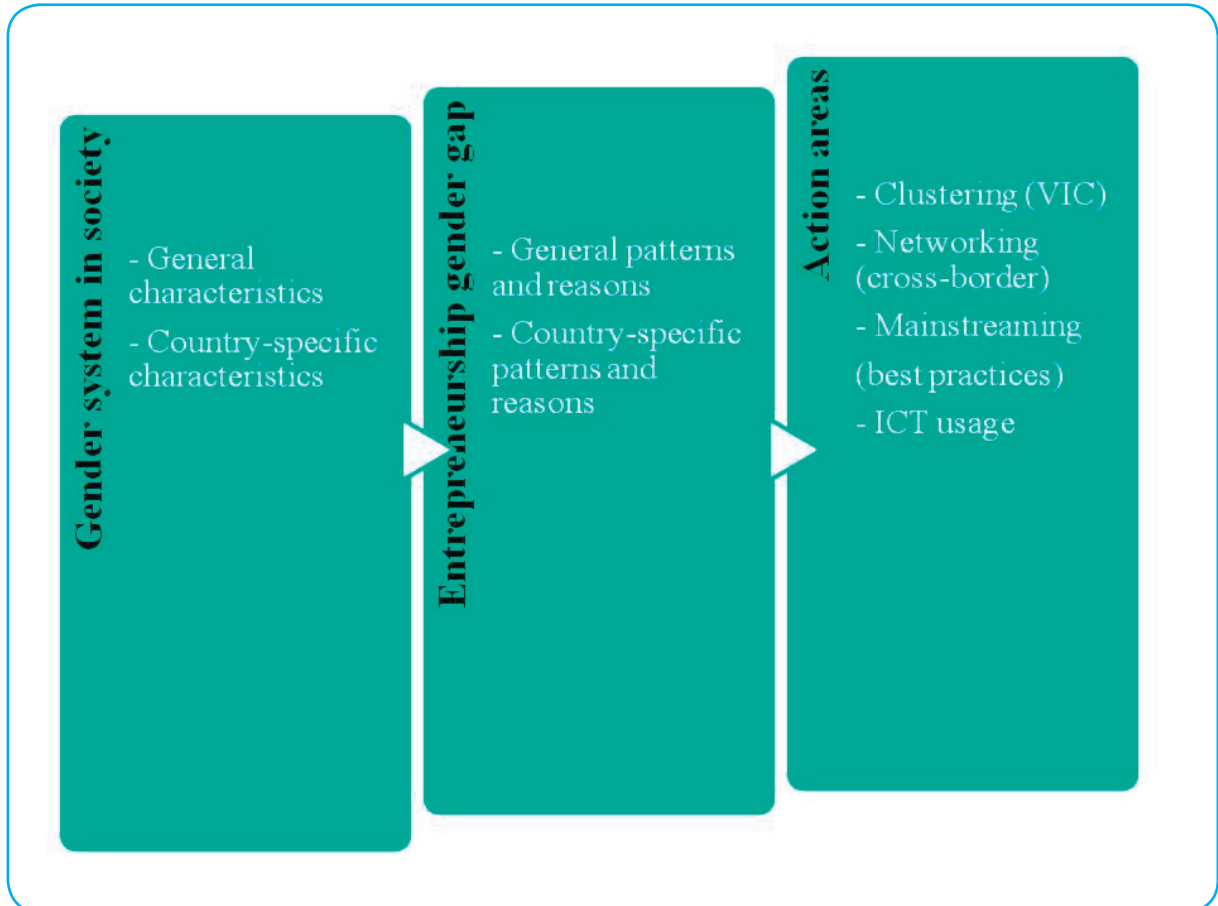- Mainstreaming (best practices)
- ICT usage

Illustration 2: Outline of the framework report

3. Gender system in society

3.1 The concept of gender

Gender is the wide set of characteristics that are seen to distinguish between male and female human beings, extending from one's biological sex to, in humans, one's social role or gender identity.

As a word, gender has more than one valid definition. In daily talk, it is used interchangeably with "sex" to denote the condition of being male or female. In the social sciences, however, it refers specifically to socially constructed and institutionalized differences between men and women. The World Health Organization (WHO), for example, uses "gender" to refer to "the socially constructed roles, behaviours, activities,

> ### Biological sex and social gender
>
> - Biological sex (man, woman):
>   Some anatomical differences.
>   Differences in everyday life as *natural consequences of anatomical differences*
>
> - Socialt gender (masculine, feminine):
>   Men and women are met by different expectations on behaviour and life priorities.
>   Differences in everyday life as *cultural consequences of expectations on men and women.*

and attributes that a given society considers appropriate for men and women". This means that what is masculine and feminine is the result of a cultural process in society whereby male and female bodies are attributed different characteristics and subjected to different expectations on looks, behaviour, emotional repertoire and so forth.

Categorizing males and females into social roles creates binaries, in which individuals feel they have to be at one end of a linear spectrum and must identify themselves as man or woman. Globally, communities interpret biological differences between men and women to create a set of social expectations that define the behaviours that are "appropriate" for men and women and determine women's and men's different access to rights, resources, and power in society. Although the specific nature and degree of these differences vary from one society to the next, they typically favour men, creating an imbalance in power and gender inequalities in all countries.

The cultural system of norms and beliefs that defines the social roles of men and women in relation to each other is usually referred to as the gender system. Hirdman (1990) claims that the gender system is the foundation for social patterns identifiable in most societies, patterns that are constituted by two logics; the separation of sexes (segregation) and the primacy of masculine norms (hierarchisation). Even though there are differences between societies in time and space – being a black woman in USA one hundred years ago was something entirely different from being a white woman there today – these two logics can be found as well in the organisation of society as in the ongoing construction of identities. Male and female bodies are attributed masculine and

feminine characteristics, and what happens to be regarded as 'feminine' is thus separated and subordinated to what happens to be regarded as 'masculine' normality (Butler, 1999). The two categories are often constructed as each other's opposites; what is masculine can thus never be feminine, and what is feminine is the deviation.

The consequences of the gender system are easily recognized throughout society, in the sense that cultural norms on how men and women should think, behave and live their lives result in visible patterns across large populations. While individual men and women may very well deviate from parts of the norm systems by e.g. choosing non-typical occupations or by sharing housework responsibilities in non-typical ways, the overall patterns are statistically clear. Among the most usual patterns we find the following (see also specific statistics for the Quadruple Helix Central Baltic project countries below in section 3.3, derived from Lindgren & Packendorff. 2010):

- Men have higher employment ratios than women. It is masculine to be the breadwinner of the household, while it is feminine to perform household work.

- If women do have employment, they often work part-time. They are expected to spend part of their time in the household and also themselves claim care responsibilities as the reason for not working full-time. Even when there exist public financial support programmes to which both men and women have equal access – which is the case of e.g. maternity/paternity leave programmes – women claim the majority of these resources by performing household work while men spend increasingly more hours at work.

- Men have traditionally been higher educated than women and have therefore had better access to well-paid jobs. In many developed countries, this pattern has changed during recent decades.

- Men are better paid than women, even for the same jobs. The salary gap within a couple usually increases after the birth of their first child – the woman taking more responsibility for the household and the man taking more responsibility for breadwinning.

- Men are much more successful than women in terms of career, and men also occupy most managerial posts in society. Here, the established cultural notions of femininity do not support women who want to pursue demanding careers. Higher ratios of part-time work and lower salaries do not help.

- The gender gap is also clearly visible when it comes to entrepreneurial activities in society, which will be discussed in the next section of this report. Men are generally twice as likely to start their own business as compared to women, and the typical entrepreneur is a masculine figure who devotes most of his time and energy to his venture.

- The gender gap also contains a potential for economic growth and prosperity, as increased employment among women has a positive impact on GNP. The most affluent countries in the world are also among the most equal ones. For the European Union as a whole, the potential growth resulting from full gender equality is almost 30 percent from the current levels[1].

Despite the above patterns, which are both statistically significant and stable over time, many societal structures are characterized by gender blindness. Gender has a tendency to get very personal – you cannot easily escape your gender – and as such it can be a source of discomfort and conflict when subject to discussions and practical measures. It is usually much easier to see the current patterns as natural and gender differences as something that will disappear over time as society becomes increasingly enlightened. It is also much easier to claim that society is already equal – at least according to UN declarations of human rights – and that men and women are thus free to do what they want. The problem, again, is that the gender system is a part of historical cultural patterns in society that we are all being socialized into from birth. Deviations from cultural norms are seldom rewarded in society.

3.2   Differing notions of gender

While the concept of gender is well established within both research and the public debate, there are major disagreements concerning why gender matters and why gender equality should be the subject of legislative and/or voluntary actions.

One dimension in these disagreements concern the very nature of gender differences. It ranges from a pure essentialist position (claiming that men and women are two different forms of human beings genetically disposed for entirely different lives) to a pure constructionist one (claming that most perceived bodily differences are only consequences of cultural expectations and thus possible to change). To take the example of child care; an essentialist position would be that women are biologically disposed for such a task while men would lack the in-built sense of care and love needed. The constructionist position would instead be that any differences between men and women in this respect would be the result of traditions and norms identifying child care as a feminine task, traditions and norms that may well be subject to articulation and change.

Another dimension of the disagreements concerns the basic assumptions behind the practical handling of gender differences. It ranges from a pure democratic stance – built on the right for everyone to live their life as they wish – to a pragmatic position based on effectiveness as the main target.

---

1   Report on equality between women and men 2010, European Commission, Directorate-general for employment, social affairs and equal opportunities, 2009.

The resulting range of differing views can be summarized in the following 2x2 matrix model:

Four ways of viewing gender

Value foundation

	Democracy	Efficiency
Men and women are similar	Equal opportunities	Competence view
Men and women are different	Different values	Complementary contribution
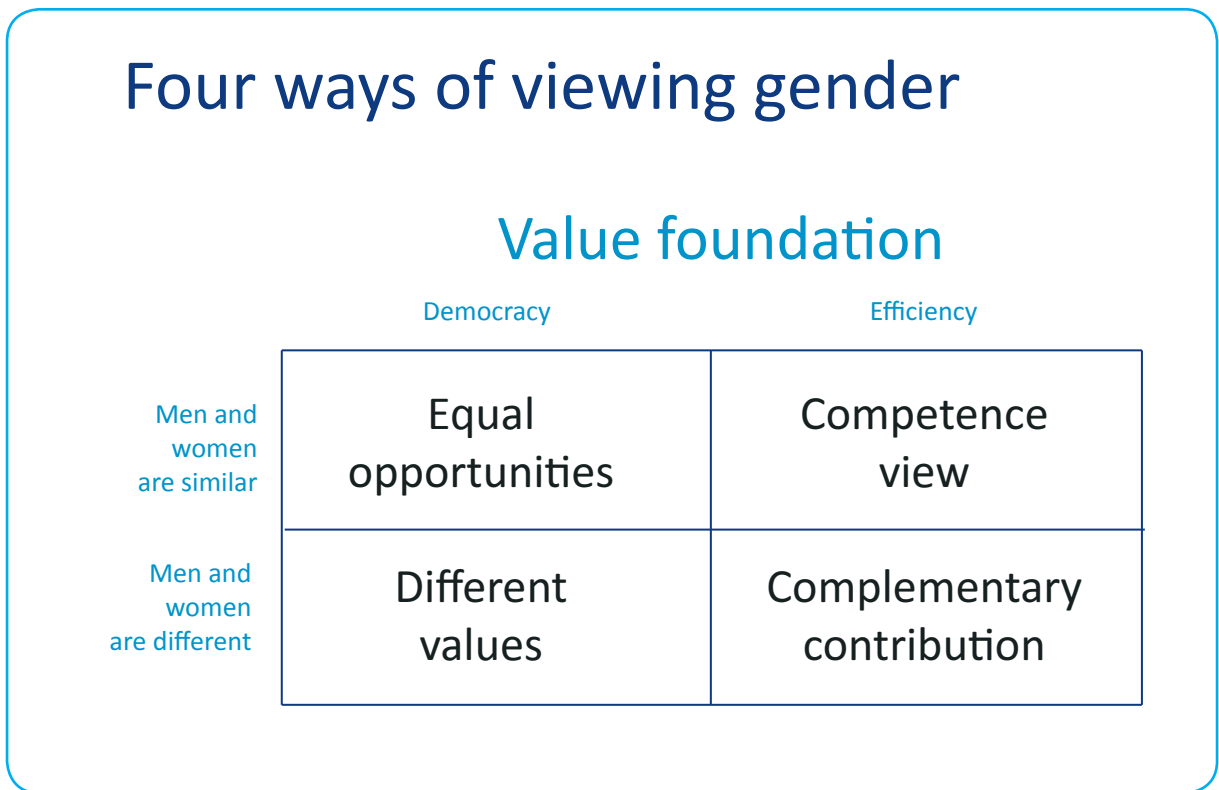
Illustration 3: Four ways of viewing gender (adapted from Billing & Alvesson, 1989)

The four positions can, in general terms, be described as follows:

Equal opportunities: Men and women are basically the same and they should have the democratic right to live the lives they want. Any societal structures that present them with different perceived opportunities to do so are depriving them of their basic human rights and should be changed.

Competence view: Men and women are basically the same, and should therefore have the same potential to participate and contribute to societal development in any sector. Any societal structures that presents them with different perceived opportunities to do so are depriving us all of growth and prosperity and should be changed.

Different values: Men and women have well-established different values about what is important in life, and it is a matter of democracy and respect to let them live according to these values. Any societal structure that prevents them from doing so is problematic and should be changed.

Complementary contribution:	Men and women have different roles to fill in society, and it is important to let them fulfil these roles to the best of their ability if we want a good society. Any societal structure that prevents men and women to make full use of their respective gender characteristics is ineffective and should be changed.

Most political initiatives on equality depart from the equal opportunities stance, i.e. the notion that men and women are basically the same but that there are strong cultural norms implying differing expectations on them. Enabling men and women to emancipate themselves from these cultural norms is seen as an important part of modernism, enlightenment and democracy. When it comes to specific policy areas such as business management and entrepreneurship, this democratic value assumption has also been complemented with the competence view – if most business leaders and entrepreneurs are men, we have not made use of the total talent pool in society. For example, the fact that about 50% of university graduates are women while almost all business leaders are men points at that current family structures and organizational career patterns are ineffective in terms of talent pool usage.

3.3   Gender mainstreaming

Gender mainstreaming is the public policy concept of assessing the different implications for women and men of any planned policy action, including legislation and programmes, in all areas and levels. Most definitions conform to the UN view of the concept:

> Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality[2].

---

2   United Nations. "Report of the Economic and Social Council for 1997". A/52/3.18 September 1997.

The Swedish parliament has set up the following general objectives structure for their gender mainstreaming work[3]:

Overall objective

Women and men must have the same power to shape society and their own lives.

Interim objectives

1. Equal division of power and influence between women and men. Women and men shall have the same rights and opportunities to be active citizens and to shape the conditions for decision-making.

2. Economic equality between women and men. Women and men shall have the same opportunities and conditions with regard to education and paid work that provide lifelong economic independence.

3. Equal distribution of unpaid care and household work. Women and men shall take the same responsibility for household work and have the same opportunities to give and receive care on equal terms.

4. Men's violence against women must stop. Women and men, girls and boys, shall have equal rights and opportunities in terms of physical integrity.

3.4 The gender system in Estonia, Finland and Sweden

While all three countries are part of a general Nordic culture of gender equality, there are some notable differences in terms of general statistics[4]. Estonia has a higher gap between men and women in terms of employment, equality potential for economic growth, board membership and salaries. Finland has a very low employment gap among older people but also a low ratio of female business leaders. Sweden has a very high ratio of women working part time, and a low ratio of women prioritizing care responsibilities. The full statistical material is produced annually by the European Commission and summarized in Table 1 below[5].

---

3 These objectives were adopted by the Swedish Riksdag in May 2006 (Govt. Bill 2005/06:15).
4 Report on equality between women and men 2010, European Commission, Directorate-general for employment, social affairs and equal opportunities, 2009.
5 See also Lindgren & Packendorff, 2010.

Measure	Specification	EU	EE	FI	SE
Gender gap in employment	Difference male-female employment 2008, %	13,7	7,3	4,1	4,9
Gender gap in employment age 55-64	2008, %	18,2	4,9	1,3	6,7
Gender gap in unemploym	2008, %	0,9	-0,5	0,6	0,7
Part time work share	Men/women 2008, %	7,9/31,1	4,1/10,4	8,9/18,2	13,3/41,4
Equality potential	Potential GDP growth if full equality 2008, %	27	27	19	21
Gender gap in employment with or without children	2008, women/men, employment gap per gender, %	-11,5/6,8	-19,0/5,4	-10,4/8,5	n/a
Rate of inactive women due to care responsibilities	2008, %	29,9	16,3	11	7,5
Rate of upper 2nd school attainment	2008, %, women/men	81,3/75,6	88,3/76,0	87,6/84,6	89,7/86,2
Gender segregation index	2008, occupations/ sectors	n/a	32,2/25,8	29,5/23,1	27/22,1
Pay gap	2007, women's pay in % of men's	82,4	69,7	80	82,1
Share of female business leaders	2008, % (EC / UBC)[6]	32,5 / n/a	34/26	21,6/20	26,0/27
Share of female board members in businesses	2009, %	11	6	24	27
Attitude to paid work vs housework	Equality index[7]	n/a	9	11,5	11,8

Table 1: Recent gender-related statistical indicators for Estonia, Finland and Sweden[8.]

6 Here we publish two sets of statistics, illustrating that all statistical figures are dependent upon their definition and calculation. The source of the UBC statistics (http://www.ubc.net/plik,2051.html)

7 Source: Estonia in European comparisons, Series of the Ministry of Social Affairs, No 3/2008.

8 Source (except when otherwise indicated): Report on equality between women and men 2010, European Commission, Directorate-general for employment, social affairs and equal opportunities, 2009.

The segregation of the labour market can be illustrated as follows:

Female occupations (ratio to men)	*Male occupations (ratio to women)*
• Pre-primary education teaching associate professionals (14.5)	• Miners, shot firers, stone cutters and carvers (80.2)
• Nursing and midwifery professionals (10.1)	• Building frame and related trades workers (64.8)
• Secretaries and keyboard-operating clerks (9.8)	• Ships' deck crews and related workers (52.9)
• Nursing and midwifery associate professionals (9.5)	• Building finishers and related trades workers (35.4)
• Personal care and related workers (9.3)	• Mining and construction labourers (35.3)
• Primary education teaching associate professionals (6.2)	• Agricultural and other mobile plant operators (30.5)
• Shop, stall and market salespersons and demonstrators (5.8)	• Mining and mineral-processing-plant operators (24.5)
• Special education teaching professionals (5.6)	• Metal moulders, welders, sheet-metal workers, structural-metal preparers, and related trades workers (23.1)
• Domestic and related helpers, cleaners and launderers (5.4)	• Machinery mechanics and fitters (21.7)
• Primary and pre-primary education teaching (5.3)	• Power-production and related plant operators (15.9)

Table 2: Female and male occupations in the labour market.[9]

4. The gender gap in entrepreneurship

Since long, entrepreneurial activity and innovation have been seen as an indispensable factor behind societal development and prosperity. Almost all political parties agree upon the necessity of increased entrepreneurial venturing in society – placing the future in the hands of thrifty entrepreneurs rather than relying upon corporate managers and public sector leaders to deliver growth, innovation, jobs and prosperity. At the same time, research has repeatedly shown that entrepreneurial activity is not open for everyone. From a gender perspective we can see a clear 'gender gap' across Europe – often portrayed as a statistical pattern showing differences in prevalence of entrepreneurial activities between the categories of men and women. The reasons for the gender gap can be traced back to the general cultural gender differences in society, where entrepreneurship and innovation is culturally defined as masculine activities (Danilda & Granat Thorslund, 2011). Moreover, the expectations on entrepreneurship and innovation from policymakers are emphasizing high-tech, high-growth, individualist ventures – i.e. traditional masculine ways of 'doing entrepreneurship'. Behind the statistical gender gap in entrepreneurship, there is thus a cultural gender gap.

4.1   Background

The gender gap in entrepreneurship is usually defined in terms of a statistical pattern showing differences in prevalence of entrepreneurial activities between the categories of men and women. The reasons for the gender gap can be traced back to the general gender differences in society, where hard work in general and business start-up in specific is culturally defined as masculine activities. Moreover, the expectations on entrepreneurship from policymakers are emphasizing high-tech, high-growth, individualist ventures – i.e. traditional masculine ways of 'doing entrepreneurship'. The entrepreneurial gap between men and women in the European Union, defined as the difference between male- and female-run firms divided by the total number of firms, increased over time: from 46.9% in 2000 to 47.8% in 2005 (Lotti, 2009)

In the 2008 report (Allen et al, 2008) of the Global Entrepreneurship Monitor (GEM), the gender gap was subject to a study across 42 countries, ranging from advanced high-income economies in Europe and North America to rural, low-income economies in Asia and South America. There are of course important differences between different categories of countries where the reasons and forms of entrepreneurship are concerned.

In high-income economies entrepreneurship may be an alternative to employment, while in low-income economies it can be the only way to survive. Still, the GEM report makes the following summary concerning the gender gap in entrepreneurship (Allen et al, 2008: p.10):

1. Women's entrepreneurship matters. Women are creating and running businesses across a wide range of countries and under varying circumstances. Female entrepreneurship is an increasingly salient part of the economic makeup of many countries and is a key contributor to economic growth in low/middle-income countries, particularly in Latin America and the Caribbean.

2. A gender gap exists with respect to new venture creation and business ownership. This gap is significant and systematic, varying both by country GDP as well as by region. The gender difference is more pronounced in high-income countries but persists throughout all regions, with European and Asian low/middle-income countries showing a greater gap than the Latin American and Caribbean low/middle-income countries.

3. Being employed and having a social network that includes other entrepreneurs are stronger predictors of women's entrepreneurship than educational attainment or household income.

4. Perceptual factors that reflect optimism, self-confidence, and reduced fear of failure are important predictors of women's entrepreneurship. Women find themselves in very different situations compared to men, and these different situations result in different perceptions about the world. Given similar situations, the data suggests that women nonetheless perceive the world differently from men.

The implications for policymaking that emerge from this diversity of circumstances and perspectives point to the need for customized or targeted policies. As we have learned from such programs as the UNDP's gender mainstreaming initiative, successful and sustainable economic growth is best achieved when all citizens are mobilized and empowered. Research and policymaking may perhaps best be focused on how to effectively change the business environment and social institutions to support women through employment, access to social and financial capital, and raising self-confidence.

4.2 Entrepreneurship and gender gap in Estonia, Finland and Sweden

The question is then what the situation is in the Quadruple Helix Central Baltic project countries. As the GEM does not involve Estonia, a statistical comparison between the three countries is not easy to do. GEM does involve Latvia, but the two countries are not similar enough to justify an assumption that Latvian figures can represent Estonian patterns. According to Varblane et al (2010) who refer to a statistical summary on 2004 Total Entrepreneurial Activity Index figures calculated according to the GEM methods, the general entrepreneurial activity level in the Estonian economy was about the same as in Finland and Sweden – involving 5% of the active workforce. These statistics were not, however, broken down on gender categories. According to the UNECE figures from 2001 (Giovanelli et al, 2004), Estonia has the same share of female self-employed women (32,6%) as Finland (32,6%) and Norway (30,9%) and almost the same share of female employers (30,2%) as Finland (32,3%). We can therefore conclude that we do not expect any major deviations in terms of gender gap in entrepreneurship between Estonia, Finland and Sweden.

Both Finland and Sweden are part of the GEM collaboration, and there are detailed statistics on the gender gap in entrepreneurship from the 2007 report. In both cases, entrepreneurial activities launched by women accounts for about one third of the total entrepreneurial activities. In Finland, the prevalence of entrepreneurial start-up activities are 8,96% among men and 4,81% among women – implying that men are twice as inclined to start up their own businesses as women are. The pattern is even more visible when it comes to prevalence of established business owners: 10,31% among men and 4,80% among women. The opportunity/necessity ratio is 8,11 among men and 3,64 among women, indicating that men are more than twice as likely to see their entrepreneurship as driven by business opportunities than by sheer necessity to gain an income and survive.

Similar numbers can be seen in the Swedish context, where the prevalence of entrepreneurial start up activities are 5,78% among men and 2,47% among women. The prevalence of established business owners is 6,87% among men and 2,48% among women. The gender gap is about the same one as in Finland, but the general entrepreneurial activity across the population is considerably lower. The opportunity/ necessity ratios are also lower in Sweden for both men and women – although the gender gap is just as wide,

4.3 Reasons for the gender gap in entrepreneurship – from research

The research on gender and entrepreneurship is a well established and growing area internationally. What is interesting for the purpose of this report is to go beyond the statistical patterns and see what reasons that have been claimed to explain the gender gap in entrepreneurship. By attending to the reasons we can also construct a foundation for change and improvement.

In the below summary of extant research we have chosen to depart from explanations related to circumstances that can be changed, i.e. viewing entrepreneurship as a phenomenon affected by cultural norms on how men and women are expected to think and behave. We see men and women as equally suitable for entrepreneurial activities, but subjected to differences both in terms of their own perceptions and in terms of perceptions held by their cultural environment.

The main reasons raised by entrepreneurship researchers tracing these patterns back to constructions of masculinity and femininity as related to entrepreneurship are the following (cf Maxfield, 2005; Holmquist and Sundin, 2002; Lindberg, 2010; Danilda & Granat Thorslund, 2011):

- Perceived necessity of entrepreneurship more important for women than for men. Can imply that women to a larger extent will refrain from starting businesses unless perceived as necessary for survival (women's adjustment to family Sundin & Holmquist, 1989).

- Entrepreneurship as a masculine activity in masculine sectors. Nowadays, the entrepreneur is constructed in society as the savior of the modern economy. The role models presented in mass media are often tough, decisive, growth-oriented billionaires, working within material- and technology-intensive sectors. Women, who already by education and employment are more likely to be found in other sectors and expecting their businesses to be a stable source of modest income, may feel estranged to the concept and stereotypes of entrepreneurship (Lindgren, 2009, Lindgren & Packendorff, 2007).

- Less usage of venture capital. Based in a mutual reluctance of women and financiers to engage in venture capital negotiations. Many women as entrepreneurs do not fit into the stereotype of the masculine entrepreneur expected by the venture capital providers, and they also expect to be seen as deviating – as women and also often as representatives of less interesting sectors of the economy (Orser & Foster, 1994, Carter & Rosa, 1998).

- Entrepreneurship as integrated with family life. Women as entrepreneurs are part of cultural norms emphasizing women as responsible for household matters. This means that it is hard not to see the possibilities of integrating

family and business life as a main issue in entrepreneurship (Sundin & Holmquist, 1989, Lindgren, 2002).

- Smaller and more local social networks. The importance of social networks has since long been emphasized in entrepreneurship research. There are indications that women often have smaller networks consisting of closer relations, and that this may be problematic in an economy where large-scale networking is important for the possibilities of perceiving opportunities and collaborating with knowledgeable actors (Fenwick, 2003, Doyle & Young, 2001).

- Dependence on national culture. Entrepreneurship generally involves risk taking and uncertainty, and the view of these aspects differ between cultures. It has been suggested that it is easier for men to go against such cultural aspects than it is for women.

5. Action areas
I: Virtual Industry Clusters and cross-border networking

5.1 Definitions

UNIDO (United Nations Industrial Development Organization) defines clusters as sectorial and geographical concentrations of firms that produce and sell similar or complementary products and thereby face the same challenges and opportunities (UNIDO 2001).

Clusters are geographical concentrations of related firms, specialised suppliers, supporting service providers, firms in related branches and related institutions – in which both competition and collaboration takes place (Porter 1998). But beyond this traditional notion of clusters as depending on geographical proximity, there are also emerging modes of collaboration built on dispersed networking and virtual organizing. As the project involves both these dimensions, we will look into both these areas.

5.2 Regional competitive collaboration: Porter's cluster formation factors

Based on observations of specialized regions throughout the world, Michael Porter and OECD have since long claimed that such regions can be globally competitive and create a wealth superior to that in neighbouring regions. In a specialized region, firms may draw upon common resources and orchestrate creative interactions. A sense of closeness and trust is important for this to happen.

In his "diamond model" Porter identified six factors necessary for successful cluster formation. If one or more factors are weak or even absent, the actors in the cluster will need to strengthen these factors in order to secure a positive future development.
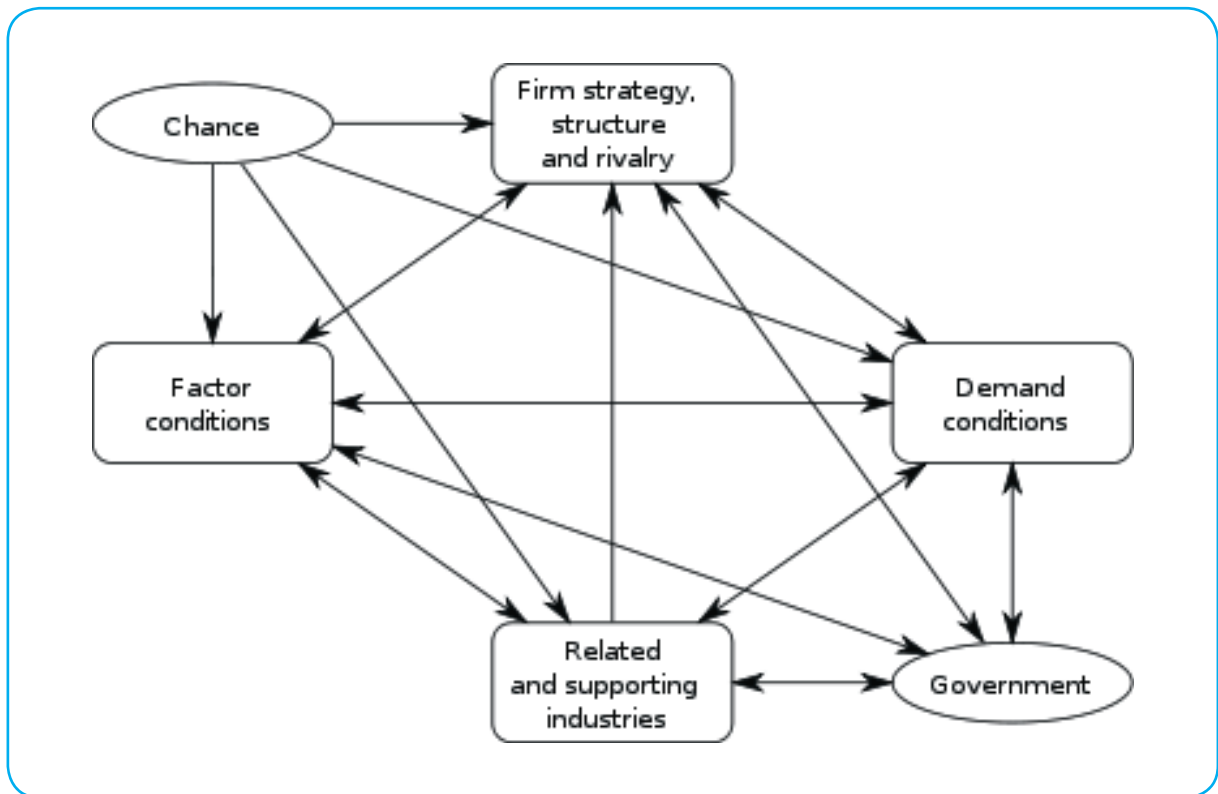
- Factor conditions are human resources, physical resources, knowledge resources, capital resources and infrastructure. Specialized resources are often specific for an industry and important for its competitiveness. Specific resources can be created to compensate for factor disadvantages.

- Demand conditions in the home market can help companies create competitive advantage, when sophisticated home market buyers pressure firms to innovate faster and to create more advanced products that those of competitors.

- Related and supporting industries can produce inputs which are important for innovation and internationalization. These industries provide cost-effective inputs, but they also participate in the upgrading process, thus stimulating other companies in the chain to innovate.

- Firm strategy, structure and rivalry constitute the fourth determinant of competitiveness. The way in which companies are created, set goals and are managed is important for success But the presence of intense rivalry in the home base is also important; it creates pressure to innovate in order to upgrade competitiveness

- Government can influence each of the above four determinants of competitiveness; supply conditions of key production factors, demand

conditions in the home market, and competition between firms. Government interventions can occur at local, regional, national or supranational level.

- Chance events are occurrences that are outside of control of a firm. They are important because they create discontinuities in which some gain competitive positions and some lose.

What the diamond model clearly emphasizes is the importance of relations between the actors in a cluster. By relations we mean long-term relations, built upon informality, trust, and reciprocity. While it can be important to create formal arenas for cluster formations (such as triple helix initiatives), the long-term development of a cluster will always be a bottom-up process of actors who seek to pursue a common future course of action. A well-functioning cluster thus exhibits the following characteristics:

- A core of firms that get the main parts of their revenues from customers outside the cluster, i.e. as exporters from the region or the municipality

- Supporting firms that directly or indirectly help the core firms. Here we find suppliers of components, raw materials and services, and other firms that can be involved in the value chain of the core firms.

- Soft infrastructure supporting the main activities or some other important aspect – linking the core firms, support firms and other organisations together. Examples are educational institutions, business network organisations, local governmental business support, voluntary associations. The quality of the soft infrastructure is one of the keys to success.

- Physical/hard infrastructure, such as roads, harbours, airports, communication infrastructures. The quality of the soft infrastructure (including the competence of the participating organisations in using it) is one of the keys to success.

What the Porter model does not cover is the impact of virtual clusters where participants located across countries collaborate via Internet. The Porter Diamond Framework is useful in a single country context but, as so much of a nation's activity takes place in a regional, international or global context, it is important to consider the trade relationships between countries to gain a full understanding at the nation level.

5.3 Cross-border virtual networking: Virtual Industry Clusters and Virtual Organizations

The alternative conception – focusing on collaboration situations where actors are not concentrated into a defined geographical area – is Virtual Industry Clusters (VICs). VICs are usually described in the same ways as virtual organizations (VO's), which can be defined as follows:

> A virtual organization is a combination of multiple - geographically dispersed – parties (persons and/or organizations), that by uniting complementary core activities and methods endeavour to attain a common objective. This virtual organization accords an equal division of power amongst its participants and is dependent on electronic communication (an ICT infrastructure) for the co-ordination of these activities. (Jägers et al, 1998: p. 74)

A VIC or VO is usually based in a need for orchestrated collaboration. As shown in illustration 5, the basic idea is to offer a target market goods and services that has been produced by many different organizations in collaboration, while appearing as a united and coherent business organization. A VO is orchestrated around an imaginator that integrates the different partners needed for the production of specific goods and services with the customers targeted. To function, the VO also must set up ICT-based systems for communication, delivery/distribution and payments.

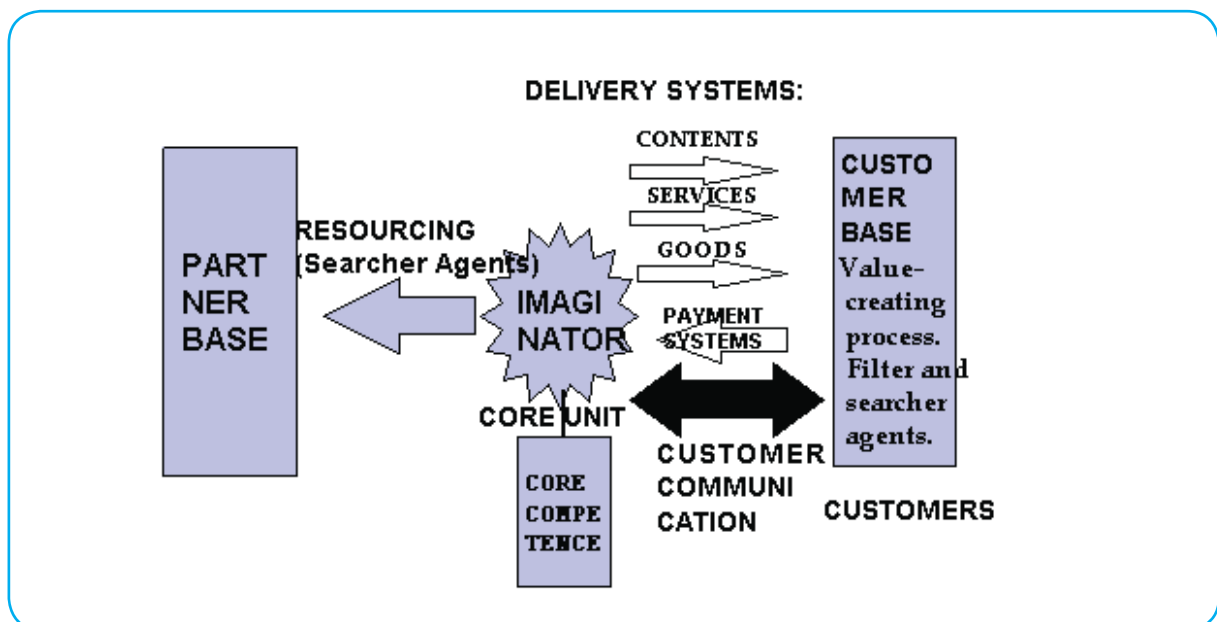Illustration 5: General model for a Virtual Organization

Beyond the 'hard infrastructure' portrayed above, the establishment of a VIC/VO also requires that partners, imaginators and customers trust each other. Collaboration between firms, especially such collaboration that take place over geographical distances and is mediated by means of ICT rather than face-to-face interaction, is a process of

trust-building that is both time-consuming and risky. In illustration 6 below, aspects of such trust-building over time is portrayed. Especially interesting is the advice following from boxes 3, 4 and IV.
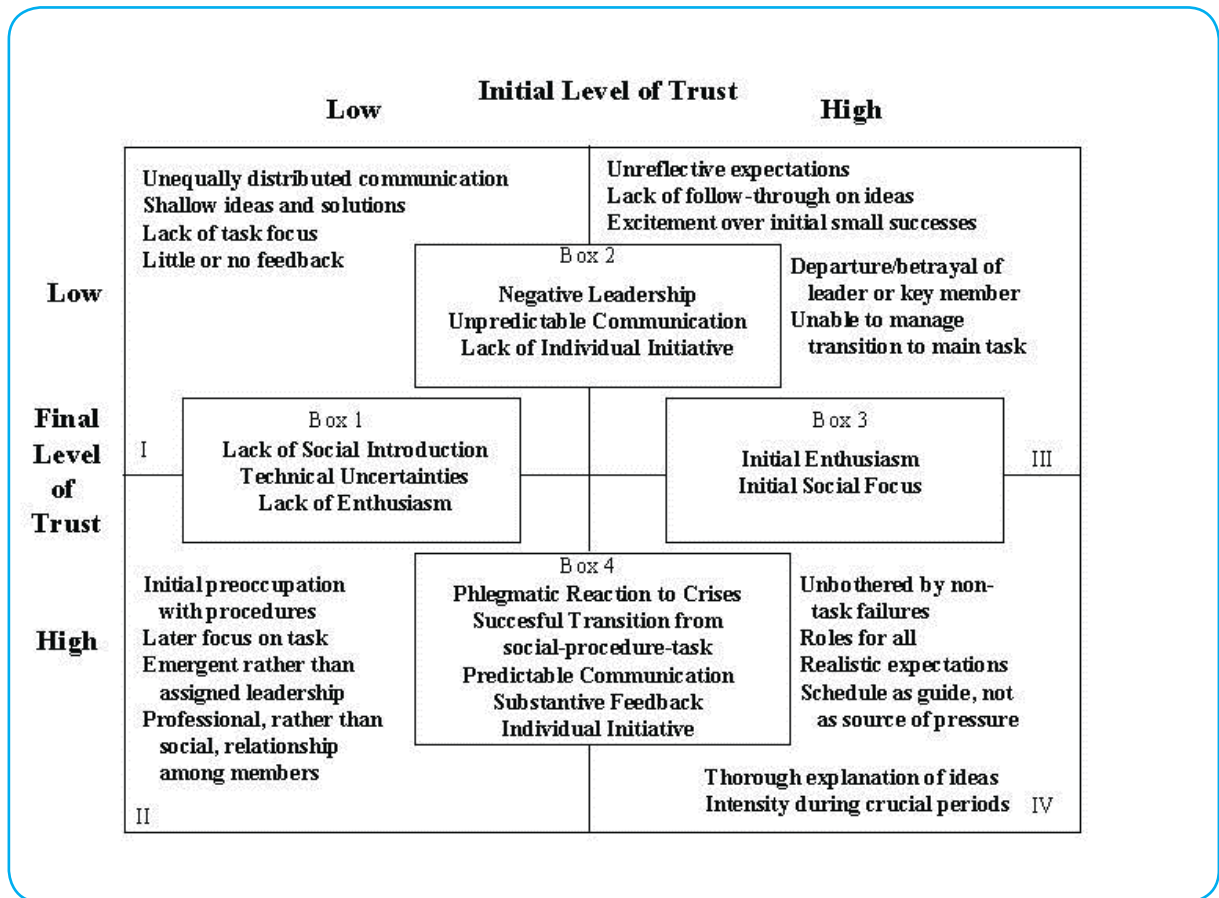

Initial Level of Trust

	Low	High
Low	Unequally distributed communication Shallow ideas and solutions Lack of task focus Little or no feedback	Unreflective expectations Lack of follow-through on ideas Excitement over initial small successes
	Box 2 Negative Leadership Unpredictable Communication Lack of Individual Initiative	Departure/betrayal of leader or key member Unable to manage transition to main task
Final Level of Trust	I Box 1 Lack of Social Introduction Technical Uncertainties Lack of Enthusiasm	Box 3 Initial Enthusiasm Initial Social Focus III
High	Initial preoccupation with procedures Later focus on task Emergent rather than assigned leadership Professional, rather than social, relationship among members	Box 4 Phlegmatic Reaction to Crises Succesful Transition from social-procedure-task Predictable Communication Substantive Feedback Individual Initiative Unbothered by non-task failures Roles for all Realistic expectations Schedule as guide, not as source of pressure
	II	Thorough explanation of ideas Intensity during crucial periods IV

Illustration 6: Trust-building over time in virtual collaboration (Jarvenpaa & Leidner,1999)

5.4   Guidelines for action: Regional and cross-border cluster formation

In the Quadruple Helix project we intend to support the emergence of a cross-border cluster in the central Baltic region. Such a cluster form need to be modelled on both the Porter notion of co-located competitive clusters and on the VIC/VO notion of virtual cooperation. What is needed is a cluster model that builds both on competition and collaboration, both on top-down organizing bottom-up emergence, both on geographical concentration and cross-border mutual interests.

According to the *Swedish Cluster manual* (NUTEK, 2004), intentional cluster building involves the following steps, here with additional comments based on the possibility of creating VIC's:

1. Cluster analysis. Analysis of regional preconditions concerning public sector resources, existing clusters, possibilities for emerging clusters.

2. Cluster inventory. Closer analysis of existing and planned clusters, analysis of all single firms, open and trustful communication. Inventory of individuals that can serve as mediators between actors in the cluster.

3. Form a management team. Selection of individuals, create commitment and a sense of urgency. Important to choose individuals with high legitimacy, that can be expected to work for the common good rather than for their own business interest. The higher degree of virtuality in the cluster, the more important it is to emphasise that everybody must define and carry a role.

4. Formulate a cluster vision. Arrange meetings with all involved actors, intended for open discussions and decisions on common strategies. These meetings are important as they can be referred back to as the 'founding moments' of the clusters.

5. Cluster creation planning. Mapping value chains, decide what actions to start with. In what ways can the businesses collaborate in offering goods and services to the target markets, what customer value is to be created and what steps and parts of that value creation should each business take responsibility for? Start with a simple and low-risk collaboration issue that can serve as a learning process and positive example when facing upcoming large-scale collaboration.

6. Prompt action. Implementing the first actions decided upon, short-term action plan. Create and maintain a sense of urgency, make sure the actions are fully implemented before evaluating them.

7. Organizing the cluster. Plan for the establishment of a self-financed, sustainable cluster (instead of public project-based financing). What individuals/organizations are to fulfil the imaginator/coordinator role, how can the long-term survival of this role be secured? Establish division of work and necessary systems for coordination and communication, perhaps by forming an association.

8. Renewing the strategic agenda. Benchmarking, revisiting initial assumptions and action plans, developing a cluster identity.

6. Action areas
II: Gender mainstreaming

Gender mainstreaming was adopted as a strategy by the Swedish Government in 1994, and by the UN at the 1995 Beijing Conference on Women. The strategy was also adopted by the EU in 1996, and is the required method to be applied along with special measures on behalf of the under-represented gender.

6.1 Gender mainstreaming as a work process

The following quote is from the Swedish government bill 'Shared power, shared responsibility':

> "Gender equality work must be conducted in every area of policy, and measures should primarily be undertaken as part of the regular operations of the body concerned."[10]

This means that public services are to be equally accessible, of equally high quality and equally well adapted to all citizens, regardless of gender. Services and resources must be adapted to the needs of both sexes by basing them on women's and men's living patterns.

For obvious reasons, it is a long and arduous process to make gender equality an integral part of policy making and practical measures in any society. In most cultural contexts gender issues are either seen as controversial or as unnecessary. Danilda & Granat Thorslund (2011) refers to the dynamic equality tracking model developed by Olgiati & Shapiro (2002) in their analysis of gender mainstreaming work in innovation systems:
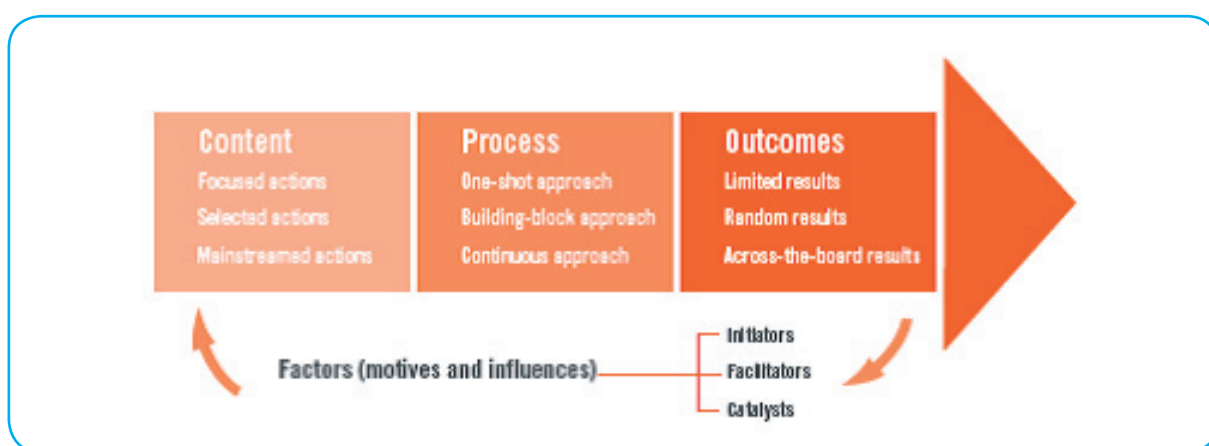

Illustration 7: The dynamic equality tracking model (Danilda & Granat Thorslund, 2011: 77)

---

10 Delad makt – Delat ansvar, Govt. Bill 1993/94:147, p. 17

Danilda & Granat Thorslund (p. 76) describe the four parts of the model as follows:

1. Motives for the actions – in terms of external factors influencing the strategy such as legislation, national programmes, allocation of funding for gender equality projects and changes in market conditions or internal factors in the companies such as values, culture and Human Resource Management.

2. Content of the actions – in terms including the introduction of new recruitment and selection practices, professional development for employees and measures aimed at changing the organisational culture to overcome gender stereotypes.

3. Process for implementation of the actions – in terms of different steps in the strategy such as collection of baseline data and analysis, definition of goals and targets, involvement and mobilisation of different actors and monitoring and communication of results.

4. Outcome of the actions – in terms of impact for the employees (women and men), the organisation and the business objectives.

Not surprisingly, many organisations tend to work with gender equality issues with a one-shot approach, viewing gender equality as a problem that can be easily fixed through a project or a policy. The result of such an approach is often limited or random results that do not last very long. They also find that mainstreamed actions (i.e. actions where gender equality is an integrated part of action programmes) and more long-term-oriented approaches (such as the incremental building-block approach or the sustainability-oriented continuous approach) lead to across-the-board results. What is important here is to remember that gender is a cultural matter, and cultural change requires a long-term orientation and general ambitions to succeed.

According to Olgiati & Shapiro (2002), the model is designed as a tool to be used in design, evaluation and tracking of gender equality work. They maintain that there are no prescribed routes from Content to Process and Outcomes that ensure success, but that one need to be aware of these dimensions when working with gender equality. For example, mainstreamed actions (which seem most desirable) might very well end up in limited results if channelled through a one-shot project without a sustainability agenda. Olgiati & Shapiro (ibid, p. 113f) summarise their findings on gender mainstreaming in the following way:

It is clear from the research that the term 'mainstreaming' is being used to describe quite different approaches and practices, leading to very different equality outcomes. Piecing together the information, we propose that the main features of a comprehensive mainstreaming approach should include:

- [Mainstreamed] equality action applied to different segments of a diverse workforce. New priorities such as race or multiculturalism should complement and not take the place of gender equality or cause gender equality action to fade away. The equality action should also ensure a focus on behavioural and cultural change.

- A continuous equality process where:
  — the organisation's commitment to equality is declared and supported;
  — the business case for equality is continuously affirmed;
  — monitoring represents a key step for ensuring continuous incremental improvements (this demands that results are monitored by means of both qualitative and quantitative indicators, and that they are communicated to everyone).

- Explicit awareness that (a) introducing gender equality is an organisation-wide change process; and (b) other changes in the organisation of work can have an impact on the achievement of gender equality objectives. Gender equality should therefore be explicitly integrated into the organisation's strategic planning process.

In order to establish gender mainstreaming actions, it is usually recommended to make an inventory of actual practices in the local setting. While statistics and literature data may definitely be of help, the practical process of taking action must start with the collective analysis of the existing daily patterns whereby gender differences are constructed and sustained[11]. The steps below are taken from a gender mainstreaming handbook published by the Swedish government, and adapted to the Quadruple Helix project in the sense that it is formulated as a self-evaluation for the partner organizations concerning their participation in the project.

6.2 Guidelines for action: The 4R model for gender mainstreaming

The following text, in italics, is quoted from the Swedish Gender Mainstreaming Manual[12].

Step 1. R1 Representation – surveying gender representation

In the first step, R1, you select a specific activity and the target groups to be measured. Begin by answering the question: how many women/girls and how many men/boys? The responses are supposed to provide a picture of

---

11 http://www.sweden.gov.se/content/1/c6/08/19/82/3532cd34.pdf
12 Swedish Government Official Reports (2007) Gender Mainstreaming Manual. SOU 2007:15. Stockholm: Fritzes. (http://www.sweden.gov.se/content/1/c6/08/19/82/3532cd34.pdf)

the gender distribution at all levels of the decision-making process and the various parts of the operation, e.g. among decision-makers, staff, users, entrepreneurs, job applicants etc.

Who makes the decisions?

To answer the general question of how many women and how many men, you must first determine who the actors in the decision-making process are. Here, the aim is to determine the extent to which women and men are represented in the decision-making process. Look at the formal and informal decision-making processes. Both must be examined to pinpoint where real decision-making powers lie.

Who implements decisions?

This is where you describe where the decisions are implemented – in what bodies, at what levels and by which individuals. This could be people working in a local government department, in an association or in a company. It could also apply to job centre staff or treatment centre staff. What is the gender distribution of the selected groups?

The target group – who is the user/client?

What is the target group of the activity? In the example of regional development work, the ultimate target group is the entire population of the county. In such cases, it is important to be aware of the gender patterns in the county. Who are these women and men? How are they represented in various public and private arenas, companies, professions?

Step 2. R2 Resources – examining the allocation of resources

R2 answers the question: How are our common resources – money, scope, time – distributed between women and men? The answers show how resources in the activity are allocated by gender.

Who gets what?

Examples of factors you can study are:

- time
- rooms/premises
- money
- information/meetings
- development work.

Time

What items, and what aspects, are allowed to take up time at meetings and in the processing, preparation and investigation of an issue?

- Who is allowed to take up time – as speakers, for example?
- Who is affected by the issues that take time?
- Can you see any gender-related patterns in what and who is given priority with respect to time?

Space

How is the public arena used by women and men? How, for example, is access to sports premises, land for new businesses, classrooms at training courses etc allocated?

Money

What is the allocation of direct payments – not just salaries, but other types of support as well, such as loans and grants, operational costs (including costs for time and space in the shape of staff and premises)?

Information

- What information is important for an active participant in the project or the activity?
- Who receives important information? Who learns what, and when? How are different groups given information, and when? Is this done early in the process or late, and in what format?
- How many meetings are different groups invited to? What gender patterns can you see in the groups? Are some groups allowed to take part in more meetings than others? What is the representation of women and men in the 'important' groups?

Development work

What development work is undertaken in the project/activity, for instance in the form of training, trade fairs, study visits, investigations or project planning?

Step 3. R3 Realia – analysing conditions

R3 answers the question: What are the reasons for the gender distribution of representation and resource allocation? On what terms are women and men able to influence the design and use of the activity concerned?

Representation and resources are about quantity. Who has access to what? 'Realia' are the quantitative substance of an activity. The idea is that patterns will become clear through a survey of the first two Rs – patterns that will then lead on to questions about why things are the way they are. Here, we focus on the operation or activity itself, i.e. the content of the services produced. What is the reality, and does it match present objectives? The question is then: who gets what, and on what terms?

What is the situation in our operation?

• What gender patterns do we see?

• Whose needs are being met?

• Can you see whether the activity has been designed on the basis of a norm that favours one gender ahead of the other?

• Are women's and men's interests, opportunities and wishes met to an equal degree?

How does the activity deal with gender equality issues?

• Does the activity proceed on the basis of the user's/client's gender?

• Do women and men, as individuals and groups, encounter differing demands and expectations linked to stereotyped ideas of gender?

• What is the 'gender contract' in the activity? By 'gender contract' we mean the prevailing norms and values that lead to some tasks being defined as 'female' and others as 'male'.

With respect to the realia – the norms governing the activity – there are no simple factors that can be measured. An analytical approach and an open discussion are needed. This should be based on a familiarity with gender equality and gender, and perhaps on further research that illustrates why the operation is the way it is, e.g. in terms of power relationships between the sexes.

Step 4. R4 Realisation – formulating new objectives and measures

R4 answers the question: What shape should the operation take if it is to achieve gender equality?

Describe your vision of an operation adapted to the needs of both women and men. When you have performed the analysis and answered the questions in R1–R3, it is time to decide whether the operation must change to live up to the gender equality policy objectives. Here, you can formulate a fresh vision for the activity – a vision based on the needs of women as well as men.

If you are to realise this vision you must review current operational objectives. Are the agency's own objectives sufficient, or do you need to formulate new ones to bring gender equality into the picture? If so, what steps need to be taken to achieve the objectives? The effects of this work should be measured using various indicators. The indicators are used to gauge how well you have achieved your objectives. Are they sufficient, or do you need to draw up new ones based on the gender patterns identified in the analysis?

- Decide what measures are necessary to adjust distorted gender patterns.
- Decide a completion date for achievement of the objectives.

Follow-up

- Decide how the results of the measures are to be measured in relation to the new objectives. What indicators or key ratios are to be used to follow up the activity?

- Decide when, and in what way, evaluation and follow-up are to take place.

6.3 Guidelines for action: The role of civil NGOs in quadruple helix innovation systems

In the Quadruple Helix Central Baltic project, the civil society actors are expected to play a distinct role in promoting gender awareness in cluster formation and policy formulation. They thus become core vehicles both for gender mainstreaming and for the advancement of cross-border clusters involving small firms. From earlier research (Lindberg, 2010, Lindberg et al, 2010) , we have derived several aspects related to the role of the NGOs for supporting female entrepreneurship and gender mainstreaming.

- NGOs has a clear role as collaborative platforms for women as entrepreneurs. They are arenas for non-hierarchical networking and business collaborations between individuals, projects and firms. That also implies that they may serve as 'cluster incubators' where systemic patterns of collaboration and competition can emerge over time.

- NGOs also has the role of legitimating and linking SMEs led by women to the other helixes. For example, they may affect the formulation of governmental policies in the direction of gender mainstreaming, and connect SMEs to academic research and education. Being less formalized they can handle different linkages in a pragmatic manner, and they can give voice to marginalized categories of entrepreneurs and firms in non-traditional industries, non-traditional sectors, non-urban areas and with atypical sizes and growth ambitions.

- NGOs tend to develop competences and process innovations related to entrepreneurial venturing outside traditional Triple Helix constellations – becoming platforms for developing knowledge on, e.g., women's entrepreneurship, solo venturing, rural entrepreneurship, small-scale service production etc. Based on this knowledge they may also become arenas for developing effective procedures of supporting entrepreneurs and firms usually not considered in dominating societal models – e.g. related to business advisory services or practical cluster building.

- NGOs can also carry the dimensions of individuals and societal structures – such as the link between gender structures and conditions for individual women pursuing entrepreneurial ambitions – often neglected in traditional Triple Helix constellations focusing on firms and projects.

In extant research, we also find several examples of challenges and resistance that NGOs become faced with in pursuing the abovementioned roles.

- In the role of being collaborative platforms they continuously face the problems of maintaining their ongoing operations on a long-term basis, beyond short-term project financing and commitments.

- In their role of linking and legitimating they are often taken less seriously due to their informal ways of operating and to their character of 'women's organisations' as such – several of the studied NGOs experienced that they became scrutinized in a way that other helix actors were not, and seen as prone to initiate 'disturbing' gender conflicts. Often, they were also seen as competing intruders in existing governmental structures for e.g. business

advisory services. The basis of legitimacy therefore often may rest on a regional, national or trans-national level rather than on the local one. They also often found it especially hard to link to other helix actors (such as universities) neither used to nor organized for handling entrepreneurial organizations – especially not small, female-led ventures.

- Concerning the role of competence and process development, NGOs often experienced that their results were not seen as innovations – unless they could be commercialized. Process innovations concerned with how to support women as entrepreneurs and their collaboration and cluster building were not seen as 'real' innovations.

- Finally, while carrying the perspectives of individuals and societal structures, they were questioned precisely of this – allegedly attending to issues of cultural patterns and discrimination rather than 'doing proper business'.

7. Action areas III: ICT implementation and gender

It goes beyond the scope of this report to deal with technological aspects on the interrelations between ICT and entrepreneurship. What we can comment upon is the relations between gender and ICT – where ICT has traditionally been a masculine issue and implementation of ICT has to be made with special awareness of gender patterns in society. This section is mainly built upon a report by Anita Gurumurthy (2004). Below, in italics, we quote some important text from Gurumurthy's report.

7.1 A cultural gender perspective on ICT design and implementation

Gurumurthy starts by defining the need for gender awareness in ICT design and implementation:

> New technologies in the information and communications arena, especially the Internet, have been seen as ushering in a new age. There is a mainstream view that such technologies have only technical rather than social implications. The dramatic positive changes brought in by these information and communication technologies (ICTs), however, have not touched all of humanity. Existing power relations in society determine the enjoyment of benefits from ICTs; hence these technologies are not gender neutral. The important questions are: who benefits from ICTs? Who is dictating the course of ICTs? Is it possible to harness ICTs to serve larger goals of equality and justice? Central to these is the issue of gender and women's equal right to access, use and shape ICTs. (p. 1)

She then contrasts the mainstream view of ICT as a neutral tool with the perspective that ICT is a cultural construct and the everyday practices depend on how technology is implemented and understood by different categories of individuals in society:

> Mainstream views of technology often take it to be a technical tool that society can use, but not something that in itself is influenced by society. They also ignore the differential influences of technology on the various sections of society. As such, technology is seen to be gender neutral. (p.3)
>
> However, feminist scholarship has pointed to women's exclusion from science and also from the creation, design and use of technology. […] The more recent critiques point to the dangers of putting technology ahead of people and of an uncritical acceptance of modern technology as something

that works everywhere and provides immediate solutions to development challenges. The gendered approach argues that technology is not neutral, but depends on culture. (p. 4)

The fact that technology has remained a male preserve historically, suggests that the appropriation by women of technology is in itself a political project. And, as active agents of change, women have been engaged in the process of claiming technology. However, we cannot assume that all women relate to technology in the same way. This will result in over-generalised approaches to redressing gender imbalances in access. We also cannot ignore the fact that gender power operates within institutions in many insidious ways. Therefore, women's empowerment in the information society requires a constant examination of how gender relations as a dynamic cultural process are being negotiated and contested, in relation to the technology environment. (p.5)

7.2   Guidelines for action: Gender-aware ICT design and implementation

Gurumurthy then use the cultural gender perspective outlined to summarise guidelines for gender-aware ICT implementation and design (p. 43-45):

- Enable women's participation, and build gender awareness among women and men participants. Engendering projects requires participatory processes that involve men and women in the community, inputs from gender experts and organisations that work on gender issues and gender sensitisation of project staff.

- Expand opportunities for women beyond the stereotypical roles. Women technicians are also still a minority. Women are not prioritised in training on technical production nor given opportunities to experiment with the technologies and self-train.

- Use appropriate technology. Successful information and communication technology projects do not only have to use high-end technology when addressing gender issues. Making judicious use of available, affordable technology and using technology mixes can have a much greater impact than using the latest technology for its own sake. Also, innovations that use effective/high-utility but low-cost technologies, shared infrastructure, public access facilities and the use of intermediaries (like NGOs) to interact with the disadvantaged, may be most appropriate.

• Develop content which is both locally relevant and challenges local
stereotypes. Localising generic information (through local language),
augmenting content for local application, and creation of content based on
local needs are non-negotiable in making the Internet relevant to non-elite
populations, including poor women. Priority needs to be given to content
that is developed by women and reflects their knowledge and perspectives,
and which helps them with their immediate survival needs, aspirations, their
well-being, and that of their families. Attention must also be paid to strategic
content in areas such as women's reproductive health, rights and awareness.
Gender equality advocates need to get into content production.
Unfortunately, stereotyped notions of gender roles form the basis of content
development in many community projects; for instance, health-related
information may be targeted at women, and market-related information, at
men. Such discriminatory approaches may be justified by project planners as a
response to what women have explained as their needs, but they are also a
missed opportunity to use ICTs for transforming traditional gender roles and
exploring the possibilities of social reengineering.

• Look at who in the community is benefiting. The socio-cultural context in
which gender relations are set is of great significance. In fact, what can be a
huge asset for women farmers may end up as a "community" asset benefiting
elite men, given access barriers that women face.

• Enable marginalised women to create content. By and large, demonstration
projects to test out the potential of new ICTs the world over have focused on
connectivity and the hardware dimensions of delivery mechanisms. The path
for the future is to get into an "upload" mode by creating relevant
applications and content; ICTs need to be shaped to be of value to women,
particularly poor and rural women.

• Build women's capacity broadly – not just technical skills. Successful projects
show that economic benefits from ICTs depend on capacity-building of
women. This should not be restricted to the use and operational aspects of
ICTs, but must also: develop locally relevant content; set up enterprises – ICT
and ICT-aided; use the Internet for communication and networking; promote
advocacy; build linkages with local institutions; and integrate women's
economic activities with local and global markets. Governments and the
donor community will need to support the scaling up of such successful
models.

• Use ICTs for both political and economic empowerment. ICT deployment for
economic empowerment at community level has received greater resources
than have innovations which address the social and political aspects of gender

relations. Even e-governance projects, which can be conceptualised as a vehicle for social change and women's empowerment as well as public accountability, are typically deployed as an efficiency mechanism for easier administration. ICT approaches need to be adapted and put to use for transforming gender relations.

• Look at impact. Despite the consensus about the potential of ICTs for enhancing women's status, very little documentation exists about the actual impact of the numerous projects that have attempted to address these issues. We still do not have adequate data on whether and how building women's communities' online, online discussion forums, providing content with a gender perspective, and designing gender-sensitive community-based projects have actually made an impact on gender stereotyping and gender roles. Research on the impact and how to measure it is needed.

8. Summary

The purpose of this framework report is the following

- To design methodologies for integration of a gender perspective in entrepreneurship, innovation and cluster programs.

- Producing guidelines for mainstreaming strategies and a framework for regional and cross border analysis.

Concerning the first purpose, methodologies for integration of a gender perspective in entrepreneurship, innovation and cluster programs, we recommend the following:

- Knowledge dissemination on what a gender perspective means and what existing patterns we find in society with reference to entrepreneurship and innovation policies.

- Cluster and innovation system training – aimed at opening the eyes of entrepreneurs to existing models and resources.

- Assessment of gender-related consequences as an integrated part of all decision making and evaluation activities. View of gender structures as long-term societal traditions and mindsets, not as 'body count' problems that can be easily 'fixed' by increasing the percentage of women.

- Pooling of interests of individual entrepreneurs through various forms of NGOs in order to overcome the barriers of small, marginalized, women-led firms to participate in innovation systems and clusters.

Concerning the second purpose, guidelines for mainstreaming strategies and an analytical framework, we recommend the following:

- Usage of established models for cluster building (see section 5.4).

- Usage of extant gender mainstreaming action models (see section 6.2) in all decision-making and collaborative processes, applied to all steps in the cluster building process.

- Usage of experiences of the role of NGOs in supporting women's entrepreneurship (see section 6.3)

- Usage of experiences of ICT design and implementation from a gender perspective when applying ICT as a tool for business collaboration and value creation (see section 7.2).

As a basis for cluster building, it is important to do some basic research, especially in regions void of collaborative patterns or in situations where geographically dispersed networks are to be gradually transformed into virtual industry clusters. This research

can be done through semi-structured interviews of about 1-2 hours/each where the entrepreneur can tell in detail about her experiences. About 15-20 interviews should be enough as a knowledge base, if you make sure to select entrepreneurs from different industries, different places, different age and different firm characteristics (size, ownership, husband involvement etc). We think that the following questions are some of the ones that should be of interest.

Area 1: Conditions for female entrepreneurs (analyzing the current situation)

- individual and company data
- what does the company do? history of the company? future plans?
- why did you start the firm? necessity? business opportunity?
- involvement from rest of family?
- previous work experience?
- typical workday?
- ICT (information and communication technology) usage in the firm today? future needs?
- homework responsibilities and homework sharing with husband?
- financing the company - how?
- attitudes met from outsiders - banks, authorities?
- view of growth, view of risks
- what are the main obstacles in general? how can they be removed? who should remove them?

Area 2: Quadruple Helix logic functionality (analyzing the conditions for cluster building and participation in quadruple helix innovation system through NGOs)

- who are your main competitors?
- who are your main collaborators?
- networking/relations with authorities/governmental institutions? what authorities?
- networking/relations with universities/schools? what universities/schools?
- networking within non-governmental organizations (NGOs)? what NGOs?
- draw a simple map of your business network
- what network relations are weak today? authorities? universities? NGOs?
- how could they be improved?
- what would you wish for from authorities? universities? NGOs?
- what can an NGO do that authorities and universities can't?

Bibliography

Allen, I. E., Elam, A., Langowitz, N. & Dean, M. (2008) Global Entrepreneurship Monitor. 2007 Report on Women and Entrepreneurship. Wellesley, MA: Babson College.

Billing, Y. D. & Alvesson, M. (1989) Four ways of looking at women and leadership. Scandinavian Journal of Management, 5(1), 63-80.

Butler, J. (1990) Gender trouble – feminism and the subversion of identity. New York: Routledge.

Carter, N & Rosa, P. (1998) The Financing of Male- and Female-Owned Business. Entrepreneurship and Regional Development, 10 (2), 225-241.

Danilda, I. & Granat Thorslund, J. (eds.) (2011) Innovation & Gender. VI 2011:03. Stockholm: Vinnova.

Doyle, W. & Young, J. D. (2001) Entrepreneurial Networks in the Micro Business Sector: Examining Differences Across Gender and Business Stage. Journal of Small Business and Entrepreneurship 16 (1), 40-55

Estonia in European comparisons, Series of the Ministry of Social Affairs, No 3/2008.

European Commission (2009) Report on equality between women and men 2010. Brussels: Directorate-general for employment, social affairs and equal opportunities.

Fenwick, 2003, Women Entrepreneurs: A Critical Review of the literature. http://www.ualberta.ca/~tfenwick/ext/pubs/leaders.htm

Giovannelli, C., Gunnsteinsdottir, H. & Me, A. (2004) The status of statistics on women and men's entrepreneurship in the UNECE region. http://213.174.196.126/stats/documents/2004/10/gender/wp.32.e.pdf

Gurumurthy, A. (2004) Gender and ICTs. Overview report. Brighton: BRIDGE, University of Sussex.

Hausmann, R., Tyson, L. D. & Zahidi, S. (2007) The Global Gender Gap report 2007. Geneva: World Economic Forum.

Holmquist, C. & Sundin, E. (eds.) (2002) Företagerskan: Om kvinnor och entreprenörskap [The entrepreneuse: On women and entrepreneurship]. Stockholm: SNS Förlag.

Jarvenpaa, S. L. & Leidner, D. E. (1999) Communication and trust in global virtual teams. Organization Science, 10(6), 791-815.

Jägers, H., Jansen, W. & Steenbakkers, W. (1998) Characteristics of virtual organizations. In P. Sieber & J. Griese (eds.) Organizational Virtualness. Bern: Simowa Verlag.

Lindberg M (2010). Samverkansnätverk för innovation - en interaktiv & genusvetenskaplig utmaning av innovationspolitik och innovationsforskning (Joint action for innovation - a participative and gender scientific challenge of innovation policy and innovation research). Dissertation. Luleå: Luleå University of Technology.

Lindberg, M., Lindgren, M. & Packendorff, J. (2010) The role of NGOs in supporting womens' entrepreneurship: A study of a quadruple helix project in the Baltic Sea region. Quadruple Helix reports 2010:4. Norrtälje: Quadruple Helix Central Baltic.

Lindgren, M. (2002) Kvinnor och friskolor: Kvinnliga entreprenörer och nya livsformer. In Holmquist & Sundin (2002).

Lindgren, M. (2009) Gränsöverskridande entreprenörskapsforskning. In C. Homquist (ed.) Entreprenörskap på riktigt: Teoretiska och praktiska perspektiv. Lund: Studentlitteratur.

Lindgren, M. & Packendorff, J. (2007) Konstruktion av entreprenörskap: Teori, praktik och interaktion. Örebro: FSF.

Lindgren, M. & Packendorff, J. (2010) The gender and entrepreneurship gap in Estonia, Finland and Sweden. Quadruple Helix reports 2010:5. Norrtälje: Quadruple Helix Central Baltic.

Lotti, F. (2009) Entrepreneurship: Is there a gender gap? (unpublished working paper) Rome: Bank of Italy.

Maxfield, S. (2005) The entrepreneurship gender gap in global perspective. Briefing note number 22. Boston: Simmons School of Management, Center for Gender in Organizations.

NUTEK (2004) Den svenska klustermanualen. NUTEK R 2004:13. Stockholm: NUTEK.

Olgiati, E. & Shapiro, G. (2002) Promoting gender equality in the workplace. Dublin: European Foundation for the Improvement of Living and Working Conditions.

Orser, B. J. & Foster, M. K. (1994) Lending Practices and Canadian Women in Micro-based Businesses. Women in Management Review, 9(5), 11-19

Porter, M. E., (1998) Clusters and the new economics of competition, Harvard Business Review, 76(6), 77-90.

Sundin, E & Holmquist, C (1989) Kvinnor som företagare. Malmö: Liber.

Swedish Government Official Reports (2007) Gender Mainstreaming Manual. SOU
2007:15. Stockholm: Fritzes.

UNIDO, (2001), Development of Clusters and Networks of SMEs: The UNIDO
Programme.

Varblane, U., Mets, T. & Andrijevskaja, J. (2010) Knowledge-based entrepreneurship in
Estonia. CASE Network Studies & Analyses No. 407/2010. Warsaw: Center for
Social and Economic Research.

www.quadruplehelix.eu