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Doing gender in Sweden's innovation policy, when transforming academic theory into regional practice

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Doing gender in Sweden's innovation policy when transforming academic theory into regional practice

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Abstract

Since the establishment of the new governmental agency Vinnova in 2001 and the initiation of the regional growth agreements in 2000, the Swedish government has promoted innovation by means of regional innovation systems. Just as long, there has been a debate about the gendered aspects of these policy efforts, especially in relation to the transformation of academic theory into regional practice. In this paper, the matter of how gender is produced in Sweden's innovation policy is discussed in the light of a survey brought out on the pattern of prioritization among regional innovation systems in Sweden. The survey exposes how 75% of the regional innovation systems subject to public promotion via the Vinnväxt programme concerns groups of industries that primarily employ men. From a 'doing gender' perspective, this pattern implies that gender is done in a manner that distinguishes men from women in relation to regional innovation systems. A seed of change is to be seen, however, in the bottom up initiative to organize regional innovation systems around women's entrepreneurship and innovation, originating from the project Lyftet. In this paper, this seed of change is interpreted as an alternative to the segregating and hierarchical doing of gender in Sweden's innovation policy, introducing a way where it is unnecessary and undesirable to distinguish women from men when it comes to public promotion of regional innovation systems. Some final thoughts on how different measures of gender mainstreaming influence the doing of gender in the regional practice of innovation policy programs indicate that measures introduced ad hoc in already prioritized formations will not change the encompassing pattern of how different groups of industries are esteemed in the process of prioritization, thus leaving the predominant way of doing gender intact. However, a gleam of hope can be discerned in recent calls made by Vinnova on areas that bridge the gender segregated labour market, e.g. within innovation journalism, e-services and healthcare.

Key words *Doing gender, Innovation policy, Regional innovation system, Triple helix, Quattro helix*

Introduction

Since the establishment of the new governmental agency Vinnova¹ in 2001 and the initiation of the regional growth agreements in 2000, the Swedish government has promoted innovation by means of regional innovation systems.² In research, the concept of innovation system was introduced in the late 1980's, turning into a flourishing stream of empirically and theoretically informed research during the 90's and 00s's (Eklund 2007). Ever since the introduction of the innovation system concept in policy and research, there has been a debate about gendered aspects of these endeavours, especially in relation to the transformation of academic theory into regional practice (Lindberg 2006). This debate has lately been pursued within the nascent stream of gender research focusing innovation policy and innovation systems (e.g. Blake & Hanson 2005, Balkmar & Nyberg 2006, Pettersson 2007). The interest for gender in relation to innovation policy and innovation systems reflects the fact that the Swedish government, during the last decades, has developed a gender equality policy aiming to "create the conditions for women and men to enjoy the same power and opportunities to influence their own lives" (www.sweden.gov.se/sb/d/4096 Dec 3, 2008). 'Gender mainstreaming' is the government's primary tool for achieving this goal, which implies that the Swedish gender equality policy is to be implemented in all policy areas (Sterner & Biller 2006, p 32). This provides a background to the government stating - in it's instructions from 2004 and 2007 - that Vinnova should promote gender equality between women and men within their areas of activity.

In this chapter, I hope to contribute to the expansion of the field of innovation policy research by employing the perspective of ‘doing gender’ in order to scrutinize how gender is produced in Sweden’s innovation policy when transformed from academic theory into regional practice. The empirical data I base my discussion on comprises policy documents and transcripts from six dialogue seminars carried out in the project *Lyftet*. In the first part of this chapter I give an introduction to the theoretical stream of ‘doing gender’ and its implications for theory and policy regarding regional innovation systems. In the second part, I present some theories on regional innovation systems together with the results from my survey of the pattern of prioritization within Vinnova’s Vinnväxt programme, which I relate to the gender segregated labour market in Sweden. The pattern I reveal underline the need for empirical data representing an extended range of actors and areas constituting regional innovation systems. In the third part, I highlight a seed of change originating from a bottom up initiative focusing women’s entrepreneurship and innovation. Finally, I draw some conclusions about the doing of gender in Sweden’s innovation policy when transformed from academic theory into regional practice. Thereto I provide some thoughts on how different measures of gender mainstreaming influence the doing of gender in the regional practice of innovation policy programs.

Doing gender

“Gender is manifested at many levels: in the case of individuals, as an aspect of their own personalities; at the cultural level, in figures of speech, metaphors, categories; at the social level, as a principle for organization of work and decision-making processes.” (The Swedish Research Council’s Committee on Gender Research 2005, p 3)

According to the theoretical stream of ‘doing gender’, gender can be understood as a constitutive part of organizational processes and organizations (Acker 1999). Gender is then regarded as an ongoing activity and interaction performed among and between women and men. This perspective relates everyday practices and activities to an institutional and structural level. The origin and developments of doing gender is found in works by West & Zimmermann (1987) and Fenstermaker & West (2002). For a Nordic overview of doing gender research in organizations, see Gunnarsson et al (2003). One of the main contributions of gender research is the exposure of how gender often is done in ways that creates dichotomies e.g. between ‘men’ and ‘women’ or between ‘femininity’ and ‘masculinity. At a structural level, this leads not only to segregation - e.g. on the labour market - but also to hierarchies where areas associated to ‘men’ and ‘masculinity’ often are ascribed higher value - e.g. by higher wages and faster careers. In practice, this implies an uneven distribution of power and resources between women and men (Butler 1990).

This ongoing construction of segregating and hierarchical gender categories is present in Sweden’s innovation policy too. In the promotion and development of regional innovation systems, gender is done when distinguishing different actors and branches of industry and ascribing them different value in relation to economic growth. I will illustrate this mechanism in the account of my survey of the pattern of prioritization within Vinnova’s Vinnväxt programme further on. First, I wish to highlight yet another aspect of the doing gender perspective, namely the subject of change. This aspect is principal in the doing gender perspective, as the focus on everyday practices underlines the possibility of doing things differently (Gunnarsson et al 2003). It is not compulsory that the doing of gender ends up in segregating and hierarchical patterns. It is quite possible to act in ways that break this trend,

opening up for a more dynamic and nuanced perception of the world. Concerning promotion and development of regional innovation systems, I suggest that such a change in the doing of gender could imply that sites of innovation are decentred “from singular persons, places and things to multiple acts of everyday activity” (Suchman 2007, p 1).

From academic theory to regional practice

In this part of the chapter, I present some academic theories on regional innovation systems together with the results from my survey of the pattern of prioritization within Vinnova’s Vinnväxt programme, which I will relate to the gender segregated labour market in Sweden. In academic theory, two different approaches to regional innovation systems can be detected: one where a broad scope of actors, areas and factors are regarded to be crucial in such systems and another where a more narrow scope is applied. The broad approach is reflected in the following quotation, highlighting the importance of several forms of innovation as well as several kinds of knowledge:

”The innovation system approach reflects that innovations are not solely a question of scientific or technological research or development of technologies and products put into use. Innovation is to equal parts dependent upon access to organizational, social, economical and market based knowledge, arranged in a successful interplay.” (Frykfors 2005, p 6)

In the narrow approach to regional innovation systems, the importance of research based innovation, technological infrastructure and market driven research is emphasized (Lundvall 2006). Another example of the narrow approach is to be found in the model of ‘triple helix’, where the roles of public, private and academic sector in regional innovation systems are highlighted (Lavén 2008). In the broad approach, such delimitations of actors are regarded as undesirable. There, the roles of different actors are to be proven empirically, rather than being determined theoretically in advance (c.f. Carlsson 2000). Consequently, academic theory provides two possible approaches to regional innovation systems.

Is the theoretical scope of approaches reflected in regional practice, then? Existing research testifies that this is not the case. When academic theory is transformed into public policy promoting regional innovation systems in Sweden, research exposes how policy programs primarily employ a narrow understanding of such systems - and thus concern quite a homogenous group of actors, areas and factors - at the expense of a more inclusive approach suggested in the original research on this area (Lundvall 2006, Lindberg 2008). My survey of the pattern of prioritization among regional innovation systems in Vinnova’s Vinnväxt programme illustrates this situation. Since 2001, regional innovation systems have been invited to compete for long term financing. The maximum amount granted has been ten million SEK (appr. 900 000 Euro) per year during a period of maximum ten years. In 2001, five pioneering projects were selected. These were followed by a row of official winners in 2003, 2004 and 2008. The prioritized formations are listed in *Table 1* below together with the area of activity that each formation involves. The table also contains a column with my assessment of which group of industries each formation adheres to. The three groups of industries are: Basic /Manufacturing industries (BM)³, New technology industries (NT)⁴ and Services/Experiences industries (SE)⁵.

Table 1. Prioritized formations in the Vinnväxt programme 2001-2008⁶

Programme	Formation	Area	Group
Vinnväxt 2001	Bioteknik (Biotech)	Biotech	NT
	IT-konsultsektorn (ICT Consulting Sector)	ICT ⁷	NT
	Underleverantörssamverkan (Suppliers in Cooperation)	Telecom	BM/NT

		Vehicles Manufacturing	
	Innovationsstaden (Innovation City)	Start-up of businesses Business development	No data
	SISU - Samverkan industri, samhälle och universitet (Cooperation Industry, Society and University)	Industry	BM
Vinnväxt 2003	Innovation i Gränsland (Innovation in Borderland)	Food Biotech Health Commerce	NT/SE
	Robotdalen (Robotic Valley)	Robotics	BM
	Uppsala Bio	Biotech Pharmaceuticals Diagnostics	NT
Vinnväxt 2004	ProcessIT Innovations (Process ICT Innovations)	Process industry Manufacturing ICT	BM/NT
	Biomedicinsk utveckling (Biomedical Development)	Biomedicine	NT
	Triple Steelix	Engineering workshop Steel	BM
	Fiber Optic Valley	Fiber optics	NT
	Hälsans nya verktyg (New Tools for Health)	Care Health Medical technology	SE/NT
Vinnväxt 2008	Framtidens bioraffinaderi (Bio Refinery of the Future)	Bio refinery	BM
	Peak of Tech Adventure	Tourism Sports ICT	SE/NT
	Smart Textiles	Textiles Fashion	BM/SE
	Printed Electronics Arena	Paper electronics	BM/NT

According to *Table 1*, 11 of 17 formations in the Vinnväxt programme are active on areas within industries based on new technology. Yet another 8 are active within basic or manufacturing industries. Only 4 of the formations are active within services or experiences industries. As the table shows, some of the formations belong to more than one group of industries. A closer look at different combinations of groups reveals that 3 formations are active on areas within basic or manufacturing industries in combination with industries based on new technology. Another 3 formations are active within new technology as well as services or experiences industries. Only one formation combines basic or manufacturing industries with services or experiences industries. Concerning formations active within only one group of industries, 5 of the formations are active solely within industries based on new technology and 4 formations are active solely within basic or manufacturing industries. None of the formations are active solely within services or experiences industries. This pattern is illustrated in *Figure 1* below.

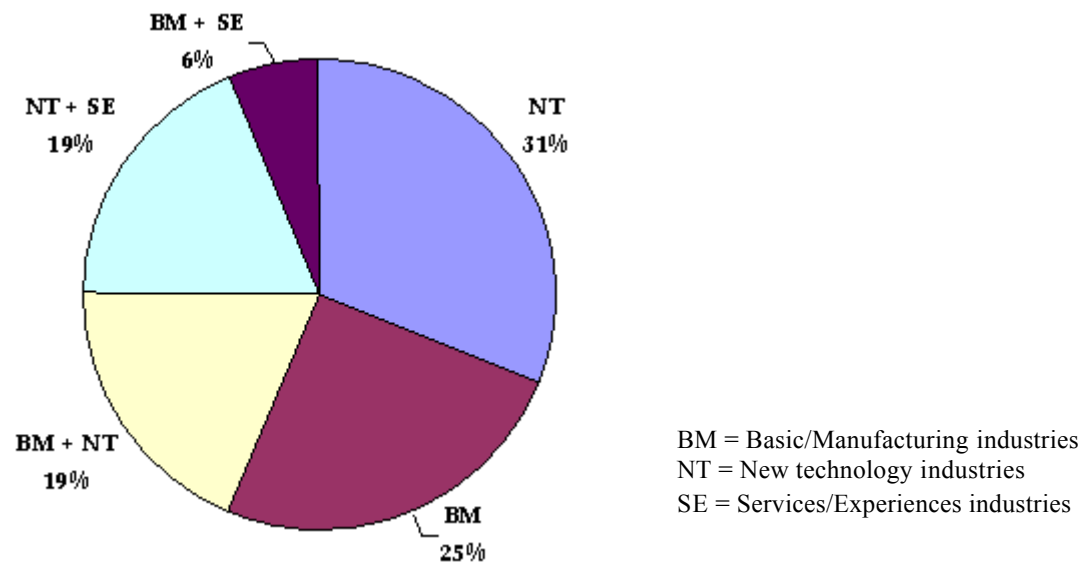


Figure 1. Groups of industries represented in Vinnväxt 2001-2008

From a gender perspective, this pattern of prioritization within Vinnväxt is somewhat problematic. Even if the act of prioritization in itself may be motivated in Sweden's innovation policy, a question mark appears when it's revealed that the pattern of prioritization coincides with the pattern of gender segregation on the Swedish labour market. The division between paid and unpaid work has been reduced since women entered the working life en masse, but men and women are still, to great extent, to be found in different groups of industries (Gonäs & Karlsson 2006).⁸ Table 2 shows the distribution of women and men on Sweden's labour market.

Table 2. Distribution of women and men on Sweden's labour market⁹

Distribution	Areas
Dominated by men (over 60 % men)	ICT, Cars/Trucks/Machines, Mining/Metal, Chemistry, Forestry, Telecom, Transportation, Other industry, Agriculture, Manufacturing industry, Steel, Biotech, Wood, Computer technology, Electronics, Telephone/Television/Sound technology <i>± Mainly Basic/Manufacturing industry & New technology</i>
Balanced (60/40) ¹⁰	Health care, Consumer goods/Commerce, Media/Entertainment, Services, Textiles/Clothes, Recreation, Restaurants/Hotels <i>± Mainly Services/Experiences</i>
Dominated by women ¹¹ (over 60 % kvinnor)	Biomedicine, Nursing care, Child care, Elderly care, Health care, Personal services, Education/Research, Retail trade <i>± Mainly Services/Experiences</i>

Comparing Figure 1 with Table 2, it is revealed that the formations that have been granted funding in the Vinnväxt programme are predominantly the ones being active within groups of industries employing primarily men, namely the groups of Basic/ Manufacturing industries and New technology. In 75% of the formations these areas are represented separately or in combination. The group of Services/Experience industry, employing most women, is comprised only in 25% of the formations. None of the formations include this group of industries as their sole area of activity. This encompassing pattern of prioritization in Vinnväxt in relation to gender distribution on the Swedish labour market is exhibited in Figure 2 below.

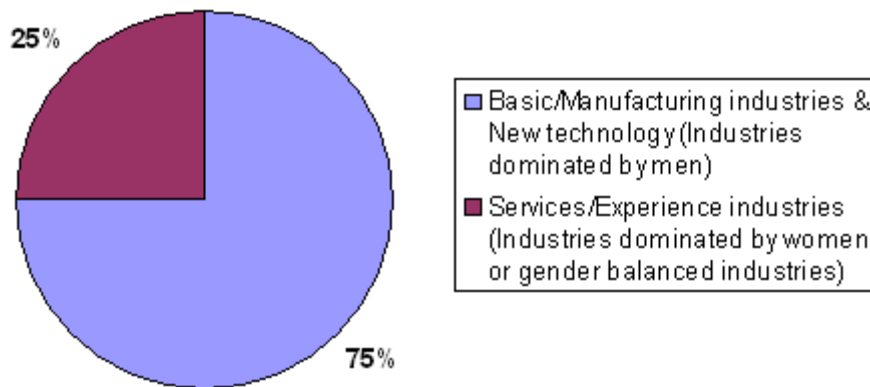


Figure 2. Encompassing pattern of prioritization in Vinnvåxt in relation to the gender distribution on the Swedish labour market

In relation to academic theory, it seems like only one of the two research approaches to regional innovation systems has survived the transformation into regional practice. The approach applied in Vinnvåxt seems primarily to have been a narrow one, only considering a certain type of actors, areas and factors to be of importance – namely the ones employing mostly men. In terms of a ‘doing gender’ perspective, this pattern of prioritization within Sweden’s innovation policy contributes to a hierarchical construction of gender where groups of industries employing primarily men are ascribed a higher value in relation to regional innovation systems than the ones employing mostly women or a balanced number of women and men. Thereto, the pattern reveals that the policy decisions made rest upon a segregating understanding of gender, where it’s regarded to be fruitful to implicitly distinguish the categories of ‘men’ and ‘women’ in relation to economic growth. According to Pettersson (2007) and Blake & Hanson (2005), an innovation policy constructed upon such restraining gender perceptions runs the risk of excluding actors and areas with innovative potential. And since Sweden’s policy on gender equality prescribes gender mainstreaming into all policy areas (Sterner & Biller 2006) - including equal power in terms of economy and influence in society - the prevalent pattern of prioritization could be reason enough to review the priorities made within the innovation policy programs.

A seed of change

The pattern of prioritization revealed in my survey underlines the need for a regional practice of innovations policy representing a broad approach to regional innovation systems, including an extended range of actors and areas. In order not to reproduce the prevalent segregating and hierarchical gender constructions, this broad approach should reach beyond the distinction between ‘men’ and ‘women’ and provide the grounds for an equal esteem of different groups of industries, irrespective of their gender distribution. In this part of the chapter, I highlight an example that I think represents such a broad approach. This seed of change originates from a ‘bottom up’ initiative (Matland 1995) taken by researchers and participants in the project *Lyftet*, which was managed by Luleå University of Technology and financed by EU structural funds and Vinnova via their call on the area of gender perspective on innovation systems.

In the project *Lyftet (The Raise)*, four regional networks came together in order to raise their experiences of promoting women’s entrepreneurship and innovation to a joint platform of knowledge. Participating at dialogue seminars arranged in the project, the network members

came to challenge delimiting assumptions within Sweden's innovation policy, which was a subject they hadn't been encouraged to reflect upon elsewhere. The challenge consisted primarily in widening the narrow scope of actors and areas being promoted in the public policy programmes, where their own efforts to organize networks similar to those being branded regional innovation systems and clusters had been neglected. Each network had a specific background to their involvement in the project. In 2002, a local resource centre for women named *Emma Resurscentrum (Emma Resource Centre)* - situated in the county of Västerbotten - initiated a project in order to scrutinize the concepts of regional innovation system and cluster from a gender perspective. Despite the fact that *Emma Resurscentrum* had been organizing networks among entrepreneurial women during an entire decade, they experienced that these concepts had been imposed in the regional growth agreement in a manner that excluded the branches where most women in their region were active as entrepreneurs or employees, such as tourism, handicraft and culture.

Around the same time, three other regional networks located in other parts of Sweden started to investigate if and how the concepts of innovation system and cluster were relevant to their own activities. *SAGA (Sámi Network Connectivity Gender Allocation)* was initiated by a gender researcher at Luleå University of Technology, in order to secure women's influence upon and profit from the innovation system she was organizing in the region on the area of network connectivity. *SAGA* consisted of women from different spheres of society - working in private companies, public authorities, local resource centres for women, development groups etc - all of them living in Norrbotten. *Lika Villkor (Equal Terms)* was a project managed by the County administration of Södermanland, situated in the mid-parts of Sweden, constituting a regional network for cooperation and development among local resource centres for women. The aim was to make use of the ideas of women entrepreneurs in local and regional development policy. This was achieved partly by their investigation and support of a cluster within the healthcare sector, where many women are employees or entrepreneurs. They also introduced an understanding of resource centres for women as constituting innovation systems. *Företagsamma kvinnor (Entrepreneurial women)* in the county of Västmanland - located in the mid-parts of Sweden - were managed by the local resource centres for women in the region. Promotion of women's entrepreneurship by means of mutual inspiration was the main purpose of this network, consisting exclusively of women running their own companies. One of their achievements was a survey of clusters within branches of business with many women.

At the dialogue seminars we strived to create the prerequisites for a mutual sharing of experiences among the network members as well as between them and us researchers, which is congruent with the tradition of 'dialogue conferences' introduced by Nordic working life researchers in the 80's (Shotter & Gustavsen 1999). We wanted the participants to express themselves in many different ways in order to get a rich empirical material, which is why we brought pens, papers as well as whiteboard markers. The dialogue seminars were also recorded with an mp3-player. In the first round of seminars, arranged in the spring of 2006, the network members got to present and discuss their organizations from three different angles of approach. In the second round of seminars, arranged half a year later, the main task was to discuss their activities in the light of public efforts to promote entrepreneurship and innovation. There, I presented some of the data from the first seminars and from available text material concerning their strategic organization of actors, areas, activities and innovations. In this way, we got a rich empirical material about their endeavours, verified by the network members themselves. I consider our mode of procedure to be a practical example of interactive gender research methods (Gunnarsson 2007), in that we strived to include

previously excluded actors and areas in a discussion on innovation policy by means of a joint knowledge development between researchers and participants.

The results from the dialogue seminars exposed how the four networks had organized a sort of regional innovation systems around women's entrepreneurship and innovations. In this, they had involved actors from all areas of society - industry, public sector, academia and non-profit organizations. The areas they were active on were predominantly the ones employing mostly women, or a balanced number of men and women, belonging to the group of services and experiences industries. But there were also examples of strategic promotion of innovation within the area of ICT, which is a industry employing mostly men, according to *Table 2*. There, some of the network members in *SAGA* were developing an entirely new system for connectivity in sparsely populated areas. In their pursuit of promoting women's entrepreneurship and innovation, several efforts to develop new knowledge were made by the networks, which manifested itself in reports and anthologies as well as in the arrangement of seminars and conferences. As a result of the networks' endeavours new enterprises and innovations were created.¹² Several of the innovations had the form of new services and methods, e.g. within business counselling, surveys/inventories, loans/credits, organization, innovative processes, wedding arrangements, recruitment consultancies, restaurants, tourist information, Internet connection, handicraft retail and home-help services.

Comparing these examples of regional innovation systems with the kinds being prioritized in Sweden's innovation policy and in the narrow approach to regional innovation systems, four distinguishing features appear:

- Beside the public, private and academic sector, a fourth sector was involved in the innovation systems organized by the networks, namely the civil sector. This is why I've chosen to launch the concept 'quattro helix' (in contrast to 'triple helix'), in order to describe the organizational rationale of these regional innovation systems.
- The knowledge development has not primarily taken place in cooperation with academic institutions, as the concept of triple helix indicates. Instead, the new knowledge has been developed by the network members themselves, sometimes with the assistance from non-profit educational associations (studieförbund), consultants or researchers.¹³
- The groups of industries in focus differ from the ones being prioritized in *Vinnväxt*. The networks have in most cases been active within Services/Experiences industries, which are women dominated and gender balanced industries. This contrasts with the heavy dominance of Basic/Manufacturing industries and industries based on New technology in *Vinnväxt*.
- The innovations being realized as a consequence of the networks' efforts to promote women's entrepreneurship and innovations have mainly taken the form of new services and methods, in contrast to the technological and material focus in the narrow approach to regional innovation systems.

According to me, these features of the four networks involved in *Lyftet* can be interpreted as representing the type of approach to regional innovation systems that within academic theory has been labelled as a 'broad' one. This constitutes a seed of change regarding the possibility of doing gender differently in Sweden's innovation policy, since it reaches beyond segregating and hierarchical gender constructions by including groups of industries occupying many women in the same frame of policy measures that up to now have prioritized industries employing mostly men.

Conclusions and additional thoughts

In this last part of the chapter, I draw some conclusions about the doing of gender in Sweden's innovation policy when transformed from academic theory into regional practice. Thereto I provide some thoughts on how different measures of gender mainstreaming influence the doing of gender in innovation policy programs. In academic theory, two different approaches are suggested in regard to regional innovation systems. One where a narrow range of actors, areas and factors are considered to be of importance to such systems, and another where a broader range is taken into consideration. When transformed into regional practice, however, only the narrow approach seems to subsist. This has implications for the gendered aspects of innovation policy and the regional innovation systems it is intended to promote. In this chapter, the matter of how gender is constructed in Sweden's innovation policy has been discussed in the light of my survey on the pattern of prioritization among regional innovation systems. The survey exposes how 75% of the regional innovation systems subject to public promotion via the Vinnväxt programme concern those groups of industries that primarily provide employment for men, given the present gender segregation on the labour market. From a 'doing gender' perspective, this pattern implies that gender is done in a manner that distinguishes the categories 'men' and 'women' in relation to economic growth and ascribes the former category a higher value on the area of regional innovation systems.

A seed of change is to be seen in the regional innovation systems organized around women's entrepreneurship and innovation originating from the project *Ljftet*. I interpret this seed of change as an alternative to the segregating doing of gender in Sweden's innovation policy, introducing a way where it is unnecessary and undesirable to distinguish women from men when it comes to public promotion of regional innovation systems. This initiative was financed via Vinnova's call on gender perspective on innovation systems, but has not yet led to any attempts to mainstream women's entrepreneurship and innovation in the Vinnväxt programme. Instead, Vinnova has launched additional funds in order to encourage the inclusion of a gender perspective in the formations already being prioritized in the Vinnväxt programme. Since the great majority of these formations belongs to groups of industries primarily occupying men, this measure of gender mainstreaming introduced ad hoc might at its best imply a more equal distribution of influence and benefits among women and men within the organizations. But the encompassing pattern of gender imbalances in the estimation of these groups of industries will not be altered. The gendered aspects of the pattern of prioritization itself will thus remain unchallenged in gender mainstream measures introduced ad hoc in already prioritized formations. However, I discern some gleam of hope in recent calls made by Vinnova targeting national and sectoral innovation systems on the areas of innovation journalism, e-services as well as innovations within health and healthcare. These efforts might be extended to encompass regional innovation systems as well, thus striving to bridge the gender segregated labour market and prevent segregating and hierarchical constructions of gender within Sweden's innovation policy.

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¹ Swedish Governmental Agency for Innovation Systems

² For an explanation of different types of innovation systems, see the chapters by Jukka Teräs & Håkan Ylinenpää and Lars Coenen & Annika Rickne.

³ e.g. forestry, wood products, mining, steel/aluminium, cars/trucks, biofuels, robotics, electro-mechanics, electric power, pulp, packaging, light materials, polymer/plastics

⁴ e.g. bio technology, ICT and fiber optics

⁵ e.g. care, tourism, commerce, education and entertainment

⁶ www.vinnova.se Oct 9, 2007 & Apr 7, 2009

⁷ ICT = Internet and Communication Technology

⁸ A public inquiry on the sex segregated Swedish labour market (SOU 2004:43) shows that women and men primarily choose to work in different occupations. However, the segregation has been somewhat reduced during the 1990's, as a result of an increased number of women in those men dominated professions that require higher education.

⁹ www.folksam.se/testergodarad/jamstalldhetsindex Nov 2, 2007

Balkmar & Nyberg 2006, p 24-26

På tal om kvinnor och män 2006, p 64-65

Balkmar 2006, p 54

¹⁰ In larger companies, the balanced distribution between men and women is only valid for the employees, not the management.

¹¹ These statistics are only valid for the employees, not the management, except in personal services where the main part of the entrepreneurs are women.

¹² See the chapter by Lars Coenen & Annika Rickne for a discussion about whether innovation should be regarded as an outcome or as a dynamic activity.

¹³ That the knowledge development within innovation systems can take various forms, is also discussed in the chapter by Lars Coenen & Annika Rickne.