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## **Gender Summit 9 Europe**

*Strategic priorities for regional STEM gender equality policy*

Strategies to tackle gender inequalities in STEM in the  
Nordic countries

Marja Makarow  
Brussels, 9 November 2016

# Society needs radical innovations



## **Radical / disruptive innovations**

Arise from unexpected findings of fundamental research

That no-one could have imagined to ask for  
That create jobs, new markets and economic growth  
That change the world and increase the quality of life

The criteria of one of the world's most significant innovation prizes

## **The Millennium Technology Prize**

Established by State of Finland, high-tech industry and academia  
Awarded by Technology Academy Finland

# 1st Millennium Technology Prize to Tim Berners-Lee in 2004 for WWW



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## **Internet launched the digital revolution**

125,000 new jobs annually in Europe alone  
Digital Single Market: 800,000 new jobs estimated by 2020  
15% of world economy based on ICT

## **Digital revolution changes our way of life**

Work and business  
Manufacture and transport  
Learning and communication with each other

## **Women underrepresented in math, computing, technology, engineering**

26% of computing professionals are women (USA 2015)  
12% of engineering professionals are women (USA 2015)

## **Without policy measures to support women in STEM education and research**

Women not prepared to contribute to and benefit from the digital revolution  
Half of talent missing in creation of innovations supporting well-being and growth  
Women's participation in changing the world missed

# 8th Millennium Technology Prize 2016: first woman Frances Arnold



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# Women in the innovation and research scenery



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**MTP nominations** by organisations world wide

Even nominations of women almost non-existent, 5% of over 400

**Nobel prizes** in science

5% women out of ~870 awardees

**Fields medal** for mathematics

1 woman / 66 awardees

**European Research Council's** share of women awardees in science

30% of starting grants and consolidators

15% of advanced grants

**ERC Proof of Concept calls** (from research to innovation, 2011-2015)

Success rate similar to men's !

***Academia Europaea***

12 % women of 3200 members, young Academy 26% women

**European Union Women Innovators Prize** badly needed and great inspiration

### **EIT promotes translation of research ideas into products and services, solutions to societal challenges and growth**

Share of women in governance and top management of EIT Knowledge and Innovation Communities

Raw materials	4/13	31%
Health	5/20	25%
Climate	7/30	23%
Energy	2/33	6%
<b>ICT</b>	<b>1/40</b>	<b>2,5%</b>

Risk: Lack of diversity in decision-making bodies lowers quality of decisions

Glimmer of hope at grass root level: young women do well in EIT entrepreneur competitions

# Finland's solution to diversity in decision-making bodies

## Gender quota in legislation since 1995



### **Bodies exerting DIRECT or INDIRECT power over public funds** ***Minimum of 40% of minority gender***

Research Councils: at least 40% of female members

Results: Share of women applicants of research funds risen to ~ 50%  
Pro-active encouragement and monitoring

Share of women awardees risen considerably

Post-doctoral positions	56%
Grants to launch independent career	45%
Most prestigious professorships	27%
Directors of Centers of Excellence	17%

Gender balance more or less achieved in research except in STEM  
Still only 24% of women professors

# Understanding the Nordic Paradox: top score in European Gender Equality Index but no gender equality in academia



NordForsk launches in 2016 two Nordic Centers of Excellence on gender equality

*NordForsk: The Nordic countries facilitator organisation for cross-border research collaboration*

## **“Solving the Nordic Paradox: Gender Gaps in Research and Innovation”**

Highlights of Research themes

Analysis of regional knowledge and innovation systems

Assessment of impact of equality policies

Identification of barriers

Understanding challenges for gender equality in labour market context



## Émilie du Châtelet



### **First internationally known woman scientist**

Mathematician, physicist, philosopher  
France 1706-1749

"Illumination of Enlightenment"

Metropolitan Opera New York  
Live cinema diffusion of  
Opera "Émilie"

10 December 2016

Composer Ms Kaija Saariaho  
Conductor Ms Susanna Mälkki



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# Thank you for your attention!

<http://www.nordforsk.org/>