



Research Division

Technoscience Studies

Department of Technology and Aesthetics
School of Planning and Media Design
Blekinge Institute of Technology (BTH)

Profile areas

Design for Digital Media

ICT for Development

Feminist Technoscience

Innovation System and Development

ANNUAL REPORT 2011

*The Mission of the Research Division of TechnoScience Studies
is to Expand and Transform Theoretical and Practical Knowledge Bases
of Technology Research & Development & Innovation*

Contents

Executive Summary	3
Background	6
Staff	7
Theoretical stance	8
Research projects	9
<i>DESIGN FOR DIGITAL MEDIA</i>	9
<i>ICT FOR DEVELOPMENT</i>	11
<i>INNOVATION SYSTEM AND DEVELOPMENT</i>	13
<i>FEMINIST TECHNOSCIENCE</i>	16
<i>Other ongoing projects</i>	19
Postgraduate degrees awarded	20
Publications	20
Postgraduate activities	23
<i>InterGender</i>	23
<i>Research supervisor training</i>	24
<i>Division Seminars and Graduate Course</i>	24
<i>Development of the R&D profile Design for Digital Media</i>	25
<i>The International Graduate School on Innovation Systems, Clusters and Development</i>	26
Internationalisation	28
<i>Partners in Developing Countries</i>	28
<i>Partners in High Income Country</i>	30
Cooperation between BTH, business and the community/politics	30
<i>BTH campus Karlshamn</i>	31
Commissions	32

Executive Summary

The activities at the Research Division of Technoscience Studies (ToS) during 2011 are characterised by high number of examination and PhD students, high degree of external funding and international collaboration as well as development of an International Graduate School on Innovation Systems, Clusters and Development. ToS includes four main profile areas namely Design for Digital Media, ICT for Development, Innovation System and Development and Feminist Technoscience. ToS is closely linked to the undergraduate education with its profiled programmes of Digital Game, Digital Audio Production, Digital Visual Production and Web Development engaging more than 300 students.

The highly appreciated cooperation with and support from the local government of Karlshamn and the Bank of Karlshamn continued during 2011 within the context of NetPort. To participate in developing NetPort as a strong innovation system is an inspiring driving force for ToS, which thus is fulfilling one of the core values in the profile of BTH.

One adjunct professor at ToS, Gerhard Bax, was installed at BTH academic ceremony in October.

During the year *one* doctorate degree in the PhD program Technoscience Studies was earned by Maria Bäcke with her thesis titled *Power Games: Rules and Roles in Second Life. Five licentiate* degrees were obtained by Rebecka Molin with her thesis *A Sight/Site for Transparency or Opacity? Notes on Knowledge Production and Feminist Technoscience*, by Charles Otine with his thesis *Participatory approach to data warehousing in health care: UGANDA'S Perspective*, by Lydia Mazzi with her thesis *Geographical Information Technologies for Road Infrastructure Maintenance in Uganda*, by Joshua Mutambi with his thesis *Stimulating Industrial Development in Uganda through Open Innovation Business Incubators* and finally by Julius Ecuru with his thesis *Fostering Growth in Uganda's Innovation System*.

One new doctoral student, Linda Paxling, was admitted during 2011. She is doing her research within the fields of M4D linked to ICT4D, Feminist Technoscience, Postcolonial Technoscience and Cyborg Anthropology.

Three PhD students are doing their research within the International Graduate School for Innovation Systems, Clusters and Innovations. The Graduate School is an initiative by ToS via the Scandinavian Institute for Competitiveness and Development (SICD) and in collaboration with PACF (PanAfrica Competitiveness Forum) and Universidad Mayor de San Simon (UMSS), Cochabamba, Bolivia. Tomas Kjellqvist, who is the managing director of the International Graduate school, has during the year anchored the Graduate School in several international, academic and funding networks. A consortium is planned with the following actors in an initiating phase – the Institute of Economic Research on Innovations, Tschwane University, South Africa, the Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania, UMSS, Bolivia, UNU – Merit, Maastricht, Netherlands, Aalborg University, Denmark, BTH, Research Policy Institute, Lund University, Sweden.

One of the PhD students is a public sector doctoral student being a staff member of the local government of Karlshamn as well. This is a result of the cooperation between ToS, the local government of Karlshamn and NetPort within the project X-ovation.

During the year ToS had thirteen active doctoral students within the PhD programme. The ties of ToS to international R&D collaboration were strong, with specific links to Norway, Denmark, Tanzania, Uganda, Bolivia, Ghana, Italy and Germany.

The R&D program within the profile of Design for Digital Media was strengthened during the year and now comprises one guest professor, three internal research supervisors, three doctoral students and one university lecturer doing research. The profile is linked to the Swedish Faculty for Design Research and Research Education, at which ToS is a member. The recruitment of a new professor in the profile failed because of no competent applying candidates. This is a challenge for us, which we share with other new knowledge fields requiring interdisciplinary competences. The programme and linked activities are presented below.

The regional relevance of the research is enhanced by involvement and collaboration in NetPort and its profile New Media. Research and undergraduate education are strongly intertwined and result in establishment of companies by students within media technology and especially so within digital game. The research project X-ovation includes innovative development processes at the municipality of Karlshamn as well as driving forces for cooperation, from which the regional development is benefitting. Pirjo Elovaara and Linus de Petris from ToS have central roles in the project. The international PhD students of ToS contribute directly to solve acute problems in their respective home countries like digital education resources for rural secondary schools, digital systems handling serious diseases and other systems for vital infrastructures in society.

BTH strategic plan 2009 – 2012, goal area number 5, concerns collaboration with developing countries. ToS was during the year strong in realising this goal not only in doctoral training and research, but also as witnessed by the following.

SPIDER (The Swedish Program for ICT in Developing Regions) has sponsored the R&D project iFarms - Leveraging mobile platform technology to address the information and development needs of marginalised communities (rural and urban poor) with Peter Okidi Lating as project manager. In the final phase Pirjo Elovaara and Kerstin Gustavsson have participated in the project with their competences in participatory ICT development processes. The project was finalized in the end of the year with the following main results. An open source solution for iFARMS was developed and deployed for use by farmers. A project-based pedagogical method of learning was successfully used for training the student software developers. iFarms shows that innovations and sustainability can emerge out of triple helix relationships as long as the conflicts and contradictions inherent in such relationships are continuously addressed.

ToS via The Scandinavian Institute for Competitiveness and Development (SICD) have two Sida funded R&D projects. One is the project "Innovative Clusters Closing the Gap between University and Society in East Africa - a living proof of mode 2 excellence?" with Birgitta Rydhagen as project manager and with a budget frame of 3 190 000 SEK during 2010 – 2012. The other project is "Solar power to the poor people: Using innovative clusters to develop business models for technology transfer" with Tomas Kjellqvist as project manager and Erik von Bahr assisting and with a budget frame of 4 400 000 SEK during 2010 – 2012. The advisory group linked to SICD was expanded with the well known innovation expert

professor Bengt-Åke Lundvall, Aalborg University, Denmark.

Staff at ToS were during 2011 involved in three EU projects. Professor Gerhard Bax is a GIS expert and research partner in the project "Impact of climate change and related glacier hazards and mitigation strategies in the European Alps, Swedish Lapland and the Tien Shan Mountains, Central Asia" with FORMAS as national coordinator. A number of researchers at ToS are involved in the EU funded project GenisLab coordinated by a partner in Italy. A gender audit of BTH was performed by ITC/ILO and coordinated by the division of Technoscience Studies during the year fostering the awareness of gender equality issues at the male dominated BTH.

Art Line is an international art- and culture project in collaboration between 14 partners from 5 different countries in the South Baltic region; Sweden, Poland, Germany, Russia and Lithuania. The project is part-financed by the European Union (European Regional Development Fund), South Baltic Cross-border Cooperation Program, and will run from 2011 until December 2013. Pirjo Elovaara is a participant with the sub-project Telling the Baltic (TTB). TTB is a collaborative storytelling project involving Laznia Centre for Contemporary Art (Laznia CCA), BTH, , Blekinge County Museum, Kaliningrad Branch of the National Centre for Contemporary Arts (NCCA), Nida Art Colony, Kunsthalle Rostock, Stena Ferry Line and ArtMission.

The external R&D funding for ToS during 2011 was 78% of the total R&D budget counted on processed and granted income.

Background

The research division of Technoscience Studies belongs to the department of Technology and Aesthetics at the School of Planning and Media Design (DSN) at Blekinge Institute of Technology – a profiled University of Applied ICT and Sustainable Development.

The activities at ToS began in 1998 in the then Department of Computer Science and Economics with earmarked funds appropriated by the Parliament through the research bill 1996/97:5. A professor chair in ICT and gender research was filled the 1st July 1999. ToS is a new field of technology and engineering and is highly innovative in terms of development of gender research within technoscience, media technology, methodology for ICT related research and innovation system and cluster development.

In addition to research, undergraduate and graduate education the activities embrace work with knowledge networks, campus development, external engagements, internal work at BTH and support work for external funding of research and research collaboration.

ToS is fully integrated into the profile of BTH in terms of both applied IT and interactions in triple helix constellations.

Staff

Administrators

Anita Carlsson / Head of Administration, Department of Administration, DSN

Madeleine Persson / Economist, Department of Administration, DSN

Marie Hallberg / Economist, Department of Administration, DSN

Ulrika Magnusson / Research education administrator, Department of Administration, DSN

Peter Ekdahl / Dean of School, DSN

Paul Carlsson / Head of Department of Technology and Aesthetics, DSN

Researchers

Carlos Acevedo / Doctoral student

Gerhard Bax / Adjunct Professor

Erik von Bahr / Senior advisor

Christina Björkman / PhD, senior researcher

Maria Bäcke / Doctoral student and PhD

Paul Carlsson / University lecturer

Linus de Petris / Doctoral student

Julius Ecuru / Lic., Doctoral student

Peter Ekdahl / PhD, Senior lecturer

Pirjo Elovaara / PhD, Senior lecturer

Anders Falk / Doctoral student, University lecturer

Peter Giger / PhD, Senior lecturer

Elisabeth Gulbrandsen / Lic., Doctoral student

Kerstin Gustavsson / University lecturer

Tomas Kjellqvist / Doctoral student, Project director

Henriette Koblanck / Guest Professor

Peter Lating / PhD, postdoc

Lydia Mazzi / Lic., Doctoral student

Rebecka Molin / Lic., Doctoral student

Joshua Mutambi / Lic., Doctoral student

Charles Otine / Lic., Doctoral student

Linda Paxling / Doctoral student

Birgitta Rydhagen / PhD, Senior lecturer

Fatuma Simba / Lic., Doctoral student

Dan Sjögren / Project manager

Lena Trojer / Professor, Head of Division

Theoretical stance

One of the aims of Technoscience Studies is to develop complex knowledges about ICT including media technologies as reality-producing and transforming technologies as well as of the transformations that follow in its wake. ToS is including perspectives of feminist research developed within technoscience. This presupposes participation in the appurtenant processes of transformation and knowledge production. Seeing ICT as reality-producing technologies rest on the idea that all of us, researchers in the field included, are enmeshed in development processes. No innocent positions exist. ICT intervenes in and co-creates people's everyday lives. On the other hand, ICT is developed and interpreted and practiced by people. This aim of Technoscience Studies is thus to create theoretical bases as well as practises for developmental processes in ICT-related fields as well as in the context of innovation systems.

The latter has increased in importance for ToS with a strong and upcoming research profile in innovation system and development including the International Graduate School for Innovation Systems, Clusters and Innovations together with a number of international partners.

Within international gender research with strong links to the dominant technological fields of our age – information and communication technology, biotechnology and material technology – there is a widespread understanding of the production of knowledge and technology as processes that take place in distributed systems. In these days and age knowledge is generated in the overlapping borderland of universities, companies and other regional, national and international entities. These processes are not least apparent in our region Blekinge and affect the way in which BTH carries out R&D work. The term technoscience connotes this understanding of the concurrent production of knowledge, technology and reality. The way in which technoscience is defined by internationally leading researchers such as Donna Haraway, raises issues about boundaries and transgression of the boundaries between science, technology, politics and society, and between humans and non-humans as in the processes of hybridisation between people / machines / species (cyborg theories).

The PhD program of ToS belongs to the faculty of technology at BTH.

Along with research activities based on the individual research projects, ToS also has a joint research programme organised as division seminars and courses in order to develop epistemological competence and skills for theoretical and methodological work. Prospective doctoral students and university lecturers also participate in this research programme.

RESEARCH PROJECTS

The research projects are listed below within the four main profile areas of the research division of TechnoScience Studies. The projects can either be doctoral thesis projects or research projects. In some cases the projects belong to more than one profile area.

DESIGN FOR DIGITAL MEDIA

Theoretical Frameworks for ProduSer Oriented Design for Digital Media

Peter Ekdahl, R&D project

The aim is to develop a research structure as well as theoretical frameworks for the concept ProduSer Oriented Design for Digital Media. When starting the process of producing digital media, there are no separate roles as producer and user. The roles are intertwined in complex and dynamic relations. The understanding of these complex relations opens up for new ways of developing relevant and future oriented applications. The R&D project is closely linked to the under graduate programmes Digital Games, Digital Visual Production, Digital Audio Production, Web Development and Basics for Digital media. The project encompasses development of a deeper and more complex understanding of digital media technology and design as an area of knowledge. The aim of the project is also to define core areas and develop transformational strategies in order to find out how traditional disciplines relate to the core areas of media technology and design including serious gender perspectives.

Social Networks in a Sustainable World

Peter Giger, R&D project

How can social networks, as the World Wide Web, support the human transition into a sustainable world? Is it reasonable to view social networks as valuable assets for sustainability? If the answer is no - why not? If the answer is yes - how to use the brief human experience of hybrid networks? How to meet the challenges of sustainability by configuring the human-technology relation in the brave new digital space?

Technology as an intrinsic part of humans — from eGovernment to iGovernment

Linus de Petris, PhD project funded by Swedish Agency for Economic and Regional Growth

The research is set in a municipal government context, focusing on participation and design and use of ICT. It is carried out on a basis of action research. The public sector has for many years declared visions of technology (the Internet in particular) to enable so called 24-hour services, strengthening democracy, empowering civil society to influence policy making and political decisions, and much more.

Are these expectations on technology and the Internet in particular to solve problems in and for society realistic? Trying to fully conceptualize the role of ICT in a municipal context and what consequences design will have for different people and processes is very complex, probably not fully graspable. The theoretical work is inspired by several disciplines, including design theories, technoscience, information architecture and cognitive science.

Ideas on design as participation in assemblages of humans and non-humans is a foundation in my work. John Law's method assemblages and Pelle Ehn's notion of design things are key in the understandings of contemporary challenges for participation, design and innovation. Another important aspect for the work is the concept of hyper-reality from the thoughts of Jean Baudrillard.

The digitizing of rituals; aesthetics in digital media

Anders Falk, PhD project funded by local government of Karlshamn

The main objective is to study rituals as design hooks in digital media.

The more specific objectives concerns the issues of

- the choices of transparent virtual alternatives instead of unsure realities
- changes from gameplay mechanics towards emergent / internal meta systems.

The reality producing dynamics of the mobile artefact in East Africa

Linda Paxling – PhD project

The research objective is to provide a feminist and postcolonial technoscientific understanding of how the mobile phone is changing the reality producing dynamics in an East African context.

Following a transdisciplinary approach to ICTs and society the research will showcase the dual process of the reality producing shaping/design of mobile technologies for development (M4D) and the impacts of mobile phone usage on society.

By merging a feminist technoscience stance with an action-oriented research approach my work aims to apply a locally contextualized knowledge production of the institutionally structured situation (government initiatives, NGOs and private companies) as well as the unstructured everyday situation (everyday mobile phone use), and based on the findings suggest improvements of strategies, practices, and knowledge of the local mobile environments for policy-makers, practitioners and academics.

Keywords:

M4D, ICT4D, Feminist Technoscience, Postcolonial Technoscience, Cyborg Anthropology, Livelihoods, East Africa, Participation, Representation, Democratization

Creativity in Media Technology Graduate Education

Paul Carlsson, PhD project

The PhD project starts in the issue of creativity and how to implement this in technical graduate education.

Educational reports published over the last 20 years have consistently identified creative thinking and problem solving as among the most crucial skills necessary for success in today's workplace, and thus have called on educational institutions to do more to promote these abilities (Carnevale et al., 1990; Secretary's Commission on Achieving Necessary Skills, 1991; Partnership for 21st Century Skills, 2008)

Is it possible to design a learning environment in the context of media technology training that gives more focus to creativity and problem solving instead of the traditional fact learning situation?

ICT FOR DEVELOPMENT

Transdisciplinary Research Development in Triple Helix Context in Uganda

Dr Peter Okidi Lating, post doc project, funded by Sida.

The aim of the postdoctoral study is to strengthen transdisciplinary research skills of the candidate and improve graduate supervisory skills as part of the staff capacity development in the Faculty of Technology, Department of Engineering Mathematics/Computer Engineering, Makerere University, Uganda, The specific objectives are the following:

- Publish a book titled “ Realities of Transdisciplinary Research Development in Uganda: Co-evolution in triple helix processes”, published at Makerere University Press, 2011
- Publish three state-of-the-art journal papers where longitudinal data analysis method is used.
- Jointly supervise a PhD student under the Innovative Systems and Clusters Program (ISCP), in process.

Modelling Connectivity for e-Learning in Tanzania:

Case - Study of Rural Secondary Schools

Fatuma Simba, PhD project funded by Sida.

Broadband access network (last-mile connectivity technology) is a prerequisite to deliver multimedia e-learning contents. The main objective of this research project is to model a cost-effective and performance efficiency connectivity solution for rural secondary schools to access e-learning services. Specific objectives are:

1. To determine a cost-effective access network technology (last mile connectivity technology) to the rural areas.
2. To evaluate performance of the cost - effective technology in order to identify key performance parameters for the e-learning services to be delivered with the required quality of service (QoS).

Data Mining in Health Care: HIV patient monitoring in Uganda

Charles Otine, PhD project funded by Sida.

The main objective of the research project is to develop the incorporation of data mining techniques in the monitoring of health care of AIDS patients in Uganda. The more specific objectives are to

- review critically the literature on data mining in health care and patient monitoring focusing on AIDS patients.
- assess the status of information systems in health care in Uganda.
- develop the conditions for integrating data mining in AIDS patient monitoring.
- identify the constraints to incorporating data mining in monitoring of AIDS patients in Uganda.
- explore the deployment of data warehouses for use in data mining or knowledge discovery in AIDS.

Geo Spatial Technologies as Decision Support Tools for Road Infrastructure Maintenance in Uganda

Lydia Mazzi, PhD project funded by Sida.

The main objective is to develop an integral framework for incorporating geo-information technologies as decision support tools in road infrastructure maintenance works in Uganda. More specifically the project will

- identify gaps in the use of GITs in the road infrastructure maintenance process of Uganda and identify the limitations to enhancing the use of these technologies,
- develop a model for predicting infrastructure areas due for maintenance with a view to facilitate the prioritization of road infrastructure maintenance actions, and
- develop an algorithmic framework that incorporates GITs as decision support tools in road infrastructure maintenance in Uganda

The main supervisor for Lydia Mazzi is Associate Professor Gerhard Bax.

The reality producing dynamics of the mobile artefact in East Africa

Linda Paxling – PhD project, see above.

INNOVATION SYSTEM AND DEVELOPMENT

Business Incubation Systems as an integral development strategy for industrialization of Uganda

Joshua Mutambi, PhD project funded by Sida

The main objective of the research is to establish the impact of the BI initiatives and to develop the most suitable model of small business incubation that can stimulate Industrialization in Uganda”

Specific objectives are

- to study experiences in other countries in respect to business incubation and industrial development and in the context of Government support
- to determine the factors of business incubators that affect growth and productivity of businesses in Uganda
- propose an appropriate Ugandan Business Incubator model.

Unlocking the Binding Constraints in Uganda’s Innovation System

Julius Ecuru, PhD project funded by Sida

The main objective of the research project is to establish priorities for interventions within Uganda’s innovation system.

Specific objectives are to

- map actors in Uganda’s innovation system
- assess the patterns of interactions with respect to knowledge generation and exchange among the actors
- model the flow of knowledge and information among the actors
- identify the binding constraints and opportunities within the innovation system.

Formation of clusters focusing generation of a co-evolution context of university and industry in Cochabamba region, Bolivia

Carlos Acevedo, PhD project

Main objective is to develop knowledge about the cluster shaping process focusing the generation of a co-evolution context between the university and the cluster firms based on the experiences of Cochabamba city, Bolivia.

Specific objectives are to

- describe the clustering process taken place in the region of Cochabamba, Bolivia
- determine success factors in the clustering process for the development of a co-evolution context between the university and the cluster firms
- analyse the impact reached during the clustering process in the framework of co-evolution processes.

Aid, Knowledge and Technology Transfer

Tomas Kjellqvist, PhD project

Main objective

Recent critique of development aid by Easterly and Moyo has among other things pointed to how recipients get dependent on aid. This study will use the debate created by these authors as a context to analyse how development paradigms on technology transfer in the energy sector has contributed to shape the situation that the authors are criticizing.

Specific objectives are

- to analyse how the role of knowledge and knowledge institutions have been treated in development paradigms, with snapshots from the 1960's, 1970', 1980's, 1990's and the first decade of the 21th century
- based on this model propose an experimental model for introduction of renewable technologies to reduce poverty
- to make recommendations for the next era of technology transfers linked to the climate change mitigation and adaptation funding mechanisms.

Solar power to the poor people: Using innovative clusters to develop business models for technology transfer

Tomas Kjellqvist, project manager, Erik von Bahr, R&D project funded by Sida

This project proposes to improve the productive uses of energy in innovative clusters with solar energy installations adapted to their needs. The project will draw on previous experience of income generation through almost 75 innovative clusters in South Africa, Tanzania and Uganda. These 75 clusters are based on agglomerations of small and medium sized enterprises with a total geographical spread encompassing both urban and rural surroundings. Each cluster consist of a number of firms that are linked in a production chain or operate in the same trade, but cooperate to achieve joint competitiveness. They involve people in different productive functions throughout the value chains, and we find these people in very different socio-economic situations. Investing in solar technology for clusters would show long-term social and economic effects as the involved individuals of all social strata could increase their incomes over time.

The clusters can provide opportunities to test and improve solar energy technology in real world applications as they represent a wide range of trade areas. Working with clusters means that there are opportunities to replicate solutions and to find advantages of scale. The cluster members have acquired a basic understanding of entrepreneurship and openness to technological change. As a result they would be prepared to adopt solar technologies and adapt them to their needs. They have good experiences of participation in capacity building programs. Besides opportunities to try out solar energy technologies the clusters could develop adapted business models to apply for loans to construct experimental sites. These sites will be arenas to define research for further development of solar technology and for improving mechanisms for technology transfer.

In this case, technology transfer and capacity building requires a close collaboration between the cluster entrepreneurs as end-users, solar technology firms as providers of technology, and universities as providers of training, expertise and new knowledge. Policymakers at national and municipal levels need to be involved to at an early stage to facilitate and give political, and possibly financial, support to the activities. A constellation of these actors is commonly referred to as a "Triple Helix". The actors are in a continuous dialogue to solve problems and transcend barriers with joint efforts. The Triple Helix requires that the

respective actors join in to share their own specific knowledge and networks, and are prepared to learn things of use to their own activity area from the others. If such trust is established, the effects of the project are more likely to be sustainable. Each actor could also use his/her network for dissemination of the results, which provides for replication of approaches and solutions in a wider context.

FEMINIST TECHNOSCIENCE

The New Production of Politics

Elisabeth Gulbrandsen, PhD project

The main objective is to explore conditions for developing responsible technoscientific cultures - in and beyond the academy. The linearity as well as the division of labour suggested by the “technology push” and “society pull” policy models are heavily criticized for ignoring the complexity and dynamics that emerge partly as a consequence of the success and pervasiveness of science and technology in late modernity.

Science and society have both become transgressive invading each other’s domains, and policy questions are enhanced into political questions. A third, more interactive policy model is emerging figured in transdiscursive terms like “strategic science”, “innovation system”, “postnormal science”, “technoscience”, “mode 2”, “agora”.

Social Networks in a Sustainable World

Peter Giger, R&D project, see above

A Sight/Site for Transparency or Opacity?

Notes on Knowledge Production and Feminist Technoscience

Rebecka Molin, PhD project

The research is devoted to looking at ways of understanding the visual, and to narrate the image as a site for meaning-making and negotiations between subjectivity, gendered relations, technology and technological artefacts.

This is done empirically by laying focus on the visual production form(at) as a way of doing and thinking about technology. My theoretical framing argues for the urgency of making images matter beyond the borders of either a clear re-presentation of reality, or the more postmodern theoretical perspectives that put emphasis on the empty image. In this, I engage with cultural thinker Jean Baudrillard and feminist technoscience theorist Donna Haraway, in order to try to understand the (im)material consequences of technology in relation to the production of the visual.

X-ovation : Developing e-services and e-administration

Pirjo Elovaara, Linus de Petris, Linus Peter Giger, financed by Swedish Agency for Economic and Regional Growth, 2009-2012

R&D-project in co-operation with NetPort.Karlshamn, BTH and Karlshamn municipality.

The aim of the project is, taking a point of departure from the partners’ competences, experiences, perspectives and interests, to make visible ongoing activities of information and communication in the society. The aims are also to develop new services and also new understandings of communication and information between public actors and citizens.

Epistemological Issues in Computer Science Education from Gender Research Perspectives

Christina Björkman, research project, quiescent during 2011

This is a project with university teachers in computer science at a Swedish university. The focus of the project is gender, knowledge and learning in computer science, and the project aims to deepen the teacher's knowledge and experience in these areas in order to develop their teaching. In the longer perspective, this concerns how to make computer science more interesting to a larger group of people than is the case today. This can be accomplished by, for example, discussing issues such as what computer "is", and how it is presented, and to learn to respect and accommodate greater diversity among students and their backgrounds, interests, motives and understandings.

Theoretical Frameworks for ProduSer Oriented Design for Digital Media

Peter Ekdahl, R & D project, see above.

The reality producing dynamics of the mobile artefact in East Africa

Linda Paxling – PhD project, see above.

Innovative clusters closing the gap between University and Society in East Africa. A living proof of Mode 2 excellence?

Birgitta Rydhagen, project manager, Lena Trojer, funded by Sida 2010 - 2012.

Universities in East Africa collaborate in innovative cluster initiatives in diverse locations in knowledge production in the context of application. This means that scientific researchers participate in socio-economic development and poverty reduction by developing knowledge in close collaboration with actors in local communities, with business and Government. The umbrella organization PACF (Pan African Competitiveness Forum) provides a supportive structure and facilitates collaboration between cluster groups in different African countries.

The study focuses on two cases where cluster initiatives develop innovative solutions to address changing situations - climate change, increasing global market competition, deteriorating natural resources and an increasing need for diversified income generation among women and men. One case is the Tanzanian Zanzibar cluster for seaweed production. The other case is salt production cluster in lake Katwe, Uganda. Both clusters aim towards increasing product quality and product diversity to increase the income, and at the same time improve social conditions for workers and their families. Many of the participants are women.

The main aim is to study how innovative clusters can foster timely implementation of knowledge products with socioeconomic relevance. Focus is on the research component, since socioeconomic development is part of the strategic policies of universities in Uganda and Tanzania. The project includes focus group discussions and participatory exercises with PACF key persons and cluster members. Research results will be disseminated continuously and through a final report to research participants in the two clusters and to PACF partners. Together with one research partner from Tanzania and Uganda respectively, we will also participate in conferences arranged by Sida and UNESCO.

Designing Climate-Smart Water Adaptation Strategies for Sustainable Urban Development. A study of Cochabamba and Kota

Birgitta Rydhagen, financed by Sida 2011-2013.

Project leader Dr Julie Wilk and senior researcher Dr Anna Jonsson at Tema Vatten and CSPR, Linköping University are the main researchers in the project. The project aims to try and adjust a toolbox developed for assessment of vulnerability and adaptation strategies for climate change in municipal organizations. The project builds on a series of workshops with stakeholders within municipal organizations and citizens' groups. Collaboration is established with researchers in Bolivia and India to situate the toolbox and the process in the context of application. The role of Birgitta Rydhagen is to emphasize technoscience aspects of climate adaptation, and to develop gender relevant adjustments of the toolbox.

Feminist TechnoScience and a Shared Fragile Future - challenging the epistemological infrastructure in technology

Lena Trojer, R&D project

The intention is to bring forward discussions on how we, as researchers in technoscience, are deeply involved in technological transformation processes through our knowledge production. The focus is turned towards the knowledge production itself and the university as partner in distributed research processes. The contemporary situation is understood as circumstances, where the boundaries between universities, industry, public sector and other kind of institutions and authorities are exceedingly hazy concerning knowledge production and evolving into complex co-evolving processes. The discussion is kept to the role and accountability of the actors at the universities. There is an emphasis on the need for (self)reflection in technological transformation processes as far as scientists are concerned.

Other ongoing projects

- Sms application project “iFarms”, Uganda, Sweden, Philippines, sponsored by SPIDER, see below under Internationalisation
- Partner in the national graduate school InterGender financed by VR and coordinated by Linköping University
- Collaboration with Bauhaus University, Weimar, for developing a joint R&D program
- GenisLab; The Gender in Science and Technology LAB, EU project within FP7
- Research collaboration with Faculties of Makerere University, Uganda, University of Dar es Salaam and Nelson Mandela African Institute of Science and Technology, Tanzania, Universidad Mayor de San Simon, Universidad Mayor de San Andres, Bolivia, see below under Internationalisation.
- R&D collaboration in PACF (Pan African Competitiveness Forum) and ISCP-Bolivia (Innovation System and Cluster Program) funded by Sida.
- Blekinge County Council/ Centre for Competence: development of reflection methods within the ‘Äldrelots’-project (Jan Björkman and Pirjo Elovaara)
- Nationella genusforskarskolan (National Gender graduate school) in Umeå, Christina Björkman, Pirjo Elovaara
- R&D in design methodology for lecturers at the media technology under graduate and graduate programs.
- The Swedish Faculty for Design Research and Research Education

Postgraduate degrees awarded

Licentiate of Technology	Pirjo Elovaara 2001 02 02
Licentiate of Technology	Christina Björkman 2002 06 14
Licentiate of Technology	Peter Ekdahl 2002 10 25
Doctorate of Technology	Birgitta Rydhagen 2002 12 18
Licentiate of Technology	Annelie Ekelin 2003 01 27
Licentiate of Technology	Inger Gustafsson 2004 05 07
Doctorate of Technology	Pirjo Elovaara 2004 05 28
Doctorate of Technology	Christina Björkman 2005 05 23
Doctorate of Technology	Peter Ekdahl 2005 12 09
Licentiate of Technology	Peter Giger 2006 06 09
Licentiate of Technology	Peter Okidi Lating 2006 12 04
Doctorate of Technology	Inger Gustafsson 2008 01 18
Licentiate of Technology	Ellen Kalinga 2008 05 28
Licentiate of Technology	Suzan Lujara 2008 05 28
Doctorate of Technology	Peter Okidi Lating 2009 03 06
Licentiate of Technology	Fatuma Simba 2010 06 28
Doctorate of Technology	Ellen Kalinga 2010 12 08
Doctorate of Technology	Suzan Lujara 2010 12 08
Doctorate of Technology	Peter Giger 2010 12 15
Licentiate of Technology	Rebecka Molin 2011 02 11
Licentiate of Technology	Charles Otine 2011 03 31
Licentiate of Technology	Lydia Mazzi 2011 06 01
Doctorate of Technology	Maria Bäcke 2011 05 27
Licentiate of Technology	Joshua Mutambi 2011 06 10
Licentiate of Technology	Julius Ecuru 2011 09 24

Publications

F. Stodt, A. H. N. Rice, L. Björklund, G. Bax, G. P. Halverson, T. C. Pharaoh, "Evidence of late Neoproterozoic glaciation in the Caledonides of NW Scandinavia", *Geological Society, London, Memoirs* 2011; v. 36; p. 603-612 doi: 10.1144/M36.58

Maria Bäcke, doktorsavhandling, *Power Games: Rules and Roles in Second Life*, Blekinge Institute of Technology Doctoral Dissertation Series No 2011:09

Linus de Petris, Pirjo Elovaara, Göran Hagert, "Participation in public – a reflection on the design of controversial things", published in *Proceedings SWEG 2011 - 8th Scandinavian Workshop on E-government*. February 7-8 2011, Tampere, Finland.

Julius Ecuru, Peter Lating, Yasin Ziraba, Lena Trojer, "Integrating Science, Technology and Innovation in the National Development Planning Process: The Case of Uganda", published in *Proceeding 2nd International Conference on Advances in Engineering and Technology (AET2011)*, MacMillan 2011

Julius Ecuru, licavhandling, *Fostering Growth in Uganda's Innovation System*, Blekinge Institute of Technology Licentiate Dissertation Series No 2011:11

Pirjo Elovaara, "The uninvited – travelling around in an ICT-project", conference presentation at *Dilemmas for Human Services 2011*, Thursday 1st – Friday 2nd September 2011, London, UK

Pirjo Elovaara, Annelie Ekelin, "Digital Storytelling Crosswise - Silences, Places, Identities and Non-Humans", published in *Digital Proceedings The 4th International Conference on Digital Storytelling Create, Share, Listen*, Lillehammer, Norway, February 5-7, 2011. An edited version presented at Places, people, stories an interdisciplinary & international conference. Linnaeus University, Kalmar 28-30 September 2011

Pirjo Elovaara, Kerstin Gustavsson, "Ordering a messiness? – diffracting an ICT-project in Rwanda", conference presentation at The 6th European Conference on Gender and ICT, March 8-11, 2011, Umeå, Sweden

Pirjo Elovaara, Kerstin Gustavsson, "Ordering messiness? – diffracting an ICT-project in Rwanda", published in *Bridging Gaps – Empowering Women in Development through ICT* (Spider, 2011)

Peter Giger

- *Technoscience Philosophy – Deleuze and concept creation in relation to technoscience practices*, to be submitted

- *The Thousand Plateaus of the Internet*, to be submitted

Lydia Mazzi Kayondo, Gerhard Bax, Sandy Stevens Tickodri Togboa, "Algorithmic Incorporation of Geographical Information Technologies in Road Infrastructure Maintenance in Uganda", published in *Proceedings 2nd International Conference on Advances in Engineering and Technology (AET2011)*, MacMillan 2011

Lydia Mazzi Kayondo, Gerhard Bax, Sandy Stevens Tickodri Togboa, "Low Cost Methodology for Preliminary Road Maintenance Decision Support", published in *Proceedings 1st Conference on Advances in Geomatics Research*, Kampala, 2011

Lydia Mazzi, licavhandling, *Geographical Information Technologies for Road Infrastructure Maintenance in Uganda*, Blekinge Institute of Technology Licentiate Dissertation Series No 2011:08

Rebecka Molin, licavhandling, *A Sight/Site for Transparency or Opacity? Notes on Knowledge Production and Feminist Technoscience*, Blekinge Institute of Technology Licentiate Dissertation Series No 2011:01

Joshua Mutambi, Joseph K. Byaruhanga, Lena Trojer, Kariko B. Buhwezi, Peter O. Lating, "Transferring Best Practices for Uganda Technological Innovation and Sustainable Growth", published in *Proceedings 2nd International Conference on Advances in Engineering and Technology (AET2011)*, MacMillan 2011

Joshua Mutambi, licavhandling, *Stimulating Industrial Development in Uganda through Open Innovation Business Incubators*, Blekinge Institute of Technology Licentiate Dissertation Series No 2011:10

Peter Okidi-Lating, "Hybrid e-learning for rural secondary schools in Uganda: Co-evolution in triple helix processes" in *Proceedings of the Second International Conference on Advances in Engineering and Technology*, published by Macmillan Uganda (Publishers) Ltd, 2011, ISBN 978-9970-214-00-7, pgs. 270-276.

Peter Okidi-Lating, "Longitudinal analysis of performance of Ugandan rural advanced level students in Physics practical"s in *Proceedings of the Second International Conference on Advances in Engineering and Technology*, published by Macmillan Uganda (Publishers) Ltd, 2011, ISBN 978-9970-214-00-7, pgs. 277-283.

Peter OkidiLating, *Realities of transdisciplinary research development in Uganda: Co-evolution in triple helix processes*. ISBN: 9970-05-040-X. Makerere University Press, Kampala, Uganda 2011

Charles Otine, licavhandling, *Participatory approach to data warehousing in health care: UGANDA'S Perspective*, Blekinge Institute of Technology Licentiate Dissertation Series No 2011:04

Kajsa Petersson, Pirjo Elovaara, "49 000 000 bubblor, mellan process och resultat", conference presentation *Högskola och samhälle i samverkan 2011* conference, May 4-6, 2011, Karlstad, Sweden

Birgitta Rydhagen, Carin Dackman "Integration of sustainable development in sanitary engineering education in Sweden", *European Journal of Engineering Education*, 2011, Vol. 36, No. 1, pp. 87-95.

Birgitta Rydhagen, "Det finns inga skadedjur", satellittext till Elin Wägners text "Molnfödelse", *Tidskrift för Genusvetenskap*, 2011 No.4.

Fatuma Simba, Lena Trojer, Bakari Mwinyiwiwa, Nerey Mvungi, Emmanuel Mjema, "Broadband Access Technologies for Rural Connectivity in Developing Countries", published in *International Journal of Research and Reviews in Computer Science (IJRRCS)*, 2011 volume 2 issue 2.

Lena Trojer, Peter Okidi Lating, "Gender Research as Knowledge Resource in Technology and Engineering", published in *Proceedings of the Second International Conference on Advances in Engineering and Technology (AET2011)*, MacMillan 2011

Media Coverage about the Division of Technoscience Studies and its Members

Virtuellt 25/2011: Interview with Pirjo Elovaara, www.bth.se/forskning.nsf/sidor/virtuellt-arkiv

SPIDER NEWS, 2011, Peter Okidi Lating, The Ifarm Project, which aim is to develop and apply SMS technology to address the information and development needs of the under privileged dairy farmers in Western Uganda
<http://www.spidercenter.org/news/spider-supported-ugandan-project-%E2%80%9Cifarms%E2%80%9D-wins-national-innovation-award>

Daily Monitor, 2011 03 21, page 17, Julius Ecuru, “The only sub Saharan African on the Obama Bioethics commission”,

Entré, nr 4, 2011, p. 9, Julius Ecuru o Joshua Mutambi, “Uganda behöver fler inkubatorer” (Uganda needs more incubators)

Genus nr 1 / theme Innovation, page 26 – 29, 2011, Porträttet (The Portrait), Lena Trojer, http://issuu.com/genus_sv/docs/genus1_11

Interview in Radio Blekinge 2011 12 20 about BTH and gender equality.

Postgraduate activities

InterGender

ToS partner in the VR funded National Graduate School

InterGender links Swedish PhD programs in Gender Studies and set up relations to four major European Research Schools within the area. Participants are Gender Studies units at the universities in Blekinge, Göteborg, Linköping, Luleå, Lund and Örebro that have established Gender Studies as a research training area of its own, as well as Gender Studies units at the universities of Stockholm, Uppsala and Umeå. International partners are the Finnish, the Dutch and the Inter-Nordic gender research schools as well as the transdisciplinary gender research school at Humboldt University, Berlin. InterGender is linking these strong, but scattered research training units in a joint, systematized program of PhD courses, PhD supervisors' courses, thematic research seminars and conferences. A clustering of PhD students in long-term trans-institutional and ICT-facilitated discussion groups is an aim. It is expected that InterGender will generate synergies and a significantly enhanced level of quality due to critical mass and complementary expertise of the research staff. Pirjo Elovaara, Lena Trojer and Rebecka Molin are working with InterGender. During the year a thematic workshop was planned. Associate professor Laura Watts at IT University of Copenhagen was booked as the resource person under the theme of *Future Imagination*. The workshop is planned for March 2012 at BTH, campus Karlshamn.

Research supervisor training

FLUS, 4,5 ECTS

The two universities BTH and Linné University in Växjö and Kalmar provide a joint research supervisor training for staff holding a Ph.D. The Faculty Board has tasked Lena Trojer to be the programme director on BTH's behalf. During the year Peter Giger participated in the supervisor training starting in December 2011.

Division Seminars and Graduate Course

Staff engaged in research at Technoscience Studies as well as lecturers gather for division seminars and graduate courses, where research activities and fundamental choices for our understanding of the field are discussed and developed and where individual researchers present their work for discussion. The following division graduate course and seminars were held during the year:

- 2011 01 24 Aesthetics in a Bauhaus university context, Professor Frank Eckardt, Bauhaus university, Weimar, lecture at Graduate course Aesthetics for Digital Media.
- 2011 02 06 Literature seminar with text of Jan Thavenius – Pedagogics of Aesthetics, The Radical Aesthetics, Graduate course Aesthetics for Digital Media.
- 2011 03 18 Aesthetics and Industrial Design, Professor Henriette Koblanck, Linnéuniversitetet and BTH, lecture at Graduate course Aesthetics for Digital Media.
- 2011 04 28 Manual skills and feminist technoscience, Technology licentiate Rebecka Molin,
- 2011 06 14 Research seminar on research activities at ToS
- 2011 09 15 Research seminar on research activities at ToS
- 2011 10 28 Research seminar focusing the concept technoscience
- 2011 12 19 Literature seminar on *Bodily Natures* by Stacey Alaimo and *Between the Practical and the Academic, The Relation of Mode 1 and Mode 2 Knowledge Production in a Developing Country* by Dana G. Holland plus presentation of research activities at ToS.

Development of the R&D profile Design for Digital Media

Position

The development work of the Media Technology Group in the undergraduate programs indicates that the core knowledge foundation of design for digital media is evolved in the expression of the production (in Swedish *gestaltande produktionen*). Consequently there are specific demands on the epistemological and methodological bases as well as the formation of the R&D profile to support the activities.

The objectives of the R&D profile of Design for Digital Media are:

- to strengthen and more clearly articulate the design environment for undergraduate courses
- to develop Master programs and courses on graduate level
- to develop the research profile of Design for Digital Media in the PhD program of Technoscience Studies into a specific PhD program of its own
- to provide relevant qualifications for the teacher staff of Media Technology at graduate level
- to strengthen cooperation with external education and research actors nationally and internationally
- to develop co-production with the industry and the public sector.

The R&D profile of Design for Digital Media includes the following:

- Seminars developing the conceptual repertoire. The activities are open to the teacher as well as researcher staff. This enables us to identify and prioritise the needs of qualification for our teachers. The activities include seminars with guest speakers, literature and writing workshops, participation in conferences with papers.
- Courses at graduate level to qualify the teachers and invite applicants from other university sections and colleges in order to broaden our networks.
- Graduate school at the national level in collaboration with other universities. This facilitates teachers' qualifications and networking.
- Research groups focusing three areas: theory, development of design education and applied research.

The Swedish Faculty for Design Research and Research Education

Design for Digital Media at ToS is a member of the Swedish Faculty for Design Research and Research Education. The aim of the Swedish Faculty for Design Research and Research Education (previously the Center for Research in Design) is to create a solid, critical and future-oriented platform for research, advanced practice and education in the field of design.

The Swedish Faculty for Design Research and Research Education was founded in December 2007 financed by Swedish Council of Research (VR) and Royal Institute of technology (KTH) and is a national center for design research based at KTH Royal Institute of Technology. The faculty encourages the development of design as a field of knowledge so that it can respond to social, economic and technological challenges in society in a sustainable, innovative and aesthetically aware manner. Currently the faculty is hosting 47

doctoral students from 12 of its 20 member institutions throughout Sweden.

Design concerns us all - everyday and everywhere, in private and in public. In this sense, design is society's biggest cultural sector. Thanks to its ability to effect renewal, design also has a decisive impact on competitiveness in many industries. Design research is needed so that design can develop its cultural and innovative role to meet the future's complex and rapidly changing world with its increased demands for sustainable development.

Research Development of Design Methodology

Professor Henriette Koblanck continued to be linked to ToS as guest professor during 2011. This was funded by the savings bank's foundation of Karlshamn Bank. The focus of the collaboration is development of design understandings and design practices for the research profile Design for Digital media. Henriette Koblanck holds a professor chair in design at the Department of communication and design at Linné University. Thanks to her work ToS and DSN, campus Karlshamn is full member of the research network S&R, Swedish Design Research Network. This broadens the national network considerably for the profile Design for Digital Media as well as brings the research into the national graduate school named Design faculty together with additional 18 universities in Sweden, see above. Henriette Koblanck works with a longterm competence development within design for research and teaching staff at ToS and DSN. Peter Giger, Paul Carlsson and Anders Falk participated in activities at the Design faculty during the year.

The International Graduate School on Innovation Systems, Clusters and Development

Background

As an impact of the development of the Innovation systems and Clusters program in East Africa (ISCP-EA) since 2004 and in Bolivia Cochabamba since 2007 one research component identified in the programme is PhD training. This component contributes with a research based understanding and practice of the development of innovative clusters and innovation systems. A number of active cluster facilitators have expressed a strong wish to do research as a PhD candidate within the frame of the ISCD or are already PhD students and wish to be linked to a graduate school of the ISCD.

The objective of the International Graduate School is

- to develop research based understanding and practice of innovative clusters and innovation systems and thus contribute to social/economic sustainability.
- to give PhD students international experiences and benchmarking possibilities within the core knowledge field of the graduate school as well as networking possibilities of value for future carrier.

Each PhD student is registered in his/her home university and follows the regulations of the home university. The doctoral student is free to participate in any of the activities offered by the graduate school. The participating doctoral student will receive a certificate from the graduate school when achieving doctoral degree.

The activities suggested include a curriculum catalogue, consortium of universities and key institutions, summer school focusing cluster development, innovation system and innovation

and development studies, list of PhD themes linked to relevant problem identification and advanced supervisor collegium development.

Presently Joshua Mutambi, Julius Ecuru and Carlos Acevedo are doing their research within the International Graduate School. Other PhD students are affiliated. Joshua Mutambi and Julius Ecuru defended successfully their **licentiate theses** at BTH during the year. An international group of supervisors is formed. Meetings were conducted with the Vice Chancellor of the Nelson Mandela African Institute of Science, Technology and Innovation in Arusha, Tanzania, concerning an African university hub for the International Graduate School. The Director of the International Graduate School, Tomas Kjellqvist, is heading the development of **a university consortium** with the following partners (in the initiating phase) - Institute of Economic Research on Innovations, Tschwane University, South Africa, the Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania, UMSS, Bolivia, UNU – Merit, Maastricht, Netherlands, Aalborg University, Denmark, BTH, Research Policy Institute, Lund University, Sweden.

Internationalisation

Technoscience Studies was involved in the following international R&D&I activities:

Partners in Developing Countries

Cooperation with the **College of Engineering and Technology (CoET) at the University of Dar es Salaam, Tanzania**, on an e-learning project. The form of cooperation is via doctoral studies within the Sida funded program ICT - Design and Implementation of a Web-based Interactive E-learning Framework. Two doctoral students, Ellen Kalinga and Suzan Lujara defended successfully their doctoral theses in December 2010. Fatuma Simba is finalizing her Ph.D. studies at both CoET and BTH, with three Tanzanian research supervisor and two Swedish research supervisor (ToS, Lena Trojer, Birgitta Rydhagen). Both Ellen Kalinga, Suzan Lujara and Fatuma Simba have conducted / are conducting their PhD studies both at their home university UDSM and at BTH.

Cooperation with the **College of Engineering, Design, Art and Technology (CEDAT) at Makerere University, Uganda**, on e-learning, datamining, GIS and innovation system projects. The form of cooperation is via doctoral studies and one postdoc. Four doctoral students, Charles Otine, Lydia Mazzi, Joshua Mutambi and Julius Ecuru are doing their Ph.D. studies at Makerere University and BTH with Ugandan research supervisors and Swedish research supervisors (ToS, Gerhard Bax, Birgitta Rydhagen, Lena Trojer). Peter Okidi Lating from Makerere University is doing his postdoc in collaboration with BTH, ToS.

Cooperation with the **Universidad Mayor de San Simón (UMSS) in Bolivia** on development of innovation systems. The form of cooperation is via doctoral studies. One doctoral students, Carlos Acevedo at UTT (Technical Transfer Unit at UMSS) is doing his Ph.D. studies at BTH with two Bolivia research supervisors and two Swedish research supervisor (ToS, Lena Trojer, Birgitta Rydhagen).

ToS was involved in a collaboration project concerning SMS-services for the rural areas in Uganda. The title of the project is "Leveraging mobile platform technology to address the information and development needs of marginalized communities (rural and urban poor)." The project management is located at CEDAT, Makerere University, in Uganda, with ToS at BTH as the Swedish collaborating partner. The collaboration also involves the ICT cluster in Uganda.

ToS is a collaborating partner to the new **Muni University, Uganda**, in the development of the Faculty of Technoscience both concerning under graduate curriculum, research and ICT infrastructure development.

The Scandinavian Institute for Competitiveness and **Development (SICD)** placed at ToS and supported by Sida and VINNOVA continued its activities in East and West Africa and Bolivia, see the website //si4cd.wordpress.com. The mission of SICD is to support social and economical development by facilitating cluster development and innovation. SICD include

collaborations between Swedish and African partners since 2003 and Bolivian partners since 2007.

Erik von Bahr, Dan Sjögren, Peter Kempinsky, Tomas Kjellqvist, Lena Trojer together with external experts constitute an international team working with Sida funded programs on Innovation Systems and Innovative Clusters Africa and Bolivia in partnership with SICD. The African program is coordinated by **PACF (Pan African Competitiveness Forum)**. PACF conducted during 2011 an annual conference in Uganda and cluster training workshops in Kenya. A comprehensive Completion Report of the Sida funded PACF / SICD program 2010 – 2011 can be found at ToS website www.bth.se/tks/teknovet.nsf
The Sida funded **Innovation System and Clusters Program in Mozambique** was relaunched. SICD collaborates with **FNI** (National Research Fund Mozambique) and conducted a facilitator training in a team including experts from SICD and PACF-Tanzania and PACF-Uganda.
In Bolivia the SICD team was facilitating training of cluster development in Cochabamba in collaboration with **UTT at UMSS** and with **DIPGIS at UMSA** (Universidad Mayor de San Andrés) in La Paz.

The implementation of **the International Graduate School on Innovation Systems, Clusters and Development** continued during the year in close collaboration with PACF, Makerere University and UMSS in Bolivia, see above. Joshua Mutambi, Julius Ecuru and Carlos Acevedo are doing their research within the International Graduate School. Other PhD students are affiliated. Joshua Mutambi and Julius Ecuru defended successfully their **licentiate theses** at BTH during the year. An international group of supervisors is formed. Meetings were conducted with the Vice Chancellor of the Nelson Mandela African Institute of Science, Technology and Innovation in Arusha, Tanzania, concerning an African university hub for the International Graduate School. The Director of the International Graduate School, Tomas Kjellqvist, is heading the development of **a university consortium** with the following partners (in the initiating phase) - Institute of Economic Research on Innovations, Tschwane University, South Africa, the Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania, UNU – Merit, Maastricht, Netherlands, Aalborg University, Denmark, BTH, Research Policy Institute, Lund University, Sweden.

Central Institute for Applied Geosciences (CAIAG, Bishkek, Kyrgyz Republic) is the main partner in the Tien Shan region for our climate change related project EurasClimpact (see below). Gerhard Bax is responsible for dissemination of research results and training of local partners in mitigation of global change related geohazards. For a workshop and training sessions an Open Source E-learning platform (LMS) has been established locally in Bishkek.

Partners in High Income Country

Humbolt University, Berlin

ToS collaborates with Humbolt University via the national graduate school InterGender.

Bauhaus University, Weimar

The collaboration with Bauhaus University and its Media Faculty continued during the year with the Graduate course Aesthetics for Digital Media. The development of long term relations with Bauhaus University in Weimar is highly valued by ToS and will find its more concrete activities in due time.

The GenisLab

The project aims to implement structural changes in a group of selected scientific organisations in order to overcome the factors that limit the participation of women in research. The nine partners are: CSIC (Spanish Superior Council for Scientific Research) Institute for Polymer Science and Technology, Spain; IPF - Leibniz Institute of Polymer Research Dresden, Germany; FTM UB _ Faculty of Technology and Metallurgy, University of Belgrade, Serbia; NIC _ National Institute of Chemistry, Slovenia; INFN, National Institute for Nuclear Physics, Italy; BTH _ Blekinge Institute of Technology, Sweden. Technical partners are: FGB- Fondazione Giacomo Brodolini, Italy; ITC/ILO _ International Training Centre of the International Labour Organization, Un Agency, International; ADS - Italian women in science organization, Italy.

During the year the BTH team of GenisLab coordinated a gender equality audit conducted by ITC/ILO _ International Training Centre of the International Labour Organization at BTH in May 2011. For further information see www.bt.se/genislab

Department for Environmental Geosciences, University of Vienna,

is contractor in the international project *Impact of climate change and related glacier hazards and mitigation strategies in the European Alps, Swedish Lapland and the Tien Shan Mountains, Central Asia*. Other cooperation partners are: Austrian Central Institute of Meteorology and Geophysics (ZAMG) and GeoForschungsZentrum Potsdam, Germany), more information is available on the official project-website <http://www.bth.se/dsn/eurasclimpact.nsf>

Cooperation between BTH, business and the community/politics

The cooperation profile of BTH is an explicit praxis in the activities of the Division of Technoscience Studies. Indeed, this praxis in itself constitutes empirical results for the production of knowledge, broadens the understanding of technology and innovation and creates relevance for the activities of ToS.

BTH campus Karlshamn

Most staff at the Division of Technoscience Studies is deeply involved in BTH's construction of a university campus in Karlshamn. This effort began in 2000 and has intensified as operations grow. During the past year this effort involved advanced cooperation in what is described as a triple helix context. The collaboration at NetPort also pertains to all kinds of undergraduate education and student issues, cooperation with upper secondary schools and other education providers, various EU project constellations, support for research also in cooperation with experience-based learning, local government and business contacts, incubation activities with participation in the savings bank's foundation of Karlshamn Bank (Sparbankens Näringslivsstiftelse) to promote economic development, etc. The long term support from the local Government of Karlshamn is highly appreciated and constitutes a base for a very fruitful development of NetPort.

NetPort and BTH are situated in the same premises. There are many activities going on at NetPort, which means visibility for BTH's presence in Karlshamn and a form of indirect marketing. The contacts with NetPort's director and staff during the year were vital for a fruitful collaboration especially in the profile area of Digital Media at BTH campus Karlshamn.

Commissions

Below is a presentation of commissions the staff members at the Division of Technoscience Studies had during the year, both at BTH and elsewhere. A conclusion to be drawn from the list of commissions as well as what is presented above, is that the collected expertise found at ToS is relevant in numerous important contexts.

Peter Ekdahl

- Co-supervisor for the PhD students Rebecka Molin and Anders Falk
- Acting dean of School of Planning and Media Design, 2009 – 2011
- Dean of School of Planning and Media Design 2011-

Pirjo Elovaara

- Co-supervisor for Thomas Persson in his PhD project “Making the Desirable Feasibility - towards an Integration of Gender Knowledge into Informatics Study Programs” (Nationella genusforskarskolan / Mittuniversitetet). He defended his thesis 2011.
- Co-supervisor for Linus de Petris in his PhD project “Technology as an intrinsic part of humans - from eGovernment to iGovernment”
- Member of the Gender Expert Group at National Research Council
- Board member of the National Graduate School InterGender, 2008 –
- Member of the GADNET – network
- Reviewer for Information, Communication and Society Journal, Graduate Journal of Social Science and Women, Work and Organization
- Committee member for IADIS ICT, Society and Human Beings conference
- Committee member of the 6th European Symposium on ICT and Gender

Peter Giger

- Member of the planning committee for the culture house, Östra Piren, Karlshamn
- Member of the research network “Digital Art and Culture in the Age of Pervasive Computing”
- Editor and technical developer of International Journal of Feminist Technoscience
- Co-supervisor for Anders Falk in his PhD project “The digitizing of rituals; aesthetics in digital media”
- Co-supervisor for Linda Paxling in her PhD project “The reality producing dynamics of the mobile artefact in East Africa”

Tomas Kjellqvist

- Vice-Chair of the Swedish National Commission for Unesco
- Member of the scientific expert group for Unesco, coordinated by the Swedish Research Council
- Member of the Advisory Board to CAAST-Net

Birgitta Rydhagen

- Contact person at BTH in the national research network Gender and Development studies (GADNET)
- Second supervisor to PhD students Ellen Kalinga, Suzan Lujara and Carlos Acevedo.
- Reviewer for International Conference on Engineering and Meta-Engineering (ICEME)

- Reviewer for the European Journal of Engineering Education (EJEE)
- Reviewer for Tidskrift för Genusvetenskap, www.tegeve.se

Lena Trojer

- Board member of the National Graduate School InterGender, 2008 -
- Member of the National Steering Committee of PACF-Tanzania 2006 -
- Member of PACF Council 2010 –
- Member of the Advisory Board for the Swedish Secretariat for Gender Research 2010 –
- Member of the International Advisory Board for the Second International Conference on Advances in Engineering and technology (AET2011)
- Director of Scandinavian Institute for Competitiveness and Development, DSN, BTH, 2008 -
- Board member of the Savings Bank's Foundation of Karlshamn Bank, 2002 –
- Board member of NetPort.Karlshamn, 2004 –
- Member of the Grading Committee for the Jens Sörvik's doctoral thesis, Research Policy Institute, Lund University
- Reviewer of application for a position as full professor at Makerere University
- Reviewer of application for a position as senior Lecturer in Media Technology, Södertörn University