# Division of History of Science, Technology and Environment KTH Royal Institute of Technology

**Strategy 2013-2017** 

## Our point of departure is

- that historical studies are central for understanding contemporary conditions and future change
- ① that science and technology are part of our culture, and shape and change environments and conditions for life on earth

We want to be a leading international environment for research and education through

- The research that contributes original perspectives and new insights on the relations between science, technology, environment and society
- ② education that reaches students of various backgrounds and broadens their knowledge and perspectives
- ② participation in public debates that raises new questions and challenges current ideas
- Duilding a diverse and integrated collection of historical expertise that is willing and able to address major societal challenges

#### The role of the strategy

The aim of the strategy is to formulate an active and well-informed orientation that will guide the directorate and co-workers in making day-to-day decisions and priorities in the future. It spans a period of five years, but should be revisited annually and actualized in ways that involve all members of staff. Parts of the strategy describe current practices at the Division, while others concern analysis, assessment, and strategic evaluations that will influence decisions and directions in the coming years. We also include an evaluation of the previous strategy for 2007-2012.

#### The basic idea of the strategy

The Division of History of Science, Technology and Environment has its roots in activities in the history of technology at KTH that go back several decades. This is the Division's second strategy statement; the first was formulated in 2006 and accepted in 2007. Working on the strategy has helped the Division develop as an academic environment and workplace. The strategy is intended to make daily work easier by providing direction for important decisions and guidance to current and future employees. It is also hoped that it will make activities in the Division more transparent and enable a more open and democratic working environment.

In this second edition of the strategy we draw attention to some important changes that have taken place since 2007 and identify strategic implications and conclusions for the Division. Where appropriate, we try to make practical suggestions for responding to those changes.

Especially since the mid-2000s, the Division has developed expertise in a unique combination of historical fields. Many share the common feature of recognizing a spatial or material perspective on the past. Some central themes are recognized in the Division's name, others are captured by established terms such as industrial heritage, media history, cultural history, energy history, history of universities, studies of research, higher education and innovation, and science and technology studies (STS).

Straightforward lines cannot be drawn between these fields; rather, we prefer to talk in terms of thematic clusters or focuses. Several of these are established sub-disciplines, such as environmental history, history of technology and history of science. The central strategic idea is to develop integrated combinations and collaborations within these clusters as well as with other themes present in the Division's research environment. This relates to all areas of operation, including education, research, and public outreach and engagement.

In the 2007 strategy we referred to this as a *multinuclear structure*. In the past few years this strategic idea has matured and can now be formulated as an ambition to develop an integrated environment recognized by a *postdisciplinary multinucleus*. The different themes are not pursued as independent disciplinary projects as the focus is on promoting interactivity. This is already visible in

the integrated postgraduate programme of the Division, which includes clear elements of several of the themes expressed in the Division's title. The undergraduate courses that we offer reflect a similar plurality and steps towards integration have been taken there as well.

The historical perspective creates a central, unifying element between the different thematic focuses and specialties. In general, the Division's activities fall within the late modern period with a focus on the period after 1900, but earlier periods are represented in both educational and research activities, as are current events in certain fields. Geographically there is still a focus on Sweden, but since 2007 both research and education has become more international and now relates to all Nordic countries as well as to the rest of Europe, Russia, the Arctic region, East and South Africa, and North America. Increasingly we work from transnational and global historical perspectives when we study actor networks, knowledge and technology in their geopolitical contexts.

Altogether the different subjects and thematic focuses provide significant breadth within the historical field. This unity in diversity is the Division's most important strategic asset. In addition, the Division also has broad points of contact with other historical sub-disciplines, as well as with several other disciplines in the humanities and social sciences. This resource must be nurtured, among other things through a recruitment process that ensures that the central fields at the Division remain solid and that new coworkers can take responsibility for projects as well as for essential parts of the postgraduate programme.

The strategy fits especially well with the priority of environmental and sustainability questions that KTH has implemented since 2011. Through a donation by industrialist Carl Bennet the Division was able to establish the KTH Environmental Humanities Laboratory in 2012. The EHL will be active on all levels, including under- and postgraduate education, research, and outreach. The Division has also received long-term strategic support for its longstanding focus on energy history and become established with a mandatory course that is part of the new engineering programme Energy and Environment.

#### The Division in 2017

The 2007 strategy made an attempt to estimate the desired size and structure of the Division in 2012. At the start of 2007 there were 25 members of staff at the Division: 2 professors, 1 part time (50 percent) guest professor, 5 researchers and 15 doctoral students. We did not think at that time that the Division had reached its optimal size and saw several reasons for it to grow, including development of breadth and potential for creating original master's and postgraduate programmes. Our strategic evaluation in 2007 was that in six to eight years the Division should comprise 35 workers: 5 professors, 5 associate professors, 10 postdocs and 15 doctoral students. An important reason for this quite substantial expansion was the ambition to start a master's programme with 35 students, which

would require resources in the form of staff. It was estimated that the annual turnover could be 25-30 MSEK.

By the end of 2012, that is after a little less than 5 years, the Division had 32 members of staff: 5 professors (including 1 adjunct, 1 guest professor on almost 40 percent, and 1 on leave), 2 associate professors, 2 assistant professors, 5 researchers or postdocs, 15 doctoral students, and 3 other staff. That is an expansion on par with the estimation made in 2007, albeit with a slightly different composition. The annual turnover was 23,5 MSEK in 2011; in 2007 it was 13 MSEK.

An expansion to about 32-35 MSEK per year and about 40 members of staff in 2017 seems both desirable and realistic considering the significant additional contribution of the KTH Environmental Humanities Laboratory. We would then have the requisites for a postdisciplinary multinuclear environment with several different more or less temporary research groups, a broader diversity of seminars and visiting researchers than at present and several postgraduate courses per year. Such a widened frame could also include a strengthened postdoctoral programme. International exchanges are also planned as part of the KTH Environmental Humanities Laboratory. Nevertheless, the increased size of the Division will not be such that it will preclude having a central seminar with good attendance. Conditions for expansion are progress in the strategic development of undergraduate education, potentially also the postgraduate programme, and continued success in the securing of external research funds.

Of these factors it is only the external funds that we have some control over, given that we are able to compete successfully with other applicants. When it comes to undergraduate courses and master's programmes we depend on internal priorities and strategic planning within KTH. Our opinion is that KTH should adjust its programmes better in the future to meet the needs and demands of society and no longer exclusively offer engineering education. This would open for additional categories of applicants, including students with backgrounds in the humanities and social sciences, and thereby increase the competitiveness for places at KTH. This could help make KTH a stronger and more relevant university and of course also open significant possibilities for completely new and unique combinations of technological and other fields of knowledge, including the humanities. Such a fundamental restructuring requires collaboration with other universities in the region, which is desirable for many reasons. In this way development at the Division is connected to changes within KTH, in the region and in national policies for research and education, and consequently we work to advance our strategic goals in the forums that are available to us.

#### **KTH Environmental Humanities Laboratory**

2012 saw the establishment of a new body within the Division, the KTH Environmental Humanities Laboratory. The EHL is based on a private donation, internal co-financing from KTH, and external

funds. The *vision* for the EHL is that it will be a forum for integrated activities in a humanities environment that is innovative and original and with an impact on society while remaining closely connected to research within the Division. During the period 2012-2017 a more comprehensive environment will be built that is recognized through both research and education and anchored in historical studies of science, technology and environment while also including other relevant fields in the humanities and social sciences.

*Education* is central and one ambition with the EHL is to increase the amount of education offered by the Division in line with the outlined strategy for the Division. Within the environmental humanities in particular collaboration with other institutions in the region appears especially vital and attractive, not least considering the recruitment base for students. What is said about undergraduate education in the next section is very much the point of departure for work in the EHL.

The EHL will also be used for systemically widening and strengthening *international collaboration at the Division*. This will be done by connecting the EHL to an international peer group, as well as by building an international circle of humanities research centres specializing in the environmental humanities and related areas. Between these there could be regular exchanges of doctoral students, postdocs and researchers. This is a demanding task that requires attention and perseverance but which could considerably advance the Division as an academic environment in the long run. Potential collaborators, with which we have already had some contact, include the Environmental Humanities Program at Stanford; the Institute for Advanced Study, Princeton; The Centre for Environmental History and the Fenner School of the Environment, Australian National University, Canberra; and the African Centre for Cities, University of Cape Town. Existing collaborations with Science and Technology Studies at MIT and the TIK Centre at the University of Oslo should also be included.

Recruitment of researchers and teachers to the EHL will reflect these ambitions. Building an innovative and integrated environment for environmental humanities requires a combination of new recruits, on different levels and sometimes with international backgrounds and from other humanities disciplines, and integration with current researchers and teachers at the Division.

The EHL will also pursue visible activities in the form of annual conferences, workshops and other events.

## Education for undergraduate and master's students

Education for undergraduate and master's students (GRU) made up about 12 percent of the Division's total turnover in 2012. That is a small part compared to many other divisions at the ABE school, which is relatively education heavy. It is however an important part, for several reasons:

- ☼ KTH is to a large extent an educational institute, in addition to its aspirations to be recognized for its excellent research. Traditionally KTH has been enlisted by the government to educate engineers and architects. By teaching undergraduate and master's students the Division takes part in that assignment, which gives us *legitimacy*.
- Most of those who want to pursue a career in academia need to teach to qualify for academic positions. To an increasing degree, this requires documented pedagogical skills and experience even if the teaching load is small. By offering undergraduate and master's courses we also provide opportunities for our staff to gain *qualifications*.
- Through our courses we can have an impact on the engineering education and in the long run on the kinds of engineers that go out into society. Engineers that have a broader understanding of technology and technological change are *better engineers*, and our courses can give them that understanding.
- Participation in undergraduate education can contribute to a *stimulating exchange between* research and education.
- Even if the undergraduate courses offer limited income they still enable full-time employment for almost three people. As mentioned, that might be small in comparison with other divisions, but nevertheless offers greater financial flexibility in an environment otherwise largely dependent on external funds.

Apart from the courses that the Division offers at KTH members of our staff are also asked to lecture on courses at other universities, which gives visibility both to these individuals and to the Division. However such activities have so far been of limited financial significance.

The gradual implementation of the Bologna process at KTH means that what used to be known as basic education has been divided into two categories, undergraduate and master's education, further divided into basic and advanced levels. Within these two categories there are optional courses that are not mandatory on any programme, and programme courses, which have are mandatory in certain programmes and which therefore provide a number of guaranteed students. Having had a number of such mandatory courses in the 1980s and 1990s, we have had very few such courses in the 2000s. The past few years have however seen a positive tendency and the Division now has courses and participation in more programmes. With regard to optional courses we have focused recently on courses on advanced level, as we expect the students to have more optional credits later on in their education.

Having many courses on advanced level is good for starting a process towards eventually registering our own master's course in the history of science, technology and environment. While it will not be possible to achieve fully in the next few years, it should be a long-term goal of the

Division to eventually establish an internationally attractive master's programme. New types of engineering programmes could enhance the recruitment of students from broad, multidisciplinary backgrounds. We should also be central in the establishment of an alternative engineering programme at KTH similar to bids at other universities for "humanities engineers".

The profitability of our basic education varies greatly between different courses. The most profitable are those that have the most students since our courses can be scaled up. The larger programme courses are financially sustainable and some are profitable. The more research-related courses often run at a loss due to too few students. That the basic education is nevertheless financially sound is thanks to the fact that the course Swedish Society, which is mandatory on several international master's programmes and a popular optional choice for many students, generates a substantial surplus. The discussion regarding what should be required from an optional course should be continued and new optional courses should be regularly added and dropped for financial as well as research related reasons.

Previously we have registered all our courses as add-on courses at the advanced level. In the past few years it has become more difficult to do so as KTH wants to promote these types of courses and limit their number. This means that it has sometimes been problematic for us to accept students from other universities to courses at the advanced level, because they have not been able to fulfill prerequisites. We should however carefully consider potential target groups for add-on courses at the advanced level, and possibly even tailor-make courses for certain groups. Yet another option would be courses on demand, something we have little experience of so far.

One way to still be able to teach students from other universities is to offer courses and programmes in collaboration with other institutions. Provided that it is financially attractive, it could be a way to make our research and postgraduate education visible for new groups of students, and help us reach students that are not interested in studying at KTH but whose broad interests overlap with ours. Collaborative teaching could also open possibilities for research collaborations.

Development of education in all the directions mentioned here are also part of the goals of the KTH Environmental Humanities Laboratory.

#### Research, postgraduate education and research environment

Since the 2007 strategy, research at the Division has become significantly broader and more comprehensive. This expansion has mainly been in the field of environmental history. Since the chair in environmental history was taken up several researchers, networks and projects related to this field have been tied to the Division. It was therefore appropriate to change the name of the division from the Division for History of Science and Technology to the Division of History of Science, Technology and Environment in 2012. The Division should however not be perceived as consisting of three

distinct and separate fields. The research environment is both broader and more integrated than that would imply. On the one hand, research is carried out at the Division that could justify an even broader name, including for example cultural heritage and media, while on the other hand new recruitments in the past year have strengthened research that bridges studies of science, technology and environment, especially through a new associate professorship for historically oriented science and technology studies (STS). The breadth is also recognized in individual researchers who work in several of the fields represented at the Division. At the same time the presence of some subjects at the Division has decreased, especially industrial heritage.

The single most important strategic question, not least considering the increased breadth at the Division, is how the research environment should be organized and developed in order to enable as much synergy as possible between the different areas. In a research environment with such a high percentage of externally funded projects, and several individual researchers that work in projects that span short periods of time, it cannot be taken for granted that there will be a sense of common responsibility for the shared research environment.

There is a positive incentive in the application process for external research funds. Even when applications are not immediately successful, work on joint applications is a long-term resource, since it is important to nurture a diversity of ideas for research and projects of high quality that can be taken up when new and suitable calls are announced. During the past few years, in the time leading up to the major annual calls the researchers at the Division have met to discuss how different project ideas can be coordinated in order to make the most of collective resources in the application process. This can sometimes mean that individual projects take a back seat to collective projects.

In the next few years we will make a strategic effort to develop a programme that could accept international postdocs for two-year visits to the Division. We think that a strengthening of that level would have a very positive influence on the entire Division and benefit the distribution between different levels and categories of research in our environment.

As with other activities at the Division, the postgraduate programme has become more comprehensive compared to 2007. This is reflected in a name change for the postgraduate programme, from History of Technology to History of Science, Technology and Environment. As a consequence of a central reform at KTH, since 2011 the Division's postgraduate programme is organized within a joint postgraduate programme at the Department of History and Philosophy, Humanities and Social Science Studies of Science, Technology and Environment, which in turn consists of three different research subjects.

In the past six years (2007-2012) eleven individuals have graduated from the postgraduate programme at the Division. New doctoral students have been recruited at a corresponding pace. Graduates from the Division have been successful in securing external funds, postdoc positions, and

positions and assignments outside academia. Based on the large number of applications to announced openings, the postgraduate programme at the Division is attractive to students of different backgrounds and from different countries. Recruitments reflect a broad range of subjects and at present the Division has doctoral students with degrees in several different subjects and fields, in some cases from universities outside Sweden. An increased number of teachers at the Division on the level of associate professor means that the Division has in recent years become able to offer supervision on a broader range of topics.

An important strategy for the quality of the postgraduate programme in the past few years has been to aim for a coordinated recruitment of doctoral students, in order both to create a vibrant social and intellectual community and to offer better opportunities through shared participation in teaching-intensive courses. In the next five to six years, the KTH Environmental Humanities Laboratory will impact the postgraduate programme comprehensively. The recruitment of 4-6 new doctoral students in the next few years will create conditions for a closely knit group of students as well as high ambitions for courses and other joint activities for PhD candidates.

Another way to extend the number of courses and the postgraduate network is to establish new forms of collaboration within the postgraduate programme, within and beyond KTH. Efforts to that effect are already being made, but could become more systematic in the future. In the immediate Nordic surroundings we consider the Centre for Technology, Innovation and Culture in Oslo, Studies in Science, Technology and Environment at Umeå University and the Department of History of Science and Ideas at Uppsala University to be especially interesting environments for exchanges in relation to doctoral courses.

#### National and international collaborations

In 2012 the Division signed a declaration of purpose with Faugert & Co, who specialize in evaluations of systems for research and education and innovation policy. This collaboration could play out in the form of joint seminars, publications and participation in evaluations as co-workers or guarantors of quality. The Division has also begun a similar collaboration with NIFU (Nordic Institute for Studies in Innovation, Research and Education) in Oslo. Together these two initiatives primarily strengthen activities in research and higher education.

The outlined programme for postdocs can increase possibilities for international researchers to come to the Division, but it is also central that coworkers at the Division visit institutions abroad for shorter or longer periods of time. The doctoral student exchange with the Program in Science and Technology Studies at MIT, established in the 1990s, is still active and has led to excellent professional networks. Participation in international summer schools has had similar effects. Efforts to establish additional exchanges for doctoral students and researchers should continue and expand.

## Internal organization and order of delegation

A good working environment is recognized by among other things clear and apparent routines and a transparent organization. Coworkers should be aware of how and when decisions are made and by whom, and information should be distributed so that everyone feels that they are part of the process and have the ability to contribute.

The Division has a number of positions divided between a corresponding number of coworkers. These are the Head of the Division, who so far also has been Head of Department (Head of Department alternates between the History and Philosophy divisions in periods of four years), the administrator, the director of undergraduate studies, and the director of graduate studies.

At the Division there is a **Directorate** (LG), who meet two or three times per semester to discuss important tactical and strategic questions and make decisions (decisions are formally made by the Head of the Division). The Directorate is made up of professors at 50 percent or more, the Head of the Division, the administrator, the directors of under- and postgraduate studies, one representative of the group researchers and teachers, and one representative for the doctoral students. Notes from the meetings of the Directorate are distributed to all members of staff.

There is also an **Executive committee** (AU) that consists of those who are responsible for certain activities, that is directors of studies, the administrator, the Head of the Division, and representatives for researchers and teachers and doctoral students. The Executive committee meets every third week or as needed and notes from the meetings are distributed to all members of staff.

At least once a year, usually at the start of the autumn semester, a **Division Day** is organized, normally at a conference facility or similar location, and including a dinner in the evening. The topic for the day can vary but should be relevant for as many as possible. It is also traditional that the Division has a Christmas dinner and a meeting before the summer holidays.

**Supervision meetings** take place at least once per academic year for all primary and secondary supervisors at the Division. These meetings are called and led by the director of graduate studies.

**Workplace meetings** are held about once a month, often in connection to the higher seminar. This is an opportunity to announce information that is of interest to everyone. Sometimes a guest is invited.

**Meetings for doctoral students** are called regularly by the PhD candidates. At these meetings it is decided who will represent the doctoral students in the Directorate, and other concerns relevant for the PhD students are discussed. When a new doctoral student is accepted, the existing students usually appoint a mentor for the newcomer.

**Basic education meetings** (GRU) are held once in the spring and once in the autumn to discuss the courses that were given the previous semester and exchange thoughts and impressions. Additional activities on certain themes relating to the basic education are sometimes organized. The director of

undergraduate studies calls the meetings, which are open to all members of the Division, including those that are not teaching.

The Head of the Division calls the meetings for the Directorate and Executive committee, the Division Day and the workplace meetings. On the department level there is also a **Department committee** that meets once each semester to discuss issues that concern the whole department. There is also a **Coordinating group** between the employer and union representatives that the Head of the Department is responsible for.

#### Employment categories, recruitment and qualifications

There is a rich variety of categories for employment at KTH which will become even more plentiful with the new autonomy. Several categories, but not all, are represented at the Division.

There are **doctoral students** whose positions last for four years. The PhD students are guaranteed funding for the period for which they have been accepted. In addition to research education, the doctoral students can also choose to do additional work at the Division in the form of administration or teaching at a maximum of 20 percent. A position for a doctoral student with 80 percent research education and 20 percent additional assignments will then last for five years.

There are also positions in the category **researchers**. Researchers have external funding that they have chosen to place at the Division. In addition to external funds researchers can also be funded through teaching or administration. However, if external funds run out researchers cannot expect to be fully funded through teaching and administration.

Then there are **assistant professors** and **associate professors**, or so-called teaching positions. The former are employed for a limited period of time during which they gain qualifications for promotion to associate professors. These positions are filled after public announcement and expert evaluation. Associate and assistant professors often have the same type of assignments as researchers, i.e. research, teaching and administration, with the difference that the Division has a greater responsibility for funding those who have teaching positions. For assistant professors, the Division has committed to fund 75 percent research time. These tenure track positions are part of a new initiative at KTH that is not yet fully established.

Finally the Division has two professors, one guest professor, and one adjunct professor (and one professor on leave). The two full-time professors also belong to the teacher category which means not only that they have a different employment security but also that they are eligible for special assignments at KTH, including to serve as examiners for courses, on the board for academic appointments, or be elected to the faculty's board of trustees.

Recruitment of new coworkers is a crucial factor for the Division's ability to maintain, develop and improve its standards. It is also important that existing as well as potential future members of staff

know which qualifications are recognized as such, so that they can make rational decisions with regard to aims and regulations at the Division. Qualification and recruitment are closely connected since the evaluation of qualification determines the choice of applicant.

Doctoral positions and assistant/associate professorships should be announced publicly and be open for competition. Doctoral positions are announced centrally at certain times each year according to a strictly regulated procedure. The teaching positions are also announced centrally but the timing depends on a decision from the Recruitment committee that defines the profile for the position before it can be announced.

The main criteria for recruitments should be that they are in reasonable agreement with the Division's strategy. Recruitment issues are dealt with by the Directorate, which initiates and prepares new recruitments. Once the initiative has been made by the Directorate, recruitment of associate professors and professors is made according to regulations at KTH and in agreement with the leadership of the school and faculty. With regard to researchers with external funding it is up to the Directorate to decide if a project may be placed at the Division.

Qualifications should be evaluated in relation to the Division's aim to be a "leading national and internationally recognized research environment". This means that research qualifications should have a prominent role and that international experience, especially international publishing, is of value. It is also a qualification to have been active in areas other than research. Recruitments to the Division should also have excellent qualifications in at least one of the two categories teaching and outreach. The annual meetings for individual development are a good opportunity to discuss qualifications.

Employees are expected to take part in professional activities that are organized at the Division, especially the higher seminar and relevant meetings. They should also keep their individual websites updated, register their publications in Diva, and submit other information about their activities when asked. Those who teach should also have pedagogical training and make sure that course evaluations and analyses are submitted within a month after a course is finished, to enable continual course improvement.

#### **Publication**

Publication is the most important way for employees at the Division to communicate the results of their research and take part in the international and national research community. Quality in publication reflects quality in research; the value of the research becomes apparent through what is published, its contents, where it is published and how it is received and used. Publications have also become central for different ways of evaluating and measuring quality. Publications have always been, and remain, the basis for evaluation for recruitment and allocation of research funds. Recently it has also become increasingly important for the allocation of internal funds at KTH and for different

Against this background one of the Division's central aims is to develop and improve its publication profile, especially with regard to international publications and visibility, without neglecting traditional forms of publishing that reaches specific audiences, such as books in Swedish. Specifically, this means that the Division should:

- ① increase the number of international publications by researchers and doctoral students
- annually follow up on and analyze collective publications based on material for the annual report
- ① offer seminars, courses, advice and other activities intended to develop coworkers' awareness of and competence in different matters concerning writing for different genres, publishing and communication and support them in this aim
- ① involve more people in international publishing and raise the lowest level of publishing
- ① make sure that publishing and writing becomes part of the postgraduate programme
- ② actively use the Division's website and annual report to make research at the Division visible

Individual coworkers should normally

Description publish at least one scientific and one popular science publication per year, and are expected to have their own individual publishing strategy

Doctoral students should, with help from their advisors

during their time as postgraduates publish at least one international scientific article (even if the dissertation is a monograph) and at least one popular science publication (even if the dissertation is a collection of articles in English)

In order to further the development of publications, during 2013 and 2014 the Division will focus especially on prioritizing efforts that can improve knowledge and competence in areas relating to publishing, different forms of writing, scientific and popular communication, and similar areas.

The Head of the Division and the Directorate have a special responsibility for translating the strategy and the ideas mentioned here into practical measures. Turns need to be taken in initiating these. Among other things a more substantial survey of publication patterns at the Division is needed, which should involve a comparison with other relevant institutions. Seminars and other activities that can contribute to an increased awareness of publication concerns should also be organized. The amount of attention that these questions receive within the postgraduate programme should be examined, and any changes deemed necessary should be made. Goals and criteria for successful

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publishing and citation should be formulated, as should concrete suggestions for continuous follow-up and analysis of publications. Everyone should register their publications in Diva so that visibility on the website is facilitated. These concerns should also be brought up in the annual report.

This is a fundamental enterprise that is partly about setting a new standard for publication at the Division. Efforts should be intensified in 2013 and 2014, and at the end of this period a thorough analysis should be made and compared to the results from 2011. In the succeeding years leading up to 2017 efforts should be made towards further implementation and development in this area.

### **Process and implementation**

Working on this strategy has been a relatively drawn-out process involving several sessions with all coworkers at the Division over a period of time. The most important factor for successful implementation of a strategy is that members of staff feel ownership of the strategy and thereby also motivation to work towards realizing it in their day-to-day activities. To make the strategy an active and useful tool it should be part of the material for the Division Day, where revisions and implementations can be discussed in relation to current concerns. In addition, the strategy should be constantly present in the work of the Directorate.