

**Division of History of Science, Technology and Environment
KTH Royal Institute of Technology
Strategy 2018-2022**

Our point of departure is:

- that history is central for understanding contemporary conditions and preparing for future change
- that science and technology are part of our culture, and shape and change environments and conditions for life on earth
- that addressing environmental challenges requires knowledge from the humanities and social sciences as well as the natural sciences

We want to be an internationally leading integrative environment for research, education and societal collaboration, through:

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

The basic idea of the strategy

This third Division strategy document for the period 2018 to 2022 follows on two previous documents covering 2007 to 2012, and 2012-2017. The aim of the strategy is to provide direction and inspiration for the Division and its staff and guidance for the Division leadership, the Steering Group and others in making decisions and priorities for the future. The strategy spans a period of five years, but should be revisited annually and actualized in ways that involve all members of staff. Procedural and organizational documents for the day-to-day work are listed at the end and attached.

Although events and changes will inevitably occur that cannot be specifically foreseen by a strategic statement, striving for thoughtful and long-term decision-making is still worthwhile. The strategy is also a place where values and visions are articulated, and thereby it functions as a window into our activities also for those who take an interest in our workplace without being part of it.

A challenge-driven academic environment

The Division has developed expertise in a combination of historical and related disciplines and seeks to apply this expertise to challenges derived from societal as well as academic imperatives. 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, political ecology, urban studies, environmental justice, history of universities, studies of research, higher education and innovation, science and technology studies (STS), and environmental humanities.

The central strategic idea is to develop integrated combinations and collaborations within these fields, as well as with other themes present in the Division's research environment, to tackle the questions that result from the central challenges that are facing humanity, with a particular focus on conceptualizing and addressing transitions. Examples of such global challenges include climate change, migration, natural resource extraction and digitalisation.

The different subjects and thematic focuses collectively provide what may be envisioned as an intellectual potluck. This unity in diversity has proven to be an important strategic asset. In addition, the Division also has several 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 core competencies of the Division remain solid and that new coworkers can take responsibility for projects as well as for essential parts of the postgraduate programme.

Sometimes we talk of our activities as 'post-disciplinary'. However, to be post-disciplinary demands to some extent a disciplinary grounding, and this balancing act is a continuing challenge in addition to an asset. Our competencies are constantly being re-articulated in relation to the changing character of the academic humanities. Nevertheless, it is important that those who come to the potluck do not all arrive with the same kind of pie – boring, and in the long run unhealthy.

The humanities at KTH

Being a humanities and social science research institution at a technical teaching university requires ongoing effort to assert our legitimate role within that structure. In trying to articulate our role at KTH we look at other leading engineering schools that already offer a broad range of educational opportunities to their students, including significant elements from the social sciences and humanities. The positive repercussions from a stronger relationship between engineering and the humanities are increasingly heard in Sweden as well, with major universities now presenting their engineering education as successfully embedded in a broad knowledge environment. We are working towards this end also at KTH.

The ongoing shift toward integrative humanities (including environmental humanities, medical humanities, digital humanities, public humanities and others) is of considerable interest in this respect. This shift aims to provide constellations of knowledge production with higher ambitions

to influence societal development and be part of responsible solutions, while at the same time enhancing quality in education and research. Moreover, the integrative humanities are of particular interest to technical universities since they offer opportunities to develop an on-campus presence of the humanities and social sciences in a manner that fits the strategic profile of an institution such as KTH.

We are working toward positioning KTH in relation to these developments and articulating a strategic approach to the humanities (and related strands of the social sciences). A core argument is that employers in particular, and society at large more generally, increasingly expect graduates to have the intellectual breadth and flexibility to engage critically with current affairs and societal issues. Providing humanistic training that can fill this important need would in turn widen the pool of potential talent available to KTH and enhance the KTH brand as a leading provider of engineering education. It would also facilitate the continued effort to improve the university's diversity and gender balance.

A second argument for a strategic approach to the humanities comes from current trends in research funding and evaluation. The government's research bill from November 2016 signals a decisive turn towards broad, long-term research and innovation programs funded and organized through the research funding agencies. Agencies will most likely be instructed to integrate human, social, natural, engineering and medical sciences in most of the around fifteen programs that are presented in the bill, which speaks favorably of integrative environments for research, teaching and collaboration.

Thirdly, a stronger presence for the humanities would enhance the opportunities for KTH to continue its mission of positively impacting the society of which it is a part. KTH has a strong record of productive contacts with industry and has managed to extend this role to newer industrial sectors such as ICT and biotechnology. Expanding the capacity of KTH within the humanities will expand the university's ability to engage with challenges such as climate change that require expertise from both the social and the natural sciences. A more pluralistic KTH 'voice' would also effectively signal a broader commitment to thinking critically about technology and society as an internal priority.

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 EHL systemically widens and strengthens *international collaboration at the Division*. This is 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. During the past five years, important ties have been made with for example the Rachel Carson Centre in Munich and the Centre for Culture History and Environment at the University of Wisconsin, Madison.

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

In 2016, in preparation for this strategy document, the EHL has held three visionary workshops, organized by PhD students, to explore its possible paths. The key issues were identity and stability. From a disciplinary point of view, we support a vision of the environmental humanities beyond a narrow disciplinary canon. Thereby, the EHL will continue to be an arena for collaboration and exchange with the ambition to produce hybrid research which will challenge, and not only blend, disciplinary languages. The EHL visionary exercise did not speak only of the future, but also of the present revealing that already now the Lab has attracted researchers from disciplines beyond the core business of the Division. This implies to revisit our PhD training aiming to both expanding towards new areas and ensure a solid training in our basic disciplines.

The original idea of having the Lab as an integral part of the Division needs further articulation. For the future, the challenge for the EHL will be to cultivate a distinct but not exclusive identity, drawing on the multitude of resources at the Division and at the same time having a identity of its own. As far as long-term funding is concerned, while KTH has ensured a permanent funding support to the EHL, the need to plan an extensive campaign of fundraising to address the upcoming end of the donation is recognized.

Research and research environment

Since the 2012 strategy document, research at the Division has become significantly broader. The expansion has mainly been in the fields of environmental history, environmental humanities, and research policy. 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 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 which 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 revived 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 to make the most of their collective resources in the application process.

Limited core funding and increasing co-funding demands from a part of the major funding institutions have made it necessary to think collectively about the number and the scope of applications. In late 2016 a vetting system for project applications was introduced, in which applicants are asked to submit the parameters of their project proposal. This form of centralized research coordination, with final decisions resting with Division's leadership and Steering Group, is also strategically useful in order to gain an overview over incidental costs, co-funding needs and also potential new positions and hirings.

Training for bachelor's and master's students

Training for bachelor's and master's students (GRU) made up less than 10 percent of the Division's total turnover in 2017. 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:

Legitimacy. KTH is an educational institution and as such is committed to excellence in that field in addition to its aspirations to support excellent research. KTH has a long-term mission, endorsed and supported by the Swedish state, to educate engineers and architects. By teaching undergraduate and master's students the Division takes part in that assignment.

Qualifications. 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.

Better trained engineers. 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 with a broader understanding of technology and technological change.

Participation in undergraduate education can contribute to a *stimulating exchange between research and education*.

Greater financial flexibility. Even if the undergraduate courses offer limited income they still enable full-time employment for the equivalent of three people. This is important in an environment otherwise largely dependent on external funds.

Having multiple courses at the advanced undergraduate level is important for starting a process towards eventually registering our own master's programme in the history of science, technology and environment. While this may not be possible to achieve in the next few years, it is a long-term goal of the Division to eventually establish an internationally attractive master's programme. 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, an effect of economies of scale. The larger programme courses are financially sustainable and some are profitable. The more research-related courses often run at a loss due to having a smaller number of students. That the undergraduate education component of the Division 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 exchange students, generates a substantial surplus. The KTH Environmental Humanities Laboratory does not offer courses of its own, but its members play an active role in shaping and delivering the courses offered by the Division.

PhD training

As with other activities at the Division, the PhD programme has expanded its ambitions compared to 2007. This is reflected in a name change for the PhD 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 PhD programme is organized within a joint PhD programme at the Department of History and Philosophy: Humanities and Social Science Studies of Science, Technology and Environment. This programme in turn consists of three different research subjects.

An important aspect of ensuring the quality of the PhD programme is 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. Another way to extend the number of courses and the PhD network is to establish new forms of collaborations, within and beyond KTH. To continue the work of organizing joint PhD-level courses with universities elsewhere in Scandinavia and Europe, including through funding from the European Commission and NordForsk, is of strategic importance.

Recruitment and growth

Recruitment of new coworkers is a crucial factor for the Division's ability to maintain, develop and improve. It is also important that existing as well as potential future members of the staff are aware of how different qualifications are valued within the Division and how these relate to the regulations issued by KTH and the Swedish educational authorities. Qualification and recruitment are closely connected since the evaluation of qualification determines the choice of applicant.

Doctoral and teaching positions are announced publicly and are open for competition. Doctoral positions are announced centrally at certain times each year according to a strictly regulated procedure. Teaching positions are also announced centrally, but the timing depends on a decision from the school's Recruitment Committee that defines the profile for the position before it can be announced. The school Dean and the Faculty Committee also needs to approve of teaching positions which can be professorships, associate professorships and assistant professorships.

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 Steering Group, which initiates and prepares new recruitments. Once the Steering Group has issued its approval, recruitment of teaching positions 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 Steering Group to decide if a project may be placed at the Division. We follow the principle that the

support of at least two people in the Division is required for an external candidate to place funding or an external application with 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 publishing in the international literature, is of value. Having been active in areas other than research can also be considered a relevant qualification. Recruitments to the Division should have excellent qualifications in at least one of the two categories of teaching and outreach. Professional development opportunities appropriate to each career stage are offered to all employees in the Division.

The Division also continues to work on structures for helping individuals transition to new work environments, particularly given the number of PhD students and externally financed researchers whose employment is linked to time-limited projects. We apply a mobility procedure for PhDs, which means that the newly graduated cannot place a post-doc or research project at the Division. During the coming years we will develop a more thorough approach also to post-docs and researchers to increase transparency and predictability. The aim is not to keep every post-doc or researcher as that kind of growth is unsustainable in the long run.

Our workplace – local and international

Over the years the Division has worked consciously to develop an environment that is welcoming, inclusive, non-hierarchical and supportive. We are confident that this has supported our academic ambitions in the past and will continue to do so in the future. We have taken to heart the growing research-based evidence to sustain the argument that diversity (including gender diversity) sustains creativity, and we will continue to strive for a diverse workplace.

A consequence of increased internationalization is that English is now our working language. While some courses are still offered in Swedish, teaching and administration in addition to research communication is increasingly conducted in English. The Swedish language nevertheless remains important for a number of reasons, perhaps most importantly for communicating with the society in which we are embedded. At the workplace environment level, we will continue to seek ways to stimulate non-Swedish speakers to learn the language as it is an important aspect of integrating into Swedish society.

Organizationally we have put in place a structure that is inclusive and transparent with clear division of responsibility. Rules and expectations should be clear to all in the Division. Certain elements of the Division's operations may be considered tacit knowledge to those coming from outside KTH and indeed Sweden, and ensuring that such knowledge becomes explicit is recognized as a key task. Making sure that steering documents for undergraduate teaching or PhD training are updated and used further contributes to establishing a common ground. A challenge is to grow and keep informality in communication. As we grow bigger we will have had to find new ways of meeting and interacting.

A well-functioning administration is central for the quality of our work. We recognize that a growing Division causes more administrative work. Much of the routine work must be done and is done by the researchers, PhD candidates and those having a teaching position. We also employ designated administrative staff, carefully recruited and with specific qualifications and responsibilities. In step with the growing number of employees at the Division we have increased our administrative staff and we strive to advance administrative capacity further as the need arises. We aspire to provide possibilities for further qualification and development of skills, in order to maintain the sound infrastructure that is the basis of our work and communication flows. At the Division it should be known who does what and who one might approach with questions. The administrative staff should be well informed of what is going on at the Division and at ABE and KTH at large. The administration, together with the leadership, is also central in welcoming new staff and visitors.

Humanities research is traditionally individual, but we believe firmly that working together is both more productive and more fun. This does not mean that we do not have individual publications and projects, but rather that we try to foster exchange and collaboration. At the monthly staff information meetings, we share ideas and interests, not just information items and itineraries. Grant writing is increasingly a collective effort and even those who are not on an application often contribute.

We are confident that our increased impact and greater interest from outside is connected to the quality of our social environment. To put it simply: it matters if people like to go to work. In the co-worker evaluation at KTH in 2014, the Division was ranked very high, confirming what we have long suspected. Our yearly kick-off meeting in the beginning of the autumn term builds community as do frequent social occasions during the year. Occasional common sports activities and excursions offer possibilities of other kinds of exchanges than the normal academic. Cake can be made and offered both when a grant is won (almost considered compulsory) and when a competition is lost (for contemplation). Of great importance is also the daily interaction, which – this we now know by experience – can be facilitated by a good space. Since February 2014 we share a common space, which in its design and architecture allows for both great social interaction (including lunches and coffee breaks) and secluded, concentrated work.

Impact and circulation of knowledge

Our ambition continues to be to aim for a societal impact that goes beyond the academic community. We would like to think of this in terms of circulation of knowledge. This can be achieved in many ways, and necessarily changes over time.

Nowadays scholars are asked to be visible, to tweet, blog, film, and more. However, before planning how and where to be visible, we argue that the research themes should be carefully chosen. In order to be visible and relevant, we need to address challenges of the present that matter to those beyond our own walls.

The EHL has been active in promoting public events with the ambition to have an impact on the societal level reaching a wider audience. Many times those events have experimented with non-conventional formats for academic communication. Although it is hard to evaluate the efficiency of public events as a key tool in the Division's impact strategy, we will continue to arrange these kind of gatherings, also challenging the distinction between academic and non-academic in the very production of knowledge.

We also want to experiment with new languages and formats. Novels, artwork, film and poetry are but a few examples of non-traditional activities, often taking place outside of academia. We believe that the Division, taking advantage of the EHL, should invest in the next five years in producing at least one creative output with the deliberate aim to extend our impact beyond the academy.

The Division is a multicultural entity. However, the structure of the academic system has pushed all of us towards an Anglo-Saxon mono-lingual environment. While we are clearly committed to publish in top academic journals (that is, Anglo-Saxon journals), we should strategically plan to continue publishing in other languages. The transnational character of the Division should be placed at the service of multiplying our impact in several languages (from a quick inventory we have Swedish, German, Italian, Turkish, Spanish, Finnish, Estonian, French, Japanese). This circulation of knowledge should be focused both on translations of published materials and supporting the formation of multilingual teams.

Although training and teaching go under a different heading in this document, we want to stress our conviction that those are also primary ways through which knowledge circulates. As our teaching at KTH stays limited, we believe that we could still cultivate our mission through, for instance, the production of one or more textbooks, precisely with the ambition to merge training and circulation of knowledge.

Publication

The most decisive tendencies in our publication patterns over the 10-15 years are growth in the number of publications, in the number of international peer reviewed publications, and a parallel decline of scholarly publications in Swedish. These trends are correlated. The growing focus on international publications, predominantly in English, makes it hard to maintain scientific publication in Swedish. This is also related to the demographics of our staff, with a majority born outside Sweden and not used to publishing in Swedish. Nonetheless, through a few individual authors we have still maintained a significant presence in the Swedish public discussion. Given our strategic goals to impact the society around us, it is important that this link is maintained, which means that excellence in communicating in Swedish should be a consideration in staff recruitment and professional development.

In addition our staff publishes popular and non-fiction books, literary criticism, essays, op-ed. articles, reports, mostly but not exclusively in Swedish. We also publish on line, blogs, podcasts,

and in the form of film documentaries. To use make this engagement an asset also for KTH is a strategic issue.

During 2015-16 there has been a concerted effort to collect better publication data and we will continue to try and track the impact of our work. It should be seen as an integrative part of securing a long term strategic self-knowledge in the Division and of educating our staff at all levels as knowledgeable, critical academic professionals.

Process and implementation

Working on this strategy has been a relatively long process involving all coworkers at the Division over the academic year 2016-2017. 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 kick-off, 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 Steering Group. To make it more operational, it can be brought forward at the first Steering Group meeting every year guiding the more operational activities that can serve to implement the strategy.

Attachments

Organisation of the Division

Memo for PhD training

Departmental service

Memo for undergraduate training