An introduction to Sweden

In the heart of Scandinavia

Home of the Nobel Prize

A culture of innovation and entrepreneurship

Stockholm – one of the most livable cities in the world

Nobel Prize Award Ceremony

One of the most livable cities in the world acording to Monocle

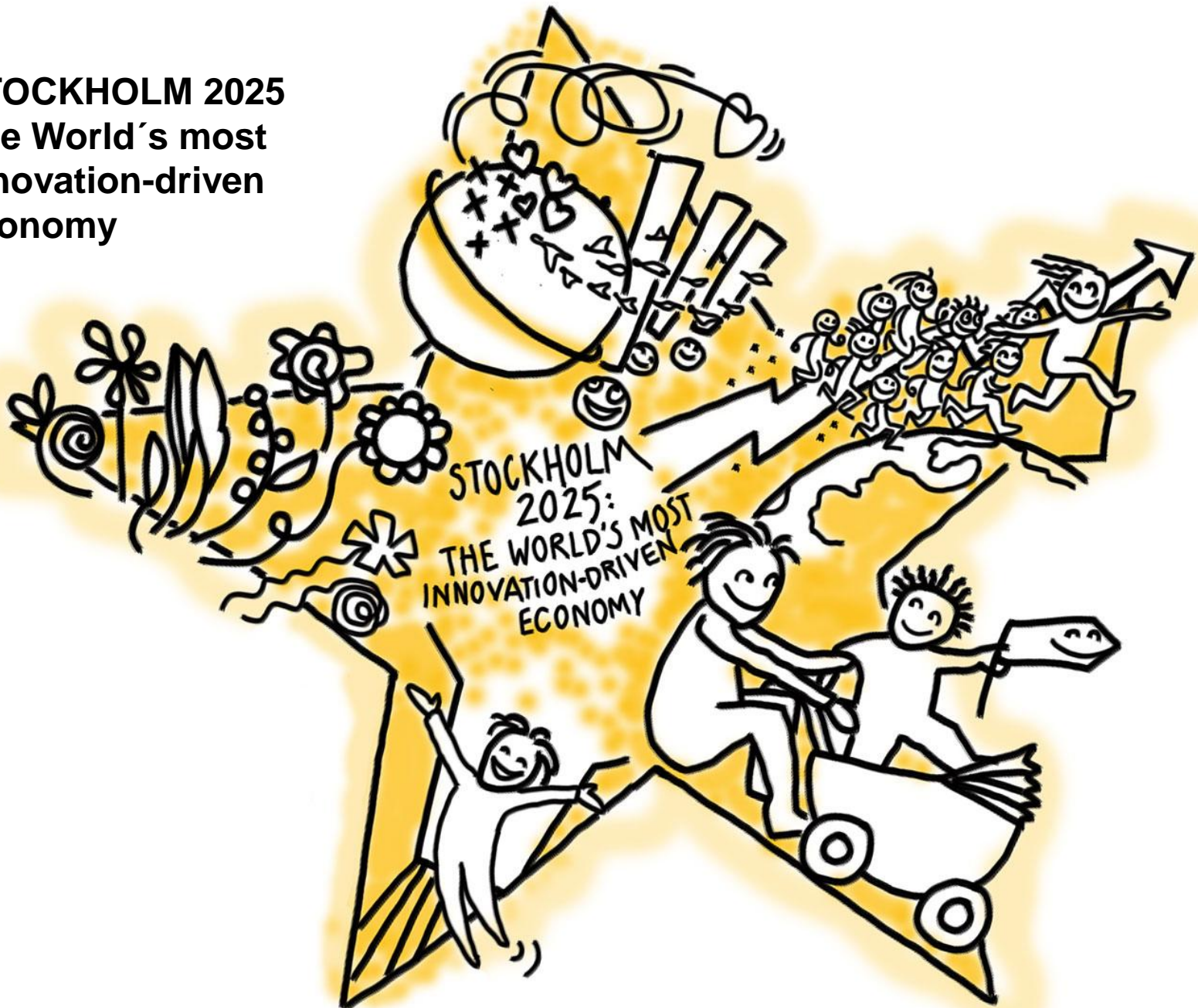Tight relationship between academia and business

UN Human Development Index

Early adopters of new technology and trends
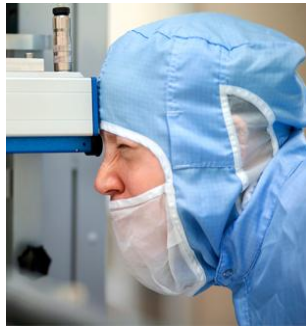
Clean, tidy, safe

English speaking

STOCKHOLM 2025
The World´s most innovation-driven economy

KTH at a glance

Sweden's largest, oldest and most highly regarded technical univeristy
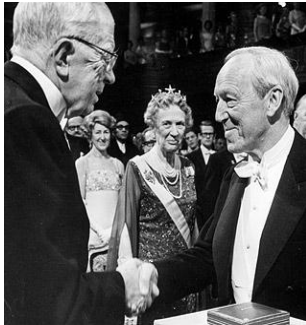
Leading research institution

Maintains partnerships with international elite universities

Hosts two EIT Communities

14 000 full year students, 30% of whom are women

4300 emplyees

Famous alumni

Professor Hannes Alfvén, Börje Ekholm, Minoo Akhtarzand, Professor Christer Fuglesang

- One Nobel Prize in Physics
- More than 75 000 alumni
- Over 15 000 alumni registered in the network
- 70 % get their dream job

The Knowledge Triangle – K3

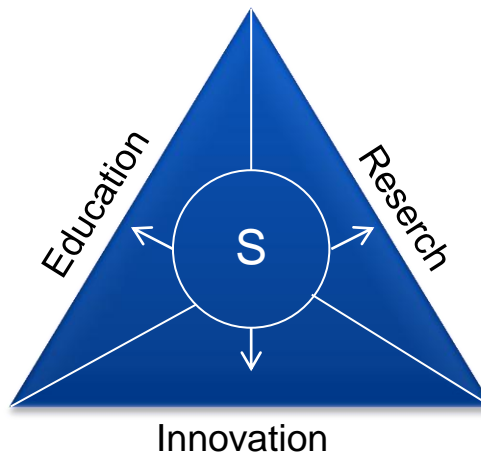A "new" metaphor, marketed within EU – and with Sweden as a leading actor – since 2008

A continuous and systematic interaction between education, research and innovation, improving the impact of investment in these areas:
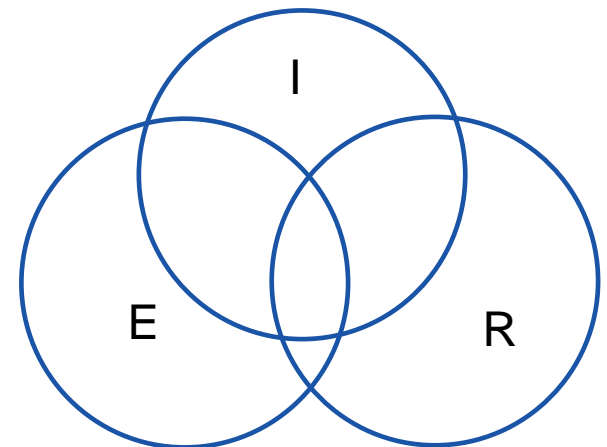
GENUINE

R

Knowledge

E   I

CTH

Education

Research

S
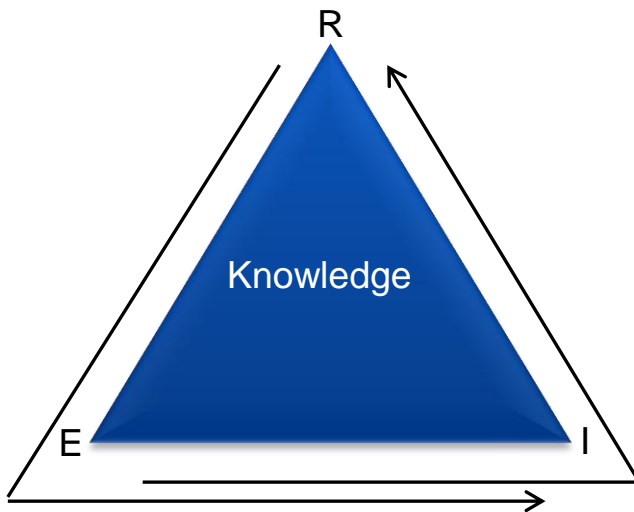
Innovation

S = Strength areas

VINNOVA

I

E   R

Impact and outreach
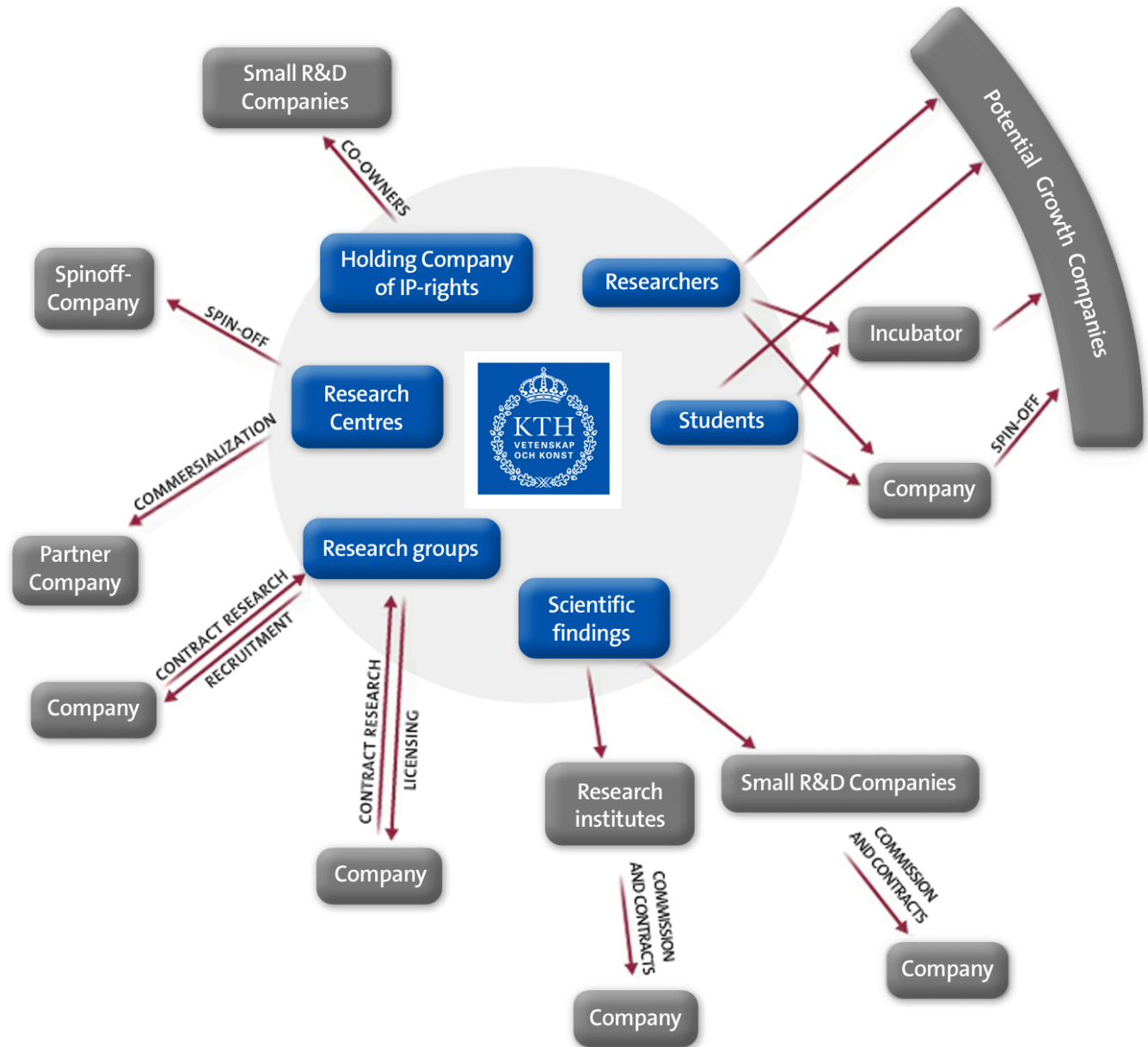
KTH Business Liaison

Scoop of work
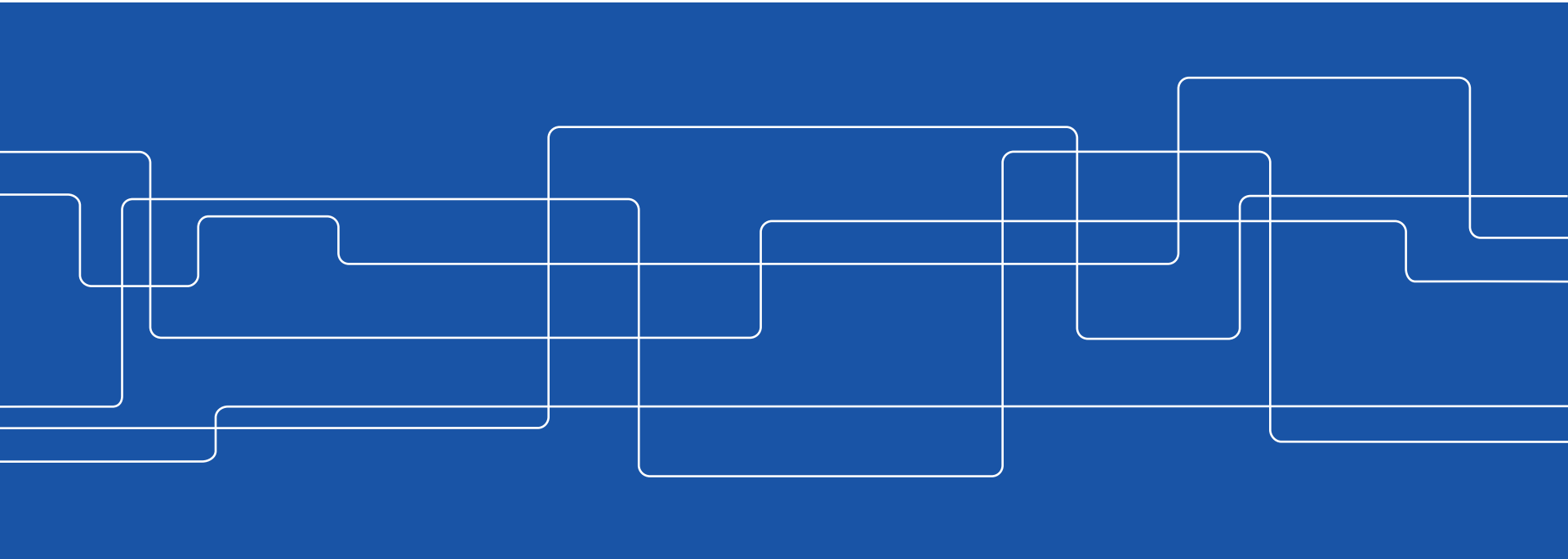
Areas of business
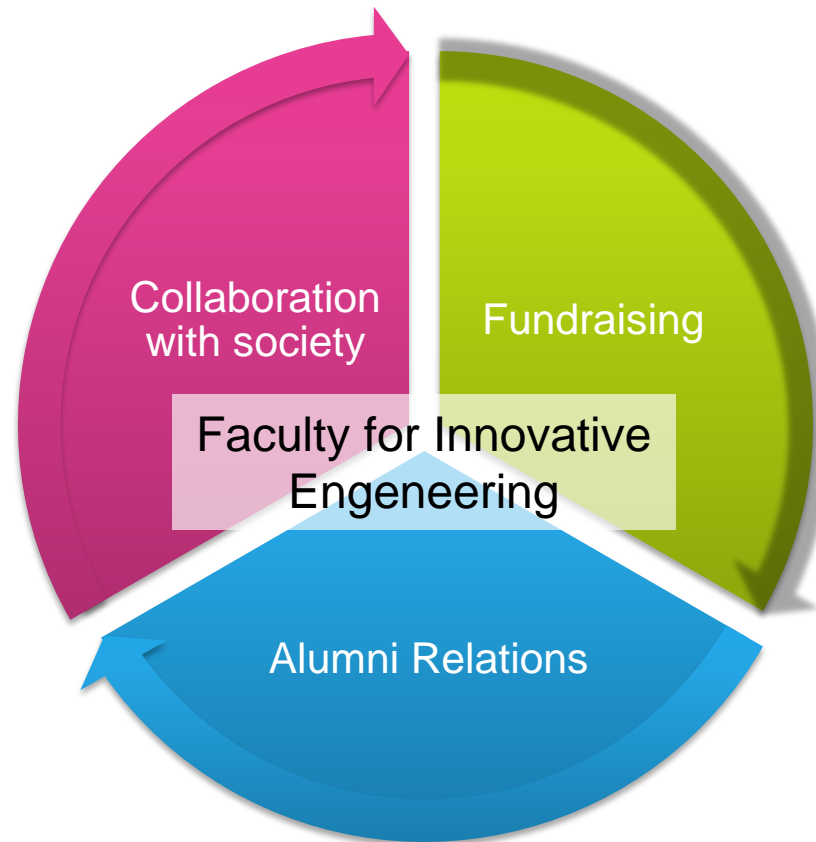
Scoop of work

- Building of strategic relations with partner companies as well as increased personal exchange with the Faculty for Innovation Engineering (Industrial Faculty)

- Fundraising for philantrophic donations

- Build network and communicate with 75 000 alumni

- Receive and moderate inquiries from companies/organisations

- Employer branding and recruitment services for companies

- Career report, job portal and degree project portal for KTH alumni and students

- Transfer "best practice" within cooperation between KTH schools and research centers

- Project owners of some of KTH strategic collaboration projects

We believe that…

KTH can, and will, play a vital role for the empowerment of enterprises in Sweden to compete on the global markets

Close collaboration with society leads to increased quality in KTH:s research and higher education

Close collaboration stimulates increased innovation capability with our partners

Why collaboration with sociesty

"Collaboration with external stakeholders is of vital importance and in growing extent a prerequisite for KTH's future competitiveness."

"Collaboration with external actors to be facilitated and expand in scope"

Differentiated levels of collaboration

What activities are relevant for collaboration?

Scope of collaboration

Education and research

B. Technology champions

Industries where innovation of cutting edge is core to the business model

D. Strategic partners

Larger corporates with broad R&D portfolios, with critical size to engage in long-term collaboration

Education only

A. Recruiters of engineers

Companies requiring skilled engineers in their core operations but without need for cutting edge research

C. Education builders

Industry players with broader interest in improving quality of Swedish engineers

Project based   Long-term

Mode of collaboration

To what extent are you willing to engage in long-term commitments?

Enl McKinsey 2010

Collaboration development stair

Question/Request

Matching

Case

Project formalizing — Agreement — Co-production

Effects

Learning

Form Resources

Will and resources to collaborate

Meeting and networking

Meeting places, Info flyers

One-way knowledge transfer

Executive programs
Guest speakers
Access to cases

Mutual knowledge exchange

Student thesis work, workshops

Co-production

Industrial researchers
Co- research
Enterprise customized educational programs

Examples of collaboration projects

- Knowledge pilot (Stockholm Academic Forum)

- Future Female Leader Award

- Big Sister network

- Stockholm Life

- Forest Beyond

- AIMday and other events

- Alumni network (national and international)

- Career events

- Job portal and degree project/thesis portal

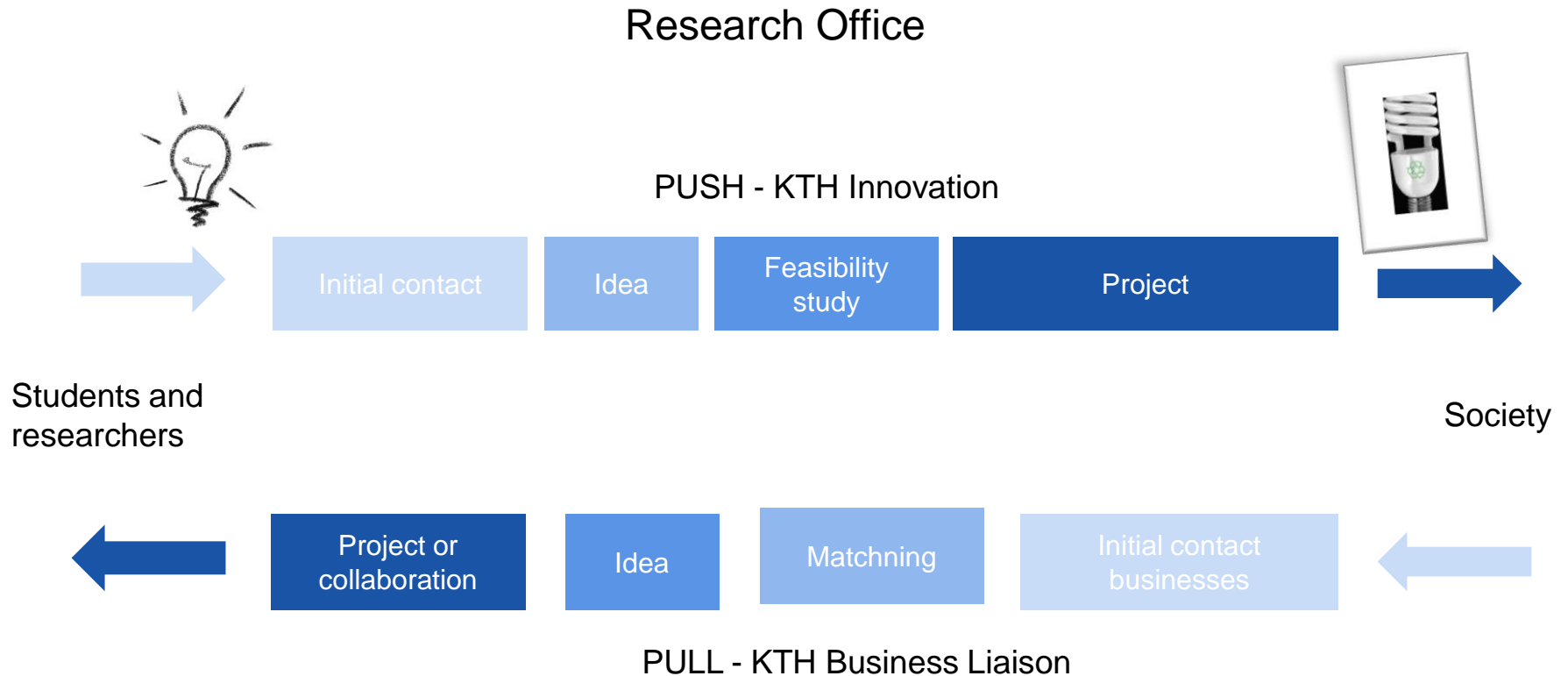# Tech Transfer and Innovation support

Research Office

PUSH - KTH Innovation

Initial contact	Idea	Feasibility study	Project

Students and researchers

Society

Project or collaboration	Idea	Matchning	Initial contact businesses

PULL - KTH Business Liaison

KTH Partnering Process
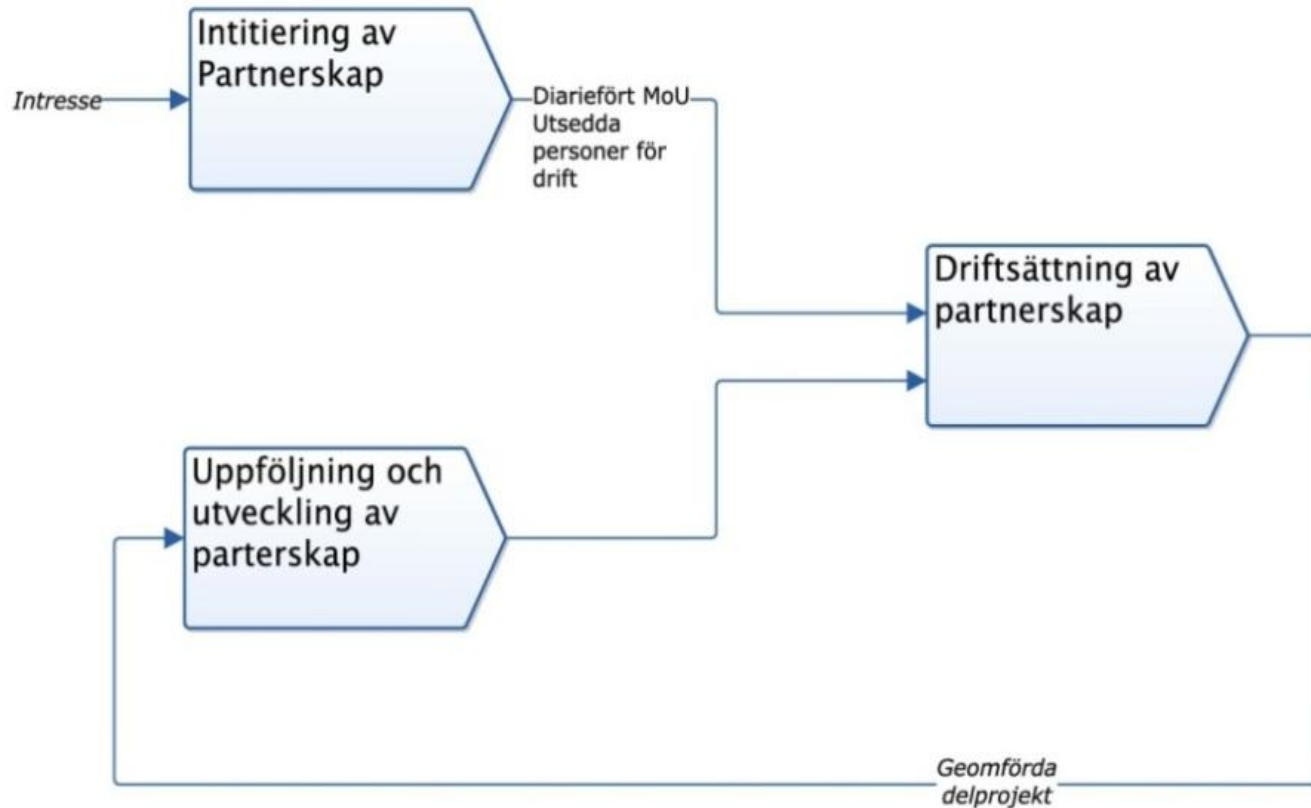
2012-05-16

...ategi för samverkan mellan Kungliga Tekniska högskolan och
...holms läns landsting 2013-2015

SKANSKA

Memorandum of Understanding
Scania - Key partner in KTH Faculty for Innovative Engineering

KTH och Scania avser att stärka det långsiktiga samarbetet. Med en omvärld som är under snabb förändring krävs partnerskap med kontinuerlig dialog på ledningsnivå hos respektive part, vilket ger stabilitet för samarbetet i såväl låg- som högkonjunktur. Samverkan sker för utbildning,

... for Innovative Engineering har Scania en central roll, strategisk ... SAAB samt studentrekrytering till KTH. ... för samarbetet i såväl låg- som högkonjunktur ... relationella starka partners. Scania är beredd att ta en ledande ...

Memorandum of Understanding

Memorandum of Understanding regarding strategic cooperation to develop the supply of talent for both ABB AB and KTH.

In a rapidly changing world, long term partnerships and an ongoing dialogue at the management level are essential to create stability through both economic peaks and troughs. The Royal Institute of Technology (KTH) and ABB AB, jointly "the Parties," hereby express their intention to strengthen their long-term and strategic education and research partnership.

The Parties will develop areas of cooperation according to the needs identified in an annual dialogue between the management and joint research & development, which will benefit both Parties. A well developed development and joint research & development, which will benefit both Parties. A well developed networking structure between the parties offers important benefits in increasing competence and promoting interest in engineering among children and youth. This cooperation communicates other forms of cooperation with third parties or between the Parties. A separate agreement is set up for each activity or project as needed.

Maintaining the supply of talent and competence development

One of the criteria for ABB's expansion in Sweden is a good supply of relevant skills. KTH and ABB therefore intend to work together to maintain talent for ABB and student recruitment for KTH. It is important to participate in relevant advisory teams and centres of excellence. The higher education programme. It is noted that ABB's continued presence can develop and implement programmes to students and guest lecturers. The development for ABB's employees, e.g. in the form of ...

Research

KTH and ABB already have several cooperation projects. This cooperation is strengthened further. This cooperation also includes... are also participating in the EIT...

Personnel exchange

Personnel exchange... considerations... researchers...

SAAB TECHNOLOGIES SAAB

ERICSSON

Memorandum of Understanding

SAAB - Key Partner in KTH Faculty for Innovative Engineering

KTH och SAAB avser att stärka samarbetet långsiktigt och strategiskt. I en omvärld under snabb förändring krävs partnerskap med kontinuerlig dialog på ledningsnivå, vilket medverkar till stabilitet för samarbete i låg- och högkonjunktur. Samverkan skall ske för utbildning, forskning och innovation.

Kompetensförsörjning, kompetensutveckling, internationell samverkan och forsknings- och innovationsarbete.

En förutsättning för SAABs vidareutveckling inom forskning, utveckling och produktion är god tillgång till relevant kompetens. SAAB och KTH utvecklar nu ett fördjupat samarbete för att gemensamt utveckla forskning och kompetensförsörjning till SAAB samt studentrekrytering till KTH.
SAAB medverkar i diskussioner om inriktning av högre utbildning i relevanta rådgivande grupper och centrumbildningar. Medverkan av SAAB i KTHs grundutbildning genom utmaningar till studenter samt gästföreläsningar är välkomna inslag.

Memorandum of Understanding
strategiskt partnerskap som bidrar till utveckling av ...ationsförmåga hos både Ericsson och KTH

...ld under snabb förändring krävs långsiktiga partnerskap och en kontinuerlig dialog på ...i för att skapa stabilitet i så väl låg- som högkonjunktur. Kungliga Tekniska högskolan och ...sammans "parterna" ger härmed uttryck för sin avsikt att stärka sitt långsiktiga och strategiska ...scende utbildning, forskning och innovation.

...utveckla samarbetsområden efter de behov som identifieras i årlig dialog mellan KTH:s och ...ng. Dessa samarbeten skall leda till långsiktig kunskapsutveckling, gemensam forskning och ...innovationsförmåga, vilket bidrar till nytta för båda Parterna.

...sörjning och kompetensutveckling

...r Ericssons expansion i stockholmsregionen är god tillgång till relevant kompetens. ...skall därför fördjupa samarbetet för såväl kompetensförsörjning till Ericsson som ...l KTH. Ericsson skall även kunna medverka i förekommande till Ericsson som för ...utbildning i relevanta rådgivande grupper och centrumbildningar ...i KTHs grundutbildning genom utmaningar till studenter och ...men. Vidare kan kompetensutveckling genom utmaningar till student... ...och genomföras genom KTH...

Collaboration supporting activities

- MoU process for strategic partnerships

- Forum for Adjunct professors

- Alumni relations, KTH&CO, Alumni News

- Fundraising

- Innovation Power Stockholm, Regional collaboration

- OpenLab, interdiciplinary challangedriven, regional collaboration

- Inkomming questions/requests, avredge 900 per year

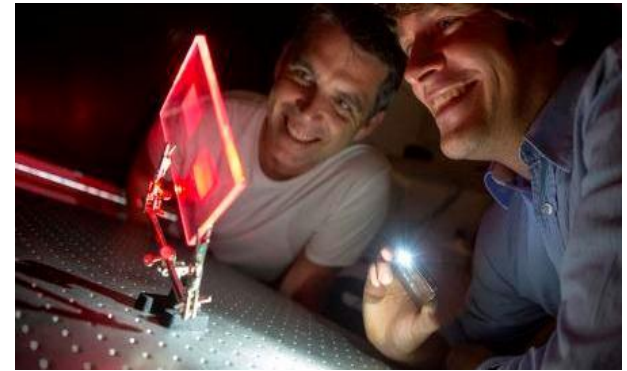- Outreaching activitys, AIMday, Matching …

- KTH Degree Projekt Portal

AIMday – forum for knowledge exchange
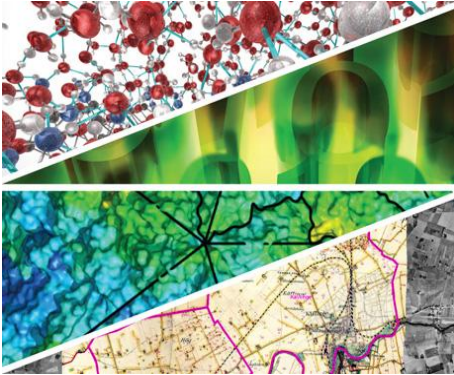
**AIMday® e-Tools &
Methods
November 27 2013**
Uppsala

**AIMday® Transport
December 4 2013**
KTH

**AIMday® Material October
24 2013**
Uppsala and Lund

KTH Alumni

- 60 000 alumni in over 100 countries
  - Chapters in Sweden, Norway, China, India, Brazil, NY and Bay Area, Zurich

- Spreading the word about KTH, creating good PR

- Student recruitment

- Donations

- Feedback that helps us improve our quality

- Raising international ranking

- Identifying and developing research collaborations

- Mentoring, internships and projects for current students

Our alumni are our top ambassadors

Spreading the word about KTH, creating good PR
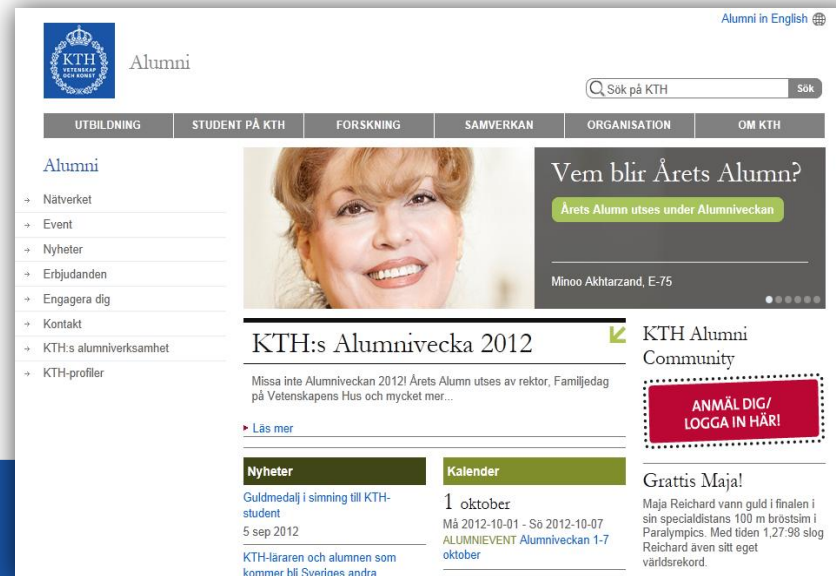
Student recruitment

Donations

Feedback that helps us improve our quality

Raising international ranking

Identifying and developing research collaborations

Mentoring, internships and projects for current students

- China
- NY and Bay Area
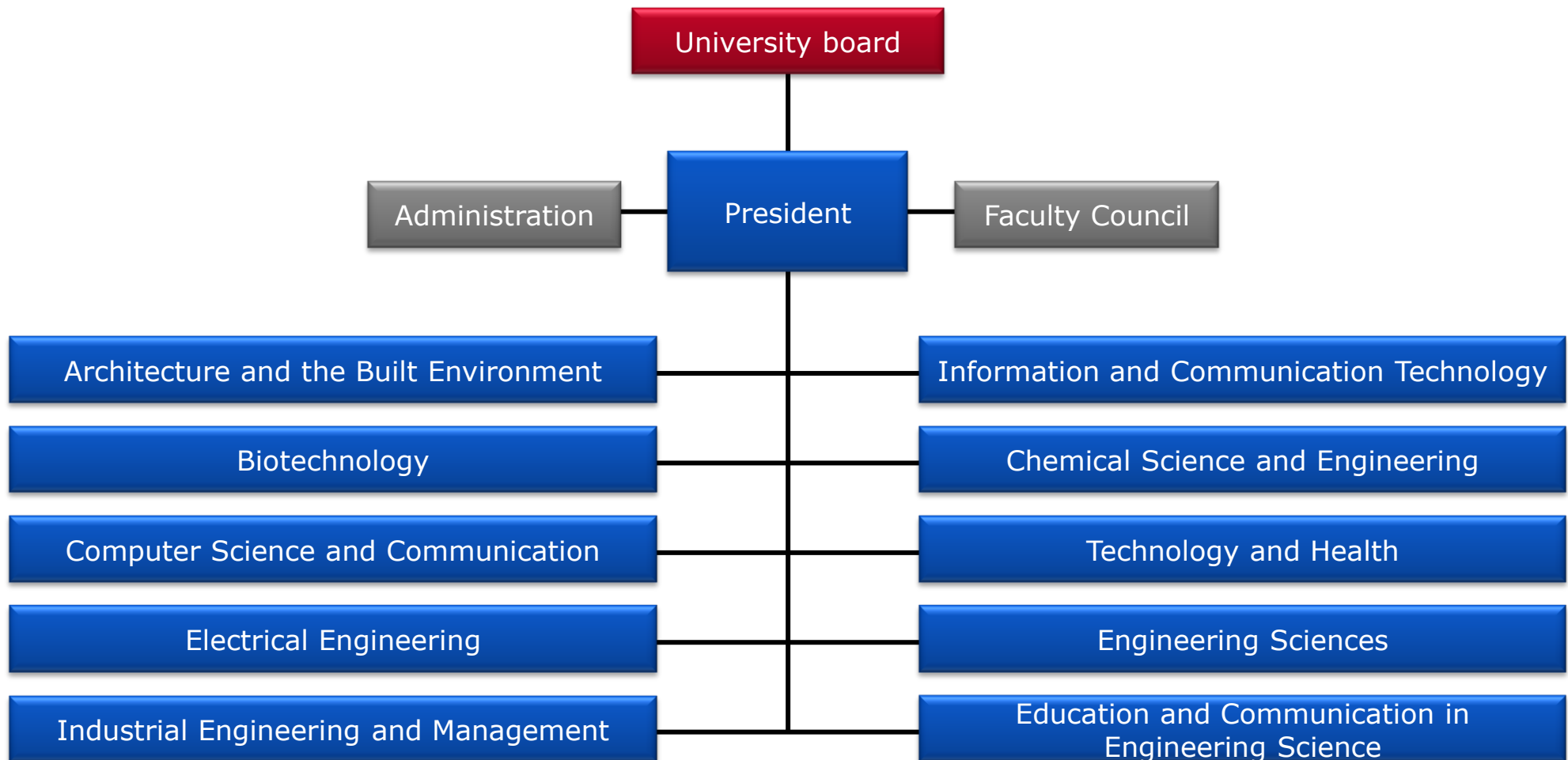- Zurich
- ..

Welcome to KTH

September 10, 2013

Tempus project - 530244

"Modernizing higher engineering education in Georgia, Ukraine and Uzbekistan to meet the technology challenge"
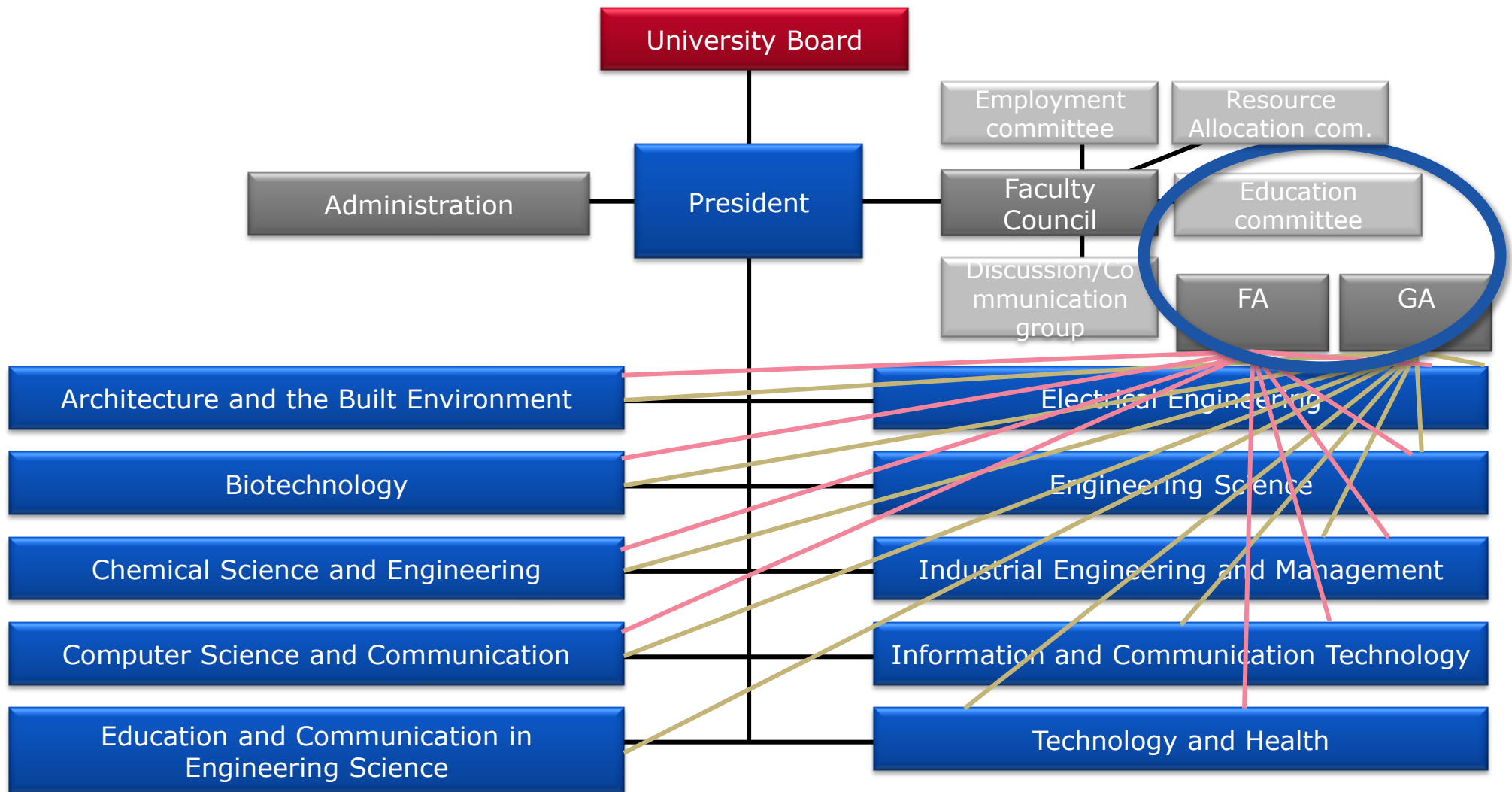
A short glimpse about:

- organization - structure
- rules
- some facts and figures
- programme improvement

- Presented by
  - Carina Kjörling &
  - Margareta Karlsson from
    Planning and Evaluation Office

Organization

```
                    ┌─────────────────────┐
                    │   University board  │
                    └─────────────────────┘
                              │
┌──────────────────┐  ┌─────────────────┐  ┌──────────────────┐
│  Administration  │──│    President    │──│  Faculty Council │
└──────────────────┘  └─────────────────┘  └──────────────────┘
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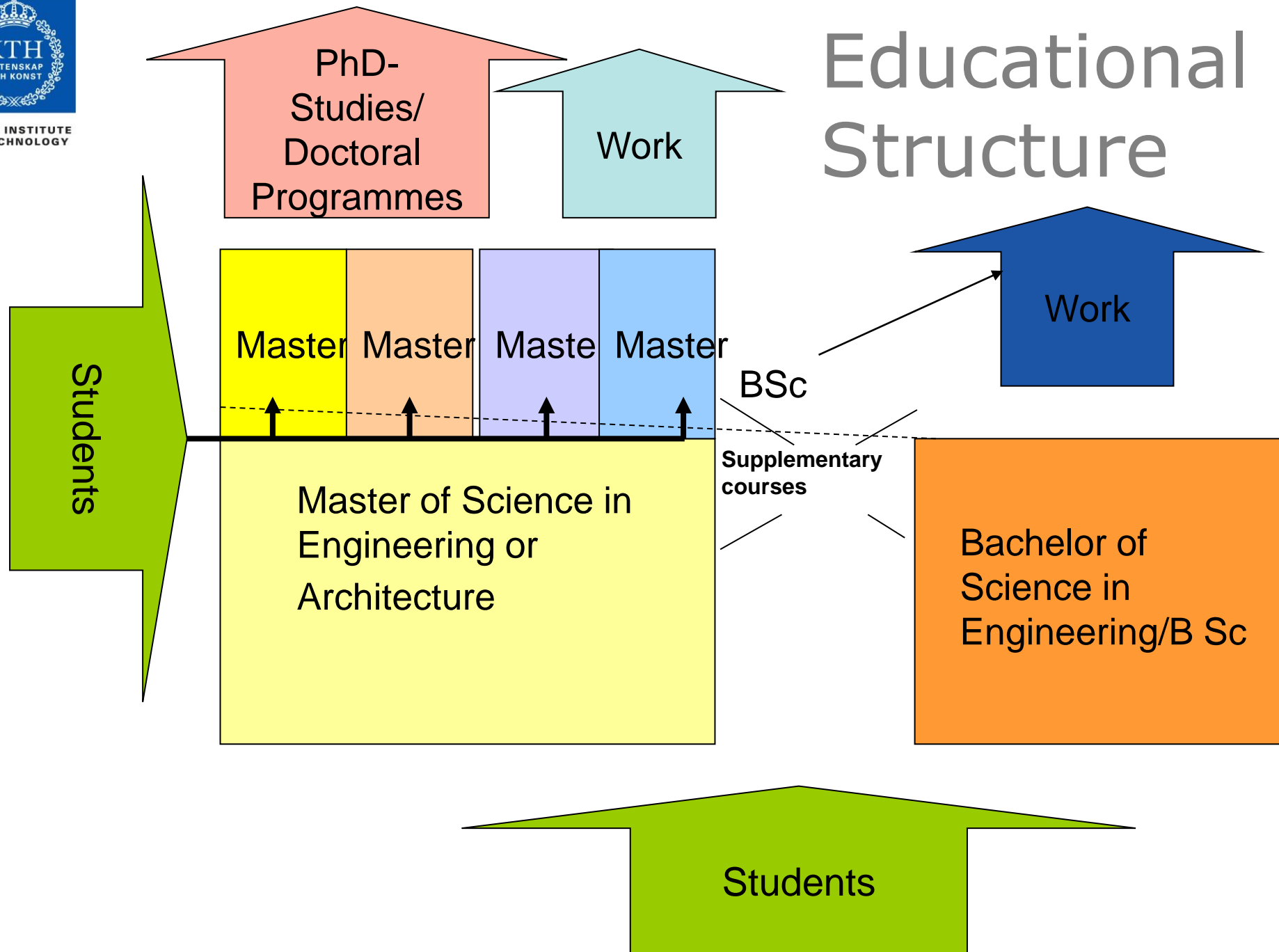|	
Architecture and the Built Environment	Information and Communication Technology
Biotechnology	Chemical Science and Engineering
Computer Science and Communication	Technology and Health
Electrical Engineering	Engineering Sciences
Industrial Engineering and Management	Education and Communication in Engineering Science

Channels for education issues in the organization

Educational Structure

Educational levels

- Preparatory level
- First cycle
- Second cycle
- Third cycle
  (cycle refers to the Bologna description of educational levels)

  Courses, Educational Programs and Degrees are all referred to a level

KTH is a university

- Universities in Sweden have general degree awarding powers at
  - first cycle (Higher Education diplomas and Bachelors' degrees)
  - second cycle (one-year and two-year Masters' degrees) and
  - third cycle (licentiate and doctoral degrees).

About rules and regulations

- Higher Education Act
- Higher Education Ordinance
- KTH-Regulations
1. Education on first and second cycle must be organized in courses.
2. The courses may be combined into educational programmes
3. Courses must have a syllabus
4. Programmes must have study-plan
5. Students must fulfil national and local qualification requirements in order to receive degree certificate

Local Degree Regulation

- Master of Science in Engineering – having completed courses comprising 300 credits, of which

1. At least 45 credits in mathematics/natural science subjects, in addition at least 180 credits (including a 30-credits degree project) in subjects within framework of the engineering area;

2. At least 90 credits at second level, of which at least 60 credits in subjects within framework of the engineering area

- Bachelor of Science in Engineering – having completed courses comprising 180 credits, of which
1. At least 25 credits in mathematics/natural science subjects, in addition at least 90 credits (including a 15-credits degree project) in subjects within framework of the engineering area

- Master (120 credits)
1. At least 90 credits at second level, of which at least 60 credits (including a 30-credits degree project) with in-depth studies in the main field of study

- Doctorates – the studies correspond to 240 credits

1. A scientific thesis (doctoral dissertation) corresponding to a minimum of 120 credits

2. Courses corresponding to a minimum of 60 credits

- Licentiate – the studies correspond to 120 credits

1. A scientific paper corresponding to a minimum of 60 credits

2. Courses corresponding to a minimum of 30 credits

Application and running of programmes

- Schools apply for new programmes
- The President may give out assignment to a school to develop a new programme
- The application is handled by the Education Committee and thereafter by the Faculty Council
- The President decides to establish programme (or not)
- Dean of school determines the study-plan for the programme
- The President decides number of students to be admitted to each programme

Establishment of courses

- Departments/units apply for new courses
- The application is handled within the school(s)
- Decision to establish a course is made by the Dean of school

Dean of school also:

1. determines the syllabus
2. appoints examiner

Examiner at KTH

- Grades can only be decided by an appointed teacher, examiner

- Who can be examiner?

  Professors, adjunct professors, visiting professors, associate professors, assistant professors, lecturers

  - at least employed 20 % of full-time at KTH

Integration process towards Bologna

Students enrolled in <u>5-year</u> Master of Architecture or Master of Science in Engineering programmes

1. Compulsory degree project work 1st cycle
2. Can apply for B Sc degree after completing year 1-3
3. Last two years together with other students admitted to Master of Science programmes 2nd cycle

Grades at KTH

- Criterion-referenced grading scale A-F

  A-E approved grades (A highest)

- Fx is used when there is a chance to supplementary examination – must be done within 6 weeks

- Grading scale P/F (Pass/Fail) - only used as an exception

- Students are allowed to retake exams in order to receive a better grade – when appropriate

The Academic Cycle

- Begins in early September ends in June

- 40 weeks divided into four study periods

- Examination period after each study period

Education at KTH 2013/2014

- Preparatory education (foundation year programme)
- 1 Higher Education Diploma programme
- 9 Bachelor of Science programmes in Engineering
- 4 Bachelor of Science programmes
- 1 Master of Architecture programme
- 15 Master of Science programmes in Engineering
- 1 Master of Science programme in Engineering + Education
- 1 Master of Science programme in Secondary Education **NEW**
- 6 Master of Science programmes (60 credits)
- 62 Master of Science programmes (120 credits)
- 29 Doctoral programmes

Doctoral Programmes

Aims at strengthening quality by providing:

1. Good quality courses given on regular basis
2. Support for doctoral supervisors
3. Specific requirements on thesis
4. Unity between different groups of students
5. Intended learning outcomes
6. Programme co-ordinator as well as steering-committee

A Doctoral Programme may involve several subject areas

Regulations:

• Programme description

• Study plan for each subject area

• Individual study plan for each doctoral student

Student facts and figures 2012

- 12377 full year students (registered on 60 ECTS/year)

- 10895 full year performances

- 1869 active research-students (>50 % of full-time)

- 2754/1715/420 newly admitted students cycle 1/2/3

- 82/838/668/1177 issued Master of Architecture/ Master of Science in Engineering/Bachelor of Science/Master of Science degrees

- 235/153 issued Doctorate and Licentiate degrees

An International University

- 1372 incoming exchange-students 2012

- 651 outgoing exchange-students 2012

- Nordic master's programmes; Erasmus Mundus and EIT European Institute of Innovation and Technology master's programmes and graduate schools

- 33 % of graduates from Master of Architecture and Science in Eng had spent at least one term abroad

- 20 % of graduated 2008/09 work abroad (2011)

- 16 % of Licentiates/14 % of Doctorates had spent >3 months abroad; 81/84 % respectively had presented own research results at international conference

Programme improvement

- Great potential for change and improvement while developing joint educational programmes
- N5T Peer-evaluation developing exercise
  - SWOT-analysis, exchange of best-practice
- Network for programme directors within KTH
  - cohesion between courses, theme, progression
  - improvement of students' written communication skills
  - integration of sustainability and ethics aspects
- NOTIS-Science and Technology in Society
  - aims to increase teachers' knowledge of labor market and improve work related learning and activities in educational programmes

At last

Thank you for your attention

carinak@kth.se

maggank@kth.se

A Brighter Tomorrow

KTH, the Royal Institute of Technology

Victor Kordas
Senior Project Manager KTH

Legal basis for employing teachers

- Higher Education Act (1992:1434)
- Higher Education Ordinance (1993:100)
- Decisions of University Board, 1993 - 2009
- President's decision No 354/2005 "KTH's rules of procedure, Ref 930-2005-0480, Doss. 10
- President's decision No 310/2006, Ref V-2006-0531, Doss. 40

Recruitment goals

- Highly professional teacher team

- Creative scientific and research environment

- Staff with own research interests capable to develop new areas

- Pedagogical development

Teacher categories at KTH

- Professors
- Adjunct professors
- Visiting professors
- Associate professors

- Assistant professors
- Lecturers

Specific provisions relating to each teacher category

Specific recruitment goals with regard to gender equality

Recruitment: planning and preliminaries

Needs analysis, prospective applicants and preliminary external experts: Search Committee

- Dean of the School is responsible for preliminary measures

- Specific search committee is selected for each teaching appointment

- The President decide whether the position shall be announced

Recruitment: planning and preliminaries

Employment profile contains:

- Subject field
- Subject description
- Primary working tasks
- Required qualifications
- Assessment criteria for selection and their weighting
- In employment profiles for assistant professors, explicit qualification requirements for promotion to associate professor within the given subject area must be stated.

Recruitment: planning and preliminaries

Roles and responsibilities in decision making

- The Faculty Council decides on the employment profiles for the following posts: Visiting professor and adjunct professor.

- The decision on employment profiles has been delegated by the Faculty Council to the Employment Committee for the following positions: Professor, associate professor and assistant professor.

- The Faculty Council has delegated decisions on employment profiles in cases of promotion to the Employment Committee.

Nomination

KTH may nominate an individual for appointment to a professorship if the appointment of this individual is of particular importance for a specific undertaking at the university

If KTH nominates an individual for a post, written record must be made of the grounds on which the appointment is of particular importance.

Anyone wishing to initiate a nomination procedure must first contact the Dean of the relevant school. The Dean of School then refers the matter to the Dean of the Faculty and the President.

Advertising

Vacant teaching posts shall be announced and advertised externally, with the exception of adjunct professorships, visiting professorships and in the case of nomination

An advertised vacancy for a professorship shall always be advertised in at least one daily newspaper (Swedish)

All advertising in the media, including the Internet is to be coordinated by the HR Department

Decisions regarding external experts

The Faculty Council decides on the external experts for visiting professorships and adjunct professorships.

The Faculty Council's Employment Committee decides on external experts for professors, associate professors and assistant professors as well as appointments by nomination and promotions .

Each external expert is to submit an individual written evaluation to the appropriate Appointments Committee

Appointments Committees

The responsibility for making assessments and submitting proposals concerning the appointment of professors, associate professors and assistant professors rests with the Faculty Council

The members of an Appointments Committee shall be selected so that the committee has the possibility of assessing both research and educational expertise as well as other skills

The Faculty Council has delegated the appointment procedure and decisions on proposals for the appointment of professors, associate professors and assistant professors to the Scool or inter-school Committees

Appointments Committees

The Appointments Committees consists of:

- A chairperson and at least three other members elected by the Faculty Council. If the chairperson cannot be present, he/she selects one of the other members to act as vice chairperson.
- Student representatives. The students have the right to be represented by three members in an Appointments Committee.
- The external experts selected for the procedure.
- The Dean of School or an individual nominated by the Dean of School co-opted to the Committee. The school representative does not participate in the decisions.

Appointments Committees

The Central Appointments Committee consists of:

- A chairperson and at least three other members elected by the Faculty Council. If the chairperson cannot be present, he/she selects one of the other members to act as vice chairperson.
- Student representatives. The students have the right to be represented by three members in an Appointments Committee.
- The external experts selected for the procedure.
- A representative from the School from which the application for a promotion has been submitted, normally the chairperson/vice chairperson of the School's Appointments Committee. The school representative does not participate in the decisions

Appointments Committees

- **Specific rules of the AC working procedure**

- **Clearly defined requirements for presenting AC decision and its reasons**

- **Conflicts of interests**

Decisions regarding appointments

- The Appointments Committee submits proposals to the President for the appointment of professors

- The committee submits proposals for the appointment of associate professors and assistant professors to the Dean of School responsible

- Decisions on the appointment of professors are made by the President, while decisions on the appointment of associate professors, assistant professors and lecturers are made by the Head of the School to which the post is assigned

- If the Dean of School's standpoint differs from that of the Appointments Committee, the decision shall be submitted to the President

Terms of employment

- The President together with the Head of Human Resources shall determine the salary to be paid following individual negotiations in connection with the appointment

- Information about salaries and terms of employment are to be provided by the Head of Human Resources

- For associate professors, assistant professors and lecturers, salaries are determined on the basis of individual negotiations in connection with the appointment by the School

Employment contract

- An employment contract is drawn up in connection with each appointment, which includes a job description based on the employment profile and any additional requirements for the post

- If the individual appointed lacks training in teaching skills a requirement to complete such training must be included

- The employment contract shall also include a plan and a date by which this training is to be completed

Deviations from the appointments procedure

- The qualification requirements and assessment criteria laid down in this appointments procedure may in individual cases be waived or replaced by other procedures based on specific requirements entailed by the tasks specified for the individual appointment.

- The Faculty Council or the Employment Committee decides on exceptions of this nature when determining the employment profile.

- In addition, the President may decide on deviations from this appointments procedure if there are grounds for doing so.