Minutes meeting in Employers´ Panel for Computer Science

Tuesday 20 September 2023 at 16.00, at Netcompany.

Participants:
Members of panel: Christian Bjerre Nielsen (chairman), Bodil Biering, Mille Østerlund, Daniel Schiermer, Jacob Benjamin Cholewa, Torben Wind Meyhoff

From ITU: Per Bruun Brockhoff, Pernille Rydén, Dan Witzner Hansen, Therese Graversen, Marco Carbone, Patrick Bahr, Luca Aiello, Peter Sestoft, Thore Husfeldt, Mette Holm Smith, Marc Kellaway, Allette Bjørn Bundgaard (minutes).

Minutes:

1. **Welcome** /Christian
   Short presentation round.

2. **Presentation by Netcompany: How ITU graduates fit into the company** / Jacob.
   Netcompany only hire people with IT/natural science background, and thus, all levels from management to salespersons and developers know what is possible in relation to products. This makes a good dynamic in the company.
   Employees in Netcompany can develop a career with IT in several directions and employees tend to stay for a longer time.
   Outsourcing is also part of the company set up with larger teams in Poland and minor in Vietnam. The teams work side by side with the Danish teams as clients are not too keen on collaborating with non-Danish speakers.
   Graduates from ITU with computer science background have good developing skills, learn fast and know how to dive deep into projects.
   Competences looked for when hiring are problem solving skills and ability to see the clients needs.
   Netcompany hires mostly newer graduates and spend many resources on onboarding to give newcomers the same starting point.
   The main consulting business of the company hires only MSc and PhD graduates. Bachelors are also hired but more for practical hands-on jobs.

   Question from the panel:
   - Do you prefer to hire employees having graduated from longer study programs to shorter?
   Graduates with longer education are more used to learn quick.
   - How is the need for lifelong education/upgrading?
   There will always be a need to stay updated on IT-skills.

3. **Follow up on earlier recommendations:**
   Nothing on the list.

4. **Status on study programs (applicants, admission, employment etc.)** / Peter and Heads of programs.

   Peter presented the application and admission numbers from the 2023 intake – see appendix 1

   - At SWU the number of women on this year´s cohort is now 25%.
   - The demand for students/graduates is high, but the admission number should not raise on the cost of quality. Further it is also important to maintain the focus on research as this is the second leg on which university is based.

   Question from participants:
   - What made it possible to increase the level of women to such a degree?
   ITU has worked on this for many years and introduced several events aimed at women or people without coding experience, like Coding Café and IT-Camp for women and BootIT for new students with no coding experience.
   Thus, we show that we take seriously that students cannot code when they come.
   Course examples incorporates both gender, and TAs are both men and women.
   Those initiatives make men and women see themselves in the program.
   The panel is amazed to see this increase in women students on SWU over such a brief time.

   BDS / Therese: Admission: International women more often say no-thanks to the study place than other groups of students.
   Kvote 2 applicants tend to be good – often better than kvote 1.

   The new first semester program structure comes into force this year.
   Software Design and Engineering is now mandatory on fifth Semester. Students on this course learn Java, while the main language on the rest of the program is Python. What do the panel thinks of this?

   Comments from panel:
   Python is not enough for companies. Industry use Java widely.
   Transition between programming languages is important, but graduates are struggling more with software engineering than learning new programming languages. Thus, please use a language that forces these paradigms.

   KDS / Luca: The first cohort of MSc in Data Science graduated this summer. Many graduates already found jobs before graduating.

   KCS / Marco: The new mandatory course, Introduction to Machine Learning course comes into effect this autumn.

The prerequisites for applicants to KCS have been revised and are now precisely defined. BDS students can qualify by using their two electives on specific courses.

SWU / Dan: The review of SWU by an external review-panel took place last year. Head of programs discussed changes based of the recommendations from the review panel. One of the initiatives are to develop and secure the scaffolding around the programming courses.

5. **Should the BSWU program teach introduction to machine learning (ML) as a mandatory course?** / Dan.

   The head of programs consider introducing a mandatory course in ML on SWU. However, as there is no free space in the program, the question is what course to remove from the program to make space for ML.
   Dan asks for the panels´ view on this.

   Comments from panel:
   - leave ML as optional for the interested students, it is better to make super qualified software developers than graduates with skills pointing in many directions.
   - As it is, SWU embrace software engineering and computer science, and this is good. Front end systems are complicated, and it is important to keep the "soft" skills in SWU, as software engineering requires the "soft" skills. It might be better to focus on software skills for SWU and data science skills (e.g., ML) for BDS.

6. **The impact of generative AI (GAI) on education** / Thore Husfelt.
   Presently, the use of GAI increase. Universities need to consider how to respond to students´ use of GAI, and the possibilities, and challenges it brings to the way we view education. Thore presented his views on this – see appendix 2.

   The participants discussed the impact of GAI and what is important to realise.
   Key words from discussion:
   - GAI gives a boost to the good software programmer. The good programmer can express and understand what GAI makes and ask the right questions to further develop the result.

   - What is the impact on different learning areas - GAI might be supportive for both weaker and strong students for varied reasons. However, the risk is that GAI makes students lazy.
   - Right now, where nobody really knows GAI in-depth, we need to be able to evaluate what comes out of students using GAI and develop from there. Gradually, we will enhance our skills and experience.
   - Students need to be able to explain and understand what happens in GAI and how to use it.
   - if GAI is a general tool, exams can be constructed to be more complicated.
   - GAI is a strong tool if you understand how to use it.
   - It is important not to marginalize students that do not use GAI effectively.

Question: How do ITU view GAI?
Dan: The written exam forms need adjustment to cater for the use of GAI.
Marco: Students can use GAI for their Master´s thesis if they explain what they have done.
Therese: Mandatory assignments and other smaller assignments are the points of considerations.
Luca: GAI is complexity with many moving parts. Thore: Universities need to provide environments that allow valid and fair assessment forms, including fine-grained control over which electronic and communication tools are allowed and expected for a particular exam.Pernille: We need to know what employers expect from our students.
Peter: GAI is a special challenge on introductory courses, students need to know the basics and see the reason for knowing this before they are allowed to use and embrace GAI.

7. **Approval that the CS education programs BSWU, BDS, KCS, KDS, KSD develop Green Competence Profiles and include them in the Sustainability and Ethics pillar of the Employability Profiles** /Peter

   Peter explained that ITU and the Ministry agreed to add sustainability to the ITUs strategy. Environmental sustainability is part of this. As a result, ITU now works on Green Competence Profiles for the study programs and wants to include them in the Sustainability and Ethics pillar of the Employability Profiles. The level of details is not high yet but will be.

   Comments from Panel:
   The panel has no objections to including the Green Competence Profiles in the Sustainability and Ethic pillar on the Employability Profiles.

8. **Updates on the "Kandidatreform"** /Peter.
   Peter presented the outlines of the "Kandidatreform" – see appendix 3.
   ITU plan a Kandidatreform "network" meeting, Wednesday 1 November 16-18.

   The participants discussed the Kandidatreform, especially, who should finance the industrial master´s programs? What will employers pay? ITU and employers have a joint responsibility to develop the new study programs in a way that makes them attractive for applicants.
   With the current demand for IT-graduates on the job market, the panel worries about the governmental plan to reduce the number of study places on IT-programs.

9. **AoB.**
   Nothing.