Running a PhD School

Carsten Schürmann
IT University of Copenhagen
My view on PhD education

• Goals
  – Further frontiers knowledge
  – Ready students to become leaders
  – Build a network

• I am heading the PhD School at the ITU
Overview

• Challenges in the Global Context
• How do we run the PhD School at the IT University of Copenhagen?
• Self evaluation
National vs. International

Denmark: Seven public universities

• Stimulate the local economy

• PhD is expensive
  – 200 000 Euro
  – 3 years

• Expectations
  – Generate value
  – Be global
  – Be great
  – Be fast
National vs. International

One big network
Tough competition
Countries with excellent undergraduate education
Countries with universities that have grown excellent reputations
Europe’s Situation

Blue sky vs. Strategic research
Time to market vs. Market to time
Outsourcing vs. Insourcing
Inferiority vs. Superiority
Humble Suggestion

1. Recognize what is good.
   - Excellent high schools
   - Excellent undergraduate programs.

2. Concentrate and build on our strengths.
   - Fix what is broken
   - Support quality

3. Avoid pitfalls (complacency)
Being Elitist vs. Being Common

Principle
Great students in
Great students out

Elite Universities
Lost in Translation

• What is a Bachelor degree?
  – Liberal Arts Degree
  – Deep Scientific Knowledge

• What is a Master degree?
  – US: Professional degree or consolatory degree
  – German Diplom
  – Danish Candidate?

• What is a PhD degree?
### My Studienbuch 1990

**Hochschule: Universität Karlsruhe**

**Sommer-Winter-Halbjahr 1990/91**

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**Bestätigung/Quittung**

(Auftragsannahme der Bank)

Überweisung wurde zur Ausführung angenommen am: 05. Juli 1990

Sparkasse Karlsruhe

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The PhD SCHOOL at the IT University of Copenhagen
Thesis Proposal

DEFENCE
What do we expect?

To educate a generation of leaders in

• academia
• business
• society

Our students must

• Produce a piece of work that others build upon
• learn how to teach
• build a network
OUR GUIDING PRINCIPLE

Support the student

Trust the advisor

(but within reason)
Playing the Reputation Game

We are young
But we play to win!
Spiral of life or death
Long term investment

Measures of success
• Derivative of applications numbers
• Derivative of how many are qualified
• Evaluate output with respect to goals
• Measure the yield
How do we find candidates?

Domain: Entire World
Regular application deadlines
• mid April mid October
Rattle the research networks
• Email lists
• Personal connections
• Establish channels
How do we evaluate them?

Evaluator System
• Collaborative tool
• Easy and fast to use
• Three-click evaluation
• Two years experience
• It’s not software it’s a process

Not for sale but free to use
• We are happy to share it
• Send mail to carsten@itu.dk
How do we make them feel welcome?

**ITU Introduction course**
- One day event
- Department introduces itself
- Vice Chancellor gives a talk
- PhD student gives advice
- Talk about the difficulties and expectations of doing a dissertation

**Effects**
- Students identify with the university
- Students meet each other
How do we control quality?

*Validate the advisor and student relation*

- Study plan (after 3 months)
- Half year reports
- Thesis proposal

Careful planning of the stay abroad

Student lunches

Personal conversations

Time management
Thesis Proposal

History
• Suggested by an advisory board in 2007
• Discussed among all faculty in 2007
• Introduced January 2008
• First student defending June 2009

Highlights
• Low overhead (5 page document)
• Student: 15min talk: Details
• Advisor: 15min talk: Big picture, nugget
• Dissertation evaluation committee is set

Outcome
• PASS/TRY AGAIN
EDUCATIONAL REQUIREMENTS

*PhD courses*
- Faculty currently use “research time”
- No integration into ITU teaching model

*Example:* Programming Logics and Semantics
- Critical mass of students
- Linear Logic PhD course 12-14
- Teaching is part of research

*Our Speciality*
- Mini PhD courses lecturer from outside
- Follow student’s demand
- Summer/Fall Schools
PHD Research Schools

*PhD school*
- Responsible for quality of the work
- Vertical support
  - Integration into one university
  - Teaching
  - Interaction with people in different fields

*PhD research school*
- Responsible for research network
- Horizontal support
  - Across several university
  - Connection/peers
  - Focuses on research
  - Limited to Danish Universities (?)
How do we support the defense?

- Governed by law
- Evaluation committee
- Show the student that we acknowledge their hard work.
- However, we should
  - more to help them find a job
  - offer an “emigration” course
  - stay in touch with our alumni
How do we ADVERTISE?

*With our graduates!*
(Raw talent * Education)

*Trying to establish channels to*
• find good universities
• draw students from there
• draw more students from there

*Sometimes we get free advertisement*
• News spreads fast in Denmark
216 kæmper om at blive ITU-æggehoved

Der er masser af interesse for forskeruddannelser inden for it. På IT-Universitetet er der 216 ansøgere til 11 ph.d.-pladser.

AF TANIA ANDERSEN, MANDEG 27, APR 2009 KL. 13:29
EMNER: ITDANNESE

ITU-Universitetet i København (ITU) har fået i 216 ansøgere til bare 11 pladser på universitets ph.d.-uddannelser.

VI oplever, at IT-Universitetet er et eftertragtede sted at starte sin forskerkarriere. Jeg tror, at en væsentlig årsag til dette er IT-Universitetets fornuftige forudplanlægning for uddannelsen inden for samfund og IT og desuden universitetets generelle fokus på globalisering,« siger lektor Carsten Schürrmann ifølge en pressemelding. Han står i spidsen for rekruiteringen af ITUs ph.d.-studenter.

Videnskabsminister Helge Sander har bidt universiteterne om at fordoble deres optag på ph.d.-uddannelserne. For ITU betyder det en stigning fra 11 sidste år til 22, og de 11 kommende studerende i dan nuværende runde bliver således fulgt til dømmes af 11 andre studerende fra første runde.

Et stort af finansieringen af de 22 ph.d.-studere kommer fra samarbejdsprojekter med eksterne partnere, såsom private virksomheder.

»ITU-Universitetet går nu i gang med at finde flere firmaer, som kunne være interesserede i at medfinansiere ph.d.-studerende, som kan være med til at dække deres behov for højt kvalificerede medarbejdere,« fortæller proktoren Jørgen Staunstrup ifølge en pressemelding. Skulle nogen være interessered, siger han klar ved telefonen, lyder det fra ITU.
## STATISTICS

### The PhD school of the IT University of Copenhagen

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### First Research School at the IT University of Copenhagen

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### Industrial PhD students at the IT University of Copenhagen

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Where do our graduates go?

- Currently about 60% of our PhD students come from abroad.
Self Evaluation

• The PhD School could be more closely integrated into the university
• Active participation in hiring process
• Integration of teaching PhD courses into regular teaching load of faculty
• Faculty discussions about students’ progress, e.g. black friday
• More PhD research schools at ITU
• PhD student teaching ideally more relevant to research
• Emigration course
• Strengthen alumni relations
• Evaluation software works great!
{Pre: An outstanding faculty}

{Post: High-Risk High-Return Research}