Welcome to the Master Innovation Sciences

Outline of Presentation
• What is Innovation Sciences?
  • Its core disciplines
  • Its core interests
• Career opportunities
• Study program
• Master Thesis examples
• Job examples

Innovation Sciences
Business Model:
• Customer should not own battery > battery exchange
• Re-charging infrastructure

Socio-economical Problem:
• Failure of Energy Infrastructure?

(Source: J. Naus)

Innovation Sciences
Electrical cars

Business Model:
better place
• Customer should not own battery > battery exchange
• Re-charging infrastructure

Socio-economical Problem:
• Failure of Energy Infrastructure?

(Source: J. Naus)

Innovation Sciences
Fiber optics at home

> 200 initiatives in NL
~ 5 initiatives in NL

Why?

Innovation Sciences
Smart e-Metering:
• Energy AND ICT Applications

But:
• Why is not taking off?
• Who owns the meter and the data?

(Source: J. Naus)

Innovation Sciences
Sustainable technologies?
Career opportunities

- Companies: Océ, Philips, Ericsson, IBM, ASML, Shell, Volker Wessels, Telecom, Rabo, ...
- Universities (or related research institutions): TU/e, TUD, UvA, TNO, Kema, Universities abroad, ...
- Local and national governmental organizations: SenterNovem, OPTA, NMa, Economische zaken, Municipalities, Provinces, ...
- Other non-profit organizations: Housing corporations, Hospitals, ...
- International organizations: EU, Red Cross, World Bank, Unesco, ...

Current jobs of ‘IS’ graduates
- External advisor/consultant: 28%
- Manager, team leader: 25%
- Internal advisor/consultant: 15%
- Research, education: 10%
- Policy advisor: 5%

75% of the graduates feel that their current job is a seamless fit to their studies.

Recent Development

Times Higher Education Ranking 2014 - 106 place worldwide
Masters Innovation Sciences 2014 - Top Masters in NL (82 points)

Evaluation by external committee

- Every couple of years the educational program is evaluated by an external committee (since 2010).
  Overall judgment: EXCELLENT
- NVAO awarded Innovation Sciences the special quality mark ‘internationalization’, assessing the internationalization as ‘good’.
  “The strength of the Master program lays in the compulsory international semester, the international composition of the staff and the relatively high number of foreign students.”

The MSc program combines inputs from technology and different social science disciplines

- Innovation Sciences
- Sociology of innovation
- Psychology of innovation
- Economics of innovation
- Technology Assessment
- History, Philosophy, Ethics, Law
- Technology

What is Innovation Sciences?

MSc program Innovation Sciences
- Socio-economic perspective on technology and innovation
- Focus on technological change and innovation
- Particular technological areas: Energy, ICT and Health Technology
- What kind of policy do we need? Why don’t we get this policy?
- Multidisciplinary perspective
The study program: two-year Master [+1]

- Master, year 1: Core courses and Elective courses
- Master, year 2: International semester + Master thesis

From HBO → MSc IS: pre-master program

Study program
Year 1: core courses and electives

**Core Courses**
- Evolutionary Foundations for Innovation Sciences
- The Network Society
- Modern Societies in Transition
- Governing Innovations
- Novel Technologies & Human Behavior
- Research Methodology Innovation Sciences

**Elective Cluster(s)**

**Elective Courses (12 ects)**
- Life in a Virtual World: the social science of the Internet
- Knowledge Economy & Society
- Innovation & Sustainability
- Technology, Globalization & Europeanization
- (or custom-made cluster, e.g. cluster of technology courses)

The Network Society

- Companies getting knowledge by cooperating with others, network of independent R&D alliances (example: ASIC - Application Specific Integrated Circuits Market)
- Questions: How many cooperative links does a firm have? How central is a firm in the network?

Governing Innovations

Can you “govern” innovations?

- Innovations: spontaneous process with high risks and very uncertain returns > Are WBSO subsidies the magic toolbox for innovations in the Netherlands?
- Naive perception of policy: government will/has to take care of everything > BUT: government is increasingly pulling out!
- Problem for society: how to produce radical innovations? Are innovation subsidies just for big companies? How to foster innovations in small- and medium sized companies? Are large firms like Apple and Big Pharma just exploiting public funds without sharing the benefits with society?
Cluster 'Life in a Virtual World'

Study program specialisation

Impact of virtual communities on social behavior

Courses
- Life Online
- Super Crunchers
- Consumer behavior
- Infonomics

Why did Philips fail with HDTV? One world, the "smartphone" Velo1?

Study program specialisation

Cluster 'Knowledge economy & Society'

The role of knowledge and knowledge institutes in innovation processes

Courses
- Innovation and Intellectual Property
- Infonomics
- Knowledge Infrastructures in a Globalizing World
- Inside the Knowledge System

What are the six Apple patents Samsung violate? Is this good or bad for innovation?

Cluster 'Innovation & Sustainability'

Study program specialisation

Large scale PV power plants in deserts
Rural electrification in India, Africa

Courses
- Technology & Development
- Ethics and the Risk Society
- Energy & Economy
- System Innovation and Strategic Niche Management

Cluster 'Technology, Globalization and Europeanization'

Study program specialisation

Role of critical infrastructures in Europe
Sustainability experiments in an Asian context

Courses
- Development Economics
- Transnational Critical Infrastructure
- Technology & Globalization
- Technology & European Integration

You can also choose your own courses (after approval of Examination Committee)

Examples:
- ICT: Software security / biometric recognition / intelligent systems / ...
- Energy: engine technology / vehicle drive trains / wind energy / hydrogen technology / solar energy / biomass / ...
- Construction: Intelligent buildings / domotics / building performance simulation / ...
- Medical technology: biomedical technology

Second year, first part: you go abroad .....!

'Tailor-made' programs for students in:
- USA - Univ. of California Berkeley, Carnegie Mellon, Univ. of Wisconsin
- Australia - University of Sydney
- New Zealand: Victoria University Wellington
- Italy - Bocconi University, University of Brescia
- Sweden - Chalmers Univ. of Technology, Univ. of Lund, Stockholm University
- Germany – Universität Düsseldorf, TU Berlin
- UK - Northumbria University, Newcastle, UK
- South Afrika - University of Pretoria
- or in Spain, Chile, Tanzania, India, Thailand, Singapore, ....
- In preparation of your Master Thesis (= afstudeeropdracht)
You can carry out your Master Thesis in:

- A commercial organization, e.g. Holland High Tech, Kema
- A non-profit organization or governmental institute organizations, e.g. Province of North Brabant, Fact
- An international organization, e.g. Unido
- The Research School of our department: the Eindhoven Centre of Innovation Studies (ECIS)

These MSc assignments can be carried out in the Netherlands or abroad. For instance, students with a specialisation in Sustainability and Innovation or Technology, Globalization and Europeanization and an interest in research in developing countries can execute (part) of their MSc assignment in a developing country.

Study program
Year 2: international courses and thesis

- University spin-offs and network activities
- Open innovation: analysis of business spin-offs on the High Tech Campus Eindhoven
- FITH in the Netherlands : availability, adoption & use
- Exploring the grey area of openness in innovation in the Dutch high tech systems and materials sector
- Privacy : constitutional rights and the internet of things
- How to rebuild your public image on Facebook?
- Exploring the potential of small biogasifiers for electricity production in developing countries : a multi-level analysis on possible adoption in Uganda and Bolivia
- The sustainable university campus

Master thesis examples

- Rabobank International Utrecht
- Novem BV Utrecht
- Province Noord-Brabant
- Haskoning BV Nijmegen
- Alk ingenieursbureau
- Gemona Vaarheesael
- Ministerie van Buitenlandse Zaken
- Cap Gemini Ernst & Young Utrecht
- Been Development Barneveld
- Turpin Vaessen
- Rode Kruis Nederland
- NEDTrain, NS Materieel Zutphen
- Korce Landelijke Politiediensten
- Rabobank International Utrecht risico-analist
- Novem BV Utrecht programma-adviseur
- Haskoning BV Nijmegen adviseur-faciliteit management
- Alk ingenieursbureau directeur
- Gemona Vaarheesael groepspaleider helpdesk
- Ministerie van Buitenlandse Zaken beleidsmedewerker
- Cap Gemini Ernst & Young Utrecht projectleider ICT
- Been Development Barneveld usability consultant
- Turpin Vaessen directeur eigenaar
- Rode Kruis Nederland beleidsmedewerker internationale hulpverlening
- NEDTrain, NS Materieel Zutphen consultant schrijver produceren
- Korce Landelijke Politiediensten coördinator digitale weergaven

Positions of some of our recent graduates

- KPN Telecom Den Haag landelijk manager billing & formulemanagement
directeur
- Cap Gemini Ernst & Young Utrecht risico-analist
- Novem BV Utrecht programma-adviseur
- Haskoning BV Nijmegen adviseur-facility management
- Alk ingenieursbureau directeur
- Gemona Vaarheesael groepspaleider helpdesk
- Ministerie van Buitenlandse Zaken beleidsmedewerker
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Job examples

- Interelctra Hasselt
- UN Food and Agriculture Org.
- TNO industries Eindhoven
- Lucant Technologies Hilversum
- Omant LMG (Shell)
- Lucant Technologies Hilversum
- Arnhelde Ontwikkeling Woerden BV
- Philips Display Components
- Rode Kruis
- Vietnamese Investeringsmo.
- UNIDO
- EO
- Rode Kruis
- Unilever Utrecht
- APM Consultants
- Novib en andere ontwikkelingsorganisaties
- manager nieuwef
- rural energy expert
- medewerker business support
technical product marketing manager
- senior utility & environment technologist
customer information developer
- projectmanager
- groepsmanger
- coördinator Rode Kruis Zuidelijk Afrika
- coördinator investeringen
- regiormanager Uganda
- medewerker kantoor Beijing
- managementfunctie (Geneve)
- onderzoeker
- stafdocente projecten Indonesie
- medewerker
**Master's program Innovation Sciences**

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**Innovation Sciences**

The Tale of a Lifetime.

Alain Starke

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**Contents**

- Hello!
- All about me
- All about me & Innovation Sciences
  - My decision-making process
  - My curriculum
  - All about you (Questions)

*IS = Innovation Sciences, of course*

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**All About Me**

- Alain... 
- 
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**Alain Starke, 24 years young**

- SG Augustinianum Eindhoven (VWO; 2002-2008)
  - Natural Sciences & Technology
- BSc Technological Innovation Sciences (2008-2012)
  - Minored in Energy Technology
  - Thesis: Cultural Legitimacy of Dutch Bicycle Use
- Had my fair share of extracurricular activities, like:
  - Honors Horizon Program
  - Full-time board Intermate 2010/2011
  - What I’m doing right now (Get rich or die talkin’)

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**More about me**

- Alain...
- 
- 
- 
- 

- Was also denied a modelling career
I also faced a difficult choice…

My decision-making process

ALL ABOUT ME & INNOVATION SCIENCES

I even wrote an article about it

Considering my options

• Focusing my courses or maintaining a broad scope?
• Technology as a starting point or as a mere subject?
• Practical experience or a scientific career?
• And considerations like…
  • “Ja hé, alles is wel leuk!”
  • “Ik kén overal mijn ei wel in kwijt, figuurlijk gezien dan.”

So eventually…

Why?

• I preferred a research-oriented master
  • IS / HTI
• Wish to tackle global issues locally
  • IS / Partially HTI
• Multidisciplinary courses
  • Foremost in IS
• Still, I prefer experimental designs
  • That’s why I’m a bit HTI-oriented
My Curriculum

ALL ABOUT ME & INNOVATION SCIENCES

My experiences

First year Innovation Sciences
• No engineering courses
  • Innovation & Sustainability cluster
  • Super Crunchers, Life Online, Development Economics
• Very cohesive lectures
• Approachability
• Little focus on firm processes

My experiences

Second year Innovation Sciences
• Invaluable international semester in Lausanne, CH
• Currently working on Master’s thesis
• Support from graduation supervisors
• Topic: Social energy-saving recommender systems

All about you: Question Time

With a question mark to emphasize this

Thanks for listening!