HIIT Research Programmes

HIIT Retreat

22.5.2006

Patrik Floréen

HELSINKI
INSTITUTE FOR
INFORMATION
TECHNOLOGY
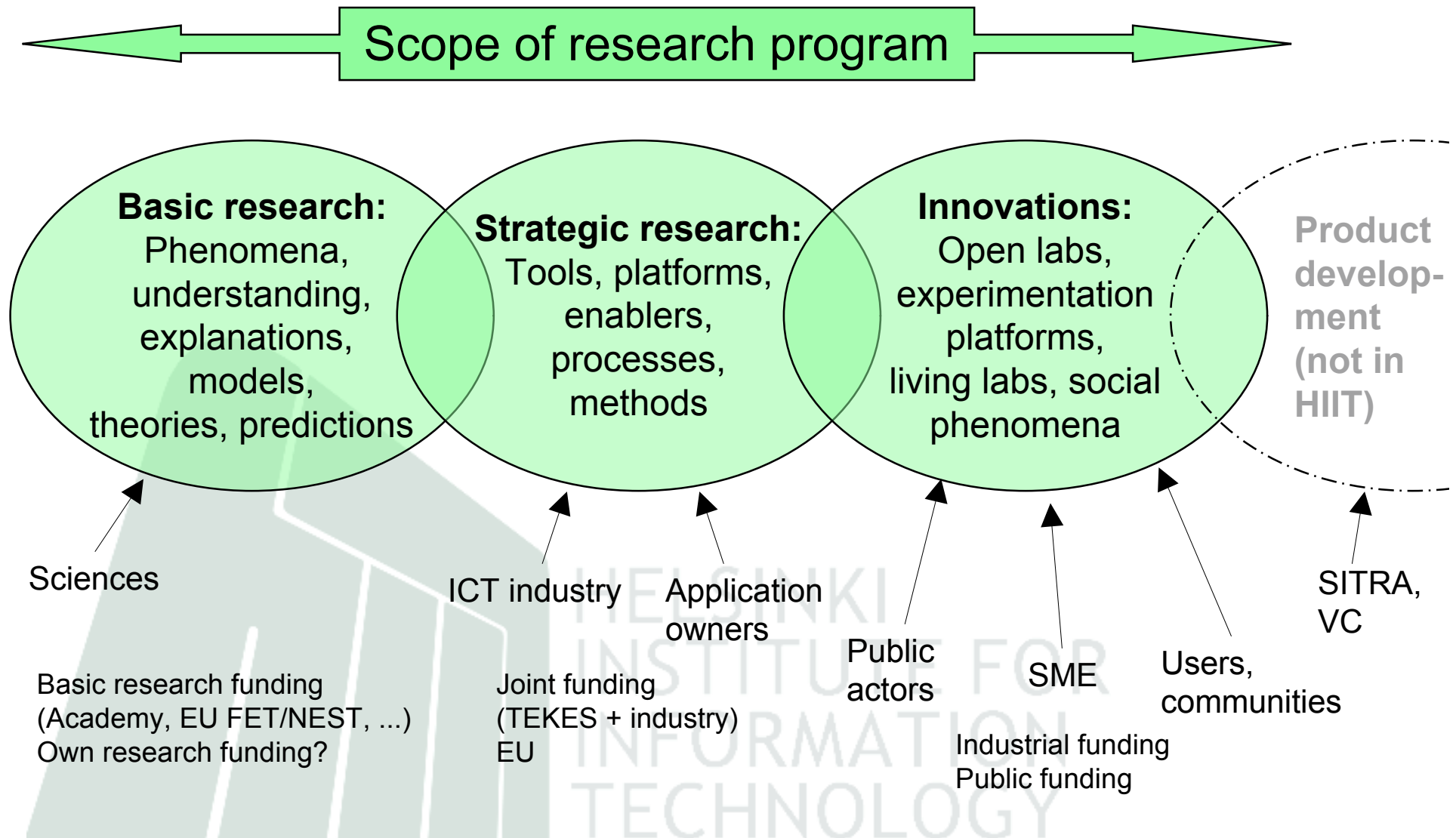
Process

- This is a step towards unification of HIIT, in accordance with the approved strategy
- Timetable:
  - 29.3. at 15: Meeting of prospective programme directors
  - 13.4. at 14: Meeting with TKK/T
  - 18.4. at 13: Meeting with HIIT senior researchers
  - 27.4. at 14.15-: Industrial feedback meeting
  - 11.5. at 14: HIIT Board meeting approved the research programmes until end of 2008
  - → 22.-23.5. HIIT Retreat in Haukilampi: Programme launch

Principles

- Definition: The programme is defined by its mission; each project is assigned to some programme

- Timing: Programmes are temporary (1.7.06-31.12.08)

- Management: Professor-level director; support group (better name?) of external professors and industry – These support groups replace the IAB, which is dissolved

- Decision processes: Board approves the programmes, Management Board of Directors approves base funding distribution between programmes

- Follow-up: Programmes are assessed by SAB at end of 2008

End-to-End

Scope of research program

Basic research:
Phenomena, understanding, explanations, models, theories, predictions

Strategic research:
Tools, platforms, enablers, processes, methods

Innovations:
Open labs, experimentation platforms, living labs, social phenomena

Product development (not in HIIT)

Sciences

ICT industry

Application owners

Public actors

SME

Users, communities

SITRA, VC

Basic research funding (Academy, EU FET/NEST, ...)
Own research funding?

Joint funding (TEKES + industry)
EU

Industrial funding
Public funding

HIIT Vision (draft)

- Ubiquitous and mobile computation, communication and digital media bridge people, things and places; interweave complex phenomena involving individuals, communities, businesses, environment, sciences and society; and produce vast amounts of data

HIIT Research Mission (drafts)

- Recognised as an internationally leading research institute in its field, HIIT's research aims at high scientific, industrial and societal impact based on deep understanding of the developments and phenomena related to modern information technology and their implications on novel theories, technologies and applications

- Esko U version: Recognised as an internationally leading research institution,HIIT aims at basic and multidisciplinary research of modern information and communication technology which includes theoretical and technological aspects, as well as applications, and has high scientific, industrial and societal impact

Suggested Programmes

- Algorithmic Data Analysis (ADA, ~65 py/y) – <u>Mannila</u>, Ukkonen, Hollmen, Rousu, Toivonen, Floréen, Gionis, Lemström, Kärkkäinen

- Future Internet (Fuego tai FI?, 20-25 py/y) – <u>Raatikainen</u>, Floréen, Gurtov, Rimey, Tarkoma

- Network Society (NS, 30-40 py/y) – <u>Turpeinen</u>, Mäntylä, Himanen, Kemppinen, Saari, Jacucci, Pitkänen, Virtanen

- Probabilistic Adaptive Systems (PAS, ~20 py/y) – <u>Myllymäki</u>, Buntine, Hyvärinen, Rissanen

Programmes and their Missions

- **ADA:** Develop useful algorithmic data analysis methods for other sciences and for industry. The work involves both basic research in CS and applied work on problems arising from applications

- **FI:** Enhance Internet infrastructure to enable efficient, secure and trusted always-on connectivity

- **NS:** Human-centric development of ubiquitous information and communication technology, which is based on deep understanding of needs and practices of our everyday life and our social relations in a network society

- **PAS:** Study and further develop the theory of sophisticated probabilistic models and explore their applications for solving problems appearing in complex real-world stochastic systems

Additional Research Activities

- HIIT will be open to new initiatives outside of these four programmes, but fitting to HIIT's vision
- These may grow into new programmes later
- The intention is also to discuss further, during the HIIT Retreat, possibilities of establishing a fifth research programme rather soon

Mission Statements

- PAS: Study and further develop the theory of sophisticated probabilistic models and explore their applications for solving problems appearing in complex real-world stochastic systems

- ADA: Develop useful algorithmic data analysis methods for other sciences and for industry. The work involves both basic research in CS and applied work on problems arising from applications

- NS: Human-centric development of ubiquitous information and communication technology, which is based on deep understanding of needs and practices of our everyday life and our social relations in a network society

- Future Internet: Enhance Internet infrastructure to enable efficient, secure and trusted always on connectivity

Issues to Discuss

- Finalisation of HIIT Vision and Research Mission
- New versions of research programme papers
- Abbreviations of research programmes; better word for "support group"
- Support group composition per programme
- Ways of increasing participation of TKK professors?
- Base funding and coordinator requests from programmes?
- Fifth research programme (open call)?