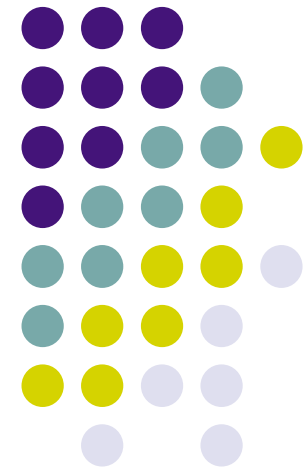


# Building Collaborative Research Capacity in Uganda

John Nerbonne, Dutch Director  
Building ICT Research Capacity in Uganda

EuroAfrica ICT FP7 Awareness Workshop  
20 Oct 2008



# Strengthening ICT Research & Training Capacity in the Public Universities



- Phase I (2004-2008)
  - Infrastructure
  - Education
  - Collaboration among universities, ICT industry, government
- **Phase II**
  - **Staff development**
  - **Research**



# Why Research?

- Research leads to deeper understanding, a goal with intrinsic value
- ICT development creates wealth, & **research capabilities needed in development**
  - Techniques often “off the shelf” but with modification
  - Example: Google’s famous page-rank algorithm

# Background Vision



- Translate:
  - Building ICT Research Capacity => Fostering Collaboration Dutch-Uganda ICT Research
- Research capacity is hard to build, fragile
  - Focus on long-term collaboration
  - Promote cooperation
  - Aim for broad base of **groups**, not individual projects
    - Ph.D. students – Dutch & Ugandan -- help each other

# Philosophy



- Build research capacity through collaboration
  - Learn (research) by doing
  - Collaboration mutually beneficial
  - Mutually beneficial collaborations sustainable
- Success means collaborations and co-publications for 5-10 years
- We're working *with* Uganda

# Operationalization



- Aim for 10 groups of 3 Ph.D. students each
  - Each with Dutch, Ugandan supervisors
  - One Ph.D. student works in NL, two in Uganda
  - Involve all public universities in Uganda
    - 60% Makerere, 40% Gulu, Kyambogo, Mbarara
- NL projects: 3 yr, NL; 1 yr. Uganda
- Ugandan proj.: 3 yr. w. annual 2-mon. visits

# Excellent Senior Scientists



- Baryamureeba
- Lubega
- Rai
- Quenum
- Ogao
- Quinn
- Mekuria
- Ssewanyana
- Bagaya
- Williams
- Musingi
- Nerbonne
- Van den Brand
- Valentijn
- Aiello
- Van der Aalst
- Biehl, Wilkinson
- Jacobs
- Van der Weide
- Renardel
- Sol
- Vaandrager

# Research Achievements – Phase I



- Six Ph.D.'s
  - John Ngubiri, 9/2008
  - 2009-2010: Geoffrey Andogah, Benjamin Kanagwa, Josephine Nabukenya, Julienne Sansa, Florence Tushabe
- Dozens of publications, including co-publications
- Best student paper award (Tushabe), competitive “shared-task” result (Andogah)

# Candidate Selection, Phase II



- Competitive
- Transcripts, References, Project Sketches, Presentations, Interviews. Aug. 2007
- 8 Dutch groups selected (of approx. 15)
- 8 Ugandan groups

# Variety of Research Lines



- Software Engineering
- (Geographic/Business) Information Systems
- Security
- E-Learning
- Pattern Recognition
- Sensor Networks
- Language Technology
- Service-Oriented Computing
- Process Mining
- Grid Computing
- XML
- Agent Technologies



# More Information

- Project “wiki” <http://www.let.rug.nl/uganda/>
  - Enabling exchange of information
  - Sketches of NL, Ugandan research groups, Ph.D. projects
  - News



# Scientific Opportunities

- Eight collaborative research lines
- 11 Dutch professors
- 8 Ugandan senior researchers
- 28 energetic Ph.D. candidates
- 4 years to establish collaboration
  - Co-publications
  - Other projects

# EU Experience



- Lots of experience with EU projects in Dutch consortium, incl. Groningen, Eindhoven, Radboud (Nijmegen)
- Nerbonne coordinated two EU projects
  - *Glosser* 1996-1998 Copernicus program, € 250K, automated dictionary access
  - *Learning Computational Grammars*, 2000-2002, Marie Curie Network, €1,2 Mil., applying machine learning to language technology



# A Personal Note

- Motivation includes
  - Cooperativeness, to help where possible
- But also
  - Scientific ambition, to achieve more scientifically through cooperation
- Scientific, professional motivation essential

Tufanye hiki pamoja!