Probability, Networks and Algorithms (PNA)

Self evaluation CWI 2005-2010

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Overview:
1. Dynamics in composition
2. Position, cohesion, viability and ambition
Composition of PNA

1. Algorithms, Combinatorics and Optimization (PNA1)

2. Probability and Stochastic Networks (PNA2)
   • merger in 2006

3. Signals and Images (PNA4)
   • moved to the SEN cluster in 2010

4. Cryptography (PNA5)
   • started in 2004

5. Algorithms and Complexity (PNA6)
   • joined PNA in 2010

Flexibility: dynamic group structure in response to new challenges and opportunities
Position of PNA

Mixture of fundamental / curiosity-driven research and research motivated by applications

Strong contribution to all four research themes
- societal logistics
- data explosion and learning
- life sciences
- software as service

Broad international network of contacts, both in academia and industry
Cohesion within PNA

Cluster structure facilitates **new** and **multi-disciplinary** research lines

Collaborations with CWI-groups outside of PNA: SEN1, SEN3, SEN4, MAC4
Viability of PNA

- All groups are internationally **leading** and **visible**
- All groups obtain **prestigious research grants**
  - e.g., Spinoza, ERC, VICI 3x, VIDI 4x, VENI 6x, Sofya Kovalevskaya grant, NWO Free Competition 12x, NSF, ESF, EC 6FP, EC 7FP
- All groups are **financially sound**
- Senior staff is talented and relatively **young**
- All groups are well-imbedded in internal and external communities and contact networks
- **Flexibility**: turn-over of group leaders and cluster leaders
- Ample possibilities for **multi-disciplinary** research, many collaborations within and outside of CWI
• **Secure and expand** internationally leading positions of the individual groups

• Expand activities in the context of the current CWI **research themes**, and in the new theme “energy”

• Increased focus on **cross-fertilizing** our shared knowledge on fundamental mathematics