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Faculty of Engineering, Built Environment and Information Technology

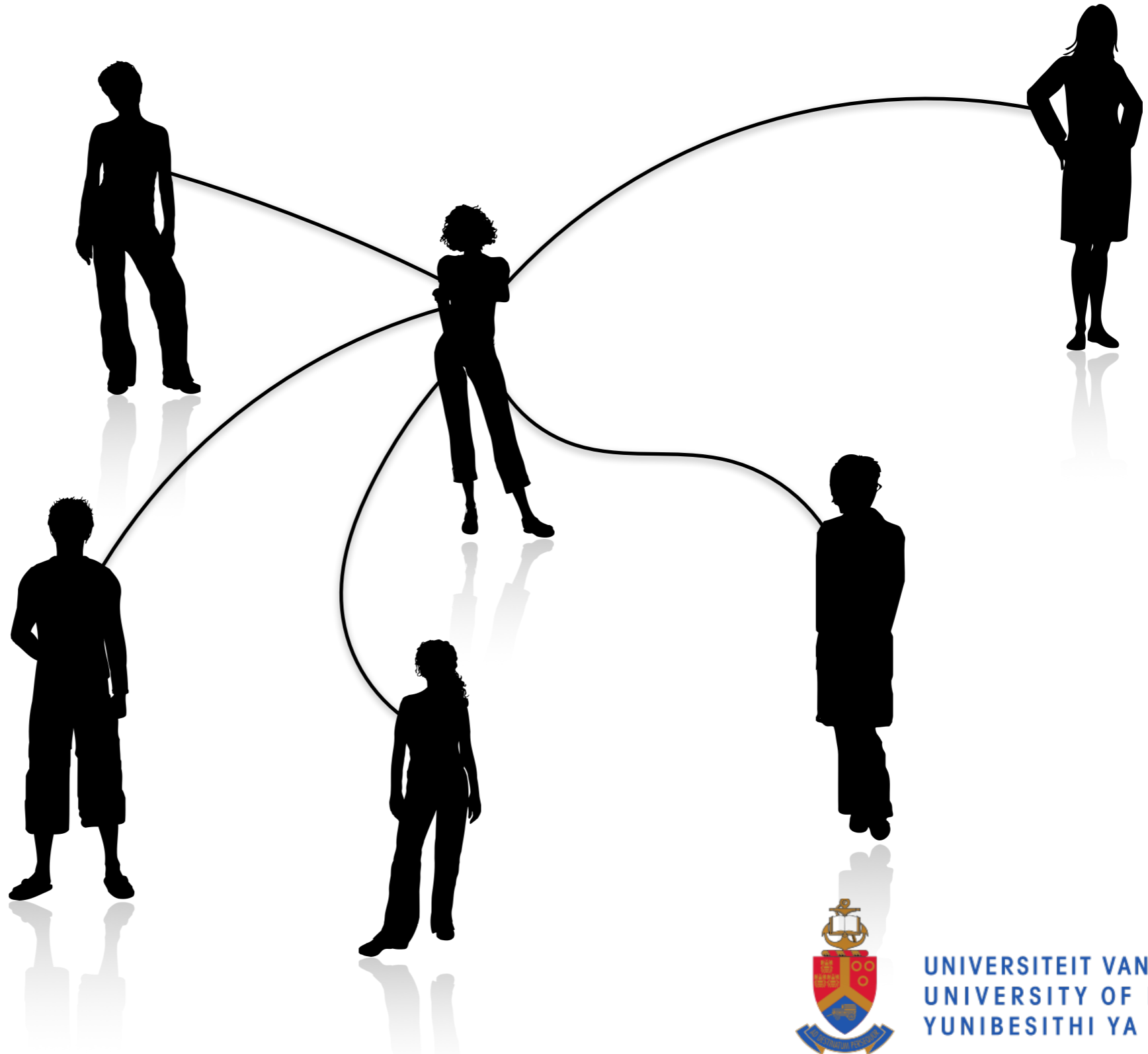
Fakulteit Ingenieurswese, Bou-omgewing en
Inligtingtegnologie / Lefapha la Boetšenere,
Tikologo ya Kago le Theknolotši ya Tshedimošo

How complex is grain transport in South Africa?

Nadia M. Viljoen

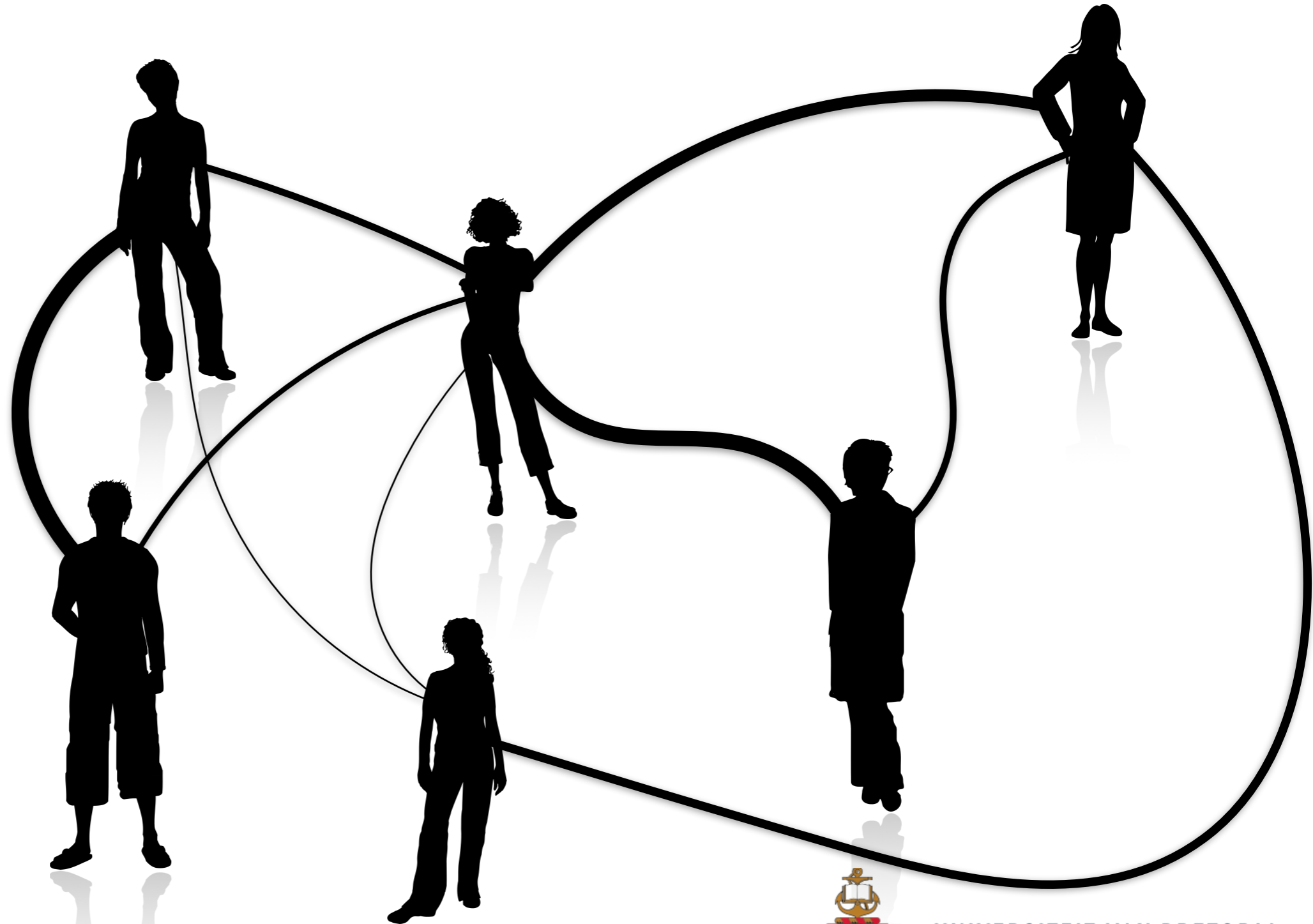
Agbiz Grain - 21 August 2018

~~Complex network theory~~ *Facebook friends*



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~~Complex network theory~~ *Facebook friends*



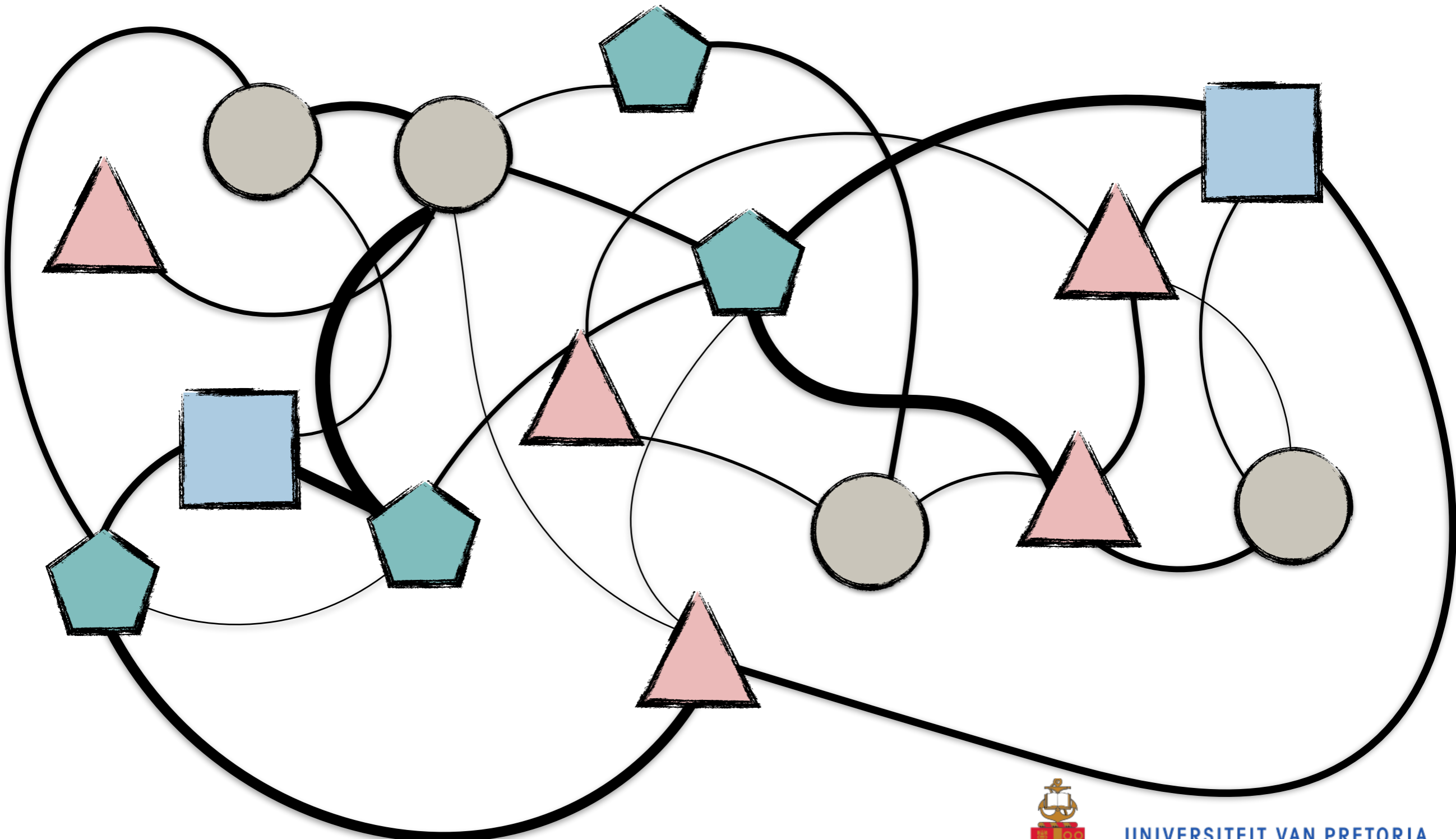
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Complex network theory *Facebook friends*



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Grain friends?



port silo mill farm



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The ties that bind

Nodes



Links



tonnes shipped



transport capacity



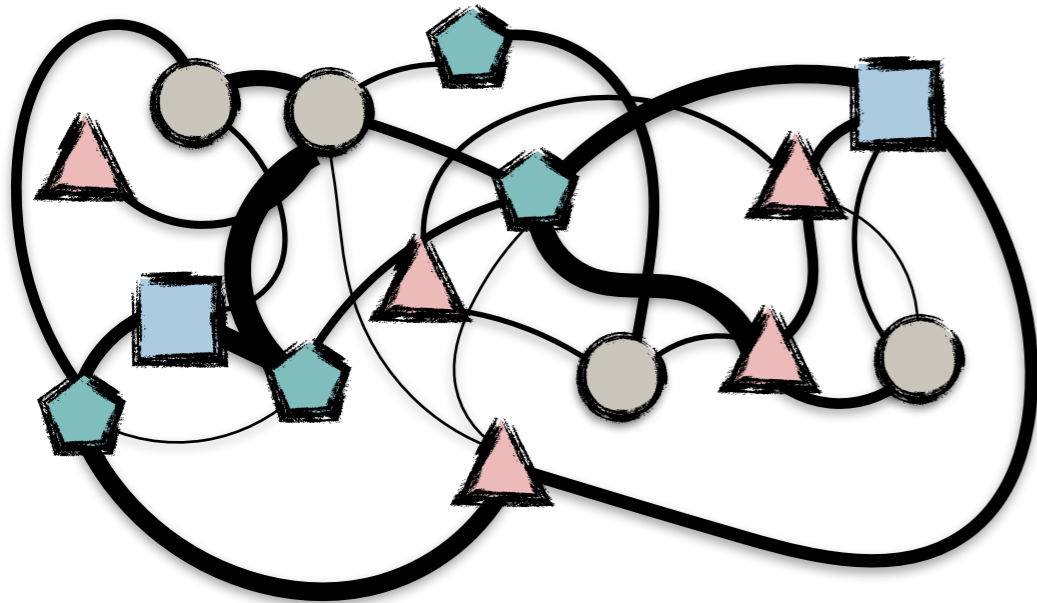
transactions



multiplex relations



What can we see?



Hierarchy

Critical bridges

Topology

Efficiency

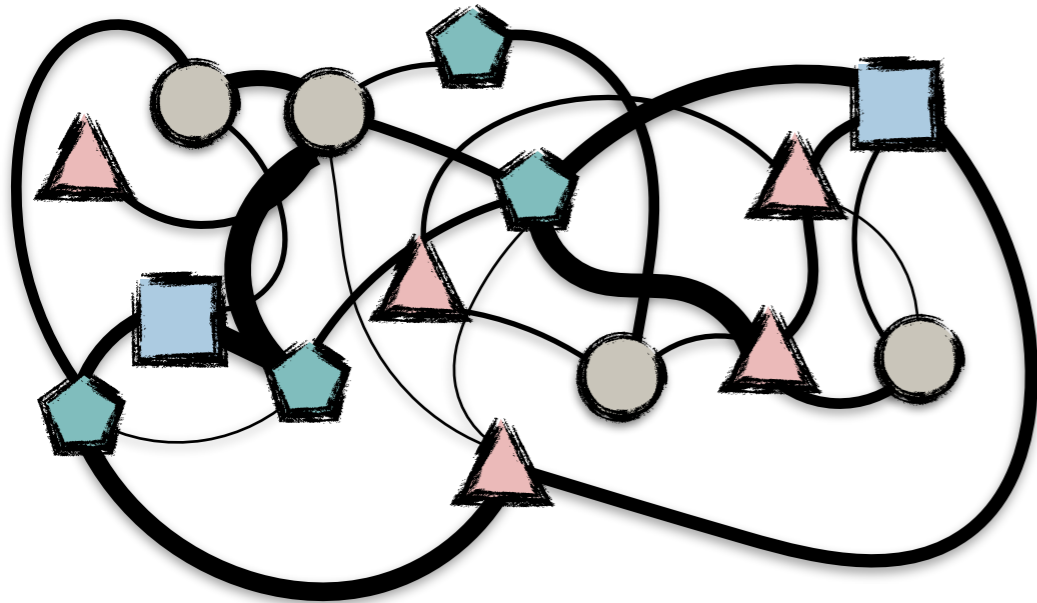
Vulnerability

Propagation



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What can we see?



Change grain
players

Change transport
providers

Consolidation

What-if
simulations



Next steps = Data

- GPS traces
- Transactional data
- Tonnage data
- Facility locations

Which concerns prevent data sharing?



Contact

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