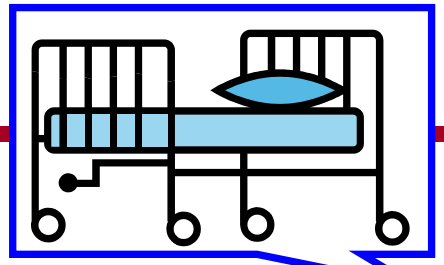
Issues in Broadband Architecture

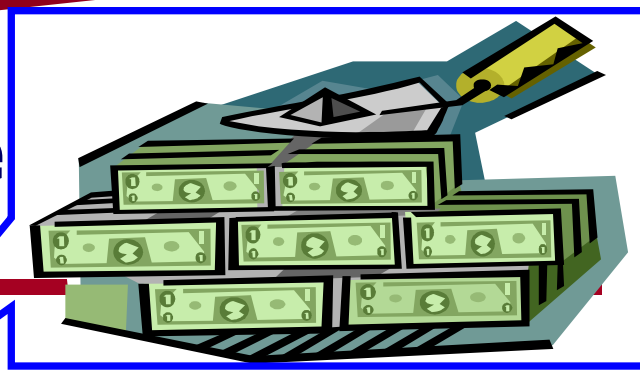
Loa Andersson
loa@pi.se

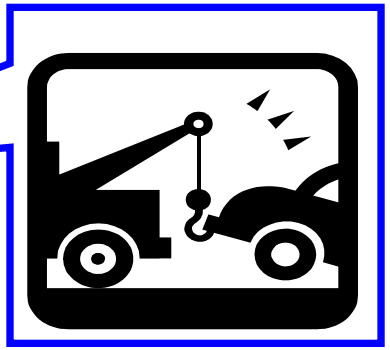
MPLS 2004

acreo

Perspective





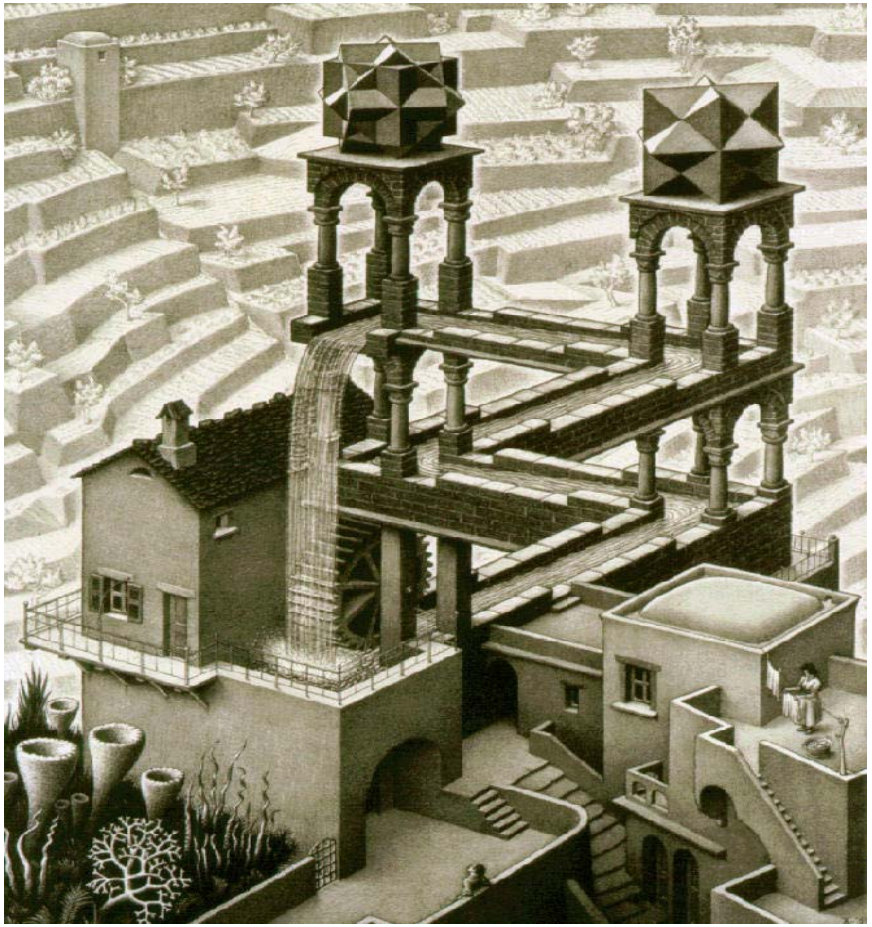


MPLS 2004

acreo

Complexity

Complexity



Complexity

- Networking is complex
- We don’t need to do everything just becasue it is possible
  - Domain wide labels
  - Pre-computed label stacks
  - Over-specifiations
  - Competing specifications
  - etc ...
- Compatible specifications, security and managabilility
- Simple, safe and smart (Mr Okada, NTT)

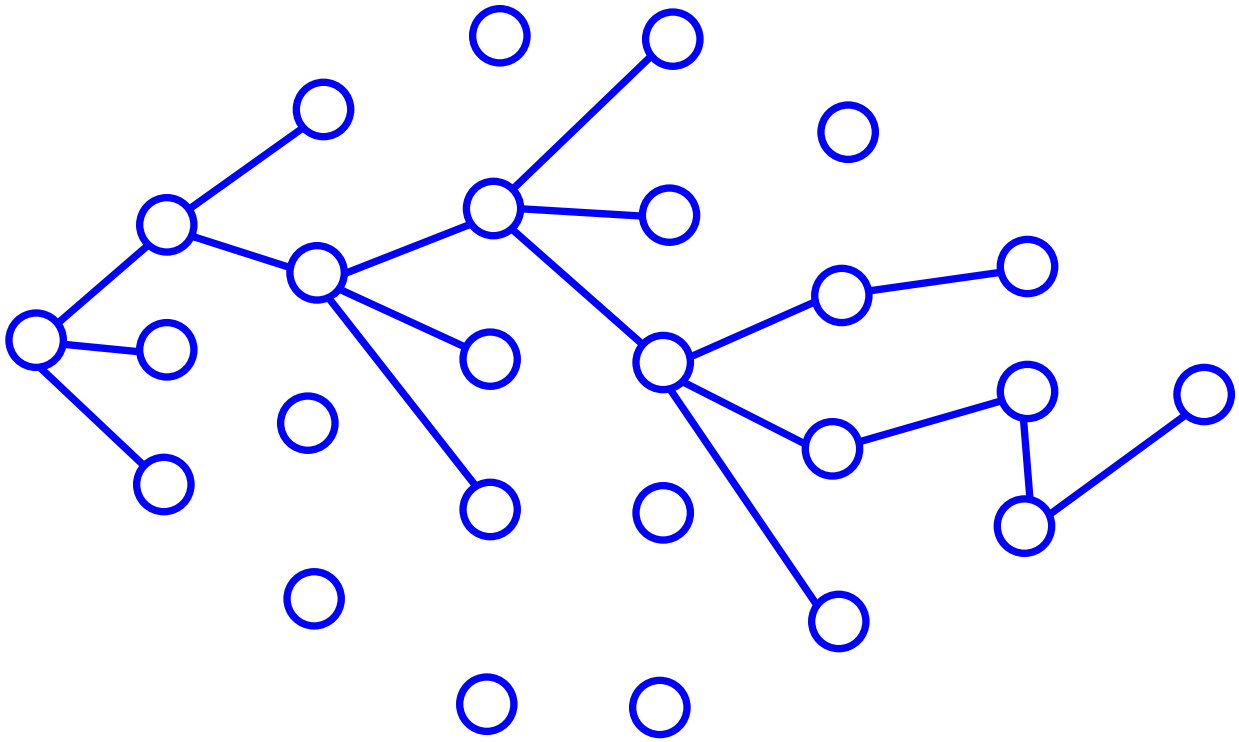
The Traffic Engineering dilema

“Oh no I've said too much I haven't said enough”

Out the ashes into the fire

- Traffic engineering
- Deterministic set up
- Or trial and horror

Crank back?



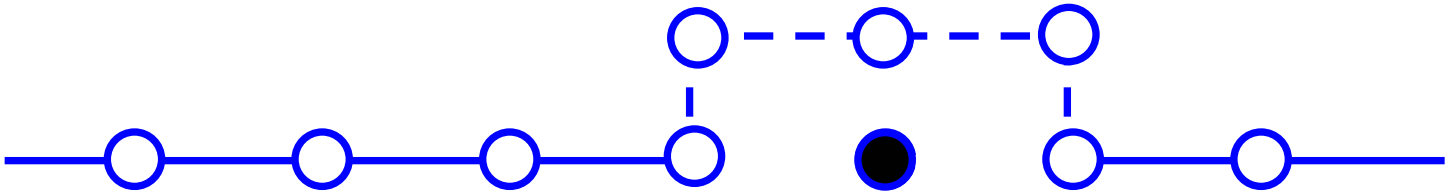
Crank back!

- Useful mechanism!
  - Crank back is there to be used
  - Sometimes it is enough, sometimes the only thing available
- Processing intensive.
  - Everyone is allowed to make all possible misstakes on his own
- But hardly the generic TE mechanism.
  - Not the only path setup mechanism

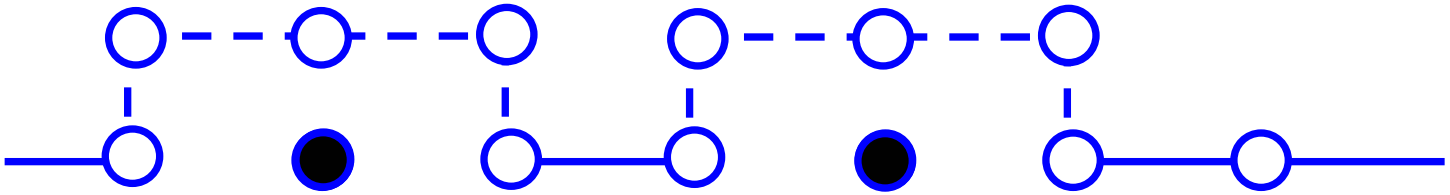
Huge areas

- Alternative approach
- Single area (domain that shares TE information)
- Caveats
  - Nation wide network (500 routers)
  - Full IP/Optical integration (3 – 6 times that number of nodes)
  - Domains becomes huge
  - Processing (path computation / convergence) time will be "long"
  - Stress on lower layer nodes

Optical constraints



Optical constraints



Optical Constraints

- Router or L2-switch network
  - No fuss, local repair works!
- Transparent Optical network
  - Dispertion (distance dependent)
  - Need to go to the eletrical domain
- Needs to have a set of optical constraints
  - On the horizon

End of Presentation

loa.andersson@acreo.se