Provider service offerings, SLA, and pricing issues

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Theses:

- backbone transport is a commodity, should be provided in an undifferentiated uniformly high quality
- any necessary quality and price differentiation should be provided at the edges
- intelligence continues to move to the edges
- costs, and therefore also revenue opportunities, continue to move to the edges

Basic point:

If QoS and complicated service offerings are so great, why not try them out on LANs and campus networks?

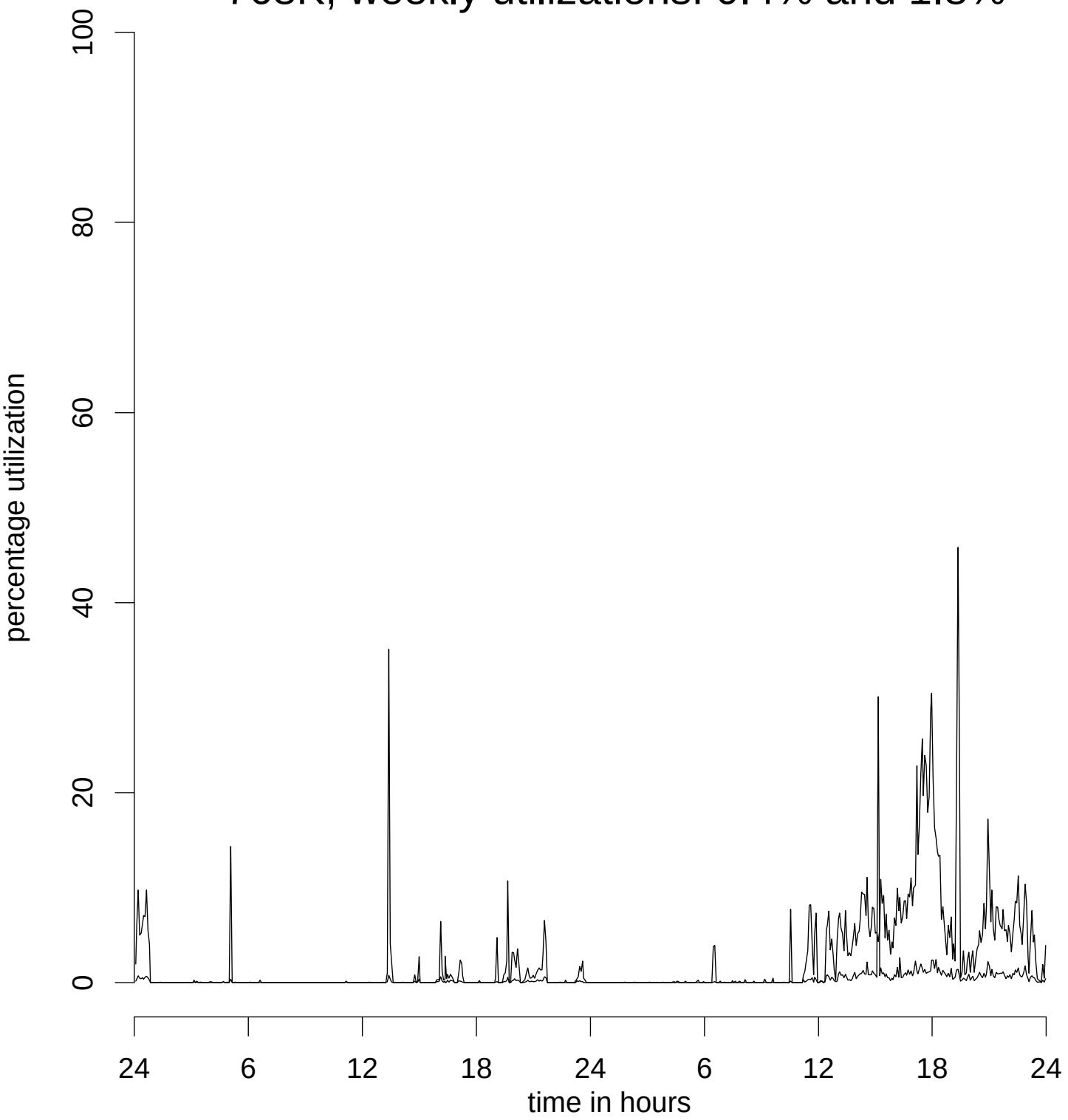
Example of cost structure:

Data for around 500 DSL subscibers at a major university, heavy peer-to-peer users: average data flow around 10 Kb/s per user

If provide 20 Kb/s per user (to allow for uneven usage), at current costs for commercial Internet access of about $200 per Mb/s per month, each DSL user will cost about $4/month for Internet connectivity

Numerous other arguments for simplicity:

- historical precedents
- imperative to increase usage
- ...


U.S. business customer
768K, weekly utilizations: 0.4% and 1.8%
percentage utilization
0
20
40
60
80
100
24
6
12
18
24
6
12
18
24
time in hours

Most common causes of performance problems as well as outages in networks today:

In roughly the order

1. Network Engineers (What's this command do?)

2. Power failures (What's this switch do?)

3. Cable cuts (Backhoes, enough said)

4. Hardware failures (What's that smell?)

5. Congestion (More Bandwidth! Captain, I'm giving you all she's got!)

6. Attacks (malicious, you know who you are)

7. Software bugs (Your call is very important to us....)

Sean Donelan, NANOG list, July 2, 2001

Conclusion: simplicity will win

More details in papers at

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