UK Internet
A Semi Personal History

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Current Favourite Motto

"It is well known that ninety-nine percent of the world's problems are not susceptible to solution by scientific research. It is widely believed that ninety-nine percent of scientific research is not relevant to the problems of the real world. Yet the whole achievement and promise of modern technological society rests on the minute fraction of those scientific discoveries which are both useful and true."

C.A.R.Hoare in Foreward to Systematic Software Development Using VDM, Cliff B.Jones

- Semi-personal
- Semi-reliable
- My own, all too fallible memory
- Happy to be corrected (as we go along)

In the Beginning

- Winter of discontent

- GPO

- Flowers report: ULCC/UMRCC

- RJE/NJE network stars

- JANET

- X25

- Coloured Books

- TCP/IP (What for?), JIPS

- (some) ISPs as almost resellers of JANET

- Cliff Stanford – John Heaton

Slightly After The Beginning

- Telehouse and Thatcher

  - Big bang ripples

- Nomura and Mitsubishi banks

  - Can't trust the British with telecoms

- 'Please can we have some space, Mister?'

- LINX, bandwidth qualification, but peering in UK not NY

MaNAP and TeleCity

- Summer 1996, fallen out with everyone in computing services
  - No one would work with me
  - Freelancing in the department
  - Selected projects
  - Impossible
  - Useless
  - Harmless
- Minx
  - All 3
  - Cf LINX
  - Had been tried and failed by City Council, University, private sector

MaNAP and TeleCity

- How do you start?

- Got on the phone (to Keith first)
  - ISPs wanted second peering point
  - LINX required transatlantic bandwidth
  - LINX partly wanted a nursery
  - Spoke to about 50 ISPs in two or three weeks
  - Got on the road
  - St Margarets Church Hall
  - Not the worst
  - LINX19(?) in Hendon
  - Great reception

- MaNAP set up in about six months Easter-September
  - Nigel at BtInternet, instrumental

MaNAP and TeleCity

- Had become obvious that ISPs didn't just want a peering point

  - Bandwidth pricing distance dependent (imagine that)

  - Couldn't economically serve northern customers from South-East (Cliff, £9.99 a month dial up)

  - Needed a colocation facility 'up North', as well

- Left University 1998 and started TeleCity

  - £1.25m equity investment from 3i

- Williams House, MSP (for the great Fred Williams)

TeleCity Alone

- Bonnington House, Equant, us

- Manchester filling, Bonnington filling

- Good synergy, close strategic relationships colo and network clients

- Harbour Exchange, Kilburn House

- Obviously Northern presence initially, then London, Amsterdam, Paris, Frankfurt, Stockholm, Dublin, Edinburgh…

- Went where clients wanted us to be
  - Built, along with network operators, the European Internet core
  - 1998-2001

Up

- 16 sites in 11 countries

- Only there for client service

- Raised over £200 million to build out

  – Largely spent on physical infrastructure

- Floated 2000

- Very decent company established

- Done well, a lot left to do….

Less Up

- Had overexpanded
  - Calculated business risk – first movers did have an advantage, still got it
- UK sites always profitable quickly
- European sites slower
  - Clients' expansion abandoned
- Needed to retrench to guarantee survival of Company and ensure continuity of client service
- Rescue rights issue
  - Quite painful
  - Very necessary
  - Left at rights issue time, no appetite for sitting on my arse in boardrooms

What was TeleCity For?

- Opportunity to provide service
- Experiment in large scale industrial process applied to computing equipment
  - Experiment is unfinished
  - Proven that it is highly economic to apply industrial process in data centres
  - Plant and staffing economies of scale
  - Purchasing efficiencies for energy
- Enduring benefits of neutral colo for interchange and exchange

Why did colo expansion work well?

- Strategic partnership between network and Internet operators and colo

- Colo provider is a wholesaler of space

- Networks resell the space in their product

- Parties listening to each other, trying to anticipate requirements

- Colo provides a neutral space where competitors can coexist and 'cooperate'

  - Internet doesn't work without some areas of designed and designated neutrality (cf IXPs)

Colo Operators Role

- Mutually beneficial relationship colo operators and network operators

  - Need a lot of trust

- Meant to provide what is required, where and when it's needed, and slightly ahead of need

- Traditional colo

  - space

  - power

  - cooling

  - managed and unfettered interconnects

Future Colo

- Anticipate new needs
- What else can usefully be an wholesaling option
  - Any kind of shared system
  - Very large, tiered storage
  - Unlimited processors
  - Any thing complicated and rare, HW or SW
  - Billing
  - Anything with economies of scale or scope
- Whatever the client needs

Us

- Glad to be back

- Keen to provide service

- Want to find out what future colo looks like

- Only one way to find out

- Got to build it

- With some help and wise advice we might succeed