

LINX and our 100GE Challenge

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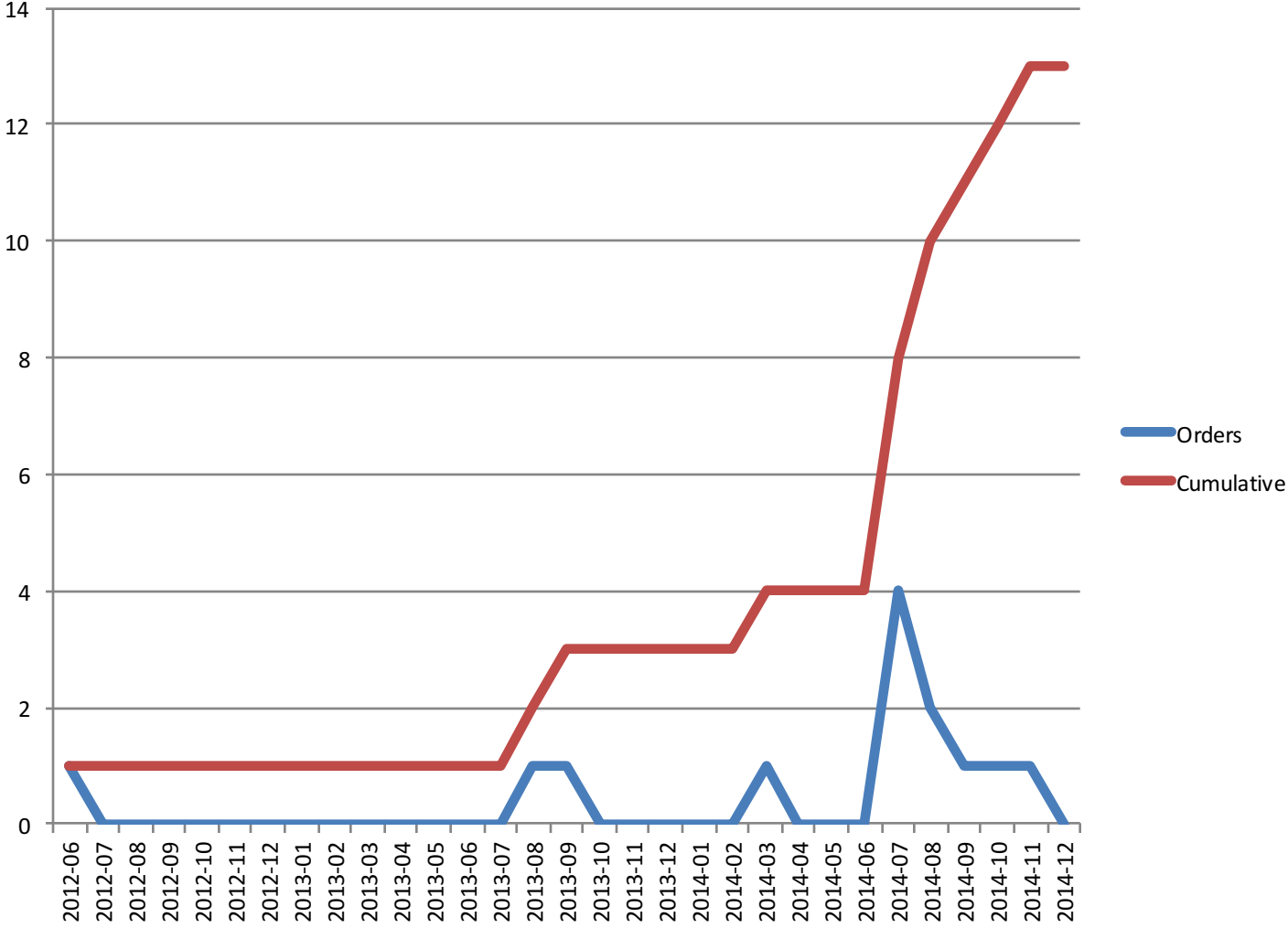
The 100GE Challenge

- As with many of the large IXPs the challenge of rapid growth hit us in 2015.
- But why has this been such a Challenge?

The 100GE Challenge

- Let's look back at 2014 .. We had some 100GE members but we did not have a nice up and to the right chart.
- Our trend analysis was simply lacking in analytics ..
... a lack of data points

The 100GE Challenge – Orders to 2014



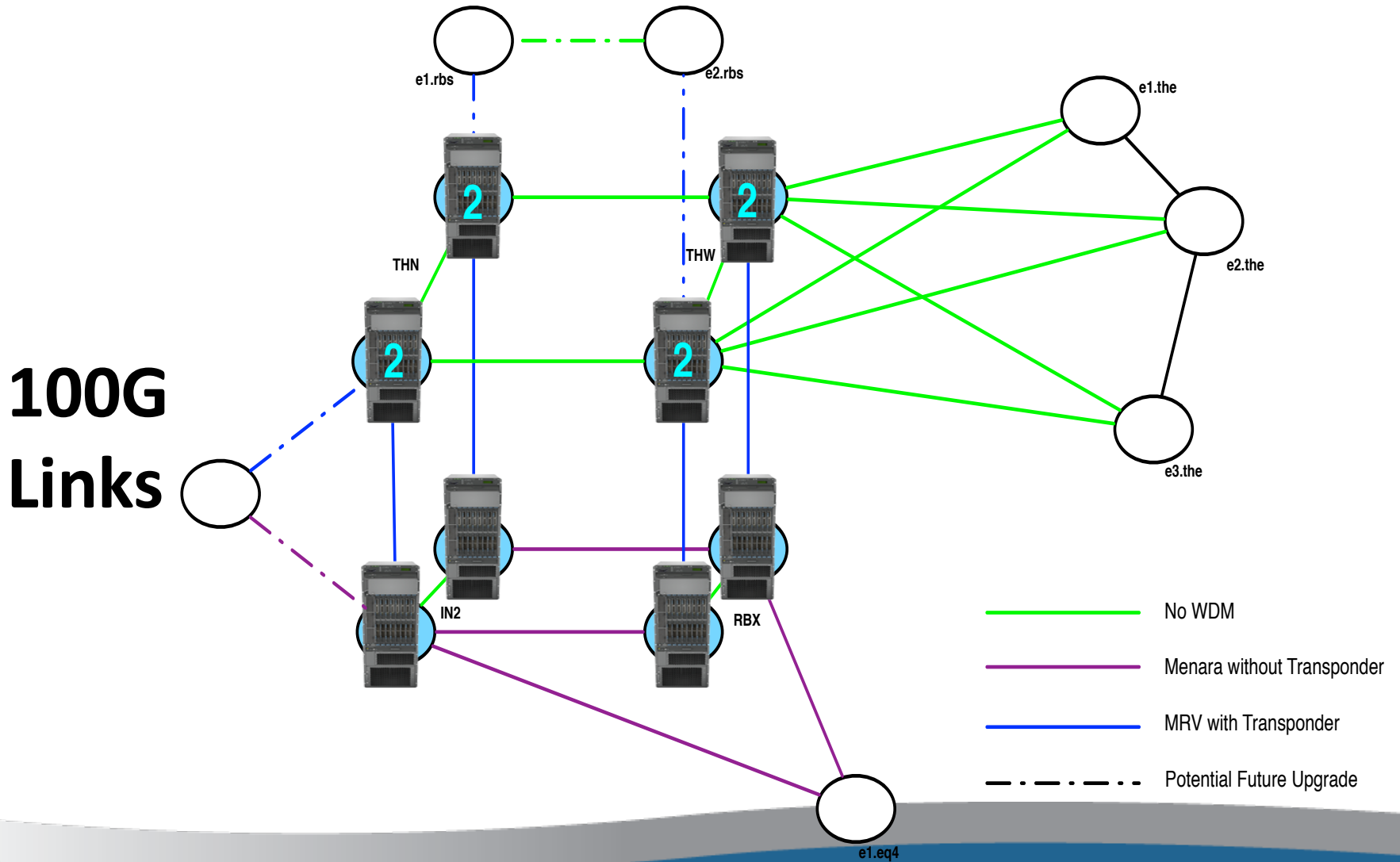
So we set a forecast, a budget and a plan

- **20 new member pots in 2015**
 - = 20*100GE
 - = 2TB/s of new edge capacity

And we applied an engineering project

- **PTX Upgrade program**
 - 2nd generation cards and chassis deployed in the North Plane
 - 1st generation equipment moved to the South plane
 - MX south cores pushed to the edges

And we applied an engineering project



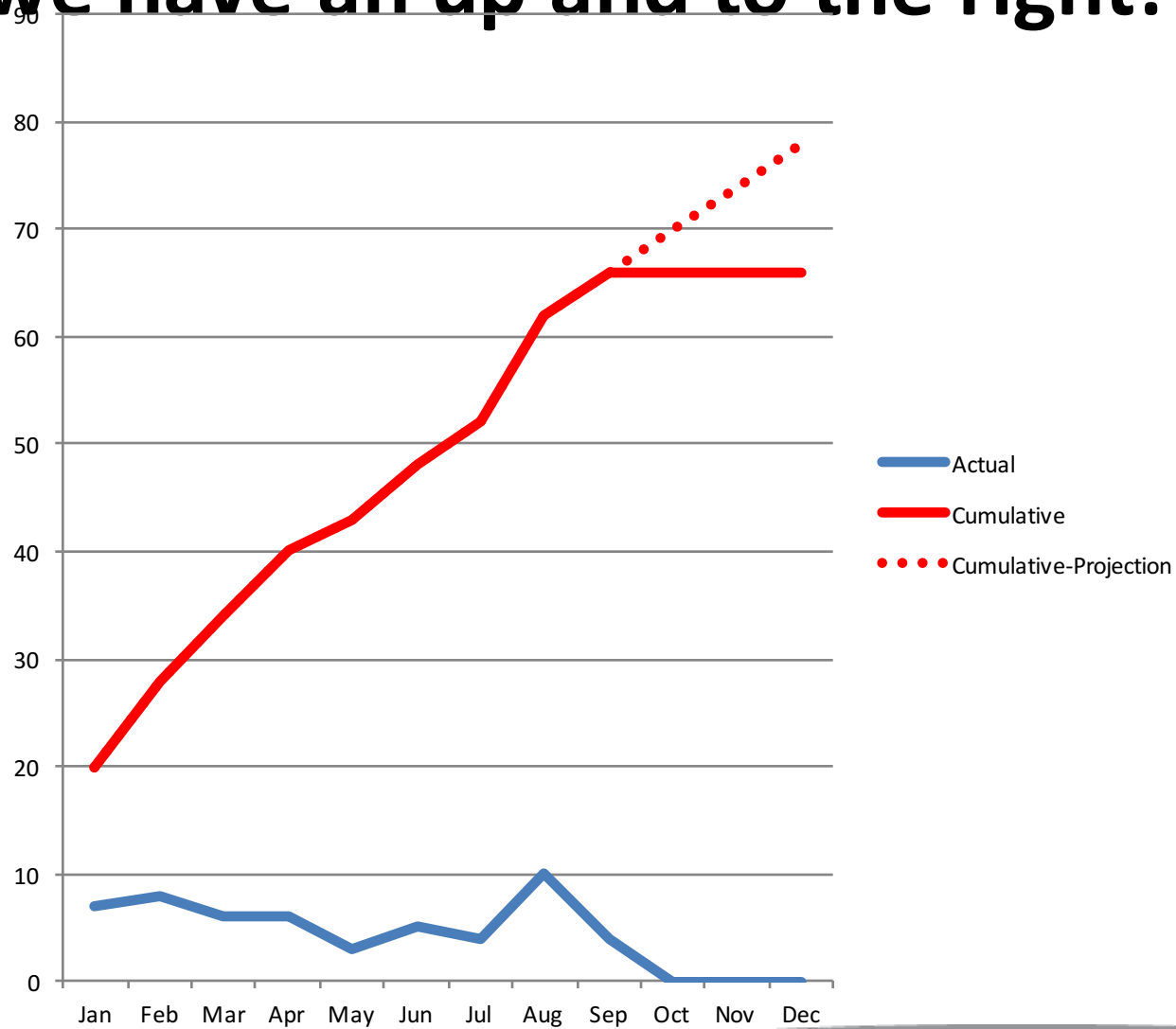
And we applied an engineering project

- 8-9 week program with extension to 10-11 weeks
- Presented to the membership in detail at LINX88
- Introduction of new transport network

But when the forecast goes wrong..

- **Actual YTD**
- **53 new member port orders in 2015**
 - = 53*100GE
 - = 5.3TB/s of new edge capacity
 - = 265% of original forecast

Now we have an up and to the right! - 2015



How has this impacted the exchange?

- Total edge growth projected at 5-6Tb/s
- Delta from 2014 <10Tb/s through 2015 >15Tbs
- 50% increase in edge capacity

Back to the engineering plan

- **PTX Upgrade program**
 - Program extended, 10-11 became 15
 - We had to stop and add new edge routers
 - We had to stop and plan the second half of 2015, which we had originally planned for 2016

Back to the engineering plan

- **PTX Upgrade program phase 2**

- Upgrade of all core links within Telehouse to 8 * 100G
- Upgrade of all other core links to 6 * 100G with the option of upgrading to 8 * 100G
- Redeployment of the 4 MX960s to become new Edge Routers
- Harbour Exchange increase from 3 edge routers @ 320G to 5 @ 480G and a 6th at 320G
- Modify Design of Telehouse North so all edge routers full 320G
- Increase Capacity Telehouse North from 2 routers as 320G to 3 edge, 2 of which at 480G.

Back to the engineering plan

- **PTX Upgrade program phase 2**

- Increase Capacity in TCM (Bonnington) from 160G to 320G
- Increase in Capacity in IN2 from 320G to 480G
- Increase in Capacity in RBS from 320G to 480G
- Increase in Capacity in EQ4 from 320G to 6 * 100G

The 100GE Challenge .. 2016

- Where do we see 2016?
 - Another 50-60 ports?
 - Another 6Tb/s of new capacity?
 - This will see a two year doubling from 10Tbps to 20Tbps

The 100GE Challenge .. 2016

- What can you all do to help us?
 - Great UK&I Peering 1.0 event
 - Meet at EPF and GPF
 - LINX91
 - Please complete the LINX survey!

Thank you ..

- Questions