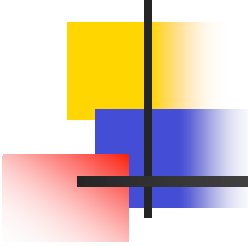


Making the IPv6 policy simpler and more fair

Leo Vegoda

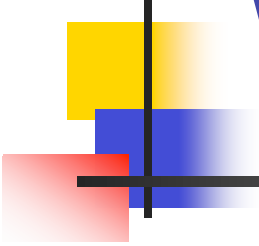
In a personal capacity

leo@bind.org



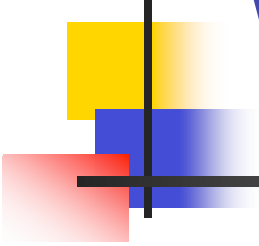
Overview

- What's the situation?
- Assumptions
- Flow charts
- My proposal
- Your comments



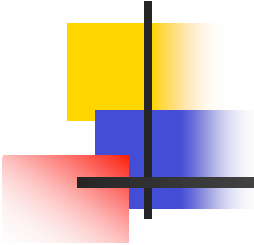
What's the situation?

- RIPE does not have a PI assignment policy
- 2006-01 proposes one but
 - does not define criteria for quantity
 - Requires multihoming



What's the policy like for IPv4?

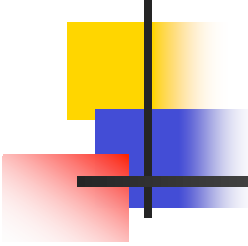
- A network qualifies for the same amount of PI space as PA space
- Anywhere from a /29 to a... well there is no maximum assignment size.



Does it work?

“The allocation policies we had for v4 were spot-on. They fuelled a revolution in networking and v6 has the same capability. The address space is massive and we can make that policy work as long as we have abundance.”

-- [Geoff Huston](#), September 2007



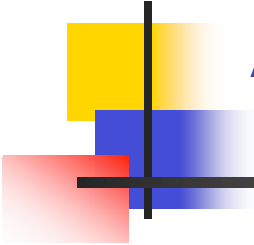
What's the intention?

- Equality of outcome



- Equality of opportunity

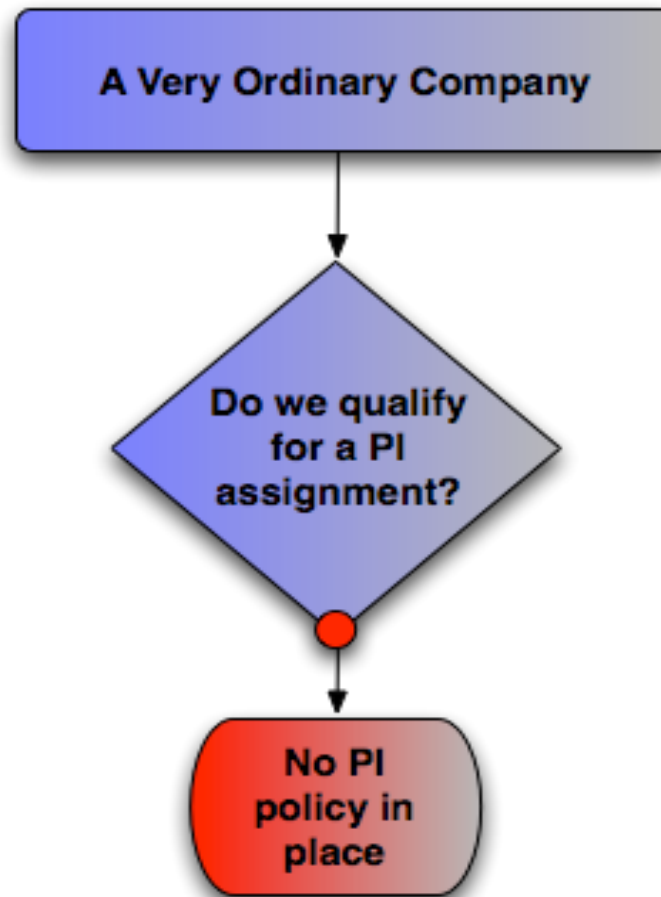




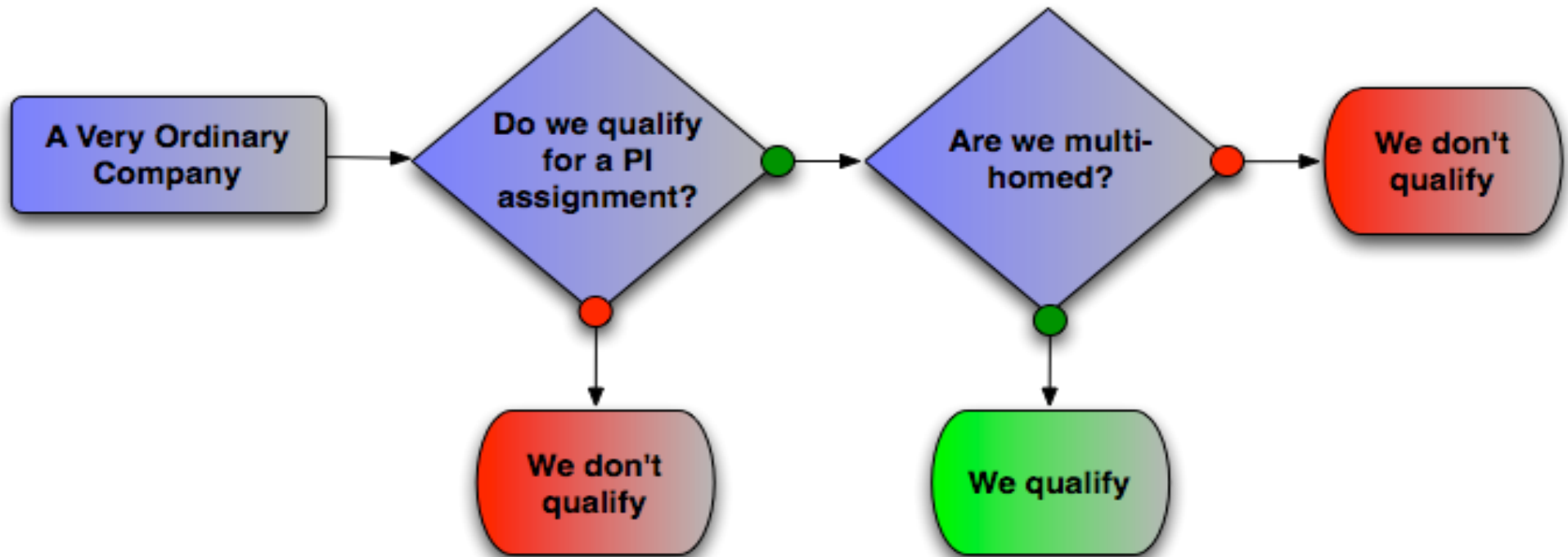
Assumptions

- IPv6 doesn't change multihoming
- Re-numbering isn't easy
- Most networks are not ISP networks
- PI is required

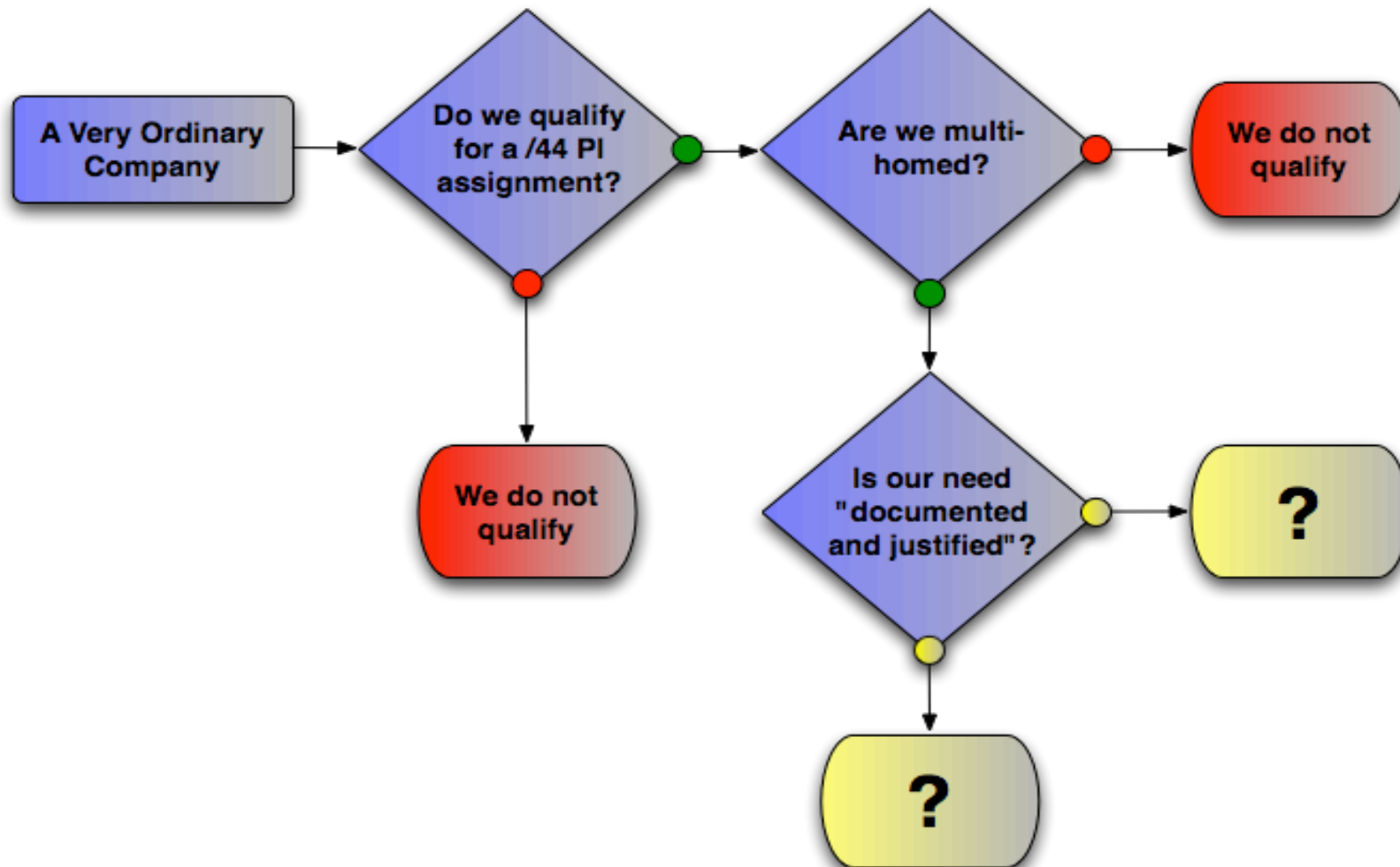
What do we have now?



With 2006-01 we would have...



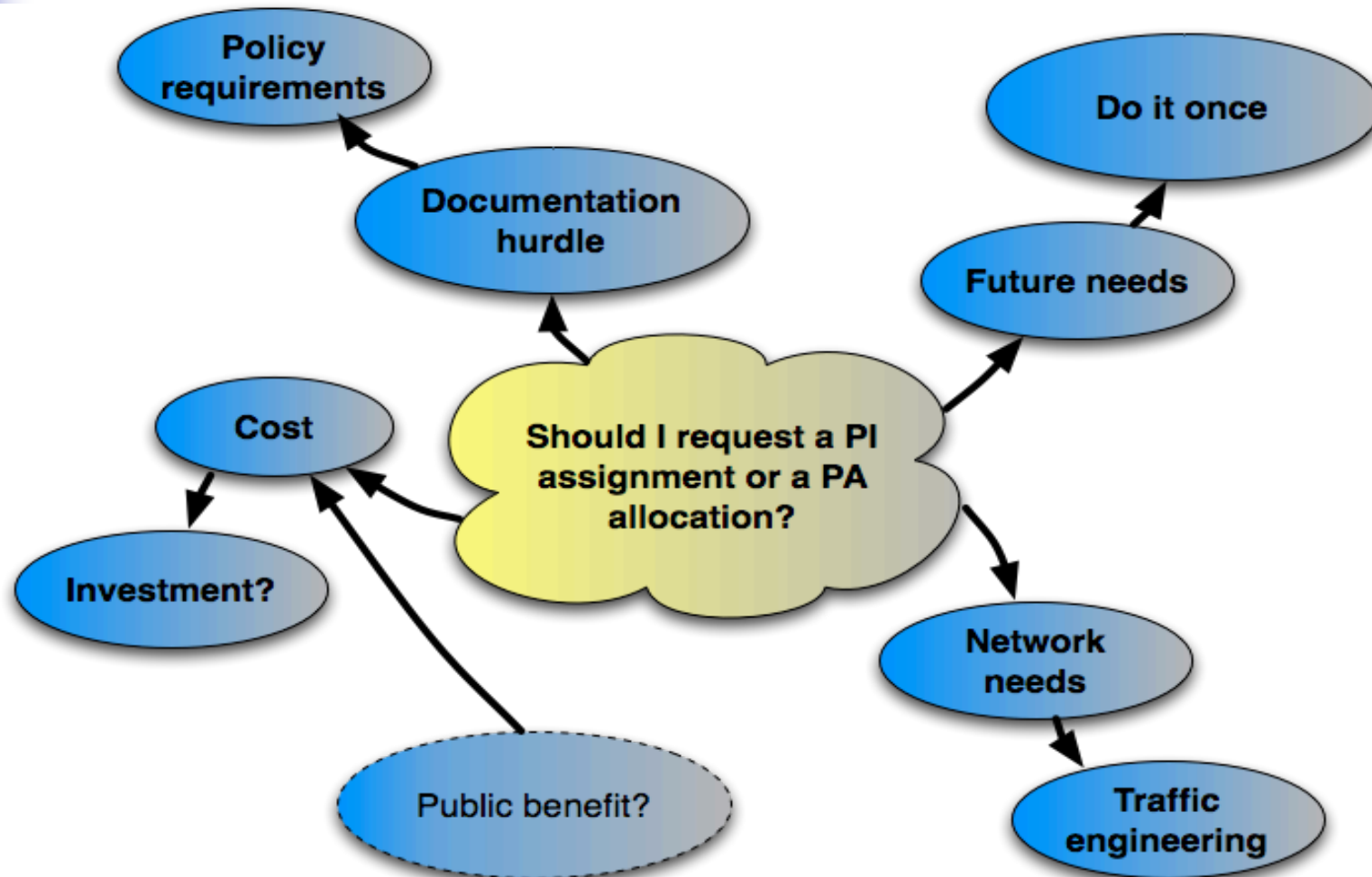
But I need more than a /48...

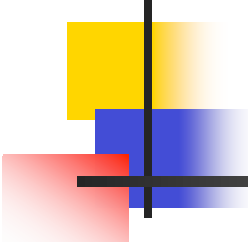


Recursive policy requirements are bad



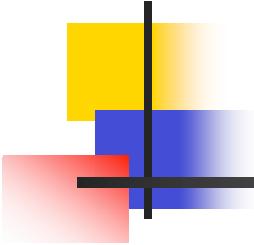
Thinks...





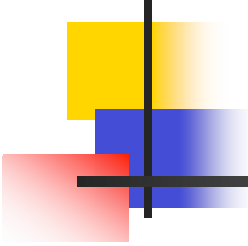
More thinks...

- What's the difference between an ISP and enterprise network?
- What's the difference between PI & PA?
- Why has the policy used 'magic numbers'?
- Why has it been so hard to get a fair balance between PA & PI?



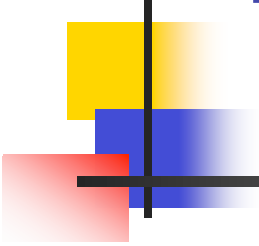
So I propose that we...

- Remove the distinction between PA allocations and PI assignments
- Remove the /32 minimum allocation
- Base all delegations on a network's planned needs, measured with the currently applicable HD-ratio value
- Make all delegations using a sparse allocation method to maximise opportunity for aggregation



The advantages

- No 'magic' numbers
- Needs based allocation is fair
- No need for a complicated split fee structure
- No incentive to disguise an allocation as a large PI assignment
- Limit prefixes allocated to no more than the number of contracts with the RIPE NCC

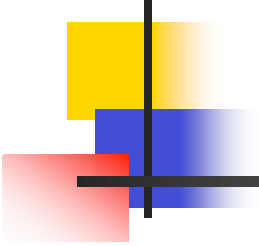


The disadvantages

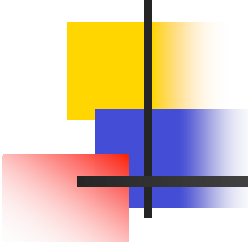
- Prefix length filtering becomes more difficult
- Possibly one ACL per RIR issued prefix
- RR based filtering may become **very** important
- Routing scalability reaching its limits. This would be a challenge.

Am I an incarnation of the BIF?





Extra slide



Relationship between inetnum and route objects

- PA allocations with an associated route object
 - 87.0%
- PI assignments with an associated route object
 - 56.8%
- Combined
 - 67.7%

(Source: RIPE NCC, Oct 2007)