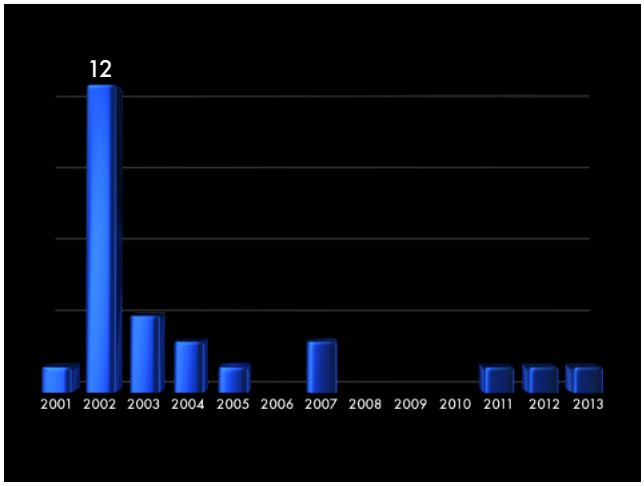
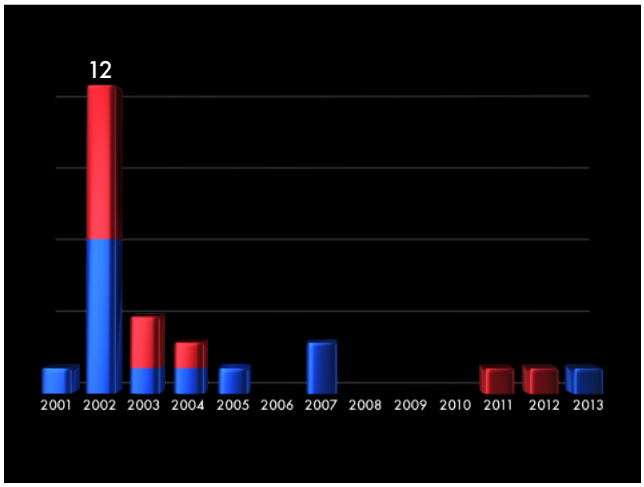
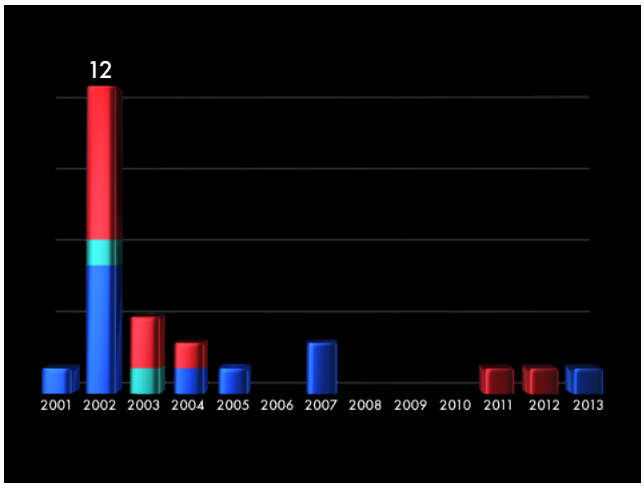
BOSS ASKED ME: why do we keep IPv6 turned on?
STRUGGLED to answer.
TEN YEARS: what do the numbers show?
RIPE gives some numbers, but what do they look like inside the ISP?



LOOK inside ours. HOW MANY assignments we've made to our clients (excl. schools)
WE HAVE about 60 or so of these all told, from small offices to large campuses.
LOOKS ok, our client base is very stable.
HOW MANY OF THEM ARE USED?



RED = not routed.
HOW MANY of these, as of Dec 2013, were tunnelled?



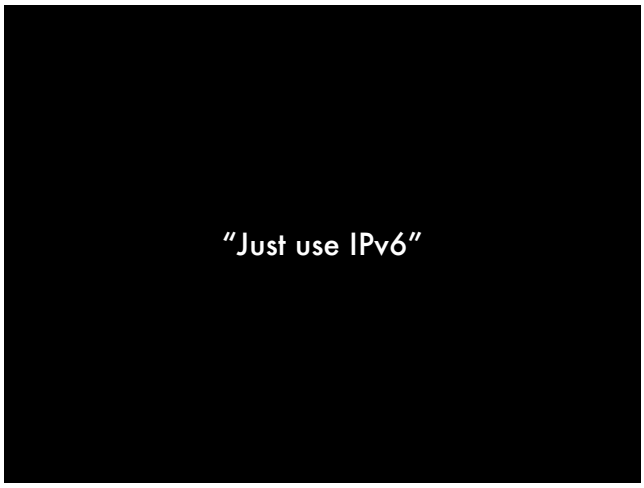
TUNNELS were not helping people move to native connectivity.
TRAFFIC also reflected this. NOT just HEAnet either, saw the same in european networks.
AFTER TEN YEARS, this is all I have to show for it. STOPPED UNDERSTANDING:

What problem are we trying to solve?

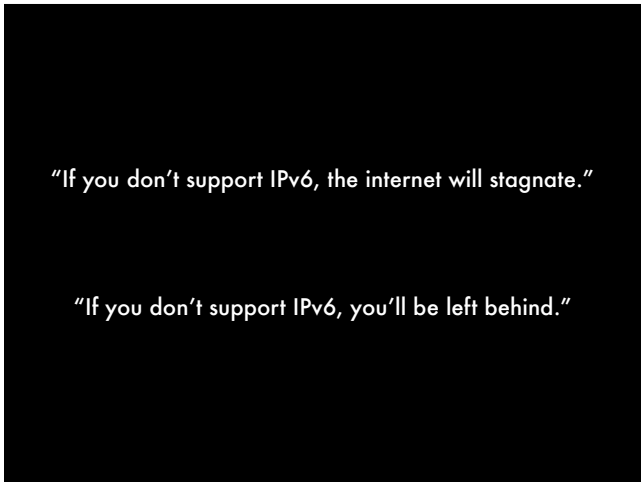
QUESTION is not “What good can IPv6 do?” I get that.

End-to-end	→	NAT
Internet	→	Fragmented net
Standard	→	Proprietary
Open	→	Competitive (dis)advantage

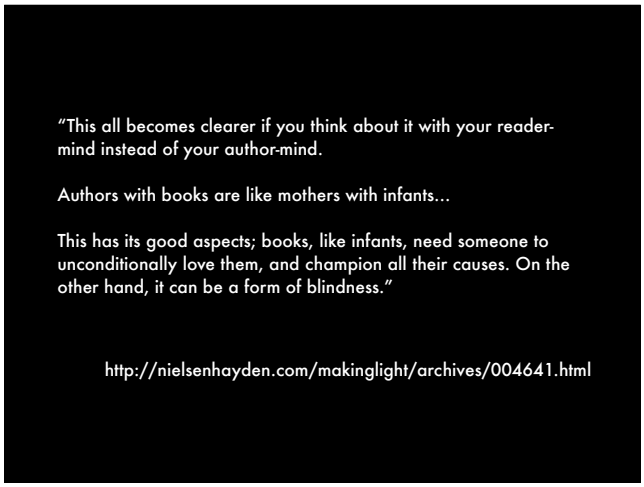
AVOID the bad internet. NAT will be like SPAM - tedious, obstructive to cope with.
BUT we try to use this justification as a reason for each customer.
WHAT do you say to someone who can’t get IPv4 PI? More devices than addresses? New client without their own space?



Do I say this?
How does this solve the problem?
This isn't a case for continuing to work on it.
This is a case for turning IPv6 off.
ARGUMENTS USED

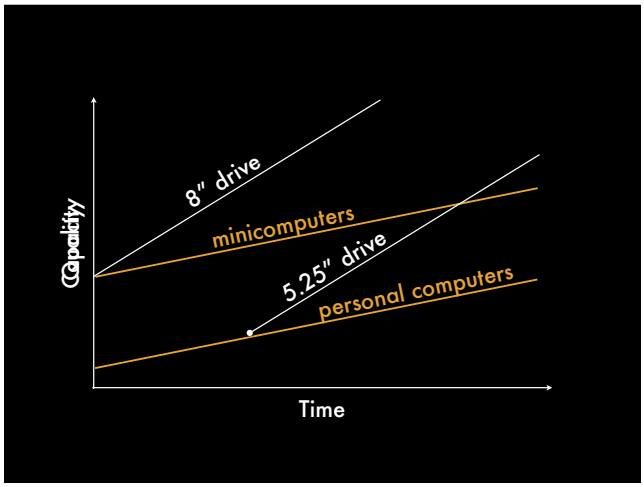


Took an honest look at the efforts here. A lot of persuasion revolves around two assertions.
They're true as far as they go, but they are mutually contradictory, and kind of extreme.
Don't think they convince anyone who isn't already convinced.

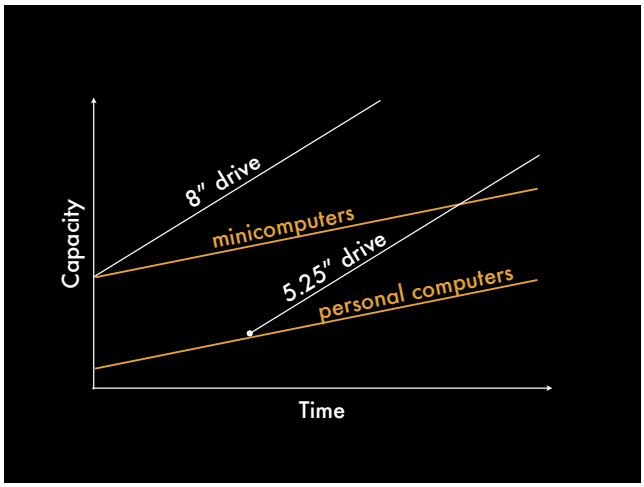


It's easy to become so convinced of the necessity of v6 that you become blind to flaws in the approach to deployment.
We need to think with our reader mind: someone's using IPv6 as a tool to get a job done.
THEN: things started to work. Are they sustainable?

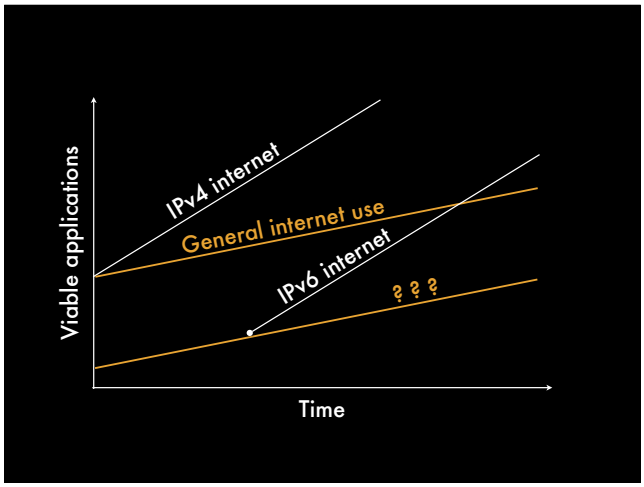
LET’S TALK ABOUT DISRUPTION.
CLAYTON CHRISTENSEN’S book.



TWO Types of innovation. Graph with time and quality. CAPACITY of a hard disk. 8” drives in minicomputers. SUSTAINING innovations - better than the original on every axis.
OUTPACE market demand. NEW disk drive is worse. Why would anyone want this?
FINDS its own market - PCs. Then SUSTAINING innovations outpace minicomputer demand as well.



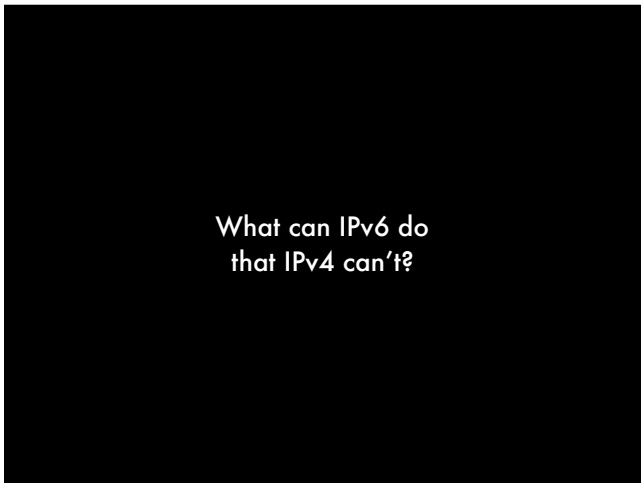
THIS applies to more than disk drives. TAKE away the labels - could be diggers. Backhoes. CABLE-pulled diggers had bigger bucket capacity than hydraulic, but they went to small builders.
MICROSOFT is willing to annoy its existing customers with windows 8.



Is there something we can find that will allow IPv6 to become self sustaining?

THIS comparison only works if these conditions hold true.
But it's a big topic.

This is a better question. Where should be focus our efforts? Translates to…



I'M not talking on a base technical level, we know they're the same.
NOR am I talking theoretical advantages. I MEAN is there something that a user WOULD WANT?
WORLD V6 LAUNCH did great work. MY OWN CUSTOMERS are finally starting to move.

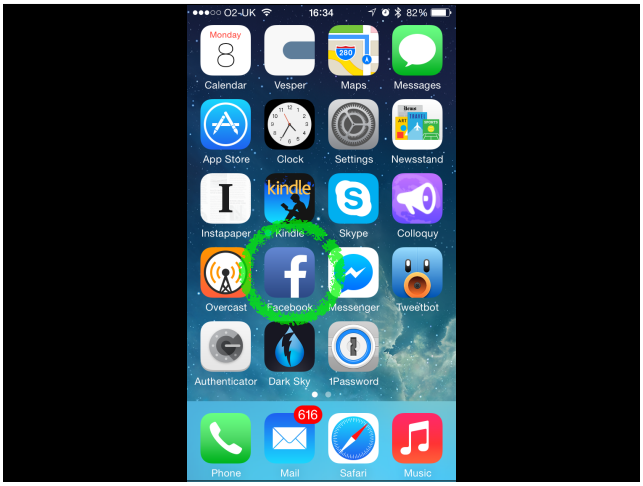
- Do we aim for what we measure?
  (So what should we be measuring?)
- What's the improvement we want to get?
  (Is that served by doing what we know?)
- Is the current growth really mainstream?
  (Or is there somewhere else to grow from?)

What does this mean?

That's what I want to ask you guys.

But let me give you one idea.

Just as an example.



COULD THESE run on v6 only?
DEVS don't care about network: they'll take what's sold
NEED TO DO THIS for v6 deployment to become self sustaining.
APPS are code+services. Services are outsourced: Linode, Azure, Amazon, iCloud.
MUCH MORE LIMITED than entire web;
MORE MEANINGFUL than fraction of the web.
WHAT OTHER AREAS are there?
