

Building a BetterVerse

by dave täht, ceo, teklibre

“Why do we build bypasses?
Because bypasses **MUST** be built!”

- British Politician, shortly before the Vogons destroy the Earth for a hyperspace bypass. The plans had been on file at Alpha Centauri for 50 years, but apparently no-one on Earth had objected.
From the “Hitchhikers guide to the galaxy”.



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About Dave Taht

- I've been working on reducing delays (latency) and jitter across the internet for 30 years, among other things like wifi and embedded Linux, all free or open source software (FOSS)
- Goal: make the internet capable of having 4 members of a band play together “across town”. This also enables what some are now calling the “metaverse”. Kind of a hard problem.
- Intensively tackling the “bufferbloat” problem along the Internet edge for the past 10.
- That problem’s “solved”, technically, with algorithms like fq_codel and sch_cake, already in billions of boxes. What “research” I've been doing recently has been to somehow find a way of propagating the fixes out across the rest of the routers in the world.
- IMHO, if you want to build a low-latency, high speed, high resolution, analog of the “metaverse”, everybody’s going to need “my” stuff. Try OpenWrt, and SQM, in particular.
- But that’s not what this talk is about today.

The Metaverse's Creation - 1993

- Snow Crash – Neal Stephenson
 - Hiro Protagonist had a posh address in the Metaverse
 - While delivering pizza for the Mafia and living in a storage unit. If you didn't deliver on time... well...
 - People lived in “Burbclaves”. The catastrophic center of the plot was a visual virus, called “snow crash”, which destroyed the minds of millions.
- Fire upon the Deep – Vernor Vinge
 - The denizens of the universe communicated via “netnews”, and due to the long store and forward delays, language differences, and so on, was full of miscommunications, misunderstandings, and chaos.
 - One main character was employed as a “programmer archeologist”, digging deep into ancient code, layered upon older code, full of bugs and workarounds and under commented circumstances
 - Some of those bugs caused mass extinctions of whole species, and a latent computer virus led to the development of an all controlling entity bent on destroying all other species. Which largely succeeded.
- “True Names – and other dangers”, also worth re-reading

Facebook IS Now Meta!!

- Which to me, was like saying:
 - Inject the snow crash please! Hey, how about a double dose! Or...
 - Let's go build a Brave New World!
 - Or: How much of 1984 do you want to buy?
 - Surveillance capitalism would have blown Orwell's mind
 - Pick a dystopia, any dystopia...
 - Vonnegut's "Player Piano" is pretty good
 - Or try Dangerous Visions – Harlan Ellison
 - Or 2nd Variety by Phillip K. Dick
 - There's a lot of good scary SF worth reading!
 - And hopefully... not emulating!

On avoiding the mouse utopia...

- The mouse paradises built in the 1960s – where every mouse had enough to eat - all ended disasterously...
- <https://www.smithsonianmag.com/smart-news/how-mouse-utopias-1960s-led-grim-predictions-humans-180954423/>
- Is that what we are building?
- I'd like a world where knowledge, striving, conflict, struggle, accomplishment, skill, and craftsmanship were still valued.
- And also, love.

A difference in Vision

- VR

- Immersive
- Addictive
- Controlling

- AR

- Augmenting
- Assistive
- Broadening

Both VR and AR share problems

- We don't know how to do
 - Taste
 - Smell
 - Touch
- Not particularly good at:
 - Motion
- The 3D sound is **great – visuals, not so much**
- **Ethics? Anyone?**

A step back into network history

- Net0 – 1968-1983 Arpanet to internet
- Net1 – 1983-2004 internet to Internet
- Net2 – 2004-Today Internet to INTERNET!!!
- Web1 - 1993-2006
- Web2 - 2006-Now
- Web3? Net3?

Net1 - 1983

- File sharing: databases, cifs, bittorrent, ftp
- Big comms: Usenet, email
- Short comms: Irc, jabber for chat
- “The internet is a copying machine” - John Perry Barlow. See: “Wine without bottles”.
- I thought, then, by now, all books would be online, we’d stop writing “papers” and that cryptography would make it possible for the little guy to publish anything they wanted, and microtransactions pay for it all.
- It didn’t turn out that way.

Web1- 1994

- A huge outpouring of public efforts and time investment to share knowledge and ideas, tabulature, etc, etc
 - Converted usenet to a “better” interface.
 - Crypto made conventional financial transactions possible.
 - Hard to imagine it was illegal in 1994, huh?
 - Chat, though was still separate
 - “Remix Culture!” - Lawrence Lessig
 - Doc Searls - “Markets are conversations” - from “the cluetrain manefesto”
 - Cory Doctorow invented “wuffie”, a reputational currency, in “Down and out in the magic kingdom”
 - Charlie Stross – Accellerando – the character of Manfred, who made others rich by giving away his patents
- A tremendous outpouring of “content”, with no, or few ways to pay for it, a wonderful blossoming of ideas, and commentary – every website had a comments section, letters to the editor were essentially published no matter what.
- See: “A declaration of independence of CyberSpace” - JPB for how we felt then.
- Search engines emerged to sort it all out.

Net2 - 2004

- WiFi freed us from the computer room, into the coffee shop
- Protocols, not platforms, driven by standards appeared
 - Chat functionality
 - Web functionality
 - WebRTC functionality
- And FOSS code for linux and BSD servers appeared
 - Supporting all this underlying infrastructure
 - Then... **profit** ... usually for someone else.

Web2 “progress”

- I love wikipedia, archive.org, f*ckedcompany.com, and so on. Honest communications!
- We helped organize all the world’s data. But: anyone remember xml?
- Platforms appeared..
- Simpler email, web, publishing experiences
 - I liked facebook a lot when it came out
 - Chat integrated into my jabber/emacs workflow
 - Along with google
 - It wasn’t such a silo. Had pictures!
 - Was easier than blogging
 - I liked amazon a lot – simple ordering of any specialty item you needed
 - Honest communication between users
- But it all built on the collaborative work we’d done in net1, net2, and web1 to gradually... lock you in.
- Now there are the same kind of “claves” that were in snow crash – google users can’t talk to apple user, facebookers can’t talk to redditors, and so on...
- And there is no truth in advertising, and deplatforming became a thing...

Web2... Today

- News.google.com = National Enquirer
- Can't tell time without a cell phone
 - Or even use many services – OTA – without one
- Blogs are broadcast media, no comments
- Leaders and followers on twitter... and the empty pleasure of the like button, everywhere...

In the News: Web3, Cyber

- Net1 and Net2 are **dead** of complexity collapse
 - Home networks – who here can setup a printer? Or a local service?
 - Chat: 26 billion spent on “slack”
 - Public conversations only on reddit, everything else is now behind a paywall
 - Email: rendered nearly irrelevant
 - File transfers – delgated to dropbox
- Web3 – “We will remember it for you wholesale and sell it back to you retail”
 - Corporations with control of a marketplace raking it in (not just coinbase, but Apple!)
 - A virtual bank robbery every week
 - Winners, losers, and grifters making noise everywhere

Cyber and NFTs

- Virtual Goods in a virtual space in a virtual game economy *are* worth something.
- Trying to convince me that NFTs are useful outside that world is a real stretch, no matter how many billions you got...
 - “The internet is STILL just a copying machine”.
- Yet many others are convinced... and they are making bank on it. Or claiming to.

Financial future seems grim

- Ponzi schemes
 - Tulips
 - Bernie Maddoff
 - Social Security
 - Crypto
- Questions for your “crypto advisor”
 - How long can this ponzi scheme last?
 - How big can this ponzi scheme get?
 - How do you pick the right one?
- I wish I had answers for “sound investments in the future”, but with conventional interest rates where they are, (0)....

Apenwarr

“Cryptocurrency is a great way to bill for ransomware, and it’s the biggest ponzi scheme ever. Ransomware is not going to go away until we don’t have buggy software... It ought not to be legal to run buggy software. What was considered working yesterday is broken today.”

I don’t know how to write non-buggy software.

Nobody Does.

Nobody knows how to maintain it either.

Visions of direct to brain connections terrify me.

Facebook is one of many Inadvertant Infrastructur-ers

- Whatsapp is THE means of communication in Africa and Central/South America
 - What happens if that goes down?
 - Do they have a moral or financial obligation to keep that running?
 - If they lose staff, will it stay secure?
- Why do we trust google, or dropbox, or our banks, in the first place? See: log4j.

AR/VR Interface issues

- Cellphones are lousy interfaces to the world
 - Humanity reduced to thumbs and a 6 inch screen
 - Voice input has come along
- Happy to see one COVID reaction has been an uptick in desktops, and real keyboards for WFH
- Big screens are better! So are real keyboards
- Big screens lend perspective.
- More than 240 characters of text lends nuance

Conflicting laws for future comms

- Metcalf's Law – “The value of a network is proportional the the square of the number of users.’
- Dunbar's Limit – the maximum size of of a tribe < 250 people
- At what point, and for what causes, do normal people abandon a platform?
 - Where is the next Mayflower voyage to elsewhere?
 - (I get out my escapist fantasies via spacex)

What of a... Net-3?

- Diaspora, Discord, better apps
- More stuff on your own computer
 - Personal videoconferencing (galene.org is FREE)
 - Better educational tools that can work offline
- More FOSS software (if we can bear to write it)
- Ipv6 everywhere (so we can connect to each other again)
- Tailscale and personal clouds (to share with just who you want to share with)
- Doc Searls's VRM (to take control of your data)

I like this future a lot more, but there's no money behind it.

Not a conclusion

- There's room for many universes ahead.
- I'd like to build a better one.
- If anyone else has a good idea, I'd love it if you'd share it.
- I worry a lot that the future plans for humanity are on file, on Alpha Centuri.
- It's ok with me, though, if you tune up, log out, and drop in.

THX!!!!!!