The Internet in Sweden is broken

Some of us have been crying wolf, or rather crying that IPv4 has run out, for many years now, and we have done so more or less in vain. In 2012 RIPE ran out of IPv4 addresses, which means that neither Western nor Eastern Europe has any more IPv4 addresses to let the Internet grow in a healthy way.

Or, to use today's buzzword: digitalisation is held back.

There is of course a solution to this shortage, and it is called IPv6. But Sweden is a developing country when it comes to IPv6, and so we are becoming a developing country when it comes to the Internet as well. See for example Google's IPv6 statistics. In the USA the Internet service providers (ISPs from here on) do what they can to get rid of IPv4, while we in Sweden do the opposite and put lipstick on the IPv4 corpse, and fiddle and patch and tinker and...

Fibre is being procured and dug at record speed today, to houses, flats, to just about everything. But is anyone checking what is actually delivered over that fibre?

No, I would say. The only requirement when fibre is procured for villages or housing is that several ISPs must be able to deliver Internet, and that is usually done through a so-called communications operator (CO from here on). A CO is a contraption that owns the active equipment the customers connect to, and the CO then offers Internet access from several different providers.

There are several hundred COs in Sweden today. They range from the big players such as Telia, Telenor and Comhem, which run their own COs under other names, to tiny operators and city networks. Practically NONE of them can deliver IPv6. So what happens then? Well, since IPv4 has run out, the ISPs have to translate your address through so-called CGN, which makes the Internet worse. Games may work worse, IP telephony may drop now and then, you cannot reach the things you have at home, and so on. All address translation brings more complexity, limitations, disruptions and a slower Internet.

The solution to the problem above is, as I said, IPv6, but the COs are far from prepared to handle IPv6, and the reason can be anything from the hardware to a provisioning system that cannot handle it.

Now, we should not only blame the COs, because the big ISPs have the same problem: nobody delivers IPv6 to anyone's home. At all. The only shining exception is Tele2's 4G, where IPv6 is enabled by default, which is the only reason we in Sweden reach ~4 percent IPv6 penetration according to Google's measurements. See the list of Swedish ISPs (formerly ispmedipv6.se), a list with a large number of ISPs in Sweden and whether they themselves have enabled IPv6 on their web, DNS and incoming mail.

This has been a known problem for more than 10 years, so what are the small and large consultancies doing about it? Look at the list of Swedish IT companies (formerly

itbolagmedipv6.se) and you will see a cross-section of the IT companies in Sweden that could help us out of this misery.

Not even 3 percent of those companies have IPv6 enabled on their web, DNS or incoming mail.

I say in an article in IDG that there is a skills shortage in Sweden, and the more you work with the Internet, the more obvious it becomes. That things work as well as they do today is mostly because the people who work with firewalls, routers and so on have kept doing the same thing for a long time.

But when will more people than those of us who have been nagging for years take on the problem?

The digitalisation that is supposed to develop Sweden needs a new and better Internet than the IPv4-only one we have today.

The previous government's digital agenda proposed that government agencies and municipalities should have IPv6 enabled by 2013 at the latest, but we came nowhere near that result, as you can see from the links below: myndighetermedipv6.se (agencies) and kommunermedipv6.se (municipalities).

Why? I have had countless meetings with the public sector and their consultants, where everyone is terrified of developing their networks and services. Once again the skills shortage shows, and what is new is dangerous. IPv6 is neither difficult nor dangerous, but it does require that whoever introduces it understands why and how to do it in the best way.

Last week I spent several hours with a shoehorn and a sledgehammer getting IPv4 VPNs between municipalities to work. Had they had IPv6 enabled in their networks, it would have been dead easy to get it going, but oh well...

What happens if you have IPv6 enabled? Many large ISPs and content providers measure and show that things load faster with IPv6 enabled, on the mobile, at home or at work.

- Facebook News Feeds Load 20-40% Faster Over IPv6 (Internet Society)
- Can IPv6 Really Be Faster than IPv4? (Part 2) (Infoblox)

So who can help make the Internet in Sweden healthy again? PTS and IIS held a few seminars and activities some years ago, and that gave some results, but since then things have more or less stood still. There are almost never any IPv6 requirements in procurements. I know of a large procurement where the requirement was removed because the supplier they wanted did not support it.

So those of you who think you are doing the right thing, such as SSNF, SKL, Kommentus, Kommits, the Government and others, must understand that you too have to take part and set requirements, so that IPv6 is in every hand and every home in Sweden, and soon. Why no large ISP in Sweden has done it yet is a mystery, but feel free to be inspired by what is going on in countries outside Sweden and how they work to get rid of IPv4, instead of, as here, making it last longer than is healthy.

More to read about IPv6

- 16 years with IPv6 (ARIN)
- Get6 (ARIN; the address now leads to ARIN's IPv6 case studies)
- IPv6-only for the enterprise (Interlan, archived copy from 2017)