



CREATING THE LIVING NETWORK™

Internet as a Downloadable SW Package



Observations about the Internet

- The Internet has come from the perspective of interconnecting **networks**, mainly belonging to organisations, ISPs, businesses, ...
- The WWW has come from the perspective of interconnecting **services**, mainly being provided by organisations, ISPs, businesses, ...

- Users' access to Internet via **mobile** has surpassed fixed usage in 2016
 - 95% of Chinese Internet users access via mobile devices
- With proliferation of smartphones, Internet access has become an experience of **installing** the right **application!**

So what is the Next Generation Internet?

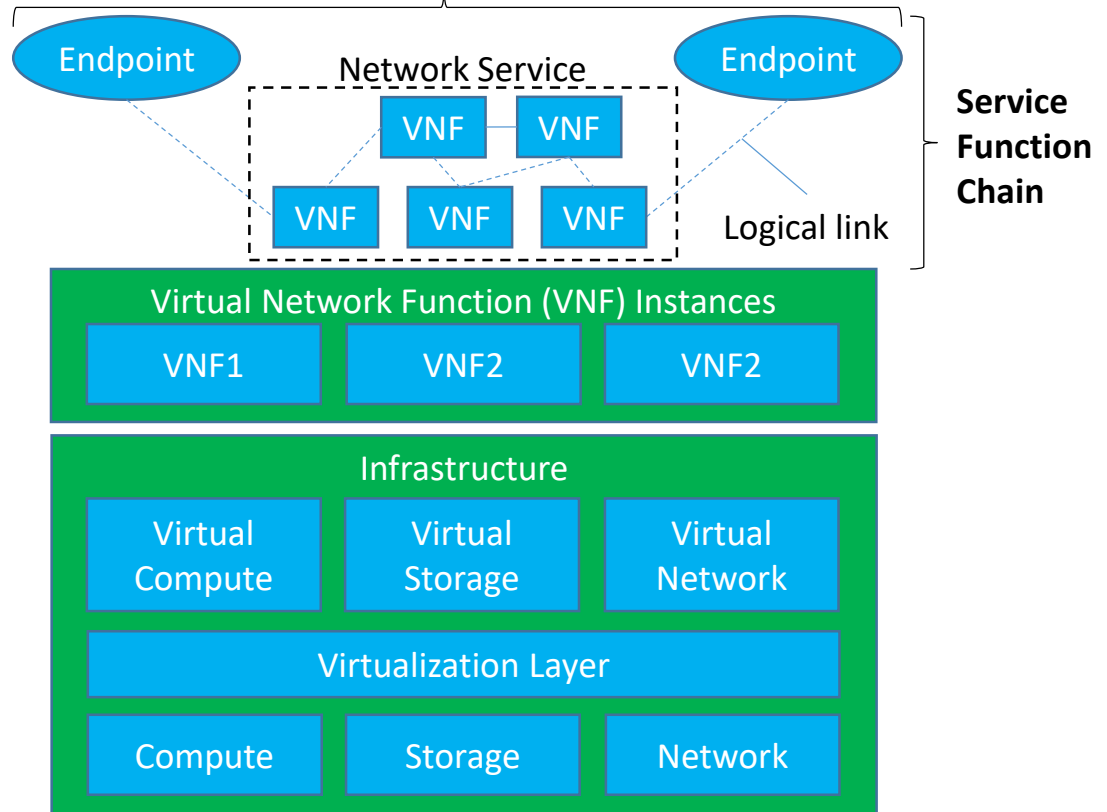
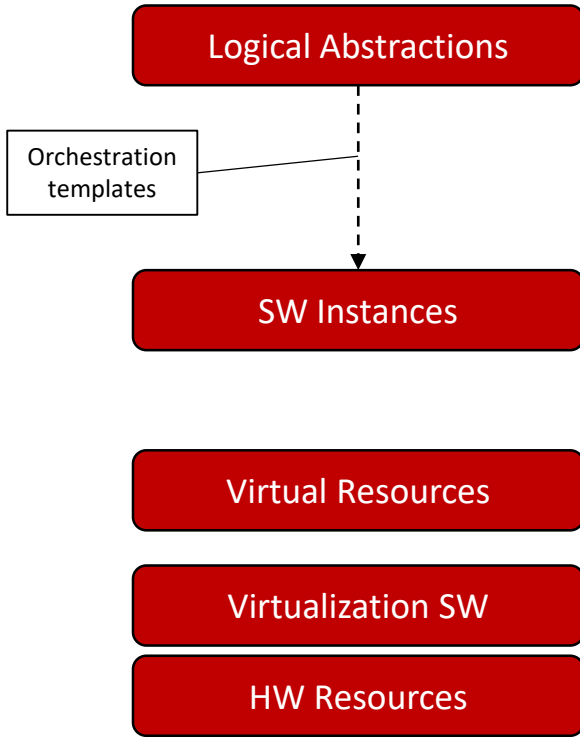
...there is an app for that, surely?

BUT:

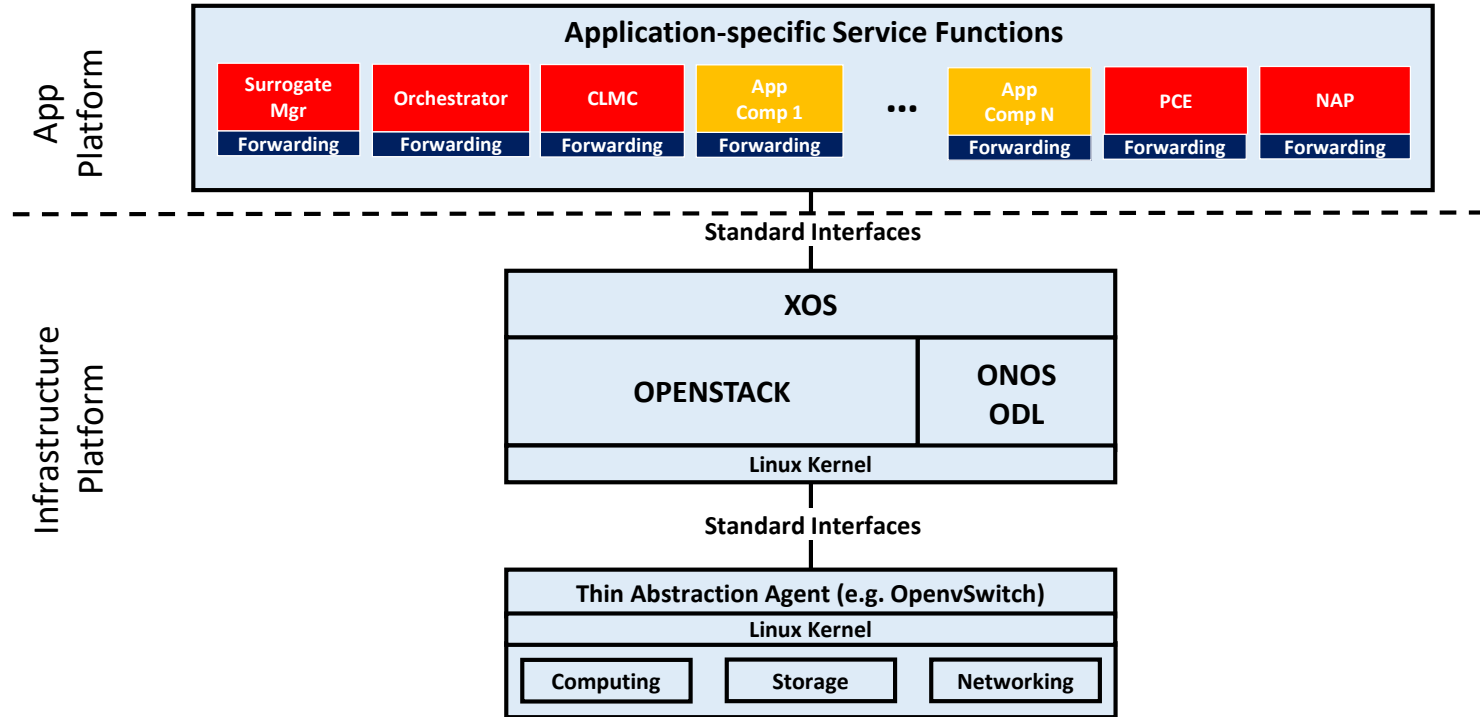
1. What is the platform?
2. What is the value chain?

The Internet is all About Resources

End-to-End Service

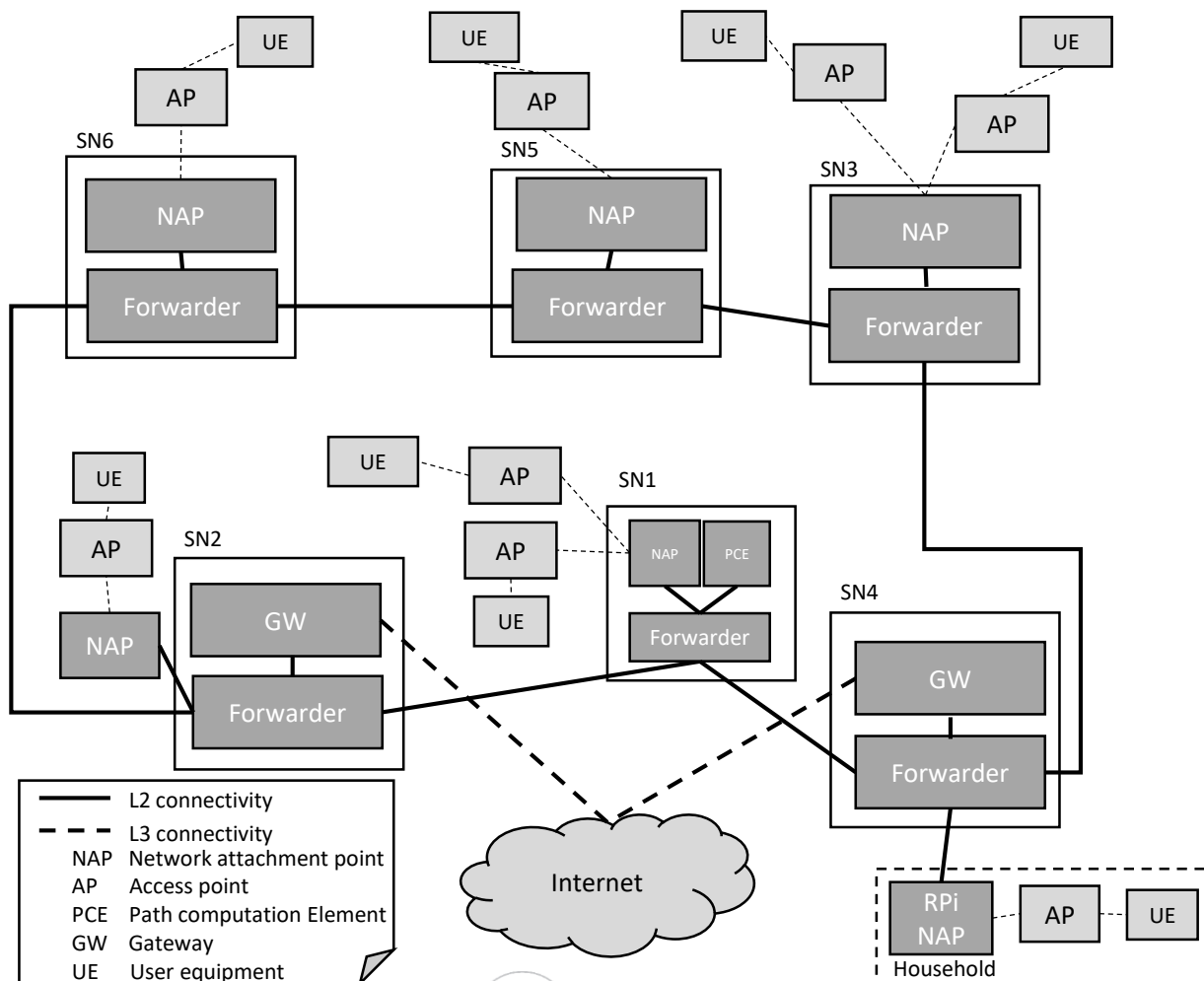


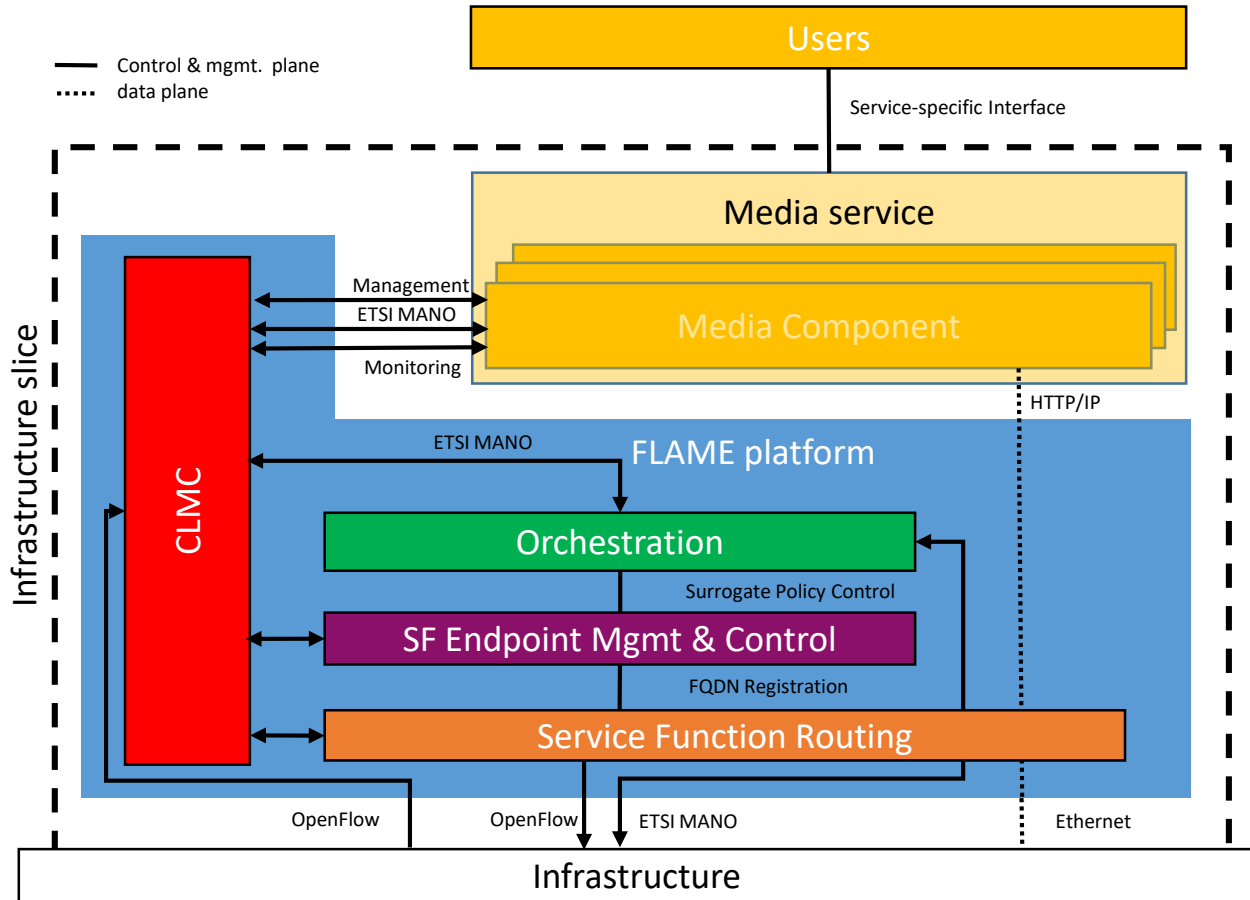
Emerging Platforms drive the App View



Case Study 1: SW-based Community Networks

- Objective
 - Bring the Internet to communities who have otherwise problems to afford the deployment
- Realization
 - Pure SW solution, including SW-based switching, deployed directly over Layer 2 connected computing devices
- Realized in H2020 RIFE project

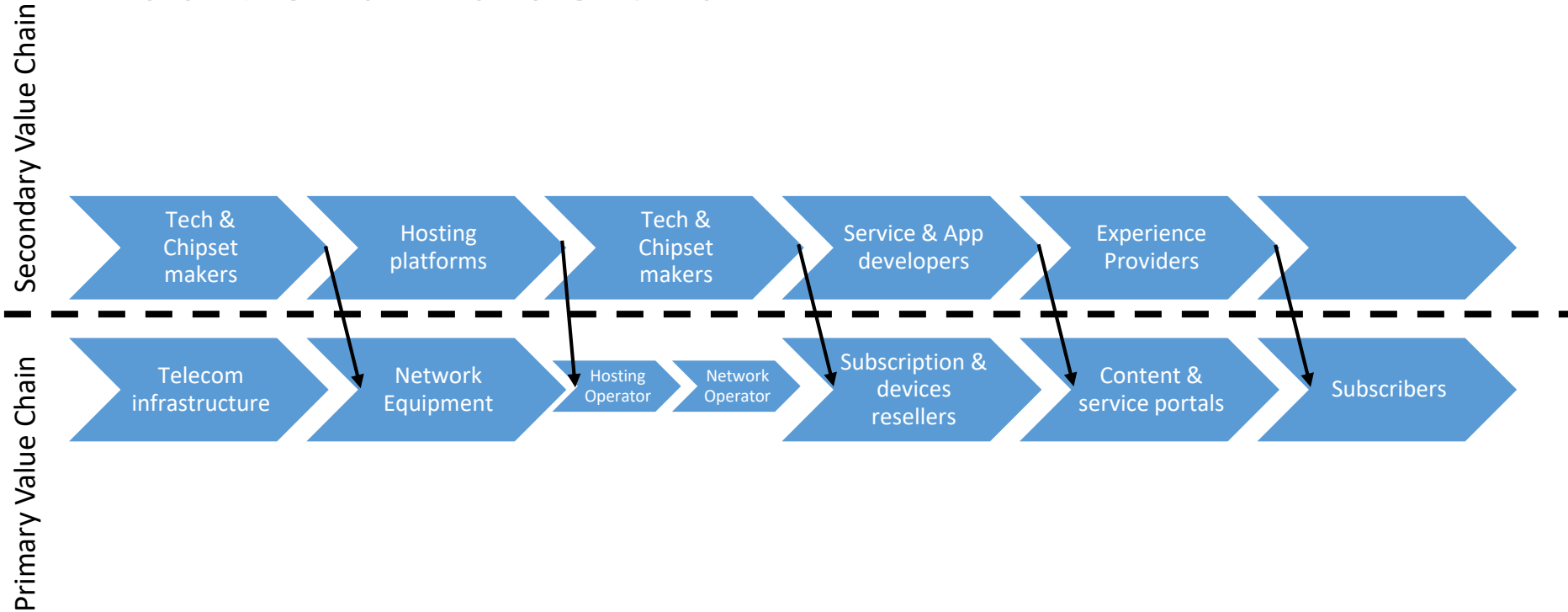




Case Study 2: FLAME-on-a-Stick

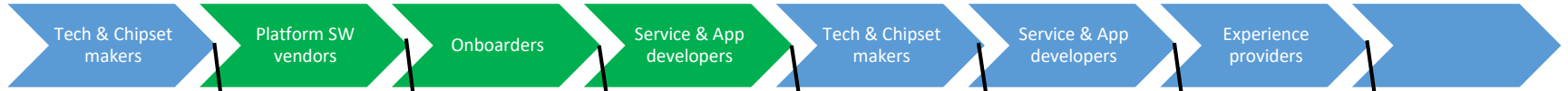
- Objective
 - Allow for personalized, mobile, interactive, and context-aware (PIML) media services in rich environments, such as Smart Cities
- Realization
 - Developed as a pure SW package, deployed from a mere USB stick (or similar)
- Realized in H2020 FLAME project

Traditional Value Chain



Intermediary Value Chain with the Network as a Distribution Computing Platform

Secondary Value Chain



Primary Value Chain



Value Chain of a True SW-based Internet

Secondary Value Chain



Primary Value Chain



Research Challenges

- Real-time control in a multi-domain & multi-tenant fashion
 - Not all is owned what needs to be controlled!
- Control in situations with high dynamicity
 - Mobile, edge, multi-domain, ..., all add to dynamicity of control environments at any point in time
- Testing and conformity
 - Safeguard the interests of the many stakeholders in an end-to-end deployment
- Accountability
 - Who's done it and what is it worth?
 - New pricing models (why paying the truck driver?)
 - currency models (if blockchain is the answer, what is the question?)
- Anybody mentioned neutrality? Of what?

Conclusion

- We have moved from interconnecting networks and services to an app-driven personalized experience
- SW-based technologies are sinking deep into the networks providing those apps over the top nowadays
- New platforms and marketplaces will emerge that extend the app experience across all elements of the end-to-end experience

My Personal Internet -> there is an app for it!