

Information Centric Networking: Evolution or Revolution?

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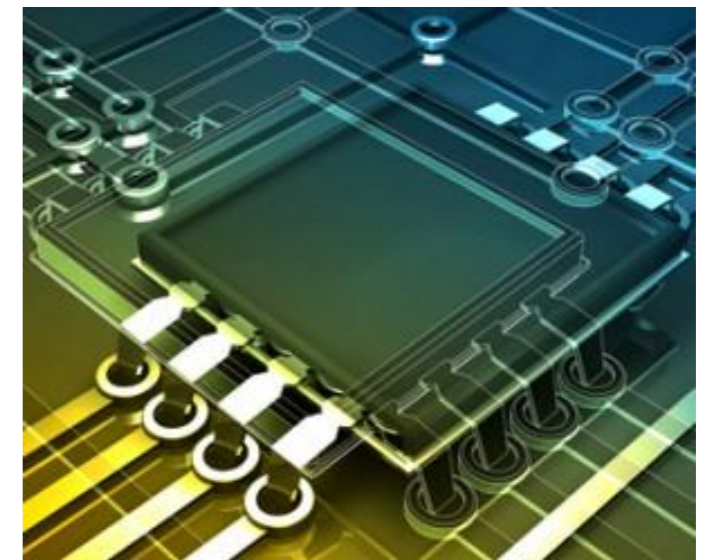
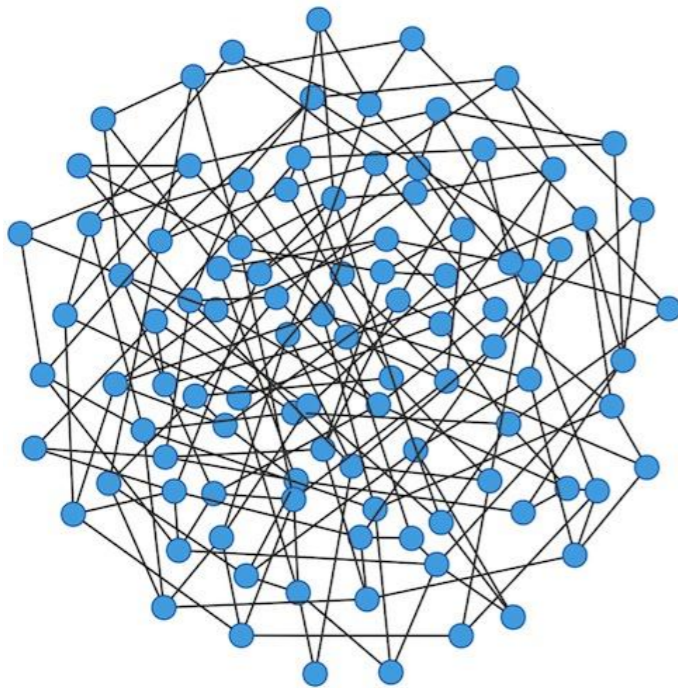
Motivation

- The number of devices with communication capabilities is growing exponentially;
- Network traffic is increasing accordingly;
- The current network model was not design to cope with these many devices and traffic;
- The is a clear mismatch between how people uses the Internet (and network systems in general) and how networks operate;
- The problems that we are facing today regarding security, mobility, trust management, etc., derived from intrinsic limitations of the current network model.



Evolution or Revolution ?

- Some facts:
 - Is commonly accepted that the current network model needs to evolve (in every aspects) to cope with the emerging new challenges;
 - Network hardware tends to evolve from very dedicate chips targeted to specific tasks (like packet switching) to more generic ones programed (by software) to do these same tasks.



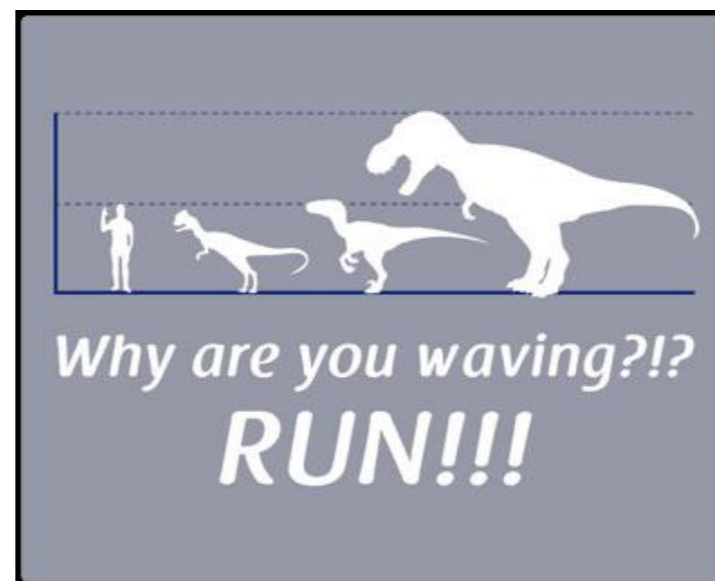
Evolution or Revolution ?

- Ways to go:
 - Continue to remedy;
 - Take a ground breaking approach that completely breaks ties with the past;
 - Take a clean slate approach that can coexists with current solutions.

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"I thought I felt a paradigm shift, but
it was just my undershorts riding up."

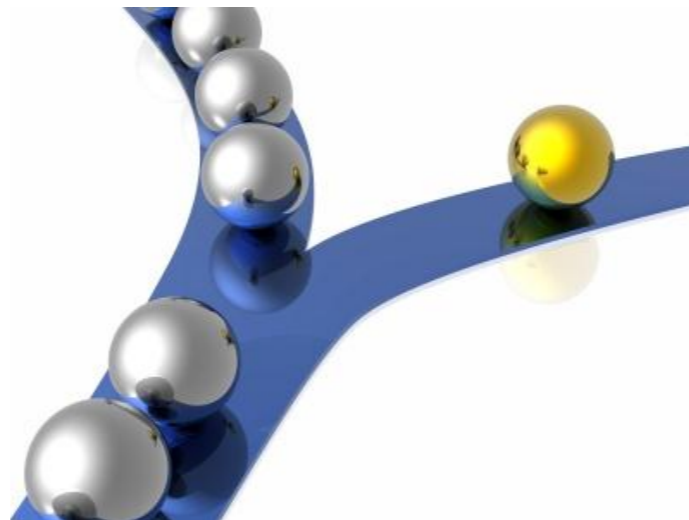


Most relevant architectures

- CCN/NDN
 - <http://www.ccnx.org/>
- NetInf
 - <http://www.netinf.org/home/home/>
 - <http://www.sail-project.eu/>
 - <http://www.4ward-project.eu/>
- PSIRP
 - <http://www.psirp.org/>
- Hagggle
 - <http://www.hagggleproject.org/>

Where SITI stands

- Neither of the mentioned architectures was tested in opportunistic scenarios and multiple platforms (including embedded devices and smartphones);
- We decided to start developing a new architecture, considering the strong point of the other ones and targeted for as many platforms as possible;
- We hope to have a basic working architecture at the end of this year.



Conclusion

- I think we need a new communication model that can cope natively with the heterogeneity of devices, network interfaces and communication scenarios that we have today;
- I believe that information centric architectures are the future;
- There are many open issues regarding the future of the internet and networking in general (this is good for those that are considering a research career!!).

Thanks!