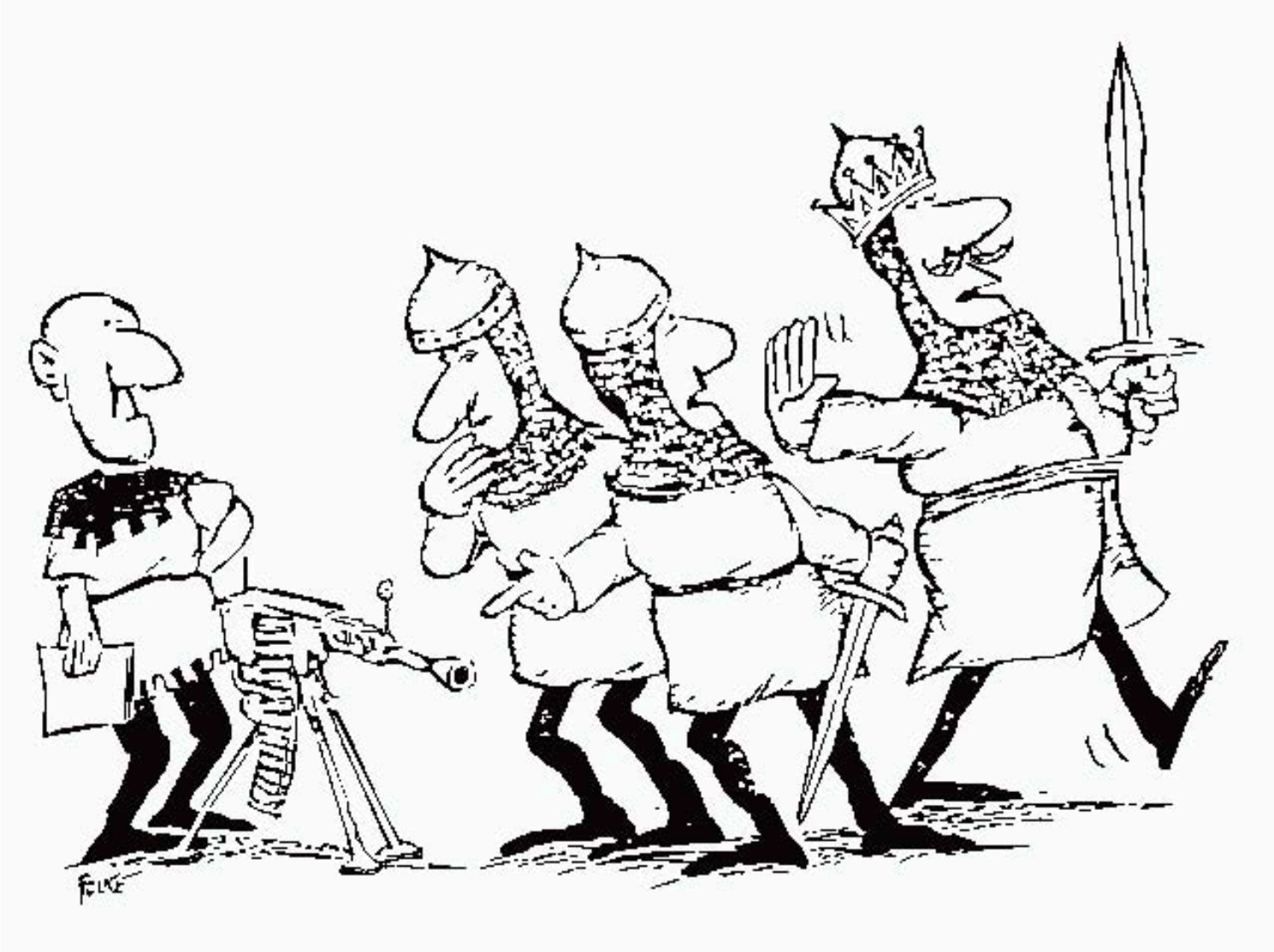
THOMSON

Future Research Challenges

Martin May

Clean slate vs. evolution?

Think Beyond Legacy…



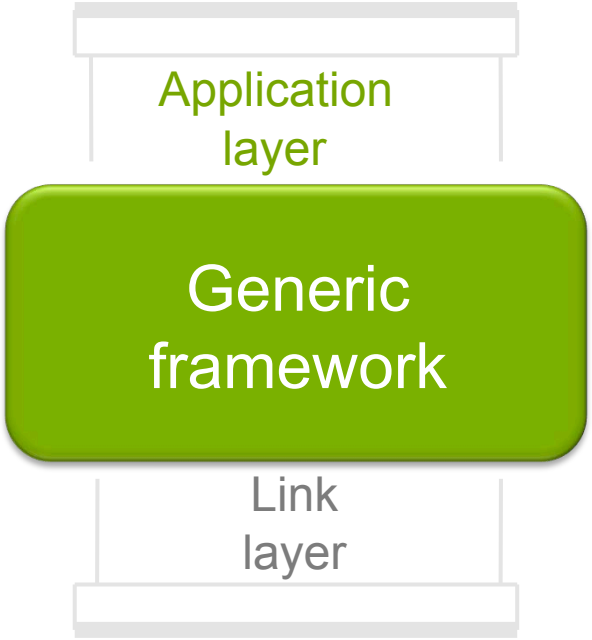
Clean slate vs. evolution?

- In research we need the freedom to come up with fresh, new ideas
- We should not be limited by backwards compatibility and evolutionary paths

→ Clean slate research!

That does not mean that the future internet will be clean-slate, but the research has to be.

What we need next?

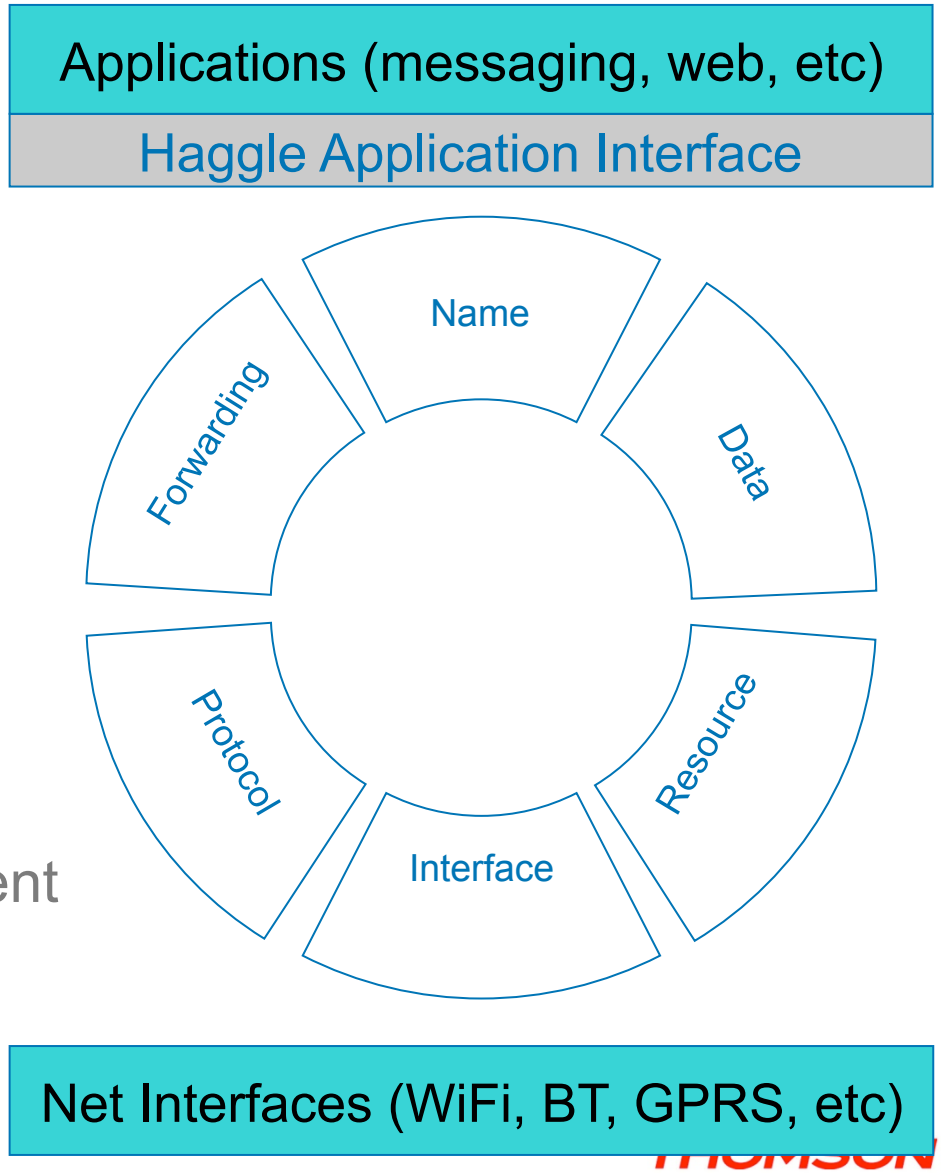


- **Implementations of such generic frameworks**
- **Implementations of new protocols and network stacks**
- **Platforms for experimental paradigms**
  - OneLab nodes
  - Embedded systems/mobile devices
- **Access to these platforms**

The ANA framework is such a generic framework able to host multiple networks (stacks)

Haggle Architecture

- **Same idea, but for mobile platforms**
- **Data-centric app API**
  - Free from net complexity
- **Seamless mobile networking**
  - Late binding
  - Integrated resource management



Lessons learned from ANA, Haggle,…

- **Building platforms and frameworks is challenging and takes time**
- **In new projects, we should not re-invent the wheel every time but build on already developed knowledge**
  - Use the already developed platforms
  - Enable sustainable platforms
- **For both projects, the challenge is to promote the platform**
  - Tools for rapid development
  - Libraries, languages

What's next?

- **We need more applications that run on the new platforms**
- **We need more top down approaches**
  - Application-driven networking
  - New services / application should drive the design of new networking architectures
- **Is there an application that does not run on the Internet and why is that?**
- **More platform where we can deploy our ideas on**
  - Platforms are also spectrum, bandwidth, cloud computing resources,…

Thank you….