

A REVIEW OF NEXT GENERATION INTERNET ARCHITECTURE OPEN-SOURCE SOFTWARE PROJECTS

TOWARDS A HUMAN CENTRIC INTERNET

Mirko Presser, *Associate Professor at Aarhus University*

Rita Madsen, *Research Assistant at Aarhus University*



Presenter: Rita Madsen, rita.madsen@btech.au.dk



DEPARTMENT OF BUSINESS DEVELOPMENT AND TECHNOLOGY
AARHUS UNIVERSITY

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RITA MADSEN
RESEARCH ASSISTANT



ABOUT ME

BACKGROUND:

- Bachelor´s degree in Management and Business Administration, Vilnius University, Lithuania
- Master´s degree in Economics and Business Administration, Aarhus University, Denmark

RESEARCH FIELDS:

- Organizational research
- Business models
- Sustainability and Green Business



RESEARCH TEAM

Department of Business Development and Technology at Aarhus University is an interdisciplinary research and teaching institution with strong connections to the industry.

Authors are involved with Next Generation Internet projects funded by the European Commission as part of Horizon 2020 (NGI Pointer) and Horizon Europe (NGI Search).



Furthermore, our research group is working on projects related to the:

- IoT in the production companies
- Cyber security in the production companies

NGI POINTER OPEN-SOURCE SOFTWARE PROJECTS

RELEVANCE OF THE RESEARCH

Practical

Gain an understanding of how to support and grow future internet initiatives through public, private and community support.

Academic

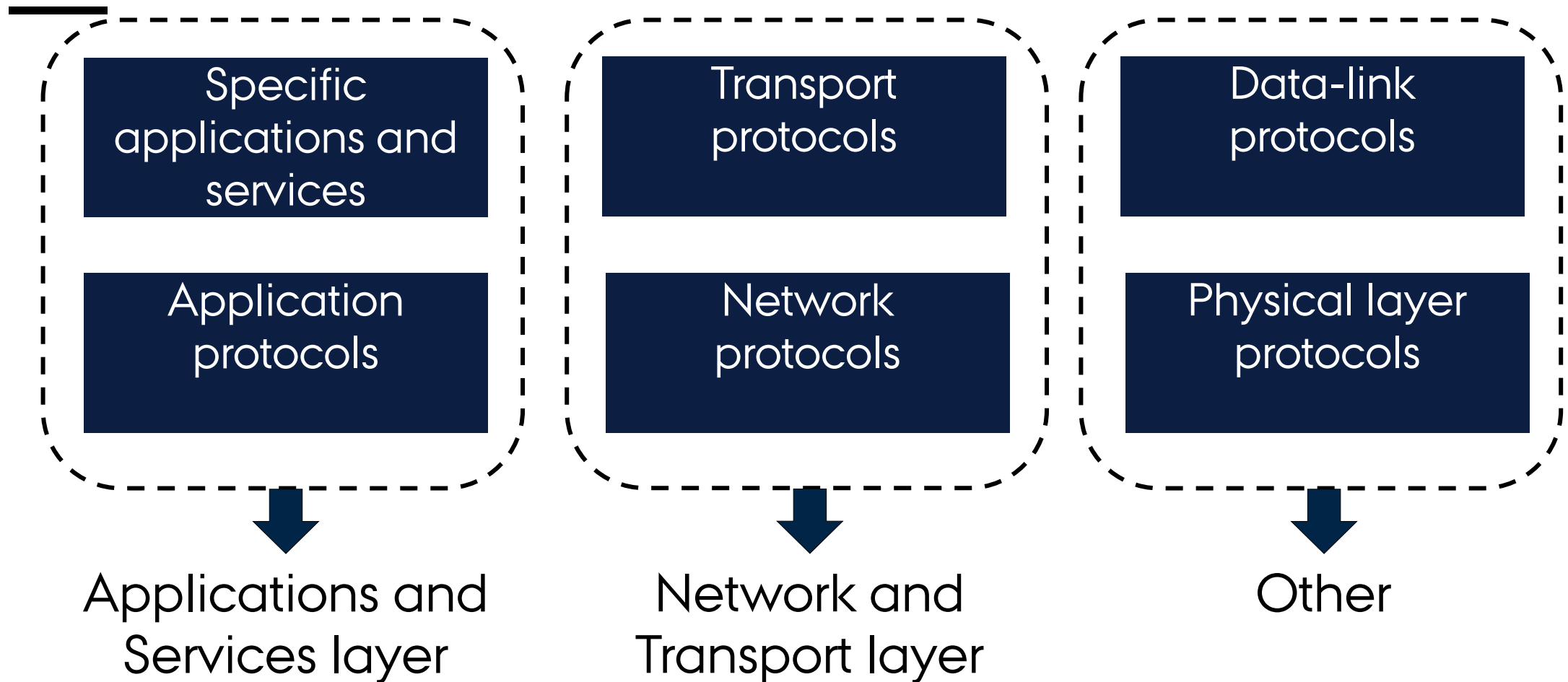
To analyze the projects from a financial sustainability perspective and identify trends within projects which would allow identifying business model patterns.



DATA SET

- Multiple case study: 32 open-source software projects funded through NGI Pointer
- NGI Pointer main topic: Next Generation Internet Architecture:
 - Privacy-by-design;
 - Internet at the Edge;
 - Network Optimisation;
 - Virtualisation and isolation;
 - Limitations in the TCP/IP protocol suite;
 - Autonomous Network operations and control;
 - Energy efficiency; Industrial Internet Security;
 - Trust for New Internet/Web Users.
- Primary and secondary data collected from January 2020 to December 2022.

THE INTERNET ARCHITECTURE



CATEGORIZATION OF THE PROJECTS

Specific applications and services, such as email, browsers, etc.

Application protocols, such as Hypertext Transfer Protocol (HTTP), building the foundation of the web.



Applications and Services layer
(10 projects)

Transport protocols, such as Transmission Control Protocol (TCP).

Network protocols, such as Internet Protocol (IP).



Network and Transport layer
(15 projects)

Data-link protocols, such as Ethernet.

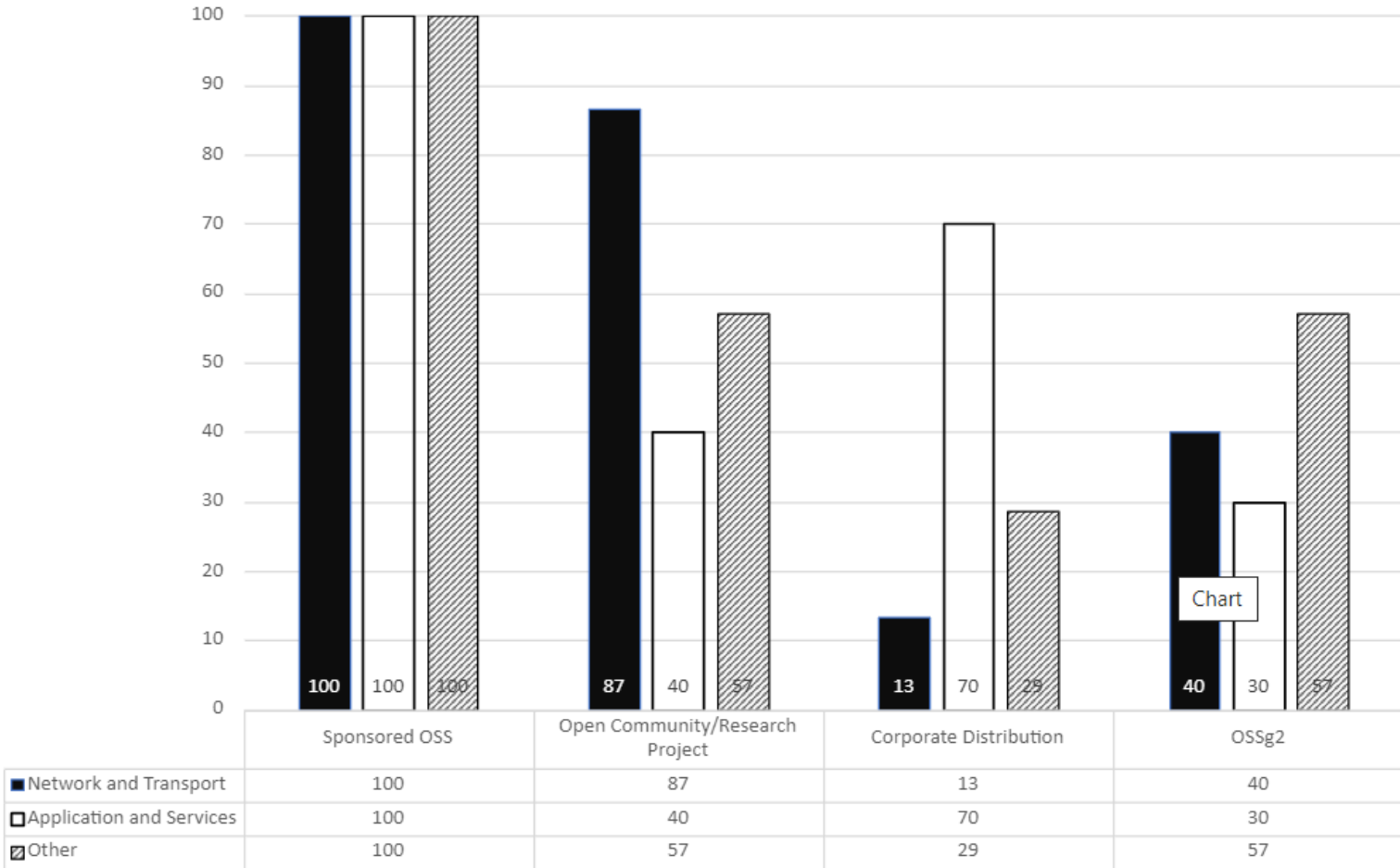
Physical layer protocols, such as DSL.

Other **not specified protocols**.



Other
(7 projects)

SUSTAINABILITY MODELS BY LAYER



FUTURE RESEARCH

The review of the NGI Pointer projects reveals potential research topics:

- Identify trends
- Develop a model of modern Business Model Patterns for open-source software and hardware projects
- Apply other frameworks for analysis
- Organizational research

ORGANIZING IN OPEN-SOURCE SOFTWARE INDUSTRY

How do open-source software communities organize?

- What different types of organizations exist in the OSS industry?
- How are boundaries formed in non-traditional OSS organizations?
- How do non-traditional OSS organizations organize over time?

OPEN CALLS



Second Open Call: 1 April - 1 June 2023.

This Open Call will be funding projects in the following areas:

1. Power cognitive search by reinforcement learning
2. Machine-based data
3. AI-based taxonomies
4. Network analysis
5. AI-based search tools and content generators
6. Ethics in search and discovery
7. Enabling new ways of discovering and accessing information

More information: www.ngisearch.eu



