Engagement platforms in software ecosystems – Case Future Internet PPP

Anssi Smedlund, Pentti Launonen, Petra Turkama & Heini Ikävalko
Aalto School of Business
Center for Knowledge and Innovation Research (CKIR)
Our department (CKIR) was in charge of coordination and support action (CSA) of Future Internet PPP program 2011-2017.

Future Internet PPP (FI-PPP) was the first program to utilize open call methodology:
- i.e.: Much of the budget was not fixed in the beginning, but used during the program
- 23 one to two hour interviews to program key persons were conducted to document the learnings

Work in progress: Manuscript draft available from anssi.smedlund@aalto.fi
Six-year, 450 million euro investment by the European Commission to respond to international software ecosystem competition with an alternative, European approach.

- Aims at advancing European ICT business ecosystems, reduce obstacles to the digital single market, develop internet standards and foster innovation and entrepreneurship

- Over 300 European companies, cities, universities and SMEs have participated in the program in its’ three stages.
Fiware?

- The developed software, FIWARE consists of advanced Open Stack based cloud capabilities, called Generic Enables (GEs), and a library of APIs on a cloud based infrastructure.

- APIs and generic enablers (GEs) allow developers to create their own context specific service system blueprints, or bundles, as referred to in openly accessible online FIWARE catalogue.

- GE’s are distributed in different technical chapters and provide different capacities, e.g. storage, processing capabilities, service marketplace, network resources and service development kits.
Fiware foundation

- Fiware foundation was established to maintain the software after the FI-PPP program in June 2016
- Atos, Engineering, NEC, Orange and Telefonica as main supporters
Research question

- How software ecosystems can be created with public funding?
Research approach

- Utilized business ecosystem metaphor (Moore 1993) and engagement platform construct (Breidbach et al, 2014)

- Reflecting the theories with the FI-PPP program structure and with the interviews
Business ecosystems and software ecosystems


1. Birth
2. Expansion
3. Leadership
4. Self-renewal

In FI-PPP program, this meant:

1. Software creation
2. Anchor tenant’s leadership
3. SME expansion
4. Software supplying and renewing (Foundation)
Software creation → Anchor tenant’s leadership → SME expansion → Software supplying and renewing (Foundation)

FIWARE foundation
Maintaining core open source software and open source forums. Essential for self-renewal of the software ecosystem and supplying software. Ensuring supply and demand
Engagement platforms?

- Engagement platforms are processes to orchestrate the ecosystem
- Are ‘physical or virtual touch points designed to provide structural support for the exchange and integration of resources, and thereby co-creation of value between actors in a service system’ (Breidbach et al. 2014, p.596; Ramaswamy 2009).
- Are often, but not necessarily ICT-based (Nenonen et al. 2012)
- Act as intermediaries that actors leverage in order to engage with other actors to co-create value (Storbacka et al. 2015)
Engagement platforms

Figure 7.1 Conceptual framework of Amazon’s engagement ecosystem (based on Breidbach, et al., 2014)
The four phases of FI-PPP orchestrated interactions and transactions

Phase 1
Anchor tenants' leadership
Software creation
Software supplying and renewing
SME expansion

Value chain -specific
Software ecosystem

Focus of impact

Phase 2
Phase 3
Phase 4 – Fiware.org

Software	supplying
and
trenewing

Software	creation

Focus	of	impact

Aalto University
School of Business
Fi-PPP successes and challenges – Phase 1

- Phase 1 – Ficore. Software creation
  - Success: Creation of core software modules
  - Challenges:
    - Ambiguity of goals
    - Accountability issues
    - Technology ownership unclear
FI-PPP successes and challenges – Phase 2

- **Phase 2 – Use cases. Anchor tenants leadership**
  - Successes: Working use cases. Governance model.
  - Challenges:
    - *Technology ownership issues*
    - *Maturity of core technology*
    - *Conflicts of business versus common interests*
FI-PPP successes and challenges – Phase 3

- Phase 3 – Accelerators. **SME expansion**
  - Successes:
    - Making core software open source and curated
    - Cascade funding model
    - Support actions
  - Challenges:
    - Technology maturity in the beginning
    - Large variety of quality between accelerators
FI-PPP successes and challenges – Phase 4

- **Fiware foundation. Software supplying and renewing**

  - **Successes:**
    - Community of developers
    - Traction in vertical industries
    - Strategic partnerships

  - **Challenges:**
    - Joint front-end at demand side
    - Ensuring supply and demand
    - Monetization and sustainability
    - Decision making
Conclusions

- Public funder can orchestrate software ecosystem by establishing four types of “engagement platforms”: Engagement for 1) software creation, 2) anchor tenant leadership, 3) SME expansion and 4) software supply and renewal.

- i.e. processes that enable participants to co-create value

- i.e. processes that increase voluntary contribution of participants resources for the benefit of the software ecosystem (c.f. van Doorn et al. 2010; Brodie et al. 2011)
Policy implications

- The role of public funder is to act as an orchestrating intermediary, not only as grant agency
- There are many types of “engagement platforms” for a public funder to set up, and all types are needed at some point
  - Technology creation and utilizations need different types of engagement platforms (contract terms, support functions)
  - In closed phases, the responsibility is with the participants, contract terms are clear
  - In open phases, the responsibility of the public funder is pronounced as voluntary participation increases
Impact of FI-PPP to other EC programs

- Open calls approach proved to be successful mechanism
- In FI-PPP public funder’s role was more active orchestrator compared to previous grant funding and demand results – model
- The responsible individuals were changed during the program, and flexibility caused by Open Calls allowed flexibility
- FI-PPP governance model, as well as other conclusions and implications are now used as examples for other European Commission PPP programs
References


Thank you!