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School of Business

Engagement platforms in software ecosystems – Case Future Internet PPP

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Background

- 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*
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FI-PPP ?



- **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 Enablers (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

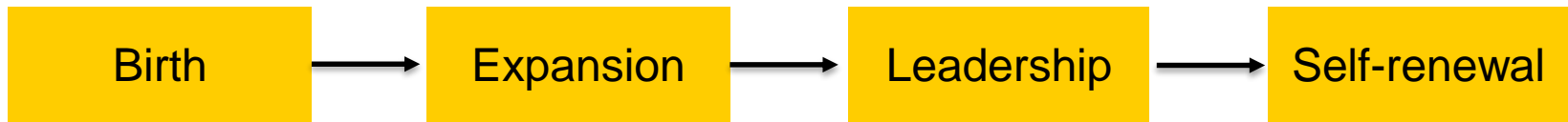
- **How software ecosystems can be created with public funding?**

Research approach

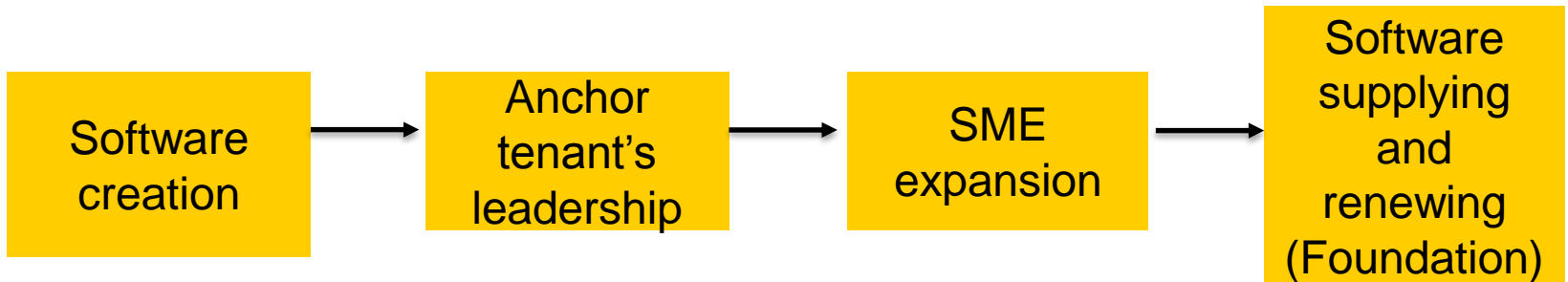
- Utilized business ecosystem metaphor (Moore 1993) and engagement platform construct (Breidbach et al, 2014)
- Reflecting the theories with the FI-PPP program structure and with the interviews

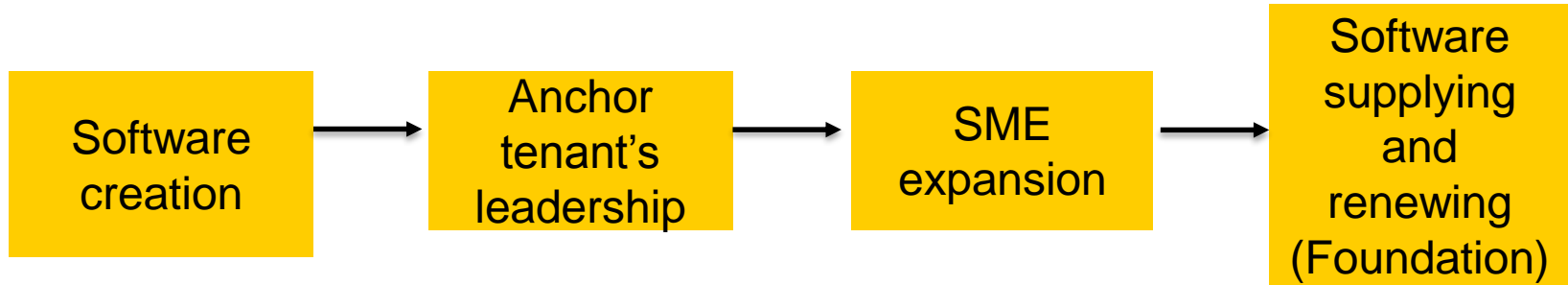
Business ecosystems and software ecosystems

Ecosystems emerge in four stages (Moore, J.F., 1993. Predators and prey: a new ecology of competition. *Harvard Business Review*, 71(3), pp.75–86)



In FI-PPP program, this meant:





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

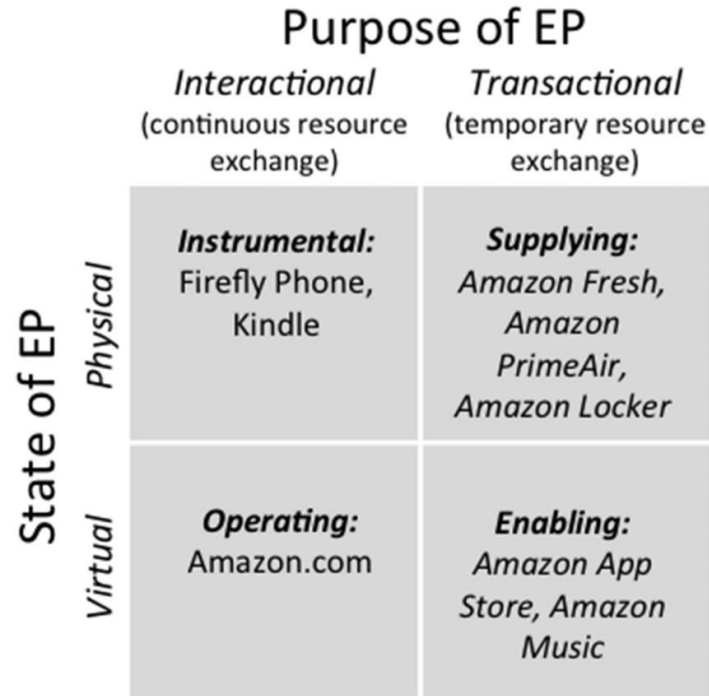
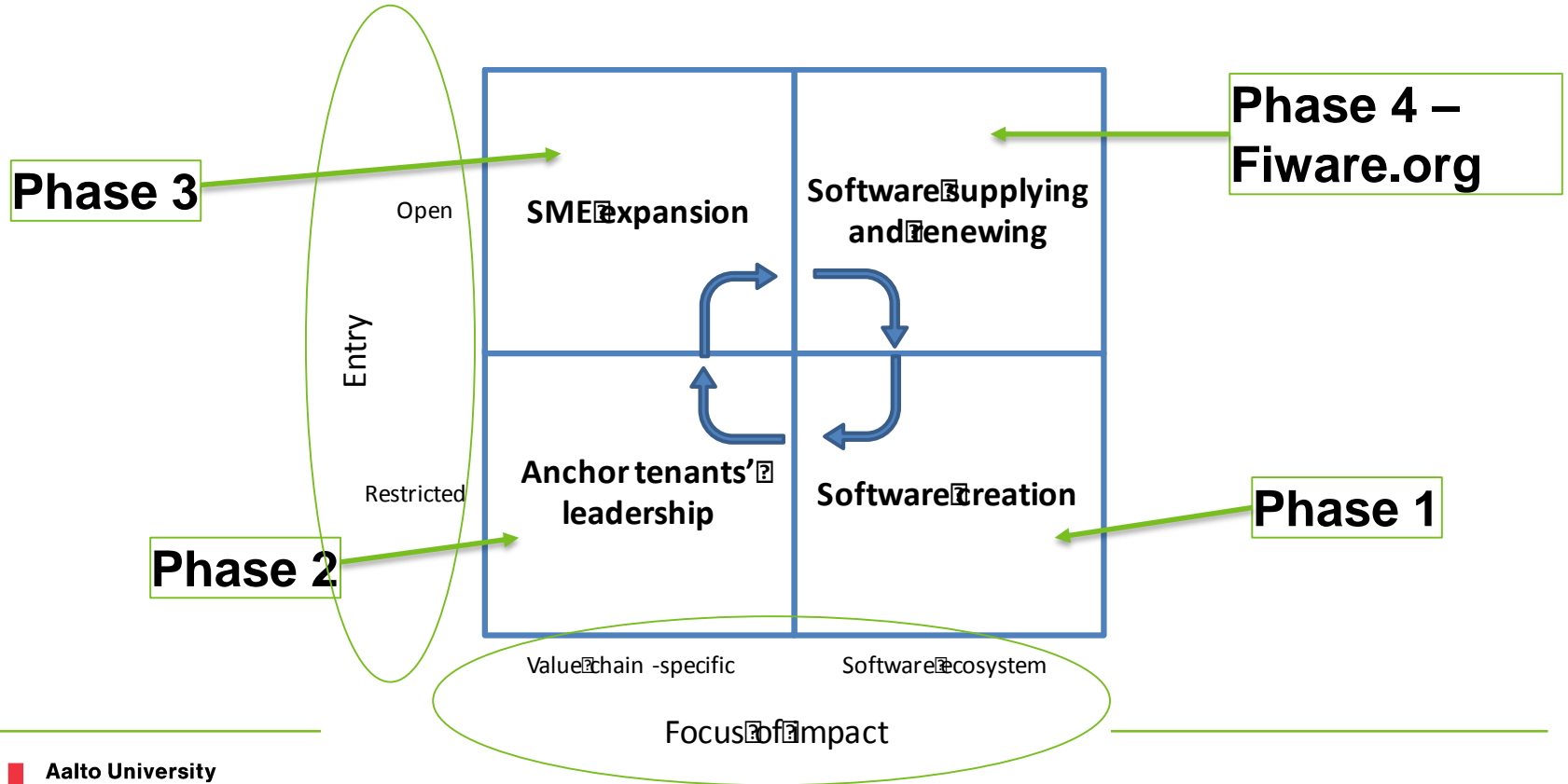


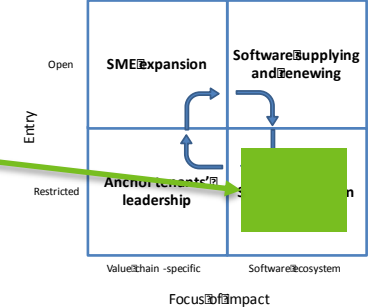
Figure 7.1 Conceptual framework of Amazon's engagement ecosystem (based on Breidbach, et al., 2014)

The four phases of FI-PPP orchestrated interactions and transactions



FI-PPP successes and challenges – Phase 1

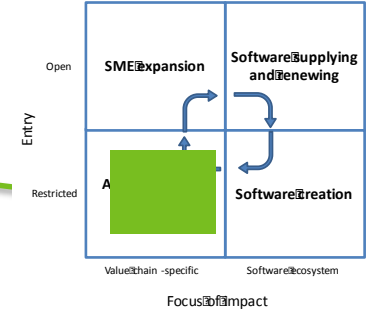
- **Phase 1 – Ficore. Software creation**
 - Success: Creation of core software modules
 - Challenges:
 - *Ambiguity of goals*
 - *Accountability issues*
 - *Technology ownership unclear*



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

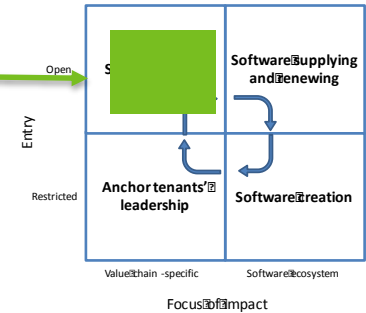
- Phase 3 – Accelerators. *SME expansion*

- 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

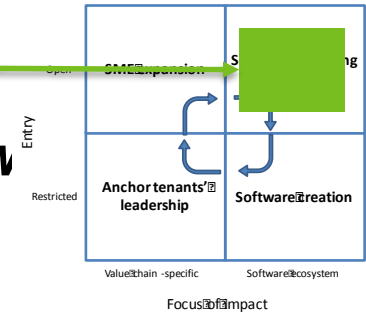
- **Fiware foundation. Software supplying and renew**

- 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 a examples for other European Commission PPP programs**

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Thank you!