

# Open and Closed Innovation it ICT

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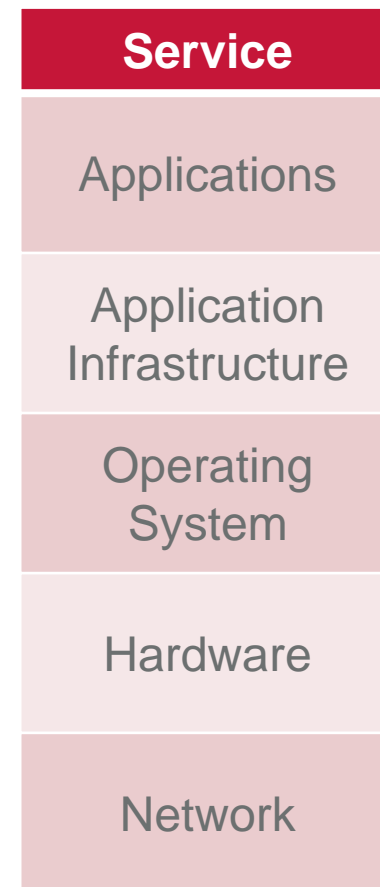


## Overview: Open and Closed Innovation in ICT

- Software is (even further) moving towards becoming a service business
- Open Innovation practices (here: Open Source Software, Open Standards) are speeding up this process
- The increased shift towards services, open source software, creates new opportunities for firms
- This shift also creates organizational problems which, however, can be overcome

## ICT is increasingly becoming a service business

- Services *have always been* pivotal to the ICT industries
  - Package/solution deals
  - After sales *services* are more than half of project costs
- New developments give even more importance to services, at ever faster pace
  - Outsourcing, *Service Level Agreements*
  - Cloud computing, including SaaS (*Software as a service*), Web 2.0 apps (Facebook apps, Google Docs)



## From closed to open innovation

- IBM gave up control of the PC architecture in the 1980s
  - Transformed industry structure from silos to vertical layers
- Complete offers ensured by compatibility or glue code
  - (Open) standardization efforts are there, but often fail miserable (e.g., UNIX)
- Concept of open standard emerges, gains foothold with Internet
  - Without open standards, there is no market
  - Open source software



## What is open source software

- Open source software (OSS) is an (extreme) example of open innovation
- OSS is defined as software that provided under and OSI-compliant license
- Each (valid) customer has the right to...
  - ... obtain the source code (=blueprints) of the program (at least upon request)
  - ... modify the source code (without restrictions)
  - ... redistribute the source code (without restrictions)



## How firms may benefit from OSS



*Notes: Advantages are combinable. Assumes that firms reveal selectively.*

## Do firms in fact benefit? It depends...

Event study using all firms that made a closed product open (N = 77)

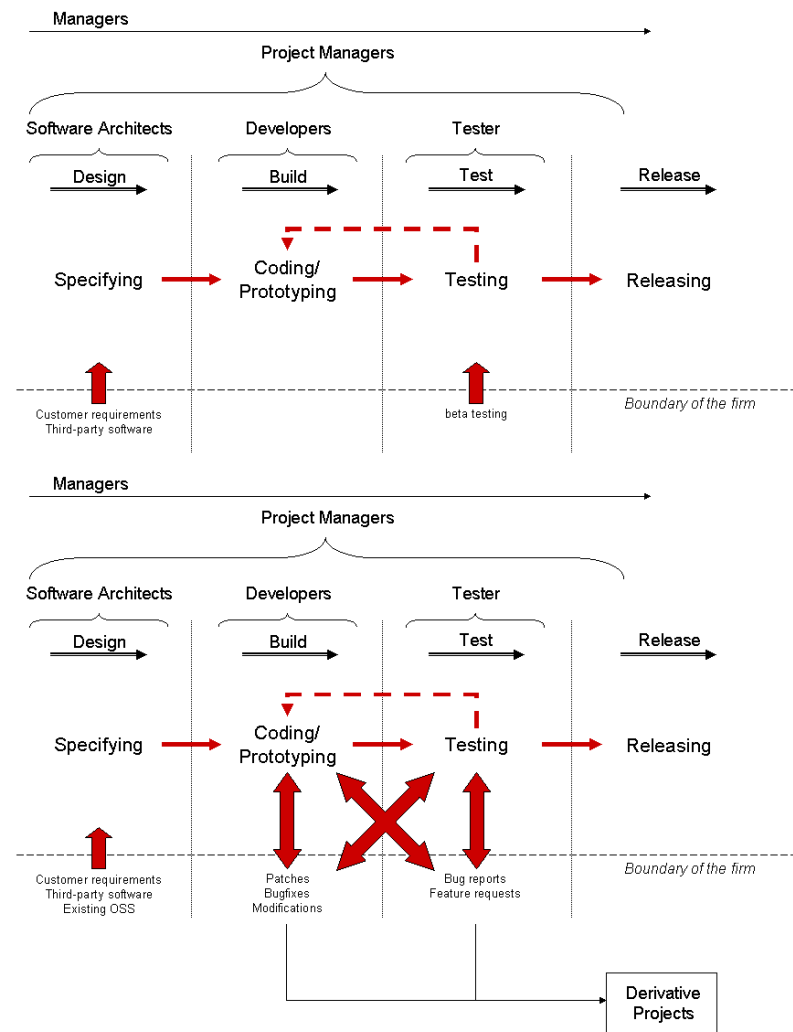
- Significant *positive* effect on stock price for firms targeting *short-term to mid-term goals*
- Significant *negative* effect for *long-term goals*
  - Effect is moderated over time
- Significant *positive* effect of *absorptive capacity*



*There is definitely value creation in going open, but firms have to find a way to appropriate this value (by for example choosing a viable business model).*

## Can firms manage the transition? Probably.

- Considerable changes in software development process, most notably for
  - Developers: from black box to moderators, open competition
  - Project managers: more uncertainty, additional work with very little benefit
- Several ways found to help overcome the tension
  - Incentivizing (monetarily), also to coordinate
  - Learning and culture
  - Top management support



## Conclusion

- Open source software, open standards facilitate the ICT industries' move towards the cloud
- There are many opportunities for firm to benefit despite becoming more open
  - Services are a key part of this!
- Whereas the transition from a closed to a (more) open paradigm will create tensions in the organization, it is manageable

