

Designing Platform Emulation

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Abstract

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Many contemporary firms and public agencies seek to engage external third-party developers to supply complementary applications. However, this type of development sometimes occurs without organizational consent, which creates problems for subjected organizations at both the technical and organizational levels.

In this thesis, I have developed a theoretical perspective called open platform emulation. This perspective builds on emulation logics, where designers use an external model as a basis for developing compatible platform capabilities superior to the original model. In this thesis, this model has been external unsanctioned development. In open platform emulation, such capabilities include governance decisions enabling coherence with previously proven solutions, the flexibility to accommodate new development trajectories, and strategies for applying openness to a digital resource. The means to achieve these capabilities involves design rules' architecture, interfaces, and integration protocols, which convey the capabilities to third-party developers. This way, a platform owner can draw on governance and architectural configurations to emulate self-resourcing behavior through the platform core.

I generated the contributions from this thesis by materializing open platform emulation in a clinical setting. More specifically, I used action design research (ADR) together with the Swedish Transport Administration (STA). Starting in early 2012, I led a platform initiative that, in collaboration with the STA, sought to emulate self-resourcing to design an open platform. Here, I conducted two full ADR cycles that resulted in a currently active production platform used by both the STA and external third-party developers. Before this engagement, I also conducted studies of related phenomena within the Swedish public transport industry, and I have continued to follow the STA's platform trajectory since its release in 2014.

The theoretical contributions from this thesis include design principles that seek to guide the designers of open platforms in situations where digital resources are subject to self-resourcing. These design principles cover both product and process aspects throughout the open platform's developmental trajectory. Also, I offer additional theoretical implications based on this work. These include extensions to current theories on open platforms, different types of platform emulation, an enunciated influence response to outlaw innovation, and methodological implications for guided emergence in ADR.