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Architecting a distributed system for data sharing between untrusting actors

Abstract

The architectures of digital systems, by defining the direction of data flows, have political implications. For this reason, they have become an object of investigation within social sciences. We can identify two main approaches to the study of architectures in the literature. The first focuses on architecture *as a design process* and questions the *political strategies* of architects (designers) in this process. The second focuses on architecture *as the result of a design process* and questions its *political effects* on the behavior and interactions of users. We can place the first approach in the field of Information Systems and Organization Studies and the second in the fields of Platform Studies and Internet Studies. This contribution follows the first approach (architecture as a process) and shares its interest for the political strategies of designers.

However, political strategies pursued during the system design processes have been more often asserted than empirically demonstrated. This blind spot of research has been recognized and calls have been made to explore it. Initial works have been proposed that adopt an Information Infrastructure perspective. Because of the phase that was observed -the infrastructural becoming of systems- these contributions focus mainly on political strategies aimed at systems integration. Our research, anchored higher upstream in the observation of the design phase, examines another type of strategy, aiming at the enrolment of heterogeneous, autonomous, and sometimes competing actors, in the development of a collaborative system.

More precisely, the collaborative system studied is a distributed system designed to enable the transmission of data between public and private organizations in the agricultural sector and under the authorization of data owners, the farmers. The contribution examines the strategies developed by the designer of the system to provide these mutually untrusting actors with a sustainable framework for a collective action.

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