Of Blooming Flowers and Multiple Sockets: Infrastructure Integration and the Technological Imaginary

Marcello Aspria MSc[1,a], Dr Marleen de Mul[1], Dr Samantha Adams[1]
[1] Institute for Health Policy and Management, Erasmus University Rotterdam
[a] *aspria@bmg.eur.nl (corresponding author)*

Abstract. We analyze and discuss the use of two metaphors for integration work in the development of Zorgportaal Rijnmond (ZPR), an online portal for healthcare and wellbeing in the Rotterdam Rijnmond region of the Netherlands. We view these metaphors as elements of actor-networks, and follow them 'in action'. Drawing on ethnographical observations we contend that they are performative: they generate new realities and have the ability to reconfigure actors in a project. We show how they produced and reproduced categorizations and classifications in the ZPR project, and discuss how they demarcated technical and financial concerns from the organization of health care practices. In this paper we plead for a sociotechnical approach to infrastructure integration work that acknowledges the 'technological imaginary' as a constitutive part of emergent information infrastructures.

Introduction

In this paper we explore the role of the 'technological imaginary' infrastructure integration. We borrow the concept from the field of cultural studies to denote situated, verbal representations of technology and the assumptions and expectations they encompass (cf. Marcus 1995; Fortun and Fortun 2005). We briefly analyze and discuss the use of metaphors for integration work as we

encountered them in our study of Zorgportaal Rijnmond (ZPR),[1] an online portal for healthcare and wellbeing in the Rotterdam Rijnmond region of the Netherlands.

We contend that metaphors are performative: they generate new realities and have the ability to reconfigure actors in a project. Based on Latour's work on symbolic representations in science (Latour, 1990), we show how metaphors for integration work produced and reproduced categorizations and classifications, and materialized in tangible artefacts. To foreground the performative nature of these metaphors, we view them as elements of actor-networks and follow them 'in action' (Latour, 1987, 1990).

Research approach

Our research is informed by Latour's approach to the social construction of scientific facts, and his take on the role of writing and imaging procedures in this process (Latour, 1990). Latour looks at such procedures as 'mobilization devices' that allow ideas to circulate faster and influence the way in which people argue and convince each other (Latour, 1990:31). We attribute a 'mobilizing' quality to the technological imaginary, which in our study was conveyed verbally (metaphors, analogies, allegories and proverbial expressions) as well as visually (architecture diagrams and standardized forms).

Through participant observations, interviews and document analysis we investigated how two metaphors for integration work – the portal as a 'multiple socket' and e-Health applications as 'blooming flowers' – traveled (cf. Latour, 1987, 1990) in the ZPR project between September 2009 and August 2012. We analyzed audio transcripts and field notes pertaining to ZPR project group and steering group meetings, brainstorm sessions, and informal discussions with project members and stakeholders.

Flowers blooming in a multiple socket

Two metaphors for integration work caught our attention in ZPR's first project group meeting: the representation of new e-Health applications as 'blooming flowers' and the description of the portal as a 'multiple socket'. We saw both metaphors as expressions of infrastructure integration work, i.e. the tasks involved in exploring, negotiating and governing a wide range of technical, financial, organizational, legal and professional attributes in the development of ZPR. These concepts did not travel alone: they were part of a management culture

[1] www.zorgportaalrijnmond.nl

in which the use of metaphors, analogies, allegories and proverbial expressions was profuse.

The view of the portal as a 'multiple socket' represented a favored outlook on infrastructure integration among many members during the early stage of the project. In their view it meant to convey the notion of a 'neutral' platform that posed no threats or risks to prospective participants in the project. It temporarily acted as a mediator between project members and the 'outside world' by bringing a sense of order in a wide range of possible configurations between heterogeneous technologies, contiguous markets and 'business cases'.

The limitations of the multiple socket metaphor became apparent to the project members when one of the vendors rejected it as an unrealistic and 'untranslatable' model of portal integration. Although the use of the term fell into disuse soon afterwards, the metaphor's performativity persisted. Expressions such as 'plugging into the portal' continued to recur among project members, conveying a similarly technically oriented, deterministic notion of infrastructure integration. To support further explorations and negotiations in the development of the portal platform, a visualization of infrastructure integration ensued in the form of a series of architecture diagrams. This translation from metaphor to material artefact entailed strenuous negotiations that revealed the former's political nature.

The 'blooming flowers' metaphor emerged contemporally with the multiple socket metaphor, and was used in the ZPR project to denote established and novel e-Health projects in the Netherlands that were deemed appropriate or interesting enough to be 'offered through' or 'plugged into' the portal. During the first weeks, project members thus investigated 'blooming flowers' on the Dutch e-Health market. As the number of applications brought to the project group's attention increased, so did the necessity to maintain a structured overview of what could be 'plugged into' the portal.

The 'blooming flowers' metaphor materialized in the form of a working document that served to classify and categorize emergent e-Health applications. A rating system allowed each member of the project group to judge the 'blooming flowers' in a comprehensive, standardized overview; the form that was filled out for each e-Health application became known as the 'blooming flowers form'. The 'blooming flowers' metaphor endured until the search for new applications came to an end, approximately two years later.

Discussion

The multiple socket and blooming flower metaphors produced categorizations and classifications for integration work that informed the choice for technical, financial, organizational and legal scenarios in ZPR's development. This integration work inevitably implied the inclusion of specific standards, users, and applications, and therewith the exclusion of others. Both metaphors reflect a

deterministic view of infrastructure integration: the view of blooming flowers being 'plugged into' the multiple socket implies a perfect alignment between a universal, politically 'neutral' platform and heterogeneous innovations. Moreover, they prioritize technical and economical concerns over others: equally defining elements of a health portal, such as its prospective use by health care providers and recipients, played a subdued part in this imaginary.

The translation into material artefacts mirrored the strong urge within the project to create a sustainable 'business case' for ZPR; this must be understood in the context of the political and economical uncertainty in which the project was embedded. Nevertheless, this specific orientation overshadowed concerns on the envisaged role of the portal in the regional context, where the very legitimation of the project resides. Attempts to create a 'business case' were based on an imaginary that ignored or overlooked questions regarding the purpose of the portal project, and its relation to health care.

Conclusion

Based on our ethnographical findings we argue that the technological imaginary forms a constitutive part of emergent information infrastructures. The use of metaphors in integration work is not innocent or trivial; in this paper we have briefly shown their performativity and materialization into tangible artefacts. Their agency is best made visible by describing them as elements of actor-networks; this method can be applied to material as well as non-material objects, and can contribute to the understanding of the complexities of large-scale infrastructure integration. The technological imaginary is largely overlooked in current studies on large-scale e-Health infrastructures; we plead for an approach to infrastructure integration work that acknowledges the technological imaginary as a constitutive part of emergent information infrastructures.

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