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3. Gianluca Miscione and Raoni Guerra Lucas Rajão “The Narratives We Infrastructure By”.

### **THE NARRATIVES WE INFRASTRUCTURE BY**

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The literature on information systems (IS) can easily give the impression that IS in industrialized economies and in developing countries are two quite separate matters. Though widespread, we argue that such separation is arbitrary, and that taking it for granted empirically also skews theoretical views. Further, we contend that analysis of IS in resource constrained settings can help to

shed light on phenomena that are normally discussed mainly in OECD-type contexts, leading us to propose a view of knowledge sharing across such assumed boundaries.

Specifically, this article explores how the narrative surrounding Free and Open Source Software (FOSS) can provide material and symbolic affordances to enable information systems development and implementation within the field of public health in developing countries. We propose to look at FOSS as an enabling narrative which can serve to make the diverse activities of a series of actors (e.g. health ministries, research and health care institutions, programmers, consultants, NGOs, WHO and EU personnel, related software projects) mutually understandable and convergent, transcending the usual dichotomy of developed and developing parts of the world. FOSS principles (e.g. of openness and sharing) can thus contribute to making health information systems meaningful and viable in new contexts. Thus, FOSS can be seen as an *infrastructural narrative* which can make a variety of assemblages (Lanzara 2008) coherent enough to perform distributed and coordinated activities across developed and developing contexts. This explains our title. We seek to analyze knowledge sharing and learning for IS development and adoption based on the case of a global action-research project, aimed at implementing FOSS-based health information systems in several countries in Africa and Asia.

The issues of how FOSS projects are organized (distributed software development and debugging based on open feedback loops) have been thoroughly debated in the literature (e.g. Fitzgerald 2006, Grand et al. 2004). Scholars have also argued that software licensing has constitutional implications for FOSS communities (Weber 2004). Beyond this, Camara and Fonseca (2007) point out that “adoption of [F]OSS is not only a choice of software, but also a means of acquiring knowledge. Developing countries have to use [F]OSS as a way to gain knowledge about the technology itself and as a way of creating technology products that fit their specific needs.” This stance conceives FOSS as a way to achieve emancipatory knowledge, which creates and is created by new inter-organizational relations and patterns. Such knowledge cannot be purely technical, nor purely organizational.

We draw on the literature on information infrastructures (Hanseth et al. 1996, Star and Ruhleder 1996) as networks of socio-technical actors, whose evolution goes through incremental change linked to the interplay between human and technical elements. Taking the notion of “assemblage” from Lanzara (2008), we ask how a FOSS narrative keeps information infrastructure-supported assemblages together. This aims at going beyond the idea of “narrative network” (Pentland et al.: 2007) as long as that is limited to existing patterns of action –such as buying an airplane ticket, and look at entrepreneurial activities of boundary spanning and federation (Miscione and Staring 2008).

Our analysis addresses three levels: the FOSS discourse as an increasingly accepted source of legitimation (mostly in developed economies, where most research and technology development projects originate), aspects of policy-making in “developing countries”, and the practice of FOSS in those use-contexts. For instance, the Government of Kerala was among the first (South Africa being another, see Jolliffe 2006) to explicitly provide a place for FOSS in its official policy (2007): “The Government realizes that Free Software presents a unique opportunity in building a truly egalitarian knowledge society. The Government will take all efforts to develop Free Software and Free Knowledge and shall encourage and mandate the appropriate use of Free Software in all ICT initiatives”. Here we see how the principles of FOSS are gaining acceptance as an

overarching narrative, which enables a globally dispersed network of organizations to make sense of each other, to create and maintain relations (on the line of Czarniawska-Joerges and Gagliardi: 2003, Deuten and Rip: 2000). The coexistence of different perspectives shows that in many implementations, FOSS has little traction as a “philosophy”, but its principles are rather used rhetorically to establish and maintain inter-organizational relations. Although similar arrangements could conceivably take place through agreements around proprietary software, the narrative is continuously reproduced by stakeholders confirming fair peer collaboration through FOSS. From our observations, decision-makers in India care less about the “freedom to tinker” aspect, but appreciate an open business model which promises that scarce funding will go towards local salaries and capacity building rather than multinational corporations and royalties.

Like the Zimbabwe bush pump (Laet and Mol 2000), which is fluid enough to allow a variety of context-bound socio-technical arrangements, the FOSS narrative can both orient international networks and allow local appropriation from public administrations, enabling participation in site-specific innovations. If the requisite skills are not available, the celebrated fluidity of FOSS to empower users will remain un-acted (Orlikowski 2000). Still, the narrative acts as a resource for knowledge and infrastructure development across boundaries, and makes a connection between intellectual property and opportunities for organizational change, which are emergent properties, not hardcoded into licenses and agreements.

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4. Ian Graham, "Global Standardisation of Mobile Technology: the Emergence of the Cosmopolitan Reflexive Standardsmaker".

This paper considers the social processes within the formal standardisation of innovative mobile technologies. Formal standardisation is generally treated as being a rationalised process where national representatives negotiate standards trying to meet the needs of their national users.