



Local information services in Medellin: Technology, institutions, communities and power



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ABSTRACT

This article examines the politics of technology and information by exploring a case study of local information service provision in Medellin, Colombia. Local Information Service (LIS) is defined as a community centre where information deemed relevant to local communities is generated, stored, organized and disseminated through print and digital means. Using a social construction of technology approach, the article attempts to deconstruct the implementation and delivery of LIS in Medellin, Colombia and analyse how empowering and disempowering discourses form through relationships between institutions and citizens laden with social and economic inequality. The article analyses the development and deployment of this artefact and positions LIS as a socio-technical system, embedded with political, social, cultural, and economic values. We describe the unintended consequences of this deployment through a multilevel perspective of the head organisation and the smaller 195 local institutions that support it. The article challenges and operationalises the social construction of 'local' in local information by highlighting practices of social exclusion and resistance embedded within the design of the service. This case provides a vantage point from which to examine how relevant social groups interpret and engage with technological devices and the implications of this for the communities the device is intended to serve.

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1. Introduction

Local information services (LIS) have been prioritized by some governments in the global south as a 'next stage' developmental paradigm [20]. These platforms not only have the potential to promote commercial activity but can also offer a novel form of cultural representation and with that preservation, particularly of rare, local languages, customs or rituals. Few academic studies [2,28,34]; capture and record the development and implementation of an LIS system empirically. Although case studies are not considered generalisable, this case offers lessons and insights on current debates on constructivist and determinist approaches that are transferable. This informs the way LIS can or should be implemented depending on the goals for transparency and shared power and informs the discourse regarding technocracy and the unintended consequences of decision-making. This case is a particular instance that reflects a problematic among different actors,

including local government, larger private organisations, smaller local institutions and users. These elements create tensions that affect how local information is collected, digitalised and disseminated to residents and businesses in Medellin.

This article seeks to understand how the dynamics of technology politics work by conceiving LIS as a socio-technical system acted upon by different actors, technologies, and processes [30] and has clear implications for how technological systems in society are subject to both social influences and government policy. This article responds to the call by Ref. [26], p. 6) for research that demonstrates how various 'social construction processes come into play and entwine with the technology's material properties, as well as with the existing social structure of the context in which it is used'. Hence, this study helps to fill an important empirical gap by adopting a socio-technical framework as a means to understand and perhaps anticipate the success or failure of an LIS initiative.

UNESCO¹ claims that local knowledge forms the basis of local

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¹ Definition of UNESCO for local information <http://www.unesco.org/new/en/natural-sciences/priority-areas/links/related-information/what-is-local-and-indigenous-knowledge/>.

digital information and can thus be conceived as an expression and communication of a community's locally generated, owned and adapted knowledge and experiences relevant to a community's situation. Here, local information and its digitization highlights the core link of ICT in enabling all segments of society to participate in digital technology, particularly those who are marginalized through language or socio-economic circumstances. Technologies, such as local information platforms, then are thought to have the potential to empower people and encourage ownership of development policies.

However, the UNESCO definition neglects to point out the political element of deploying technology in society; potentially influencing its contributors while being influenced by their local perspectives [33]. This study examines a 1991 LIS initiative that began as a paper-based information collection and redistribution service for the residents of Medellín, Colombia. This initiative, even in its pre-digital form, constituted a socio-technical system that was designed and implemented by a large, private organisation, but supported by 195 smaller, local institutions. The institutions provided local information that was then converted into a technology artefact [8] and rolled out for local consumption, with varying outcomes. Within this process, technology became subject to government policy and social influences, which materialised in the diverging interests among different stakeholders.

2. Theoretical framework

This study looks at the dynamics of the provision of local information service through a multilevel perspective that primarily encompasses the main organisation, the local institutions, and users. It gives particular attention to how these actors interact as they adjust to changes within the socio-technical system. Examining only the digital portal that stores local information does not sufficiently explain the significance of the 'material objects, social practices, social relationships and social organisation' [25]; p. 95) that constitute this socio-technical system. It is a system materialised through the development of technical expertise, the defining and codification of local knowledge, the acquisition of local materials, infrastructure, technologies to retrieve, store and disseminate information digitally, and an understanding of how to reconcile 'local norms and values' with the use of technology [33]; p. 65). As such, this service should become a co-productive process [22] that provides a means to a socio-technical system. The LIS system in Medellín provides an opportunity for critical insights into the political and social interactions that underpin technologies. The article examines the social conditions [18] within which this new technological initiative was developed and the extent to which individuals and the local institutions are able to exercise agency within the socio-technical system.

In Science & Technology Studies (STS) literature, two main perspectives prevailed regarding the study of technology: technological determinism and social constructivist. Technological determinism arguments date back to at least Karl Marx's discussion of the hand-mill where technology was seen as having its own development outside of human control, as it were. As [27] point out, technological determinism is bound by the idea that 'technological development follows a trajectory that is intrinsic to technology itself'. Furthermore [17], p. 103) argues that technologies act upon the social world 'in predictable ways.'

On the other hand [17], p. 103) points out three aspects of technology that question the use to technological determinism as an analytical lens (at least in its purest form) for this study. First, technological progress is a social activity. As this study will show, the adoption of technologies, such as LIS, is an uneven process and in fact met with resistance based on different community attributes

within Medellín. Secondly, Heilbroner argues that technological advance is responsive to social direction and is in part the result of social policy. In this study, technology was forced to adapt its modes of production to meet social needs and trends. The third aspect of technology that challenges determinism is that it must be 'compatible with existing social conditions' [17]; p. 103). Here, LIS, as a socio-technical system, could only function within the limited capabilities of the current economic and institutional infrastructures of the city. Therefore, rather than adhering to a purely deterministic view of technology, this article argues for an alternative view of technology to explain the local information services. Despite the local government's modern and futuristic visions of Medellín, what [24] term as the socio-technical imaginary, evidence shows that neither the city nor its inhabitants are fully ready to make use of technologies for three reasons: the culture itself, lack of access to the Internet, and a lack of human capacity. Furthermore, these actors also have different ideas around what would be the 'best' informatics solution for their communities. Social constructivism places emphasis on the influence that relevant social groups [4] have on technological development [4]. argue that such groups can encourage the development of particular forms of technology and suppress other forms. In this way, technology becomes a social process negotiated through interactions in society. However, the LIS system in Colombia was not born in collaboration with social practices and norms. It was in many senses a disruptive technology that was initially unilaterally controlled by designers of the system, a large private organisation named Comfenalco.

Given the complexity of LIS implementation and delivery, this article adopts a socio-technical approach to bring to light the ways in which the dynamics of technology politics in Medellín is intertwined with economic, institutional and social realities that bind this system together in unique and interesting ways. Within a socio-technical approach this article shows how actors' past experiences have influenced their behaviour as they moved from a print model toward a technology-based model of local information production. Hence, all of the actors transferred or modified a 'previously existing cognitive framework to a new situation', which [26], p. 12) term as the interpretation perspective.

The article will next discuss the background of the country, city and the local information services, followed by a methodology section. The subsequent two sections are empirical and examine the (macro) organisational level and the (micro) community level of the LIS platform, followed by conclusion and recommendations.

3. Case background

This article shows how a number of factors affected the way communities access local information, including a national stratification system, drug-related violence, corruption, the lack of technical infrastructure and a general lack of awareness of local information in Medellín, the capital city (3.7 million inhabitants) of the department Antioquia in Colombia.

In 1988, Colombia began a stratification system that categorized citizens from strata 1 to 6 (low to high) according to housing values; which the government used to symbolise socio-economic circumstances of the population. The neighbourhoods of 24 Colombian cities were classified in this way, with strata 1–3 receiving subsidies for water, sewage and electricity, stratum 4 paid market prices and strata 5 and 6 paid a premium² [1,37] [4]. use the term 'relevant social group' to denote different sets of meaning that groups of users attached to a given artefact. Hence, this article

² Source DANE <http://www.dane.gov.co/index.php/estratificacion-socioeconomica/generalidades>.

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