

# Re-embedding Market Information Systems

## Abstract

Market Information Systems (MIS) developed for farmers in the Global South with the goal of providing them with different types of agricultural information are failing to be widely adopted. We argue that this is because they are designed on the basis of a universalistic idea of how markets (should) work, and how abstract information circulates (or does not). Drawing from our study of information practices in rural Indian and Chinese agricultural communities, we suggest three dimensions that need to be considered in order to design MIS that are more aligned with the actual needs of their targeted users, and the micro and macro contexts in which they live. The first is the range of roles and policies at play in the functioning of a market; followed by the identity of the actors in these roles; and finally by existing information-sharing practices and media (radio and television) involved in the working of the market.

**Keywords:** Market Information Systems, China, India, information, design

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## 1 Introduction

That information has a 'social life,' i.e. that it depends on local conditions, traditions, and socio-economic arrangements, is starting to be accepted in academic debates about information and society. Practice, however, continues to show a deep faith in the idea that 'information' in the abstract can achieve specific goals regardless of where it comes from and where it is to be used. For example, there has been a dramatic increase in Market Information Systems (MIS) designed for farmers in low-income communities of the Global South. Aimed at addressing market inefficiencies (real and imagined), MIS-based projects such as Reuters Market Light, Nokia Life Tools and Esoko are typically designed to deliver price, weather, crop details, etc. to market actors using mobile phones. Assessing the impact of such MIS is a complex task (Staatz, Kizito, Weber, & Dembélé, 2014). Nevertheless, there is increasing evidence that such systems are poorly adopted by targeted populations (Egg, Dembele, & Diarra, 2014; Fafchamps & Minten, 2012). Several factors contribute to low adoption, including high costs, literacy barriers, difficulty in acting upon the information received, or simply uselessness of such information. Based on our study of information practices in rural Indian and Chinese agricultural communities, we find that MIS are often designed on the basis of a universalistic idea of how markets (should) work, and how abstract information circulates (or does not). Drawing on our own research and inspired by others focused on the diversity of market actors and their goals (Chari, 2004; Gidwani, 2013), we argue for a need to understand how markets are organized in specific places and among specific actors. We present our work-in-progress that seeks to develop a set of criteria to consider when designing MIS embedded in their social and economic contexts (Granovetter, 1985; Polanyi, 1944). We argue that such a framework can yield designs that are more likely to meet the actual needs of their targeted users, rather than the abstract needs of generic market actors.

Existing guidelines to create MIS rightly emphasize assessing the 'information needs' of targeted users (Ferris, Engoru, & Kaganzi, 2014; Schulte, 1992; Weber, Donovan, Staatz, & Dembélé, 2005). For example, two targeted actors might both be seeking 'information' on which crop to grow. But the details that would satisfy them would, in fact, be very different for a young male farmer receiving no state subsidies for his crops and looking for a new source of income and crop diversification, and for an older woman who prizes stability and lives in a country that offers a minimum procurement price for her crop. In our work, we show how 'information needs' are always situated in the political economy of specific markets and the role of different market actors within it. We suggest three dimensions that need to be examined in detail when creating an MIS: the range of roles and policies at play in the functioning of a market; the identity of the actors in these roles; and existing information-sharing practices and media (radio and television) involved in the working of the market. We briefly highlight these dimensions, which we find mostly absent in current designs of MIS.

### 1. Economic Roles and Policy

The history and regulatory regime of a region shape the supply chain and functioning of its market. Consequently, the division of labor and economic roles involved in a market, as well as its processes, can

differ widely between markets. Mapping the diversity of economic roles in a market beyond a generic seller and buyer (for example processors, creditors, middlemen, facilitators, wholesalers, retailers, exporters, regulators, cooperatives etc.) should be the first step in designing a system for it. As we outline below, mapping roles is a way to capture three aspects of how a specific market is organized: the product being transacted in it, its regulatory context, and its invisible actors.

The nature and presence of specific roles (say, processors and creditors) often reflects the peculiarities of a product (for example, its life and perishability, its capital-intensive production and consequent need for credit). The existence or absence of some roles can also reveal state policies (on land ownership, pricing, subsidies, exports, for example). Additionally, the mapping of roles brings to light actors and priorities that are often overlooked in design. Consider for example a MIS that seeks the reduction of 'wastage' or to improve 'efficiency' by improving the circulation of information in a market. These goals have meanings and impacts that are different for market actors such as primary producers or consumers, and for others whose livelihoods depend on recycling/salvaging/processing 'waste' or on leveraging "inefficiencies" (for example, those processing stale fish or byproducts of agriculture, or middlemen). In many economies, waste processors are also the most marginalized actors in the supply chain. Their definitions of 'waste' and 'efficiency' are seldom taken into consideration; yet their lives are the most affected by new products and services focused on these terms. In mapping the diverse roles in a market and making them visible to designers, we draw on the work of ethnographers of markets (Chari 2004; Gidwani 2013) as well as on the techniques of participative appraisals adopted by development theorists (Chambers, 1994a, 1994b). Mapping roles prior to designing products/services, we argue, allows us to think concretely about the local embodiment of macro policies, the local meaning of abstract concepts such as 'waste' and 'efficiency,' their desirability for different actors and the possible consequences of the adoption of MIS among different groups of actors in the same supply chain.

## **2. Social Identities**

The situated nature of how market information is valued is also closely tied to the identities of the actors involved. While impossible to separate completely from their economic roles as outlined earlier, we refer here to sociological categories that are more closely held by actors and harder to change than economic roles. Thus, we refer primarily to categories such as the gender of actors, their class (smallholder, landless, landed, mid-size etc.) and age, but always seen in the context of their local culture, society, and economy. For example, gender greatly shapes how market actors act everywhere, but the specifics of how they can or cannot act in a particular market vary. Issues such as gender and mobility (Do women sell crops? Can they go to the market or do buyers come to them? Are nearby markets reachable, by foot or transport, and can women go alone?) influence how men and women access or use market and agricultural information differently.

## **3. Existing information practices**

The final dimension of factoring in the specificities of a market includes accounting for existing information practices, knowledge organization systems and communication media. This would include the question of literacy and comfort with oral vs. written communication, local practices and knowledge about agriculture that might not fit with or even contradict knowledge and practices coming from non-local sources, and locally popular and trusted media such as farmers' almanacs, TVs and radio programs (Gandhi, Veeraraghavan, Toyama, & Ramprasad, 2009).

## **2 Conclusion**

Our poster will challenge some of the assumptions underlying MIS design that takes place in the ICTs and Development (ICTD) space that is directed at the Global South. We see attempts like our framework as an important step in reframing the design of information systems as well as of 'development.'

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