



Universal service policy in China (II): Case study and institutional variables



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ARTICLE INFO

Available online 15 January 2016

Keywords:

Rural informatization projects
Information services
Implementation success
Regulation
Institutions
Case study
Chinese model

ABSTRACT

Our companion paper developed an institutional conceptual framework for the analysis and assessment of China's rural informatization regime and projects. Following the conceptual work and based on the case study of specific projects, this paper documents the institutional idiosyncrasies and identifies institutional variables affecting implementation effectiveness in China. It is found that China has fared well in some projects (usually at the construction or *technical* level) while encountered difficulties in some others (at *semantic*, *service*, and even higher levels), due to variance in the enforceability of differing institutional arrangements. China has arguably succeeded, at best, in the supply-side ("access" level) of the rural informatization ecosystem; this is partly because that the Chinese model has emphasized primarily on the formal side of institutions but considerably less so on the informal side. Accordingly, factors contributing to implementation success have, path-dependently, highlighted the functioning of regulative institutions but considerably less so of the normative-cognitive institutions. Policy implications are offered which call for a shift to the demand-side of the rural informatization ecosystem.

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1. Introduction

The integration of "access" and "applications" into a single national program, as demonstrated in the Chinese case, once succeeded, may constitute a milestone in the arena of universal service policy and implementation (Xia, 2016). In recent years, China has been scheduling for an ambitious goal to provide comprehensive information services (CIS) in its vast rural area. The Chinese case differentiates itself from other countries not only because of its institutional uniqueness, but, most of all, its extensiveness in the scope and intensiveness in political mobilization shown in the nationwide rural informatization initiatives. Thus far, China has fared well in some projects while encountered difficulties in some others, which offers a unique opportunity for case comparisons.

Over the past decade, the cases of China's universal service programs, such as the Village Access Program (VAP) and the Village Informatization Program (VIP), have attracted scholarly attention, domestic and abroad. Previous researches have demonstrated a fairly diversified focus, ranging from multiple-case to single-case, from the central-level initiatives to the provincial and even community-level initiatives (see, e.g., Liu, 2012; Ting & Yi, 2013; Xia, 2010; Xia & Lu 2008). Some previous researches either explicitly claim to take an institutional perspective or implicitly integrate, although rather

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haphazardly, some institutional elements in seeking explanatory factors. Nevertheless, none of them have taken on a formal institutional endeavor—neither embodied in individual research works, nor by putting them together—for the case study of China. In other words, while a formal institutional approach toward a generic analysis and assessment of China's rural informatization regime is nonexistent, as pointed in our companion paper, a similarly formal institutional approach towards the case study of specific projects is also wanting (Xia, 2016). Moreover, study on the package approach (*i.e.*, integrating "access" and "applications") in providing CIS is not found in the literature either. Knowledge gap exists with regard to a systemic approach in the examination of institutional factors affecting China's implementation success or failure. The present study fills the gap by undertaking a formal institutional approach towards the Chinese regime and experiences.

Our companion paper proposes a conceptual framework that integrates various institutional dimensions and policy elements underpinning China's national universal service initiatives (Xia, 2016). More specifically, the companion piece revisits policy elements (*i.e.*, objectives; technology solution; support mechanism; governance) and explicates generic constructs for the measurements of implementation success or effectiveness (based on DeLone & McLean, 1992, 2003)—namely, *technical level* (*i.e.*, system quality); *semantic level* (*i.e.*, information quality); *service level* (*i.e.*, service quality); *adoption level* (*i.e.*, information use and user satisfaction); and *impact level* (*i.e.*, net benefits). An ecosystem model is created in which various roles and actors (*i.e.*, ideological-administrative guardian; project funder and administrator; ICT enabler; and target beneficiary) and power relations are defined and framed based on institutional wisdom (*e.g.*, Alchian & Demsetz, 1972; Bolton & Dewatripont, 2004; Coarse, 1937; Fama, 1980; Jensen & Meckling, 1976; Laffont & Martimort, 2002; North, 1990; Scott, 2014; Williamson, 1996). Finally, some generic propositions are postulated and an institutional framework—*i.e.*, a "diamond model" which comprises political supremacy, vertical opportunism, horizontal opportunism—for forecasting the behavioral pattern in the ecosystem is generalized, based on the analysis of Scott (2014) institutional pillars (*i.e.*, regulative; normative; cultural-cognitive).

As proposed in our companion paper, "political supremacy," which serves as the paramount constraint, together with "vertical opportunism" (*e.g.*, lower level departments aiming to game the political system by formally following top-level administrative orders while not seeking to implement programs in the right spirit) and "horizontal opportunism" (*e.g.*, interdepartmental or peer-to-peer rivalries), forms a tripod in making sense of rural informatization actions—*e.g.*, the specific form those actions may take, functionalities and services that are expectedly actualized, and values delivered (Xia, 2016). From an even broader view, the interpretative utility of the "diamond model" can be represented in each level or element of rural informatization policy—*i.e.*, objectives definition, technology solution, support mechanism, and governance in each administrative level. As pointed out in the companion paper, the magnitude to which each construct constrains behavior in jointly making sense of actions and interactions in the rural informatization ecosystem is ultimately contingent upon situational factors.

In our quest for institutional variables, this paper applies the conceptual framework developed in Xia (2016) in the case study of specific projects. This paper uses case method to examine and document the institutional idiosyncrasies underlying China's national rural informatization regime. The case strategy is helpful in identifying the casual chain that leads up to success or failure by revealing chronologically the various actors and events that have influenced the final outcome (Benbasat, Goldstein, & Mead, 1987, Yin, 2010). The case study is conducted with embedded units of analysis that encompass various policy elements, institutional variance, and implementation outcome, following those constructs explored in our companion paper. Consequently, various institutional variables are explicated and generalized.

Two guiding principles have been kept in mind for the selection of cases, *i.e.*, representativeness and definability. On the one hand, the chosen cases should be representative of the nationwide rural informatization drive; on the other hand, they must have a definable boundary and scope, which facilitates meaningful comparisons. Data collection, which has effectively spanned over more than a decade, has entailed both secondary and primary sources, capitalizing on the investigator's status as a longtime China-based scholar closely related to the telecom industry. Data collected through secondary sources include government documents and reports, statistics releases, news reports, and scholarly publications. These data are triangulated by comparing different sources. Primary data collection includes dedicated research trips (once or twice a year), in addition to extensive informal interactions.

Table 1
Dimensions of the chosen cases.

Cases	Project scope (level of success)	Main actor involved	Tested level of implementation
Village Access Project (VAP)	Village (community) access to basic telephony (<i>technical</i>)	Central ideological and administrative guardian, telecom regulator, and telecom carriers	"Access" at the central level
Information Services Stations (ISS) system	CIS (<i>technical, semantic, and service</i>)	Central ideological and administrative guardian and varied other participants	Bundling of "access" and "applications" at the central level.
Telecom operators' "agrarian-connected" projects	CIS (<i>technical, semantic and service</i>)	Central ideological and administrative guardian and telecom carriers	"Applications" initiated by telecom carriers
Provincial initiatives (Zhejiang and Guangdong)	Internet access and CIS (<i>technical, semantic, and service</i>)	Provincial governments and telecom carriers	"Access" and bundling of "access" and "applications" at the provincial level

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