



## Case study

# Understanding the roles of business ecosystems in large public IT infrastructure project development: The case of M-Taipei

Tzu-Chuan Chou<sup>a,\*</sup>, Mei-Yun Huang<sup>b</sup>

<sup>a</sup> Department of Information Management, National Taiwan University of Science and Technology, Taiwan, ROC

<sup>b</sup> Graduate Institute of Management, National Taiwan University of Science and Technology, Taiwan, ROC

## ARTICLE INFO

## Article history:

Available online 20 October 2011

## Keywords:

Public–private partnership

Business ecosystem

Outsourcing

Case study

## ABSTRACT

This case study examines how public–private business ecosystems play a critical role in public IT infrastructure project development. In studying the world's foremost wireless “cyber city,” the M-Taipei project, we argue that the symbiotic nature of relationships in business ecosystems is of critical importance in conducting the public IT project. Based on the case data, we differentiate three forms of business ecosystems – knowledge-oriented, resource-oriented, and business-oriented which emerged in the different phases of project development. We hope to provide a foundation for future discussions on this increasingly important view of research and practice.

© 2011 Elsevier Ltd. All rights reserved.

## 1. Introduction

The constructive partnerships between private and public actors will enable creative and effective responses to tackle economic and social crises (Rangan, Samii, & Van Wassenhove, 2006). Accordingly, public–private partnerships (PPPs) are growing in popularity as a major governing model for delivering infrastructure projects (Kwak, Chih, & Ibbs, 2009), including public IT infrastructure outsourcing (e.g., Lawther, 2005). This is particularly true for the unprecedented public IT project, which needs to build up the levels of resources through a larger coalition (Rangan et al., 2006). Accordingly, the management of PPPs in outsourcing processes has become a main locus for researchers. After all, IT implementation is ongoing in the public sector at all levels of government.

Previous research on PPPs focused on many diverse perspectives, such as the formation of PPPs (Koppenjan, 2005), the way of governance (Hayllar, 2010; Pope & Lewis, 2008), the behaviors of boundary-spanning managers (Nobel & Jones, 2006), and public accountability (Forrer, Kee, Newcomer, & Boyer, 2010). Although insightful, these studies are not able to effectively address “the symbiotic nature of relationships” among various private sectors and public agencies (Moore, 2006). We agree that alliances between firms and public actors can create collaborative effects which can't be achieved separately, but we know little about how the symbiotic nature of relationships influences the actions and outcomes of public IT infrastructure outsourcing.

As such, we need to think of each business as part of a wider economic ecosystem and environment. This responds to recent calls in literature to pursue research into the pivotal contribution of an economic community involving many companies working together in the collaborative process, and to set this research within the stage-specific context of business ecosystems rather than partnerships only. Accordingly, this paper aims to extend our understanding of public IT outsourcing in terms of public–private business ecosystems (PPBEs) in order to explore the role of the symbiotic relationships and how they impact the project development.

## 2. Literature review – from PPPs' to PPBEs' view of public outsourcing

Although research in outsourcing management has increased our collective understanding of factors influencing success, that vast majority of prior studies examine only the bilateral relationship rather than resource network. The term “business ecosystem,” first introduced by Moore (1996), defines the ecosystem as being made up of customers, market intermediaries (including agents and channels, and those who sell complementary products and services), suppliers and of course, oneself. Broadly speaking, *business ecosystem refers to an economic community involving many companies working together to gain comparative advantages as a result of their symbiotic relationships* (Iansiti & Levien, 2004; Kim, Lee, & Han, 2010; Moore, 1993). It embraces important concepts including coevolution, self-organization, emergence, conscious choice, limited knowledge, interconnectedness, feedback, and the interaction of variation, selection, and development (Peltoniemi, 2006).

In order for companies to coevolve their goods and services, they must find ways to align their visions, so that research and

\* Corresponding author. Tel.: +886 2 27301268.

E-mail address: [tcchou@mail.ntust.edu.tw](mailto:tcchou@mail.ntust.edu.tw) (T.-C. Chou).

development investments are mutually supportive, and capital investments and operating processes are synergistic (Moore, 2006). Together with interconnectedness, companies in a business ecosystem lead a shared fate among organizations; the members are dependent on each other, and the failures of firms can result in failures of other firms (Peltoniemi, 2006). In an ecosystem, keystones are the kind of companies that serve as the enablers and have a great impact on the whole system (Iansiti & Levien, 2004). In contrast, a flagship company plays a critical role as a node located in a hub position, such as key suppliers, customer and competitors than a keystone company (Kim et al., 2010). However, scant attention has been given to identifying the keystones, flagships, and their symbiotic relationships in public IT outsourcing and understanding the impacts of PPBEs in public IT infrastructure development.

### 3. Research approach

The case research method is particularly appropriate for the current study and since the case research strategy offers better insights into the interdependencies among the factors in the study (Benbasat, Goldstein, & Mead, 1987). We selected M-Taipei, the world's largest public wireless network, to explore issues related to PPBEs. The case of M-Taipei's development is particularly appropriate for studying an "unprecedented public IT project" since the M-Taipei initiative is one of the first major cities in the world to roll out its own public wireless Internet service, with the city government – in cooperation with private companies – leading the way.

Data were collected mainly through 22 personal interviews with key actors in both public agencies and private firms, supported by secondary information. We began our interview by asking the former CEO and Secretary General of the Taipei City Government (TCG) to describe the general profiles of the M-Taipei initiative. In subsequent interviews, we asked public and private actors associated with the M-Taipei initiative to describe the role and evolution of PPBEs during the M-Taipei initiative development, construction, and business operation. The face-to-face interviews were unstructured; the standard set of questions used was designed only to help initiate and guide the interview process. All the interviews were tape recorded and subsequently transcribed, and notes were taken during the sessions as well. The use of externally oriented articles provided another possibility to triangulate the validity of the interview (Pan & Scarbrough, 1999). Following collection, data were analyzed based on the work of Weaven and Herington (2007). The analysis incorporated three major phases of description, analysis, and interpretation. The data collection and analysis across the phases helped elicit the emergence of PPBEs and their influence on the development of the M-Taipei initiative in order to address our research objective. The theory-data-model alignment (Pan & Tan, 2011) has employed to ensure the data analysis quality.

### 4. Case context: M-Taipei initiative

This section presents the background information about the M-Taipei initiative and process by which PPBEs took shape. The M-Taipei initiative project was initiated by President Ying-jeou Ma when he was Taipei Mayor in 2004. What he saw was a "New Digital Taipei" that is leading the world into the 21st century – a cyber city that is wireless and borderless. The citywide WiFi comes in the form of near-ubiquitous Internet access and aims to encourage Taipei residents to "frequent the Net, and free up the road."

After 2 years of construction, in September 2006, a total of 5000 "hot spots" became available for users to enjoy the wireless service. The spread of the locations included every MRT station, all branches of Taipei City Hospital, all branches of Taipei City Library, culture

**Table 1**  
Summary of business ecosystem perspective of M-Taipei initiative.

Phases of M-Taipei initiative development		
Phase 1: Planning (2003–2004/07)	Phase 2: Infrastructure construction (2004/09–2006/09)	Phase 3: Business operation (2007–2011)
<i>Business ecosystem context</i>		
Knowledge-Oriented Business Ecosystem for integrating complementary practicable ideas	Resource-Oriented Business Ecosystem for stacking complementary resources	Business-Oriented Business Ecosystem for modeling complementary business models
<i>Ecosystem members and their roles</i>		
Keystone – TCG as an innovative incubator platform for collecting intelligence. Flagship companies – HP, Intel	Keystone – Qware as a resource platform for cumulating available resources from actors' network. Flagship companies – TCG, Taipower, 7-11, HP	Keystone – FET as a business value-added platform for deploying complementary services for M-Taipei. Flagship companies – Qware, TCG
<i>Vision alignment</i>		
To seek technology opportunities for both public agencies and private firms	To key commitment while maintains the commercial goodwill	To developing a win-win cooperation to maximum the network resources
<i>Governance mode with interconnectedness</i>		
Pre-contract governance	Relational governance	Strategic alliance network
<i>How keystone improve the overall health of their ecosystems</i>		
Consolidating the ideas from peripheral IT specialist to form an executable M-Taipei initiative	Orchestrating the resources from key actors' social and business network	Developing the synergistic business model by collaborative business operation
<i>Implications of ecosystem to public IT infrastructure</i>		
Developing <b>pre-contract identification</b> of key actors facilitates public agencies their ability to gain access to external specialists and their knowledge	The key actors' <b>network ties</b> provide access to additional resources which plays an important to help M-Taipei project escape from resource constraints	The key actors' <b>shared core competences</b> to make up a deficiency of M-Taipei's business model and in turn utilize its facilities and capacities

and education venues, major roads, administrative buildings across 12 districts, 7-11, coffeehouse chains, etc. Also at the end of 2006, the city's efforts in WiFi development were recognized by JiWire, a WiFi hotspot authority, as the world's largest wireless network. Taipei is the world's first large-scale wireless city, with wireless Internet access reaching up to 90 percent of its public spaces. The case descriptions are presented chronologically in three phases. By exploring the different forms of PPBEs in which different forms of symbiotic relationships were embedded, Table 1 summarizes how an unprecedented public IT project was planned, developed, and operated across the three phases.

#### 4.1. Knowledge-oriented PPBE in the planning phase (2003–2004/07)

In the first phase, from 2003 to July 2004, the TCG served as the keystone in the ecosystem. Before formal announcement of the M-Taipei project, in 1999, an experimental wireless city project

Download English Version:

<https://daneshyari.com/en/article/1025856>

Download Persian Version:

<https://daneshyari.com/article/1025856>

[Daneshyari.com](https://daneshyari.com)