

Chapter 6

Digital El Paso: A Public–Private Business Model for Community Wireless Networks

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ABSTRACT

The Digital El Paso (DEP) community wireless network was deployed as a public-private business model to achieve digital inclusion, sustain economic development, and enhance government and public services. The design, implementation, and funding of DEP were achieved through the collaboration of local businesses, core community members, non-profit organizations, academic institutions, and government entities. In particular, Cisco Systems, Inc. provided design and planning support to complement Intel Corporation's seed funding for the site survey. El Paso County, the City of El Paso, El Paso Independent School District, the Housing Authority of the City of El Paso, and El Paso Electric provided equipment and services. The purpose of DEP is to provide wireless Internet access to achieve social inclusion and economic development. DEP's main challenges include lack of funds, limited user acceptance, and insufficient user training. The policy implication is that leveraging public/private partnerships enhances collaboration and increases the chances of success of community wireless networks. A family-centric approach to drive the adoption of these emerging networks and increase bandwidth utilization, particularly in rural and underserved communities is also recommended.

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BACKGROUND

The Digital El Paso (DEP) community wireless network was deployed as a Proof Of Concept (POC) to test wireless technology and explore the possibilities of using wireless networks to improve the delivery of state and local government services. Other objectives of DEP were to increase social inclusion and to drive economic development. The project was led by a collaborative, self-directed core group of state and local governments, education institutions, and private sector partners who brought the commitment and support of each of their sponsoring organizations to the project. The overall goal was to identify local needs and develop a solid business case to plan and build out a large-scale municipal wireless network. The lessons learned by this team provide a roadmap that could be replicated by other communities with similar broadband visions and digital needs.

El Paso, Texas is the largest U.S. city on the 2,000-mile U.S.-Mexico border. El Paso is the 6th largest city in Texas and the 23rd largest city in the United States. The closest U.S. metropolitan city is about 200 miles away. In other words, El Paso community lives in a relatively isolated and remote location. It has a fiber cable that serves as an Internet backbone expanding through El Paso from east to west. However, the county has minimal middle and last mile service to pockets of the community. El Paso County is about the size of the U.S. state of Rhode Island. The county includes communities with no access to basic utilities such as water or sanitary (Rubio, 2009). Because of the limited capacity and low population density, it may not make sense for traditional Internet Service Providers (ISPs) to build out to serve these areas. However, access to broadband service is essential for this underserved community to thrive and fully use the digital opportunities and resources of the current information age.

Ciudad Juárez is El Paso's sister city in Mexico. It is the largest city in the state of Chihuahua, the 5th largest city in Mexico, and the largest Mexican city on the U.S.-Mexico border. The city halls of

El Paso and Juárez are about ten blocks apart. The international metro area is home to about two million people and is the largest community in the world where a developed country and a newly industrialized country join to form a regional economy (Rubio, 2009).

SETTING THE STAGE

In 2006, the frenzy of “free” municipal wireless networks was taking off, sparking a debate between community activists and telecommunications companies (Abdelaal & Ali, 2008; Abdelaal, Ali, & Khazanchi, 2009). Many people thought that municipal wireless networks were a viable solution for affordable Internet access, but the question was how to pay for them (Cisco, 2006a, 2006b; Rideout & Reddick, 2005; Simpson, 2005). In other words, what is the suitable business model?

The prevailing wisdom among community leaders seemed to fall into two camps. One group believed that they could negotiate free wireless Internet for all citizens by contracting with large ISPs (Brietbart, 2008). In this model, ISPs would make money from monthly subscriptions and sales of advertisements that could be delivered to connected citizens. Some envisioned a recurring revenue stream from other accompanying services. The other group believed that cities should own the network and fund the build-out by adopting an anchor productivity or municipal application such as automated parking meter reading, code enforcement, utility meter reading, emergency responder, or traffic management (Quinn, 2006). Both groups advocated for a participatory design model, where end users are involved in the design and outcomes of the project as a way to ensure the sustainability of such community-centered projects (Carroll & Rosson, 2007; Simpson, Wood, & Daws, 2003).

Cities such as Chicago, Los Angeles, and San Francisco all announced municipal networks during the middle of the last decade. City governments expected these networks to spur economic devel-

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