

Infrastructures to Imagine: The Mexican Internet Industry

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ABSTRACT

The Internet provides a technical platform that can be used by start-ups in every country to launch innovative products for world markets. Yet, most of the successful Internet products—such as Twitter or Skype—are created in centers of innovation in US and Europe. The major asset of startups in the most developed countries is the social infrastructures they have available, which are used to bring together the right people and create the conditions for building innovative and successful products. This study seeks to understand how start-up companies creating Internet products in mid-income countries are building the social infrastructures they need to succeed in world markets, within the social, economic, cultural and historical constraints of the country. The study looks at how entrepreneurs in Mexico are designing the social infrastructures and mechanisms to change their work practices and the culture of their industry, which had little precedent for technological innovation. This study looks at the practical level of how this change in practices and culture is articulated, and the ways in which interactive and communication technology is enabling these efforts.

Categories and Subject Descriptors

K.4.2. Computers and society: social issues. H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Management, Human Factors.

Keywords

CSCW, Innovation, Internet industry, mid-income countries, Mexico.

1. INTRODUCTION

The Internet provides a platform for start-ups to launch innovative products in world markets. Technical infrastructures are available worldwide at low cost. Yet, most of the successful Internet products—such as Twitter and Skype—are created in centers of innovation in high-income economies [1] such as the US, Western Europe, and Japan. The greatest competitive advantage of start-up companies in high-income countries is the social infrastructure

that connects their employees to the right people.

High-tech industries are upgrading the economies of middle-income countries [1] such as China, India, Brazil, and Mexico. But the process is somewhat slow and it would be desirable to accelerate it. Our understanding of technological innovation of Internet-based products comes from high-income nations. Start-ups in the middle-income world operate under different cultural, social, and economic conditions. A better grasp of how innovation happens in middle-income nations will support more effective social and technical interventions that potentiate the growth of these national industries.

My research analyzes how Internet entrepreneurs in Mexico are achieving the social and technical infrastructures they need to create innovative products. While Indian and Chinese professionals working at high-tech companies in the US and Europe are a great asset for Asian entrepreneurs, providing entry points to global networks of innovation and role models of how to succeed, in countries such as Mexico, which lack a strong presence of skilled migrants in advanced centers of innovation, people must follow alternative paths. The emerging Internet industry in Mexico is confronted with imagining how to build a prosperous industry in a place with little precedent for technological innovation.

“Infrastructures to imagine” are a combination of social, cultural, cognitive, ideological, and material resources that allow entrepreneurs to *explore and define new possibilities to innovate* in their organizations and products. For example, the “Hacker Room” in Mexico City, is one of a global collection of hacker spaces, low-cost public locations where “hackers,” that is, engineers and developers, gather to share knowledge and socialize. At the Hacker Room (see figure 1), people work at the early stages of their Internet start-ups, gaining access to specialized knowledge and business contacts difficult to obtain otherwise. Start-ups in the Hacker Room aspire to launch products for global markets, and to scale up rapidly—aspirations atypical for most Mexican IT companies which are service based. The entrepreneurs in the Hacker Room help each other, offering advice on how to manage their businesses. They share contacts of local and global tech gurus, business consultants, and potential investors. They discuss how they are implementing products using cutting edge technologies such as the powerful Node.js server-side language that is still under documented.

Another example is the Tequila Valley community, one of several Mexican communities connecting a critical mass of innovators, in the thousands, from people geographically dispersed across Mexico. In lively Twitter conversations, pictures on Flickr, and blog posts, Tequila Valley members discuss web programming languages such as Ruby, or the latest techniques to use social media for brand engagement. Members also meet face to face at parties, workshops, and conferences, such as the “Destilando

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Web” (Distilling the Web) sessions, which take place in a café on Sunday mornings. At these sessions people gather to have breakfast, socialize, and discuss a specific technology such as Ruby, working specific examples on their laptops.

I have observed that the emerging practices of innovation in Mexico are qualitatively different from those of centers of innovation in places such as China and India. Understanding the practices of technology entrepreneurs in middle income countries will serve to enable better design of social and technical interventions to accelerate the growth of these industries globally.



Figure 1. People working at the Hacker Room. Taken from <http://www.flickr.com/photos/davidaustria/4951707216>

2. RESEARCH METHODS AND QUESTIONS

The infrastructures to imagine are being created and used across the entire Mexican Internet industry. It is necessary to understand the role of these infrastructures as part of the entire innovation systems of the Mexican Industry. To do so, am conducting an ethnography in a variety of locales “following the people” [2], as proposed for multi-sited ethnographies, who are creating and using these infrastructures. Frequently, the people I am following will participate in the activities of several of these locales, which take place both online and in physical places. Thus, I am following the activities at the Hacker Room, in communities such as Tequila Valley, and at start-ups that are using the infrastructures to imagine for growing their businesses. This method would serve to have holistic understanding of how the communities use multiple modes of communication to introduce, discuss, and transform their work practices.

My questions are formulated to understand what the multiple infrastructures to imagine are, how they are created and used in the Internet industry in Mexico, and how they can be augmented.

- What are the resources that Mexican entrepreneurs use to explore and define new possibilities to innovate in organizations and products? When do these resources become infrastructures to imagine? How these infrastructures are used in practice? How does the use of infrastructures to imagine serve to change and create work practices?
- What are the process by which these infrastructures to imagine get constituted and designed? Which are the communities that create these infrastructures, and where they come from? What maintains these communities together?

- What are the ways in which these infrastructures could be extended? Are there technical artifacts that could be used to extend these infrastructures? What are the social interventions that could extend these infrastructures?

3. EXPECTED CONTRIBUTIONS

This study will serve to understand the economic, social, and cultural changes which the Mexican Internet industry is experiencing, and how these changes are being created by its participants. How cultural-historical conditions influence innovation has already been studied in different settings (e.g. [2]). *What is novel in the proposed research is to understand how people design the very mechanisms by which these cultural changes can happen.* This is how a group within an industry attempts to create a cultural change on an entire industry.

This study will provide empirical evidence of how innovation is conducted in environments with resource constraints not present in developed countries: How do people work in innovative projects when they lack of the financial resources that are available in developed countries? How do innovators in industries in developing countries build networks with leaders in the main centers of innovation to access to expert knowledge and work relationships to get their work done?

The study will look at how the flows of information and people—carrying their knowledge, ideologies, and practices—are creating models for new work practices. The study will give a way to understand how the relationships being formed among people and diverse resources create the structure of these flows. And the dynamics of these flows will be shown in how the material, cultural, ideological, and cognitive resources travel across multiple communities, and mediate the interactions among people building these new practices. Understanding these flows of information and people will show the role of new media, such as Twitter, Flickr, and videoconferencing, to create and learn new practices. And when, how, and why this new media are combined with in-person interactions to achieve these new practices, and create cultural change at an industry level.

These contributions are not only expected to advance our understanding of innovation, but also to help the members of the studied communities to better understand the effects the changes they are trying to introduce, giving these community members insight on how their strategies are changing their environment, and new opportunities to improve their strategies.

4. ACKNOWLEDGMENTS

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