

Chapter 8

A Cloud Computing Adoption Framework for Developing Countries

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ABSTRACT

This chapter explores Cloud computing adoption strategies for small and medium enterprises (SMEs) and microenterprise that can enhance the economic growth of local industries in developing countries. This focus is based on the recognitions that (1) economic growths of local industries reduce poverty through the creation of new jobs for poor people to earn a living wage and support their families, and (2) there is a lack of research on Cloud computing adoption strategy that addresses the unique constraints of small and medium enterprises (SMEs) in developing countries.

INTRODUCTION

This chapter presents a cloud computing adoption framework for developing countries that small and medium enterprises (SMEs) and microenterprises can use to enhance the economic growth of local industries through the creation of new jobs with living wages. The framework incorporates proven strategies with the potential to quickly grow local industries, specifically adopting advanced technologies to narrow the productivity and research gaps. The framework has two dimensions. The first dimension represents the requirements across the different economic levels. The second dimension represents the cloud computing characteristics to mitigate

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Table 1. High-level tradeoff for industry type

Industry Type	Advantage	Disadvantage
Manufacturing	<ul style="list-style-type: none"> • The employment of a large population. • It contributes revenue to the government via taxes. 	<ul style="list-style-type: none"> • The required financial investment is large. • There is the potential of pollution from improperly managed manufacturing process. • There may be long-term environmental effects from the construction of factories.
Natural Resources Exploration	<ul style="list-style-type: none"> • The employment of a large population. • It contributes revenue to the government via taxes. 	<ul style="list-style-type: none"> • The required financial investment is large. • There is the potential of pollution from improperly managed manufacturing process. • There may be long-term environmental effects from the excavation process.
Tourism	<ul style="list-style-type: none"> • The employment of some the population as service employees. • Tourism-related businesses will be created along with new jobs. 	<ul style="list-style-type: none"> • The available jobs are short-term, non-skill positions.
Information Technology	<ul style="list-style-type: none"> • The population is employed and trained for high demanding jobs. • The jobs are long-term because of project global demand for IT professionals. 	<ul style="list-style-type: none"> • The required financial investment can be large depending on type of project/initiative. • Some period of training is required to properly support IT jobs.

adoption risks in developing countries. An example set of cloud computing technology products will be presented to illustrate the potential benefits of the framework.

BACKGROUND

Economic Growth Strategy for Developing Countries

Economic growth in developing countries is the most important means of raising income and reducing poverty through the creation of new jobs for poor people to earn living wages and support their families; the result is a more stable future for the country. However, the available options of adoption of a certain industry typically involved complex tradeoffs such as environmental and social side effects. Table 1 lists the example advantages and disadvantages for industry types.

Furthermore, “[m]any developing countries face particular challenges that make it difficult for them to stimulate and sustain economic growth. These challenges include weak institutions, high unemployment, poor infrastructure, a lack of access to financial services and unsuitable laws and regulations. Options for developing countries are limited.” (Greening, 2015) Besides the limited options, the window of opportunity for economic growth is narrowing fast. Research results have shown (Comin & Hobijn, 2012; Nobel, 2012) that “...the rate at which countries adopted

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