Chapter 11
The State of Technology in Venezuela in the Context of Production Chains

Leandro Rabindranath León
Universidad de Los Andes, Colombia

ABSTRACT

This chapter develops a discursive context called “the sawmill metaphor” that interprets the technology as a system of timber production that runs through a river. Trees are cut upstream and transported by the river towards a sawmill in the midstream. The sawmill then transforms trees into logs that are sent down river towards other factories that produce finished products downstream. Using this metaphor a link between technology and production is identified as well as the vital importance that the interlinking networks has on production. This context allows us to propose a diagnosis of the state of technology on Venezuela in 2014, a country which regardless of plans of technological acquisition sets forth since 2003 with sizable investments, far from increase technological sovereignty has lost it. Finally, taking as a basis the Venezuelan case, we present a set of general guidelines to consider in a plan of technological acquisition.

INTRODUCTION

Over the past twelve years, one of the main political aims of the Venezuelan government has been to establish independent production systems through the development of technology in Venezuela. To this end, several different strategies have been implemented, such as: the establishment of monetary policies aimed at preventing capital flight from Venezuela, the inauguration of numerous new universities, the implementation of incentives for local production (subsidies, tax incentives, etc.), attempts to improve the transport system, the promotion of foreign capital investment, especially from China, and the generation of open knowledge.

Nevertheless, twelve years on, the situation regarding Venezuelan based technology is now more precarious than when the plans for technological development were initiated. While domestic demand for staple goods has risen considerably, particularly in the food sector, imports of these essential items have also dramatically increased.

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As we discuss below, a technological system requires interlinking networks; for example, transport systems, telecommunication networks, or those related to the generation and transmission of electricity. While these networks are accessible to almost all Venezuelans, both as regards their availability and their cost, their use has been oriented towards individual consumption in detriment of industrial use. To date, the national transport system is on the edge of collapse due to excessive traffic, lack of maintenance, and especially a failure to expand. Similarly, there is currently a deficit of approximately 20% in the generation and transmission of electricity caused by a very strong domestic demand, which has resulted in repeated rationing and power cuts. The same could be said of the telecommunications sector, which suffers from interruptions in both the telephone and internet services.

Perhaps the most eye-catching aspect of this situation is that the Venezuelan government has shown a very clear desire to develop Venezuelan-based technology, as demonstrated by the implementation of policies to promote its acquisition that have been successful elsewhere, particularly in South Korea and India (Adelman & Yeldan, 2000). Despite this, however, Venezuela, far from having progressed towards developing its own technology, has actually increased its dependence on foreign technologies.

The question therefore, whilst wishing to avoid political proselytism, is: Why, in spite of the political will and the implementation of policies that have been successful in other countries, has Venezuela not only failed in its objective to gain technological independence, but has also moved even further backwards? What mistakes have been made? What is it that the Venezuelan leadership responsible for technology has not perceived? Why have they not perceived it?

We suggest that the lack of success that Venezuela has had in developing its own technology is largely due to the fact that the authorities responsible have made many misguided interpretations of what technology actually is. This has led to a “fragmented vision” of the technological situation in this country. Potentially effective formulas and protocols have not been successful because no-one is clear what they are for. This lack of clarity about how to define technology has meant that is has been very difficult to identify clear objectives and reach agreement on the best way to acquire it.

In this chapter we attempt to identify the possible misinterpretations that have led to the failure of Venezuela to acquire a technological base. This is intended to serve as a framework for further discussion.

Before proceeding we would like to clarify that this essay is of a subjective rather than an objective nature based on the modest experiences and personal impressions of the author in his role as a director in centers for the research and development of Venezuelan technology, as well as his participation in discussions about Venezuela’s strategies for the acquisition of technology.

This essay is divided into three parts: In the first part “What is technology?” we discuss the general framework of the article and use this to give a clear definition of technology in order to avoid confusion surrounding this term and its use. With a clear definition in hand, in the second part “Technology in Venezuela” we outline, in very broad terms, the technological situation in Venezuela. Finally, in third and last part “General recommendations for the acquisition of technology”, we provide some general guidelines and political priorities for a plan for the acquisition of technology in Venezuela.

**WHAT IS TECHNOLOGY?**

Possibly the main obstacle to an appropriate and sensible policy for technological development is the diversity of mistaken interpretations as to what technology actually is. For the most part, the misconceptions consist in confusing an essential component of technology with technology itself.