

“Cooling” Air Conditioning Business in Brazil

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OVERVIEW: Air conditioning in Brazil is primarily used for cooling and the demand is for products that offer low cost and high quality. A shortage of foreign exchange after the oil crisis in the 1970s also led to a requirement for domestic production. In response, Hitachi Air Conditioning Products Brazil, Ltd. established domestic production of air conditioners at a local factory. This operation also survived the economic confusion associated with hyperinflation. The company has contributed to the growth of the air conditioning business in Brazil by supplying products with high performance and quality that utilize technology from Hitachi. Recent growth in the business has been driven by a range of environmentally conscious products including the multi-split system air conditioner.

INTRODUCTION

COMMON perceptions of the Federative Republic of Brazil in Japan include the carnival, the Amazonian jungle, and Japanese emigrants. Beyond this, however, popular knowledge of Brazil is often limited. The country has a land area of about 8.51 million km², which is 23 times larger than Japan, and a population of about 180 million. 2008 was

the 100th anniversary of Japanese immigration into Brazil and it is estimated that about 1.5 million people of Japanese descent now live there.

Although Brazil has gained reputation recently as a member of the BRIC group of countries (Brazil, Russia, India, and China), the attention it has received is perhaps less than that enjoyed by the other BRIC countries. Despite this, the Brazilian economy

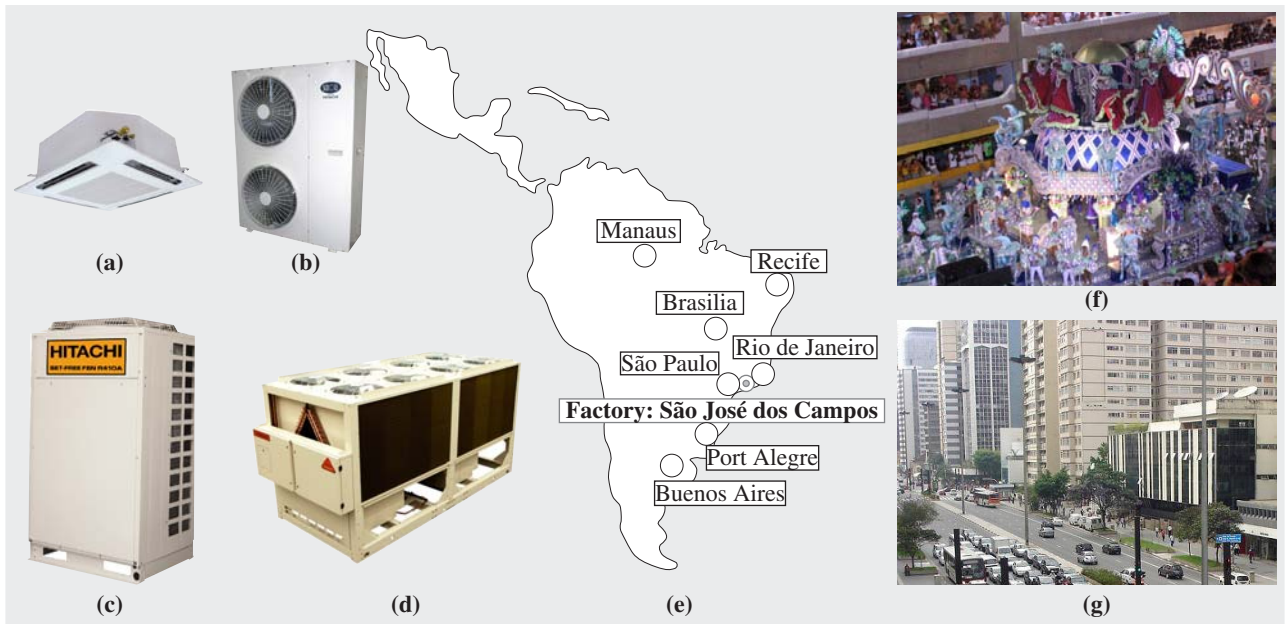


Fig. 1—Growth of Brazil and Air Conditioning Industry.

Ceiling cassette type indoor unit of packaged air conditioner (a), outdoor unit of packaged air conditioner (b), outdoor unit of the multi-split system air conditioner (c), and air-cooled water chilling unit (d). All of these models are made in Brazil. The map shows the locations of the factory and the seven sales offices in Brazil and Argentina (e). The scenes from the energy carnival (f) and the financial district of São Paulo (g) are shown. São Paulo is a leading center in the growing Brazilian economy.

TABLE 1. Outline of HAPB

HAPB has been producing and distributing air conditioning products as a major supplier in Brazil since the company was established in 1972.

Category	Specification
Business	Production and sale of commercial air conditioners
Sales territory	Brazil and Latin America
Main products	Packaged air conditioners, multi-split system air conditioners, water chilling units, and reciprocating compressors
Factory	São José dos Campos (State of São Paulo)
Sales offices	Six offices in Brazil (São Paulo, etc.) and one office in Argentina
No. of employees	About 440 (about 360 in factory)
Total sales	About 13 billion yen (2007)

HAPB: Hitachi Air Conditioning Products Brazil, Ltd.

has achieved consistent growth, much of it thanks to its natural resources, and its GDP (gross domestic product) of about 1,300 billion dollars in 2007 makes it the world's 10th largest economy.

Hitachi Air Conditioning Products Brazil, Ltd. (HAPB) has been operating its air conditioning business in Brazil since 1972 (see Table 1). This article covers the history of the air conditioning business at HAPB and in doing so sheds some light on the nature of the Brazilian market and how to manage a business in an emerging economy (see Fig. 1).

AIR CONDITIONING BUSINESS IN TURBULENT BRAZILIAN ECONOMY

Foundation of Company Followed by Brazilian Economic Crisis

HAPB constructed a factory in São José dos Campos in 1973; one year after the company was established. The factory assembled packaged air conditioners using a knockdown production system (see Fig. 2). However, production started just as the first oil crisis hit, an event in 1973 that seriously affected the Brazilian economy because of its dependence on foreign finance. This was followed in the 1980s by a foreign debt crisis and hyperinflation which left the Brazilian economy in a critical situation. The government attempted numerous economic policies but inflation was not tamed until the Real Plan in 1994 which introduced a new currency and a fixed exchange rate (see Fig. 3).

Amongst the severe measures adopted by



Fig. 2—Full View of HAPB.

HAPB produces air conditioning products in the city of São José dos Campos in São Paulo state. São José dos Campos is one of Brazil's major industrial cities and also hosts factories run by General Motors Company (GM) and Embraer.

the government during these times were import restrictions aimed at minimizing the outflow of foreign currency. These measures remained in place until the market liberalization in 1990 and acted to protect and promote domestic industry.

Managing Business and Growth in Economic Crisis

HAPB had to manage its business under the tough conditions that resulted from the economic confusion that reigned in Brazil in the period after the company was formed. These included restrictions on imports of parts, frequent changes in regulations, and hyperinflation. However, having its own

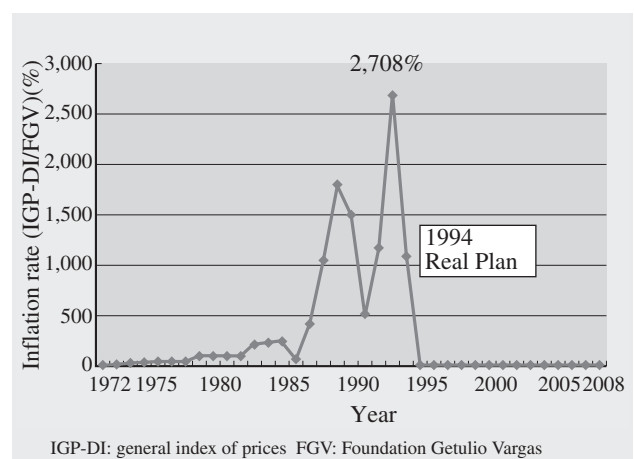


Fig. 3—Trend in Annual Inflation Rate in Brazil.

After ranging between 15% and 80% during the 1970s, price inflation exceeded 100% in the early 1980s and surpassed 1,000% in the late 1980s. Inflation was finally brought under control by the Real Plan introduced in 1994.

local production facility meant that HAPB could expand domestic production of air conditioners and components such as compressors. As most of the competing air conditioning suppliers in Brazil at that time were locally based manufacturers, the products and technology of HAPB earned a good reputation in the market. This domestic production also helped improve the design and production capabilities of HAPB and local suppliers (e.g. piping and parts machining). The benefits of this experience now help HAPB develop products that meet the requirements of the local market.

Accounting Procedures and Price Control during Hyperinflation

To deal with the rapid change in asset values that occurred under hyperinflation, HAPB introduced the “Currency Value Adjusting System” accounting system in Brazil whereby accounting values were adjusted on a monthly basis. To keep pace with inflation, product prices were also updated each month based on material price increases and changes in the inflation rate and interest rates. The level of complexity associated with such an accounting system led HAPB to introduce computer-based data processing to reduce clerical work. Above all, the critical factor in an inflationary economy is the ability to act quickly.

Growth of Air Conditioning Market and Era of Competition

The Brazilian economy gradually began to recover following market liberalization in 1990 and after inflation was brought under control by the Real Plan in 1994. Business has been expanding since 2003 thanks to higher prices of natural resources and the air conditioning market has also been growing (see Fig. 4). At the same time, Brazil’s currency, the real, has also appreciated during this period.

The advent of market liberalization brought increased activity by American manufacturers in the air conditioning market. The rising value of the real also encouraged growth in direct imports of air conditioners from Japanese suppliers and from cost-competitive Chinese and Korean manufacturers. This led to an increasingly competitive market.

HAPB has responded with proactive measures aimed at supplying products suitable for the local market that take advantage of the company’s local design and production capabilities combined with technology from Hitachi.

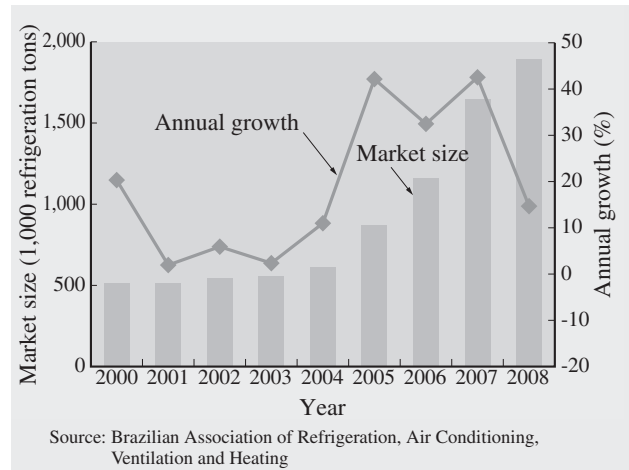


Fig. 4—Trend in Size and Growth of Brazilian Air Conditioning Market.

The market size including room air conditioners is shown. Increasing sales of small room air conditioners contributed to strong growth in recent years.

MULTI-SPLIT SYSTEM RANGE OF ENVIRONMENTALLY CONSCIOUS AND ENERGY-EFFICIENT PRODUCTS

Multi-split System In-home Air Conditioners

The range of multi-split system air conditioners are a typical example of an environmentally conscious and highly efficient product. The multi-split system air conditioners consist of several indoor units connected to a single outdoor unit. Each indoor unit can operate independently and the outdoor unit can save energy by adjusting its capacity in response to the air conditioning load. Fig. 5 and Table 2 give an overview of the multi-split system air conditioner and its features.

In Japan, the multi-split system range of air

TABLE 2. Features of Multi-Split System Air Conditioner
The advantages of multi-split system air conditioners include energy efficiency, easy equipment design and construction, and convenient operation.

Features	Merits
Energy efficiency	<ul style="list-style-type: none"> · No pump or duct fan required. · Outdoor unit can adjust capacity to match air conditioning load. · Each indoor unit operates independently.
Easy equipment design and construction	<ul style="list-style-type: none"> · No pump, water pipe, duct or duct fan required.
Convenient operation	<ul style="list-style-type: none"> · Each indoor unit can be operated independently.

conditioners is typically used in business premises such as office buildings and only rarely in private homes. Homes in Brazil, however, tend to be larger, as are the individual rooms, and it is not uncommon for the entire 1,200-m² floor of an up-market apartment building to be occupied by a single family. Homes such as these require a high-capacity air conditioner to cool several rooms independently. Accordingly, the multi-split system range was considered suitable for this market.

Market Penetration Strategy

Although the multi-split system air conditioner has many superior features, business was slow to pick up because the product concept was new to the Brazilian market where American-style central cooling systems were the mainstream.

To gain market acceptance, HAPB exhibited the product at local trade shows and held seminars and road-show workshops. Hitachi also visited many architect's offices, recognizing that this group played a key role in product selection. A dedicated team of specialists was established expressly for this promotion and technical consultation work. As a result of these activities, sales of the multi-split system range of air conditioners started to increase from 2003.

Strengthening Product Performance through Domestic Production and Service Network

The appreciation of the real after 2003 led to other Japanese manufacturers entering the market and greater penetration for multi-split system air

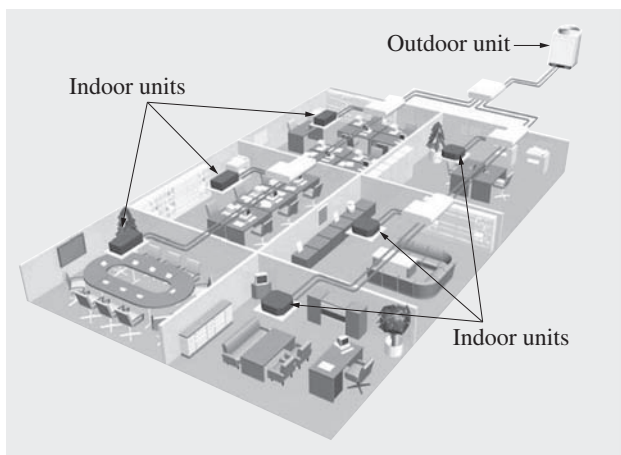


Fig. 5—Overview of Multi-split System. The multi-split system consists of several indoor units connected to a single outdoor unit. Each indoor unit can be controlled independently.

conditioners. However, this also brought greater competition.

Taking advantage of its local factory, HAPB started domestic production of the multi-split system range of air conditioners in 2006 with the aim of shortening delivery times and reducing production costs. Another sales point that HAPB emphasizes with its customers is that service and maintenance are important considerations for complex products of this nature, and that HAPB has an existing service network in Brazil. In this way, the distinctive multi-split system range of air conditioners has grown to become the main product of HAPB (see Fig. 6).

FUTURE OUTLOOK AND CHALLENGES

Extensive repatriation of foreign currency from Brazil after the financial crisis in 2008 led to depreciation in the real of more than 40%. Meanwhile the boom in prices of natural resources turned to a bust bringing with it a rapid slowing of the economy. These factors also affected the air conditioning market.

Although a short-term decline in the market is unavoidable, strong growth is expected in the medium to long term as the cumulative effect of past economic growth creates a larger middle-class population with sufficient buying power. The market for highly efficient products is also growing along with increased awareness for and stronger regulation of environmental performance and energy efficiency.

Globalization has intensified competition by shortening the time taken for advanced products to appear on the Brazilian market and by opening up the market to low-cost products mainly from Chinese manufacturers.

HAPB's response to this tough commercial environment has been to utilize its environmentally



Fig. 6—Outdoor Units of Multi-split System Installed on Roof. The multi-split system is mainly used for office and apartment buildings. Because it can be installed on the roof, building space can be used effectively.

conscious and energy-saving technologies to continue supplying quality products that meet local market requirements. To achieve this, a greater emphasis will be placed on cooperation with Hitachi in Japan on product development. The ability of HAPB to reduce costs and provide high-quality service by taking advantage of its local factory and sales and service network will also prove an effective means of countering competition from importers in particular.

CONCLUSIONS

This article has given a history of the air conditioning business at HAPB while offering suggestions on how to manage a business in an emerging economy and on the prospects for the Brazilian market.

Although many people see Brazil as an economy with an emphasis on agricultural and mineral resources, the country is also home to leading companies such as Embraer S.A., the world's 3rd largest aircraft manufacturer specializing in medium to small aircraft, and Petrobras S.A. which has technology for the development of deep-sea oil fields.

While bio-fuels are still being studied in Japan, over 90% of the vehicle fleet in Brazil are already flexible-fuel models capable of running on both bio-ethanol and gasoline. These aspects of Brazil show a country with strong industrial capabilities.

If it can take advantage of its natural resources and distinctive industrial technologies, Brazil has the potential to enjoy considerable growth in the future. HAPB will continue to contribute to the air conditioning business in Brazil, based on its long-term reputation and the advanced air conditioning technology of Hitachi.

REFERENCES

- (1) Hitachi Air conditioning Systems, Ltd., Editing Committee for Overseas Operation Documents, "Intellectual Property of 40 Years' Overseas Operation at Hitachi Air Conditioning Systems, Ltd." (Oct. 2003) in Japanese.
- (2) Y. Kageyama, "Problems and Countermeasures for Brazilian Accounting under Inflation," Keiri No.91 (Jan. 1993).

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