

SOFTWARE MARKET

SUMMARY

Brazil will drive the market growth for corporate software in Latin America in 2004. During 2003, the country recovered from an economic crisis surrounding the 2002 presidential elections and now paves the way for robust software demand in 2004. Brazilian companies are expected to spend US\$20 billion this year on information technology (IT), an 8.5% increase over 2003.

As the largest and most dynamic IT market in Latin America, Brazil offers significant opportunities for U.S. suppliers of IT products and services. Brazilians have a high regard and strong preference for U.S. technologies and will buy from U.S. companies that can offer competitive prices.

Brazilian firms are anticipated to spend 28% of their IT budgets on hardware, 35% on software and outsourcing and the reminding on items and services including voice and data transmission. A notable tendency will be convergence of voice and data networks such as IP virtual private networks (VPNs), which will require investment in greater bandwidth.

Nearly US\$ 5 billion is expected to be used to contract IT services, a 9.8% increase compared to 2003. IT services will account for the largest share in technological investments, as acquisitions of infrastructure, software and hardware have to a great extent already been made in the 2000-2003 period.

Industry experts predict total software sales in excess of US\$ 9 billion in Brazil during 2004. Of this amount, US\$ 4.0 billion will be sales of imported products, almost 70% of which will originate from the United States. The role of the U.S. as the primary source of software for Brazil paves the way for U.S. suppliers to introduce new products to this market.

TABLE 1 - SOFTWARE/SERVICES REVENUES 2002/2003/2004

Year	2003
2002	8,000
2003	8,400
2004	9,200

The above statistics are unofficial estimates. (*) Source ABES - 2003 Estimated Exchange rates: values expressed in U.S. dollars - US\$ 1.00 = R\$ 2.96 (March 2004)

Market Background:

On account of Brazil's overall trend towards more liberalized trade policies, U.S. exporters can expect to expand their sales to Brazil or participate in new business opportunities that will make Brazil one of the strongest commercial partners of the United States in this sector.

In the 1990s, a sharp decline in the price of computer hardware resulted in an increased use of personal computers (PC) in homes, schools and businesses. As a result of this price reduction, corporate users across industries have been upgrading their information technology infrastructure. The growth in PC sales has spurred a corresponding growth in demand for computer software. Industry contacts predict continued rapid growth in hardware sales, which will stimulate a corresponding upsurge in demand for software products.

A. MARKET HIGHLIGHTS

For 2004, economists from various institutions predict growth rates from 3.5% to 3.6% for the Brazilian economy, which is seen as a positive sign of a reinvigorated IT sector.

From a macro-economic context, IT sector specialists predict a return to positive growth rates in 2004, although there are disparities in the numbers provided. For Latin America as a whole, the Gartner Institute predicts growth of up to 5%, while the Yankee Group expects growth rates to exceed 7%. The

outlook for Brazil alone is even more optimistic due to a return of investments in the utilities sector.

Brazil software market shows a significant demand in segments such as utilities, transportation, agribusiness, education, financial services and the industrial sector. Software products such as SCM (Supply Chain Management), ERP (Enterprise Resources Planning), CRM (Customer Relationship Management) and BI (Business Intelligence) are becoming essential tools for business management.

As the trend towards outsourcing technological services continues, Brazil offers the most attractive market in Latin America for multinationals looking to centralize mechanical back office functions into regional service centers. Regionally, in comparison with other Latin America countries, Brazil shows most signs of improved IT spending in 2004.

Network security will also be a strong component of IT spending this year, but restricted to installation of firewalls rather than more complex security strategies. Companies are selecting solutions according to price and quality, rather than deciding because of the brand name or because of an existing relationship with a vendor.

Brazil's wireless market is another important IT segment and is growing faster than the U.S. market. This segment may emerge as one of the world's most important markets for wireless security technology.

The idea of buying and selling over a cell phone presents potential prospects in Brazil. Online shoppers in Brazil spent US\$420 million in 2003, up 40% from 2002. The growth was driven by an increase in the average amount of each transaction, which totaled US\$ 110 in 2003 compared to US\$ 80 in 2002.

Recently, city, state and federal government procurement offices have been debating in Brazil a possible preference for "open-source" software (known as Software Livre in Brazil). Several bills have been introduced in the Brazilian Congress requiring federal agencies to acquire and use free, unrestricted open-source systems. Some state and local governments in Brazil have either enacted or are debating laws that call for open-source systems.

B. BEST PROSPECTS

Spending on IT services in Brazil is projected to overtake investment in computer hardware by 2004 and increase very rapidly thereafter. A growing number of cost-conscious Brazilian businesses have been outsourcing their systems, network management and data processing activities to IT services providers. This trend is expected to continue.

The "Business to Business" (B2B) segment is still crawling in Brazil and is concentrated in a few large companies. Brazilian companies know they must rush to do their homework. Although a large number of Brazilian and multinational companies made significant investments to develop e-business, numbers point to a different reality. Approximately 5 percent of the B2B transactions (USD 11.8 billion) were made through the Internet. Market analysts predict a 10 percent growth of the sector in 2004 and an increase of 5 percent in total imports.

Brazil still has the most advanced Internet and e-commerce industries in Latin America. Growth has been steady, though not as strong as it was in 2000. Due to the rapid expansion of the Brazilian telecommunications sector, this segment continues to receive significant investments, especially in the broadband segment. Some of the factors influencing growth are: (1) large user base; (2) state-of-the-art banking equipment; (3) large local retailers with strong brand recognition; (4) a wide array of Portuguese language content providers; and (5) the Brazilian Government's new project to extend Internet access to all citizens.

C. END USER ANALYSIS

1 Health

Brazil, in 2003, experienced important advances in the utilization of IT in the health sector. In the private sector, hospitals and clinics turned to IT to reduce costs and improve performance by integrating departments such as hospitality, pharmacy, nursing, procurement and finance. The Department of Health continues to show progress in the implementation of the National Health Card (CNS) program, a computerized system created to facilitate patient access to health services such as assistance in defining and applying public policies. The program consists of a Unified Health System (SUS) national patient registry, a second registry of health care providers (clinics, hospitals, etc.) and a third registry of medical professionals.

In the future, an information system with applications and optical scanning equipment for member cards will complete the integration of systems and registries. Implementation of the CNS pilot project took place in 44 cities in 11 states in Brazil. The eventual expansion of an integrated system throughout the country is planned.

2 Transportation

One of the significant developments that the transportation sector experienced in 2003 was a trend towards businesses adopting management systems. Significant investments were dedicated to IT, with heavy emphasis on process integration.

As the Brazilian Government hopes to be able to increase the usage of railroad transportation for goods, integrating railroads to other transportation modes to reduce logistical costs, it plans to invest in a national railroad transportation interchange project designed to interconnect Brazilian railroads. Currently, Brazilian railroad concessionaires say the domestic railroad and metro industries can neither keep up with demand nor honor delivery dates.

The National Bank for Economical and Social Development (BNDES) will open credit lines for concessionaires to invest in this sector. According to the President of ANTF, Guilherme Laager, since 1996, private operator investments in railroads have already surpassed the US\$ 3 billion mark.

According to market experts, BNDES will concentrate its resources in areas such as railroad integration and operations to enable them to strengthen railroad operation methods and to establish policy control tools for corporate performance measures.

3 Agri-Business

The year 2003 saw a considerable increase (7%) in business for the agricultural industry. This represents growth seven times greater than the GDP, which piqued the interest of software development companies.

A tendency that shows promise for 2004 is the implementation of a tracing system for the cattle industry. The project, known as "cattle ID" is required by the Brazilian Department of Agriculture, which registered 19 certified companies in the country.

It is expected that by 2007 the tracing system will oversee all crops in Brazil for both foreign and domestic consumption, totaling 180 million registered animals. If market predictions hold true, the demand for this system should increase in 2004, resulting in increased profits and growth in the software sector.

4 Security

Software vulnerability and increased hacker activity in the global network are subjects of great concern to individual users and corporations, but have kept IT security firms worldwide in a state of steady growth. Brazil is ranked among the countries that suffered the highest amount of security breaches in 2003, occupying 15th place in the ranking of total number of attacks and in 34th place in attacks per capita, among countries with more than one million Internet users.

5 Education

The star of the Brazilian educational sector in 2003 was the growth of Web-based distance learning (EAD). Education via the Internet and videoconferencing became an economically viable option for businesses to maximize employee participation.

According to the Brazilian Association of Distance Education (ABED), in 2002 there were 33 public and private Brazilian institutions offering 60 undergraduate and graduate courses. At the beginning of 2003, there were 84,713 students in Brazil enrolled in such courses via electronic means. (www.abed.org.br)

Predictions for this sector point to an increase in profit for distance learning development companies. This increase is due not only to the rise in the number of institutions participating in this sector, but also to an increase in the use of administrative, financial and academic control software solutions that can integrate campuses.

6 The Financial Sector

In 2003, financial institutions invested primarily in telecommunications infrastructure and data security. This was necessary in order to bring them up to date with Brazilian Payment System's (SPB) technology guidelines. The financial sector is comprised of a strong niche market for IP voice technology (VoIP), useful in carrying out companies' financial transactions in the market.

There was also room for growth in IT supply and demand in 2003 in the area of information integration for banks' myriad activities, as well as in distance customer service.

Currently, the Brazilian financial sector is one of the most competitive and efficient in the world, according to research conducted by the consulting company Accenture in conjunction with the country's main financial institutions. This study also showed that 15.8% of investments are earmarked for research, with an emphasis towards Internet Banking. In this last area, Brazil is a world leader, ranked with other countries that experience a high rate of Internet Banking use.

In another study, the importance of Internet Banking stands out clearly. As can be seen in the table below, this segment is considered "hot" by banking investment groups.

TABLE 2 - INTERNET BANKING INVESTMENT

IN:	OUT:
Internet	Banking by Phone
Office Banking	Telemarketing
Home Banking	Tellers / Branches
PDV(financial correspondence)	
Self Service (internal and external)	

Source: www.febran.org.br

This study also predicts that 55% of banks will have a mobile banking system (allowing access to banking transactions via cellular technology) in use by 2005, and that there will be significant growth in free software (Linux), especially at official banks. It is the hope that these technological and business sectors grow to be even more integrated in the near future, being that the sectors that offer the best investment perspectives are data warehouses and e-procurement.

7 Telecommunications

In 2004 we expect to witness a technological convergence of data, voice, and fixed and mobile supply due to the mergers of telecommunication giants (as was

the case with mergers of Telefonica and Vivo, Telemar and Oi, and Brasil Telecom and TIM.).

Although the recent wave of mergers will have a positive effect on technological advances and integration, the recession that service providers (installation, operation and network and system maintenance) felt in 2003 is still a cause for concern.

These developments have encouraged changes in the focus of IT businesses' activities, not to mention a growing interest in partnerships that facilitate flexibility in an ever-changing sector that only now seems to be emerging from the global crisis of recent years.

The most significant topic in this sector in the beginning of 2004 is the increase in data communication in cellular telecommunications, which is expected to continue growing for the next few years. With the arrival of new cellular phones capable of sending photographs and real-time videos, and at more accessible prices, software operators and producers are excited at the prospect of the public "upgrading" the close to 40 million cellular phones in the country.

8 Industry and Commerce

The outlook for 2004 is positive for many Brazilian industrial sectors (e.g.: civil construction, textiles, paper and cellulose, and pharmaceuticals, among others). This outlook is seen as being especially bright for businesses that develop IT solutions for industrial and commercial automation.

In 2003, commerce in Brazil registered a dip in sales volume in relation to 2002. However, on-line sales increased, especially in the B2C (Business to Consumer) sector. In this particular sector of electronic interconnection among providers, distributors and commercial partners, on line auctions are the preferred innovative resource.

Internet-driven Supply Chain Management (SCM) was most companies' favorite solution for business management. Consequently, the demand for SCM solutions is expected to increase in 2004, thereby expanding opportunities for development companies in this area.

Among the most eagerly awaited tendencies for medium-term prospects, the use of EPC (Electronic Product Code) stands out. A type of electronic tag, it was created for the purpose of improving organization and stock control capabilities. Use of EPC technology in Brazil is expected at the beginning of 2005 at an estimated cost of US\$0.03 per tag.

Another relevant tendency is an increase in the use of an automated sales force. In 2003, businesses involved in this area experienced considerable growth (from 15% to 20%) and 2004 is expected to be an even more promising year. The concept of an automated sales force has grown with the addition of call centers, the Web, completely on-line information and the total integration of different management processes.

9 The Corporate Sector

A constant observation in the evolution of IT services is the growing use of business management software, be it in the interest of unifying all of a firm's activities (as in the case of Enterprise Resources Planning - ERP), or directed towards specific activities such as Customer Relationship Management (CRM) or Human Resource management.

With an eye towards raising productivity and improving customer service, the corporate sector has invested in programs, work processes and new forms of management in 2004.

TABLE 3 - ESTIMATED INVESTMENT - CORPORATE MARKET 2004

Software and Services	% Companies investing in solutions
CRM	60%
Supply Chain Management	57%
Business Intelligence	53%
E-commerce	39%
Internet/Intranet/Extranet	38%
Security	34%
ERP	30%
Industrial Automation	19%
Outsourcing	18%

Source: Mercantile Gazette (a leading Brazilian business daily)

A recent decisive factor in the increased competition among companies has been Customer Relationship Management (CRM). Together with Supply Chain Management (SCM), it is currently the principal focus of IT investments in large companies, which need a complement to Enterprise Resources Planning (ERP) in order to integrate clients and providers.

Together with document digitalization, Electronic Document Management is another segment that continues to flourish, judging by recent developments in corporate plans.

Corporate portals are yet another sector trend. A study done by the International Data Corporation shows that the Brazilian data communication market accounted for approximately R\$5.6 billion, for an accumulated increase of 14%; the corporate sector accounted for 80% of the segment's earnings. Research estimates 27% annual growth through 2007. In the medium-term, it is expected that large companies' entire content will be communicated via corporate portals, both internally and externally. This trend has steadily taken form and is apparent in the developing interest on the part of the "key players" in the capacity for interoperation of products and Web services.

Several Brazilian companies are already using Linux. According to a survey by the law firm Boucinhas & Campos, Linux is a reality in 1% of the companies. The survey also revealed that 21% of the companies interviewed a plan to implement open-source solutions.

10 GOVERNMENT

Recently, governments at federal, state, and local levels have been debating in Brazil a possible preference for "open source" software in government procurement and public R&D funding.

Several bills have been introduced in the Brazilian Congress requiring federal agencies to acquire and use free, unrestricted open-source systems. Moreover, some state and local governments in Brazil have either enacted or are debating laws that call for open-source systems.

The Brazilian Data Processing Public Service - SERPRO, an agency linked to the Ministry of Finance, is finishing the implementation process for the installation of open source software. According to Mr. Sergio Rosa, SERPRO's Coordinator of the Open Source Software Program, 3 directives are being watched in the discussion for the implementation of the open source software: (1) quality; (2) costs; (3) technological autonomy.

Mr. Rosa explains that the goal is to implement a cultural change, and not a technical change. SERPRO intends to show that open source software is a secure solution, not just a cheap one. The institution will install in all work stations the "Open Office", which is compatible with to the MS Office, from Microsoft. The idea is not to uninstall immediately the current software that is in use; however, after a transitional period, only open source software will be used.

The Ministry of Science and Technology reported that from 1993 to 2002 the country paid a total of US\$ 5.7 Billions in intellectual property rights. Since 1993, the Brazilian government average payment of intellectual property rights have been growing, from US\$ 72 Million to US\$ 1 Billion per year.

D. COMPETITIVE SITUATION

BRAZILIAN SOFTWARE PRODUCTION

The software industry is becoming an increasingly important part of the Brazilian economy. It is made up of developers of packaged and custom software companies, which embed software in their products and develop Internet-related software.

TABLE 4 - BRAZILIAN SOFTWARE INDUSTRY - ESTIMATED MACRO-INDICATORS

No. of software firms in Brazil	4,400
No. of employees in Brazilian software firms	125,000
Brazilian software export revenue	US\$ 200 million
Total revenue of Brazilian software firms	US\$ 5.0 billion

Source: Software Economic Studies Institute - IEES, 2003

THIRD COUNTRY IMPORTS

In 2003, the Brazilian Software Association (ABES) reported that Brazil imported US\$ 4.0 billion in software from foreign companies. Of this amount, U.S. imports represented US\$ 3.3 billion while the remainder came from other countries, predominately Israel, Germany and France.

TABLE 5 - BRAZILIAN SOFTWARE IMPORTS

Software	US\$
U.S. Products	* US\$ 3.3 Billion
Other Countries	* US\$ 700 Million
Brazilian Production	US\$ 5.2 Billion
Total Brazilian Market	US\$ 9.2 Billion

(*) Source: ABES - Brazilian Software Association and SECEX - "Secretaria de Comércio Exterior" - Brazil Foreign Trade Office of the Ministry of Industry, Commerce and Tourism of Brazil

E. MARKET ACCESS

IMPORT CLIMATE

For U.S. suppliers interested in Brazil, it is important to note certain trade barriers facing potential U.S. software exporters. One of these is the requirement that all international money transfers, such as payment for software purchases, be subject to a 17% withholding tax. International tax attorneys have advised that, in certain cases, a U.S. company with proof of payment of this withholding tax, can apply for a tax credit against U.S. taxes due on the company's income earned abroad.

Another issue for U.S. software exporters to Brazil is the continued presence of piracy. Sources differ as to the sales volume of pirated software in Brazil. However, industry specialists estimate that sales of pirated software in Brazil has cost the industry approximately \$1.50 billion in 2003 alone.

Although the Brazilian government has managed to reduce the piracy rate from 86% in 1991 to 56% in 2001, having introduced a modern intellectual property protection law, much work remains to be done, primarily in more effectively enforcing the existing laws.

Brazilian Customs valuation of software imports for duty purposes varies on a case-by-case basis. Below are some important taxes that may be assessed for software importation.

--Duty on software (HS 8524.39) is assessed on the basis of the carrier medium.
--IPI (Federal tax, like VAT) tax of about 15% applies to the value of the medium and not to the intellectual property value of the software.
--ICMS (State tax) applies to the total value (plus duty and IPI) of the software package, including the intellectual property value. ICMS varies from State to State.
--Both carrier medium value and content value must be stated on the pro-forma invoice and the commercial invoice.

The Brazilian government has recently instituted a new tax related to royalty remittances and technical services with transfer of technology that puts many foreign companies at a significant disadvantage in Brazil. The new tax, technically referred to as a "social economic interference contribution" and known by its acronym CIDE, imposes an additional 10% surcharge on the current 15% tax on many technology companies' royalty remittances.