US COMPUTERS IN SOUTH AFRICA

by

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(associated with the American Committee on Africa)

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Six of the top eleven computer companies in South Africa are subsidiaries of US companies and one is a distributor for a US company's computers. These seven companies have a 47% market share. Of the remaining four, one is 25% US owned while still another distributes some US computers. When all American companies operating in South Africa are included, US computer companies account for at least half of the computer market in South Africa.

<table>
<thead>
<tr>
<th>Company</th>
<th>1985 Sales ($ millions)</th>
<th>1985 Market Share (%)</th>
<th>1984 Sales ($ millions)</th>
<th>Employees</th>
</tr>
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<tbody>
<tr>
<td>IBM</td>
<td>$180</td>
<td>20%</td>
<td>$238*</td>
<td>1,973**</td>
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<tr>
<td>Barlows***</td>
<td>90</td>
<td>10</td>
<td>73.4</td>
<td>784</td>
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<tr>
<td>Burroughs</td>
<td>81</td>
<td>9</td>
<td>104</td>
<td>580</td>
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<tr>
<td>ICL</td>
<td>81</td>
<td>9</td>
<td>112.2</td>
<td>1,000</td>
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<tr>
<td>Olivetti +</td>
<td>53.8++</td>
<td>5.6</td>
<td>51</td>
<td>700</td>
</tr>
<tr>
<td>Hewlett-Packard</td>
<td>44+++</td>
<td>5</td>
<td>47.6</td>
<td>290</td>
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<tr>
<td>Sperry</td>
<td>36</td>
<td>4</td>
<td>46.2</td>
<td>200</td>
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<td>NCR</td>
<td>36</td>
<td>4</td>
<td>44.2</td>
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<tr>
<td>Control Data</td>
<td>27</td>
<td>3</td>
<td>40.8</td>
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<td>Siltek</td>
<td>27</td>
<td>3</td>
<td>34</td>
<td>250</td>
</tr>
<tr>
<td>Wang (GBS)+++++</td>
<td>18++</td>
<td>2</td>
<td>34</td>
<td>375</td>
</tr>
</tbody>
</table>

Companies in boldface are US firms or serve primarily as distributors for US computers.

Figures for 1985 sales based on Financial Mail overall estimate of R2 billion computer industry turnover divided by estimated market share. Where an exact figure is known, this has been substituted and 1985 market share figure adjusted. (See below for specifics.) 1984 Rand figures from Financial Mail. Figures are somewhat distorted by the large shift in the Rand/Dollar exchange rate. 1984: R1 = $0.68. 1985: R1 = $0.45.

* Includes some non-computer products, such as typewriters.
** In early 1986, IBM cut its work force by 16% to about 1,600.
*** Reunert Computers (a subsidiary of Barlow Rand) includes Persetel, the distributor of Hitachi equipment, and BarlowData. BarlowData equipment is largely imported, including some from the US.
+ 25% owned by AT&T
++ Dollar figure is based on Rand figure that is actual from press source, not based on market share.
+++ Dollar figure is actual from company annual report, not based on market share.
++++ US company has no ownership of South African company, which is a distributor.

NOTE: Burroughs announced in May 1986 that it would acquire Sperry.
US Computers in South Africa: An Analysis

The growing divestment campaign in the United States and increasing resistance to apartheid in South Africa have combined in recent months to focus new attention on the role of foreign investment in South Africa. American corporations provide direct investment, loans and access to technology that, over the last twenty years, has been critical to the maintenance of white minority rule. American computer companies have in particular played a strategic role in providing equipment and technology that has directly bolstered the apartheid system. A ban on US computer company investments and sales in South Africa would have a profound effect on the apartheid economy and would certainly help those struggling to end white minority rule in that country.

Dependence

South Africa is totally dependent on imported computers. No mainframe computers are made in South Africa. Some personal computers are assembled locally, but the key parts of these personal computers are imported. American companies are by far the largest suppliers of computers to South Africa. They account for more than 47% of overall sales, 70% of the mainframe market, and they dominate the market for automatic teller machines. Companies from Japan and the United Kingdom are the next largest suppliers of computers.

Foreign firms provide technology and advanced data processing equipment that South Africa simply cannot produce. "South Africa really needs US companies in certain industries, particularly high tech industries and computers," IBM's representative told investigators from the House Subcommittee on Africa in 1984. And the head of one major South African electronics company, Bill Venter, concurred: "Economy of scale dictates that the national market cannot alone sustain a truly viable electronics industry."

The computer industry has been growing rapidly over the past few years. Imports of hardware in 1984 showed an estimated increase of 69% over 1983. Industry sales for the same period increased some 70% in rand terms to R1.7 billion. By 1985 the market had grown to R2 billion.

Who Buys Computers?

The largest single user of computers in South Africa is the white minority government, which accounts for at least 25% of all sales. The government uses computers, including American-made computers, for everything from collecting statistics on racial classification to guiding shells during attacks in Angola. Municipal and provincial authorities directly involved in administering apartheid also use computers. And as in any modern economy, computers are integral to the functioning of major industries and provide key services to the apartheid economy including the large state-owned steel and transportation companies, and privately owned mining companies.
US Government Restrictions

For many years, US computer companies sold computers to the South African police and military and other agencies directly involved in enforcing apartheid. The government-owned armament corporation, ARMSCOR, uses equipment from NCR, Burroughs, Hewlett-Packard and Sperry, and the South African Defense Force's command and control system uses an IBM computer. The United States government consistently used its veto power in the United Nations Security Council to block a mandatory arms embargo against South Africa.

In 1977, however, the Carter administration, under pressure from the world community and activist groups in the US, voted for a mandatory arms embargo in the UN Security Council. US government export regulations issued in terms of the arms embargo were enacted in early 1978. All sales to the police, military, Department of Prisons and the Bureau of State Security were banned. Although limited in scope, the restrictions were a major victory for the anti-apartheid movement. When the Reagan administration came into office, however, these restrictions were weakened to allow the export of computers to the police and military if they allegedly would not significantly contribute to police or military.

By 1985 growing unrest in South Africa and an escalating divestment campaign in the US led Congress to review Reagan's policy. As a result, when the Export Administration Act was signed into law in July 1985, it contained a clause which reinstated the controls that had been in effect under President Carter. In a separate action, President Reagan, in order to forestall tougher action by Congress, issued an executive order in September 1985 which banned all computer sales to the military, police, prison system and national security agencies. The US Department of Commerce has since issued a joint set of regulations to implement the executive order and the Export Administration Act.

While these restrictions are an important first step, they do not stop the flow of computers to South Africa. Although sales are banned to ARMSCOR, the ban does not extend to private business in South Africa. Yet ARMSCOR contracts out very significant research and production to private industry. One 1985 study reports that some 1000 private sector companies handle up to 60% of military production in South Africa.

Computers from IBM, Control Data and Amdahl are used by the country's leading research institute, the Council for Scientific and Industrial Research (CSIR). CSIR is a government research institute that, in addition to civilian activities, is involved in many types of military research. CSIR designed the Casspir armored car, which today is widely used by the military and police in the black townships. It also has design responsibility for missile systems and poison gases for the Defense Force. Sales to and servicing of US computers at CSIR continue to this day.

Other government agencies not covered under current restrictions include the Department of Statistics, Ministry of Communication and Public Works and the Department of State Purchases. Not only do all these agencies serve the white government, but all could also be used as "fronts" to purchase computers for the military or other prohibited agencies.
Continuing Sales to the Government

Among the fastest growing users of computers are municipal and provincial governments, where US companies have some 70 known installations. These sales are not prohibited under the current restrictions, except if the US determines that the purchasing agency is one that "enforce(s) apartheid." Any distinction between municipal government bodies that "enforce apartheid" and those that do not is essentially false. Municipal governments are arms of the apartheid government and are designed to maintain strict segregation of blacks and whites. The entire structure of government in South Africa is based on apartheid, the idea that there are some structures that are "apartheid enforcing" and some that are not is simply untrue.

Another loophole in the US regulations is that computers and components are totally exempt from the ban if US technology makes up 20% or less of the system price by value. This means that the many foreign-made computers that use US technology or components are exempt.

US companies have been permitted to continue selling to large state corporations such as SASOL (a coal gasification company), the Iron and Steel Corporation (ISCOR), which makes specialty steel for South Africa's military, and the Electrical Supply Commission (ESCOM) which supplies South Africa's power needs. In 1985, the South African Transport Services spent $68 (R100) million for data processing, $27.2 (R40) million of which was for computer upgrades.

All sales to South Africa, even those to the private sector, aid apartheid. The smooth functioning of business is important to the smooth functioning of the apartheid economy. Without computers, the apartheid economy would face severe problems since key sectors of industry in South Africa, such as oil refining, mining and banking, are highly computerized. Major private users of American computers are Anglo American Corporation and Gencor, the largest employers of migrant labor in South Africa, and pillars of the apartheid economy.

Even small, personal computers can have strategic importance. The Pentagon, for instance, attempted to block sales of personal computers, such as the IBM PC to Eastern bloc countries for fear of possible military uses. Such a total ban on sales in South Africa has never been considered by any US administration. PCs are sold widely in South Africa and obtaining them would be a simple matter for the military, police or other government agencies, even though such sales would be in violation of US law.

The ability to tightly monitor the restrictions on sales to South Africa, even if the political will were there, is open to question. Although an export license is necessary for computers, increasing numbers of US companies are operating in South Africa indirectly through distribution and licensing agreements with other companies. IBM itself has admitted that "it would be misleading to suggest that any manufacturer can control how its products are used."

Yet the restrictions enacted in 1985 are not without some effect, and they do represent a victory for anti-apartheid forces. The American Chamber of
Commerce estimates that the restricted government bodies represent 30-40% of all computer sales. A spokesman for Xerox's South African subsidiary told a business publication that it expects to lose 15% of its sales because of US restrictions. Other US computer companies, however, have been less concerned. "These sanctions won't have a major impact," said a spokesperson for Hewlett-Packard.

Non-US Suppliers

With the growth of the divestment campaign, US corporations are now seen as possibly unreliable suppliers. The main competition to US companies comes from IBM compatible mainframe computers, especially those made by the Japanese company Hitachi. By the end of 1985, Hitachi had captured a 10% market share. Hitachi mainframe computers are compatible with IBM computers and will run software designed for IBM. In South Africa, the move toward Hitachi is motivated in large part by the threat of computer sanctions. The data services manager at Barclays Bank in South Africa told Business Week in early 1986 that "[A]s an added protection against any possible boycotts by US-based companies, we have started buying from Hitachi." Even US companies are hedging their bets. "We are not saying we are going to switch from IBM," commented an official at Mobil South Africa, "but there is no question anyone who has his eggs in one basket is concerned."

South Africa's ability to find alternative sources of computers is open to question. In October, Japan announced it would ban the export of computers to South Africa for sale to the armed forces and police. Commonwealth countries have also adopted a common program of action that includes a "ban on the sale and export of computer equipment capable of use by the military forces, police or security forces."

Conclusion

US computers play a key role in South Africa. The government uses them for a wide range of applications, from military to scientific, and they are a vital part of the economy as a whole.

While the anti-apartheid movement has achieved some significant victories in limiting computer sales to South Africa, many loopholes still need to be closed. The Reagan administration's restrictions on computer sales to South Africa read as if they were drafted by the computer companies to deflect the anti-apartheid movement rather than to help end apartheid. All sales to the government are not forbidden, nor are sales to private companies that contract with the government.

Enforcement of the current restrictions is also far from adequate. There is little effective monitoring of the actual use of computers sold, with US government officials relying for the most on part the word of the South African purchaser. Furthermore, an increasing number of companies are operating in South Africa by selling hardware and technology through South African companies rather than through their own subsidiaries. In these cases, it is almost impossible to ensure that even the limited restrictions that do exist are enforced.
American computer hardware and technology continue to bolster white minority rule in South Africa. There is only one way to be sure that US computers in South Africa are not used to maintain apartheid. That is a total ban on all sales of hardware, software and technology to South Africa.
COMPANY PROFILES

AMDAHL CORPORATION

Amdahl delivered its first computer in South Africa in 1975. The company is now involved in sales of computers and network systems through the Amdahl International Corporation and Tran Systems (Pty.) Ltd. The company has a total of 56 employees in South Africa. In late 1985, Amdahl computers were selected as part of a large new system to be installed by ESCOM. Other Amdahl customers include CSIR and Shell. Tran Systems currently assembles about 25% of its equipment in South Africa. Recently Tran Systems decided for "strategic reasons" to manufacture its complete line of communications equipment in South Africa.

APPLE COMPUTER INCORPORATED

"Apple rejects the apartheid policies of the current government...and [we] are therefore discontinuing our activities in South Africa," announced Apple's president, Michael Spindler, in August 1985.

Apple's decision to pull out demonstrates the importance of the campaign to isolate South Africa. Apple has never had a subsidiary in South Africa, but rather sold its computers through the South African company Base 2. In reporting Apple's decision, Base 2 managing director John Floisand acknowledged the role of the divestment movement by saying: "It is mainly political unrest in America that has driven Apple to take this step. Most of our hard and software is developed in co-operation with leading American universities and it was here, especially, that Apple ran into difficulties."

Even before the decision to end direct sales, Apple had suffered considerable loss of market share in South Africa. In 1981, the company had an estimated 85% market share in the personal computer market, but as a host of other microcomputers came on the market—including the IBM PC and compatibles—Apple's market share fell to 20%.

At the end of 1985, the effect of Apple's action was still unclear. "We will source Apple products from other countries," said Base 2 managing director John Floisand in a statement shortly after the announcement was made.

BURROUGHS CORPORATION

Burroughs is the third largest computer company in South Africa with assets between $20 - $40 million and 1985 sales estimated at $81 (R 180) million. The company sells mainframe and microcomputers through its subsidiary Burroughs Machines Ltd. in Johannesburg with a total of 580 employees. Burroughs's market share was about 9% in 1985. In May 1986, Burroughs agreed to acquire Sperry, which will boost Burroughs's market share in South Africa to 12%.

Burroughs's sales in South Africa have been growing rapidly over the last three years. Major areas of sales include the government and financial sectors. At least 15 municipal governments use Burroughs equipment. A number of other public institutions, including several bantustan agencies, use Burroughs machines. In the financial sector, customers include several South African banks, including Nedbank.
In September 1985 a group of ten US companies, led by Burroughs Chairman W. Michael Blumenthal, and including IBM and General Motors, met with President Reagan to discuss the growing divestment movement. Following this meeting the group announced the formation of the US Corporate Council on South Africa. Its initial press statement said that Council members "see an urgent need for changes and reform of the apartheid system, which will lead to its ultimate elimination." As the black rebellion inside South Africa continued to escalate, Burroughs told the Detroit Free Press in November 1985 that it was drawing up contingency plans to withdraw from South Africa should the situation not improve. However, it seems unlikely that Burroughs will withdraw soon. Profits by its South African subsidiary continued to increase in 1985.

CONTROL DATA CORPORATION

Control Data ranks ninth in South Africa with estimated sales of $27 (R60) million through sales of mainframe computers, computer networks and education software from the Control Data (Pty.) Ltd. and Interdata subsidiaries located near Johannesburg. Control Data also controls 40% of Intell', a computerized system to help users of the service target potential customers. The company had assets of about $44 million in 1983 and approximately 300 employees as of December 1984. CDC has a market share of about 3%.

A major market for Control Data is state-controlled corporations. ISCOR bought its first CDC computer in 1965 and ESCOM bought one in 1971. In 1983 ESCOM purchased the powerful Cyber 170/865 computer for use in designing new power stations and for project control as part of its effort to double power generation by 1990. This 1983 sale is one of the first known instances of this powerful computer being sold outside North America. ISCOR also bought ten smaller Cyber 170/800's.

In 1985, CDC was one of the most active companies lobbying against the imposition of comprehensive computer sanctions on the South African government. The results of this activity are reflected in the way the Reagan executive order affects one of CDC's main customers, the Council for Scientific and Industrial Research (CSIR). CSIR is a large government-run research agency involved in both strategic and military related activities. The US regulations prohibit sales to CSIR for "weapons research." CDC claims that its computers are not used for military research. Yet the Control Data computers are the core of CSIR's Centre for Computing Science scientific/numeric system. According to the CSIR Annual Report, "Some 23 CSIR institutes situated in various parts of the country have access to these facilities, directly or via some 300 terminals, or via minicomputers or remote job entry stations." It is difficult to see how such a system can be effectively monitored, particularly since CDC ultimately can only rely on CSIR's own assurances that CDC computers are not used for military purposes.

CDC advertisements in South Africa point to the advantages to be gained by using its PLATO educational software system to educate blacks. Yet Control Data's own employment record reflects the company's refusal to place blacks in positions of responsibility. CDC management is 100% white, its professional staff 97% white and supervisory staff 88% white. "White people think they have done something remarkable... but it's nothing," Mandla Adonial, one of Control
Data's top black employees, told the Minnesota Star and Tribune. He was listed in CDC's report on compliance with the Sullivan Principles as an "assistant manager." Not so, says Adonial. "If I am an assistant manager on paper, in practice I should be given the challenges and the real job of a manager. They put it in the report for window dressing. It's a lie, and it angers me."

HEWLETT-PACKARD COMPANY

Hewlett-Packard is the sixth largest computer company in South Africa accounting for $44 million in sales in 1985. Hewlett-Packard's 1985 market share is estimated at 5%. The American company sells a range of computers and large instrumentation devices through its wholly owned subsidiary Hewlett-Packard SA (Pty.) Ltd. headquartered at Santon industrial park near Johannesburg. Hewlett-Packard SA had 290 employees in 1985.

Researcher Thomas Conrad of the American Friends Service Committee (AFSC) obtained data from South African industry sources in 1985 proving that a Hewlett-Packard computer is part of a new calibration system developed by Naschem, a subsidiary of Armscor involved in the production of high-caliber ammunition and bombs.

Hewlett-Packard computers are used by a number of government agencies, including the South African Reserve Bank. "The system really proved itself over the past couple of months, when the rand was slipping against the dollar and the gold price was dropping," noted one bank official in a 1985 interview.

HONEYWELL INCORPORATED

Honeywell sells process control equipment through its wholly owned subsidiary Honeywell (Pty.) Ltd. In 1983 Honeywell had sales of $49 million and about 200 employees. The company reports assets of $25 million. Of Honeywell's employees only 21% are black, and whites dominate the top job categories. According to the company's own 1985 statistics, 100% of the managerial, 94% of the professional and 83% of the supervisory staff are white.

A Honeywell process control system is used at the vast SASOL coal-gasification installation at Secunda, one of world's largest industrial computer installations.

INTERNATIONAL BUSINESS MACHINES

"It is IBM's policy not to bid for business where it believes its equipment would be used to abridge human rights or for repressive purposes. We know of no case where it is so used."

"IBM Operations in South Africa"
April 1985

IBM is by far the largest computer company in South Africa, with estimated total sales of about $180 (R 400) million. IBM's sales are
twice those of its closest competitor. IBM has clear dominance in the area of mainframe computers. An estimated 40% of South Africa's installed computer base is of IBM origin, and the company had a 1985 market share of 20%. But IBM's dominance has slipped significantly in the area of mini-mainframes from 25% to 15%. In software, IBM holds a commanding lead with estimated 1984 sales of $23.8 (R35) million of a total market of some $95 (R140) million.

IBM has operated in South Africa since 1952 and currently sells a full range of computer equipment through two wholly owned subsidiaries, IBM SA (Pty.) Ltd. and IBM SA Product Distribution (Pty.) Ltd. However, IBM has been challenged worldwide with IBM-compatible computers, and in South Africa the growth of the IBM mainframe-compatible market has meant that IBM has not grown as fast as it had anticipated. As a result, in March IBM reduced its work force in South Africa by about 16%, from over 1,900 to 1,600 workers.

In an April 1985 policy statement, IBM said that government accounts "yield a small portion" of IBM's revenues in South Africa and that no sales are made "to the police, prisons, military, agencies for national security, the Department of Cooperation and Development or the Department of Home Affairs." This, in fact, is little more than what US government export regulations already prohibited.

Historically, IBM has sought out business with the government's repressive apparatus. In 1965 IBM bid on the passbook system but lost to a British company. Since the 1970s IBM computers have been used in the system of identity documents for Coloureds and Indians known as the "Book of Life." The Atomic Energy Board has an IBM 370/155 computer and the South African military is also known to have IBM computers. More recently, in a 1980 publication in South Africa, IBM advertised a "Law Enforcement System" as available. When the AFSC exposed the existence of the ad, IBM denied that the system was available, saying that "we don't know how" the advertisement got into the publication.

IBM's statement that government accounts are a small portion of its business in South Africa also appears less than accurate. According to IBM, government accounts make up less than $7 million from the South African Transport Services and another from ESCOM. A number of municipalities also use IBM computers. Other government IBM installations include South African Airways, the Council for Scientific and Industrial Research, the Kwazulu Development Corporation, and the South African nuclear research facility at Valendaba.

IBM services a number of strategic US multinationals in South Africa including Mobil Corp. and Caltex (both sell oil to the police and military). IBM computers are also used by many large South African companies including many of the mining companies like GENCOR in South Africa and Consolidated Diamond Mines in Namibia, which illegally exports diamonds from Namibia. In early 1986 Barclays Bank, South Africa's largest bank, agreed to acquire two large IBM mainframe computers, an IBM 3090/400 and an IBM 3090/200. The IBM 3090/400 sale will be the first time that computer has been sold in South Africa.
IBM is not only in the business of selling mainframe computers, but also is responsible for about half of all personal computer sales in South Africa. Unlike mainframe computers, most PC sales are through 72 IBM authorized dealers. PCs, despite their name, are actually aimed at the business market. In addition to sales through its dealers, IBM has begun making direct sales to large clients. This strategy had a major success in August 1985 when IBM closed a deal with South African Transport Services to supply 500 PCs worth $900,000 (R2 million).

US companies frequently justify their continued investment in South Africa by pointing to the 'benefits' received by their black employees. IBM is no exception to this trend, and was one of the original 12 companies to sign the corporate code of conduct known as the Sullivan Principles. IBM is rated as "making good progress" under the Sullivan Principles monitoring system, but it provides a graphic example of the inadequacy of such codes. Eighty percent of IBM workers in South Africa are white. Only 2.3% of managers are black. As recently as 1980 IBM had no black sales people and by mid-1983 only four, none of whom sold computer products.

Because of its dominant market position, IBM has been a special target of anti-apartheid activists. When 12 US companies were targeted by church groups, IBM was on the list. IBM has been the target of many demonstrations, shareholder resolutions and divestment actions. IBM has also been a target for sit-ins by student groups in New York, Oregon and Rhode Island.

IBM has been affected by both unrest in South Africa and the divestment campaign in the United States. While denying any plans to leave South Africa, in a September 1985 statement IBM said the "South African government's lack of progress in dealing with its problems is further alienating it from the community of nations" and that the "deteriorating situation is having a significant impact on IBM's South African business." More recently, in April IBM chief executive John Akers said, "The economic activity there is worse than it was a year ago, the economic pressure in the United States is heightened, and Mr. Botha is too slow... If we cannot have as successful a business remaining in South Africa as we would have leaving, then I think we would have no choice than to leave."

NCR CORPORATION

NCR sells both mainframe and microcomputers in South Africa through NCR Corp. SA (Pty.) Ltd. With 1985 sales estimated at $36 (R80) million NCR is the eighth largest computer company in South Africa. NCR employs some 600 people, of whom 180 are black. The company increased its market share to 4% in 1985 from 3% in 1983. Although the NCR South African subsidiary contributed only about 1% of the company's worldwide sales, operations in South Africa were the 13th largest of the 180 countries where NCR is represented. Assets in 1983 were less than $40 million. NCR sales have grown some 30% overall, 50% in the area of smaller mainframes. NCR computers are used by at least 40 municipalities. A major area of growth for NCR is automated teller machines, of which it is the number one international supplier, but number three in South Africa with a 12% market share. The State of Connecticut divested from NCR in 1984 because the company provided strategic goods and services to the South African government.
OLIVETTI & COMPANY

Although Olivetti is an Italian company, it is actually 25% owned by American Telephone & Telegraph (AT&T). Olivetti is also the largest distributor in South Africa of Digital Equipment Corporation minicomputers. With 1985 sales of $53.8 (R112) million, Olivetti is ranked fifth, and has a market share of 5.6%. A particular strength for Olivetti is the banking sector, where the company controls 35% of the market for automated teller machines. Olivetti employs some 700 people.

In 1986, Olivetti stopped distributing the AT&T personal computer following a decision of AT&T to stop marketing it in South Africa. This action was taken in response to divestment pressure by AT&T’s US employees. However, AT&T refuses to use its influence with Olivetti to pressure that company to withdraw from South Africa, despite the fact that AT&T is represented on the board of Olivetti.

SKOK SYSTEMS

Skok Systems is a Cambridge, Massachusetts-based computer software company that specializes in computer-aided design and drafting (CADD) systems. Originally, Skok was a South African company. In 1983 Skok moved its headquarters to the United States. At that time the company estimates that it had 70% of the CADD market in South Africa, where it still does 50% of its business. Skok has an installed base and orders of some $18 (R27) million in South Africa. It maintains a subsidiary for sales and service with 35 employees, ten of whom are black.

Skok financed its reorganization with $4.4 million raised from investors in the United States in exchange for 30% of the stock. A number of well-known venture capital firms are involved, including Hambrecht and Quist and the venture capital arms of BankAmerica and the Fidelity Group.

The Skok CADD system was designed to run on a Hewlett-Packard computer.

SPERRY CORPORATION

With 1985 sales of $36 (R80) million, Sperry is the seventh largest computer company in South Africa and has a market share of some 4%. Sperry employs 200 people and had assets in 1983 of $33 million. Sperry sells both mainframes and micro (personal) computers. In May 1986 Sperry agreed to be acquired by Burroughs.

Sperry has long been a key strategic computer supplier. In 1972 Sperry sold SASOL (South Africa’s key coal-gasification plant) a $1.9 (R1.5) million computer. Sperry bragged in an advertisement at the time, "SASOL epitomizes modern South Africa's vivid industrial progress...[To meet its] requirements SASOL looked for a computer system that was fast, reliable and versatile. Their choice was UNIVAC."

Sperry’s strategic role was recognized in 1984 by the State of Connecticut when it divested itself of Sperry. Under Connecticut law, companies must be divested from state pension funds if they supply strategic products or services for use by the South African government. Other Sperry
customers included the South African Reserve Bank, the Cape Provincial Administration, and several municipalities.

**TELEX CORPORATION**

Telex Computer Products, a subsidiary of Telex Corporation, sells IBM compatible computer terminals through a South African distributor. It has an installed base of more than 8,000 terminals in South Africa and is a major market for Telex.

Comments Telex Corporation's Alfred Mockett, "We have felt no pressure to disinvest.... Our investment has been in the form of technology, training and financial support, and we see no reason to change this." Telex is reportedly studying the possibility of manufacturing equipment in South Africa.

**WANG LABORATORIES INCORPORATED**

Wang does not have a subsidiary in South Africa, but rather sells through its agent General Business Systems. GBS sales of $18 (R40) million in 1985 gave it an 11% growth in South Africa and a 2-3% market share. About one quarter of its sales are the Wang PC. Customers include a number of municipalities and ESCOM.

**ULTIMATE CORPORATION**

New Jersey-based Ultimate Corporation recently entered the South African market through Ultimate Computer (SA). The US company claims no ownership in the South African company. "Although there is no direct investment, we are expected to act as a subsidiary and follow all the rules," said Ultimate Computer (SA) managing director Gavin Fairon. Ultimate Corporation is selling its special operating system known as PICK, which runs on Digital Equipment Corporation and Honeywell systems. Clearly in cases such as this, there is no effective way to monitor technology uses.

**OTHER COMPANIES BRIEFLY NOTED**

Several plans for South African "locally made" computers have been reported in the press. One is to be made under license from California-based Mitac, with only 20% local content. The local content will consist of the circuit board and plastic case; the rest will be imported. And the computer is really only a PC-style microcomputer. Another is by the South African company Psion Computers to start local manufacture of the VPC, made under license from Victor Technologies in California. A sophisticated check clearing system used by Nedbank was purchased from the US company Recognition Equipment Inc. The Dutch company Philips sells the US-made Diebold automated teller machine, which has 5% of the ATM market. The largest US software house Cullinet operates in South Africa through a South African distributor. The distributor paid $1.2 million in royalties to Cullinet in 1984. Mohawk Data Systems, whose equipment is in use by a subsidiary of ARMSCOR, sold its South African subsidiary to local management, which continues to act as a distributor for Mohawk Data products. Measurex Corporation maintains a subsidiary in South
Africa that markets and services process control systems. **Computer Sciences Corporation** of California sold its 20% holding in Computer Sciences Ltd. in 1985 but at the same time broadened and extended its license and technical agreement with the South African company for ten years. **Datapoint Corporation** computer products are sold in South Africa by Computer Sciences Ltd. **Perkin Elmer Corporation** sold its South African operations in 1985. **Foxboro Company** computers, distributed in South Africa by AFH Devers, have been reported to be used by the Uranium Enrichment Corporation and by the oil industry in Cape Town. **Microsoft Corporation** announced in April 1986 that it had terminated its relationship with its South African distributor and would end all direct distribution. **Lotus** has long considered it a violation of its copyright for its product to be used in South Africa.

**NOTE**

It should be noted that figures on computers in South Africa are frequently incomplete and sometimes contradictory. Figures used in this paper are those available and presumed to give a reasonably accurate picture. Exchange rates used are: 1972 R1 = $1.29, 1983 R1 = $0.90, 1984 R1 = $0.68, 1985 R1 = $0.45. Because of the fluctuation in exchange rates, many percentages used in this paper are based on rand figures.

**SOURCES**

Extensive research done on the uses of computers in South Africa has been conducted by Thomas Conrad of the American Friends Service Committee. Two publications of AFSC, Automating Apartheid: US Computer Exports To South Africa And the Arms Embargo, NARMIC/American Friends Service Committee 1982 and Military Exports to South Africa by Thomas Conrad, UN testimony in September 1985 are extensively used for this paper.


Company annual reports, Form 10K and personal communications.

Company profiles by the Investor Responsibility Research Center, Washington, D.C.
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