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Technology training lags 'behind growth needs'

STimes (Cape Metro)
By EVE VOSLOO

79A

BY far the greatest challenge for South Africa is the urgent need for industrial growth and job creation 311193.

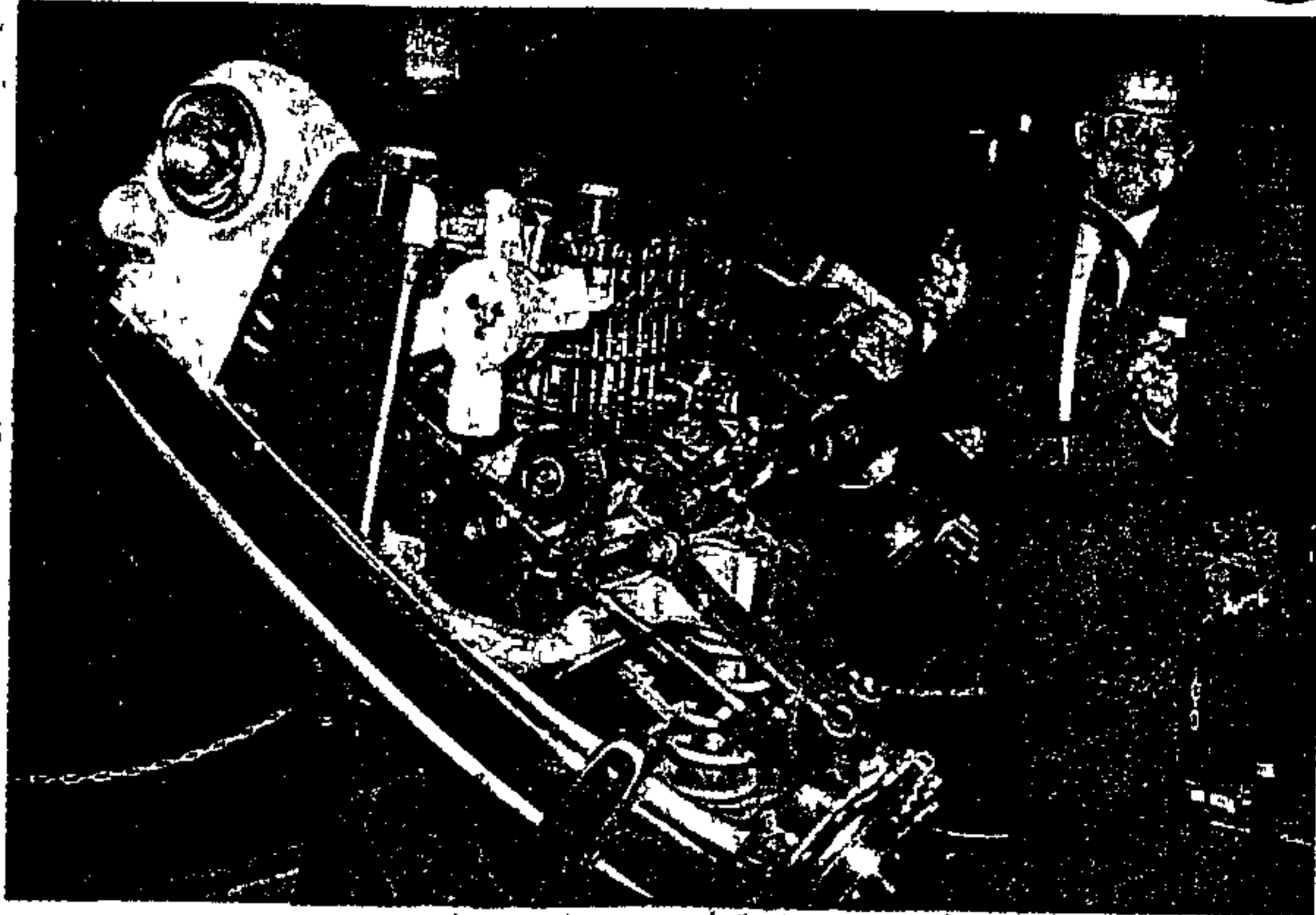
This was said this week by Professor Christo Viljoen, dean of the faculty of engineering at the University of Stellenbosch and head of the SABC board

He was speaking at the closure of the temporary Science and Technology Discovery Centre in the Union Castle Building at the Victoria and Albert Waterfront.

The centre, visited by more than 30 000 people over the holidays, is moving to a new venue on the east campus of the Western Province Technical College

Professor Viljoen said South Africa produced far fewer graduate engineers per capita than many other countries.

"Every year Japan produces 500 engineers for every million of its population," he said. The United States produced 370, Germany 320, France 280, the United Kingdom 250 and South Africa only 20



ROAD TO SOMEWHERE . . . Professor Christo Viljoen "tries out" one of the exhibits at the Discovery Centre — a dissected car which shows how the internal combustion engine works. The car was lent to the exhibition by the Peninsula Technikon
Picture: JACK LESTRADE

South Africa needed people who could help expand industrial output and manufacturing, identify new technology appropriate to the country's needs, design original products and establish global competitiveness, Prof Viljoen said

"To achieve these goals we need an effective supply of trained students from tertiary education."

"Far too few high school pupils study science and mathematics and I believe we have to start at high school level — and even primary school level — to

stimulate an interest in the natural sciences and mathematics

"Cape Town joins places like Tokyo, Munich, London and Washington with a science exhibition where visitors can get hands-on experience in discovering the wonderful world of science"

Founded by the Gateway Discovery Trust, the centre is to house interactive exhibitions involving many disciplines, including aerodynamics, alternative energy, astronomy, biology, civil engineering, computers, communications, electricity and magnetism, optics, sound and transport.

Its aim is to foster a love of science among children and to encourage more people to enter scientific careers.

CUSTOMER RECIATION MONTH



Star 3/2/93

Producing the right people for a developing economy

THE Associated Scientific and Technical Societies (AS&TS), representing some 63 organisations with 78 000 members, is gearing up to be a major player in determining future education policy.

It has aligned itself with organisations that are calling for the establishment of a national education forum.

At the society's annual meeting, outgoing president Cliff McMillan said the past year had seen AS&TS transformed from a convivial establishment club into a force which would make its mark in policy formulation affecting science, engineering and technology (SET).

A major debate about South Africa's future education policy was imminent and the input of the scientific and engineering community was critical to this debate, McMillan said.

Everyone recognised there was a correlation between economic performance and a commitment to technology and technologically based education. But SA compared badly with developed or successfully developing countries in terms of its production of technologically qualified personnel.

The fundamental problem was the lack of commitment to a technological imperative among government, business leadership and education authorities. Added to this was a disastrous schooling situation with a complete misallocation of priorities at post-school level.

"The true measure of the misallocation of resources can be seen when 308 000 students at 21 universities in 1991 is contrasted with 104 000 students at 13 technikons," McMillan said.

The misallocation of resources occurred at various levels.

- In the production of school-leavers.
- In the allocation of resources between universities and technikons and between the various universities.
- Within universities, where there was an insufficient recognition of the higher cost of staff, equipment and smaller classes associated with many fields of SET education.

It was against this background that the AS&TS launched an

The scientific and technical communities want to play a role in determining future education policy, reports Science Writer ANITA ALLEN.

education policy for technology initiative in 1992.

Workshop sessions were held in June 1992 and a SET committee was organised with equal representation of three organisations — the AS&TS, Suid Afrikaanse Vereeniging vir Ingenieurswese (SAVI) and the Joint Council for Scientific Societies (JCSS).

A task committee had been set up, and had produced reports co-ordinated into a working document to be presented to the SET membership in March. After that the document would serve as a basis for workshops involving industry, trade unions, educational policy organisations, political players and teachers.

"An essential step in bringing about a sounder restructured education system will be a National Education Forum with broad representation of the interests involved, to debate the fundamentals and agree on policy. AS&TS should be a participant to represent the priorities of SET," McMillan said.

In 1991 the Technological Human Resources for Industry Programme (Thrip) had been set up as a joint venture between industry, the Foundation for Research Development and educators representing the engineering profession. The programme focused on improving the capabilities of universities and technikons to produce the graduates needed for a developing economy.

AS&TS was already involved in academic bridging programmes, notably Protec with more than 3 000 students in Standards 8, 9 and 10 at more than 20 branches. The time had come to evaluate this programme with a view to setting up a national policy to co-ordinate funding, admissions and qualifications. Bridging programmes would be a fundamental element in dealing with the realities of the educationally disadvantaged in the future.

Research equipment 'is ageing'

6/10/93 4/2/93

ADRIAN HADLAND

PRETORIA — At least R200m should be earmarked by government for the upgrading of ageing research equipment at SA universities, an investigation by the Foundation for Research and Development has recommended. (17A)

A foundation report said a lack of adequate equipment rendered SA research internationally uncompetitive and inefficient, and demoralised researchers.

"The university research infrastructure, as manifested in research equipment, is in a crisis," the foundation's Science Policy Digest reported.

The investigation revealed that only 25% of SA's research equipment had been bought within the past 5 years, compared with more than 60% in Australia, 53% in the US and 41% in the UK.

"International comparison shows that

SA is lagging dangerously," the digest said.

The investigation also pointed out that industry and private sector investment accounted for about 20% of the funding channelled into research equipment at universities. This compared with 4% in the US and 5% in the UK.

"The high level of private sector involvement in matters of infrastructure at universities makes the tertiary education sector vulnerable to fluctuations in the business cycle," the report said.

"A protracted economic recession may have permanent negative consequences" for research in SA.

The foundation recommended that government spends R40m annually for the next five years to bring SA research to a more competitive and efficient level.

Calling all people who talk the language of science

AT 27, Roger Jardine is ready for the responsibilities that have descended on his shoulders, and undaunted by the challenge of heading a priority project of the African National Congress.

Appointed as co-ordinator of science and technology policy within the ANC's department of economic planning in October, the Riverlea lad, whose grandmother was a colleague of Helen Joseph, spearheads an ambitious programme aimed at gaining input from a broad spectrum of scientists.

From the outset it is clear that separating the man from his mission is going to be impossible. He is quick to turn the spotlight off himself, and after admitting that he was educated at Woodmead and has an MSc degree in radiation physics from Wayne State Medical School in Detroit, Michigan, he steers the interview back to the four-month-old science and technology (S&T) policy department.

He is quick to emphasise

ANITA ALLEN Science Writer

that the ANC's S&T policy guidelines, which were adopted at its national congress in May last year, commit the organisation to public participation in drawing up its policy. It is openly canvassing for collaboration with science, engineering and technology institutions, and is in the process of building up a network of experts who will submit concept papers.

"We are talking to anyone who wants to talk to us, and it is clear that there is a constituency that wants to discuss the issue," says Jardine. "From our side, we want to make the debate more accessible."

The response to the ANC's initiatives has been almost overwhelmingly positive and has worked across political barriers, he says.

"What has emerged is frustration at the present top-down control of S&T policy and the fragmented system

FORGING LINKS: Roger Jardine, co-ordinator of the ANC's science and technology policy, believes science must serve the needs of all people.

● Photograph: STEPHEN DAVIMES

of research and development funding and organisation. "It appears that things have been done so badly, that just being able to register their inputs, irrespective of the outcome, is a great relief," Jardine notes.

The ANC has identified four priority areas which will be addressed at conferences in the next six months: S&T education policy; nuclear policy; how to foster technology innovation, and identifying appropriate technology for rural areas.

Scheduled for release on Monday is the survey funded by the Canadian-based International Development Research Centre (IDRC) and conducted by an international delegation which visited South Africa in November

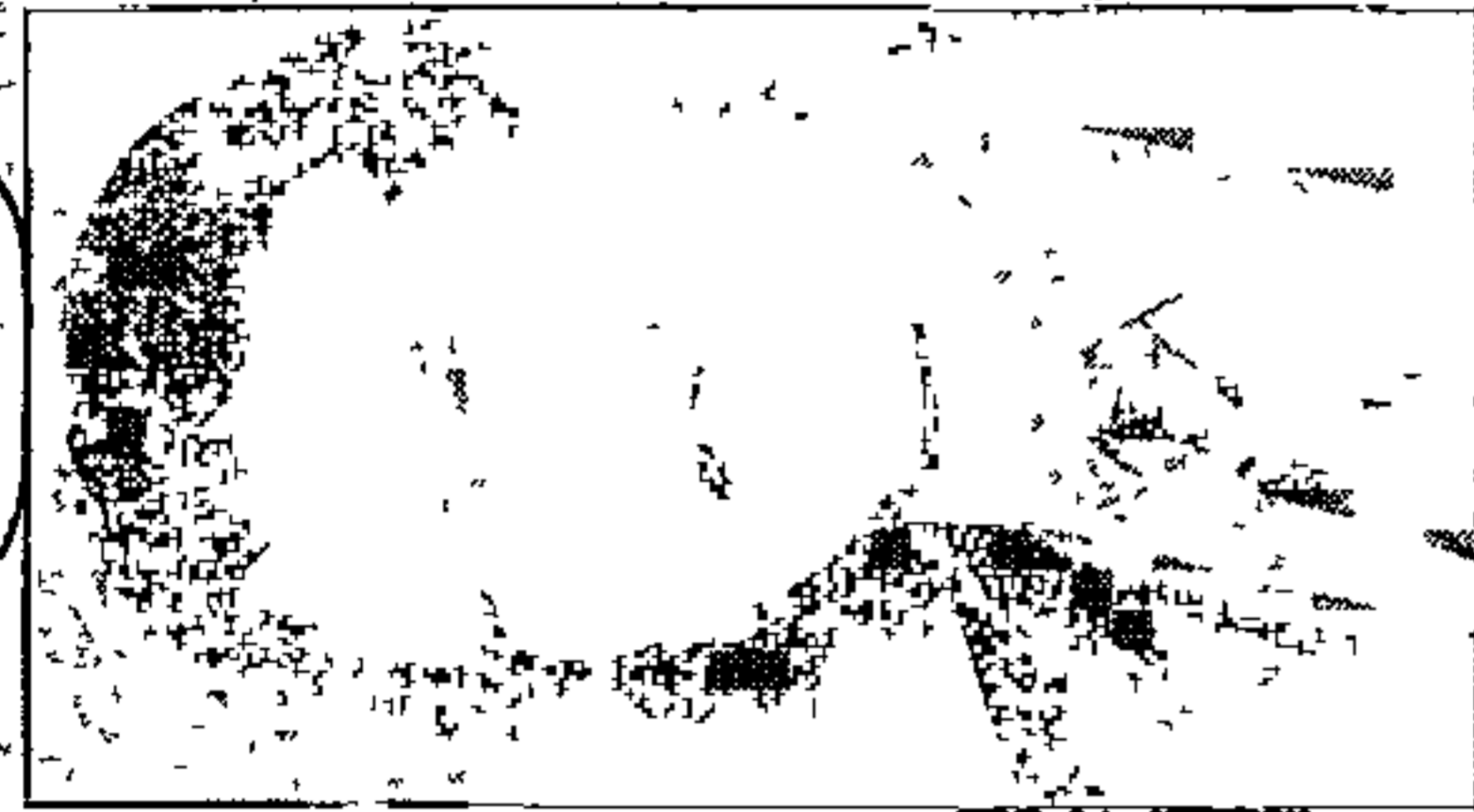
get to all the people and not just a few."

Current expenditure on research in South Africa is 0,76 percent of GNP, in 1989/90, the latest available figure, or R1,7 billion. Jardine says that a few well-established research institutions and individuals get funding year after year, but it is very difficult to break new ground.

"A new S&T policy is not just a question of increasing present science budgets and research and development funding. It's a question of refocusing, establishing priorities and improving delivery systems."

As an example, he cites the present policy of mega-funding in nuclear facilities — R685 million to the Atomic Energy Corporation and R28,8 million to the National Accelerator Centre at Faure.

"There are very few friends of a policy which sees them getting so much of the limited funds," says Jardine, and adds that it is not a simple question of closing down



last year at the request of the ANC, the SA National Civic Organisation and Cosatu.

"The ANC recognises that S&T research and development and establishing the right climate for innovation is crucial to economic wellbeing. What we are looking at is how to organise S&T down the line so the benefits

facilities.

He admits that as a radiation physicist, nuclear science is a particular interest. During seven years in the US, he worked on the commissioning of the world's first super-conducting medical cyclotron at the Gershenson Radiation Oncology Centre in Detroit.

The ANC subscribes to the Organisation of African Unity declaration to make Africa a nuclear-free zone, he says, so the nuclear issue is on the organisation's agenda and would be addressed at the nuclear policy conference, possibly in Cape Town in June or July.

Asked what motivates him personally, Jardine says that what sticks with him was something said in conversation with a member of the ANC's Women's League.

"She said the value of technology must be measured by the degree to which all people's needs are met. That is what I strive for."

SEE EDITORIAL
— PAGE 12

Star 16/2/93

SA's scientific research a mess - international team

By Anita Allen
Science Writer

179A

Scientific research in South Africa is in a mess, and the crisis goes to the highest levels of government, according to an international report released yesterday.

Institutions involved with science, technology, research and development are operating in a policy and leadership vacuum, it said.

The five-man team which produced the report, sponsored by the Canadian-based International Development Research Centre (IDRC) at the invitation of the ANC, Cosatu and the national civic body Sanco, said they found a highly fragmented group of institutions, trying to define a role for themselves in a "new" South Africa but not quite knowing how to do so. They existed in an overall system which was most frequently described by its own officials as "dysfunctional".

The strongest censure was directed at the Scientific Advisory Council (SAC), the 14-member body appointed by the Gov-

ernment to advise the Minister of National Education on policy and programmes. All research and development funding is channelled by various ministries to this Minister, whose department determines allocations.

The report said that, in practice, the SAC operated under a cloak of confidentiality and no public record was kept of its activities and advice.

Under its mandate, the IDRC mission paid particular attention to tertiary education and reserved some particularly harsh words for the Executive of the Committee of University Principals.

"The mission was dismayed to discover that that body had not ever considered discussing research policy as it affects their institutions. Our impression is that the body appears to devote its energies to the discussion of administrative matters which, though no doubt important, would in other countries be left to other less senior university officials to tackle.

The report said the universities saw themselves as divided

between 11 historically white (HWUs) and 10 historically black universities (HBUs). There was a deep sense of rivalry between and among the institutions and their staff.

There was no authoritative view of the volume of research funding, but according to Foundation for Research Development figures for 1989/90, support for natural sciences at HBUs was R23,6 million while at HWUs it was R306,6 million. In human sciences HBUs received R15 million and HWUs R124,8 million.

Assessing affirmative action programmes, the report said the picture that emerged was of highly fragmented efforts. "We can only conclude that there is not in place at this time either programmes or policies to encourage affirmative action which are commensurate with the magnitude of the problems facing South Africa.

The report concluded that South Africa should embark on a process of participation of not only the scientific community, but of all sections of society.

ANC concern at 'vacuum' in science policy

RAY HARTLEY

THE ANC yesterday criticised government for "a policy vacuum at the highest level" with respect to science and technology, and said urgent programmes were needed to make the management of research institutions "representative".

Speaking at the launch of an ANC commissioned report titled Towards a Science and Technology Policy for a Democratic SA, ANC research department head Frene Ginwala said future research needed to address the needs of disadvantaged communities.

The report was compiled by local academics in conjunction with an overseas mission which visited research institutions in SA last year.

"The mission was dismayed, in its meeting with the executive of the Committee of University Principals, to discover that body had not ever considered discussing research policy as it affects their institutions," the report said.

"In sharp contrast, the Committee of Technikon Principals gave every impression of having elected to tackle issues that go to the heart of their institutions' mission and ethos," the report said.

"Officials (interviewed by the commission) widely agreed that there is a vacuum in leadership on issues dealing with science and technology at Ministerial level.

"There are no articulated economic or social goals and objectives towards which the various (government-funded research) institutions could apply their efforts," it said.

SA's education system was facing a crisis "at all levels", particularly in the teaching of mathematics, science and engineering, the report said.

The Scientific Advisory Council, which advised government on science policy and programmes was "the target of extensive criticism from both within and outside government", the report said.

Ginwala said Armscor had not met the commission to discuss military research, despite being asked.

"It is clear that a democratic government of SA will wish to conduct a prompt and thorough review of the directions being pursued in military and space research, to ensure that they are consistent with the needs of the new SA," the report said.

The moment of birth is the moment of greatest danger

20/2/92

179A

ONE of the greatest scientists, Louis Pasteur, said that chance favours the prepared mind. Out of the intense debate and mind-work of many since February 2 1990, the "new" South Africa will be born. However, the process of birth is also the moment of greatest danger, requiring foresight as to what should be preserved.

One input to the debate on this important facet of our national household was the release earlier this week of an ANC, Cosatu and SA National Civic Organisation-commissioned report titled "Towards a Science and Technology Policy for a Democratic South Africa" by the International Development Research Centre. Errors and omissions will be followed up. However, the release was accompanied by criticism of the Government for a "policy vacuum at the highest levels".

DR CHRIS GARBERS, chairman of the Scientific Advisory Council, replies to claims made this week that there is a 'policy leadership vacuum' in science and technology in South Africa.



tract basis to private and Government sectors. The State's baseline funding was not maintained in real terms and contract income for research from State departments declined dramatically, leading to staff losses of one in five in some SCs. The system of framework autonomy provides for a periodic fundamental evaluation. Such a revision is now under way.

In stressing the strengths of the science system and the impact of framework autonomy, one could highlight:

- A well-established infrastructure for the practice of science, including internationally recognised training facilities at tertiary level
- The freeing of research institutions from bureaucratic control and interference.
- Enhanced flexibility for the SCs to adapt to a fast-changing world of science
- The SCs' capability to address a broad spectrum of demands from high technology to problems of developing communities. For example, the CSIR conducts thousands of contracts annually for clients in South Africa as well as millions of rands worth of contracts with 16 African countries on 47 projects in the fields of infrastructure, environment, developing communities, agribusiness and energy. The CSIR performs about 10 percent of all R&D conducted on the African continent.
- The operation of SCs under the guidance of strong council leadership and financial control
- The science vote being part of the forward budget planning.

This list is not exhaustive. The South African research and development expenditure constitutes approximately half of Africa's research and development. It is a great national asset.

The SAC is widely criticised. However, it received many inputs regarding its future functioning in holistic planning, together with multi-year R&D expenditure planning. This is receiving attention. In addition, the need for an annual/bi-annual review to Parliament on the state of science on a national basis is being investigated. As a first step, organisation of Government's R&D infrastructure and spending was determined, bringing possible reorganisational issues to the fore.

Many further issues are currently under investigation. Five studies were commissioned, namely, the methods for determining strategic priorities in science (FRD), an audit on the science policy and system (CSIR), a funding approach for incorporating priorities in budget allocations (FRD), a follow-up review on SA's expenditure on R&D in 1991/92 (FRD/HSRC), a study of science systems in centrally/regionally administered economies (HSRC).

Inputs were made to the Cabinet on science and engineering manpower trends and the Government's shrinking contribution to R&D expenditure. The outcome will be reflected in the science vote for 1993/94. Other issues concern the balance between big and small science, the balance between SCs' own R&D and those of universities, technikons, and museums, unfair competition with the private sector, and the appropriate funding level for the new entrant, the Agricultural Research Council.

Two issues need attention, maintaining the existing science system with accommodation of new inputs, and developing a science (and technology) policy for the new SA. In the spirit of the possible emergence of a government of national unity, this should be a joint endeavour of all role-players.

Indeed, scientific capability at the disposal of the future government emerges from decades of dedication and will present a powerful force in its armour for positive change throughout the subcontinent.

● *Shawn Johnson is overseas. Undercurrent Affairs will resume on March 20.*

Placing science under the microscope

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SCIENCE and technology (S&T) is not an elite thing such as struggling with science-fiction machines. Science is finding out how things work. Technology is making things work.

We all use irons and kettles and travel to work on minibuses or trains. Today's offices and homes have almost as many machines as factories.

South African education has been manipulated through apartheid and sexism so that virtually all our scientists and engineers are white men.

This is the heritage of Hendrik Verwoerd's infamous directive "What is the use of teaching the Bantu child mathematics when it (sic) cannot use it in practice?"

Inequality limited the benefits of technology through electricity and modern consumer goods to white suburbs.

The regimes of John Vorster and PW Botha diverted tax money from social spending to military technology.

They boasted they had invented a new secret uranium enrichment process. In fact, they used a German-invented one — which was never used in Germany or anywhere else because it guzzled more electricity than other alternative processes!

The Nats boasted about Sasol, Soekor and Mossgas, where money from taxes was used to produce petrol at double the price of importing it from Angola or Iran.

The Nats had no S&T policy. They fragmented research among half-a-dozen departments.

ANC science academics discovered that South Africa's private sector was inefficient as regards company spending on research and product development (R & D).

This accounted for a far smaller percentage of profits than was the case with their Japanese, Korean or Western competitors.

Local companies simply assemble overseas products and don't bother to improve them or create new products.

Union-bashing bosses gave technology a bad name by boasting of replacing jobs by machines "which don't strike".

The ANC has proposed a coherent S&T policy. Science for the people, technology for development. Their priorities include:

- Revamping education to promote science and technology teaching. This would include science kits for schools without laboratories, distance education and in-service



SPEAKING OUT

Keith Gottschalk
Poet and political science
lecturer at the University of
the Western Cape

teacher training.

- Retraining workers. All workers should have the right to full and early disclosure of any changes in technology in the work-place. These changes should be negotiated. Workers whose jobs are taken over by machines should have the right to retrenchment packages, including retraining at technical schools or colleges for new jobs.

- Clean production through new technology. Harmful materials such as asbestos or CFCs should be replaced by harmless substitutes. Farms and factories should become more efficient, especially as regards reducing the wasting of water, materials and energy. Sustained development means moving towards renewable resources and increasing recycling.

- Affirmative action in S&T, to the benefit of women and rural communities benefit. Over 100 years after the first phones and electric light appeared in South Africa, most rural communities have neither. Africans and women should be encouraged to take up science and technology careers.

Many African countries tried to produce more crops while their prices fell, but the machines they bought increased in price. This resulted in their foreign debt increasing.

Economists have warned that the old coal and metal industries would stagnate as a "rustbelt" should today's depression continue into tomorrow's boom. This is because the new electronic and other hi-tech "sunrise" industries use small amounts of minerals.

Our future depends on innovation and developing hi-tech products and services which create jobs and economic prosperity. Mineral beneficiation (refining) only gives us a breathing space to alleviate our slump.

The Soviet Union shows us one mistake we need to avoid. It was proud it had more scientists and engineers per million people than any Western country. But in 73 years it developed only three products and services which out-sell Western competitors — the AK-47 rifle, the Lada car and the Mir space station.

The USSR's S&T came from bureaucratic departments or ponderous parastatals with no market-orientated skills. By contrast, some Asian countries show how close co-operation between universities, technicians, government and industry can stimulate competitive exports.

South African conglomerates are content to assemble foreign products under licence. They do little research into new processes and few new products are created.

An ANC government would have to use incentives and pressure the private sector to pull its R&D weight.

The ANC has set up commissions in the Western Cape and PWV regions to debate and popularise S&T policy. The organisation's Department of Economic Planning (DEP) has appointed Mr Roger Jardine as the first full-time member of its S&T desk. His duties include the setting up of S&T commissions countrywide.

Apart from aiming to reach the ANC's members and allies, the commissions also aim to target science and engineering educators, professional associates, hi-tech businesses and regional and town planners.

New direction for S & T policy mapped at historic meeting

Shear 6/18/93
179A

THEY came from the four corners of South Africa — science and technology (S & T) leaders representing all the major science institutions, educators, businessmen and industrialists, of all political persuasions. Their common ground was science and the conviction that their discipline underpinned all aspects of the social and economic future of South Africa. The fact that they gathered at all, was history in the making.

The impetus for the meeting was a report commissioned by the ANC, Cosatu and the South African Civics Organisation, and conducted and funded by the Canadian-based International Development Research Centre (IDRC).

The task of the IDRC mission was to assess South Africa's present national S & T policy and research system. The main thrust of the report, which was made public last month, was the identification of a policy vacuum at the highest level of government with respect to S & T policy; unsatisfactory procedures for allocation of resources; pervasive fragmentation within the system and a lack of mechanisms to integrate S & T policy with other policy directions.

The purpose of the two-day meeting was for the IDRC mission to explain and defend its report. A meeting, held with researchers from the democratic movement on Thursday, and another yesterday, with about 120 representatives of the South African institutions reviewed in the report. This meeting was particularly historic.

Practically everyone who stood up at the first session welcomed the democratic movement's initiative and remarked that such a gathering had never before taken place.

Everyone saw the need for more consultation towards a new policy and the need to move forward in a new way. But that was where consensus seemed to grind to a halt.

The problem was that half the delegates seemed to think the meeting could scrub down to the nitty-gritty of policy directions, while the other half was clearly hooked on making sure everyone understood the rules of the game.

TWO days of discussions on the future of science and technology policy were concluded yesterday at venues in Johannesburg. In the language of politics, they would best be described as talks about talks of the type that took place before the first Codesa. Science Writer ANITA ALLEN reports.

The major challenge facing South Africa in formulating an S & T policy, said James Mullin, leader of the IDRC mission, was to turn around a system dealing with minority, mainly white, concerns so that all South Africans could profit.

The problem, Dr Frene Ginwala, director of the ANC's department of research, told the meeting, was one of attitude. Too often heads of institutions who had spoken out during the day had indicated an attitude that whatever had happened was before their time and they had no control over it — thereby seeking to absolve themselves.

"None of us can do this," she told delegates. "Unless we bring up what has happened and face its consequences, we cannot move forward."

As an example, Ginwala raised the issue of representation. She said time and again delegates justified that blacks were not in decision-making positions because of historic educational disadvantages. No one would deny the record of so-called Bantu education, but if that were the true reason, she asked, why were there no women at the meeting? Were the delegates suggesting that white women were educationally disadvantaged?

The only two representatives of the press she pointed out were two women correspondents. "No, gentlemen, I suggest you face up to the fact that you are a white male establishment."

The way to turn the system around was to make it more representative, Mullin said after the meeting. This could not be done overnight, given that future black leaders were at best only in the last years of high school. But white leaders could in the meantime gain a better understanding of what life was like for the majority in this country, he said.

"Whites do not have a feel for what it is like to live in squalor. They do not understand the needs of poor people and thus determines the direction of white technological institutions.

"A scientist's understanding of the needs of the community he serves reflects what he does. The real difficulty is to understand the problems and needs of the majority, mainly impoverished people. What are the technological needs of the poor? Finding out what their problems are will change strategies," he said.

Fortunately, South Africa had a lot of people who were well trained and could do what had to be done quickly.

Echong Ginwala, he said the first step was to change mindsets — the kind of change where everyone wants the system to work. If the people of South Africa described themselves simply as South Africans, that would go a long way to achieving this.

The next step was to make sure that political leaders, who were the real decision makers, took S & T policy seriously and understood its fundamental role in determining goals and priorities.

Much of the debate in yesterday's meeting surrounded just this issue: how does one get politicians to take S & T seriously?

Ginwala, the only woman delegate at the meeting, gave a telling answer when she reminded everyone that the fact the meeting was taking place was evidence of the democratic movement's understanding of the importance of S & T policy in a democratic, non-racist, non-sexist South Africa.

The ball, as far as S & T policy is concerned, is solidly in the hands of the democratic movement, and judging from yesterday's meeting, they have every intention of keeping it there.

Shot in the arm for black school

■ Computer will help pupils
in achieving aims:

By Mzimkulu Malunga

THE technology arm of Argus Newspapers has donated a computer to a black computer school, Zakhem Computing.

According to the assistant manager of Media Systems Development, Dave Tiffin, the machine has a storage capacity of about 150 million characters.

Zakhem's managing director, Gideon Makatu, thanked MSD and challenged other companies to equal or better this goodwill gesture.

"This piece of equipment will help us groom the managers of tomorrow.

"For South Africa to compete internationally, we have to increase the tempo of computer educational training," said Makatu.

Thousands of black children had probably not seen a computer in their lives, except maybe in the media. Zakhem was established with the objective of reversing this situation.

"There is an urgent need to address computer illiteracy at grassroots level," said Makatu.

Zakhem's Cape Town branch has already started with educational programmes in schools aimed at familiarising children with the technological world. Since its formation in 1986, Zakhem has assisted hundreds of black students to pass the external examination conducted by the Computer Users Council.

However, due to the downturn in the economy, many successful students cannot be absorbed into the job market though technically qualified people are highly sought after in this country.

Before Zakhem was formed, only a low percentage of black students passed aptitude tests for technical jobs, but the figure had increased to 10 percent in the past six years. Zakhem had resorted to commercial methods to be viable. While the courses have been free, students who can afford it will pay for the courses.

Negotiations were in progress with a number of companies to set up a trust fund which could become a loan facility for students.

R100m for research

Blom 22/3/93 PETER DELMAR (179A)

GOVERNMENT is to increase its support for industrial research and development five-fold to R100m.

A Department of Trade and Industry (DTI) spokesman said funds for the support programme for industrial innovation had been increased from R19m to R100m. The scheme replaced the innovation support for electronics (ISE) programme and would provide threshold support for product innovation in all branches of industry.

A government source indicated that the department believed additional funds would be needed, although under-utilisation of the ISE had prompted government to cut its contribution to the fund to R19m in 1992.

The ISE, launched in 1989, made available nonrepayable research and development grants. It had R55m available. Administered by the Industrial Development Corporation, it had been criticised for the secrecy surrounding grants and stringent screening procedures.

The DTI is finalising a technology policy. A recent discussion document circulated to industry on the policy suggested that government funding for technological product development could be in the region of R200m.

Star 15/4/93

Government issues unusual cash challenge to industry

By Anita Allen
Science Writer

179A

In an unusual challenge to industry, the government has made R8 million available for the development of technological skills, provided the private sector contributes R2 for every R1 of taxpayers' money

Effectively, this means that R24 million could be used this year to boost education and training in the technological fields.

The funds have been made available by the Department of Trade and Industry to the Foun-

dation for Research Development (FRD) which will administer and manage the project under its technological human resources for industry programme.

"In this programme, the onus of responsibility for initiating projects will be with industry which must co-operate with education institutions in formulating proposals," said Professor Jan Malherbe of the University of Pretoria, who advises the FRD on the programme

"The actions which receive funding will reflect the needs of industry. In other words, indus-

trialists will indicate which actions they will be supporting, after which the Department of Trade and Industry will add its share."

The funds may be used for programmes to develop a technology culture among high school pupils and for engineering training programmes at tertiary level to

- promote collaboration between universities and technicians
- develop centres of specialisation
- promote academic training.

Lion's share of scientific allocations goes to CSIR

SITimes 18/4/93
(179A)

Academics are upset at the manner in which the government apportions funds for research. MICHAEL CHERRY reports

THE academic community's hopes of a significant improvement in research funding this year were dashed with last month's Budget. The science budget has increased by 5,8 percent, three points below the general increase of 8,8 percent.

But four-fifths of the additional R41-million will be allocated to the Council for Scientific and Industrial Research, which performs in-house research on applied science and technology.

This allocation runs counter to the recommendations of a report presented to the Scientific Advisory Council — the committee which advises the Cabinet on how to distribute the science budget — just over a year ago. The report criticised the structure of research support in the country as “under-emphasising competitive and targeted research funding mechanisms”.

Inadequate

Its major finding was that only eight percent of government-funded research spending is performed at universities. Forty-four percent was spent on the research councils' in-house activities — far more than in any Western country. The remaining 48 percent is spent on general university funding, and forms part of the subsidies paid to the universities by the state to fund academic salaries.

The take-home message of the report was very clear: a redistribution of the science budget was required to allocate more funds to the agency divisions of the three councils — the Foundation for Research Development, the Human Sciences Research Council, and the Medical Research Council — which, in

and the CSIR, together get 60 percent of the science budget — and neither has an agency function.

Friedel Sellschop, Deputy Vice-Chancellor (Research) at the University of the Witwatersrand, feels that “the cut of the science cake allocated to the universities remains dangerously inadequate by international standards”.

“I fail to understand why the lessons learned from economically successful countries cannot be appreciated and implemented.”

Jennifer Thomson, former director of the CSIR's Laboratory for Molecular and Cell Biology, interprets the allocation as the government “bailing out” the CSIR in times of recession (in particular, their income has probably been affected by a decline in Armscor contracts). Since it was restructured five years ago, the CSIR's aim has been to increase the proportion of its income derived from consulting for government departments and the private sector.

Intellectual

Many members of the scientific community hold the view that the CSIR is not much more than a giant consultancy and, as such, has no real claim to a state subsidy. “It would probably be true to say that science as a thriving, innovative, intellectual enterprise within the CSIR is dead”, says a recent article in the SA Journal of Science by Thomson and Johan Lutjeharms, another former CSIR employee who now holds a chair at the University of Cape Town.

The cut in the ARC's subsidy (down six percent to R215-million) has been welcomed, as it is common cause that agricultural research is overfunded in South Africa. The allocations to the other councils were CSIR, R239-million (up 16 percent); Human Sciences Research Council R75-million (up six percent); Medical Research Council, R44-million (up seven percent), Council for Mineral Technology, R57-million (up seven percent), and Foundation for Research Development, R117-million (up 11 percent)

turn, distribute these funds on the basis of merit and utility to research programmes at universities, technikons and museums.

The Science Advisory Council chairman, former CSIR president Chris Garbers, predicted when the report was released that it would have repercussions this financial year. But these appear to have been confined to cutting the allocation to the Agricultural Research Council by R14-million. The two largest councils, the ARC

Research could boost export market

Science set to play increasingly role as demand for jobs increases

STAR 22/4/93

179A

As South Africa seeks to provide jobs for its growing population and capture a portion of lucrative international markets, science is going to play an increasingly important role.

University of Pretoria dean of science Professor Niko Sauer says while technology often precedes science, it is the scientist's understanding of technology which leads to more refinements of that technology

Research carried out in the laboratory could also provide South African industry with products suited for export and processes which will help add greater value to locally mined raw materials

Sauer points out that inventions devised in the laboratories tend to result in embryo industries, providing employment and future corporate giants.

Says Sauer: "The science faculty wants to be a part of this process

"This is already happening. For example, our chemistry department has invented ways of processing raw materials which we used to export to Japan. These materials were used to make ceramics which we would repurchase at a much higher price. The department has found processes which are simple and inexpensive. And small industries are being created which are based on these inventions

"The faculty is trying to stimulate this activity still further as it provides income for the university and gives the in-



Professor Niko Sauer

stitution a degree of financial independence.

"Our physics department is working on projects which we believe will lead to viable products. Even our theoretical physicists are working on superconductivity and they have made a breakthrough that I believe will move into the electronics field"

Sauer says many current projects require the co-operation of a number of departments in the faculty. He says in the past members of the faculty had tended to work in isolation. "We are trying to create a more inter-disciplinary approach."

Biotechnology is another area of research for the University of Pretoria. The biochemistry department is working on biotechnology of vaccines.

Sauer says the department is making progress in synthesising, for example, vaccines for certain cattle and horse diseases. The vaccines are currently made by making an animal sick and then drawing the serum. The team is analysing the molecular structure of the vaccines.

"I believe biotechnology is going to become increasingly important in South Africa. We have to identify biological material which is available

locally and, therefore, largely adapted to Southern African conditions such as climate. We will have to produce material for food and also to provide the country with plants and animals which we can market," say Sauer.

"The idea is to take existing material and improve upon it

"South Africa has the material. We have these marvellous flowers which grow wild. They are not quite nice enough to market as garden plants, but biotechnology can be used to modify them and create viable products."

The environment is another area of interest for the faculty and it has people involved in the restoration of the dunes in the Richards Bay area after the sands have been mined to extract the titanium oxide they contain.

Sauer says industry is very interested in the whole question of rehabilitating land and in what the university has to offer.

He points out that South Africa needs to develop its resources but at the same time there are ways of lessening the negative impact that such operations might have on the environment.

Most of the faculty's research is aimed at very practical applications as Sauer wants it to make a very "solid contribution" to the prosperity of the country

At the same time there is some pure research being carried out as this is regarded as essential for the faculty's healthy development

Project Renaissance is an innovative education programme which has been developed and adopted at the University of Pretoria.

The project is aimed at students with a high academic potential who have failed to achieve university admission standards because of inadequate preparation at school.

Applied to the science faculty its goal is to enable students to make up short falls in mathematics, chemistry and physics. Students who have successfully completed the programme will also be considered for further study in the faculties of medicine, veterinary science, engineering, dentistry and agricultural sciences.

The idea is that the students should take on a reduced course load during their first year and attend other courses which are targeted at their weaknesses. Provided the students are able to attain the required standard at the end of their first year, they are permitted to increase their courses to the usual levels in the second year.

Keeping ahead of the times

Engineers face a bright future in South Africa

STAR 22/4/93.

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South Africa is in a deep recession and even highly skilled people are being retrenched and may be forced to take employment outside of their area of expertise.

Does this mean that people such as engineers have no future in South Africa?

University of Pretoria dean of engineering Professor Jan Malherbe says the current situation is but a slice of time, and career opportunities in engineering should not be judged against the present backdrop but rather the future needs and prospects of the country.

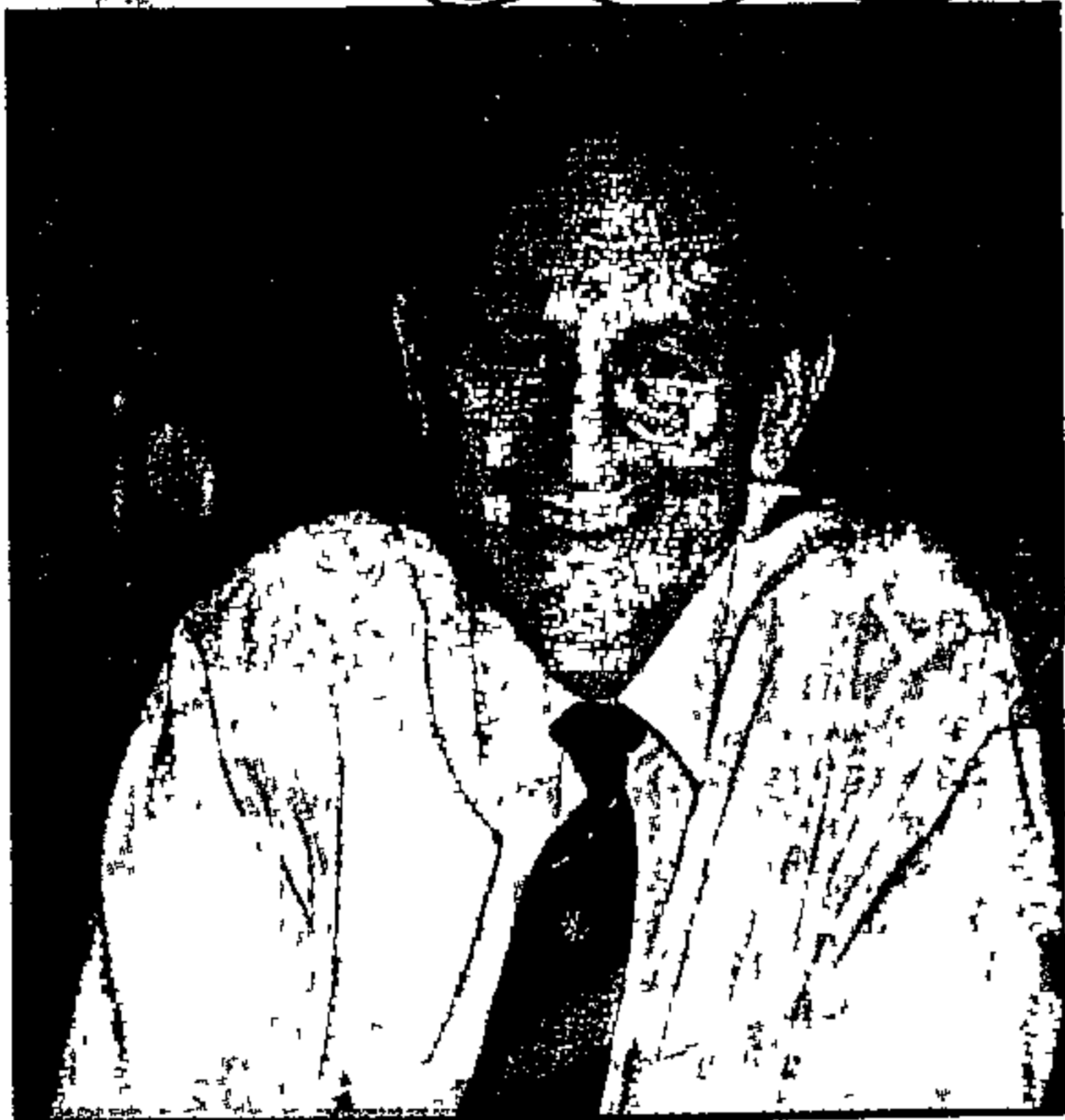
Says Malherbe: "Currently, more than half of our population is under 16 years old. That means that in the next 16 years we are going to need to more than double the number of jobs."

He points out that traditional activities such as hunting, fishing, farming, wood-cutting and mining are not going to be able to provide vast numbers of new jobs.

There are really only two areas of job creation, the service industry and industrial activity. However, growth cannot be sustained with a service industry alone. Malherbe says for a country to arrive at a point where the service sector forms a major component of a country's activity, that country must first go through a process of industrialisation.

Says Malherbe: "We have to provide double the number of jobs in the country as a whole and I believe these jobs should be created mainly in industrial activity. This will require a massive growth spurt in the industrial sector of the economy."

However, while major industrial corporations will wish to increase their turnovers, this will tend to mean increasing use of technology rather than large numbers of new jobs.



Professor Jan Malherbe . . . Dean of the engineering faculty.

He believes the route to take is the production of vast amounts of manufactured goods through small industrial firms. Given the limited size of the local market, such a path will require a high level of exports.

However, Malherbe points out that the international market is highly competitive and dominated by companies which have well-established customers.

Says Malherbe: "Your product has to be substantially better and/or cheaper if you are going to induce people to switch to a new supplier."

"If we intend to compete on the world market in terms of quality and price we will have to opt for the very best, First World technology. We have to produce items such as electronic goods, manufactured mechanical products and automotive parts which incorporate the best materials and alloys. If we don't do this, we will not be able to compete

"Industrialists should take note their survival will depend on this approach and this is going to require many highly trained engineers. As a result parents and school-leavers should be aware that engineering offers vast opportunities."

Engineers are there to solve real problems and much of their training, in whichever of the engineering disciplines they have selected, is targeted at thinking and making decisions.

The challenge to both engineering students and the faculty is enormous. An engineer may graduate at about 23 years of age and have an active working life of more

than 40 years. Considering the ever-increasing rate of development in today's world, training must be geared to enable engineers to solve problems caused by other problems which don't even exist today.

Says Malherbe: "They will have to solve them with methods we cannot even imagine today. They will cope because they have the ability to expand their knowledge — gather information, put it together and construct a solution."

The constant change and advance in technology requires engineers to constantly update their training. It is possible for professionals to keep abreast of developments in their fields on their own. However, this approach is not as effective or as efficient as attending retraining courses where information has been gathered and is presented by professionals

The University of Pretoria's engineering faculty offers a number of courses aimed at engineers who are determined not to be overtaken by change.

In addition, a number of the university's engineering courses are attempting to change the students' mind set away from the idea that the only form of employment is that of working for an employer. Students are being encouraged to see the opportunities offered by self-employment.

New cutting edge for SA technology training

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A MAJOR new initiative aimed at revitalising SA's outdated approach to technology is to be launched this week.

KATHRYN STRACHAN

The worldwide ORT Science and Technology Education Project (STEP) — which focuses on developing nations — is opening a R3m education complex in Midrand on May 6 with international support.

The vision of the project was to set the standard for technological education, said Eisenberg, adding that the Midrand Institute would be followed by the establishment of similar institutions all over the country. Improved technological education would help SA in the global market and fill the void between market needs and what the black school system delivered. SA society was generally seen as "anti-technology", and a shortage of qualified technical teachers and training resources made the problem worse. The lack of international exposure and investment in technology would hamper SA internationally, he said.

Funding has also been received from the IDT, the Canadian embassy and companies including Eskom and Liberty Life. Project executive director Eli Eisenberg said the programme would offer a technology and science-based secondary school, a technology teacher training facility, and a resource centre for developing educational technology.

The uniqueness of the ORT-STEP programme would be the close cooperation between the three components, he said.

Teachers would use the secondary school as a live laboratory — implementing the teaching methods and courseware developed in the teacher training course. The group heading the initiative includes Prof Louise Tager, ANC secretary-general, Cyril Ramaphosa, NECC president, James Maseko, and industrialist Ian Haggie.

Eisenberg said the institute had met local universities to gain accreditation and certification for graduates of the teacher training course, and the ORT secondary school was being registered as a private school.

Major players moving towards consolidation

CONSOLIDATION among major players in SA's information technology industry is well under way, with this week's announcement that Persetech has taken a 70% stake in Tarsus Technologies, and Bateman Industrial Holdings has set up a R100m networking company.

The latter move was made through Bateman company Computer Alliance acquiring Netlink through a share swap with Netlink's shareholders.

Operating under the Computer Alliance banner, the new company expects a turnover of about R100m in the 1993/94 financial year.

Bateman has made a few significant moves into the IT market, having taken a stake in Microsoft distributor Workgroup Systems, and also, recently, having launched a technical document management company, Coherent Solutions.

Computer Alliance MD Chris Botha says his company has seen growth of more than 200% in the past year, largely because of the high growth being experienced in the networking arena. He says margins have dropped by about 3% in that time, and higher turnover must make up for this.

Botha says that whereas many larger groups are being forced to enter the networking market, companies which have been operating in this market for some time have a definite advantage.

"Because of the high capital requirements, consolidation is an important move. There are lengthy lead times between orders and installations."

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The recession has accelerated the move towards downsizing and rightsizing installations through networked systems.

Although there is a conflict in some of the new group's structured wiring systems from SynOptics and Bytex, Botha says Bytex has a "clean Token Ring offering, and this will complement rather than conflict with SynOptics products, which are generalist offerings, and Ethernet systems, which can be mixed and matched".

It is understood that US-based SynOptics will soon be opening a local marketing operation as a forerunner to a full SA subsidiary with direct representation. SynOptics is estimated to have about 40% market share for its product ranges in the US. Turnover this year is forecast at \$1bn.

Both Computer Alliance and Netlink are Compaq value-added resellers, and Botha says the merger will strengthen their position in this growing market.

The group has tied up several contracts recently. Among these is one for Compaq PCs for Telkom, which could involve networking and is believed to be worth more than R10m. Rennies Travel has installed inter-networking for 100 branches, and Eskom installed a SynOptics network.

In the most recent switch, Nissan is downsizing in a R10m deal, moving off outdated equipment to SynOptics. Here, 740 Compaq workstations will be linked over a Novell network to five Compaq file servers and communication servers which will interconnect into a mainframe.

Education project to train teachers

THE new ORT Science and Technology Education Project (Ort-Step) Institute reflected a vision which "could propel our people to great heights", ANC secretary-general Cyril Ramaphosa said yesterday. Ramaphosa, who has been involved with the worldwide Jewish service organisation since its Swedish affiliate offered assistance in mine safety to the NUM in 1988, was speaking at the official opening of the institute at Halfway House to about 100 businessmen, educationists and diplomats.

Its purpose is to train teachers to impart science and technology skills and knowledge. The project, with a R3m annual budget, is being sponsored mainly by donations from foreign embassies and local

private sector foundations. The gathering was addressed also by ORT-SA honorary life-president Judge Richard Goldstone, who said the world was waiting to assist SA, and the country had to put itself into a position where it could accept that assistance. Prof Louise Tager of the Law Review Project is the chairman of the board of the project.

Project executive director Eli Eisenberg, an Israeli-born scientist and educationist, explained the project would provide for "exponential growth" in training as participants would themselves be trained to train other teachers.

ALAN FINE
Bloom 715193

Judge gives go-ahead on lower fees

MARITZBURG — Attorneys are by law entitled to charge lower conveyancing fees than those prescribed, a Supreme Court judge found yesterday in what is regarded as a landmark judgment.

In a reserved judgment, Judge McLaren ruled in favour of Durban firm Shepstone & Wylie, who challenged a refusal by the Natal Law Society to allow them to charge a lower fee for certain conveyancing work than the fees fixed in terms of the Deeds Registries Act.

In his judgment McLaren found that the relevant legislation and public policy did not preclude practitioners from charging less than the tariff.

The judge said in his view the legisla-

Own Correspondent

tion, if correctly interpreted, except where it expressly provided otherwise, did not prescribe minimum fees.

In the light of this finding he was satisfied that the Natal Law Society Council was mistaken in its interpretation of the tariff, the judge said.

Considering the question of public policy, McLaren said having considered everything that had been said, he failed to see how an agreement that a conveyancer would charge a client less than the assumed minimum could offend against public policy.

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Opportunity beckons for PC price war survivors

B/DAY 13/5/93

179A

Reports by
MELANIE SERGEANT

OVER the past five years, SA companies have invested more than R25bn in information technology, of which about R3bn was spent on PCs, and another R4,6bn on PC-related software, peripherals, local area networks and other add-on hardware.

This makes the PC and PC-related market worth about one-third of total IT investment, according to the latest research report PCs and LANs — structure and dynamics from BMI-TechKnowledge.

BMI-T desktop programme manager Jonathan Saulez says the market is fiercely contested by about 100 distributors, and more than 2 500 dealers.

"Given that the market is facing single-digit unit growth, and falling prices, there is growing emphasis being placed on sales of upgrade products, maintenance, networking and peripherals"

Elements which make SA different from some Western PC markets, is the higher proportion of PC clone sales to that of branded machines,

and that there is still a large installed base of XTs and 286-based PCs

Clones have been popular in SA because users are price sensitive, and the rand/dollar exchange rate has played against branded PC prices. Now, however, there is a swing towards brands like IBM, Acer and Compaq, because of their aggressive pricing strategies.

"The PC industry is undergoing some dramatic changes worldwide; profit margins have been eroded so much that many vendors are selling to users directly rather than through dealer networks

"While direct sales cut operating expenses, a solid infrastructure is necessary to ensure this strategy works," he says.

The local market is starting to emulate the international shift away from dealer channels towards direct selling. Companies already in this market include Olivetti, ICL, Umdata's AIT with Dell PCs, Siemens-Nixdorf, and Mustek Electronics.

With the popularity of Microsoft's Windows operating system, Saulez points out that sales of 32-bit PCs have been given a major fillip. "This is because Windows requires more disk space than DOS, and needs to run on higher configured PCs"

Given that the PC industry is experiencing the "tail end" of a five-year product cycle which began in earnest with IBM's 80386-based PCs in 1987, Intel's new Pentium processor and new operating systems from IBM, Microsoft, Sun and others — a new PC product life cycle will be initiated this year, he says.

For companies that survive the current price war, new opportunities in new markets will open up, and higher average selling prices should be fetched.

Another BMI-T report says overall printer revenues grew by 12% in 1992 over the previous year, with the move being towards non-impact technology where unit prices are higher than dot matrix printers.

"The printer market is expected to be worth around R286m this year"

Higher status for technicians to give them equal rank with universities in the field of technology has been urged by a top-level team of experts in a proposed radical overhaul of the education system.

The think tank has stressed, in a special report to the new National Education Forum, that the entire economic outlook hinges on a dramatic increase in the flow of skilled manpower at high-tech level.

The panel was drawn from the Associated Scientific and Technical Societies of South Africa, the Joint Council of Scientific Societies and the SA Engineering Association.

It recommends that the immediate aim be fixed on boosting the annual stream of new engineering graduates from the universities to at least 2 000 a year, and the introduction of strategies and more funding to increase the number of fully-skilled technician graduates to 3 500 a year.

Ideally, the current three-to-one ratio of university/technician students should be reversed to avert a future crisis in skilled manpower shortages that threatened to hamstring the economy.

Panel of experts warns that the socio-economic targets being set by the New South Africa will remain elusive unless radical action is taken to boost the role of technology, reports MICHAEL CHESTER.

Facing a high-tech future

Panel of experts warns that the socio-economic targets being set by the New South Africa will remain elusive unless radical action is taken to boost the role of technology, reports MICHAEL CHESTER.

One idea worth noting was the launch of special post-matriculation community colleges to act as bridges.

Entrance standards at tertiary institutions, says the report, have to be adapted to take cognisance of the disastrous legacy of apartheid education and the paucity of school-leavers properly prepared for tertiary education.

It therefore becomes necessary to judge potential performance, for example, in matriculation examinations among school-leavers in deciding admission.

In an elevation of status, fully-skilled technician graduates from high-tech courses should be awarded degrees, rather than the normal diploma, to put them on a par with university graduates.

The full package of recommendations is intended as the basis of a new education policy for technology, which, the panel believes, should be prepared in close liaison with the National Economic Forum to ensure a balance between skilled manpower supply and demand.

We are convinced that the whole tempo of economic growth will be dictated by the number and quality of engineers and scientists and technologists we produce, says panel member Danie Joubert.

He is human resources staffing manager of Eskom and chairman of the SA Chamber of Business education and training committee.

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have now taken it ahead." Recent studies showed, in the United States, 44 per cent of high school pupils moved on to college education, 30 per cent in France, 26 per cent in Italy, 18 per cent in Germany and 7 per cent in Britain.

In Japan, four in every 100 school-leavers went to college. South Korea, in 20 years transformed from a nation of impoverished farmers into one of the most aggressive of the Far East "economic tigers", was now producing more than 32 000 applied science graduates a year.

Joubert believes South Africa must start at primary school level to find the remedies for its chronic skilled manpower shortages, making mathematics and science compulsory subjects along with English. That would equip pupils with the basic armory needed for future industrial training.

It was vital not only to improve the quality of teaching at all levels but to confront the realities of the appalling conditions in many schools.

The high-tech panel notes, "Most schools serving disadvantaged communities have no laboratories or electricity or running water, textbooks are in short supply, classes are overcrowded, there is a high dropout rate of pupils, teachers face bureaucratic corruption, and often a collapse of discipline."

Serious examination should be made of international trends and practices to work out a balanced syllabus that promoted an innovative technological culture needed to cope with long-term socio-economic targets.

The school syllabus, from primary school to matriculation, needed a practical "Science for All" approach that prepared school-leavers for their future careers, whether they progressed to tertiary level or not.

What is especially disturbing about recent trends is the decline in the proportion of science students, as compared with arts students, at South African universities, says Joubert. "And now the trends have spread even to technicians, whose whole objective was to serve as technical institutes."

The panel was particularly concerned about the low ratio among blacks and females on key technical courses at technicals, from engineering and computer science to agriculture and health services.

Closer collaboration and inter-linkage of the 15 technicals and 21 universities was crucial. Serious problems were inevitable if tertiary institutions tried to "go it alone", pursuing their own self-interest in isolation.

A promising start to collaboration at regional level had been made with the recent launch of the Association of Southern Institutions of Technology, based in the Cape, and the Association of Northern Institutions for Tertiary Engineering Education. But the new approach needed a far wider spread through the education system.

Also, big business in South Africa needed to become more actively involved in scheme with technical training programmes that lasted far beyond matriculation or graduation.

In Japan, several large corporations had launched their own internal "institutes of technology" where the development of semi-skilled, skilled and high-level employees was based on lifetime programmes.

In Taiwan, 205 such corporate institutes were now in operation.

South Africa needed to examine the merits of the system with perhaps several neighbouring companies forming consortia to launch joint institutes in liaison with local university and technician departments.

The panel argues that the solution of a kick-start to an entirely new approach to technology would be the appointment of a National Education Council for Science, Engineering and Technology, with wide democratic representation from all key spheres. □

Access gained to top research

US TECHNOLOGY researcher Forrester Research Inc has appointed SA-based Client-Server SA its local business partner, making possible local access to authoritative research on business and technology issues.

Client-Server SA director Nick Orton says "The reports are useful for decisions relating to areas like downsizing, distributed computing, databases, image systems and many other 'new world' technologies which affect the way firms compete."

Forrester has more than 6000 clients. It uses the research of the US Fortune 1000 companies, analysing relationships between computing, network and software technologies and their effects on business.

In a recent report, Forrester examined the effect of the delay in introducing Windows NT. It bought time for Novell and would leave Digital Equipment Corporation "strung out. There will be no turnaround in Maynard without NT. The company needs the product to drive volume shipments of its Alpha AXP systems. Also, IBM's OS/2 wins a reprieve... it gives IBM another crack at positioning OS/2 for client/server, something the company has failed to accomplish to date."

8/10/93 3/6/93

Symposium set for July

THE critical role of telecommunications under an interim government will be the subject of a symposium scheduled for July.

The symposium will be hosted by the Centre for the Development of Information and Telecommunications Policy. *Buss-day*

The centre plans to formulate recommendations which will be forwarded to the negotiating council's technical committee dealing with telecommunications regulations.

The centre believes access to telecommunications is a prerequisite for socio-economic growth and technological development. *(257)*

It says access to telecommunications is a "basic human right and an important condition for freedom of speech and democracy."

"At present more than 60% of the population is hampered in its participation in the economy by being denied such access."

A source from this centre says it is essential for all interested parties to work together towards a common regulatory environment which will cater for the needs of all sectors of the community. *316/93*

International trends in telecommunications regulations will be discussed by international regulators, foreign telecommunications union members and members of the Southern African Transport and Communications Commission.

Sponsored by First National Bank, the symposium will run in Sandton from July 28-30.

R55m mainframe installed at Eskom

ESKOM has installed a mainframe computer valued at about R55m from Large Scale Systems. The Amdahl 5995M Model 5670 machine is believed to be the largest commercial mainframe computer in the southern hemisphere. *(250)*

Eskom IT production manager Andre Hofer said the system would replace six of Eskom's existing main-

frames and supplement another two mainframes. *Buss-day*

It had one gigabyte of main storage, 512 megabytes of expanded storage, 160 channels and weighed 27 tons. *316/93*

Some of Eskom's existing mainframes were seven years old, and maintenance costs tended to increase with the age of the machines, he said.

Govt 'must help high-tech sector'

Bill Day 10/16/93

MATTHEW CURTIN

GOVERNMENT needs to adopt a multipronged incentive package to foster local research, development and production of high-technology goods if the industry is to prosper in SA, says Altron executive chairman Bill Venter.

SA had only two out of a wide range of incentives currently in place in Taiwan which had proven necessary to develop high-technology businesses worldwide.

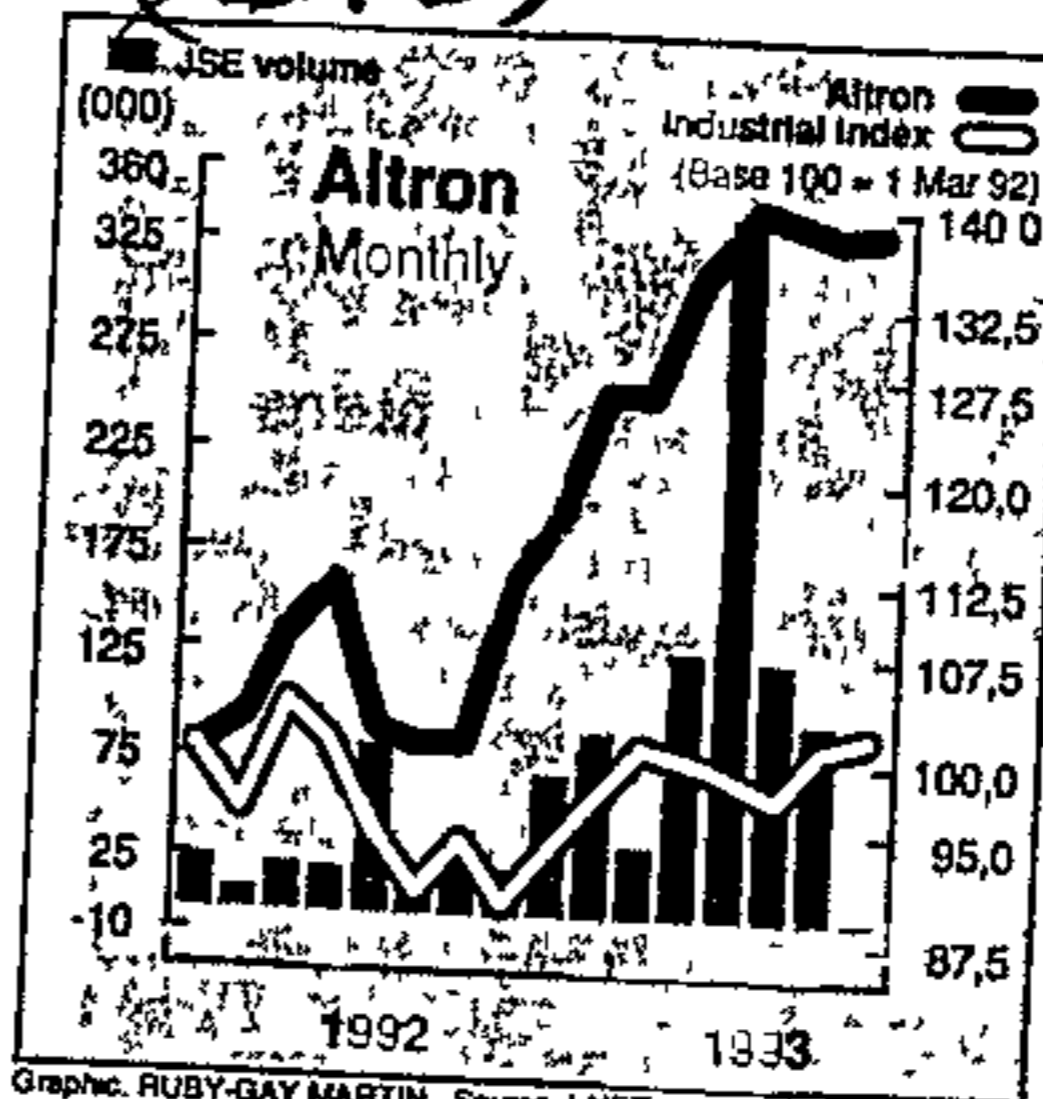
Venter said SA enjoyed export incentives and direct technology development grants, but an effective package would include:

- Development contracts from government-owned companies,
- An "RSA Inc" mind-set to promote buying of local products,
- Accelerated depreciation allowances to promote capital investment;
- Incentives for expanding technology development facilities and new products, and
- Tax credits for new equipment designed and manufactured in SA.

Such a package would put SA on a level with international competitors. Venter said he was encouraged by government's willingness to receive industry nominations for seats on the IDC-chaired standing committee for electronics, which would advise government on suitable incentives for technology development

Group executive director technology David Jacobson said Altron's technology development programme had generated more than R150m in new business. It was vital that private and state sectors collaborated more closely to identify and address priorities in technology development

New areas where Altron was focusing its resources were rural communications, radio telecommunications in Africa, prepayment



Graphic: RUBY-GAY MARTIN Source: I NET

electricity meters and computer-aided mine management.

Venter said Altron — the electronics, telecommunications and power electrics holding company 53,7% held by Ventron — had pulled through a year of "unfulfilled expectations and major disappointments" for business

Venter said many companies were simply reacting to changing circumstances when what was needed was an active approach, "structurally, culturally and commercially flexible to meet the demands of change"

Altron's prospects for 1993/4 were lifted by its strengthened relationships with French and German partners Alcatel and ABB. Alcatel would collaborate with Altech in setting up an advanced software development centre

However, Altron was budgeting in line with economists' predictions that the second half of calendar 1993 would be as uncertain as the first

Venter added: "I wish to reiterate my confidence in the basic, long-term growth prospects of Altron and SA itself."

The group reported attributable earnings of R103m (R92,7m) on sales of R2,72bn (R2,65bn) in the year ended February 28, equivalent to 543,1c (488,9c) a share.

It's a long way to Silicon Valley

Thanks to industrial and economic isolation, the recession and lack of business confidence, SA's two official university-aligned technology research parks are in no position to challenge California's Silicon Valley any time soon

The Stellenbosch Technopark has attracted 20 organisations since its inception in 1986. These include the IDC and Barlows Group company Reunert Radar Systems. At the Pretoria University-aligned park, called



Persequor's Meyer . holding on during tough times

Persequor, 25 companies have signed on since it was established two years ago, including Olivetti

"The development has not grown as fast as expected but, given the economic circumstances, we are doing well," says Persequor director Hugo Meyer

The idea behind technoparks is to provide an environment where academic researchers and their students can pool resources with private-sector entrepreneurs. The parks provide students with a way of commercialising their research and also give businesses the opportunity to stay competitive by having permanent access to the latest basic and applied research at universities.

One of the oldest technoparks is California's Silicon Valley, which started in 1939

when Stanford University engineering graduates Bill Hewlett and Dave Packard rented a garage at Palo Alto to develop a US\$55 audio-oscillator. Their company, Hewlett-Packard, has grown into one of the world's top computer companies

From the Sixties to the mid-Eighties, with the emergence of electronic and computing technologies using the latest developments in silicon chip circuitry, many more "backyard" firms sprang up in the area south of San Francisco. Since then, Silicon Valley has mushroomed into a major computer R&D centre

This concept of mutual co-operation between academic institutions and businesses is popular worldwide. The UK has more than 40 technoparks, each specialising in a particular field. In the US, the spirit of commercialisation has resulted in \$50m in annual royalties to

universities from technopark inventions and products

The local story has been different. Despite its ties to five academic institutions in the region — the universities of Stellenbosch, Western Cape and Cape Town, and the Cape and Peninsula technikons — the Stellenbosch park has attracted only 20 companies to invest in the 50 ha development

There have been few investments in recent years, the large electronics group Altron was one of the first to buy land but decided not to develop it

On the brighter side, however, the IDC's Innovation Centre has proved to be successful and will be expanded, says Stellenbosch Technopark director Johan Malan. Based on the popular "incubators" overseas, it pro-

vides communal work space, secretarial services and facilities such as fax, photocopying, telephones and a discussion room. Experts from the universities' and technikons' law, accounting and business schools are also available for consultations

The aim is to help small entrepreneurs and innovative university researchers who want to commercialise research results or new products but who don't have access to capital, business expertise or support services

The newer Persequor Technopark is in a better position to succeed because of its proximity to private hi-tech industries in the PWV, as well as institutions such as the University of SA, the Atomic Energy Corp, Armscor, the Foundation for Research Development and, just up the road is the CSIR

Typical commercial applications of university research at Persequor include the development of optical-fibre communications modules for telephone, data, voice and video transmission, and the development of electronic hardware and software for testing vehicle suspension

Situated in tranquil park-like surroundings in the hills east of Pretoria, the low-density Persequor development spreads over 66 ha. More than R6m has been invested in the infrastructure and about R20m on building development, with the university investing much of this. A post office, roads and other services have been built but only nine buildings, accommodating the 25 businesses, have been occupied. Another 16 stands must still be sold for the completion of phase one

A luxury hotel, service station and another 70 stands are on the drawing board. If the economy improves, this ambitious project may yet succeed. Meanwhile, an outlying parcel of land is made available to farmers for a fresh produce market on Saturdays

Meyer, who expects more students will use the technopark, is negotiating to open an incubation centre early next year. He also sees the Pretoria University post-graduate business school moving to Persequor.

New science Star 23/6/93 policy unit

A Directorate for Science and Technology Policy has been established at the Foundation for Research Development (FRD) (179A)

FRD acting president Dr. Khotso Mokhele said the directorate would replace the FRD's Advisory Centre for Evaluation and Policy.

Dr Anastassios Pouris, former head of the centre, will become director of the new unit on July 1.

Controversial new law being amended by govt

Bill Day 24/6/93

DRAFT legislation which could have debarred most people in the information technology industry from practising their jobs is being amended by government.

This follows intervention by the National Computing Liaison Committee, an umbrella body for the Computer Society of SA and major IT organisations.

In its original form, the Natural Scientists Act, as proposed by the SA Council for Natural Scientists, would have barred anyone not registered as a "computer scientist" or "computer technologist" from performing any "scientific work" for gain.

The Bill would also have allowed such work to be done only under the supervision of a registered computer scientist or technologist, so all employers would have had to have at least one registered computer scientist or technologist employed - or risk a fine or imprisonment (179A).

The original proposition stems from the draft Natural Scientists Bill of the mid-80s, which was shelved because of objections. The proposal mooted establishing a new class of natural scientists, called computer scientists, whose minimum qualification was a BSc (Computer Science).

The latest draft revives the frozen proposals, and propounds creating computer technologists too, but neither scientist nor technologist is defined, though it is expect-

ed that this will be done by a professional advisory committee for the IT sector.

Computer Society president Piet Opperman says the IT industry recognises that the intention is to protect the public from unqualified or under-qualified people and from unscrupulous individuals who misrepresent their abilities.

However, the majority of IT practitioners objected to the fact that not one industry body had been informed or consulted.

They also protested against the proposal that the IT industry should be represented on the Professional Advisory Committee by the Mathematical Society whose brief, in turn, was to consult with the Institute of Computer Scientists before nominating one IT industry representative to a 20-member committee.

"Also, the society believes the draft Bill ignores the complex ethical issues associated with professional registration."

He says the society believes the computer industry has the means to regulate itself, and called on government to pass enabling legislation for the industry to police itself.

"However, we are concerned that the IT industry has been removed from the ambit of the Natural Scientists Act by decree, on the grounds that it may be reinstated at any time by another edict."

NEWS IN BRIEF

'Boere mafia' held

NINETEEN alleged members of the "Boere mafia", a syndicate specialising in white-collar crimes and which has netted at least R4m, have been arrested in a police swoop.

Almost 200 policemen were involved in a swoop on Sunday night which prevented fraud of about R36m, spokesman Capt Evan Johnson said. Alleged crimes ranged from illegal possession of weapons and cocaine to vehicle finance fraud and theft.

Seventeen of the 19 suspects appeared in the Pretoria Magistrate's Court yesterday. Two more are to appear today.

Wolvaardt posting

PIETER Jacobus Wolvaardt had been appointed ambassador to Brazil, Foreign Minister Pik Botha announced yesterday.

St Lucia report

THE CSIR's final report on the St Lucia dune mining proposals would be published only in mid-September, while the review panel hearings scheduled for this month had been postponed to November, the CSIR said yesterday.

New plant offered

OCEANA Fishing was offering to set up a vegetable freezing plant in Lambert's Bay to stave off unemployment when it closed its fishmeal plant in the town, director Leon Conradie said yesterday. The Food and Allied Workers' Union threatened to seek a court interdict to stop the closure as 100 fishing industry workers could lose their jobs.

Transnet results

IT was incorrectly reported yesterday that Transnet would release its results later in the day. In fact, the results will be announced on August 30 Business Day regrets the error.

REPORTS, Sapa Business Day Reporters,
Own Correspondent

Funding criteria for job creation

BIDAY 3/8/93
GRETA STEYN

THE National Economic Forum yesterday unveiled the criteria to be used in allocating R49m for job creation and said more funds would become available if it appeared necessary.

It also announced that the forum's process committee met the planning committee of the multiparty negotiating process yesterday. Forum labour representative Jayendra Naidoo said it was decided to set up an informal liaison committee between the two bodies to take forward the dialogue on how constitutional issues affected the economy.

The forum has also liaised with the ANC on its strategy to form a "united front" on foreign investment.

Naidoo said the forum was also discussing the restructuring of the SBDC board and working on a policy framework for small business.

Other forum activities disclosed included a meeting yesterday to discuss the latest GATT offer and a meeting later this week on co-ordination of bargaining.

On the job creation programme, forum business representative Bobby Godsell said "We are pioneering a new way of accessing public funds. A partnership is being forged between civil servants and civil society."

The forum invited the public to apply to it for funds, stating it would base its decisions on: the number of jobs envisaged and the period of employment, the amount of state funding needed and details of available

supplementary funds, the usefulness of the goods and services emanating from the project, the envisaged management of the project, audit and financial controls proposed and required for a project of the type envisaged, sustainability of the project beyond the funding period, the project's training component and the value of the skills acquired, the project's envisaged labour standards and how they compare with industrial norms, the nature of community involvement, the regional impact of the job-creating project in relation to undeveloped areas and areas of high unemployment, and social tension and its impact on economic growth.

Applications should also contain details on the sponsoring group and a short description of the project.

Government representative Japie Jacobs said it was impossible to quantify how many jobs would be created. He said government projects financed from sales of strategic stockpiles of R1bn had created about 60 000 jobs. "But this is a new approach, from the bottom up instead of from the top down. We really cannot say how much new employment will be created, but preference will be given to labour-intensive projects." He hoped existing projects would also apply for funds.

Godsell said the programme's most important aspect was the process of involving civil society.

Public sector remuneration increases

PRETORIA — Public sector salaries, wages and bonuses had increased on average by 14,7% in the first quarter of 1993, the Central Statistical Service reported yesterday.

It said that with the exception of the agricultural marketing boards, all other components of the public sector registered increases in total salaries, wages and bonuses — including employer's contributions —

BIDAY 3/8/93
ADRIAN HADLAND

in excess of 11%. The boards showed a 6,8% increase on average. The CSS said at the end of March, the public sector provided work for 1 665 376 people or 8 880 fewer than for the same quarter in 1992.

The self-governing territories had taken on more than 37 000 extra people in the first quarter.

ANC to give research, development incentives

AN ANC government would introduce fiscal incentives for industries to engage in research and development to advance science and technology locally, ANC national science co-ordinator Roger Jardine said yesterday.

Jardine was speaking in Midrand at a seminar on the need for technological advancement.

The conference was hosted by the SA Institution of Mechanical Engineers, Nafcoc and the SA Black Technical and Allied Careers Organisation.

BIDAY 3/8/93
THEO RAWANA

Jardine said the ANC attached much importance to science and technology and SA was not doing enough about research and development and industries were also "falling short" in this field.

"For technical advancement you need to have science and technology in basic education — they should form part of general education," Jardine said.

Companies would be encouraged to conduct research on technical and

economic development and be given incentives for waste and pollution minimisation, he said.

Anglo American executive director Michael O'Dowd said SA should avoid early specialisation.

Students should have a grounding in a broad range of engineering before they limited themselves to a particular sub-branch, he said.

"It seems to me that the scientific basis of engineering is not at all at the cutting edge of science and the mathematics used by engineers in practice is not very advanced."

EMIGRATION Fm 6/8/93

Losing our minds?

SA could still be suffering from a brain drain. Not that Pretoria admits it. Figures from the Central Statistical Service don't record the many professionals who leave as tourists and never return. Instead, they report that, while 898 professional, semi-professional and technical people emigrated in 1992, SA gained 1 608 immigrants in those categories.

Getting perhaps closer to the truth is a survey of 500 managers in industry. Conducted by the Unisa School of Business Leadership and Chicago-based International Survey Research, it shows that one in three managers would leave SA if they had the opportunity. ~~(S)~~ (179A)

In an attempt to stem the brain drain the State-run Foundation of Research Development (FRD) two weeks ago launched a "brain gain" campaign to encourage expatriate scientists and engineers to return, and those still here to stay. Given the appalling level of violence, that looks like a hard task.

Nevertheless, the foundation has been inundated with inquiries regarding the programme, says project co-ordinator Cheryl Hobson. Most have come from scientist and engineers living abroad.

The FRD is promoting the "brain gain" campaign through embassies abroad. The ANC has also been approached for a list of

CONT →

Fm 6/8/93

exiled scientists. Industrial giants like Eskom and Sasol and major universities have also expressed an interest in the project, as has the Medical Research Council, which is also concerned at the outflow of medical personnel.

The foundation is targeting people with leading expertise in priority fields: manufacturing, information technology, communications, biotechnology, construction technology, science education and R&D. "The aim is to bring back much-needed science and technology skills," says FRD director of tertiary education Peter van Eldik.

One way of rekindling their interest in SA, he says, is to stimulate collaboration among themselves as well as with science councils, research organisations and industry in SA. Another option is to offer leading expatriate scientists financial assistance to return. So far the foundation has invested R2m in the project but more funds are expected. The idea is to fund fellowships which will require returning expatriates to work in SA for a minimum of three years. Thereafter, they are likely to be offered permanent employment. ~~(S)~~ (179A)

Natal University head of electrical engineering Ron Harley supports this approach. Top scientists, he says, will uproot themselves only if guaranteed worthwhile jobs in SA.

Van Eldik admits it's difficult to stop people leaving. Critical factors are the state of the economy — there are not enough posts available for highly qualified people — and the continuing violence. But action has to be taken as there's a real fear that when the world recession lifts, many talented South Africans will look for a safer future abroad.

Applications and proposals for funding should be directed to the FRD before August 30. The first grants will be allocated in October. ■

Prosperity from training

Biday 27/8/93
ADRIAN HADLAND

PRETORIA — Training in science, engineering and technology is the key to economic prosperity, says Foundation for Research and Development chairman Johan van der Walt.

In the foundation's 1992/93 annual report, Van der Walt said SA's economy could be kick-started only if people were equipped with the knowledge and skills to improve their own quality of life and create job opportunities for others.

Of the R70m annual budget, R11m had been paid out in university or technician bursaries; R30m in research grants "to maintain and expand the existing knowledge base", R5,6m on supporting technology research; R5m for marine and environmental projects, and R1,3m for the development of entrepreneurship in technology.

"More than ever, our country needs people who can harness science and technology to the benefit of SA and all of its people"

Pay fight still on, say public servants

Biday 27/8/93
ADRIAN HADLAND

PRETORIA — Public servants yesterday rejected government's latest salary offer, saying the additional R150m intended for educators and employees at the lower end of the salary scale was insufficient.

Public Servants' Association GM Hans Olivier said all 11 organisations within the Public Service Caucus, representing an estimated 300 000 state employees, had agreed this week that they could not accept the new offer.

"The bottom line is that we are not satisfied and the fight is still on."

After insisting public servants would receive only a 5% salary increase this year, President F W de Klerk said earlier this month that an additional R700m would be made available to limited public service categories "for the improvement of salaries and other conditions of service".

The state of the economy and levels of public expenditure prevented a higher offer being made, De Klerk told a news conference

On Tuesday this week, it was announced after another round of negotiations that a further R150m would be added to the R700m, leaving government with a public

service salary bill this year of just under R3bn.

"The salaries of the educators at the bottom end of the salary scale especially can be improved significantly" by the extra R150m, a Commission for Administration statement said.

In addition to the R850m improvement, government agreed to begin negotiations on next year's increases immediately

But Olivier said public servants were concerned that, with elections scheduled for the end of April, next year's Budget was unlikely to be announced in March

"We have doubts about how that will happen."

While an additional R850m sounded like a lot of money, it amounted to a 2% increase across the board, he added

Olivier said the caucus had asked the Commission for Administration to return to government in order to seek a mandate for a more satisfactory offer

A 15% increase had been requested, he said.

The commission was expected to respond shortly, after which negotiations would resume

Council roasted over sharp rises in rates

CAPE TOWN — The time taken by the Cape Town City Council to undertake a new property valuation was the real cause of current dissatisfaction over rates increases, SA Property Association (Sapoa) western Cape regional chairman Anton Musgrave said this week.

"If regular valuations had been done, residential property owners would have had a gradual increase in their rates accounts rather than the shock of the current sharp rises in certain wards," Musgrave said

Ratepayers in several Cape Town

LINDA ENSOR

suburbs such as Camps Bay, Bantry Bay and Sea Point, are up in arms about the large increases.

Musgrave said, however, that the effect of the delay was that ratepayers in affluent suburbs had been subsidised over the past 11 years.

It was crucial to the well-being of Cape Town that property valuations be undertaken every three to four years, he said

Sapoa believed that rates for commercial premises in Cape Town were

two to three times higher than those in comparable SA cities, with the commercial and industrial sectors in Cape Town having to bear more than 50% of the burden

This was passed on to tenants and ultimately to consumers

Musgrave said the rates rebate for residential properties had been increased in the latest valuation from 26% to 35%.

This meant that the commercial sector continued to subsidise residential property owners to an increasing degree.

179A

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SA signs technology deal with Russia

By ANDREW BROWN

RUSSIA and SA yesterday signed a five-year scientific and technological co-operation agreement in Cape Town

The document was signed by National Education Minister Piet Marais and Russia's Deputy Minister of Science and Technology Policy Zurab Yakobashvili.

The aim of the agreement is to promote co-operation in the fields of natural sciences and technology by means of research programmes, the exchange of knowledge and expertise, as well as training

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Scientific pact for SA, Russia

SOUTH Africa and the Russian Federation have signed an agreement on scientific and technological co-operation in a range of natural sciences and research programmes

National Education Minister Mr Piet Marais signed the agreement for South Africa

Russian Deputy Minister of Science and Technology Mr Zurab Yakobaschvili signed the agreement for his country

(179A) CT 15/9/98

Scientific innovation shifts to production

ADRIAN HADLAND

PRETORIA — Fundamental changes were being experienced worldwide in the way science and technology contributed to innovation, Harvard University director of science, technology and public policy Lewis Branscomb said at the weekend.

Far more emphasis was being placed on innovation in the production process, he said.

Addressing the Foundation for Research Development's science and technology lunch club in Pretoria, Branscomb said the conventional model of product innovation had become outdated.

In the model, an invention is discovered or developed in a research laboratory, after which a prototype is developed. The prototype is then passed on to the manufacturing sector which devises the appropriate

production tools and processes

"The problem with this process is that the product design is inadequately informed by the need to optimise the production process. It is much too slow."

Branscomb, who was formerly senior vice-president of IBM, said manufacturing firms in the US and worldwide now centred their innovation on the production process.

Through a process of "concurrent engineering", the design and the process definition were developed concurrently and jointly optimised.

Capital equipment investment was being displaced as more intelligent, computer-controlled systems of production became available. These could adapt, through programming,

to the evolutionary changes in both product and process.

"In Japan today, as a result of this innovation paradigm, research and development investments in industry now exceed capital investments in production equipment," Branscomb said.

Technology policy had to be based on the fact that the private sector, and not government, created wealth, using science and technology.

This approach placed less faith than previously in "spinoff" from government's mission-driven technology and "trickle-down" from high science.

"Government's role is to enhance the comparative advantage of firms in international competition and to increase innovation rates and productivity at home," he said.

Science policy under fire

SITWAD 30/1/94

MICHAEL CHERRY reports on a science initiative which academics believe has been hijacked by bureaucrats, both old and new

(1799)

AN initiative to map out South Africa's future scientific policy has come under fire from university scientists.

At a meeting of the Royal Society of South Africa late last year, University of Cape Town deputy vice-chancellor (research) Dave Woods expressed concern that the initiative was a case of "the old bureaucrats and the new bureaucrats getting together".

He pointed out that only one practising scientist, his counterpart at the University of the Witwatersrand, Professor Friedel Sellschop, was represented on the initiative's working group.

Professor Woods echoes the sentiments of a statement issued recently by a meeting of black university scientists, headed by University of the Western Cape dean of science Chris Johnson.

The statement called for "a moratorium on all unilateral restructuring, and the urgent establishment of a national forum on science".

The "Science and Technology Initiative", as it has become known, is intended to be such a forum.

But university scientists are represented on the forum only through the Committee of University Principals, which they feel is inadequate. The initiative was a

response to a report on the country's research system by the International Development Research Centre (IDRC).

It was launched jointly in May last year by the IDRC and the report's sponsors — the ANC, the Congress of South African Trade Unions and the South African National Civics Organisation.

Two plenary sessions have been held, but the driving force behind the initiative has been an eight-member working group.

Two of its members are Dr Chris Garbers, head of the Scientific Advisory Council (SAC), and Dr Rolfe Stumpf, head of the Human Sciences Research Council.

These organisations were heavily criticised in the IDRC report.

The co-chairmen are CSIR president Brian Clark and Cosatu's Jayendra Naidoo.

Other members are Professor Sellschop, Mr Bernie Fanaroff of the National Union of Metalworkers of SA (NUMSA), Mr Cromet Molepo of Sanco, and Mr Roger Jardine, co-ordinator of science and technology policy in the ANC's department of economic planning.

Six priorities have been identified by the group. These are

- A review of the mechan-

ics of the existing science and technology system which has been compiled by Dr Garbers,

● The promotion of transparency in existing processes.

But the group has chosen not to try to intervene in the allocation of the science budget for the 1994/5 financial year. This has angered university scientists who feel they are getting a raw deal under the current dispensation.

The SAC has not made its recommendations to the cabinet public.

The IDRC has criticised this move because it means that the SAC's advice cannot be assessed independently.

● Devising a new science and technology system, which is being co-ordinated by Mr Jardine.

He favours adoption of a model similar to the German Wissenschaftsrat, in which S&T funding remains the prerogative of central government but is administered by a council of scientists and political representatives from each region.

● The national forums on health, industry, electrification, water and housing will enable the research establishments to respond to these major issues.

● Developing human resources in science and tech-

nology similar to the National Education and Training Forum.

Says Mr Jardine, "It is essential to persuade people that upgrading science education is not an elitist luxury, but an economic necessity".

● Governing the research establishment, which requires urgent attention, says the group.

It recognises that scientific councils and public companies, including Eskom, Armscor and the Atomic Energy Corporation, are constrained by legislation.

These organisations have been invited to propose ways of broadening their representation.

Meanwhile, the terms of office of their boards have been extended to June next year.

Despite the university scientists' fears about the role of bureaucrats in the initiative, Mr Fanaroff says the move has had an important spin-off.

The union movement and industry has recognised that research and development spending should be "drastically reduced" by a new science and technology policy.

The question now is whether, in the face of other priorities, this will wash with those elected into government in April 27

Ready for an Africa thrust

Star 7/2/94

SOUTH African skills are about to benefit the whole continent, writes Science Writer Anita Allen (179A)

The science, engineering and technology community in South Africa is ready for a major push into Africa, says Dr Richard Viljoen, outgoing president of the Associated Scientific and Technical Societies (AS&TS) in South Africa.

Giving his valedictory address at the annual meeting last month, Viljoen said his society "is poised to make important contributions to the well-being of Africa. Being part of Africa we have experienced many of the problems common to our neighbours to the north and in many instances we are capable of solving them".

His choice of a pro-Africa theme is not just a string of nice sounding phrases. In the tradition of the AS&TS, which represents 60 000 members of the combined societies of scientists, engineers and technologists, the outgoing president's address directs the course for the forthcoming year.

The World Bank has concluded that if no further marginalisation is to take place in Africa two initiatives are crucial:

- The improvement of training, and creating a core of technical specialists.
- The forging of new partnerships with research institutes and industry in developed countries (South Africa is a developed country in the context of Africa)

Individual SET disciplines in South Africa had already established links with African organisations, Viljoen said. These should be consolidated and expanded with the AS&TS playing a fundamental role as a facilitator.

In the field of education South Africa shared many problems with the rest of the continent, Viljoen said. "Many ideas and actions suggested in our document 'An Education Policy for Technology' (published in October 1993) has relevance to much of Africa".

Regarding the World Bank's second point, Viljoen said that South African companies, particularly in the mining sector, were actively engaged in looking to investment

The African continent hosts many of the world's most important ore deposits, and besides favourable geology, chances of exploration success are attractive because there has been little exposure to new technology for 30 years. In addition, new mineral deposits in South Africa are becoming increasingly difficult to find and are at depths which make mining costly, Viljoen said.

The number of new mines or rehabilitated previous producers in Africa was growing, with SA companies playing an active role in Ghana, the Ivory Coast, Mali, Niger, Tanzania, Guinea and Gabon, Mozambique, Zimbabwe, Zambia, Namibia and Angola.

"A major spin-off of this activity is not only the transfer of SA expertise to Africa, but the fact that nationals from various countries are being brought here to benefit from our training. Many training and job-creation opportunities are emerging in other areas, besides the fields mentioned, eg medicine, housing and schools," Viljoen pointed out.

"The time has come for the establishment of an Africa Science and Technology desk to assist in co-ordinating the efforts on the African continent for the benefit of all. The AS&TS is ready for this challenge."

SITimes 2013/94

R16m boost for research

By CAS St LEGER

A R16-MILLION boost for scientific research in South Africa is being given to local universities and technicians which need to replace obsolete research equipment (179A)

The money, from a state grant, is being distributed by the Foundation for Research Development

A 1993 survey by the foundation showed that local researchers and educators were severely hampered by outdated or insufficient equipment. Only a quarter of existing research equipment was bought within the last five years.

In comparison, the norm in Australia, the United Kingdom and the US, was that at least half of all research equipment be less than five years old.

Research equipment worldwide is rapidly increasing in sophistication

and very often research and training is absolutely dependent on the latest technologies," said Dr Gerhard von Gruenewaldt, Foundation vice president, planning and development.

While decisions on which institutions will receive what money are still being made, most of the R16-million will be used to establish "multi-user" facilities.

These will provide the country's researchers with

technological capabilities to participate internationally at the cutting edge of science.

Attention will focus on programmes where more knowledge will have the greatest impact on South Africa's broad development needs, said Dr von Gruenewaldt.

The new equipment will be placed where it offers maximum access to as many people as possible.

Big boost for research

R16-m is earmarked for science

Star 23/3/94

(179A)

■ ANITA ALLEN
SCIENCE WRITER

Research capacities at universities and technikons are set for a major boost with the announcement yesterday that the government has allocated R16 million for the upgrading and replacement of obsolete equipment.

The grant has been earmarked for the research equipment programme of the Foundation for Research Development (FRD) in the coming financial year, and universities and technikons will be invited to submit applications motivating allocations from the grant.

A 1993 FRD survey revealed the severe limitation placed on local researchers and educators by outdated and insufficient equipment. The investigation showed that only a quarter of existing research equipment had been purchased within the last five years, compared to 50 percent or more in Australia, the UK and the US.

“Research equipment

worldwide is rapidly increasing in sophistication and very often research and training is absolutely dependent on the latest technologies,” said Dr. Gerhard von Gruenewaldt, FRD vice-president of planning and development.

“The R16 million will enable us to bring some of the latest technology in research equipment in to the South African tertiary education sector, enabling scientists to do quality, competitive research and to provide proper training for students.”

A large proportion of the R16 million will be used to establish a number of key-user facilities, placed where they would be accessible to as many researchers as possible, Von Gruenewaldt said.

In particular, attention will be paid to those disciplines and strategic research programmes where advancement of knowledge will have the greatest impact on the broad development needs of South Africa.

'Role of science, Star 19/5/94 technology vital' (179A)

Science and technology will have a major role in the reconstruction and development of South Africa, Minister of Arts, Culture, Science and Technology Dr Ben Ngubane said yesterday.

Addressing hundreds of Human Sciences Research Council staff members in Pretoria, Ngubane said it was well known that South Africa faced a mammoth task of reconstruction and development, and all were aware of the large backlogs in formal-sector job creation, housing, social services and amenities, education and access to land.

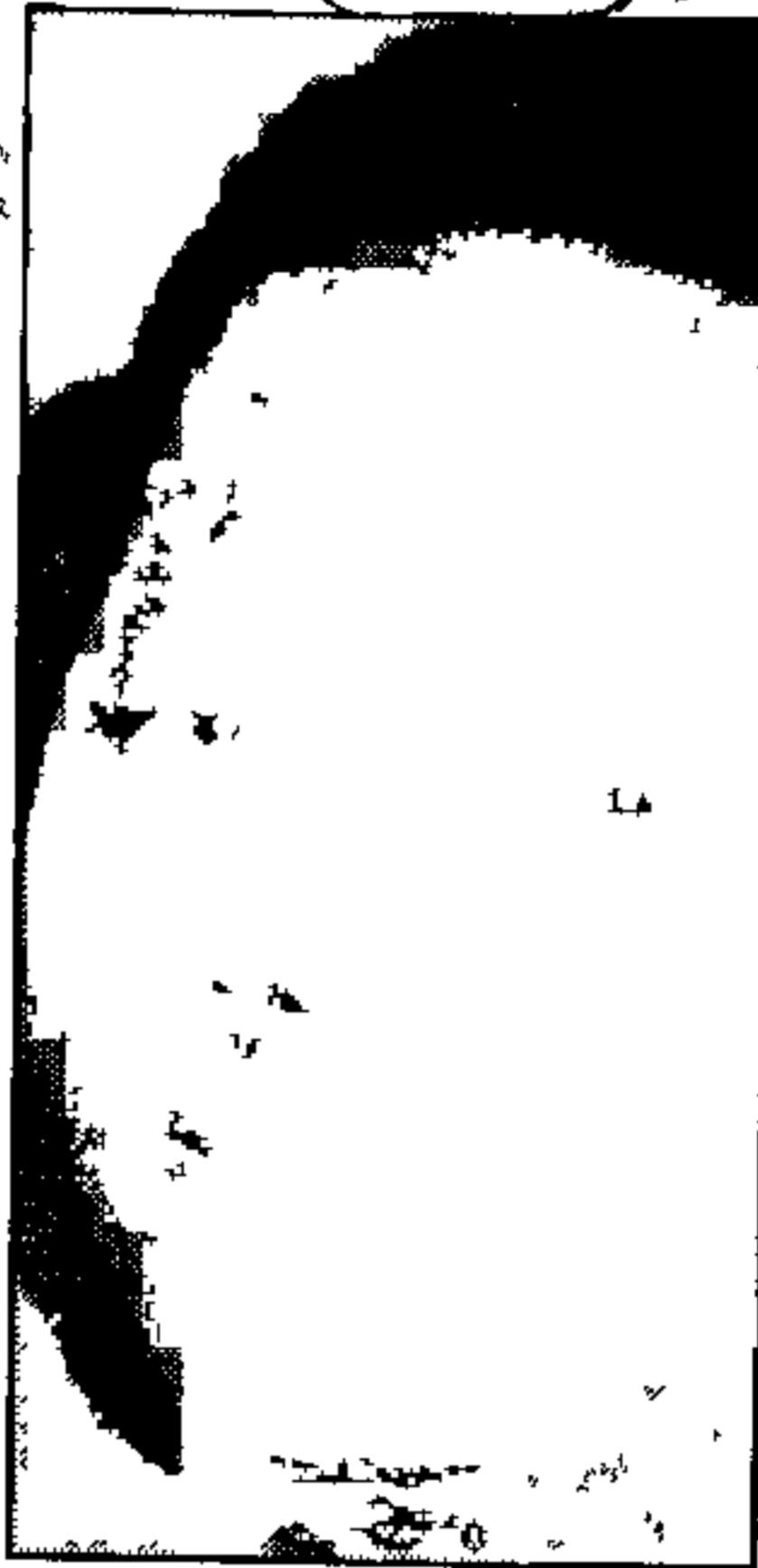
More seriously, he said, the country faced these backlogs at a time when its fiscal resources were particularly strained.

"Our only way out is through innovation in service delivery, development and job creation. We have to do more with the same amount of money. In other words, the State sector must become more cost effective.

He added that the State could not accomplish this alone, but would have to enlist the support of the private sector and communities.

Ngubane said applied science and policy-relevant technology had to play a crucial role in resolving contradictions in South Africa.

"Appropriate research and



Ngubane . . . need to fight poverty and inequality

development must become our weapons in the fight against poverty and inequality," he said.

Ngubane said the country had been spending too little on research and development, at 1 percent of gross domestic product. Although this might be more than in most developing countries it was still far less than in developed countries. It was inevitable that the State would shoulder a substantial part of the national research and development budget. — Sapa

Ad hoc group for Winnie's ministry

Star 27/5/94

BY ANITA ALLEN
SCIENCE WRITER

An ad-hoc committee will be appointed to create as a matter of urgency the structures of government falling under the new Ministry of Arts, Culture, Science and Technology. Deputy Minister Winnie Mandela announced yesterday (1994) (2003)

Its members will be drawn from non-government organisations, community structures, parastatals and industry, and will report to Mandela. It will have a co-chair and a secretariat to ensure that arts and culture, science and technology (S&T) receive equal attention, Mandela told a meeting of the Science and Technology Initiative (STI).

Mandela said there was an urgent need to orientate the arts and culture and S&T sectors to the goals of the Reconstruction and Development Programme and to the economic dimensions of a democratic SA.

Contribution

"The ad-hoc committee will have to begin this task immediately. We invite cultural and scientific organisations to contact us directly to make a contribution to the activities of the committee."

She said the ad-hoc committee would build on the inclusive process on S&T policy development started by the STI. Three framework documents detailing possible structures of government, affirmative action and a national management system for S&T were tabled at the meeting.

37 research projects at 11 institutions

R7,8-m boost for technical training

Star 11/6/94

■ SCIENCE WRITER

The development of technological skills has received a major boost with the award of about R7,8 million for projects at 11 universities and technikons around the country

The 37 industry-driven research projects range from the establishment of a centre of cast-iron technology at Potchefstroom University and a centre of separation technology at the University of the Witwatersrand, to a chrome steel research group at Rand Afrikaans University and a centre of excel-

lence in mechanical engineering at the Pretoria Technikon.

Industry supplied about two-thirds of the amount and the Foundation for Research Development (FRD) made the balance available from funding supplied by the Department of Trade and Industry (DTI)

Stipulation

Funding of the research projects is co-ordinated by the FRD's Technology and Human Resources for Industry Programme (Thrip) with the stipulation that the private sector must contribute R2 for every R1

of the DTI.

"The projects receiving funding reflect the needs of industry. This sector directs these research projects in a market-oriented way to develop human resources and technology," says Dr Tjaart van der Walt, FRD director responsible for industry and entrepreneurship programmes (179A)

"Industrialists indicate their technology needs and go into joint ventures with research institutions. These partnerships receive additional financial leverage by the FRD from DTI funding."

THE Citrus Board is to take legal action against the Trade and Industry Department, which rejected a R36m

YORK TUBMIRAN

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4 BUSINESS DAY, Tuesday, July 12 1994

More research money planned

ARTS, Culture, Science and Technology Minister Ben Ngubane has pledged to increase research spending by almost 600%.

However, pure scientists can take a long vacation unless their work is a significant money earner. Science must show it uplifts society and the economy, he says.

Ngubane said SA spent only about \$26 per capita a year on research and development while newly industrialised countries usually spent three times as much or more.

"Our most immediate task is to get from \$26 to something like \$150 per capita to meet our highest priority needs."

Looking at the statistics as a percentage of gross domestic product makes the Minister even more unhappy. "Our 1% does not compare favourably with Taiwan's 1,7%, Korea's 1,8%, Australia's 1,3% and Canada's 1,4%."

He said leading economies spent up to 3% of gdp on research and development, and SA's urgent objective should be to reach a figure of 1,5%.

However, Ngubane believed that science and technology would make a crucial contribution towards government's reconstruction and development programme.

"To thrive economically we need to become competitive. To be competitive we need to de-

velop an environment that is supportive of innovation. And for this we need education and training to create the best possible skills base."

Between 11% and 14% of his budget would fund basic research; capital expenditure would account for another 12% to 15% and research development would account for 17% and 21%.

He would not comment on the remaining 50%.

Projects already under way include Council for Geoscience surveying work to avoid sitting on new settlements on unsafe ground; support of educationally disadvantaged students by councils such as Mintek and the Foundation for Research Development; the CSIR's assistance to communities to enable people to obtain adequate infrastructure, work on air pollution, roads, drinking water and sewerage treatment.

While Ngubane is thin on figures, he makes it clear that projects that find favour will find funding.

BROWNWEN JONES

He also commissioned AIDS education in the province, which was one of the worst AIDS-hit areas in SA with one in 10 people infected and the rate doubling every 12-13 months.

A priority now is to deal with tropical diseases such as bilharzia and malaria, which he aims to eliminate rather than allow drug-resistant strains "to take hold".

Ngubane believed SA's edge over the rest of the continent would lead to a thriving medical and technology export market. Already the World Health Organisation was expected to award the polio vaccine contract for Africa to SA's National Institute of Virology.

Ngubane and Deputy Minister Winnie Mandela had begun drafting frameworks for a new science and technology policy. As a first step, Ngubane had appointed four key advisors: Human Sciences Research Council vice-president (research) Lawrence Schlemmer, ANC co-ordinator of science and technology policy Roger Jardine; Science and Engineering Academy of SA chairman Gordon Sibya; and National Arts Coalition general secretary Mike van Graan.

Ngubane felt political differences with Mandela would not affect the job "because this is a government of national unity and party politics should take a back seat. She's a good politician. We get on fine," he said.

His background as former KwaZulu health minister keeps Ngubane's heart in medicine. He is proud of what he achieved in that position since April 1991.

A big push on immunisation reduced KwaZulu polio cases to only one or two a season and measles fatalities were sharply reduced. "It gave us a glimpse of what could be achieved."

Foundation plans to cut red tape

CAPE TOWN — The Foundation for Research Development allocated more than R30m to researchers in natural sciences and engineering in its financial year to end-march 1994, the annual report released yesterday showed

The foundation received R118,8m in the form of government grants, which, with other sources, brought its total income for the year to R131,3m.

After all expenses, net income amounted to R383 000.

Its biggest expenses during the period were R69m for grants and bursaries and R38m for salaries, both substantially less than budgeted

Handing the report to Science and Technology Minister Ben Ngubane, foundation council acting chairman Prof Dave Woods said the foundation should strive to eliminate its burgeoning and complex bureaucracy.

SA could not compete globally by relying on handed-down technology and top scientists

EDWARD WEST

were needed to develop new technologies, Woods said

The greatest problem facing African countries north of SA was the loss of scientists to other countries. In this respect, the foundation had launched an initiative to return SA experts to the country, he said

Ngubane said the new government would protect the foundation's research capabilities. Without research it was not possible to create knowledge and to progress.

Foundation president Reinhard Arndt said a balance was needed between development and growth to get SA on the road to prosperity

While development issues, such as poverty, housing and education had to be addressed urgently, investments with economic growth potential, such as in manufacturing, new materials and other cutting edge technologies could not be neglected. (179A)

Constitutional Court judges meet

JOHANNESBURG South Africa's constitutional court judges have held their first plenary session. Court president Arthur Chaskalson said yesterday during a photo session at the court's new headquarters in Braamfontein. "We are discussing what we have to do."

With Mr Chaskalson were nine of the 10 constitutional judges Laurie Ackermann from the Cape judiciary was overseas

All the judges appeared in good humour, with Judge Kriegler joking with photographers:

The first sitting of the constitutional court is expected to be on February 15 and 16 when the judges will consider the death penalty.

Judge Goldstone is to spend the first two years of his non-renewable seven-year term in Bosnia where he is acting as war crimes prosecutor for the United Nations.

FIRST PICTURE: South Africa's Constitutional Court judges (right) are, standing from left, Thole Madala, Richard Goldstone, Catherine O'Regan, John Didcott, Plus Langa, Yvonne Mokgoro, Johann Kriegler, and seated from left, Albie Sachs, Arthur Chaskalson (president) and Ismail Mohammed.



SA, Russia sign pact on co-operation

The Argus Correspondent

PRETORIA. — South Africa and the Russian Federation have signed a historic joint communique that both sides believe will pave the way for a formal protocol on greater co-operation in the fields of science and technology.

Russian Science Deputy Minister Zurab Yakobashvili and South African Arts, Culture, Science and Technology Minister Ben Ngubane signed the document at the opening of the the Russian Expo yesterday.

The communique will pave the way for a more formal protocol subject to the approval of presidents Boris Yeltsin and Nelson Mandela (179A)

BUSINESS PERSONALITY

'Time ripe for technology to assist RDP'

ANDREW MORRIS

Computer Correspondent

ARG. 19-2011194H

179 (A)

DR Jonathan Miller, director of the Centre for Information Systems Research at UCT's Graduate School of Business, believes that a national information technology policy is essential for the country to exploit technology for competitiveness and to support the RDP

Bringing together those interests that will shape such a policy is what Dr Miller sees as the culmination of his recent efforts

Named Computer Person of the Year by the Western Cape chapter of the Computer Society of South Africa, Dr Miller feels that the time is right for information technology to be recognised as a significant force in the development of South Africa. The award was made for his efforts in establishing the centre and for the good work that has been achieved in its first year of operation

"The idea of the centre became clear as a result of my time spent overseas on sabbatical. Worldwide there are a number of such centres, and the aim is to create a direct benefit to business," he said

An example of the link between technology and business is Execugame, a business simulation created using Lotus 1-2-3 which Dr Miller developed some years ago for MBA students and managers. This not only introduced course delegates to computers but demonstrated the power of decision support. Dr Miller continues to use Execugame in his teaching at the GSB

He has not always been on the IT side of the fence. He previously worked in operations research (OR) for companies like Boart & Hard Metal Products and Caltex. But he has always seen his role as an interface between the comput-

er people and managers, and his OR background established his interest in measurement and a concern for managing change.

Dr Miller was born in Port Elizabeth and graduated bachelor of science (honours) in theoretical physics at UCT in 1964. He went on to study for his master of commerce in information systems in 1982 and completed his PhD in 1989

His PhD was awarded for his work in the area of measuring IT effectiveness, which has been developed as an instrument used in a number of companies to shape their IT strategy.

It was while on sabbatical in 1991-92 that Dr Miller had the opportunity to clarify his thinking on the role of technology. Time spent sitting on his mother-in-law's porch on Long Island, New York, connected to the world by his laptop computer, helped him to understand the impact of "teleworking", worldwide communications and the personal computer revolution

Dr Miller is a keen traveller and has developed contacts around the world which have resulted in a number of visiting international academics sharing their knowledge at the GSB. His connections have led him to be involved in the newly formed Association of Information Systems, and to represent South Africa on international bodies in the IT field. At home he is a member of UCT's IT policy committee and vice-president of the CSSA

He said "I love travel — it helps to understand the forces shaping our society and to create focus on the important issues. Cities fascinate me, particularly New York. But I wouldn't want to live there — it's more a flirtation"

Dr Miller's wife Alice, a native of New York, is no slouch when it comes to computing. She looks askance when he takes his notebook computer to

bed, but he says being wired to the world creates an exciting distraction

Living in Hout Bay, Dr Miller likes to spend his free time running in the mountains

Daughters Joanna, 14, and Lorren, 11, are both computer literate and this can create competition in the household for possession of the keyboard. Mrs Miller's work in developing new approaches to teaching is a valuable shared interest for the whole family

"Effective communication is the basis of Alice's work and I'm beginning to see this as an added dimension in the centre's electronic meeting room. We make the assumption that in our increasingly diverse workplace bringing black and white managers together will just work, but our experiences have shown this is not the case and it is certainly not easy"

The centre boasts the first electronic meeting rooms in the country which use a 'groupware' product called Visionquest. This software allows individuals sitting at personal computers to share their thoughts anonymously

"We have found that black managers accept this technology enthusiastically and often it is the first time they have been able to say what is really on their minds without feeling pressured or intimidated"

Dr Miller wants to build on the successes of the centre by continuing to develop international contacts, greater use of the electronic meeting room and shaping IT as a national resource

"I hope to see the development of a national IT policy and increased use of groupware as the result of my efforts. I'm confident about the future and excited about the challenges of change," he said

Comesa states in move to boost trade

(179A)

(179A)

FRUIT 30/11/95

HARARE. — Common Market for Eastern and Southern Africa member states have agreed to accede to the international convention on the simplification and harmonisation of customs procedures in an effort to boost low intra-Comesa trade.

Comesa secretary-general Bingu Wa Mutharika said the treaty, commonly known as the Kyoto convention, simplified customs administration.

"The application of the convention will assist in reducing these cumbersome, time-consuming and costly procedures applied by customs administrations and other organisations in the sub-region in the conduct of international trade," he said in a speech read on his behalf at the continuing Comesa buyers' and sellers' meeting on wood products and furniture.

He said a road customs transit declaration document had also been introduced to facilitate the movement of transit traffic in the 23-member Comesa market.

This simplified and harmonised document replaced the previous 13 customs documents needed when moving goods across borders.

With the new document, transitors would no longer have to fill in new transit declarations and load and unload at every border crossing.

"So the system reduces costs, delays, pilferages and breakages which add to the cost of intra-Comesa trade," said Mr Mutharika.

Trade within Comesa has been static at five per cent for a long time.

Mr Mutharika said the adoption of the Comesa customs bond guarantee system in 1990 was also expected to facilitate Comesa transit traffic.

The scheme enabled transit operators to execute bonds from countries where they are based to guarantee customs duties on transit goods in other Comesa countries through which the goods might pass.

The system was expected to save foreign exchange and do away with the cumbersome procedure of entering separate customs bonds in every transit country.

Mr Mutharika said three member states had already ratified the agreement, with others engaged in transit traffic expected to do so in due course.

— Sapa.

Trade ministers to meet in Zambia

ARL 30/11/95

HARARE. — Ministers from 12 southern African states will gather in Zambia to promote intra-regional trade, according to Zimbabwean officials.

They said the one-day meeting on Saturday of trade ministers from the Southern African Development Community (SADC) was a follow-up to an SADC summit in South Africa in August which failed to conclude talks on a regional trade pact.

"The last SADC summit discussed the possibility of splitting COMESA (Common Market for East and Southern Africa) into north and south. If that happens, we need a trade co-operation protocol for SADC because there's no trading arrangement in place in the region," said an official from the ministry of industry and commerce.

He was referring to a wrangle between the SADC and the larger 23-member COMESA on how to rationalise their activities to avoid duplication of projects which are stretching scarce resources.

SADC comprises Angola, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Swaziland, South Africa, Tanzania, Zambia and Zimbabwe. — Reuter

(179A) (2)

Moving closer to a common market

(17-9A) ST(BT) 3/12/95

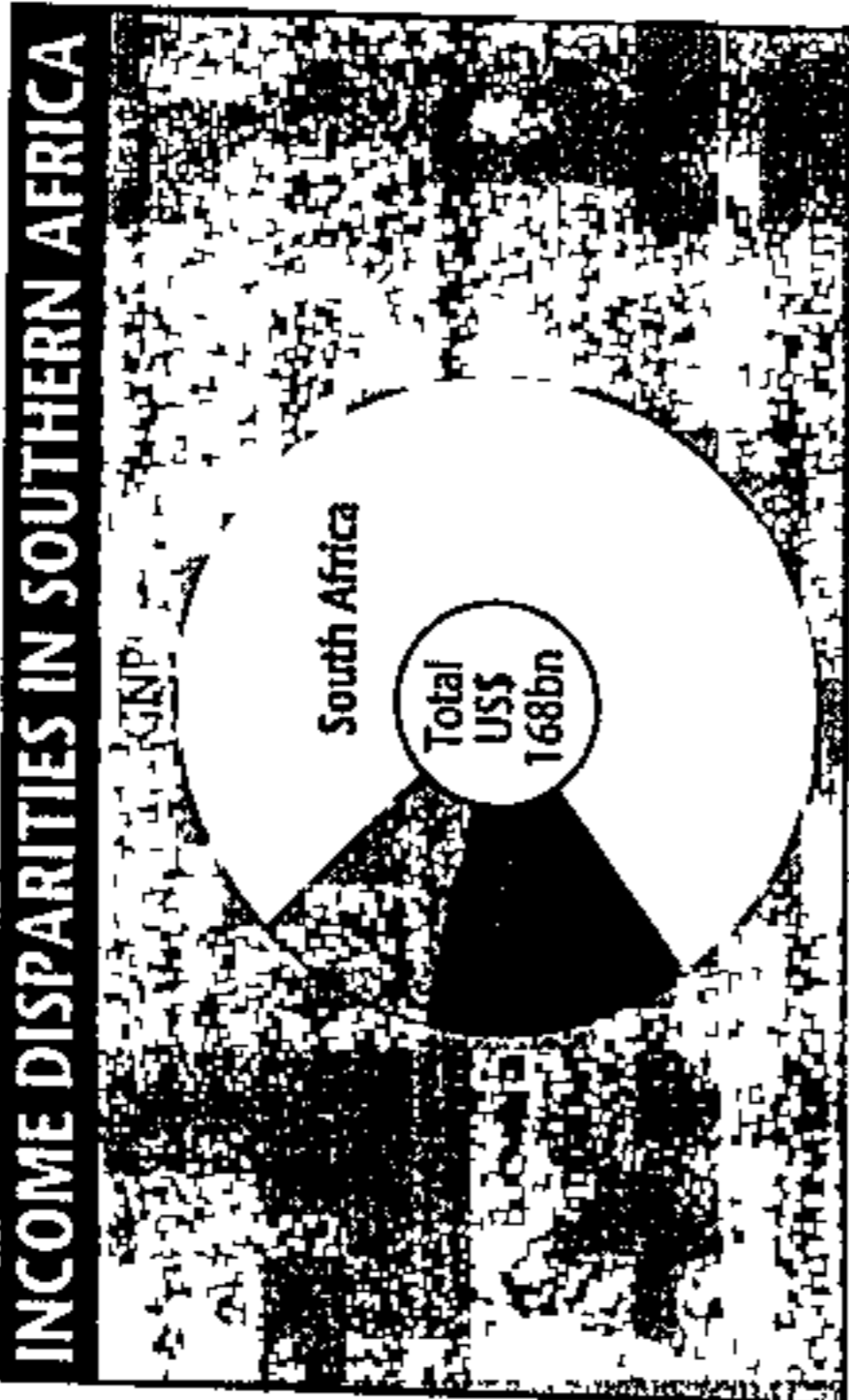
TRADE and industry ministers of the 10 Southern African Development Community countries are meeting in Lusaka this weekend to draw up a draft protocol that will lead, its authors hope, to a regional common market.

Until recently such ambitions, as stated by a southern African minister, would have been dismissed as rhetoric. However, a series of economic, energy and transport initiatives has given substance to these goals.

Already there are agreements on a common electricity pool and developing the regional transport infrastructure.

Over the past two weeks three new initiatives have been announced.

- The SADC Committee of



Governors of Central Banks held its first meeting in Pretoria "to establish a preliminary work programme covering monetary and financial matters". On the agenda over the next few months will be exchange control issues, bank supervision and regulation and the de-

velopment of financial markets;

- Ministers responsible for their countries' water affairs met in Pretoria to lay out the groundwork for a strategy to share and develop these resources;
- The meeting of trade ministers in Lusaka this weekend is perhaps the

THE ECONOMY

After months of debate and rhetoric, the hopes of the Southern African Development Community to create a regional common market are becoming more substantive, writes **SVEN LUNSCHKE**.

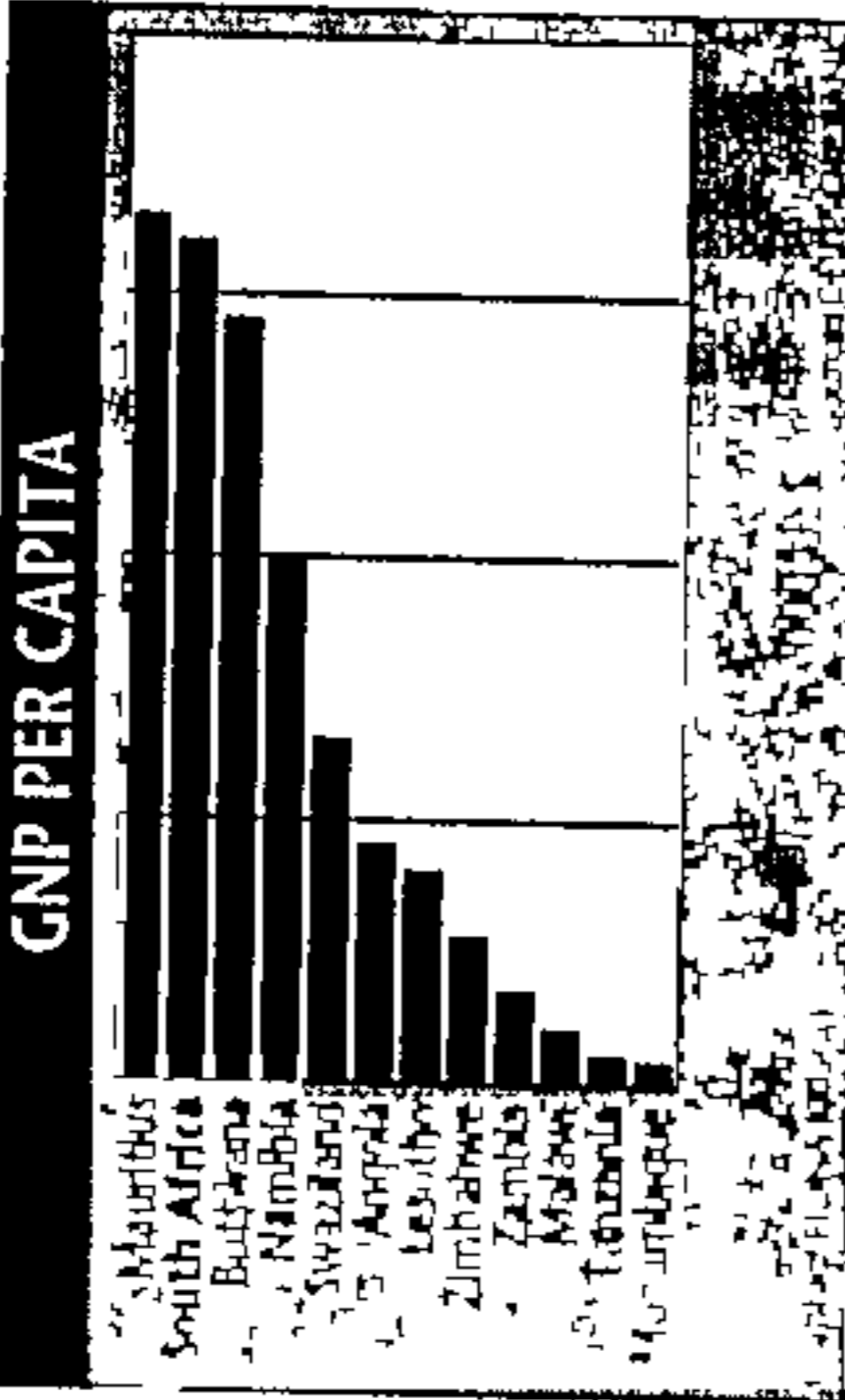
most crucial of the recent measures as it could lay the groundwork for a free-trade bloc.

The authors of the draft trade protocol, to be discussed this weekend, had even loftier aims in mind when they expressed the hope that the protocol "would promote the even-

tual establishment of a common market"

While a common market still seems a fanciful notion at this stage, greater intra-SADC trade alone would be a miracle.

Excluding South Africa, intra-SADC trade amounts to an estimated 6% of the 11 countries' total trade.



The picture looks slightly better if South Africa is included as about 90% of South Africa's trade with Africa — valued last year at about R8-billion — is with SADC countries. SA dominance is also evident in other areas, as pictured in the accompanying graphs.

It is therefore imperative that Pretoria, whose less-than-open trade policy has been severely criticised by its SADC partners, leads the way in implementing the draft trade accord.

The accord outlines a number of steps that have to be taken by member

states to break down their protectionist barriers.

- A gradual reduction and eventual elimination of import duties and other charges on goods originating in member states;
- Elimination of export duties on goods for export to other SADC members;
- Phasing out quantitative restrictions on imports from and exports to other member states;
- Prohibiting subsidies that distort or threaten competition.

Mfundo Nkuhlu, the Department of Trade and Industry's director for African trade relations, says the meeting will assess the timetable and mechanisms for removal of trade barriers and the effect on the economies of member states.

MANPOWER - TECHNOLOGY

1997

and Technology visited Robben Island last week it was not apparent that there was any well-thought-out administrative plan in place to assist Dr Odendaal in his work as interim administrator. Could the Minister tell us clearly whether there is a business plan in place now, or whether there was a plan in place at the time of this unfortunate incident, so that the person responsible can be guided adequately when it comes to taking suitable security precautions?

THE MINISTER OF ARTS, CULTURE, SCIENCE AND TECHNOLOGY Madam Speaker, the commission of a crime cannot, in any way, be governed by a management plan for an organisation or an institution. We have a plan in place. The committing of a crime did not, in any way, impact negatively on the plan that is there.

Business interrupted in accordance with Rule 199 (3) of the Standing Rules for the National Assembly

Prisoners released on parole in 1996

*11 Mr G C OOSTHUIZEN asked the Minister of Correctional Services †

(1) (a) How many prisoners were released on parole in 1996 and (b) what was the success rate in respect of parole supervision in that year;

(2) whether he will make a statement on the matter? N53E

THE MINISTER OF CORRECTIONAL SERVICES

(1) (a) 47 491

(b) 70,9%

(2) No

Unemployment rate for 1996

*12. Mr P G MARAIS asked the Minister of Labour

(1) Whether he or his Department has the unemployment rate for the period 1 January to 31 December 1996, if not, what is the position in this regard, if so, what is the figure;

(2) whether he will make a statement on the matter? N54E

THE MINISTER OF LABOUR

The government relies on data from the October Household Survey, undertaken and published by the Central Statistical Services office once a year.

The data for the period 1 January to 31 December has not yet been published and is therefore not available.

The government is considering undertaking a more regular survey of labour trends to provide more comprehensive data on employment and unemployment. The process of establishing this capacity is under way.

Constitutional Court: cases referred in 1996

*13 Mrs S M CAMERER asked the Minister of Justice †

(1) (a) How many cases were referred to the Constitutional Court in 1996 and (b) how many of these cases were still pending as at the latest specified date for which information is available,

(2) whether he will make a statement on the matter? N55E

THE MINISTER OF JUSTICE

(1) (a) 44 cases were issued during 1996

(b) 13 of these cases were still pending on 7 February 1997

(2) A statement is not necessary

SABC: pirate viewers

*14 Mr M C J VAN SCHALKWYK asked the Minister for Posts, Telecommunications and Broadcasting †

(1) (a) How many pirate viewers were there in the Republic during the period 1 June to 31 December 1996 and (b) what does the total loss of income for the SABC amount to in this regard,

(2) whether he will make a statement on the matter? N56E

THE MINISTER FOR POSTS, TELECOMMUNICATIONS AND BROADCASTING.

(1) (a) The SABC has only the All Media and Products Survey (AMPS) figures (a test sample of 16 000 participants) that incorporate the whole of South Africa for a given year. Separate figures for the former TBVC countries are not available. Therefore, the 57% piracy rate calculated according to these statistics is a distorted percentage.

Legislation to incorporate the former TBVC broadcasters is still to be passed in Parliament, which will allow the SABC to collect television licenses in these areas and thus reduce this piracy rate figure.

(b) The 57% as referred to above would imply an average loss of gross income of R400 000 000 should the SABC have the right to collect licence fees in the whole of South Africa.

Calculations are as follows

Scenario A

43% generated a net income during

1995 / 96 license year of R288 000 000

thus 100% could generate

a net income of R650 000 000

A net loss of income of R362 000 000

or

Scenario B

57% x 5 200 000 (households in the

whole SA according to AMPS) x

R150,00 (average fee per household) =

A gross loss of income of R444 000 000

Illegal casinos

*15 Mr S J SCHOEMAN asked the Minister of Trade and Industry

(a) How many illegal casinos were operating in South Africa during the period 1 July 1996 to 31 January 1997 and (b) what did the

turnover of such illegal casinos amount to during this period? N57E

THE MINISTER OF TRADE AND INDUSTRY

(a) The statistics at the disposal of the Department of Trade and Industry are only in respect of the number of legal casinos operating in the Republic. No factual statistics regarding illegal casinos are available. The physical regulation of the casino industry will be managed and controlled by the provinces within their various jurisdictions. The Department of Trade and Industry will, in co-ordination with the National Gambling Board, continuously oversee and manage the promotion of uniform norms and standards that should generally apply throughout the Republic regarding the casino industry. As soon as all the provincial gambling boards are established, the Department of Trade and Industry will set up a section to collect all relevant statistics and store them on an appropriate computer system.

(b) According to the August/September issue of the *Gaming for Africa* magazine, the estimated 1996 gross gaming revenue was R1,7 billion for the legal industry and ± R2,6 billion for the illegal industry.

Qualified apprentices in 1996

*16 Mr A H NEL asked the Minister of Minerals and Energy †

(1) (a) How many persons qualified as apprentices in 1996 and (b) what was the pass rate in this regard,

(2) whether he will make a statement on the matter? N58E

THE MINISTER OF MINERALS AND ENERGY

(1) (a) 1 014

(b) 78%

(2) Over the last five years there has been a steady decline in the number of apprentices in training. In 1996 this figure was 3 061 compared to 4 402 in 1992. The decline is a result of the rising cost of training. The Mining Industry Engineering Trades Training Board, the statutory body responsible for most of the training, is constantly seeking ways to make the training cheaper without compromising on the set standards.

Public Service: filling of 11 000 posts

*17 Mr S J DE BEER asked the Minister for the Public Service and Administration †

(1) Whether his Department has abandoned the special campaign to fill 11 000 posts in the Public Service if not, what is the position in this regard, if so, (a) why and (b) how many of these posts have been filled,

(2) whether he will make a statement on the matter? N59E

The MINISTER FOR THE PUBLIC SERVICE AND ADMINISTRATION

(1) No. The Department for the Public Service and Administration is in the process of transferring responsibility of this exercise to the respective national departments and provincial administrations.

(2) Monitoring with regard to the progress made by departments/provincial administrations in filling these vacancies was done constantly. During May 1996, it was identified that due to the processes of rationalisation and transformation of the public service, departments/provincial administrations had abolished 4 222 posts. Other vacancies under this project were subsequently redefined by various department/provincial administrations and thus not considered part of the ± 11 000 posts exercise.

This has resulted in 2 311 posts being filled by means of transfers, promotions and appointments of candidates. Of this total, 1 209 candidates have been recruited from outside the

public service and 1 112 posts have been filled through promotions and transfers. However, there are 3 307 vacancies that are yet to be filled by departments/provincial administrations. The respective departments/provincial administrations will henceforth take the responsibility and accountability for filling the remaining posts.

(2) No

SABC: National Symphony Orchestra dissolved

*18 Mr M C J VAN SCHALKWYK asked the Minister for Posts, Telecommunications and Broadcasting †

(1) Whether the SABC has decided to dissolve the National Symphony Orchestra if not, what is the position in this regard if so, for what reason,

(2) whether he will make a statement on the matter? N60E

The MINISTER FOR POSTS, TELECOMMUNICATIONS AND BROADCASTING

(1) Yes. The SABC has decided to stop funding the National Symphony Orchestra (NSO). The NSO costs the corporation about R15 million per annum.

(2) The decision was taken in the light of the corporation's efforts to channel its resources to its core areas of competence. The corporation is faced with new challenges brought about by the emerging broadcast environment in the country and the need to deliver fully fledged public broadcasting to the entire South African nation.

The corporation is faced with prospects of revenue decline as a result of the licensing of new broadcasters, while at the same time expenditure is increasing due to broadcasting in all 11 official languages, the upgrading of the African Language Radio/stations, increase in local content programming and providing educational programming.

The SABC believes that the NSO has succeeded in crossing the cultural and colour barriers in its musical performances, and is an asset to South Africa. Various initiatives have since been launched to secure external funding that would ensure the continued existence of the NSO.

On the other hand the SABC management is involved in negotiation with the Union, BEMAWU representing some NSO members with a view to find solutions to any possible labour implications that might arise from the decision taken by the SABC.

Liberation movements/political prisoners' pensions

*19 Dr T G ALANT asked the Minister of Finance †

(1) Whether his Department is going to pay pensions to former members of liberation movements and political prisoners if so (a) to how many persons and (b) what is the amount involved in this regard,

(2) whether he will make a statement on the matter? N62E

The MINISTER OF FINANCE

(1) (a) Pensions are payable in terms of the stipulations of the Special Pensions Act, 1996 (Act 69 of 1996)

It is not possible to state how many persons will be receiving pensions as the relative applications are still being considered by the Special Pensions Board.

(b) An amount of R450 million has been budgeted for the 1996-97 financial year, as the Special Pension takes effect from 1 April 1995.

(2) As Dr Alant was the person who negotiated the Closed Pension Fund for the former parliamentarians and was part of the JSOFS deliberations in drawing up the legislation referred to above, he is well

aware of the modest pensions envisaged. This is particularly so when compared with the inordinately generous payments the NP awarded itself.

SAA: market share in 1996

*20 Dr D J DE VILLIERS asked the Minister for Public Enterprises †

(1) Whether the market share of the South African Airways decreased in 1996, if not what is the position in this regard, if so (a) what was the percentage decrease and (b) what were the reasons for this decrease

(2) whether she will make a statement on the matter? N63E

The MINISTER FOR PUBLIC ENTERPRISES

(1) Yes, the market share of the SA Airways decreased in 1996.

(a) It is not in the commercial interest of the Airline to make this information available.

(b) The decrease however, was offset by the growth in the market itself. The market share decreased because of increased competition, particularly from international airlines flying into South Africa. It must be borne in mind that if the foreign airlines did not fly into South Africa, SAA would not have had the capacity to cater for all the passengers wishing to come into the country for tourism and business. The consequence would have been a loss of revenue and trade for the country.

(c) Measures to enable the Airline to hold its own against the competition are being taken. They include the following:

(i) Modernisation of the fleet through an acquisition of two Boeing 747s to be delivered in 1998 and through the refurbishment of older aircraft in the fleet, particularly in first and business classes.