

Sida Support to Telecom in Southern Africa

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and Economic Cooperation**

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Sida Evaluation 98/1

**Department for Infrastructure
and Economic Cooperation**

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Sida Evaluation 98/1
Commissioned by Sida, Department for Infrastructure and Economic Cooperation

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Registration No.:
Date of Final Report: September 1997
Printed in Stockholm, Sweden 1997
ISBN 91 586 7572 8
ISSN 1401—0402

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Abbreviations

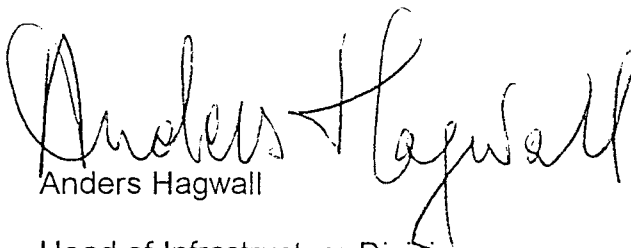
ADB	African Development Bank
AGO	Angola
DNCT	Direcção Nacional de Correios e Telecomunicações - Angola's regulatory authority
DTI	Danish Teleconsult International A/S
ENATEL	Empresa Nacional de Telecomunicações - UEE (Angola) -Telecom operator responsible for the national network
EPTEL	Empresa Pública de Telecomunicações (Angola) -Telecom operator responsible for international traffic
ERP	Economic Recovery Programme (in Tanzania)
hrs	hours
ISO	Swedish Management Group
LTC	Lesotho Telecommunications Corporation
MIS	Management Information System
MOZ	Mozambique
MOU	Memorandum of Understanding (between TTCL and TCC)
NAM	Namibia
NCC	Namibian Communications Commission
NITC	National International Transit Exchange (in Maputo)
SADC	Southern Africa Development Community
SEK	Swedish Kronor
SIDA	Swedish International Development Authority
TCC	Tanzania Communications Committee - Regulatory agency
TDC	Tecnologia das Comunicações - Portuguese consulting firm contracted for work with DNCT in Angola
TDP	Telecoms Development Program (in Mozambique)
TDM	Telecomunicações de Moçambique, E.P.
TP&TC	Tanzanian Posts and Telecommunications
TRP	Telecommunications Restructuring Programme (in Tanzania)
TTCL	Tanzania Telecommunications Corporation Ltd.
TZA	Tanzania
USD	United States dollar

PREFACE

The evaluation of Sida's institutional support to the telecom sector in Southern Africa was carried out by Swedish Development Consulting Partners AB (SDPC) in early 1997. A seminar was arranged in June 1997 to discuss the conclusions presented in a draft report submitted in May 1997. Having received comments from Sida, SDPC submitted their Final Report in September 1997.

Sida has found that the Final Report provides useful insights into problems related to the governance of public enterprises. The report clearly demonstrated the risk that public interest (including development cooperation) might become "captured" by public monopolies. At the same time there are a number of conclusions in the report with which Sida does not agree. Detailed comments from Sida are provided in Appendix 2 to this report.

Stockholm 1997-01-27

A handwritten signature in black ink, reading 'Anders Hagwall'. The signature is fluid and cursive, with the first name 'Anders' and last name 'Hagwall' clearly distinguishable.

Anders Hagwall

Head of Infrastructure Division
Sida

Our Conclusions

The Task and the Setting

Under the Terms of Reference for this evaluation study SIDA required the Consultant to identify and analyze

- the accomplished relevance,
- achievements of objectives,
- efficiency and
- sustainability

of a set of SIDA funded Institutional Development Projects in the four southern African countries; Angola¹, Mozambique, Namibia and Tanzania. This section summarizes the answers to each of the above four main questions.

The projects have formed part of the respective countries' telecom sector reform programs. They were carried out in the period 1989/90 to 1996, which is also the time span covered by this evaluation. The total cost of the projects has been SEK 441 million. Two Swedish consulting companies, Swedtel and ISO, have been responsible, individually or jointly, for the administration of over 90 percent of the input. The geographical and consultancy distribution of the projects, in terms of their costs, have been as follows:

Country Consultant	Angola	Mozambique	Namibia	Tanzania	Total (SEK million)
Swedtel only	28.2	51.0		127.1	206.3
ISO only			17.0		17.0
Swedtel/ISO	129.2	59.6			188.8
Other consultants	3.7			25.0	28.7
Total	161.1	110.6	17.0	152.1	440.8

The beneficiaries of the aid have been the four national telecom operators (Angola Telecom, Namibia Telecom, TDM in Mozambique and TTCL in Tanzania) and, in three of the four countries, also the regulatory agencies. Support to the latter has, however, accounted for less than seven percent of the total. In Mozambique and Namibia the projects in support of the regulatory agencies were discontinued prior to their contractual expiry date.

Given the nature of the projects, namely that of fostering and supporting change and improvement in institutional performance, the evaluation has focused on measuring change in organizational performance in the course of the period during which the projects have been implemented. Although the period of study is relatively long, between three and five

¹ The evaluation of the support to the telecom sector in Angola was to be limited to a desk review of material available within SIDA. Efforts to complement the very limited data within SIDA were made but the results were meagre. The Angola review is therefore very limited in scope.

years depending on availability of data, it is conceivable that some effects of the projects will become visible only at a later stage.

The evaluation concerns itself with mainly those aspects of the respective organizations' performance that can be quantified and measured. The interaction over many years between the staff of the telecom operators and relatively large consulting teams will have produced a number of effects of a positive and lasting value that would be apparent to the persons involved. An independent evaluator, with no prior knowledge of the operators, can, however, only take such effects into account to the extent that they have an impact on quantifiable performance indicators.

Accomplished Relevance

We have postulated

- firstly, that the projects' contribution to the Swedish development objectives should be in the form of economic growth, best measured as added value,
- secondly, that institutional development can only be relevant if the public sector reform that it supports makes sense, and
- thirdly, that a reform process comprising transfer of a civil service activity from the public sector to the business sector, achieves no purpose unless it is combined with mechanisms to set and enforce tangible and measurable organizational goals.

We have concluded

- that no measurable goals were defined for either the reform process or the institutional development projects,
- that the institutions concerned do not appear to have created any added value for the four economies in the form of either consumer surplus or increased institutional surplus during the course of the projects,
- that the reform process has so far failed to produce measurable benefits, and
- that the institutional development efforts funded by SIDA have therefore hitherto lacked relevance.

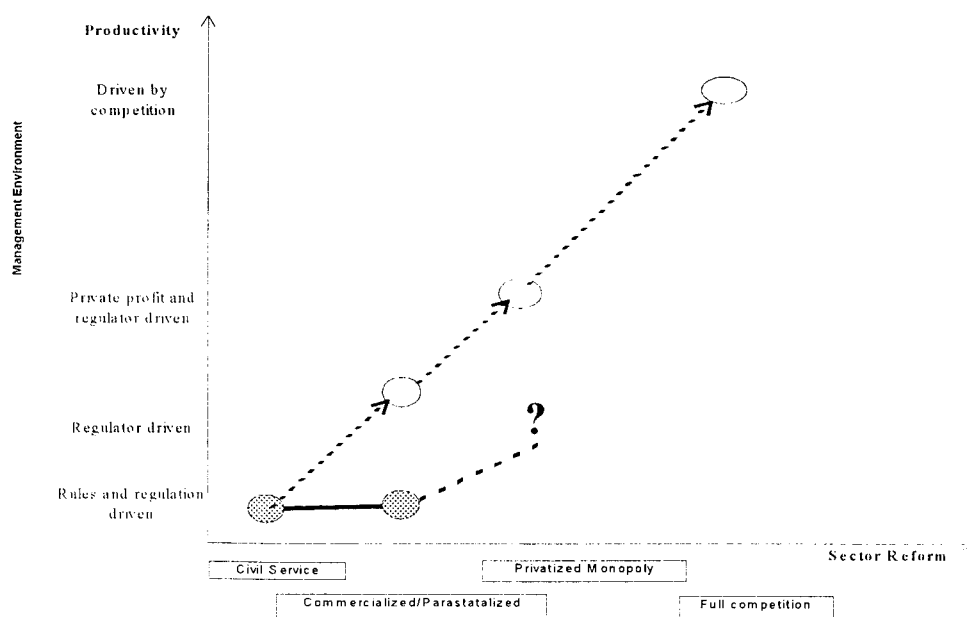
The evaluation has therefore not been able to find any relevance of the Institutional Development Projects for either the six Swedish development objectives or the national telecommunication strategies. Nor could they be said to have relevance in relation to project specific objectives since those have not been specified.

The public sector and its activities are essentially rule driven. Such an environment can tolerate vague goals because procedures, regulations and directives govern conduct. This allows the public sector to simultaneously serve a wide range of objectives, to resolve conflicts of interests and to cater to the needs of stakeholders with opposing objectives.

The business sector, on the other hand, is essentially result driven. It must have clear and easily measurable goals for its activities because it has few rules of conduct. Without the discipline of risk, competition or, for monopolies, the supervision of a strong and

competent regulator, the business sector produces few results but a lot of questionable conduct.

Institutional Development can replace neither the discipline of the market nor the power of the regulator. It can only complement these factors and without them it lacks relevance. The process of transition, for which Institutional Development must have relevance and should as its long-term goal create a competition driven environment, which would enforce performance with minimum need for regulation. Until this is achieved, competent and decisive regulation is a necessary prerequisite for the reform process.



Since inadequate attention has been given to the regulatory function the process is currently off-track. Institutional Development can have relevance only if the reform process can regain its direction.

Achievements of Objectives

Changing Objectives or No Objectives?

The Terms of Reference suggest that the objectives of the support have changed in step with changes within the organizations concerned, changes within the countries, global development in the sector, etc. The evaluation has not been able to substantiate this. The project documents do not contain a uniform and consistent definition of the objectives of Institutional Development. The documents define the input but not its purpose and the executing consultants have by and large provided the input required by the project documents.

This evaluation has therefore postulated that Institutional Development should serve to enhance the institution's capacity to create value for its subscribers and/or owners. Such

value can be in the form of better service, expanded network, lower tariffs and/or higher operational surplus. The evaluation has endeavored to measure the change in a set of parameters that mirror the respective institutions' capacity to create such value.

The evaluation has concluded that overall performance of the beneficiaries of the projects, the various national telecom operators, has remained static and, for some, even shown a decline with respect to such measurable performance indicators as return on capital, capacity utilization, expansion of network and service quality.

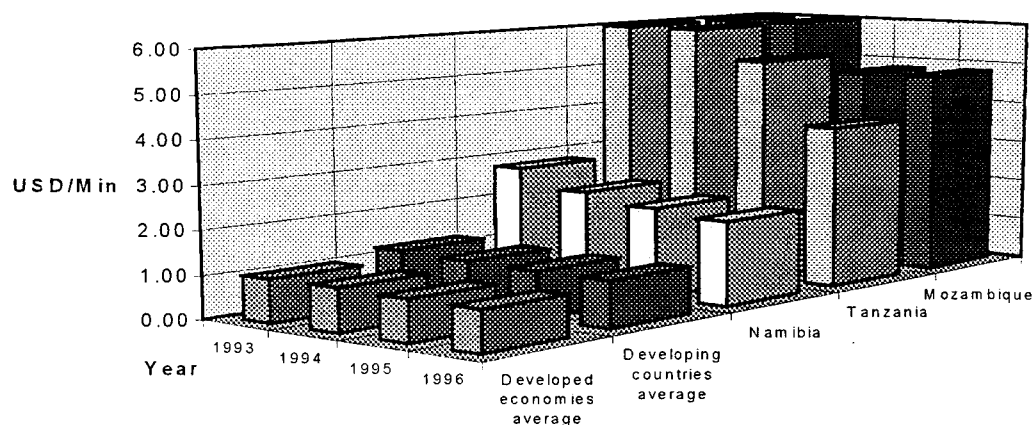
Shrinking Consumer Surplus

If this development had been combined with reduced costs for subscribers, the telecom operators could, in spite of static performance, nevertheless have created an increased consumer surplus. The consumers would have received an unchanged or slightly inferior service for a lower cost. But this does not appear to have been the case. All four telecom operators have considerable influence over tariffs, especially local call tariffs, which they have used to increase the cost to the consumers. These increases have more than offset the reductions that competition has forced upon them in the case of international calls. The indications are that consumers have had to pay more for an unchanged or declining service. Consumer surplus appears to have declined.

High Cost International Telephony

Increased cost of telephony for the large majority of subscribers that use their phones for only local calls could be difficult to avoid in a situation where high international tariffs have to be adjusted to the international level. Such an adjustment has, however, not taken place in any of the countries under study.

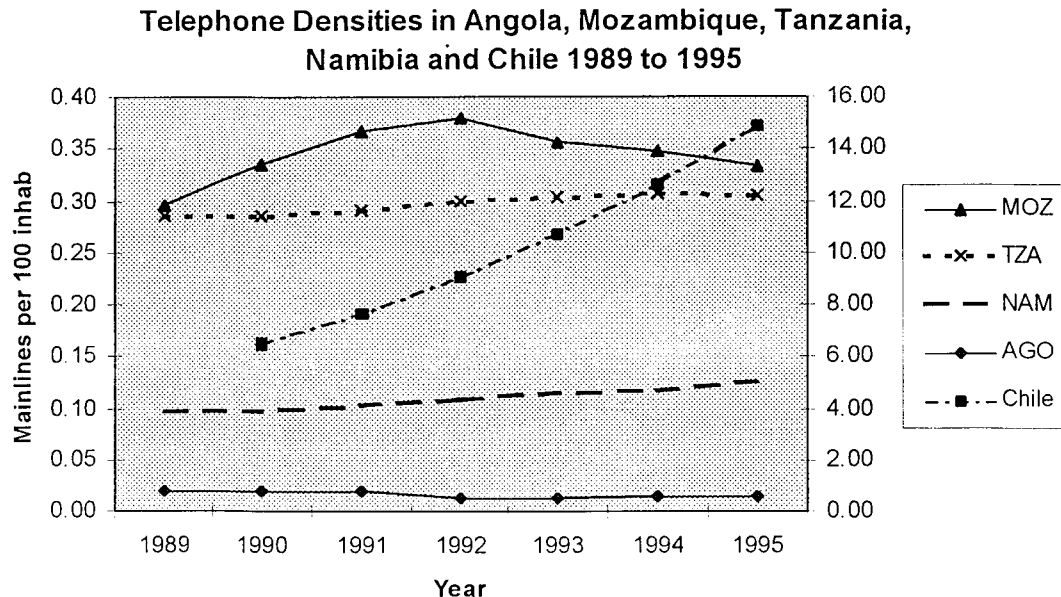
Comparison of International Tariffs



In spite of declining international tariffs, Namibia, Tanzania and Mozambique remain some of the most expensive countries in the world for international telephony.

Only One Network Expanded

Three of the four operators have not been able to expand their networks. Tanzania's network has declined instead, and even Namibia, the best performer in this regard, lags far behind the expansion achieved in a privatized environment, such as that of Chile.



The left y-axis pertains to Mozambique and Tanzania, and the right to Chile, Namibia and Angola.

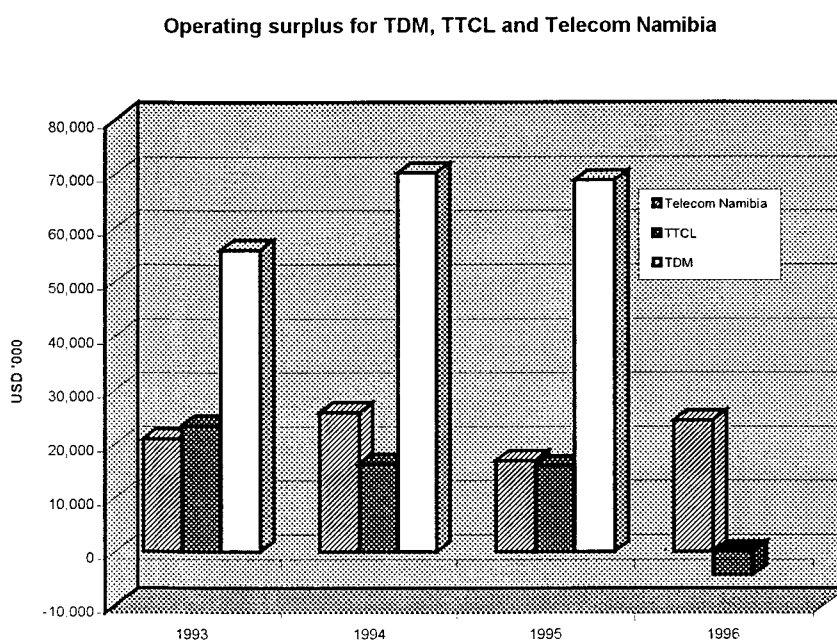
Namibia was the only country that was able to expand the network. Although demand remained unsatisfied this expansion coincided with a sharp decline in capacity utilization of the entire network. This suggests that the organization's internal efficiency leave much to be desired. In short, the record suggests that the operators' capacity to manage assets is trailing far behind their ability to acquire them and that the Institutional Development Projects have not managed to change this.

No Consistent Service Improvement

Notwithstanding a strong emphasis on customer orientation, it appears that the reform process and the Institutional Development Projects have failed to produce a consistent pattern of improved service. Nor has it resulted in an expanded range of services. While TDM initially recorded improvements with respect to service level, the latter part of the period showed a decline for some of its service indicators. Namibia Telecom was the only operator, which has been able to maintain a modest rate of improvement. TTCL's data on its improved service level has little credibility among the customers. In fact, TTCL is often suspected of causing deliberate service defects in order for its staff to be able to use defaults to extract extra income from subscribers.

Financial Performance: from Lackluster to Alarming Decline

The financial performance of the organizations has shown no lasting improvement in Mozambique and a decline in the case of both Namibia and Tanzania (no data has been available for Angola Telecom). Comparable financial data for the three operators in Namibia, Tanzania and Mozambique respectively, exist only for 1993-1996. Prior to 1993, the organizations were government departments that did not compile their results in a manner that would allow a meaningful comparison.



The Institutional Development Projects have not improved financial performance, at least not yet.

The financial performance of Namibia Telecom has been the most disappointing. In spite of an enlarged and modernized network and notwithstanding sharply increased local tariffs and the largest single investment program of all four countries, Namibia Telecom's operating surplus declined from around USD 25 million in 1994 to only USD 16 million in 1995. The increase the following year did not suffice for covering the increased capital cost resulting from a USD 100 million investment program. Net profit at the end of the period was therefore only 37 percent of its level in 1993, despite a 40 percent increase in the number of lines in service and the Institutional Development Project. In addition, inadequate depreciation charges have likely resulted in overstated profits. Few private sector companies could be expected to suffer a loss of shareholders' value on such a scale without taking countermeasures, typically by changing management.

The trend for TTCL has also been one of steady deterioration. The USD 26 million surplus for 1993 was decreased to USD 16 million the following year and by 1996 showed

a negative operating result of USD 4 million equivalent. TDM is the only operator that has achieved a better result at the end of the period than at the beginning. But TDM is also the most obvious case of monopolistic capture. It has the world's highest annual per line revenue, far in excess of what prevails in most OECD countries. Although its operating costs per line are also quite high, TDM enjoys an operating surplus before capital costs and depreciation of over USD 1,000 per line in service, which is likely to be unprecedented.

TTCL and Namibia Telecom have even higher operating costs per line than TDM. TTCL's costs have increased which suggests an abject inability to control costs. Telecom Namibia has failed to reduce its very high operating costs despite the largest investment of the three operators.

Both TDM and Telecom Namibia operate with exceedingly low leverage (low proportion of loans to equity) given the low risk they face. This effectively eliminates pressure on management to produce a return on capital unless the shareholders impose strict return performance criteria, which has not been the case.

The few indicators that can be used to measure performance against the volume of support that has been provided, strongly suggests that the reform process has hitherto failed to produce the improved efficiency, productivity and financial performance it was intended to generate. Neither TTCL nor Telecom Namibia would be financially viable were they to operate with more appropriate leverage and apply more realistic depreciation charges.

Efficiency

Input Quality and Delivery Performance

In spite of the lack of measurable institutional development results, the evaluation has concluded that

- the quality of the delivered goods has, with only very few exceptions, been very good. On the whole it appears that the consulting firms provided well qualified and dedicated staff, and that
- the consultants have completed their assignments within budgets and in general provided professionally prepared financial reports on time. That costs have been related to tasks rather than to achieved results has been a consequence of a lack of quantifiable goals rather than a short-coming on the part of the consultants.

Furthermore,

- although there have been delays in execution, this has been a consequence of the projects' complex nature rather than a reflection on the executing capacity of the consultants. The record suggests that the consultants have taken care to discuss the consequences of delays with the operators and with SIDA.
- In the case of Angola, the civil war caused unavoidable disruptions, which seriously delayed the projects and reduced the number of individuals allowed in Luanda.

In summary, it appears, therefore, that the quality of input and the delivery performance has been good and in many cases even very good. The consultants' reporting has been timely and they have consistently remained within approved budgets. SIDA's own follow-up and its independent evaluations have likewise been frequent and well organized.

Impact

The Terms of Reference seek an answer to the question of whether or not the projects have given rise to lasting improvements in institutional performance, such as improved quality of decision making, improved communication on the part of the operators as well as the society at large.

The evaluation has found that while the Institutional Development Projects without doubt have improved both staff competence and quality of institutional functions this has not translated into benefits for neither consumers nor owners. The projects have yielded a primary impact but not secondary, i.e. increased availability of telephone service, increased options for commercial sector communication and increased efficiency of transports.

Conclusions of a Deepened Analysis of Namibia, Mozambique and Tanzania

The Terms of Reference require the evaluation to comprise a "deep-analysis" of the projects implemented in Namibia and Tanzania since 1989, with particular focus on the sustainability of the project and the respective organizations' ability to develop or change after the conclusion of the Institutional Development Project. The Consultants were, however, given an opportunity to deepen also the analysis of TDM in Mozambique. This section summarizes the Consultant's findings in respect of the questions raised in the Terms of Reference as regards "deep analysis" for all three countries.

The Projects' Design – How to Create the Need for Change

By their very nature the Institutional Development Projects should promote change. The organizations should change their manner of operating, their productivity, the quality of their service, etc. The design of the projects would revolve around the manner in which such change should be imposed. The projects appear to be based on the notion that a change in organizational form, from government department to government owned corporation, will in itself create the forces that will make the organizations change. They will become more "commercial". There is limited empirical proof for this hypothesis, the concept of commercialization is deceptive. The phrase typically denotes a change of organizational structure from that of a government department to a government owned corporation, i.e. a parastatal. By referring to this as commercialization (instead of parastatalization) one obfuscates the fact that the very difficult and complex issues of how to control and manage a government-owned activity remain unsolved. Experience in many

African countries even suggests that parastatalization even exacerbates the control and management difficulties.

An organization's ability to change cannot be separated from its need to change. Organizations like human beings typically resist change. The reform process should therefore create a need for change in order for Institutional Development to be relevant. The regulatory function, if forcefully and competently executed, can create such a need for a period of time but in the long run it is risk and competition that are the most potent reasons for organizations to change and develop. The lack of focus on the regulatory aspects has weakened the impetus for change.

Furthermore, the choice of contribution, i.e. the composition of the Institutional Development tasks, appears to have been guided largely by a behavioral approach to organizational change. There is reason to take a broader view on the issue of what affects an organization and how different stakeholder groups react to the threat and opportunities inherent in public sector reform processes. There is a growing body of research and theory as to organizational behavior of monopolies that can provide valuable guidance for designing the contribution to Institutional Development Projects. There is little evidence that such knowledge has been used for the purpose of the projects under review.

Human Resource Development

Human resource aspects constitute a very large portion of the input in all three countries. In Tanzania the focus was on preparation of course material and training of teachers. The Mozambican human resource input comprised a number of interactive training courses, high level management programs – tasks oriented group training. Because of lack of teachers, the Tanzanian program failed to yield any result. The number of persons trained and the period of training have declined. It is probable that the training capacity, already at the inception of the program exceeded real demand.

The Namibian GDP² and MDP³ training programs appear to have rendered the best results. A consulting firm that has a strong focus on training carried them out.

A large part of the identification of which kind of support the operators needed was made by SIDA's consultants. The involvement of operator staff has varied and appears to have been more effective in Namibia than in the other countries. The need for measures to support the reform process was not made the subject of discussion with other organizations but the operators in any of the countries examined.

² Graduate Development Program

³ Management Development Program

Identification of the Need for Change

The evaluation concludes that the projects have suffered from an inadequate definition of what kind of change was desired as well as the quantum of change that should be achieved. The projects do not form part of a clearly articulated public sector reform program for which tangible goals could have been established. This is why they cannot be deemed to have any relevance. Nor have the projects themselves been associated with measurable goals that could provide an indication of the direction and extent of change they should achieve.

Commercialization/privatization

The objective of the reform of the public sector should be neither commercialization nor privatization. These measures are relevant only if and to the extent that they lead to increased competition because it is competition that improves sector productivity and consumer surplus. None of the projects have been found to be conducive to increased competition. There is instead a risk that they support the natural desire by the operators to postpone or prevent competition.

Have the Operators Ability to Change Improved?

The answer to this question is likely to be affirmative. All operators have benefited from a substantial amount of management training, which should have improved managements' capacity and ability to handle change. There is, however, only modest proof of change during the period of the projects.

- New telecom services have been relatively few, and mainly in the case of Telecom Namibia.
- Production methods have altered largely as a consequence of new equipment
- Organizational changes have been instituted in all operators. Increased customer orientation has fostered several of these changes.
- The input provided by the consultants has included a number of 'soft' features related to corporate culture, ability to work in groups. etc.
- Customer communication has improved substantially in both TDM, Namibia Telecom and TTCL.

The Results – Have They Improved?

This question is extensively dealt with in the above text. The answer is negative. Only TDM shows a small increase in productivity and profitability. The results of Namibia Telecom and TTCL have deteriorated.

Aid and Corporate Governance

A particular feature of the assistance to Namibia has been funding of part of the remuneration for a Swedish Managing Director. SIDA has claimed that this component of the Namibia program has been successful but this evaluation has not been able to

corroborate this. On the contrary, the financial performance of Namibia Telecom to date is, in some respects, the most disappointing of the three operators because of the weak return, in terms of improved productivity of the company's large investments.

This prompts the question of whether aid in the form of funding for management services is good development assistance.

There is growing recognition of the fact that management competence and experience is far from the only management aspect that determines whether a company produces growth, profit and increased value for its customers. Management must also operate within a structure of stakeholder forces and influences which keeps it from pursuing management's own objectives – usually that of secure tenure and increased power. There must exist a kind of magnetic field of external forces and objectives that exert a constant and strong influence over management.

A typical company would have the following three major stakeholder groups:

- Owner/investors,
- Customers and
- Staff

These groups have different priorities and therefore demand different results from management. Modern theory on organizational behavior also recognizes that management, although normally appointed by the owner and being part of staff, has its own agenda. In the literature this is referred to as the agency issue. One vital aspect of management's agenda is normally to safeguard its own position. To do this, management tends to build alliances and eliminate threats. The owner normally represents the most potent threat. In theory the owners should be placated by management delivering a return on investment commensurate with the owner's expectation. This, however, exposes management to a number of uncontrollable risks. It is often much better to reduce the owners' influence in different ways. Either by ensuring that there are no large and dominating owners, or by creating an information superiority, or by neutralizing the owners' influence by strengthening the power of the staff (unions) and involving politicians (who typically have little regard for return on investment). The more parties that are involved and have a say as to what management should deliver, the better the chances of reducing the risk that inadequate performance would result in dismissal. It is against this background that few donor agencies have involved themselves in providing and funding management. Which of the three major stakeholder groups have gained and which have lost in the case of Namibia Telecom?

In the absence of a strong regulator, management had a free hand to define what customers should expect and to make sure that it could deliver. Management did not consider lower local tariffs as desirable on the part of the consumers. By now we know, however, that this comes on top of the list wherever consumers are given a choice. Instead management postulated that the customers wanted better service and more telephones - both of which were easier to deliver than reduced tariffs.

The staff wanted job security and better pay. They got both. Pay increases have been generous, perhaps even very generous. But management's generosity vis-à-vis the staff would have been much more difficult to uphold were tariffs to be reduced.

The owner, the state, could have asked for improved return on capital. It did not and got nothing. In fact, the owner has lost because the value of its investment in Namibia Telecom must have decreased substantially as a consequence of the declining profitability. But the owner's room of maneuver with respect to management (ability to dismiss) was constrained by the fact that the manager had been recruited and financed with the help of a donor that plays a major role in Namibia.

What has taken place in Namibia appears to have been a classical case of management/staff capture at the expense of the state and the public at large. Has the involvement of a donor added to or detracted from management's desire to pursue goals of respective owners and customers?

1. SIDA's Aid to the Telecom Sector - The Projects and the Actors

New Aid Focus for the Old Beneficiaries

SIDA's assistance to the telecom sector in southern Africa dates back to the seventies. It started with Tanzania and Mozambique in respectively the late seventies and early eighties, whereas aid to the telecom sector in Namibia commenced in 1991 when Namibia became independent. Angola has received support since 1988 but the civil war has caused occasional disruptions to the programs.

The nature and orientation of SIDA's telecom sector support has changed, partly in response to perceived changes in needs but also as a consequence of changed attitudes as concerns the role of the state as a provider of public utility services. Initially the Swedish programs had a strong focus on operational assistance and network expansion. During the late 1980s and early 1990s operational and network support was gradually replaced by human resource development, training, etc. From 1991 and onwards, the aid has focused on institutional development.

Up until the early 1990s, the telecom sector in the respective countries was synonymous with the operators. Those were Post and Telecommunication Authorities (PTAs) that formed part of the executive branch of government. These operators had a monopoly partly on ideological grounds but partly also because of the notion that the sector was a natural monopoly. The national interest would be best served if the natural monopoly belonged to the state. During the early 1990s, a number of factors combined to change the perception of what a modern telecom sector should consist of. The two most important such factors were new technology that eliminated many of the obstacles to entry and the gradual erosion of the state's capacity to fund the investment needs of the sector. A new awareness of the economic benefits to be derived from increased competition as well as the importance of competition for the pace of technical development contributed towards a change in the political realities for former state owned monopolies. The momentous geopolitical changes of the late 1980s with the disappearance of the Soviet Union and the ensuing reduction of political confrontation is also likely to have played a role.

This review deals with the projects that have been carried out during the 1990s. During this period all of the four countries under review have allowed private operators to provide some telecom services along-side those of the public operator. The former PTAs have been transformed into state owned corporations but all of them maintain, either by law or by default, a monopoly over basic telecom services. Private firms or government/private sector joint ventures provide various value-added services, mobile telephony, data services, paging, etc. In all four countries this sector has also come to comprise regulatory agencies, albeit as yet with limited capacity and influence.

While the nature of SIDA's support has shifted in step with the changes in the sector, the beneficiaries of the support have remained more or less the same. SIDA has continued to orient its support towards the state owned operators with which the governments have vested that which remains of the monopolies. The fledgling regulatory functions have been given only cursory attention and no attempt has, as yet, been made to strengthen or support the private sector entrants. The new orientation of the support has been that of institutional development of state owned monopolies.

SIDA's Telecom Support Projects

During the 1990s SIDA funded a total of 13 projects in the telecom sector in the four countries concerned. The table below provides a summary of the projects, the executing consultants and the amount of funding provided by SIDA in the period 1987 to 1996.

Angola

Date of contract	Projects*	Consultant	Approved SIDA funding (SEK millions)
September 1988	Telecommunications Project Assistance to ENATEL's operation and maintenance functions	Swedtel	28.2
July 1991	Support to the Operational Part of the Telecommunication Sector, 1992-94 Institutional development assistance to ENATEL/EPTTEL	Swedtel-ISO	55.8
July 1991	Assistance to the Regulatory Function of the Telecommunication Sector, 1992-94 Creation of a regulatory authority (DNCT)	TDC-DTI	3.7
July 1994	Assistance to Angola Telecom, 1994-97 Institutional development assistance to Angola Telecom	Swedtel-ISO	60.0
July 1994	Assistance to the Regulatory Function of the Telecommunication Sector, 1994-97 continuation of support to DNCT	Swedtel-ISO	13.4
Total	5 projects		161.1

*Rehabilitation of the Benguela network is not included

Of Angola's five projects two have been institutional development projects for the benefit of Angola Telecom and two have been in support of the regulatory agency. The first project is best described as a technical operations support project.

Mozambique

Date of contract	Projects	Consultant	Approved SIDA funding (SEK millions)
September 1991	Continued Cooperation in the Telecommunication Sector, 1989-93 Assistance to TDM for enhancing its capacity to manage network expansions	Swedtel	51.0
July 1993	Support to the Institutional Development of TDM, 1993-96 Assistance to TDM for: • restructuring • commercial functions • development of the Human Resource function	Swedtel-ISO	57.6
March 1994	Support to the National Communications Institute (INCM) Formulation of rules, regulations and procedures (project discontinued)	ISO - Tele-consultores	2.0
Total	3 projects		110.6

Since the last of the above listed Mozambican projects was discontinued virtually all of SIDA's recent support to the telecom sector in Mozambique has consisted of institutional strengthening of the state owned telecom monopoly TDM. The reasons for the discontinuation of the support to INCM are somewhat obscure. It appears that the inherent weakness of the organization itself and its limited capacity for coordinating SIDA's support with that of a Portuguese consultant has caused the cancellation of the agreement.

Namibia⁴

Date of contract	Projects	Consultant	Approved SIDA funding (SEK millions)
February 1991 and June 1991	Conversion of Department of Posts and Telecommunications into a Public Corporation, 1991-92 Step 1A Study of conversion of telecom Step 1B Implementation	ISO	6.1
May 1992, and July 1994	Management Development and Human Resource Training Plan and Programme Institutionalize HRD activities, management strengthening, affirmative action and salary supplement for Swedish Managing Director	ISO	9.9
August 1994	Support to Establishing the Regulatory Framework and Functioning of the Namibian Communication Commission (project in abeyance)	ISO	1.0
Total	3 projects		17.0

Also in the case of Namibia has the support to the regulatory agency been discontinued. A lack of commitment on the part of the ministry concerned, possibly combined with limited engagement on the part of the consultant, seem to be the two factors that have caused the lack of progress.

Tanzania

Date of contract	Projects	Consultant	Approved SIDA funding (SEK millions)
1987	Network Support and Training Project 1987-93 Rehabilitation, maintenance and repair of local networks and support to staff training capacity	Swedtel	127.1
Signed in 1993; main component commenced in June 1996	Telecommunications Restructuring Programme (TRP) 1993-98 Network expansion and making the public operator financially viable and commercially oriented (the IDC component ⁵). Project is supported by several donors	mainly BT Consultants	25.0*
Total	2 projects		152.1

* Total SIDA funding for the TRP project is SEK 240 million of which only SEK 25 million applies to the period under review.

⁴ In 1994, BITS, prior to it being merged with SIDA, financed a telecom sector master plan for Namibia. This project has not been included in this review.

⁵ The institutional development component of a World Bank project

The support to the sector in Tanzania has not included any assistance to the regulatory function. This may partly be a function of the fact that the implementation of the IDC component has been delayed and this has postponed an assessment of what should be SIDA's strategy for the sector as a whole.

From Technology towards Institutional Development

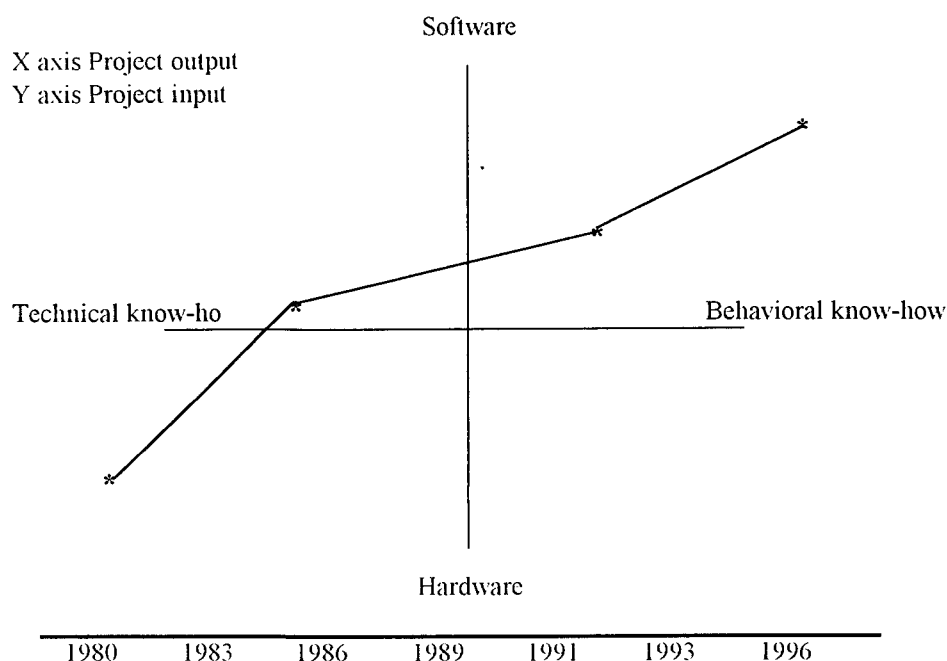
In the period under review, SIDA funded a total of 13 projects for a total amount of SEK 440.6 million. The earliest of these projects, the Network Support and Training Project in Tanzania and the ENATEL Project in Angola, both had strong network operational and maintenance focus but this gradually changed towards HRD and training. By 1991 SIDA's support orientation had moved away from technical and network issues towards sector restructuring and institutional development which became the preoccupation of the 11 projects initiated in the period 1991 to 1995. All of these projects had two categories of beneficiaries, namely regulatory agencies and publicly owned operators.

Thus

- seven of the 13 projects and some 60 percent (SEK 265.4 million) of the total funding were for institutional development of respectively TDM, TTCL, Telecom Namibia and Angola Telecom, whereas
- four projects, (of which two were discontinued) for a total of SEK 20.1 million (4.4 percent of the total) were in support of regulatory agencies and frameworks. In the terminology used by SIDA this is referred to as "sector restructuring".

The change from a network operation and maintenance focus to one of restructuring and institutional development accentuated the trend from hardware towards software, which had begun already in mid-1980s. By 1991 SIDA appears to have discontinued virtually all investment funding and other hardware support and the projects had become essentially know-how driven. Consulting services and training through consultants accounted for a dominating part of the project expenditure. The other important change was that the nature of the consulting input was transformed from one of technical development assistance to that of human resource, management and organizational development, i.e. from one of technical competence and know-how to behavioral improvement and organization capacity building.

The change in focus of SIDA's telecom support can be depicted in terms of the two dimensions of respectively know-how input and software versus hardware output. The picture below thus shows how the input and output characteristics of the assistance has changed.



However, at the same time as there was a dramatic reorientation of the aid, there was also continuity in terms of both beneficiaries and consultants. Although regulatory agencies in three countries became new beneficiaries the resources committed to their development were very limited. The limited absorptive capacity of these organizations appears to have been matched by a lack of commitment on the part of SIDA and the Swedish consultants with the result that two out of three regulatory support projects lapsed. SIDA's support has therefore become more institutional and operator oriented than sector oriented.

Institutional Development or Sector Reform?

In two of the three countries where SIDA has tried to support the restructuring of the sector by way of assistance to the regulatory agencies the projects either failed or came to a standstill. In Tanzania there has been no project in support of regulation.

SIDA's support to the institutions that should regulate the operators amounted, in monetary terms, to a mere seven percent of the assistance to the operators themselves. In reality the support has been even more insignificant since two of the three projects were allowed to lapse. This lack of commitment to sector reform as opposed to reform of the dominating operators is difficult to interpret. It appears to run counter to both the theory and practice that guide the process of regulatory reform in most countries.

Current theory postulates that regulation is needed because organizations, left to themselves, pursue goals which are not commensurate with the best interests of society at large. This applies with particular force in the case of a sector dominated by a monopoly

or a cartel. Sector reform, in such a case, could be synonymous with a reduction of the relative importance of the dominant operator in order to make room for competition. Regulation is required to ensure that the dominant operator does not use its influence to stifle competition. Thus the more competition the less need for regulation. In case the reform aims at preserving the monopoly but making it more responsive to society's needs, regulation becomes even more important. The regulator becomes the performance supervisor that should ensure that the monopoly, its management and staff does not use the power of the monopoly to further their own interests. The competence of the regulator then becomes the critical factor.

As technical development creates more and more options for services and reduces the need for a net based monopoly, telecom sector reform has become gradually more analogous with increased competition while institutional development risks becoming synonymous with strengthened resistance against competition. Institutional development could serve the interest of increased competition only if a publicly owned monopoly genuinely desired to abandon its monopoly position and expose itself to competition. There are no signs that any of the operators that benefit from SIDA's assistance takes this attitude. Nor have any of the governments in the respective countries yet adopted policies that would expose the monopolies to competition as far as their core business is concerned. On the contrary, both governments and operators have shown an aversion against competition. This is an often-noted phenomenon, which has been given its theoretical foundation in the so-called 'theory of capture'.

Has SIDA become the victim of capture and oriented its assistance so that it favors the forces opposing sector reform and competition? Have the consultants engaged for the SIDA supported projects likewise been co-opted into supporting institutions bent on preserving status quo rather than sector reform?

Is part of the reason for the lack of commitment to the regulatory agencies that it may be difficult to simultaneously serve both the regulator and the operator and that the consultants have therefore chosen the largest and strongest of the two clients?

Has SIDA's reorientation of the focus of the support been associated with a shift in the selection of consultants or has SIDA opted for continuity both when it comes to beneficiaries and consultants? This issue is reviewed in the ensuing section.

The Know-How Providers

With the exception of two projects (one in support of regulation in Angola and the institutional development component of the large TRP project in Tanzania), all consulting input has been entrusted to two Swedish consultants: Swedtel and ISO (or in the case of one project in Mozambique by a local joint venture between Swedtel and the operator TDM). Swedtel has traditionally been the only supplier of telecom consulting services for SIDA supported projects from their inception. This firm was also the sole supplier of know-how for the operational and maintenance related projects of the late 1980s. Because

of this Swedtel has long-standing and close personal and institutional relations with the operators in both Mozambique and Tanzania.

ISO, on the other hand, has essentially management, organizational development and training as its main focus. ISO, in contrast to Swedtel, had little prior experience of the telecom sector but the firm played an important part in formulating SIDA's projects in Namibia in both the communication and transport sectors. Swedtel, having no prior association with Namibia's telecom administration, had to yield this market to ISO whereas in Angola and Mozambique the two companies agreed with SIDA to share the projects.

The table below shows how different types of projects and their approved SIDA funding have been distributed among different consultants.

	Operational Support (SEK million)	Institutional Development (SEK million)	Restructuring (SEK million)	Total (SEK million)
Swedtel only	155.1	108.6		263.7
ISO only		16.0	1.0	17.0
Swedtel/ISO		115.8	15.4	131.2
Other consultants		25.0	3.7	28.7
Total	155.1	265.4	20.1	440.6

Although Swedtel retained its dominating position also when the focus changed from operational support to restructuring and institutional development the record suggests that its dominance decreased. Swedtel's SIDA/ Southern Africa telecom market share can be estimated to have declined from close to 100 percent in the 1980s to around 80 percent⁶ by the mid-1990s.

This decline coincided with a gradual change in procurement from initially having been on a so-called restricted tender basis (only one supplier invited) towards more and more competitive bidding. The tender for the IDC project component in Tanzania, which formed part of a much larger World Bank project, was on the basis of international competitive bidding. Even this project appears, however, to have been awarded on the basis of sector experience and competence rather than by general management and organizational behavioral competence.

The above table also shows that SIDA chose to employ the same consultant for both the operator and the regulator in both Mozambique and Namibia. The regulator projects in both of these countries have been discontinued. In Angola, where Portuguese and Danish consultants were engaged for a first regulator project SIDA subsequently engaged

⁶ On the assumption that Swedtel and ISO accounted for approximately half each of the value of their joint projects.

Swedtel/ISO for a second phase although the two companies already serving the operator performed to satisfaction.

SIDA's response to the new know-how needs of its projects appears thus to have been to complement its traditional supplier with a training and organizational support consultant rather than to engage specialized management and organizational reform consultants.

It can be concluded therefore that

- the change in aid focus, from technical support to management and organizational reform (the essential components of institutional development), was not matched by a commensurate change in competence on the part of the know-how providers, and that,
- SIDA chose not to recruit consultants that could be independent of the operators for the provision of know-how to the regulators of the operators.

Project Preparation and the Policy Discussion

Preparation of projects and the policy discussions that surround such work often form an important part of the strategy formation for donor organizations. An evaluation of a program can therefore benefit from an analysis of the processes that have led up to the formulation of the projects. Of particular interest, in the case of public sector projects, is the involvement of the beneficiary organization and the extent to which other groups and stakeholders than the operators and the concerned ministry have been consulted. The issue is that of 'who owns the project' and more importantly 'who feels responsible for its success'. Answers to these questions were sought both through study of the documents and by way of interviews.

In Angola the preparation of the Institutional Development Project followed the completion of a technical assistance project executed by Swedtel. In the course of this project it was noted that management shortcomings were substantial, not the least in the area of financial control and reporting. This led to a spate of consulting activities for the purpose of defining remedies. Herman Ruud, a long-term telecom consultant to BITS and SIDA was one of the several consultants contracted to study and come up with suggestions for an institutional development project. The project that was subsequently defined was awarded to Swedtel and ISO jointly. The involvement of the operator was limited and there is no record of any other stakeholder being consulted.

The second Angola Institutional Development Project was designed essentially on the basis of the recommendations of the 1994 review mission and Angola Telecom's business plan which was largely a product of the first project. Sector discussions and involvement of other parties but the operator and the consultants appears to have been limited.

The record suggests that Angola Telecom's commitment to the projects has been limited. They are likely to be perceived as 'consultant driven'.

Mozambique's Institutional Development Projects were largely defined by Swedtel in close cooperation with TDM. For the first project there was also input by SWEKO which made a study for SIDA in respect of a Telecom Development Plan and an Operational Management Plan. For the second project, another consulting firm, A.S.K. Consultants, prepared background information. A Finnish consultant firm, Telecom Oy, was engaged to assess development in the sector, but local input was again essentially confined to that of TDM and the Ministry of Communication. The staff responsible for the large HRD component clearly viewed the project as being 'consultant driven'. The fact that the cost of the project was unknown to the head of the HRD staff and not of their concern gives an indication of the limited responsibility afforded to TDM.

Namibia's projects originated from a Swedish transport and communication sector consulting study in the late 1980s. ISO was subsequently awarded a study of the conversion of the Department of Post and Telecom in 1991, which led to a sequence of institutional development projects extensively focused on management and management training needs. The only other consultant engaged for reviewing the telecom sector was SIPU International, which evaluated the institutional development in 1995. Telecom Namibia's staff differs in their attitudes to the projects from those of the other operators. The interviews clearly indicated a strong sense of commitment on the part of many of those who had been involved from an early date.

Tanzania's project preparation, prior to the World Bank promoted TRP project, was largely a combined effort by Mr. Herman Ruud and Swedtel. There is no record of other stakeholders having been materially involved in policy discussions or project design. Although both these consultants have a long relationship with TTCL its senior staff maintain that their involvement in the project definition stages has been very limited. "SIDA and the consultants determine the scope of the project" was the answer to a direct question. None of the senior TTCL staff responsible for project execution had any knowledge of the cost of the project or the contribution SIDA made to their particular component.

Quality of Input

The projects have been well budgeted, and thoroughly monitored by both consultants and SIDA and have all been completed within their respective budgets. Progress was reported, both on a quarterly and annual basis, to Steering Committees which comprised representative from SIDA and the respective operator. The consultants have also been monitored continuously by external consultants by way of so called annual review missions.

An evaluation of the quality of the delivered services and degree of fulfillment of obligations can be objective only if performance can be measured and compared with quantified goals. In the absence of such tangible criteria an evaluation must, by necessity, be based on the subjective views of concerned staff members of the operator. The Consultants have made random inquiries as to views about the performance of the

implementing consultants in Tanzania, Namibia and Mozambique, and on only one occasion was the performance of one of the consultants considered substandard. On the whole it appears that the consulting firms provided well-qualified and dedicated staff.

Virtually all projects have been subjected to delays and required extensions, i.e. the initial time schedules have not been kept. Is this a consequence of the complex nature of the projects or a reflection on the executing capacity of the consultants? The view taken by this Consultant is that it is the former. For complex and highly interactive projects such as the ones under review scheduling tends to be very uncertain. Delays are likely to constitute a rule rather than an exception. The fact that the time schedules were not adhered to is therefore no reason to criticize the consultants' efforts.

The record suggests that the consultants have, in case of important delays, taken care to discuss the consequences with the operators and with SIDA. The projects have thereafter often been extended either by prolonging the contract or by way of a new contract for tasks not performed.

In the case of Angola, the civil war caused unavoidable disruptions, which seriously delayed the projects and reduced the number of individuals allowed in Luanda. This was also the main reason for the focus on the headquarters in Luanda and the lack of assistance to other areas.

In summary, it appears therefore that the quality of input has been good and in many cases even very good. The consultants' reporting has been timely and they have consistently remained within approved budgets. SIDA's own follow-up and its independent evaluations have likewise been frequent and well organized.

2. Institutional Development - What Is It and Why Is It?

How was Institutional Development Defined?

Institutional development is a concept for which there is no generally accepted definition. It is derived from the concept of 'organizational development' used in management literature and it is likely to have its roots in the concept of 'institution building' adopted by, among others, the World Bank during the 1970s when the Bank financed public sector projects on a large scale.

But our review of the documents that govern the use of SIDA funds for the purpose of institutional development, suggests that they give only limited guidance when it comes to defining Institutional Development. The formal process of funding development assistance by SIDA starts with a so-called 'Specific Agreement', which commits funds allocated under annual 'Agreements on Development Cooperation' for specific projects or programs. The Specific Agreements do not, as a rule, contain any operational definitions of the objectives for which the funds are to be used. Typical statements as concerns objectives would be "to maintain and develop the Namibian capacity in the sector", or "to improve the service level of the existing telecom network", etc.

However, commitment of funds is normally done through a consulting contract, which, as a rule, contains a statement as to the objective of the assignment. These are complemented by a description of tasks, which would represent the actions deemed necessary to reach the objectives. The statements as to objectives and tasks contained in the consulting contract are thus the best source of a definition of the meaning and content of Institutional Development.

The table below shows representative quotes from the various consulting contracts as regards their objectives and the purpose of the tasks presumed to lead to fulfillment of objectives.

	Institutional Development Objectives	Institutional Development Tasks
Angola	..optimization of existing network installations.. ..satisfactory financial situation.. ..effective development of the competence of Angola staff.. ..reliable access to network.. ..services meeting prescribed standards.. ..financially independent operation..	• establish corporate planning unit • revitalize training center • provide technical planning and training programming • develop strategies for business efficiency and financial autonomy • formulate government and Angola Telecom performance contract
Mozambique	..strengthen project implementation and control unit.. ..assist in establishing an efficient management.. ..financially sound and commercially oriented operations..	• develop TDM's ability for planning and implementation • develop manpower training capacity • establish training center • develop commercial functions • develop subscriber complaint service • establish corporate planning unit • provide management training program • introduce new systems for management of commercial operations
Namibia	..all personnel to be trained in and operate within systems geared to a commercial enterprise run on business lines.. ..efficient and high quality post- and telecommunication services provided by viable corporations..	• institutionalize HRD activities • strengthen management capabilities • support affirmative action program • train Board of Directors • develop structures and systems for greater result and business orientation • establish HRD capacity
Tanzania	..to develop TTCL into a profit-making and customer oriented telecom service provider..	• improve economy of operation of local networks • improve quality of service and job satisfaction • establish efficient management structure • consolidate TTCL as a commercially oriented and customer oriented organizational structure • improve commercial functions • improve tariff structure

The above table illustrates three things:

- firstly, that the objectives have not been quantified and that they are, in many cases, non-quantifiable by their nature,
- secondly, that there is no intuitive causality between the objectives and the tasks, and
- thirdly, that institutional development for the different telecom operators has a number of common components.

Rather than defining distinct goals, the objectives express a desired direction of change; a movement towards an ideal state of affairs. They do so by way of value judgments rather than in a tangible form.

It also appears that an objective such as, for instance, “to develop TTCL into a profit-making and customer oriented service provider” is not necessarily achieved by the enumerated tasks alone. In fact it is not possible to determine, either a priori or ex post, what contribution, if any, each of the tasks would render. **It is therefore not possible to test a model of behavioral or system change in relation to a desired outcome since such a model appears not to exist.**

Although the institutional development tasks for the different telecom operators vary, there are a number of common features. Thus

- training and HRD plays a significant role for all the national operators as does
- corporate planning and
- improvement of commercial functions.
- The training emphasis is on management and, in one case, even on the Board of Directors.
- Institutional Development is thus management focused as opposed to technical.

The answer to the question ‘How was Institutional Development Defined?’ is thus that it was not defined, at least not in a manner that makes possible an objective assessment of goal achievement.

The table overleaf summarizes the consultant’s understanding of the main components of the projects.

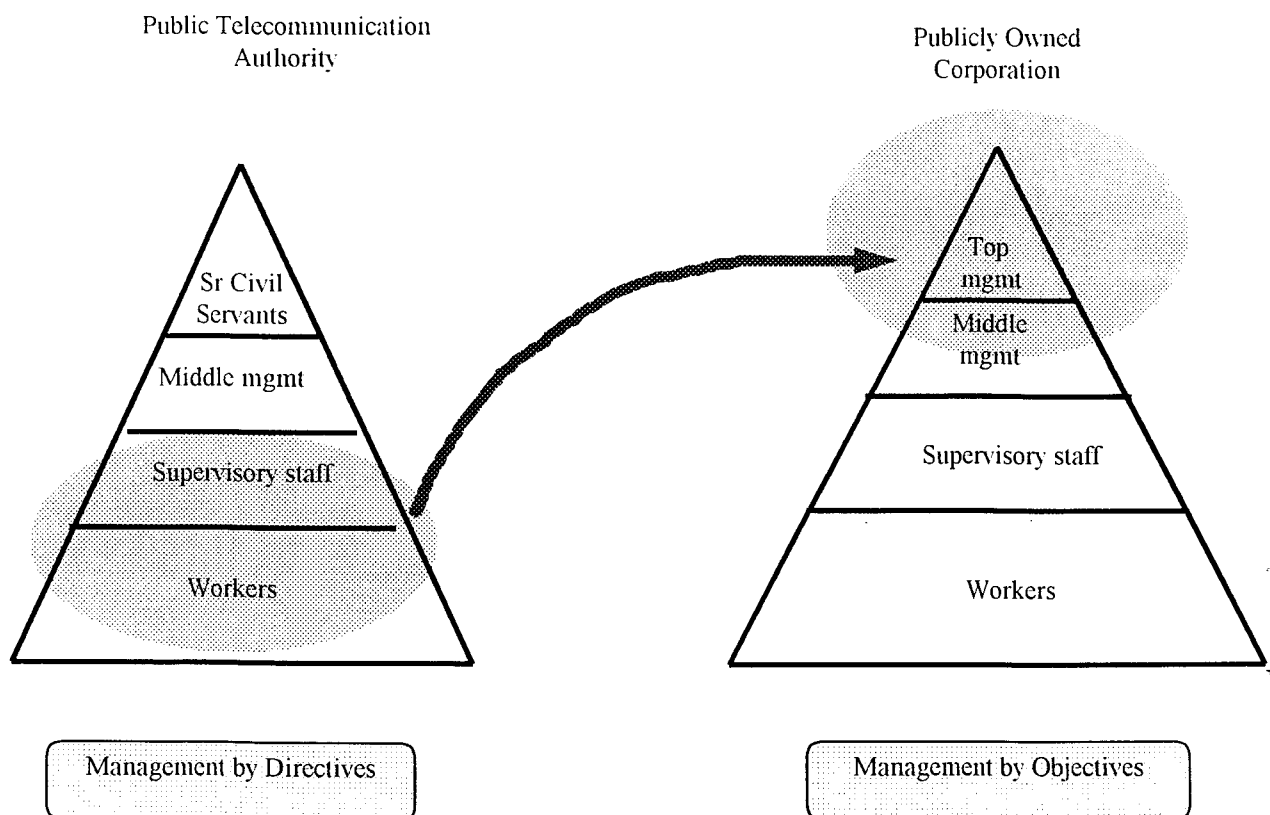
	Angola	Mozambique	Namibia	Tanzania
Organizational Development	Approx. cost: SEK 32 million • Reorganization of functions • Corporate plans • Installation of MIS • Business efficiency • Service and customer orientation • Decentralization	Approx. cost: SEK 32 million • Commercial function (mainly billing) • O&M function • Initiation of organizational change process • Support to new Corporate Planning function	Approx. cost: SEK 6 million • Legislation re corporatization • Financial evaluation • Organizational structure • Job descriptions • Compensation policies, • Tariff policies	Approx. cost: SEK 105 million • Render O&M support • Improve preventive maintenance system • Improve materials handling • Technical master plan • Financial planning and control (MIS, profit centers, etc)
Human Resource Development	Approx. cost: SEK 21 million • Training of instructors • Technical training • Management training • Develop HR function	Approx. cost: SEK 59 million • Establish training institute • Establish HR function • Technical training course capacity • Top management training programs	Approx. cost: SEK 7.8 million • HR function • Training needs assessment • Management skills development • Affirmative action program • Staff skill enhancement courses	Approx. cost: SEK 34 million • Operational training programs • Adaptation of ITU training model • Improvement of pedagogical proficiency • Improvement of training efficiency monitoring • Provision of training equipment
Others			Approx. cost SEK 2.5 million • Contract Management	

Institutional Development and Transition from a Civil Service to Business

The documentation suggests that Institutional Development as a concept is related to a transition from one environment to another, from a bureaucratic civil service environment to a business environment. Institutional Development together with this transition will improve the efficiency of the operators and therefore the sector's contribution to economic growth. Evaluating the contribution of Institutional Development, implies reviewing and evaluating the transition itself.

The Terms of Reference for the consulting contract for the Namibia institutional development support, dated February, 1991, stated that an "operation that follow normal public service standards ... is generally believed to be incompatible with efficient operation of a post and telecommunication office. The general trend worldwide and in Africa is instead to provide the services through a corporation, normally owned by the state."

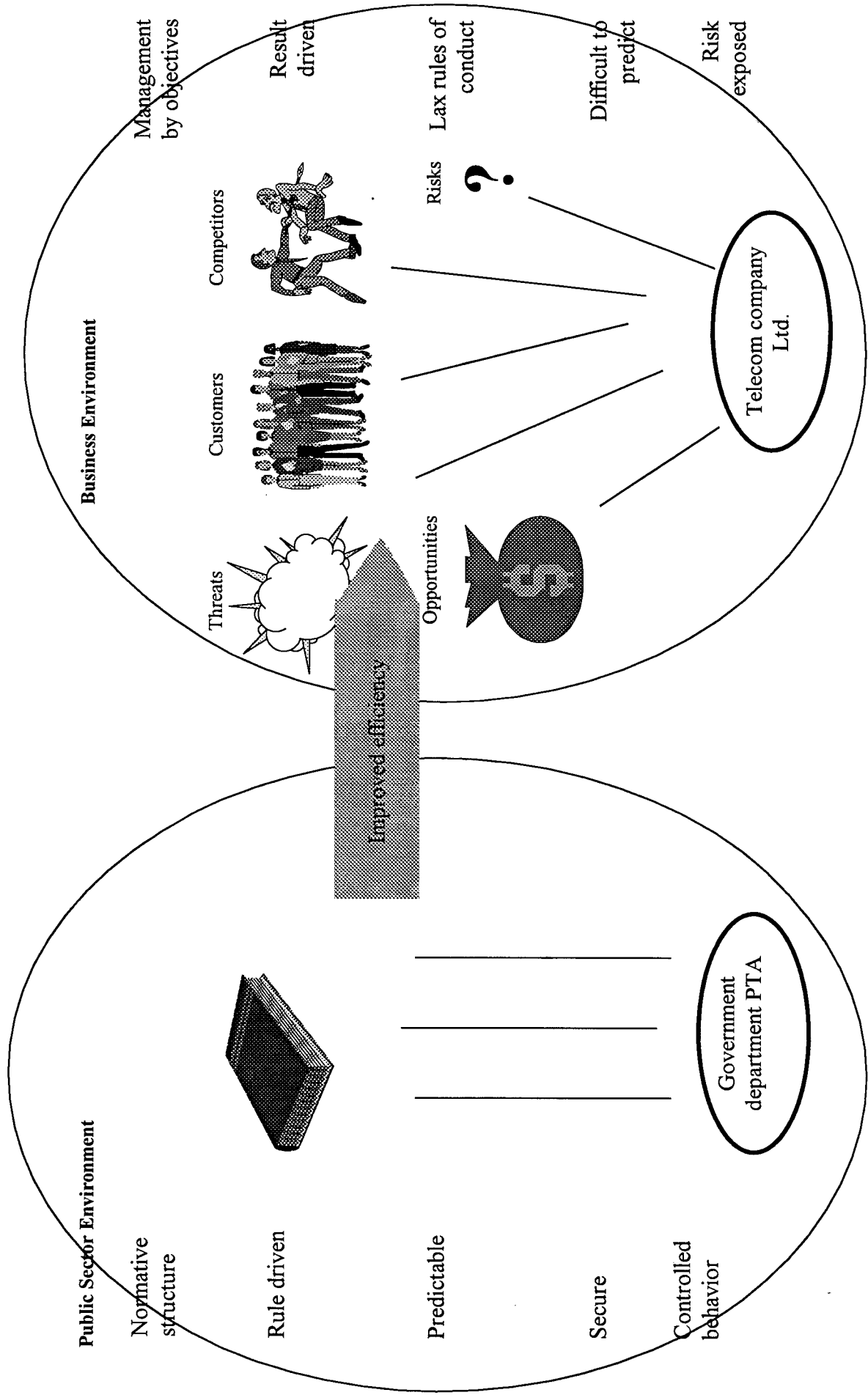
Part of the transition from the civil service sector to the business sector would thus be to change the organizational form from that of a government department to a limited liability company. This transition would require a new management approach since a company needs to be managed by objectives as opposed to the 'management by directives' which applies for activities in the public sector. The transition therefore required a focus on management and management competence that was not called for in the case of the rule driven management environment of the public sector. The assistance to the PTAs of yesterday was focused on the operational and technical staff.



The civil service environment is characterized by rules and regulations governing the execution of its functions and behavior and conduct of staff. As long as rules and norms are adhered to, it is a secure environment, which does not expose either functions, staff or management to risks. It calls for the individual to follow rules, not to produce results or reach objectives. It does not tolerate behavior outside of the norm and remuneration is standardized, i.e. no incentives for generating results. Goals and objectives can therefore be expressed in very general terms and they typically are. Government departments do not operate with tangible and measurable goals. They do not need to because of the fact that they are rule driven.

The business environment, on the other hand, is characterized by measurable objectives and pressure to deliver results. Rules of conduct are lax as long as results are delivered. Management remuneration is generous provided prescribed tangible goals are achieved. But the business environment is risky, especially for workers who enjoy much less job security. If there is competition and business risks, it can be insecure also for management, which is often stated as a reason for this sector's frequently very high management remuneration levels.

The picture overleaf illustrates, in simplified form, some of the critical differences between the two environments.



The picture is also intended to show that improved efficiency is contingent on, not only a changing environment, but also on the fact that the business environment compensates for the checks and balances of the rule driven public sector

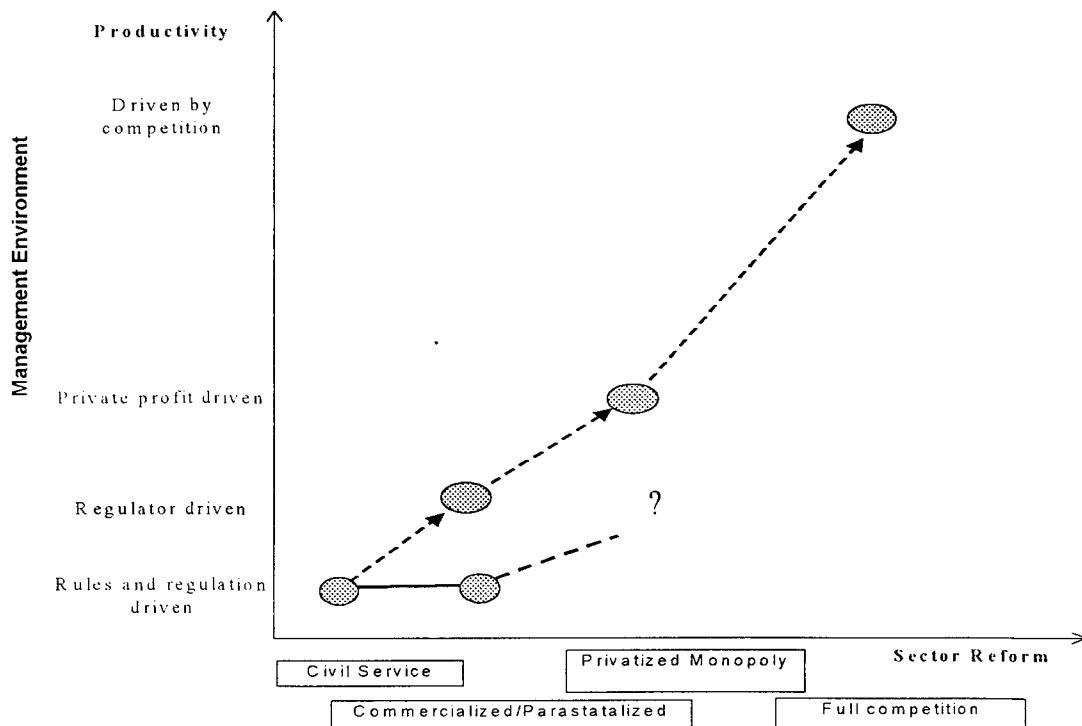
- by way of competition or regulation,
- by way of clearly defined goals and
- by exposing people and organizations to risk.

If these mechanisms are not in place the new environment could not be counted upon to yield the sought after productivity improvements.

If there are no clearly defined, measurable and well-enforced goals for the operator, a change in organizational status, from a government department to a company, will make little difference in productivity.

The pattern of transition planned for the telecom operators is from a government department to a parastatal monopoly, then to a partly privatized monopoly and, as a final step, to a wholly privatized company exposed to competition. In order to yield an increase in productivity, the first part of the transition must be accompanied by a mechanism to set and enforce objectives. This is the role of the regulator. Forceful regulation is also a necessity during the subsequent phase when private owners would impose stronger financial discipline in order to earn a return on their investment. But it is only during the last phase, that of a competitive environment when the consumers can expect to reap any benefits from the process by way of better service and lower prices.

The picture below illustrates the transition and its perceived effects on productivity. The solid line depicts the likely result in case the operator is transformed into a company without a simultaneous strengthening of the regulatory capacity.



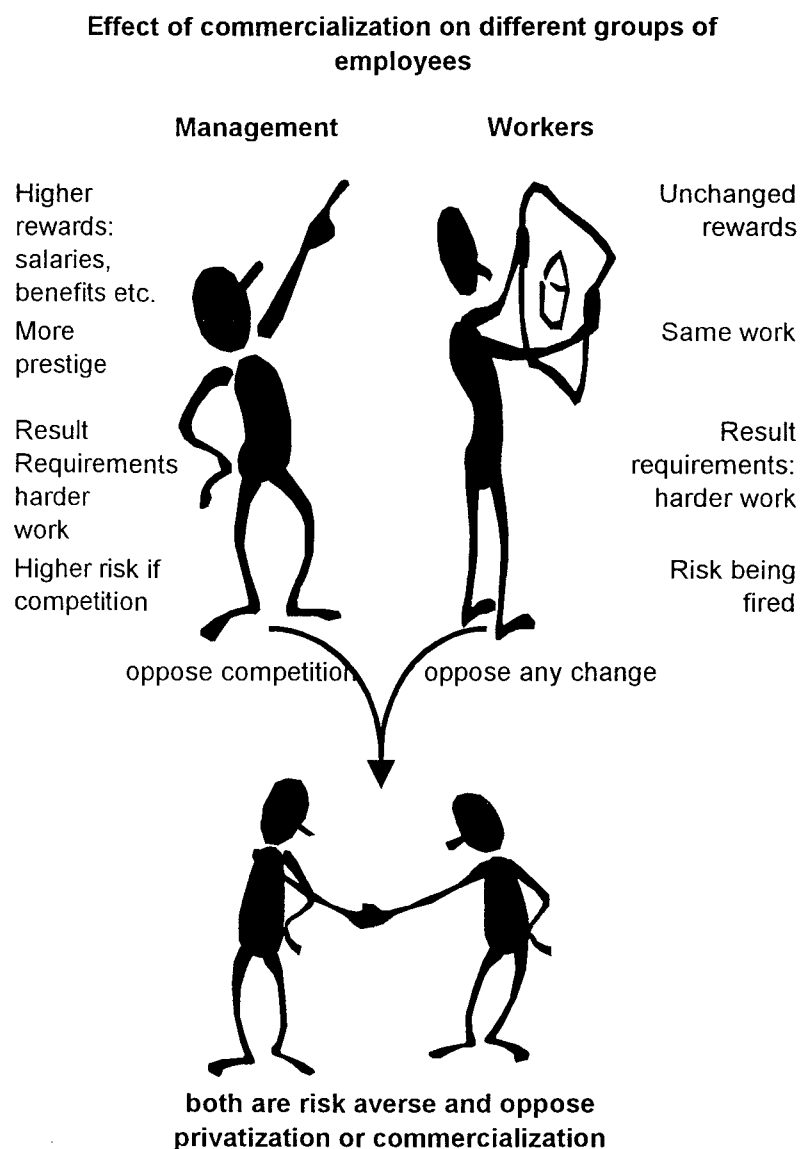
Reform of public sector monopolies has been an important aspect of the transformation process in many countries during the last decade and its effects has been the subject of a relatively large number of studies. A change in organizational form, from a public sector entity to a limited liability company is normally accompanied by a transfer of power to management. This is the result of weak and underdeveloped regulation and a lack of capacity on the part of the political structure to set measurable goals for the activity. The commercialized entity is often allowed to continue operating with the vague goal formulation that applied when it was a rule driven civil service.

The result of the commercialization, is typically sharp increases in management remuneration and a gradual reduction in the number of workers. Tariffs tend to increase but profitability remains static. Board members and senior management staff, no longer bound by the strict rules of conduct of the public sector, often cause public displeasure by lavish expenditures.

The partial privatization by way of a strategic partner, is accomplished by the state guaranteeing a risk and competition free environment for a given period of time. Profits then tend to increase but tariffs remain high and might be increased further to cover the cost of the investments typically being the quid pro quo of the continued monopoly.

The last stage tends to be very elusive. The full political and economic force of the monopoly is invariably put to use to postpone or otherwise obstruct the introduction of competition. Should competition nevertheless be allowed the former monopoly typically employs a substantial arsenal of more or less unethical means of subverting and impeding the operation of the new entrants. In recent years the Swedish Post Office, for instance, has been charged with more anti-competitive behavior than any other organization in Sweden.

So called commercialization, i.e. changing the organizational structure without introducing competition and without strengthening the regulatory function, is therefore often very attractive for management. It weakens public control, relieves management of the rules of conduct of the civil service, and expands their financial autonomy without any of the risks of a competitive environment. The workers, on the other hand, typically have little to gain. Some will lose their jobs and few will gain better employment conditions. The attitudes to so called commercialization are therefore quite predictable.



Consumers have nothing to gain from commercialization in the absence of strong regulation. For the individual subscriber, the gains to be derived by successfully opposing commercialization would be minuscule in relation to the cost of the necessary effort

required to oppose it. The battle is therefore typically waged between management and the unions with the outcome often being added security for both at the expense of the subscribers who end up paying higher tariffs. If the operator is unable to stop competition in some areas he will reduce prices and even resort to dumping where necessary but use the power of the monopoly to compensate the loss of revenue from other sources. The Swedish Post Office is again a prime example of how such tactics can be used.

Available experience therefore suggests that Institutional Development, in the commercialization phase, needs to support consumer interests (by putting downward pressure on tariffs, improving access and quality of service) and balance the added power of management by strengthened regulation.

The heavy emphasis on HRD and in particular management related HRD would hardly serve such a purpose nor would corporate planning functions. They thrive mainly in monopolistic or oligopolistic environments where their purpose is to expand control rather than reduce the cost to consumers. Performance indicator systems with targets determined by management itself can not be expected to increase the pressure on management and MIS should be carefully crafted, not for management but for public purview and for use by the regulator.

Institutional Development as per SIDA's Guidelines

In 1995 SIDA issued its *Guidelines for Support to the Telecommunications Sector in Developing Countries* in which it postulated that

institutional development, along with support to
sector restructuring and
investments

are the tools SIDA need to use to promote economic growth, social development and democracy. The most important of the three tools is institutional development.

“SIDA’s development assistance focuses on improving the institutional conditions of telecom operators. This shall enable them to become economically and financially viable, to improve their managerial and operational efficiency, to promote effectiveness in their use of capital and other resources, and to create better services for their customers”⁷

The Guidelines go on to define institutional development as comprising two components:

- institution building, and
- capacity building.

According to the Guidelines, SIDA takes the view that

“the aim of institutional development is to make individuals and their organizations capable of solving problems and of further development”.

⁷ “Guidelines for Support to the Telecommunications Sector in Developing Countries”, January 26, 1995, page 2

Capacity building is not defined per se but it shall be understood to concern the staff that run the organization in respect, i.e. be mainly an HRD activity which should be in support of the institution building component.

SIDA's definition of institutional development appears therefore to be as follows:

Institutional development = institution building + HRD = problem-solving + capacity for further development.

To illustrate the concept the Guidelines stipulate first that institutional development's initial lesson is for an organization to learn to set its objectives. Thereafter the process requires a 'needs analysis' followed by a selection of a methodological model. The implementation (putting the model to work) needs to include creation of 'learning situations for the organization, groups and individuals'.

The output of this process is seen as an ascent along the proverbial capability ladder of a developing organization. In the Guidelines the classical capability steps (capability to produce, to adapt, to create change) have been slightly modified but they are not conceptually different from the three learning levels used by for instance, John Burgoyne (*Creating Learning Organisation*⁸), Mike Pedler and others. Burgoyne refers to them as 'degrees of learning fullness'.

The matrix below summarizes the input/output features of SIDA's institutional development approach. The output features adhere to the definitions used by Burgoyne in the above-mentioned article.

Input		Output	
1	Define organizational objectives	1	Command of operating capability
2	Carry out needs assessment	2	Adaptive and survival capability
3	Choose methodological model	3	Capability to foster change
4	Create learning situations		

The definition of institutional development used by SIDA places the subject in the realm of management theories. Organizational change theories come in many shapes and forms. They can be broadly defined as belonging to either of two main categories: proactive theories and reactive ones. The proactive are those that assume that certain actions on the part of management and/or owners can change the nature and the prospects of the organization. The reactive theories, on the other hand, postulate that organizations respond in different ways to the environment in which they operate. They adapt their behavior to their competitive situation. The latter type of theories is deductive and descriptive whereas the proactive theories are typically intuitive and prescriptive.

⁸ Royal society of Arts Journal, April 1992

The proactive theories, of which there are a large number, can in turn be divided into behavioral and systemic or structural theories. The behavioral ones are more human resource oriented whereas the structural theories advocate that techniques of processing, measuring and monitoring determine the result.

The following illustrates how organizational theories can be classified into different categories.

Reactive Theories	Proactive Theories
are deductive, descriptive and	are typically intuitive, prescriptive and
normally subjected to empirical tests	often associated with anecdotal proof
Accepted science	Practical experience, folklore, quick fixes, quack remedies and pure nonsense
	SYSTEMIC BEHAVIORAL
Microeconomic theory	TQM
Theory of the Firm	Just In Time
Theory of Contestable Markets	Re-engineering
Value/Utility Theory	Value Chain
Theory of Regulation	Lean Enterprise
Theory of Capture	
	Learning Organization
	McKinsey 7S
	Empowerment theory
	New Age theories

The concept behind SIDA's suggested approach towards improving performance obviously belongs in the BEHAVIORAL category of Proactive management theory. This implies that it is not a scientifically accepted approach to organizational change. In fact it does not yet exist. It is derived from the large group of thoughts on organizational behavior that is based on, at best, practical experience and at worst pure rather nonsensical notions.

It would appear that the behavioral theory most compatible with the conceptual approach chosen by SIDA for its institutional development support is that of the "learning organization". The concept of the learning organization was first propounded by Peter Senge in his best selling *The Fifth Discipline* and subsequently developed by Gary Hamel and C.K. Prahalad (*Competing for the Future*), Harvard Business School's Dorothy Leonard-Barton (*Wellsprings of Knowledge*) and by Japanese management theorists Ikujiro Nonaka and Hirotaka Takeuchi (*The Knowledge Creating Company*).

Senge argues, in brief, that people who are keen to learn should embrace five disciplines: They should put aside their old 'mental models', learn to be open with others ('personal mastery'), understand how their organizations really work ('system thinking'), agree on a 'shared vision' and then work together to achieve a common purpose ('team learning'). Senge's first book, which was a big success, has spawned a small 'learning organization'

industry with much more down to earth and practical advice than that provided by Senge himself who writes in riddles and is a keen Zen devotee.

There are a number of difficulties associated with the learning organization concept. One is that it very soon has to tackle the issue of what sort of knowledge a learning organization should gather. Another difficulty, which it shares with many if not most of the behavioral theories and management recipes is that it does not deal with the particular firms stakeholder and competitive environment.

A feature of the Learning Organization theory, which it shares with most other behavioral theories is that it does not lend itself to empirical testing and proof. The theory is one of a large supply of competing recipes for how to change an organization, for which there is no proof but that of more or less anecdotal accounts by the authors themselves.

This should, however, not obfuscate the fact that many management theories have advanced the art (but not the science) of management substantially. Some management authors such as Peter Drucker, Henry Mintzberg and Michael Porter have made lasting and important contributions to management theory.

The suggestion that is made here is that SIDA, in its efforts to further refine and develop an approach towards institutional development, pays more attention to that which remains accepted economic science and exercises prudence when it comes to financing programs based on behavioral recipes that may have little effect on public sector organizations with a monopolistic market situation. Chapter 4 contains a review of some of the theories that are applicable in the case of the telecom operators concerned.

Institutional Development - What For?

With Institutional Development being part of a transition process, its purpose must be that of the public sector reform process itself. The basic objective of a reform of a sector should be to improve its efficiency and, as a consequence, the economy's resource allocation. The following is a summary of the theoretical underpinnings for the reform process.

In economic terms, a reform process should seek to achieve Pareto optimality, i.e. it should be designed so that the resource allocation will yield a situation where no further improvement is possible without a commensurate cost. For the telecommunication sector this means best possible service for the largest possible number of subscribers at the lowest possible cost. Achieving Pareto optimality is seldom possible but a reform process, in order to be meaningful, must seek to remove as many of the obstacles as possible towards that ultimate objective. The main obstacles are imperfect functioning of the market as a result of too little competition, regulation, subsidies, etc.

Pareto optimality is an equilibrium between supply and demand, which results in maximum welfare for society, i.e. for both the consumers and producers of the good or service in

respect. It occurs when a large number of producers compete and force the price down to a level commensurate with their marginal cost of production. But a Pareto optimal equilibrium yields lower benefits to a producer than a monopolistic equilibrium.

In the case of telecom the movement from a monopolistic equilibrium towards Pareto equilibrium would yield improvements in three areas:

1. improved quality and availability of the existing service (improved productivity),
2. increased penetration of the network, especially in rural areas (increased supply), and
3. reduced cost for the consumers (improved cost efficiency)

The economic theory that forms the basis for the market economy stipulates that a well functioning market is the basic premise for reaching an optimal resource allocation. The bigger the difference between Pareto equilibrium and actual price and quantity equilibrium of a particular market the larger the welfare losses for society. In economic terms, the issue is one of reducing the welfare losses that are produced by a poorly functioning monopolistic market for telecommunication services.

There are essentially three causes for welfare losses in the case of the telecommunications sector in the countries under review. They are:

- that the operators practice monopoly pricing for some services thereby reducing demand,
- that operational inefficiencies raises the marginal cost and reduces demand, and
- that cross-subsidization by way of the tariff structure results in distortions and sub-optimalities.

All of those effects can be measured and quantified for the main market segments that exists provided price elasticities can be estimated. This implies that it would also be possible to quantify the welfare consequences of different reform options provided the sector could be broken down in a number of market segments for which price elasticity data could be compiled. Such an assessment would make it much easier to carry on a debate and discussion as to which are the preferred options, what is the cost of the different options in terms of distortions and losses.

3. What are the Results?

In all four countries, the publicly owned telecom operators have exclusive rights to operate, maintain and expand the national telecom network, in what is called basic services.

The main justification for the monopoly of the public operator is said to be:

- economy of scale of operating and expanding one network,
- the social obligation of extending the network also to unprofitable rural areas, and
- the monopoly's ability to finance this expansion through cross subsidization.

An efficient natural monopoly should thus be evidenced by a high expansion rate, financial self-sustainability, low national tariffs and high international tariffs. The following chapter compares the current situation with that of the early 1990s to establish if the monopolies have become more cost efficient both in terms of expansion and in lower tariffs. Other factors analyzed are network expansion, improvement of services and the introduction of new services.

Have Tariffs Decreased?

One measure of cost efficiency is the tariff level. Lower call charges for an unchanged service quality would translate into higher relative value for the subscribers, i.e. into higher consumer surplus and a net gain for society as a whole.

In all four countries the telecom companies have considerable, and in some cases decisive, influence over tariffs. Have they used this influence to increase consumer surplus or not? The following is a review of tariff developments during the period 1990 to 1995.

Local Call Charges

Local call charges in the four countries have been increased during the period while international call charges have been decreased, presumably as a consequence of competition. This suggests that the level of cross subsidization has declined. TTCL and TDM have had time related charges throughout the period, while Telecom Namibia introduced a per unit (time related) call charge in 1994. Prior to that, there was no time related charge for local calls. The subscribers paid USD 0.013 equivalent per local call. In 1994 the rate was changed to USD 0.013 per minute. As a result, the number of metered units dropped by 13 percent.

Over the period, Telecom Namibia increased the cost of local calls by reducing the number of seconds per unit.

- In Tanzania, local call charges increased eight times (from USD 0.01 per minute to USD 0.09) between 1993 and 1996 as a consequence of price increases and shorter unit periods.
 - In Mozambique, the local charge has more or less followed the depreciation of the Metical. In January 1996, however, the unit period was decreased from six to four minutes, corresponding to an increase in price per minute of 83 percent.
 - In Namibia local tariffs increased sharply in 1994 but have decreased slightly thereafter.
- The table below compares the level of current local call charges in the four countries under review with a number of countries with wholly or partially deregulated markets.

	Local charges 1996/97 USD/minute
Brazil	0.01
<i>Mozambique</i>	0.01
<i>Namibia</i>	0.01
Sweden	0.02
Korea	0.02
Chile	0.03
<i>Tanzania</i>	0.09
<i>Angola</i>	0.09*

Source: Siemens AG, Telia, Baring Securities

* data from 1992

Local tariffs in Mozambique and Namibia are low also in comparison with deregulated markets such as that of Brazil, Korea and Chile. Tariffs in Tanzania and Angola, however are very high, some USD 0.09 per minute.

Installation Fee

TDM, TTCL and Telecom Namibia all charge about the same installation fee, it ranges from USD 60 per installation in Namibia and Tanzania to USD 90 in Mozambique. There is no information on installation fees levied by Angola Telecom. Installation fees increased during the period 1991 to 1996 in Namibia and Mozambique and decreased in Tanzania.

A study prepared by Siemens AG in 1995, comparing tariffs in 99 countries world wide, showed Mozambique, Namibia and Tanzania to be among the 50 less expensive countries in terms of installation fee.

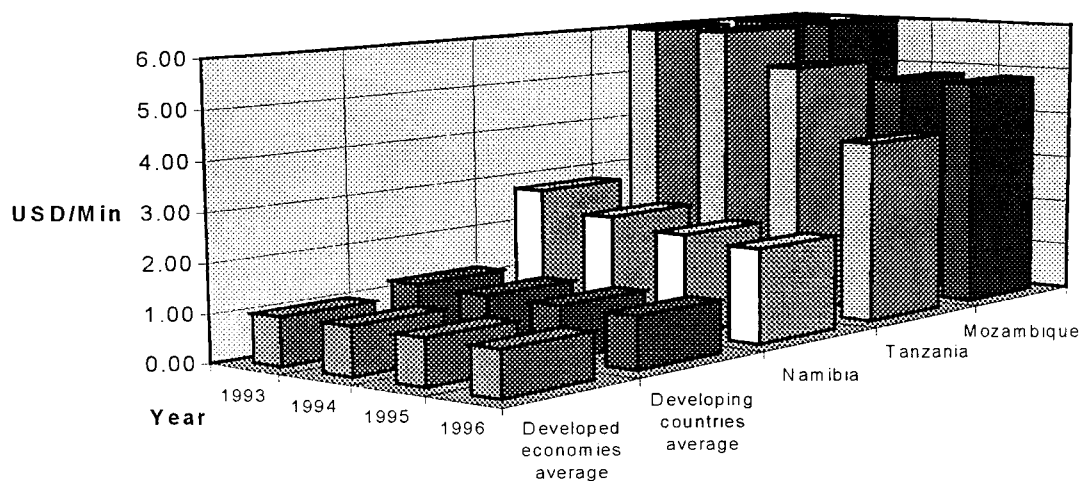
Fixed Fee

The monthly fixed charge (also called rental) has increased during the period in Namibia and in Mozambique. Telecom Namibia currently charges some USD 9 equivalent per month, and Tanzania and Mozambique charge about USD 4 per month as compared to USD 5 and USD 3.1 equivalent in 1991. TTCL thus reduced the charge in real terms between 1993 and 1996 by 11 percent, while TDM and Telecom Namibia increased theirs by respectively 50 and 12 percent during the period 1991 to 1996.

International Call Charges

All three operators have received much criticism for their international charges from subscribers. Information provided from the operators, however, shows that the tariffs have been reduced during the 1990s.

Comparison of International Tariffs



Source: TDM, TTCL, Telecom Namibia and ITU

International tariffs have come down in all three countries. However, Tanzania's and Mozambique's tariffs are still very expensive compared to other developing countries and high-income countries. The table above shows the maximum international charge per minute for three of the countries (there is no data available on international charges in Angola) and a weighted average for 20 developing and 20 high-income countries. The average for developed countries in 1993 was USD 1 per minute, and for 20 developing countries USD 1.2 per minute. The three African countries charged between three to five times as much per minute.

The three countries have, however, made a strong effort to reduce their international charges; TTCL has reduced its international charges by on average 14 percent during the period, Namibia by 11 percent and Mozambique by 8 percent. High-income countries have on average reduced charges by about 2 percent per year and developing countries about four percent per year. ITU estimates that by the year 2000 the average for developing and high-income countries would converge at about USD 0.9 per min. In order for TDM, Telecom Namibia and TTCL to reach that level, they would need to reduce their tariffs by between 20 and 35 percent per year.

Has Cost Efficiency Improved?

Cost of Operating the Network

Cost efficiency can be measured as operating costs (including depreciation) per line and should be compared to revenue per line. The table below compares TDM, TTCL and Telecom Namibia with operators in other developing countries. None of the operators are subject to competition.

	Revenue per line in service 1995 (USD)	Operating costs per line in service 1995 (USD)	Staff per 1000 lines	Approximate number of subscribers
Mozambique	1,781	378	25	60,000
Namibia	924	519	19	73,000
Tanzania	830	460	36	96,000
Pakistan (PTC)	430	90	19	2,120,000
China (Liaoning)	106	57	41	
Ecuador	377	147	4.4	700,000
South Africa (Telkom)	642	310		
OECD Average	1,140	421	6,5	

TDM earns the largest revenue per line of all operators represented in the table but it also has very high operating cost per line, for instance, in comparison with the telecom operators in Pakistan. TDM's main expense is "other services" (called Servicios de Terceros) which include the costs of satellite transmission. The latter accounts for about 50 percent of operating costs including depreciation. TDM's staff costs amount to 30 percent of operating expenses compared to more than 50 percent in Namibia and in Tanzania. TTCL, with approximately the same number of subscribers as Telecom Namibia, has a substantially lower annual revenue per line and higher operating cost per line despite the fact that TTCL charges the highest local rates of the five operators included in the table. Namibia Telecom had the highest operating costs per line in service despite the fact that they have the most modern network of the three operators analyzed. The most cost efficient operator would be EMETEL in Ecuador. It has a high productivity, 4.4 staff per 1,000 lines but it is also the largest operator.

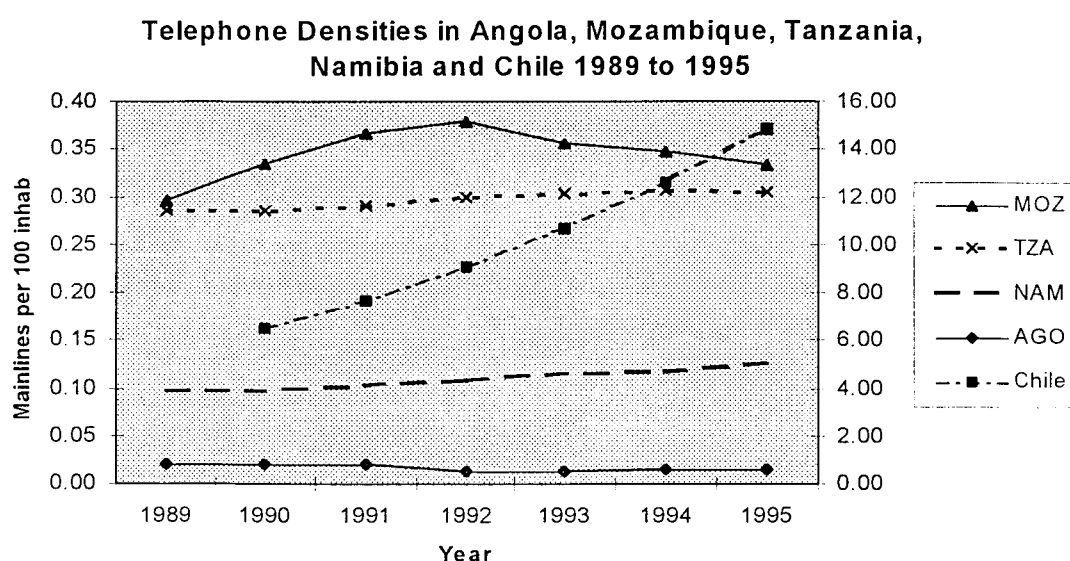
TDM's operating cost per line, which increased sharply in 1990, has since declined slowly. Telecom Namibia has diminished its profits per line by almost 50 percent since 1994, while revenue has decreased by approximately 28 percent. TTCL's operating costs increased by more than 20 percent between 1994 and 1995, and the preliminary income statement for 1996 shows that operating costs have increased again by more than 23 percent compared to 1995.

Some operating costs have declined, notably in Mozambique, others increased but all four operators under review have a long way to go before their cost efficiency comes close to that of most other developing country operators. They belonged to some of the world's

least cost efficient operators in the beginning of the 90s and they are still to be found in that category.

Have Networks been Expanded?

Of the countries analyzed, Namibia had the highest density in 1989: namely 4 mainlines per 100 inhabitants, while the other countries had less than one main line per 100 inhabitants. The table below shows the achievements in terms of density, calculated as main lines per 100 inhabitants during the period. For comparison, the development in the Chilean telecom sector (as an example of developments occurring after the sector was opened up to competition in the early 1990s) has also been included.



Source: ITU

The left y-axis pertains to Mozambique and Tanzania, and the right to Chile, Namibia and Angola. In the period, the telephone density increased by on average one percent per year in Mozambique and Tanzania and by between four and five percent in Namibia. In Angola, the data indicates that density decreased during the period. The Chilean network, on the other hand, grew by more than 15 percent per year. Growth rates in other countries where the industry has been deregulated (the Philippines, Hong Kong, Argentina, and Thailand to name a few) have ranged between seven and 14 percent during the same period.⁹

One of the main arguments for telecom monopolies is to ensure network expansions also in unprofitable areas (mainly rural areas). The table above has shown that the deregulated telecom sector in Chile has expanded substantially compared to the monopolies in Tanzania, Namibia and Mozambique. The Chilean government has also succeeded in expanding the rural network by using the market forces as described in the box below.

⁹ Baring Securities. Telecommunications Valuation, 1994-95

How to expand networks in rural areas - the Chilean example

Chile has been able to provide telephone services to rural areas through a rural telecom expansion fund, controlled by the regulatory body. The regulator periodically invites the national operators to tender for the installation of transmission, switches and outside plant installation in rural locations. The locations and the number of lines in each location are determined by the regulator. The private operators tender for, firstly, the installation of the equipment, and secondly, the non-exclusive license to charge the new subscribers tariffs which are slightly higher than those prevailing on the market for a limited period of time. A subsidy for the installation of the equipment, financed from the rural telecom expansion fund, is offered. The competitor that offers to install the equipment and provide the service for the lowest subsidy wins the contract.

In the first round (in 1995) bids for zero subsidy were made for 16 out of 46 projects, 18 were at maximum subsidy, eight were below maximum subsidy and four were not bid for.¹⁰ This manner of ensuring expansions is an efficient and low cost alternative to expand rural networks through competition.

Capacity utilization is still extremely low in all countries studied. In Namibia, the fill rate corresponds to 73 percent of the exchange capacity. In Tanzania, 77 percent of total exchange capacity is used and in Mozambique only 61 percent of the total capacity is revenue earning. The most recent information for Angola dates back to 1992, when 63 percent of the exchange capacity was utilized. Under-utilization of the exchanges is common in many developing countries where the exchanges are relatively inexpensive and financed through concessionary loans. The installation of outside plant, however, is the responsibility of the telecom operator, who either chooses to out-source it or to have its own staff install the lines. A nominal utilization rate would be between 90 and 95 percent depending on growth needs of the network. In Sweden an estimated 90 to 95 percent of the total network is connected. Not using the capacity reduces the financial and economic return on the exchanges since 30 to 40 percent of the capital is idle i.e. not revenue bearing.

Information as to capacity utilization changes over the period exists only for Namibia, Tanzania and Mozambique. In Tanzania and Mozambique the fill rate has decreased over the period from 81 percent for TTCL in 1991 to 77 in 1996, and from 68 percent in Mozambique to 61 percent in 1996. In Namibia some 93 percent of the exchange capacity was used in 1993, thus saturating the exchanges. The current fill rate is however about 73 percent.

Have Services Improved?

Service quality has varied greatly in the different countries. Collection of service quality information has not been performed in all countries during the period. In Angola, the data suggests that the service quality has decreased substantially. This information is, however, not entirely consistent. Since the ability to measure performance has gradually improved

¹⁰ B. Wellenius, Extending Telecommunications Service to Rural Areas-The Chilean Experience.

over the period, it is more likely that earlier data was compiled differently than that of later years. The most recent information (from 1995) is shown in the following table.

	Mozambique (1996)	Tanzania (1996)	Namibia (1996)	Angola (1995)
Faults per line per year	n.a.*	2.0	1.9	1.2
Faults cleared				
within 24 hours	n.a.	40%		1%
within 48 hours	n.a.	61%	69%	6%
within 72 hours	65%			
within 30 days	n.a.	95%	n.a.	48%
Average waiting time for installation (months)	10	n.a.	less than 0.5	n.a.
Total demand (registered applicants + connected subscribers)	74,000	214,000	86,000	n.a.
Satisfaction of demand	75%	43%	95%	n.a.

Source: TDM, TTCL, Telecom Namibia and Angola Telecom.

* not available.

The information contained in the annual accounts of Telecom Namibia and TDM comprises only a few basic indicators.

The table above shows that Telecom Namibia provides the quickest service and is able to satisfy almost all pending demand. Telecom Namibia has made a distinction between business and residential subscribers: business subscriber faults are cleared within 24 hours and lines are installed within one week. For residential subscribers, the target is to install a telephone within two weeks. In 1995, the number of faults cleared within 48 hours was about 66 percent of all faults reported. The number of installations made within 15 days has also increased substantially during the period, from only 29 percent in 1995 to 80 percent at the end of 1996.

Telecom Namibia has continuously increased its network. Despite this, the number of waiting applicants has remained the same, suggesting that demand has increased at the same rate as network expansion.

TDM and TTCL have about the same service level in terms of fault clearance time, although Mozambique seems to be able to better satisfy demand. In Angola, fault clearance is still very slow and more than 50 percent of all faults are not repaired within one month.

TTCL has slowly been improving its service. The fault clearance time has decreased although the number of faults per line have increased, from 1.8 in 1992 to 2 faults per main line and year.

In Mozambique, Swedtel introduced performance indicators in the early 1990s, but it seems as if the system was not used for measuring service level, output and financial performance until 1993. Since then, faults per line have decreased from 0.86 to 0.75. The percentage of faults cleared within three days decreased in 1994 and 1995. However, thereafter it increased to the same level as in 1993, i.e. 65 percent of reported faults.

One of the main problems in Mozambique is the long waiting time for a telephone connection. The average for 1996 was 10 months, a drop compared to 1993 when average waiting time was 14 months. Average waiting time is not measured in either Tanzania or Angola.

Have New Services been Introduced?

Available data suggests that new telephone services were introduced in Tanzania and in Mozambique. TDM has formed joint ventures in companies offering paging services, Internet and data services, telecom consulting, electronic security and mobile services. The introduction of mobile services in Mozambique has, however, still not been realized, and the Internet connection has not taken place. The construction of customer service centers, shops where subscribers can pay bills, complain, buy new services etc., is ongoing. With the use of the new software (Giraffe I and II) TDM will be able to respond to questions about faults, billing and installation in the entire country. This service exists in Maputo and is under installation in the provinces.

In Tanzania, TTCL competes with private firms in supplying mobile telephony, pay phones and data communication services. There are no paging services or Internet connections. TTCL has created a number of customer service centers where complaints can be logged, bills paid, services ordered etc.

Telecom Namibia offers data services to business customers in certain parts of the country (mainly in the central and coast regions). Internet and e-mail services are available through a private company. Paging services are to be introduced and Telecom Namibia is also going to provide detailed billing and customer service centers (called Teleshops) throughout the country.

There is no information on new services provided in Angola.

The table below summarizes the developments in telecom sectors in Angola, Mozambique, Namibia and Tanzania over the period 1990 to 1996.

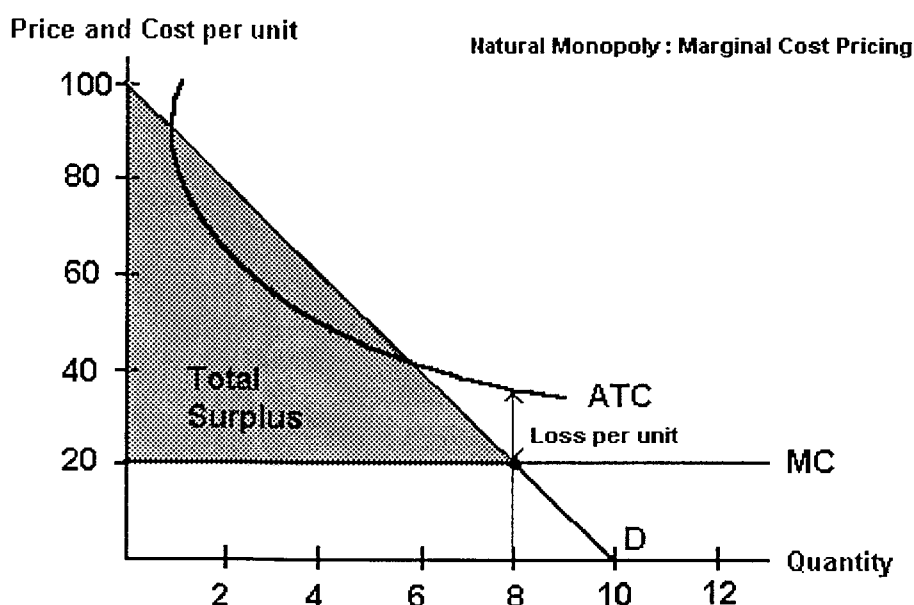
	TDM	TTCL	Telecom Namibia	Angola Telecom
Tariffs	- Local: decrease - Int.: decrease - Installation fee: gradual increase	- Local: substantial increase, very high charges - Int.: decrease - Installation fee: decrease	- Local: increase, - Int.: substantial drop - Installation fee: gradual increase	Local: Very high using official exch. rate
Cost efficiency	high costs, low productivity	high costs, low productivity	low, some labor productivity increases but very little increase in overall cost efficiency	n.a.
Telephone density 1989-1996	Increase of less than 2 percent per year	Increase of less than 1 percent per year	Increase of less than 5 percent per year	Decrease in telephone density during the period
Service quality	Slow increase	Slow increase	Slow increase	n.a.
New services	- Data services - Customer Service Centers recently introduced - Paging	- Data services - Mobile phones - Customer Service Centers exist	- Data services - Mobile phones - Customer Service Centers recently introduced - Internet	n.a.
Conclusion	limited increase in density, limited effect on prices	limited increase in density, tariff rises, slow improvement in service	some increase in density, increased local tariffs, improved service	decrease in density, high tariffs, service quality ?

The operators have, as shown, not succeeded in either expanding the network, improving cost efficiency, introducing new services or improving service quality to any extent. There would therefore not be any justification for maintaining the monopoly.

4. Explaining the Outcome - The Theoretical Context

Neo-Classic Theory of the Firm

Why do we have monopolies for the provision of public utilities? The theoretical origin dates back to a famous article published in 1938, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates" ¹¹ by an English economist Harold Hotelling. He argued that society would be better off when a regulated monopoly, whose costs decrease with output, priced its output at marginal cost (MC). Marginal cost pricing would increase consumer surplus more than it would decrease producer surplus and thus the gain of society as a whole would be increased.

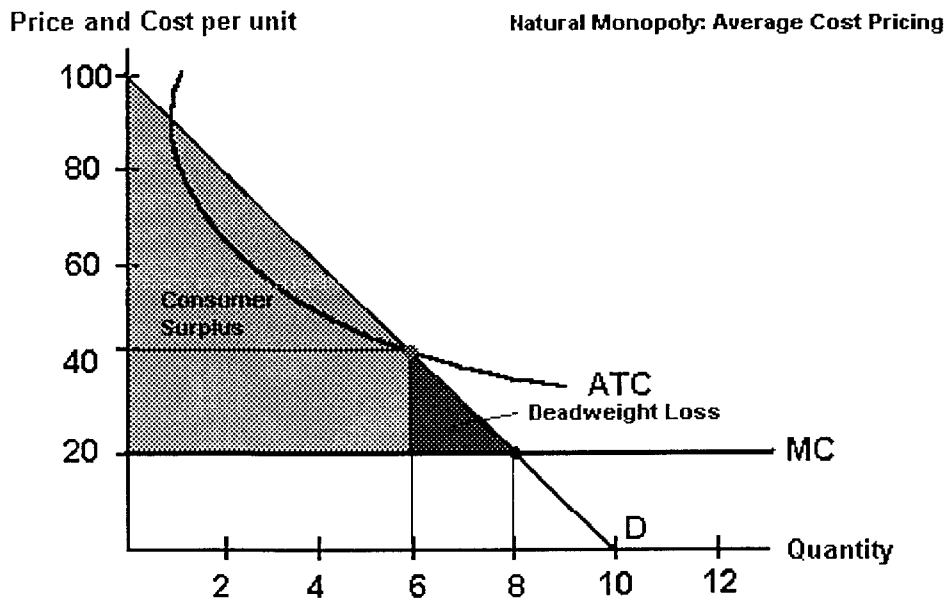


Since the marginal cost is lower than the average total cost per unit (ATC) a monopoly that prices its output at marginal cost would lose money. There are two solutions to this problem. Either the government could cover such losses by way of a subsidy or it could allow the utility to price discriminate, i.e. to overcharge some customers in order to undercharge others.

But if the government were to subsidize a private monopoly, why not make it a government agency? Similarly if the monopoly requires government protection from competition in order to be able to overcharge, why not make it part of the state. From the time when Hotelling wrote the article to well into the 1970s and 80s, the declining cost curve prevailed in the utility industries. This, too was a period of increasing state ownership of utilities including telephone operators.

¹¹ 6 *Economica* pages 242-269

Hotelling argued for market intervention which would consist of causing a utility to operate at a non-sustainable price level but be compensated by a subsidy or a possibility to overcharge. If the provider of a public utility should be financially sustainable it would have to sell its products or services at a price corresponding to the average total cost per unit. This would result in a higher price than the marginal cost and therefore in a reduced sales volume.

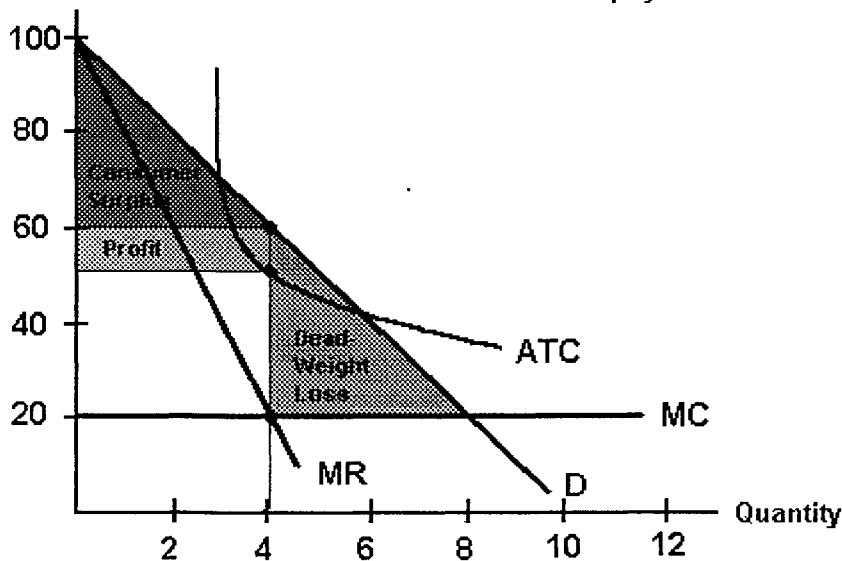


It would also result in a decrease in consumer surplus. One part of the consumer surplus would be lost to the producer but the remainder would not benefit anybody. It would be a deadweight loss, i.e. a loss of value suffered by the economy as a whole. In this case the producer surplus would increase by 80 (from $8 \times 20 = 160$ in the marginal cost case to $6 \times 40 = 240$ here) while consumer surplus would have decreased by approximately 140.

But the neo-classic theory of the firm teaches that the inherent tendency of any firm is to maximize producer surplus (and thereby profit) by selling its goods or services at a price where its marginal revenue per unit (MR) equals the marginal cost. This would be at an even higher price than that determined by average total cost (ATC) and the demand curve (D).

Price and Cost per unit

Natural Monopoly: Profit Maximisation



At this volume of sales, the monopoly would maximize its profit but the total consumer surplus and producer value of its production would be substantially lower than were it to sell at marginal cost. The deadweight loss would have increased from an estimated 20 in the case of sustainability to 80. This is what Harold Hotelling discovered.

There is thus a conflict between optimizing producer profit and maximizing total surplus. Monopoly firms have an incentive to restrict output to that level where it maximizes its profit i.e. where Marginal Cost is equal to Marginal Revenue. By so doing it increases producer surplus but reduces consumer surplus and creates a deadweight loss. What the monopoly will actually do depends on the relative strength of the various stakeholder groups that control or influence its behavior.

There are normally a number of such stakeholder groups. The most important, in case of a state owned monopoly, would be:

- politicians such as members of parliament, ministers, etc.,
- civil servants in for instance ministry of communication (typically acting as owner),
- the regulating agency,
- the management,
- donors,
- customers and
- employees.

The government as owner can chose to either use the monopoly as a source of income, i.e. let it maximize profit, or as a source of maximum welfare by creating as large a consumer surplus as possible with the help of marginal pricing. But the government is typically represented by many parties with diverging interests. Elected politicians can use the

monopoly to serve the interests of their own constituencies, which, after all, is why they have been elected. Ministries may use it as a source of revenue or as a means of extending influence and control. The tendency for management is to use the monopoly first and foremost, to secure their positions and, secondly, to expand their control span. The employees similarly want job security and maximum pay, etc.

The regulator is charged with the task of balancing the interests of a large number of stakeholder groups so that the public interest is best served. Many such groups may, however, be much more influential than the regulatory body. Since the days of Harold Hotelling economists and other observers of organizational behavior have concluded that the public interest frequently suffers at the hand of special interests.

Public Interest or Special Interests?

The behavior of various stakeholder groups in relation to monopolies has been well studied and documented. It forms an integral part of the broader theory of public choice that includes the economic theory of regulation. This theory contends that essentially four factors affect the demand for regulation:

- the larger the consumer surplus per customer or subscriber resulting from regulation, the greater would be the demand for such regulation and
- a large number of subscribers each with a substantial potential consumer surplus to gain would increase demand for regulation. In a similar manner,
- the producers would demand regulation to safeguard their interests the larger the producer surplus per firm arising out of a particular regulation and the larger the number of firms that would stand to gain by regulation.

The theory furthermore stipulates that, for a given surplus the smaller the number of customers or producers who share the surplus the larger would be the demand for the regulation that would create it. For instance, if a handful of large organizations would account for 90 percent of all telephone traffic, their cost of coordinating their lobbying for regulated lower prices would be modest in relation to the potential benefits each and everyone could gain. Similarly, on the producer side, the theory argues that a single monopoly producer would, by itself, exert stronger pressure for regulation in its favor than would a large number of competing producers. This is, according to the theory, balanced in part by the fact that the larger the consumer surplus per buyer or producer surplus per firm, and the larger the number of persons affected by a regulation, the greater is the tendency for the political system to supply such regulation.

The study of regulated monopolies has, however, also given rise to a partially competing theory, that of *capture*, which states that:

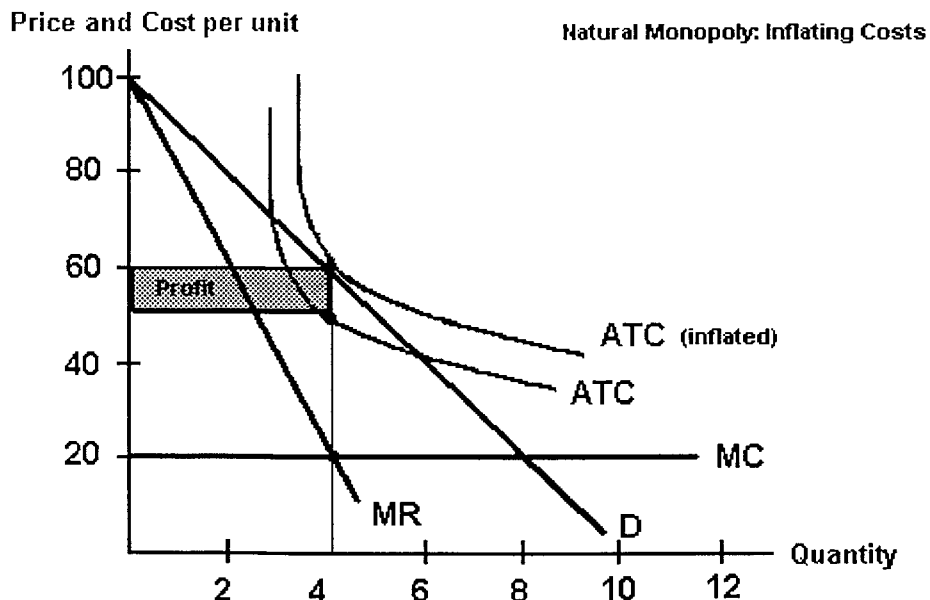
the only type of regulation that can exist over the longer term is that which maximizes producer surplus. The idea behind the theory of capture is that the cost of regulation is high and that only those regulations that increase the surplus of small and easily identifiable groups who have low organizational costs will be

supplied by the political process. Such regulation will be supplied even where it imposes costs on other stakeholder groups provided those costs are spread thinly and widely enough so that they do not have any negative effects on voters.

The theory of capture thus runs counter to the argument of Harold Hotelling by suggesting that well organized stakeholder groups have the capacity to capture the surplus of a monopoly. In other words, regulation benefits cohesive interest groups by large and visible amounts and imposes costs on others that are so small, in per capita terms, that they do not find it worthwhile to incur the cost of organizing an interest group to avoid these costs. The theory holds that:

- politicians capture the surplus of the monopoly by favoring their constituents (political horse trading) and, on occasion, through graft,
- management and senior staff often capture the surplus by creating large and sumptuously well equipped head offices, providing generous perks such as foreign travel, company cars, free housing, etc. and
- the employees can also capture a part of the surplus by way of extensive job security and over-staffing, generous pay and various allowances, etc.

In graphical form the capturing of surplus by management and staff would consist of inflation of costs so that average total cost per unit becomes higher than it otherwise need be and the profit correspondingly lower. The monopoly would be more inefficient than it need be. Since the monopoly is the sole provider of essential services, staff and management can even capture more than the profit by inflating costs over and above the demand curve and operate both at a sub-optimal capacity utilization and with a loss which the government has to cover through subsidies.



The group with the least capacity for capturing a part of the surplus is, according to the theory of capture, the consumers, especially if they are numerous. For them the cost of organizing is high in relation to the benefits they gain.

The capture theory, in essence, suggests that a monopoly is inherently inefficient in the sense that it lacks incentive to optimize productivity of capital and labor and to strive for lowest possible costs and highest possible value for its customers.

An additional theory, which explains the tendency of internal stakeholders to capture the surplus of a firm, is the concept of x-inefficiency¹². The theory is applicable to most companies where ownership and management are separate, but especially to state owned enterprises. X-inefficiency is when the owners' profit maximization objective is not shared by the employees, who have their own utility maximization objectives. Typical examples are when the management subverts the firm to their own ends, by investing in larger offices, more fringe benefits etc. and the shop floor workers take long coffee-breaks etc..¹³ The firm would thus not be efficient in the neo-classical term, since the resources would not be used to increase the company's profits alone but to increase the utility of the employees. X-inefficiency can, according to the theory, not exist in competitive environments, since it would put the firm in respect out of business.¹⁴

The most effective control mechanism, according to the theory, is competition, since it puts pressure on management and staff to reduce costs. Monopolies are therefore by nature x-inefficient, since there is no competition.¹⁵

The exception to the rule, is the case when barriers to entry are low and new firms can easily enter, which forces the monopoly to behave like a firm in competition. This is called a contestable market.

Can Monopolies be made Efficient?

Although the neo-classical theory of the firm suggests otherwise, there are several examples of monopolies renowned for their efficiencies. The telecom administration in Singapore, the National Power Board (Vattenfall) in Sweden, Crown Agents in the UK, and the National Forest Administration in New Zealand are some often cited examples. Do they represent exceptions from the rule or achievable models?

There is little empirical evidence to suggest that they represent the norm. Examples of badly performing and wasteful monopolies exist in abundance whereas their opposites are few and far between. Efficient monopolies are likely to be a consequence of very particular circumstances rather than of economic forces. Monopolies can operate well in countries with a well-developed civil service culture, a high degree of political stability and cultural

¹² Concept developed by Leibenstein, 1966.

¹³ Crew, M, page 110.

¹⁴ Burke, Genn-Bash and Haines, page 120.

¹⁵ Ibid, page 111.

homogeneity. They should be capital and technology intensive with easily quantifiable output.

In the telecom sector even paragons such as Telia reveal, through their internal reforms and redundancy programs, that their prior existence as monopolies allowed them to capture a surplus which competition forces them to cede to subscribers by way of progressively more and more competitive rates.

Two theories, organizational theory and the theory of the firm, exist to explain how and why firms act as they do. No successful attempt to merge these two theories has, however, been made. The main reason being that the two are based on different approaches. Organizational theorists study the behavior of firms, managers and administrations, i.e. base their conclusions on empirical evidence. The neo-classical theory of the firm, however, is an abstraction. The businesses and the market are studied, to determine how output and prices are established, based on cost curves.¹⁶

Organizational and behavioral theories suggest that firms try to achieve satisfactory levels of several variables such as profit, growth, market share, etc. while the neo-classical theory of the firms state that all firms strive to maximize only profit. The Organizational, Behavioral and Neo-classic theories all postulate that the determinants for why and how a firm acts is developments in its environment (new entrants into the market, new technology, decreases in market share, price changes introduced by competing firms etc.). With competition, changes in the environment (in the market) create “stimulus” for the firms, which they act upon. Actions taken can be anything from developing long range plans to increasing market share, short term plans to reduce price or increase sales etc.

Monopolies, on the other hand, strive to control the environment, and planning is the tool used to consolidate the market. Long term planning includes decisions on technologies to be used, prices, costs and goals. There are no incentives to adjust to the consumers’ preferences or to even be influenced by trends. In an article on the telecom sector in New Zealand, Mr. Michal Davies (Managing Director of Bell South New Zealand) states that “Incumbents are powerfully motivated to seek technological options which are backward compatible with obsolescent assets in place ... New entrants pursue technological options which lower barriers to entry and provide sources of differentiation which can overcome incumbents’ advantages ...”¹⁷ This serves to show that monopolies have no natural incentives to innovate, improve services or become more efficient. As long as the market situation is stable, there is no stimulus for the monopoly to change. Once the situation changes however, e.g. by the appearance of regulatory agencies with the purpose of licensing competitors, monopolies become motivated to defend their dominance. The monopolies thus have only one main stimulus, to maintain control of the market. Owner representatives and employees of the monopolies are motivated to maximize their own personal utility.

¹⁶ Burke, Genn-Bash and Haines, page 97 ff.

¹⁷ Abstracts, Michael Davies, BellSouth NZ.

The only manner of improving efficiency and to change the behavior of the firm would thus be to introduce competition. This reduces x-inefficiency, reduces the ability of the stakeholders to capture the surplus, increases cost efficiency and cooperation by the employees and above all, increases the consumer surplus.

Behavioral Characteristics of a Monopoly

Henry Mintzberg, a leading management theorist, has based on the neo-classic theory of capture, x-inefficiency and the factors that influence firms' behavior, categorized a monopoly as a "Machine Bureaucracy"¹⁸ which exhibits the following main characteristics.

Monopolies

- need to operate in a stable environment which they strive to control by way of long range planning processes,
- are highly centralized, with a vertical hierarchy,
- rely on rules, standards and the formal chain of command to control the operations,
- are cost driven in the sense that the larger unit the manager is responsible for the more power, and
- are only subject to external control by the owner or the government

Control by Planning and Standardization

Telecom monopolies exhibit the machine bureaucracies' need to control the environment and its staff. They have a strong propensity to seek to eliminate uncertainty and in their more developed form, therefore, tend to be preoccupied with long range planning. The majority of all tasks in the organizations are standardized for the purpose of easy control and monitoring. There are rules and regulations governing the functions and decision making follows a formal chain of command. Machine bureaucracies tend to rely extensively on middle management since it designs many of the formal rules and regulations whereby the organization exists.

Centralized Decision Making

The decision making is centralized and strategies are decided at the top and then implemented top - down. All non-routine problems are difficult to handle and therefore referred to top management. Senior executives tend to spend more time solving operational problems than developing strategies.

Budget Driven

A monopoly is also typically cost or budget driven. The larger the budget a manager is responsible for, the more power he or she can exert. Managers thus compete in terms of budgets, size of unit, number of workers but seldom in terms of profit margin, revenue or number of new clients. This results in top heavy organizations with limited cost efficiency.

¹⁸ H. Mintzberg, Structures in Fives: Designing Effective Organizations.

The organization itself tends to capture part of the monopoly surplus by way of its inefficiency.

Organized by Function not by Customer Needs

Monopolies cannot be genuinely customer oriented in its “normal” environment since there is no stimulus or motivation in a market controlled by the monopoly. Occasional customer surveys and PR programs cannot for long hide the fact that monopolies control their customers and ration their access to the goods or services they provide. A monopoly’s organization is typically functional as opposed to product, market or customer related.

A monopoly never responds to the prime concern of its customer, namely that of price. It would cede its power over the price of its output only if forced to by law. If its power over the price is compromised by regulation, a large part of the organization’s energy tends to be devoted to the issue of cost compensation.

Monopolistic Behavior under Threat of Competition

Monopolies also exhibit quite consistent behavior when faced with competition. When smaller (fringe firms) are allowed to enter the market, the monopoly becomes the dominant firm. Monopolies are attacked from a number of directions but the most common is by way of price. The monopoly’s standardized product is easy to replicate and its pricing is seldom cost based. This allows competitors to focus on product and customer segments with high margins.

The monopoly typically reacts with a number of anti-competitive measures such as predatory pricing, dumping, lobbying for legal restrictions on the competitors’ activities, hindering access to common resources, excess pricing of access, etc., instead of focusing on that which is likely to win in the long run: cost efficiency, increased value for the customers and reduced price. One of the most effective manners of “getting rid” of smaller competitors is predatory pricing; when the monopoly lowers its prices below costs with the intention of driving competitors from the workplace. Once this has been done, prices can be raised again.

De-regulation allows entry of a very different type of organization than that of the monopoly. This is because of the fact that the monopoly by its nature, absorbs value rather than creating it. The competitors tend to focus on creating value for customers by way of superior cost efficiency, which they share with their market. The main characteristics of value creating organizations are the following.

Value Creating Companies

- rely on flexibility and innovativeness of its staff,
- operate in a dynamic environment,
- are decentralized and controlled by way of performance targets,
- rely on demand driven training and competence enhancement of staff, and
- are market driven, strive to increase their market share by creating demand and positioning their product

The only true countervailing measure on the part of a monopoly facing such competition is cost efficiency which it can translate into lower prices, better product quality and extended market reach. The following chapter discusses and seeks to measure the extent to which the four recipients of SIDA's support have shown improvement in those areas.

Commercialization, Privatization or Liberalization of Telecoms?

One issue currently debated by governments, economists and telecom experts around the world is how to improve the public telecom operators and prepare them for a "de-monopolization". There is no longer any disagreement over whether the telecom operators should be "de-monopolized". The issue is how and when. Telecom experts also agree that the operators should be commercialized. Commercialization is a very vague concept, which seems to be defined as distancing the management of the telecom operator from the government and ensuring that the operators become more business-like.

The World Bank recently contracted Carl Bro to evaluate the strategic options available to telecom operators, their current use in high-income and developing countries and their potential use in Sub-Saharan Africa¹⁹. The main options are:

1. to privatize before competition is introduced, what is referred to as the incumbent strategy,
2. to introduce competition for the state-owned operators, referred to as the competitive entry strategy or
3. to maintain monopolies in certain areas or sectors for a limited time (and then allow competition), called the complementary entry strategy.

The incumbent strategy aims at converting a state owned telecom operator into a commercial business through privatization, often following upon a program of restructuring and reform. The incumbent strategy has been used in most European countries, including Sweden and France. The telecom operator is given time and resources to reform and restructure its organization in order to be able to compete better.

The second strategy, that of competitive entry, introduces complete liberalization in one go. Several competitors are normally licensed and the public operator has been commercialized, restructured and has slimmed its organization. This is the strategy, which maximizes consumer surplus as competition reduces prices. It forces the operators to

¹⁹ Carl Bro International A/S. Africa Telecommunication Policy Study, Phase 3.

become more cost efficient, to innovate and to introduce new services. In developing countries this strategy may also prove to be the one that increases the investments in the sector as competitors strive to connect as many subscribers as possible to their facilities. It has been extensively used in Latin America.

Complementary entry strategy is when an operator is granted an exclusive license for a certain region or service for a limited time period. This strategy aims at ensuring investments in a particular sector.

The strategies which have been the most successful, i.e. have succeeded in commercializing the operators rapidly, are those of privatization and competitive entry. The proviso is that the privatization is not preceded by a lengthy commercialization process. The strategy pursued in each of the four countries analyzed in this report has, however, been the complementary entry strategy. This strategy is the most lengthy and costly. The Carl Bro report states that the complementary entry strategy "...is the least likely of the three to produce rapid or sustained improvements in incumbent performance"²⁰. This has also been shown in the performance of the telecom operators and in comparisons with operators in other countries, which have been subjected to competition or have been privatized.

²⁰ Carl Bro International A/S. Africa Telecommunication Policy Study, Phase 3.

5. Achievement of Tasks

The Focus

This evaluation covers mainly the period 1990 to 1996, however, the orientation of the support during this period is the result of a process of gradual change and reorientation over time and three phases can be distinguished as follows:

First a *Technical Assistance Phase* during the 1980s and early 1990s: the main focus was on network engineering and operation and maintenance of the existing network.

The second phase, the *Management Support Phase*, from the late 1980s to early 1990s, comprised technical training of staff, assistance to and creation of Human Resource Development functions and advice and guidance to top management.

The ongoing third phase, the *Institutional Development Phase*, follows the aim of SIDA's Guidelines from 1994. It concentrates more closely on management issues, on creating a corporate culture, making the organization more customer-oriented and financially viable. It also includes the further development of Human Resource functions and the use of performance indicators.

In Angola, Mozambique and in Namibia the support also included *creation and strengthening of a regulatory agency*. These projects have, however, not been completed.

Three main areas of support can be identified within the overall institutional development programs:

- Human Resource Development; training of personnel and of instructors, management training, creation and assistance to a Human Resource Department and investment in training facilities
- Organizational Development and Corporatization; development of management and planning tools and organization development
- Regulation; assistance in developing the legal framework for a regulatory authority and developing the regulatory procedures and mechanisms

The following sub-chapters present the objectives of the three main areas of support as specified for each country, with achievements, a review of the tasks implemented and those currently in use and the estimated cost of each component. Basis for this analysis is documents reviewed and interviews with the staff of TTCL, TDM and Telecom Namibia.

Neither the project budgets nor the consultants' summary of funds spent show the amounts allocated to each sub-task. The Consultants have therefore estimated the allocation to the main components based on time spent on different tasks as reported by the implementing consultants.

Telecom Namibia

The support to the telecom sector in Namibia has covered only a few years. It has mainly comprised training of management in seminars and funding of a Swedish MD during a period of four years.

Human Resources Development

The total amount allocated to the HRD component has been estimated to SEK 7.8 million.

Objectives	Achievements	Is it working satisfactorily?
Establish Human Resource activities and functions.	A separate Training (HRD) Department was established.	The training/HRD department is new and recently staffed for its duties, and is running courses both in general/management subjects and technical subjects.
Identify and address the Human Resources development needs of the Corporation.	Training programs were performed according to a Training Needs Analysis. The consultants' team for the HRD project proposed an overall plan for management development and training.	Staff training of lower ranks has not resulted in the knowledge and skill required in a customer-oriented corporation. There seems to be little knowledge of the objectives and activities of the HRD and Institutional Development Programs.
Strengthen management capabilities in the new Corporation (incl. The Board).	A substantial number of managers were trained in how to perform budget planning and performance follow-up. Management teams have been trained and conflicts in management groups have been reduced. The Board of Directors' capacity was increased to some degree: understanding their roles.	Managers reporting directly to the MD are given the responsibility for recruitment and for day to day management and utilization of resources. The monitoring of performance using performance indicators is done throughout the organization. The board understands its responsibilities but was highly dependent on the Swedish MD to initiate changes.

Support affirmative action policies, and program activities as directed by the government.	A significant number of personnel from the under-privileged groups were trained to be managers.	Top and middle management currently includes a majority of black Namibians both internally trained and externally recruited.
Assist management to carry out continued training programs, and assistance to the HR departments to arrange functional specialist courses.	The consultants initiated and carried out comprehensive training programs for top and middle management: the Management Development Program (MDP) and the Graduate Development Program (GDP). During the project specialist courses were initiated in the administrative field, computer knowledge, English literacy courses, etc.	The HR Department is managing a comprehensive annual training program comprising the MDP, GDP and technical training. Telecom Namibia does not have the ability to perform the MDP and GDP “in-house” and therefore employs external consultants for this purpose. Other types of training courses are running on a continuous basis for which the different departments can sign up their staff.

Conclusion

Telecom Namibia is currently performing the tasks introduced by the consultants. The management of Telecom Namibia has benefited greatly from the project, and a cadre of managers, trained by ISO to a large extent, is now running the firm. Recruitment from other sectors in the economy has also been successful due to the new salary and recruitment policies adapted by the company. The customer-oriented approach is still lacking, both among top management and at the working level.

Organizational Development and Corporatization

The amount allocated to organizational development was approximately SEK 6 million. The overall objective was to transform the telecom operator into a corporate entity, i.e. a state owned corporation run on business principles.

Objectives	Achievements	Is it working satisfactorily?
Prepare a new Acts for Postal and Telecommunication Services.	Post and Telecommunications Establishment Act and the Post and Telecommunication Act were approved and came into effect in August 1992.	As a consequence of the Acts, a Performance Agreement was entered into by the Ministry and the Telecom Namibia in October 1994. Telecom Namibia is currently operating as a parastatal.
Financial evaluation of assets of the new entity.	The evaluation of the assets of Telecom Namibia was not completed until the past fiscal year.	
Prepare the new organizational structure including job descriptions and staffing.	The initial organizational structure was changed twice, in 1994/95 and in 1996 with the purpose of making Telecom Namibia more customer oriented. A grading system is used to describe the responsibilities for each job category.	The initial design of the organizational structure was mainly the work of the consultants and the subsequent changes that of the MD and the management group. The most recent change is however still ongoing. A revision of the grading system is under way, and not yet fully implemented.
Assist in establishing salary policies and manpower development strategies.	A "Blue Book", describing the HR policy and plans, was prepared by the consultants. The consultants' team for the HRD project proposed an overall management development and training plan.	Telecom Namibia has its own policy on salaries, independent of other government departments. It has, as a consequence of its competitive wages, been successful in attracting qualified external staff. Performance reviews are carried out regularly. Development programs for managers' positions are continued, according to the proposed plan.
Tariff setting procedures.	The tariff structure was changed as recommended in a Master Plan prepared by Swedtel in 1994. Tariffs were, during the period adjusted annually.	Changing of tariff structures was done on the recommendation of Swedtel without prior analysis of impact on customers.

Conclusion

The transfer from a government entity to a parastatal organization was smooth and swift. The developments of the company can largely be attributed to the Swedish MD and the top management. The systems introduced by the ISO consultants are working or under implementation.

Assistance to the Regulatory Entity (NCC)

The cost of the support to the regulatory entity amounted to about SEK 1 million. The overall objectives were to formulate and establish the legal framework, regulations and to put in place resources necessary for operating a regulator of the telecommunications sector.

Objectives	Achievements	Is it working satisfactorily?
Define: • priority areas requiring regulation • working procedures • standards and license conditions • equipment standards	NCC is working according to a legislation approved in April 1992 (i.e. before Telecom Namibia was formally started).	NCC has issued one operator license (to Mobile Telecommunications Limited, MTC) in 1995. A draft policy and draft regulations have been presented by the consultant, but have not yet been approved by the concerned ministry.
Legal aspects: • review existing acts; • amend and adjust the acts to reflect the regulatory role of NCC	Lists of the concerned Acts with explanations have been presented by the consultant.	No.
Resources; • present recommendations regarding equipment required by the NCC to execute its functions • recommend international partners to assist with equipment testing, standardization and similar issues	Recommendations in standardization matters have been presented by the consultant in a draft form.	No, the draft proposal has not yet been approved.

Conclusion

Draft documents have been presented to the NCC and to the Ministry for approval. The last task would be to adapt the proposal to the Namibian legal format. The final product has however not been presented. The present status of the draft proposals indicates that the tasks as specified in the Terms of Reference are not yet fulfilled. Thus the project goals have not yet been achieved in full.

TTCL

TTCL has received the largest amount of funds, including the ongoing TRP project during the period. Between 1987 and 1995, total allocation was about SEK 139 million. SIDA is supporting a part of the TDC project, the IDC component, aiming at commercializing TTCL and changing the culture of the organization. SIDA has agreed to contribute some SEK 240 million to the TRP.

Human Resource Development

The total cost of the Human Resource Development component has been estimated to SEK 34 million including equipment and investments in buildings (at the training school). The following table gives an overview of the objectives and the current situation.

Objectives	Achievements	Is it working satisfactorily?
Establish training programs based on a training needs analysis.	The training program is based on an analysis of the need for training identified by the departments within TTCL. Swedtel produced approx. 30 technical training modules on the floor level.	The training school runs technical courses on a continuous basis, but still lacks qualified staff. Part of the courses may not be relevant considering today's needs. There is little management training done at the training school.
Adapt ITU-designed course development scheme for TP&TC (TTCL).	The consultants introduced a training model for TP&TC (TTCL). The model is, however, only partially used in course development.	ITU course development model is based on a "fixed network model" and may not be flexible enough to respond to indicate training needs.
Raise pedagogical level of TP&TC training experts.	The consultants introduced new methods and procedures for administration of the Staff College and its archives and also trained a number of instructors.	Several new teaching methods have been adopted, as well as follow up analysis of the courses. There is, however, a lack of trained instructors due to the Swedtel trained instructors having been transferred to other departments.

Improve the follow-up of efficiency of training.		Training efficiency is not followed in a systematic manner.
Improve training facilities; classrooms, laboratories, etc.	The support included new equipment such as computers etc.	The equipment is in use but is by now old and outdated.

Conclusion

A number of tasks implemented by the consultants are currently not working. The training school, having received the bulk of the support, is still not able to offer management training, nor is it able to follow up training. Training is supplied by the training school out of its budget, and is not demand driven, i.e. paid by the divisions for the staff trained.

Organizational Development and Corporatization

The organizational development function is estimated at SEK 105 million including the supply of equipment etc. The following table shows the objectives and the status of the procedures at present.

Objectives	Achievements	Is it working satisfactorily?
Support to the Operation and Maintenance organization in Dar es Salaam.	The Final Report states the establishment of O&M organizations in Dar es Salaam, Dodoma and Zanzibar.	Maintenance statistics show that only Zanzibar is meeting the targets. O&M continues to be a bottleneck within TTCL. The diversity of equipment is one cause for poor performance.
Improve preventive maintenance.		The situation in TTCL is still unsatisfactory. Centrally decided and inflexible budgets cause limitations to preventive maintenance. No significant improvement has been experienced.
Improve TP&TC (TTCL) logistics.	Improvement in materials handling procedures were made and reported.	Not functioning satisfactorily, as there is frequently a lack of spare parts in stock.
Technical Fundamental Plans (Master Plan).	Established during 1989-1991 and updated later.	Working reasonably well due to the TRP program which required network specification to be presented to the donors.
Corporate planning (91-93) incl. MIS, profit center idea, planning procedures.	The consultants introduced the profit center concept and created a model for a Management Information System. They also helped strengthen the budget processes outside of Dar es Salaam.	Not working satisfactorily.

Conclusions

There have been very few achievements in any of the areas where Swedtel has been involved. The quality of service has not improved, and the internal maintenance is still unorganized. Corporate planning is largely characterized by:

- Lack of co-ordination
- Lack of information, and
- Lack of vision

TDM

SIDA's focus throughout the period was on support to TDM. The main aim of the support was to improve operational efficiency and ensure financial viability. The assistance was therefore focused on TDM as an organization, to help establish functions such as the Human Resource department and the Corporate Planning Unit, to improve billing and customer services and to improve maintenance functions. Total support amounted to about SEK 109 million.

Human Resource Development

The Human Resource Development component was part of the general institutional development and was aimed at improving TDM's management capabilities by training, assistance with general personnel issues such as the recruitment of personnel and salary policies. The total amount that was allocated to this function was SEK 32.5 million. During the period other components, neither part of Human Resource Development nor Organizational Development (project coordination and implementation), amounted to about SEK 18 million.

Objectives	Achievements	Is it working satisfactorily?
Establishment of a training institute.	The training institute was established with the assistance of several donors. Course syllabus and administrative routines were established and instructors trained.	The routines are working satisfactorily, although the capacity of the institute and the teachers are under-utilized. Routines for employment of teachers have been changed to account for the former underutilization. The routines used in terms of cost accounting, revenue and budgets have not been reviewed and a change in the overall administrative process is needed.

Support of Human Resource functions.	Several tasks were implemented but are not working to TDM's satisfaction such as the HR information system and recruitment procedures, which were only implemented superficially.	This area of support has not been successful. According to TDM staff, several of the sub-assignments were not implemented, such as career planning, new recruitment and selection procedures, newsletters for the staff etc.
Assistance in development of technical courses.	The consultants assisted in developing technical courses, both basic and equipment oriented.	All courses in basic level subjects are held continuously by well-trained instructors. For specialized courses, personnel from the field have been contracted. The motivation among both instructors and pupils is reported to be low.
Preparation of high level management programs.	Swedtel initiated the high level management programs. TDM was responsible for the planning, development and implementation of the program and Swedtel mainly supplied instructors for the courses.	The high command management training program has been adapted by TDM as an important tool in the creation of an efficient management. This long-term course is run at the training center and managers at different levels attend courses during 1.5 years. The current managers of TDM now hold seminars and courses within this program.

Conclusions

The Human Resource Department has received support in various areas but the effect has been limited and the staff feels that they are still tackling old problems, which were to be solved through Swedish assistance. The training center offers mostly technical courses, both basic and specialized, but neither the capacity of the instructors nor the facilities are being used efficiently. The lack of motivation among the pupils and the instructors is a serious problem, which the staff at the training school feels needs to be remedied. Also in this case (se TTCL) there is no link between training and the cost of training.

Organizational Development and Corporatization

The support to the organizational development of TDM amounted to about SEK 58.8 million. The achievements are summarized below.

Objectives	Achievements	Is it working satisfactorily?
Support to key functions • billing • commercial dept. • Outside Plant	The billing system which Swedtel helped install was only temporary, as TDM was awaiting assistance to install the French customer support system Giraffe I and II. A new operation and maintenance function in Maputo, detached from the overall network development function, was established.	The Giraffe I and II have been installed in Maputo and are to be used in the customer service centers and in the commercial department. The commercial department is responsible both for the billing, collection of customer data, and is currently mapping the largest customers. It also performs customer surveys and market analyses. The systems for operation and maintenance have been improved with the use of databases and new routines for reporting, preparation of work orders, dispatching and follow up of operations. The quantifiable results have, however, not yet been show.
Organizational Development process of TDM	Swedtel acted both as an advisor and an “implementor” and the changes they suggested can be seen in the organization e.g. the Corporate Planning Unit, the new Operation and Maintenance function etc.	TDM has been reorganized a number of times into a more and more decentralized organizational structure. The decentralization of decision-making and tasks is still weak.
Support to Corporate Planning Function	The establishment of the Corporate Planning Unit was the main focus and achievement of the second project (1993-1996). It is now in operation and follows up on operations within the organization.	The Corporate Planning Unit is in place and is one of the most important departments within the organization. It collects information on the operations and reports to the top management. It also prepares strategic plans, monitors the performance indicators and reports progress.

Conclusions

The establishment of the Corporate Planning Unit (CPU) has been successful and has been one of the main achievements. The CPU currently has a very dominant position in the organization. There are, however, several areas which do not seem to be covered in the tasks of the unit: incentives to plan, budget for and perform projects and cost efficiency.

The commercial department, however, still seems to have a vague idea of the market, how large it is, the customers' preferences and needs and how to position itself in order to meet competition.

Assistance to the Regulatory Entity (INCM)

In 1992-93 SIDA agreed to support a project to help establish a regulatory authority in Mozambique. The aim was to create an independent regulator of the telecom sector as well as the radio frequency band. ISO and Teleconsultores were contracted, and the total project was for about SEK 2 million.

Objectives	Achievements	Is it working satisfactorily?
Assist in the establishment of a regulatory body		INCM is at this time not functioning as a regulator

Conclusion

This project never really started. The delays in contracting a consultant, apparent difficulties to work with the INCM staff and with ICP (the Portuguese consultant signed on to execute other tasks simultaneously) and SIDA's need to finalize the support to the telecom sector by 1995-96 caused a cancellation of the project in May 1995, without any achievements except for an inception report produced by the consultants.

Angola Telecom

The projects aimed at assisting the entire telecom sector and ensuring that telecommunications function properly. This required not only assistance to ENATEL/Angola Telecom, but also to the regulatory authority. SIDA invested more than SEK 140 million in the sector.

Neither the project budgets nor Swedtel's follow up of the projects present any kind of division of the costs between the different components. The cost estimates for each component is therefore somewhat arbitrarily based on consultancy time allocated to the different components.

In the summary below, the first pilot project from 1989 to 1992 is not included since it comprised mainly technical training, procurement and installation of new equipment and to a limited extent the establishment of new routines for operations.

Human Resource Development

Several factors contributed to the lack of performance within Angola Telecom. Among them the lack of cooperation between Swedish consultants and Angolan staff, the reported inability of Swedtel to incorporate the staff in the establishment of a Human Resource department and the shortening of the project, which mainly meant that the HR assignment was canceled. The estimated amount spent on this component was SEK 21 million.

Objectives	Achievements	Is it working satisfactorily?
Increase capacity of instructors	Swedtel was instrumental in training instructors for the school.	The instructors are all Angolan. There is no recent information on the performance of the instructors presented in the reports reviewed.
Training of technicians	Training provided by the consultants seemed to be well received by ENATEL/Angola Telecom staff.	The educational level of the staff has increased both as a consequence of training and transfer of knowledge by Swedtel's consultants.
Management training		There is no information if management courses are currently held or offered Angola Telecom's staff.
Develop Human Resource division	Tasks performed by the consultants included the preparation of the HR division within the organization, assistance with job descriptions and salary policies.	According to evaluating consultants the need for and importance of a Human Resource division is not understood within Angola Telecom, and the tasks are therefore not performed.

Conclusion

There is little independent information available on the present situation and on whether functions, introduced by the consultants are working. The latest review found that the Angolan staff criticized the implementing consultants for not involving the Angolan staff in the process of creating a Human Resource division.

Organizational Development and Corporatization

SIDA, through Swedtel, has aimed at commercializing Angola Telecom, increasing productivity and customer orientation. The amount devoted to the Organizational Development and Corporatization of Angola Telecom and ENATEL has been estimated at SEK 31.8 million.

Objectives	Achievements	Is it working satisfactorily?
Assistance with the operational structure of the organization.	The organization has been restructured into more functional departments.	
Corporate Planning and Coordination.	Several plans were prepared with the assistance of the consultants, but the extent to which they are implemented is not known. A management information system was also introduced.	The new MIS was revised several times. The lack of reliable data on performance, however, indicates that it was not used to its full extent.

Improve business efficiency.		The organization still seems to be very inefficient and with low quality of service to the customers. There is little data on the financial viability of the organization.
Increase service and customer orientation.		There are signs of awareness of the importance of customer orientation at top management level. There are, however, no indications of measures to improve customer orientation, nor are there any service improvement or any analysis made of the clients' needs etc.
Decentralize decision-making.	Geographical decentralization of the organizational structure is ongoing as the safety situation has improved and contacts with the provinces are possible.	The decision making process is still highly centralized to top management level.

Support to Regulatory Entity (DNCT)

The establishment of a legal framework for the telecom sector was seen as both necessary and urgent. Several important documents were prepared by consultants, such as the acts defining the responsibilities of the different actors, the Program Contract, between DNCT and Angola Telecom and the national telecom policy. The Angolan authorities, however, were not able to complete the legal requirements to formalize the creation of the DNCT between 1992-1996.

The total amount dispersed for the development of DNCT was more than SEK 18 million, divided between several consultants, among them Swedtel-ISO, Danish Teleconsult International and a Portuguese firm, TDC.

Objectives	Achievements	Is it working satisfactorily?
Definition of areas of responsibility of the regulator.	The consultants helped draft acts defining the responsibilities of the regulator.	Areas of responsibility have been informally decided upon but the final approval by the government and possible adjustments had not been achieved by the end of 1996.
Define rules, systems and procedures.	TDC assisted in establishing routines and procedures for the issuing of frequencies.	The routines for the issuing of radio frequencies are functioning, however, DNCT has still not been able to perform its main task, that of licensing new operators and monitoring Angola Telecom's performance.

Establish a new organization.	The organizational structure was established with help of the consultants.	The part of the organization that is functioning is the radio frequency division.
Assist in management and assignment of radio spectrum and approval of equipment.		This function is operating efficiently and according to the established plan.
Elaborate a program for human resource development and training.	The staff has been trained in computer literacy, English and the use of equipment.	

Conclusion

Part of the tasks to be performed by DNCT, the issuing of frequencies, is being carried out efficiently according to evaluating consultants. Since the telecommunication policy, establishing the future of the telecom sector, had still not been approved by mid 1996, the introduction and licensing of new operators had therefore not yet taken place. The evaluating consultants were, however, doubtful if DNCT would be able to perform such tasks.

6. Return on Investment

That Which Cannot Be Measured Cannot Be Managed

The lack of measurable objectives has contributed to a situation where achievements are difficult to quantify. The Specific Agreements outline the overall aims of the support. The Terms of Reference for each consulting assignment have elaborated upon the overall aims and detailed tasks to be performed. The links between the overall aims and the tasks are, however, not defined. There is no causality between the tasks and the improvement of efficiency.

In any problem solving process the following steps are needed in order to determine the tasks and the expected results.

Objectives	overall goal
Operational base line	current situation, what is to be changed with the project
Operational goals	measurable goals
Tasks	Project management activities following up processes to ensure that the overall goals are achieved

The structure of the projects lack both operational base line definitions (what is the current status?) as well as operational goals (what do we want to achieve?). This poses a problem, for the contracting party, for the beneficiary and for the consultant.

SIDA has difficulties in measuring and evaluating performance. Questions such as the following cannot be answered:

- What has the support contributed to?
- What has been the return on the investment?
- What has been done?
- What was the effect of this?
- How do we continue from here?
- What was achieved in terms of efficiency?
- How big a role have the consultants played?

The recipient organization is unable to measure output without targets, nor can it assess the consultants' expertise and efficiency. Moreover, the consultants have no manner of measuring their own performance, nor can they show measurable achievements.

In order to establish goals and targets for what is to be improved and changed, the situation at the start of the project must be known. Assessing an organization should be done with well-defined goals in mind, in this case the provision of better telecommunication services.

In all organizations both private and state owned, indicators of different types are used to guide the organizations in different directions. Managers, workers and external stakeholders need objective means of verification of how a firm is running. Such indicators include profit, production per day, number of workers, price of the product etc. A telecommunication organization albeit a monopoly is different from a company operating in a competitive environment but its goals can still be quantifiable.

The LFA format introduced in later stages of the support is of little help without quantification. It is of even less assistance if output is defined as the means of communication, i.e. as reports or as input, as so and so many weeks of training etc. In the LFA reports prepared by the consultants implementing the projects the results were often the tasks.

Effect of Support

The overall purpose of the support has been to assist a sector reform process aiming at increased economic growth. It has been assumed this could be achieved by improving the efficiency of the operators. This report seeks to measure the projects' effect on the organizations

- in terms of operations (better maintenance, quicker service etc.),
- in terms of management (ability to control through performance indicators, better recruitment procedures, more functional organizations, better customer service etc.) and
- in terms of overall financial performance and viability.

The issue to resolve as concerns the financial viability is that of assigning values to the different results in order to be able to relate the amount of SIDA support with the effect of the support. Two variables which are quantifiable and which show the organizations' productivity and their ability to control costs and increase revenue have been chosen for this purpose. The variables are as shown below:

Performance objective	Performance measurement
Asset management	• Increase/decrease in unutilized exchange capacity (fill rate)
Operating surplus/deficit	• Increase/decrease in operating surplus/deficit

In both cases the relative change during the period is measured. To use absolute values could be misleading since the three operators charge different tariff levels and have different number of customers.

The evaluation covers only three of the four operators since financial data from Angola Telecom has not been available.

Operational efficiency

The utilization rate of the exchange capacity is one measure of the efficiency and productivity of the organization. The proportion of installed capacity that is idle represents a loss of revenue. By improving management of resources, efficiency within the service and maintenance departments and overall financial productivity, the exchange fill rate should increase. The practical maximum fill rate that is possible for digital exchanges is between 90 and 95 percent of the capacity. It is necessary to have a certain flexibility for installing new lines or changing numbers. The fill rate varies depending on where the exchange is situated; in areas where there is circulation and new numbers are needed frequently or in stable areas, typically in the countryside.

The calculation of the change in operational cost efficiency has been based on statistics provided by the operators. In Mozambique, registered demand for new telephone lines has, over the past seven years, corresponded to around 70,000 to 80,000 lines. The table below shows that the fill rate, i.e. the capacity utilization of the exchanges, has not increased significantly during the period. It still remains the lowest of the three countries under review.

Mozambique	1990	1991	1992	1993	1994	1995
Installed capacity (lines)	77,748	78,268	86,318	92,507	97,347	97,347
Fill rate	61 %	67 %	65 %	59 %	60 %	61 %
Unutilized potential (lines)	22,534	17,531	21,561	27,793	29,434	28,265
Average revenue per line (USD)	912	912	912	912	912	912
Loss of potential revenue (USD '000)	20,500	16,000	19,700	25,300	26,800	25,800

The loss of potential revenue as a consequence of low fill rates is assumed to correspond to income generated by the lines which would have been connected had the fill rate been 90 percent (instead of the actual 61 percent).

TDM has thus lost, on average, USD 22 million per year, during the period, which, corresponds to about 26 percent of total revenue. The annual potential loss declined in 1991 and 1992 but increased again in 1993 and in 1995 it was 25 percent higher than in 1990. TDM's capacity to manage its resource base has declined considerably during the period.

In Namibia, the number of registered applicants has been lower than the unutilized potential. Although Telecom Namibia has a low fill rate (71 percent in 1996), full satisfaction of registered demand would increase the fill rate by only 4 percent. Telecom Namibia currently has an unutilized capacity of about 20,000 lines (taking into account the 10 percent extra capacity needed in digital exchanges) as compared to a recorded demand for 4,500 lines. In 1994, however, Telecom Namibia would have been unable to match the increase in demand by utilizing the unused exchange capacity. In this year the exchanges were close to fully utilized. A sharp increase in capacity combined with a 13 percent increase in installed lines led to an even higher recorded demand. In 1995 Telecom

Namibia was thus able to sell twice as many new subscriptions as the recorded demand in the previous year. In addition it increased the recorded demand by almost the same number of lines as were installed. In other words, total demand increased from 74,340 to 85,000 or by 14 percent. The demand recorded as a waiting list accounted only for about one third of that which materialized when additional capacity was made available. For the purpose of the calculations it would therefore appear safe to assume that modest increases in capacity, i.e. in the order of 10 percent, would be absorbed by demand.

Namibia	1992	1993	1994	1995	1996
Installed capacity (lines)	72,225	77,500	74,254	97,396	120,700
Utilized capacity (lines)	58,000	66,749	69,784	77,989	88,111
Fill rate	80.0	86.6	93%	80%	73%
Unutilized potential (lines)	7,005	3,001	-2,956	9,667	20,427
Average revenue per line (USD)	435	435	435	435	435
Loss of revenue	3,975	1,700	0	5,452	n.a.
Registered applicants			4,556	7,011	4,521

Between 1994 to 1996 Telecom Namibia expanded its network rapidly. But it was much less efficient in connecting subscribers. Thus, the exchange fill rate decreased from a situation with full and even over-full utilization in 1994 to one with an unutilized potential of more than 20,000 lines in 1996. The corresponding increase in loss of revenue was dramatic. Telecom Namibia's capacity to manage its assets, thus appears to have fallen far behind its capacity to expand the network.

The following shows how the exchange fill rate for TTCL has changed in the period 1993 to 1996. These figures actually show that TTCL's capacity in the period declined, albeit marginally, and the increase in 1996 was due to the TRP program. The number of subscribers, however, has remained essentially unchanged.

Tanzania	1993	1994	1995	1996*
Installed capacity (lines)	124,617	129,988	128,129	148,596
Fill rate	68 %	68 %	70 %	65 %
Unutilized potential (lines)	27,150	28,674	25,046	37,736
Average revenue per line (USD)	473	473	473	473
Loss of potential revenue (USD '000)	12,800	13,500	11,840	17,849

* Data provided by Philip Andriessen, PMU, TTCL

The item "loss of potential revenue" is an estimation of the revenue TTCL foregoes annually on account of not being able to fully utilize its exchange capacity.

The premise is, however, that there exists an unsatisfied demand for more lines and that this demand equals or exceeds the unutilized potential. TTCL reported that it had more than 140,000 registered applications for a telephone in 1994, and close to 100,000 in 1996. The rate at which new subscribers were connected was negligible; in the order of

1,000 lines per year. The waiting time at this connection rate would be in the order of 100 years. This implies that a large number of subscribers would not go to the trouble of registering their applications.

The 1993 loss of potential revenue corresponded to some USD 12.8 million. This loss increased to USD 17,8 million by 1996, which equaled approximately 42 percent of that year's revenue. For the period of 1993-1996, this corresponded to an average annual decrease of about 3 percent.

Change in loss of potential revenue

	For the period USD	Average per year USD	Average per year per line USD
Mozambique	-5,300,000	-880,000	-10
Namibia	-1,477,000	-500,000	-5.2
Tanzania	-5,000,000	-1,250,000	-9.7

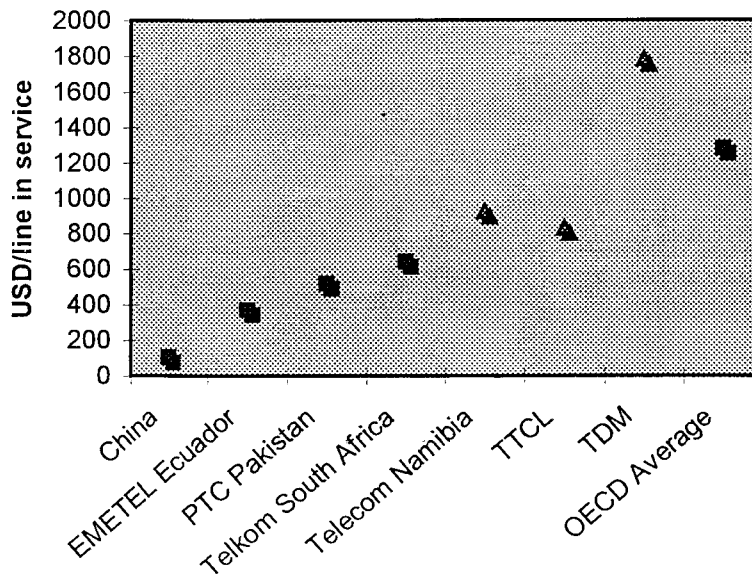
Given that the objective of Institutional Development was to improve efficiency, i.e. utilization of assets, it can be concluded that the effort by and large has failed. In the three countries for which data has been provided, the Institutional Development Projects have had no positive effect at all, as efficiency has declined.

Operational surplus/deficit

A second measure by which to judge the result, is the change in operating financial performance over the period. Although SIDA has specified, in its Terms of Reference, that financial viability of the operators is necessary and one of the main objectives, little has been achieved in this respect. TTCL has been and is still operating "in the red", Telecom Namibia and TDM are, however, generating net profits but the trend for Telecom Namibia, since 1993, is sharply downwards.

The revenue per line in service of the three operators is very high compared to other developing countries. The following graph compares the revenue per line for the three operators analyzed and for a selected number of other operators.

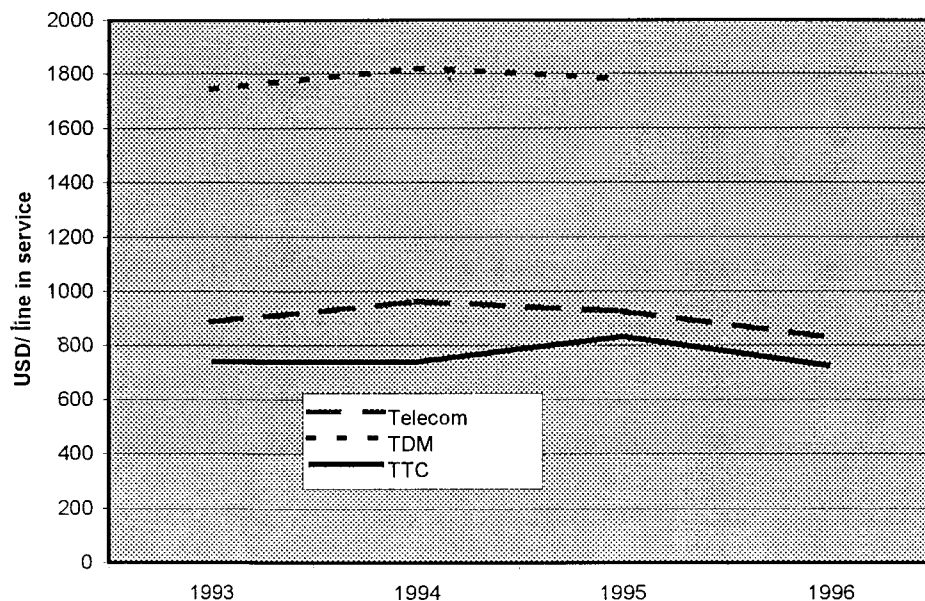
Comparison of Revenue per Line



TDM collects an annual revenue per line far in excess of the average OECD revenue. Telecom Namibia and TTCL have an annual per line revenue at par with the highest in Africa, that of Telkom in South Africa, but provide poorer service. For countries as poor as Namibia, Mozambique and Tanzania, high telecommunication costs represent both an exorbitant economic burden and a strong constraint on demand.

For TTCL and Telecom Namibia, average revenue per line declined between 1993 and 1996 as shown in the graph below. The main reason is tariff reductions for international calls forced upon the two operators by competition from call back operators. Despite this, TDM managed to increase its already high annual per line revenue even further during the period it was supposed to benefit from Institutional Development.

Revenue per Line for TDM, TTCL and Telecom Namibia



During the period, all three operators increased their local call charges substantially while reducing international tariffs. National calls contribute about 50 percent to total revenue for the three operators and international calls between 15 and 5 percent. This would suggest that both tariff changes (of local and international calls) have had an effect on revenue per line. National calls, however, account for an increasing part of the total revenue for all three operators. Those that least of all can afford telephones, i.e. low-income families making many local calls, are thus paying a larger proportion of the revenue.

None of the operators gave proof of having analyzed price elasticity of demand prior to making the tariff changes. The most questionable tariff increase appears to have been the one carried out in Namibia. It resulted in a 13 percent decline in national traffic during a period when the number of subscribers increased by 27.5 percent. Taken together, this suggests that the resulting decrease in consumer surplus was massive.

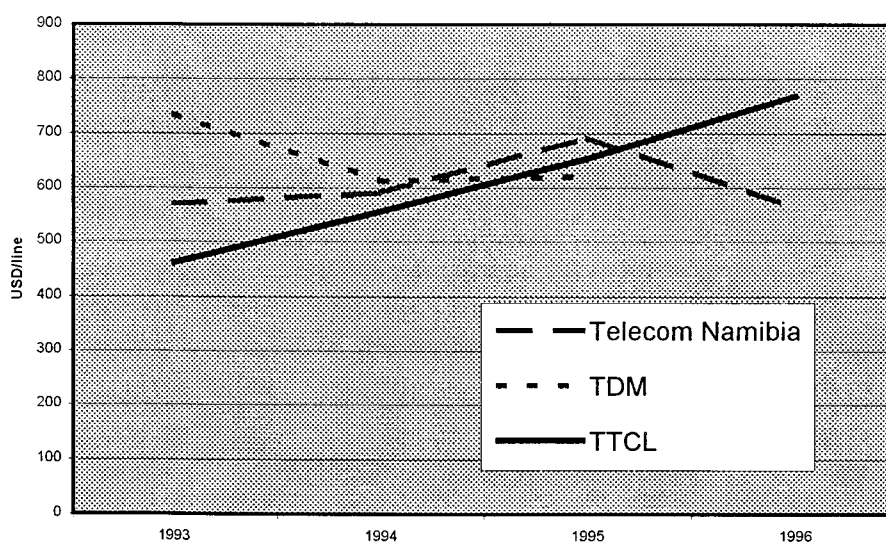
Operating costs in all three countries are also high, amongst the highest in the world. Even though the networks are small, the level of operating costs per line is so elevated that only large inefficiencies in operation and maintenance can provide an explanation.

The following table compares annual operating costs per line in service in a number of developing countries.

	Operating Costs per Line in Service (1995) USD
China	57
PTC (Pakistan)	90
Ethiopia	94
EMETEL (Ecuador)	116
Telkom (South Africa)	310
TDM	378
TTCL	460
Telecom Namibia	519

As shown in the table, Telecom Namibia has the highest annual operating costs per line of the countries shown despite the fact that 70 percent of its network is digital. In Telecom Namibia's and TTCL's case, the staff costs amount to 50 and 30 percent respectively of total costs. TDM pays more than 50 percent of operating costs for maintaining the satellite transmission network it operates.

**Operating Costs per Line for TDM, TTCL and
Telecom Namibia**

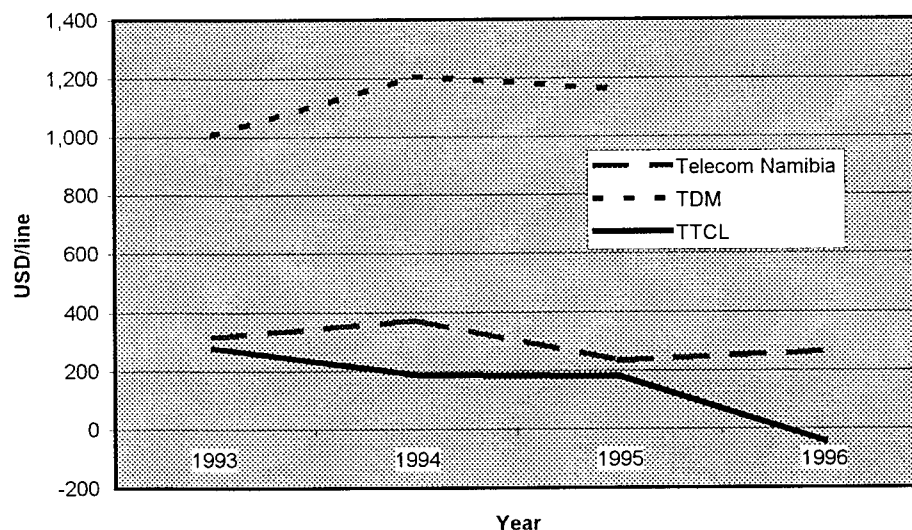


The Institutional Development Projects have not helped the operators to improve productivity. Although TTCL's curve shows the largest rise, it is Telecom Namibia, which represents the most disappointing development. This is because the company failed to reap any productivity improvements during the period of an investment of USD 100 million.

TTCL's investments did not commence until 1996. TDM is the only operator that managed to reduce its annual per line operating costs. It also invested during the period, although much less than Telecom Namibia.

Operating surplus per line in service increased for TDM but declined for the two other operators. In the case of TTCL, the last year even produced an operating loss, which is remarkable for such a capital-intensive industry as telecommunication. Net profit performance was disappointing in the case of Telecom Namibia, improving for TDM and sharply deteriorating in the case of TTCL. If the Institutional Development Projects have had any effect at all, it has not been positive in either Namibia or Tanzania. The operators in both countries suffered declines in profitability that would have been unacceptable in a private sector setting.

**Operating Surplus per Line
1993 to 1996**



Asset Management Performance

Balance sheet data was made available only for Telecom Namibia and TDM. Both operators are grossly under-leveraged with equity accounting for 60 percent of capital employed. In combination with an absence of return requirements of the shareholders, the low leverage puts very little pressure on the management to improve the return on capital by increasing productivity. The Institutional Development Projects have not contributed to better leverage and better articulated return requirements.

Also current asset management has been disappointing. Both TDM and TTCL have failed to improve collection periods and their receivables have ballooned.

The return on capital employed (net profit before taxes and interest divided by net working capital employed) improved marginally in TDM's case. It went from 7.6 percent

in 1993 to 12.8 in 1995 but declined the following year to 8.6 percent. This level of profitability is however, exceedingly low for a company that enjoys the world's possibly highest annual per line revenue.

For Telecom Namibia the return on capital employed fell by more than 50 percent between 1994 and 1995 (from 29 percent to 12 percent) but recuperated to 16.6 percent the following year. Since the fixed assets are recorded at historical cost (and the cost of depreciation therefore is understated) the above ratio would, however, tend to overstate the company's profitability.

Lacking balance sheet data, it was not possible to calculate the return on capital for TTCL. However, given the size of their network TTCL ought to have a capital employed of between USD 150 and 200 million equivalents. This would put their return on capital at between 10 to 14 percent for the first year of the period and at around -4 percent at the end of the period.

Return on Investment

There are several arguments against calculating a rate on return on SIDA's assistance for several reasons. One is that an investment normally requires a gestation period before it starts yielding a return and this period has hardly even begun. A second reason is that one can only at this juncture measure certain changes in performance, which may or may not be permanent. However, it can also be argued that the type of management support that SIDA has provided should give prompt result. In a competitive environment, three to four years is a very long time, sufficiently long to cause a poorly performing company to go bankrupt.

The return on SIDA's support has been calculated as follows: the revenue stream is taken as the change in efficiency, i.e. reduction/increase of loss of revenue on account of sub-optimal utilization of exchange capacity. The investment stream has been taken to be the totality of SIDA's support spread over the period to be covered by the individual consulting contracts²¹. The return has been calculated for the period 1989 to 1995 and the method used is that of the Net Present Value with a discount rate of 10 percent. The NPV calculation has only been applied to the telecom operators, not for the regulatory projects. All calculations are in thousands of US dollars.

It is important to note that the resulting NPV is only a very indicative value since the calculations, firstly, use data that may be neither entirely comparable over the period nor completely consistent for the different operators. Secondly, the values used are only indicative of the foregone revenue. However, the method has been consistently used for the three operators and the results should therefore make it possible to compare them with each other.

²¹ Although the projects have generally been completed at or slightly under budget this implies that the return could be slightly underestimated. The same effect, but equally small is likely to result from the fact that some project suffered delays.

	NPV (USD)	NPV as % of SIDA's Support
Angola	n.a.	n.a.
Mozambique	-13.9 million	-91%
Namibia	-1.0 million	-40%
Tanzania	-10.1 million	-43%

With a 10 percent discount rate all three operators would have produced a negative Net Present Value of the investment. That means that asset management has declined as a consequence of the transition process, which the projects were intended to support. It is important to note, however, that the calculation should not be interpreted to suggest that the Institutional Development effort per se generates negative effects.

The following is a brief description of each project, a summary of the achievements with respect to sustainability, financial viability, level of commercialization and the NPV calculated for each of the three operators.

Angola

Angola Telecom still has obvious difficulties

- in operating and maintaining its network,
- in increasing density and
- in improving services and cost efficiency.

The reports suggest that Angola Telecom has remained a rule driven and therefore relatively bureaucratic organization. Its decision making is centralized and there is little evidence of management by objectives. The existence of a performance contract has done little to improve service and results. Lacking the ability to provide financial data on its operations Angola Telecom is likely also to lack the capacity to manage by results, at least by financial results. This also suggests that the organization lacks the capacity to set meaningful financial goals and therefore to initiate change.

The DNCT project started out well, with a Portuguese consultant assisting the organization in frequency management. Experts evaluating the progress of the project stated that the support had been effective in creating an independent regulator. However, DNCT is not yet able to perform one of its most important functions, namely that of licensing new operators.

Angola Telecom	
Volume of support	SEK 144 million (approx. USD 18.9 million)
Sustainability	Non-sustainable
Profit orientation*	None
Financially viable	No
Return on Investment	not possible to calculate, lack of data

* This term is used in lieu of commercialization used in a World Bank funded study by Carl Bro, i.e. meaning "distancing management of operations from Government and the attendant bureaucracy to become more business-like".

DNCT	
Volume of support	SEK 17.1 million (USD 2.5 million)
Independent	No
Functional capacity	Partly

Mozambique

TDM has demonstrated an ability to decentralize responsibility. It has installed performance indicators, but makes limited use of those, especially in the case of financial performance of different parts of the organization. TDM has acquired some capacity for surveying the market and communicating with its customers. Its attempts to strengthen its market position prior to deregulation may, however, expose it to attack rather than protect against competitors. This is because of TDM's inability to pursue cost efficiency and lower tariffs.

Next to Namibia, TDM has the most modern network of the four countries but its operating costs per line are among the highest. This is partly on account of the satellite transmission system. TDM's capacity to service its relatively large foreign loans is a major issue. In 1993 it showed a substantial loss which was turned into a small surplus in 1994 and a substantial profit in 1995. At the same time borrowings increased sharply. The extent to which these new liabilities will reduce future profits needs to be assessed.

The support to INCM never really began, as the Specific Agreement was canceled only one year after the consultants had been contracted. According to Swedtel²², the consultants submitted only an inception report.

TDM	
Volume of support	SEK 108.6 million (USD 15.3 million)
Sustainability	Yes
Profit orientation	Partial
Financially viable	Status unclear
NPV (10 %)	USD -13.9 million

INCM	
Volume of support	SEK 2 million
Independent	No information
Strong	No information

²² Per Olof Jansson, Swedtel.

Namibia

Telecom Namibia has strengthened its organization and added substantially to management's competence as a result of SIDA's support. The provision of a Swedish Managing Director allowed the company a period of grace during which systems could be put in place and staff be trained without the interference of political and other power plays which are bound to surface in one of the country's largest parastatals. The Swedish assistance has done little to further the reform process in Namibia towards increased competition and productivity.

Swedish assistance has likewise not enabled Namibia Telecom to strengthen its earnings capacity. On the contrary, Namibia Telecom's earnings capacity per line has fallen drastically since 1993 and this bodes ill for the future.

It is highly questionable for a foreign donor to support foreign management and possibly counterproductive in the long run. This is irrespective of the performance by the individual manager or managing agent. The issue is rather one of helping the country to do the job or to do it for them. Another is that of responsibility. It easily becomes diffuse when foreign aid replaces strictly commercial arrangements. The results of this support are not yet discernible as the Swedish Managing Director left in December 1996, some three months before this report was prepared.

SIDA decided to support the establishment of the NCC. The project has however not been finalized according to the recipient (Ministry of Information and Broadcasting and NCC).

Telecom Namibia	
Estimated volume of support	SEK 17 million (USD 2.2 million)
Sustainability	Status unclear?
Profit orientation	Yes
Financial Viability	In sharp decline
NPV (10 %)	USD -1.0 million

NCC	
Volume of support	SEK 1 million
Independent	No information
Strong regulator	No information

Tanzania

TTCL seems to have been "treading water" since the beginning of the 1990s. Despite large investments in equipment and managerial training etc., density, service level and managerial capability does not appear to have improved. The lack of customer orientation, despite top management's awareness of its importance, is apparent throughout the organization and a common subject of discussion in Tanzania. TTCL's inability to measure performance or delegate authority and decision making also points to the fact that the support has not achieved the objectives. The bureaucracy and the civil service attitude are

still entrenched in the organization. TTCL still has a long way to go in terms of productivity, sustainability and viability. The donors have forced TTCL to apply performance indicators, to pursue customer orientation and to undertake certain organizational changes. If left to itself the organization would most probably not be able to continue the process on its own.

TTCL can be seen as an example of the effect of capture. Given its monopoly position it does not have to change, at least not yet, and it will not do so irrespective of consultants' efforts and donors' funds.

TTCL	
Volume of support	SEK 152 million, TRP: SEK 240 million (USD 23 million)
Sustainability	Non-sustainable
Profit orientation	Very limited
Financial Viability	No
NPV (10 %)	USD -10.6 million

Ref. No.

INEC-1996-0335

TERMS OF REFERENCE FOR THE EVALUATION OF INSTITUTIONAL
DEVELOPMENT SUPPORT TO THE TELECOMMUNICATIONS SECTOR IN
DEVELOPING COUNTRIES.

1. BACKGROUND

Sida's Guidelines for support to the telecom sector is based on the general principles for Swedish development assistance, particularly on the objective of promoting economic development. (See annex 1 for Sida's Guidelines).

The internationalisation of telecommunications together with the world-wide movement towards market economies has created new conditions for the telecom sector. The technological changes with rapidly decreasing investment costs, faster and greater capacity techniques for transmission by means of fibre-optics and satellite communications, and more flexible local networks using cellular techniques have also had a considerable influence on developments in the sector.

In relation to Sida's overall objectives, the telecom sector has the following characteristics:

- it promotes economic growth, particularly in the area of trade and industry;
- it promotes social development;
- it creates an environment for information flow, thus facilitating the processes of transparency and democracy;
- it is an environmentally sound communication technology.

The major constraints facing the sector in developing countries are the following:

- * The low density of telephone lines and low penetration.
- * The low quality of services due to lack of maintenance and service attitudes.

- * Operations often run at a financial loss. Low tariffs and inadequate and inefficient billing systems contribute to the unsatisfactory financial situation.
- * The low capacity to attract local and international investment capital.
- * Telecom operators, which are often parastatals, have inefficient organisations with a lack of personnel incentives.

Although there is an investment backlog in many developing countries, the policy of Sida's development assistance focuses on improving the institutional conditions of telecom operators. This shall enable them to become economically and financially viable, to improve their managerial and operational efficiency, to promote effectiveness in their use of capital and other resources, and to create better services for their customers.

Three main areas are given priority in Sida's support to the telecom sector:

- i) Support and assistance to sector restructuring.
- ii) Institutional development.
- iii) Investments.
- iv) IT-issues

The annual allocation to telecom projects varied between 50 and 150 mSEK at the beginning of the 1990s. The project stock in January 1995 amounted to approximately 500 mSEK.

2. PURPOSE AND SCOPE OF THE EVALUATION

In 1989 there was a shift in the priority given areas focusing on institutional development projects. Sida stated that they would most probably not fund investment programmes for an expansion of the network unless reasonable institutional development is assured. This resulted in a revised policy and strategy for the telecommunication area within Sida. Seven years has passed since this revision and it is time to evaluate the projects and the strategy taken.

The main purposes of this evaluation is:

To evaluate a series of telecommunication projects/programmes with a special focus on the institutional development concept and support and assistance to sector restructuring and through that identify and analyse the

accomplished relevance, achievements of objectives, efficiency, sustainability and their impact.

The findings and recommendations are expected to be used as background information for developing a new sector policy and strategy for Sida's cooperation in the area of telecommunication.

The countries that should be included in the evaluation and have received Sida support to this sector are Angola, Guinea-Bissau, Lesotho, Mocambique, Namibia and Tanzania. Some of the projects have been financed out of the regional SADC-allocation.

3. THE ASSIGNMENT

The evaluation shall cover the following issues:

Phase 1

An *inventory* of the Sida projects, implemented in Angola, Mocambique, Namibia and Tanzania since 1989, within the area of telecommunications shall be made. The *institutional development part in these previous projects shall be appraised and analysed* according to the following items:

- i. **Relevance.** Has the contributions been relevant in relation to the following perspectives:
 - in relation to the six Swedish development objectives,
 - in relation to the recipient countries development policy and strategy for telecommunications,
 - in relation to the project specific objectives, and
 - in relation to other objectives that may not be specified in relation to the contributions

- ii. **Achievements of objectives.**

Description of the objectives for the development support with focus on how the objectives were changed when the overall development changed within the concerned

organisation, the country and the global development. Has the contribution concerned policy-and regulating issues, organisational development or human resources management or development? Support for investments?

iii. **Efficiency.**

The quality of the delivered goods and services, how the responsible persons fulfilled their obligations. The following aspects from the fulfilment of the project shall be taken into consideration:

- cost-efficient - What was the project cost? How do costs and budget reconcile? Are the costs reasonable in relation to achievements? Could the same results have been achieved at a lower cost, i.e. were there more cost-effective alternatives?

- time frame - has it been possible to stick to the initial plans for the realisation of the project - if not: what has been the main reasons for this;

iv. **Impact** is defined as sustainable changes that direct or indirect can be derived from the contribution or investment, for example increased efficiency, cost-saving, improved quality in decision-making which leads towards a more efficient allocation of scarce resources, improved communications. Secondary impacts from improved telecommunications can arise in the form of increased social mobility and social security (for example in connection to an accident, sickness, availability to community service etc.) increased possibilities for corporate- and industrial business through increased market communications, increased efficiency of transports, to mention some effects.

In addition to this, the consultants shall make an overall account for the final report concerning the projects in Guinea-Bissau and Lesotho.

Phase 2

Deep-analysis focusing on the projects implemented in Namibia and Tanzania since 1989 with particular focus on the sustainability of the project and the organisation's ability to develop or change after the institutional development project. The following issues shall be

addressed and analysed by the consultants in order to make proposals. (See annex 2 for further examples of questions that could be addressed.)

- i. **Type and choice of contribution/effort.** What affected the design of the institutional development project?
- ii. **Human resource development** is part of all the contributions. In the earliest contributions, training was the only component. Can conclusions be drawn from the most successful contributions within the training area regarding the methods being used?
- iii. **Organisational / Management development.**
How has the need for change been identified?
- iv. **Commercialisation / privatisation**
Why commercialisation/privatisation? State the reasons for this change.
- v. **The organisation's ability to develop or change** after the institutional development project. Has that improved? and if so, state those improvements according to the following criteria:
 - new or terminated types of output (output is the final product, a service or goods that leaves the organisation to be used by another individual or organisation.)
 - altered methods of production
 - alterations in the internal administrative systems and processes
 - alterations of "soft" organisational variables, for example style of management and organisational culture
 - active procedures for communicating with customers/clients
- vi. **The organisation's result today.** Has the result in the organisation improved after the contribution? State the present result/indicators for the company regarding , for example staff turnover, productivity, profitability etc.

4. METHODOLOGY, EVALUATION TEAM AND TIME SCHEDULE

The study shall be carried out in three phases:

- a) the first phase shall include data collection, compiling of information and analysis of documentation available at Sida in Stockholm.

b) the second phase shall include deep-analysis of the material focusing on the projects in Namibia and Tanzania. This phase shall also include field visits made in these countries.

c) The third phase shall include conclusions drawn and reporting.

The Services shall preferably be performed during the period of November - December 1996.

LFA analyses shall be used whenever applicable (see LFA-guide, annex 3.)

The intended evaluation approach and methodology shall be specified in the tender.

The evaluation team shall be composed of persons possessing competence in the field of economics, institutional/organisational development and experience from de-regulation within the telecommunication sector. The team members should not have been directly involved in the implementation of the project focused in this evaluation. However, experience from Africa or other developing countries would be an asset.

A draft final report shall be presented to Sida within two weeks after the completion of the field-visits followed by a seminar at Sida in Stockholm. The final report shall be submitted to Sida within one week after the completion of the seminar.

5 REPORTING

The evaluation report shall be written in English and in accordance with the Standardized Format as described in the Sida Evaluation Manual 1994, annex 4. The evaluation report shall be written in WP 6.1 for MS-DOS or a compatible format and should be presented in a way that enables publication without further editing. Sida shall be provided with 10 copies and on diskette. Subject to decision by Sida, the report will be published and distributed as a publication within the Sida Evaluations series.

The evaluation assignment includes production of a summary in English according to the guidelines for Sida Evaluations Newsletter, annex 5, and the completion of Sida Evaluations Data Work Sheet, annex 6. The separate summary and a completed Data Work Sheet shall be submitted to Sida along with the (final) draft report.

Diarienummer:

Sida's Comments on the Evaluation Report "Aid to telecom in Southern Africa - What has it achieved?"

1. In Sida's opinion the report provides a useful insight into problems related to the governance of public enterprise. The report has clearly demonstrated the risk that public interest (including development cooperation) might become "captured" by public monopolies. This risk should be seriously considered not only in the telecom sector but also in other fields of public enterprise. In the light of this experience Sida should learn that much more attention should be given to the establishment of public regulatory structures.

2. Unfortunately, the report does not relate the development cooperation efforts to the rapid process of change that has taken place in the telecom sector during the period that is being evaluated (1990-96). The general view of the roles that should be played in this sector by the state and the market has changed dramatically during this period. In 1990, telecommunications were still mainly regarded as a traditional public service¹. Today the telecom sector is looked upon as a market where in the near future the role of the state will be limited to creating a suitable environment for private investment. In its new telecom policy statement that was developed in 1996-97, Sida has clearly recognised that the organisational development approaches that were used in development projects in the early 1990's, are not relevant in relation to telecom operators today.

3. The evaluation report gives the impression that the introduction of competitive markets can solve more or less all basic problems in the telecom sectors in the four countries. International experience shows that, in a short perspective, it is not realistic to expect that competition can become a viable option for local networks in countries such as Namibia which have "thin" telecom markets. Sida expected that the report would give more attention to the different reform options that were realistically available to the four countries.

4. In its overall assessment of the results achieved through the institutional development projects, the report strictly limits itself to a few quantitative criteria. This approach is unsatisfactory for the following reasons:

¹ The view of the telcom sector at that time is exemplified by the following statement by Mr Richard Stern of the World Bank: "... , virtually all Governments acknowledge that competition in the provision of value-added services and in terminal equipment is generally a good idea. There are, however, clear limits as to how much competition is both realistic and desirable. Unless and until there are major changes in the costs of cellular technologies, for example, it is doubtful that competition in local networks will be warranted in most cases" (cited from "Alternatives for the future" published in "Restructuring and Managing the Telecommunications Sector" edited by Wellenius et.al., The World Bank, 1989).

- It is clearly irrelevant to use a "top performer" such as Chile as the point of reference for countries which are undergoing periods of war, civil strife, economic crisis, structural adjustment programmes etc. It would have been much more appropriate to compare the four countries with a selection of other African countries.
- Sida questions some of the methods used in the evaluation report to measure the impact of telecom support, especially the use of the "fill rate" of exchanges as the only indicator of the quality of asset management and of the impact of Sida's investment in institutional development².
- The evaluation report is strictly based on an assessment of a "before and after" situation. In Sida's view an impact evaluation should primarily focus on the situation "with and without" the project (i.e. a counterfactual situation should have been discussed). Institution building projects aim at initiating processes of change where at least part of the benefits only develop some time after the end of the project. Sida is convinced that the strategic dialogue between Sida and recipient bodies has contributed to placing issues such as regulation, competition and governance higher on the reform agenda. These kinds of impacts are impossible to measure with the approach applied in the evaluation report³.

5. The evaluation report gives the impression that Sida must feel a responsibility for and be involved in all aspects of a sector reform process. Such a view is based on a traditional project support approach and is not in line with the more recent sector programme approach which, for example, was applied in the Tanzania telecom sector as from 1994. In this approach the responsibility for supporting different functions in the sector could be distributed between different donors and should always be based on a jointly agreed policy framework.

² Another example is the analysis of the international tariff level which has been seriously questioned in an independent report by a Namibian telecom expert.

³ Further examples can be found in Mocambique, where according to many sources the Swedish support contributed to increased professional standards, trust and integrity in the telecom sector, and in Namibia, where the Swedish support to the "affirmative action program" (by providing training to disadvantaged Namibians) played an important role in the reform process.

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