

Final Report

AID TO TELECOM IN SOUTHERN AFRICA

WHAT HAS IT ACHIEVED?

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SIDA

by:

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Abbreviations

ADB	African Development Bank
DNCT	Direcção Nacional de Correios e Telecomunicações (regulatory authority in Angola)
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
MOU	Memorandum of Understanding (between TTCL and TCC)
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.
USD	United States dollar

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 questions posed in the Terms of Reference.

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 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 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.

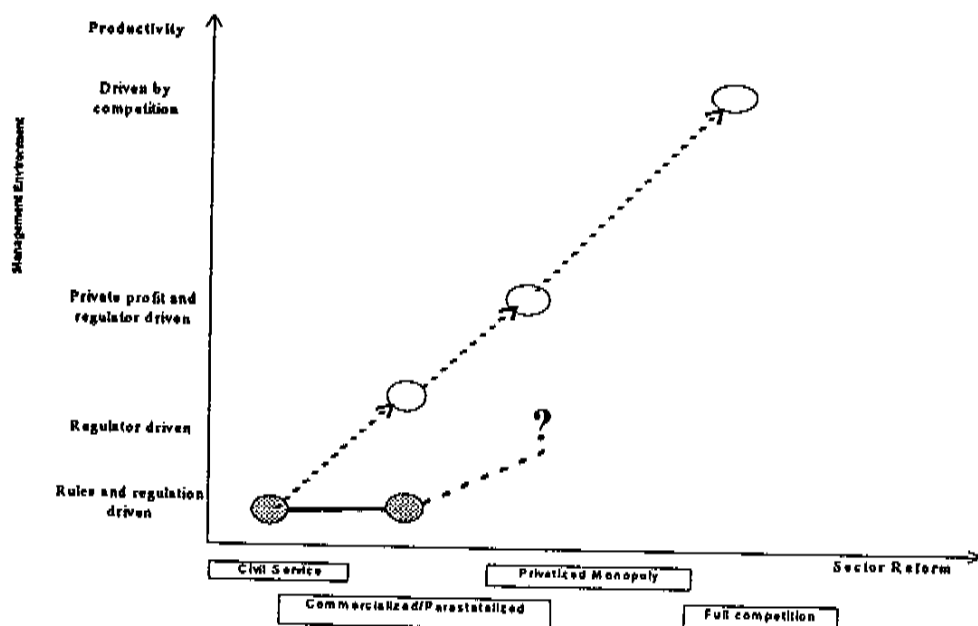
The evaluation has therefore not been able to find any relevance of the Institutional Development projects for either the six Swedish development objectives or the national telecommunication strategies. Nor could they be said to have relevance in relation to project specific objectives since those have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

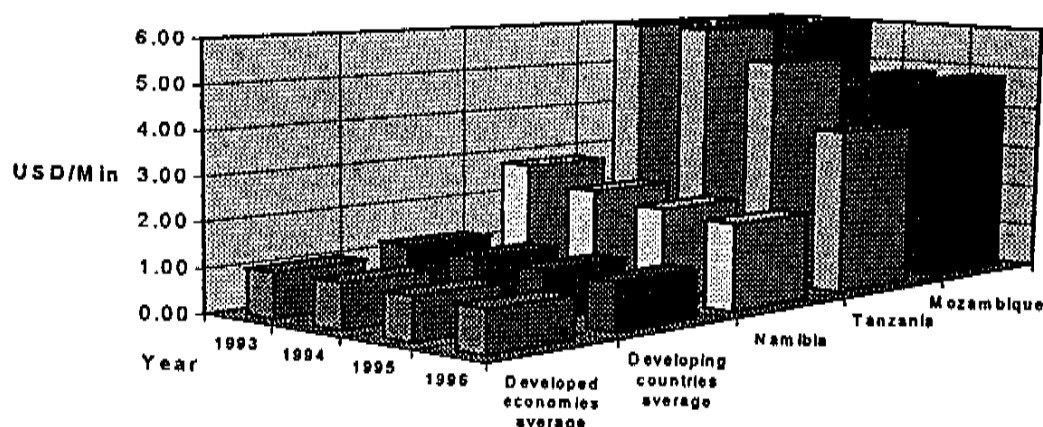
Shrinking Consumer Surplus

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, that 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.

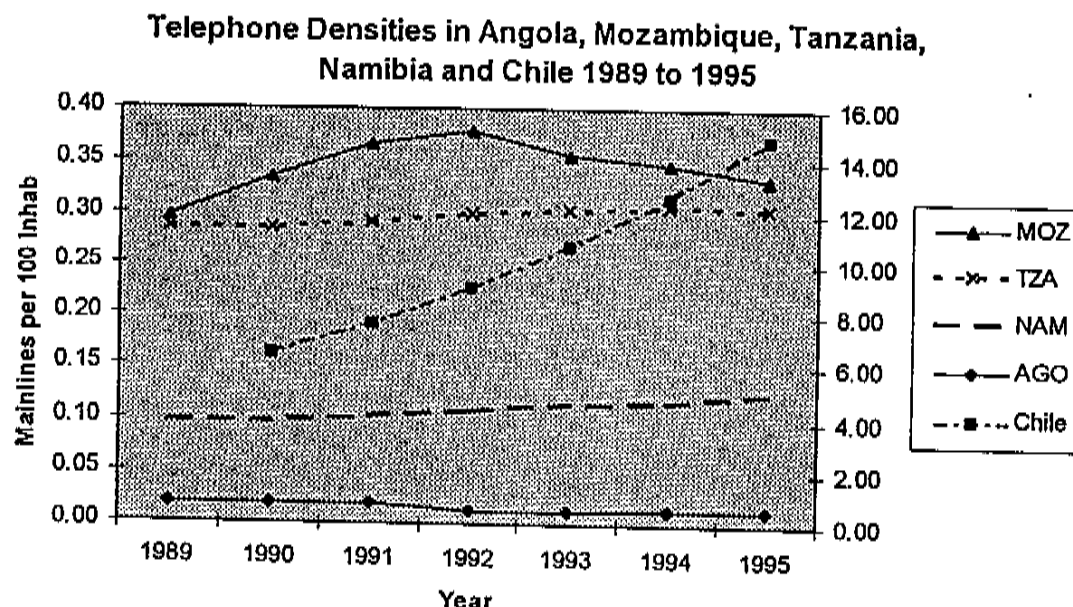
Comparison of International Tariffs



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 even declined and the expansion achieved in a privatized environment, such as that of for instance Chile, is far in excess of that accomplished by the best performer in this regard - namely Namibia.



Namibia was the only country, which was able to expand the network. In spite of a continued high level of unsatisfied demand this, expansion coincided with a sharp decline in capacity utilization of the entire network. This suggests that the organization's internal efficiency leaves 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

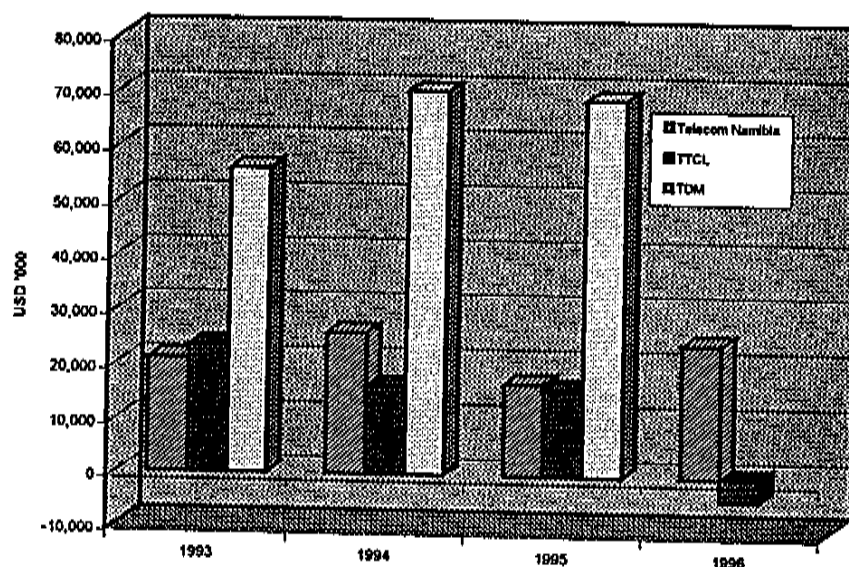
Notwithstanding a strong emphasis on customer orientation, it appears that the reform process and the Institutional Development projects have failed to produce a consistent pattern of improved service. Nor has it resulted in an expanded range of services. While TDM initially recorded improvements with 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

respectively Namibia, Tanzania and Mozambique exist only for the four years since the organizations, prior to 1993, were government departments that did not compile their results in a manner that would allow a meaningful comparison.

Operating surplus for TDM, TTCL and Telecom Namibia



The Institutional Development projects have not improved financial performance have not had any measurable effect, at least not yet.

Namibia's financial performance has been by far the most disappointing. In spite of an enlarged and modernized network and notwithstanding sharply increased local tariffs, Namibia Telecom's operating surplus declined from around USD 25 million in 1994 to about 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 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 which, at over USD 1,000 per line in service, 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 for any of the three operators.

Both TDM and Telecom Namibia operate with exceedingly low leverage, i.e. proportion of 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 either consumers or 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 GDP and MDP training programs appear to have rendered the best results. They were carried out by a consulting firm that has a strong focus on training.

A large part of the identification of what 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.

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 of management 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 stakeholder forces and objectives that exert a constant and strong influence over management.

In each company there are 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 eliminates 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. By ensuring that there are no large and dominating owners, 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 manoeuvre 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 which 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 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: <ul style="list-style-type: none"> • 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.

Namibia²

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). 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 240million of which only SEK 25 million applies to the period under review.

² 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.

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

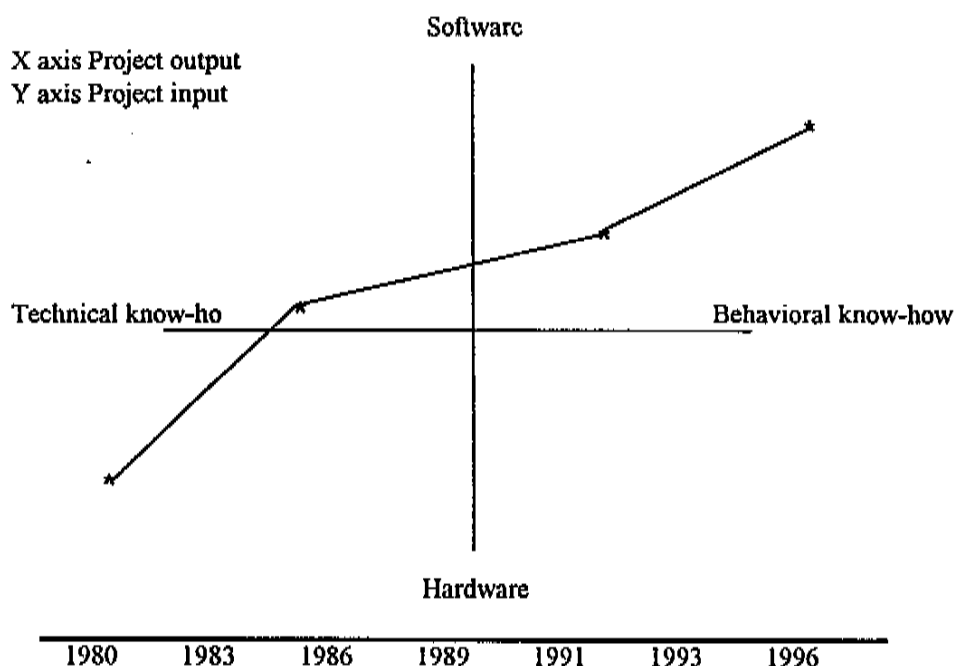
In the period under review, SIDA funded a total of 13 projects for a total amount of SEK 440.6 million. The earliest of these projects, the Network Support and Training Project in Tanzania and the ENATEL Project in Angola, both had strong network operational and maintenance focus but this gradually changed 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.

Theory has it 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. But 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 phenomena 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 since 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 percent³ 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. Also 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

³ 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 and SPM 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 SWECO 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, Telecon 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 of 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	<ul style="list-style-type: none"> ..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.. 	<ul style="list-style-type: none"> • establish corporate planning unit • revitalize of training center • provide technical planning and training programming • develop strategies for business efficiency and financial autonomy • formulate government and Angola Telecom performance contract
Mozam-bique	<ul style="list-style-type: none"> ..strengthen project implementation and control unit.. ..assist in establishing an efficient management.. ..financially sound and commercially oriented operations.. 	<ul style="list-style-type: none"> • 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
Nami-bia	<ul style="list-style-type: none"> ..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.. 	<ul style="list-style-type: none"> • 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
Tanza-nia	<ul style="list-style-type: none"> ..to develop TTCL into a profit-making and customer oriented telecom service provider.. 	<ul style="list-style-type: none"> • 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.

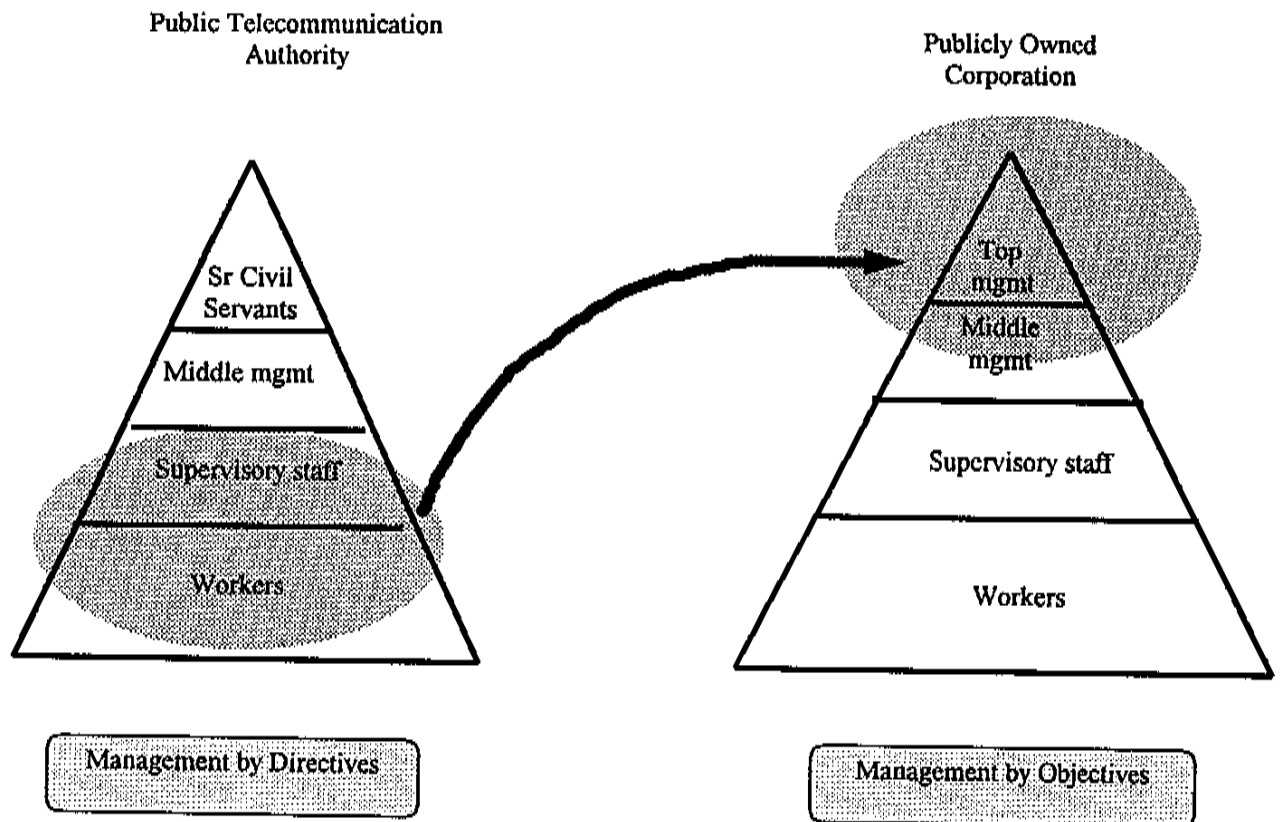
The answer to the question 'How was Institutional Development Defined?' Is thus that it was not defined, at least not in a manner that makes possible an objective assessment of goal achievement.

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 subject of 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."

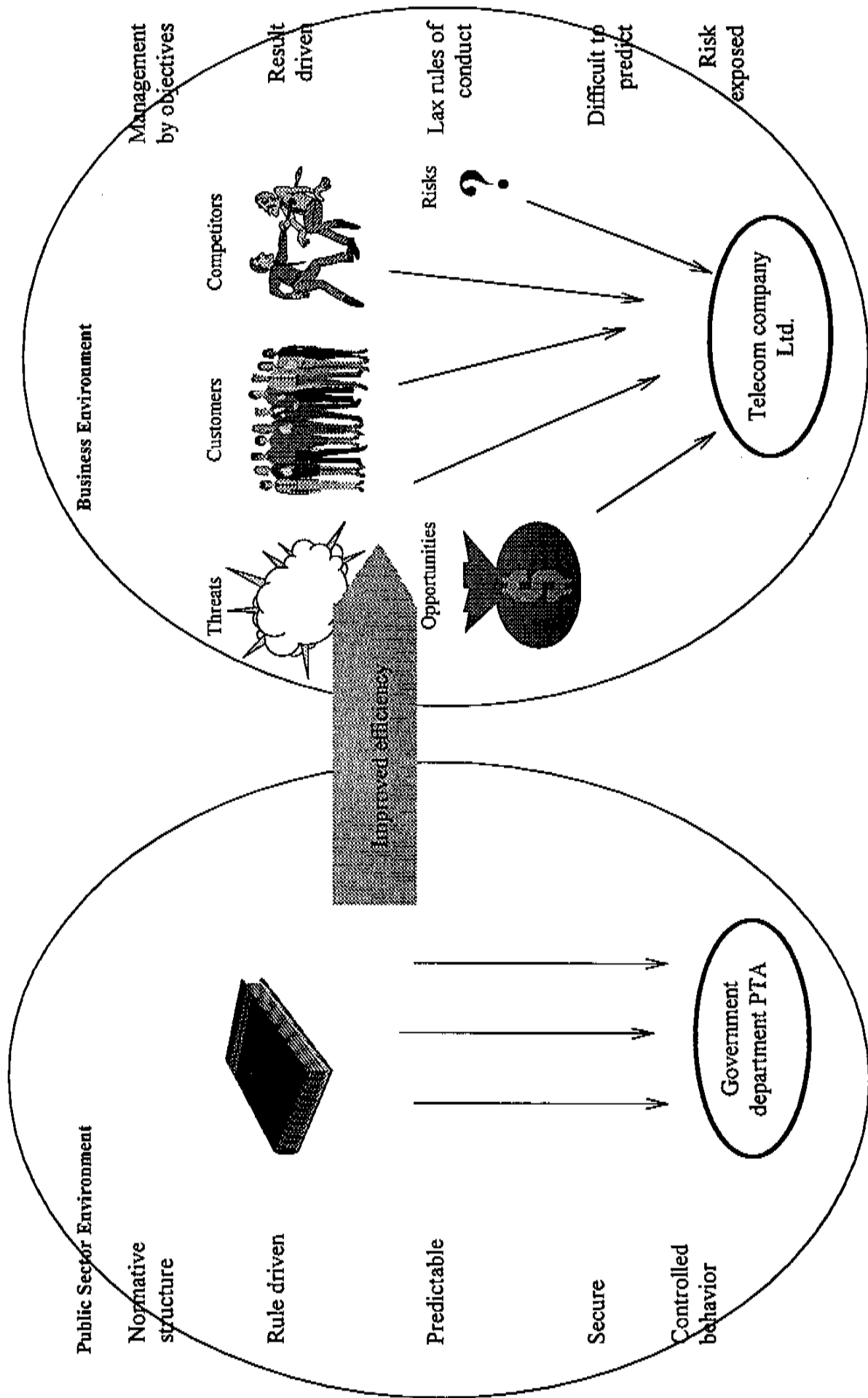
Part of the transition from the civil service sector to the business sector would thus be to change the organizational form from that of a government department to a limited liability company. This transition would require a new management approach since a company needs to be managed by objectives as 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 don't 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

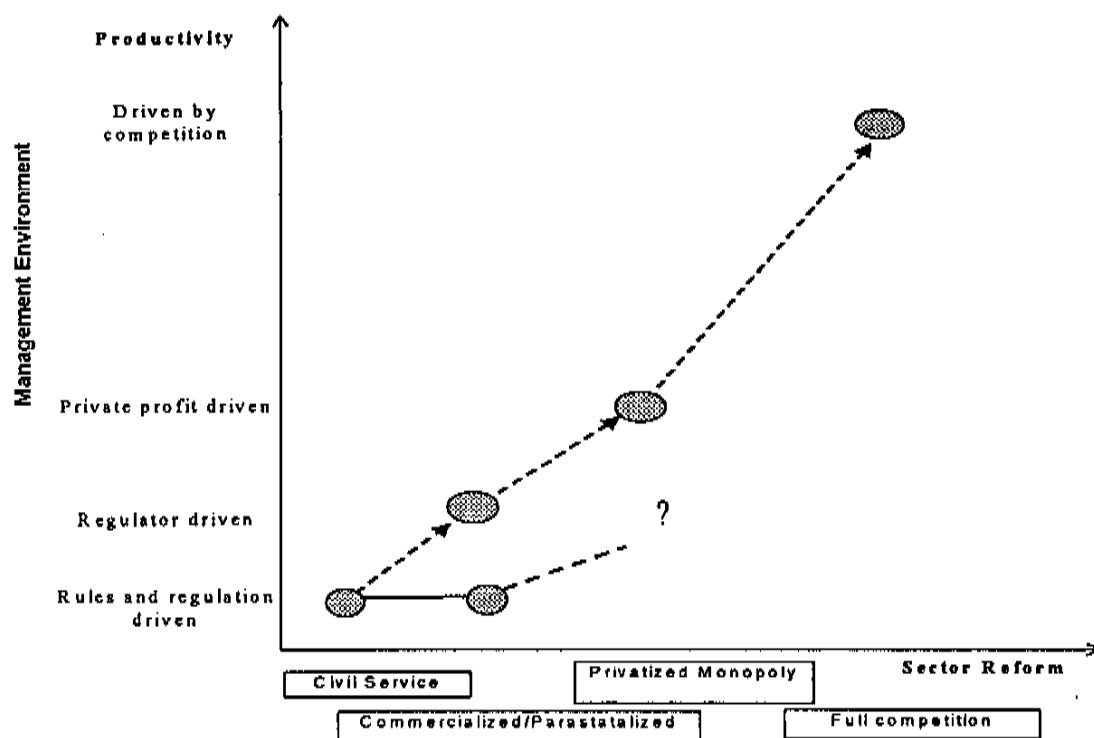
- by way of competition or regulation,
- by way of clearly defined goals and
- by exposing people and organizations to risk.

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 an 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.

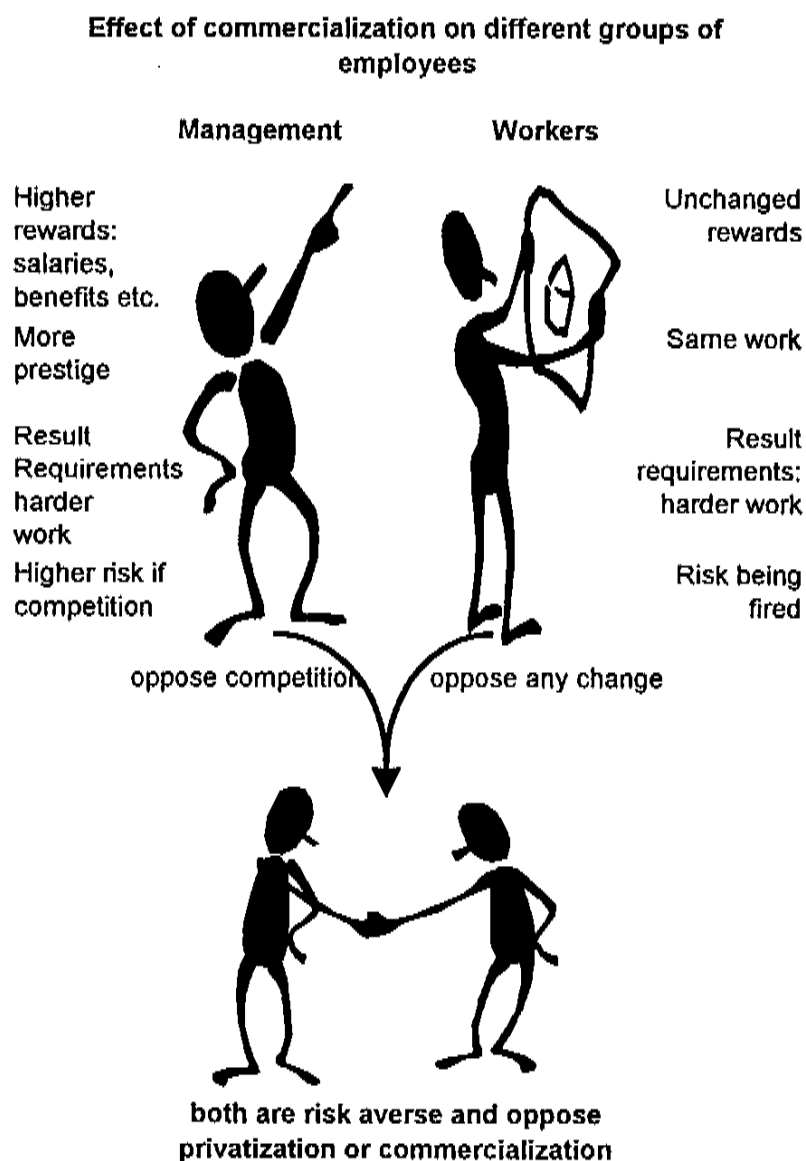
The result of the commercialization, is typically sharp increases in management remuneration and a gradual reduction in the number of workers. Tariffs tend to increase but profitability remains static. Board members and senior management staff, no longer bound by the strict rules of conduct of the public 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, 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"⁴

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

- institution building, and
- capacity building.

⁴ "Guidelines for Support to the Telecommunications Sector in Developing Countries", January 26, 1995, page 2

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”.

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*⁵), 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 which 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

⁵ Royal society of Arts Journal, April 1992

behavior to their competitive situation. The latter type of theories are deductive and descriptive whereas the proactive theories are typically intuitive and prescriptive.

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

The concept behind SIDA's suggested approach towards improving performance obviously belong in the BEHAVIORAL category of the Proactive management theory category. This implies that it is not a scientifically accepted approach to organizational change. In fact this does 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. It is one of a large supply of competing recipes for how to change an organization for 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 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 which are produced by a poorly functioning monopolistic markets 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 exist 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.

	Angola	Mozambique	Namibia	Tanzania
Organizational Development	<p>Approx. cost: SEK 32 million</p> <ul style="list-style-type: none"> • Reorganization of functions • Corporate plans • Installation of MIS • Business efficiency • Service and customer orientation • Decentralization 	<p>Approx cost: SEK 32 million</p> <ul style="list-style-type: none"> • Commercial function (mainly billing) • O&M function • Initiation of organizational change process • Support to new Corporate Planning function 	<p>Approx. cost: SEK 6 million</p> <ul style="list-style-type: none"> • Legislation re corporatization • Financial evaluation • Organizational structure • Job descriptions • Compensation policies, • Tariff policies 	<p>Approx. cost: SEK 105 million</p> <ul style="list-style-type: none"> • 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	<p>Approx. cost: SEK 21 million</p> <ul style="list-style-type: none"> • Training of instructors • Technical training • Management training • Develop HR function 	<p>Approx. cost: SEK 59 million</p> <ul style="list-style-type: none"> • Establish training institute • Establish HR function • Technical training course capacity • Top management training programs 	<p>Approx. cost: SEK 7.8 million</p> <ul style="list-style-type: none"> • HR function • Training needs assessment • Management skills development • Affirmative action program • Staff skill enhancement courses 	<p>Approx. cost: SEK 34 million</p> <ul style="list-style-type: none"> • Operational training programs • Adaptation of ITU training model • Improvement of pedagogical proficiency • Improvement of training efficiency monitoring • Provision of training equipment
Others			<p>Approx. cost SEK 2.5 million</p> <ul style="list-style-type: none"> • Contract Management 	

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 un-profitable 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 their 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, the telecom operators increased the cost of local calls mainly by shortening the number of seconds of the 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
Mozambique	0.01
Namibia	0.01
Sweden	0.02
Korea	0.02
Chile	0.03
Tanzania	0.09
Angola	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.

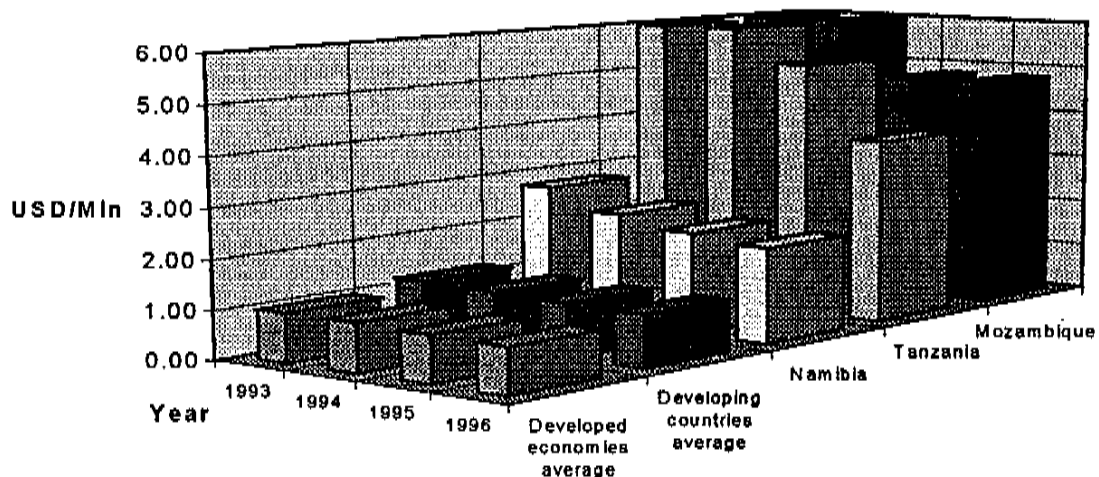
Fixed Fee

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 per line operating cost. Compared with the telecom operators in Pakistan, TDM's operating cost is very high. 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.

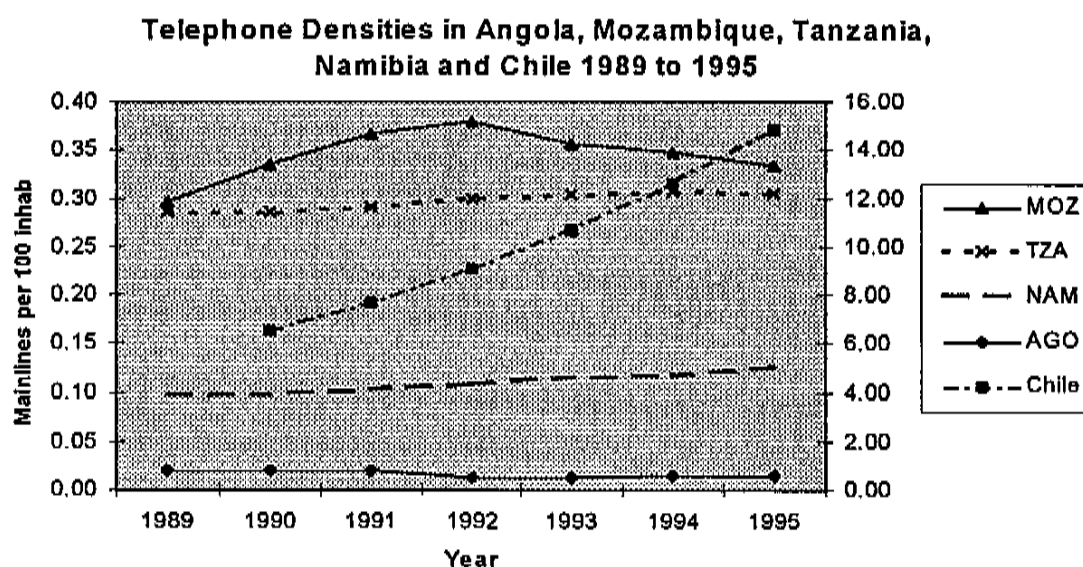
TDM's operating cost per line, which increased sharply in 1990, has since declined slowly. Telecom Namibia has diminished its profits per line by almost 50 percent since 1994, while revenue has decreased by approximately 28 percent. TTCL's operating costs increased by more than 20 percent between 1994 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 six 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.⁶

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.

⁶ 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 is 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.⁷ 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. 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

⁷ 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.

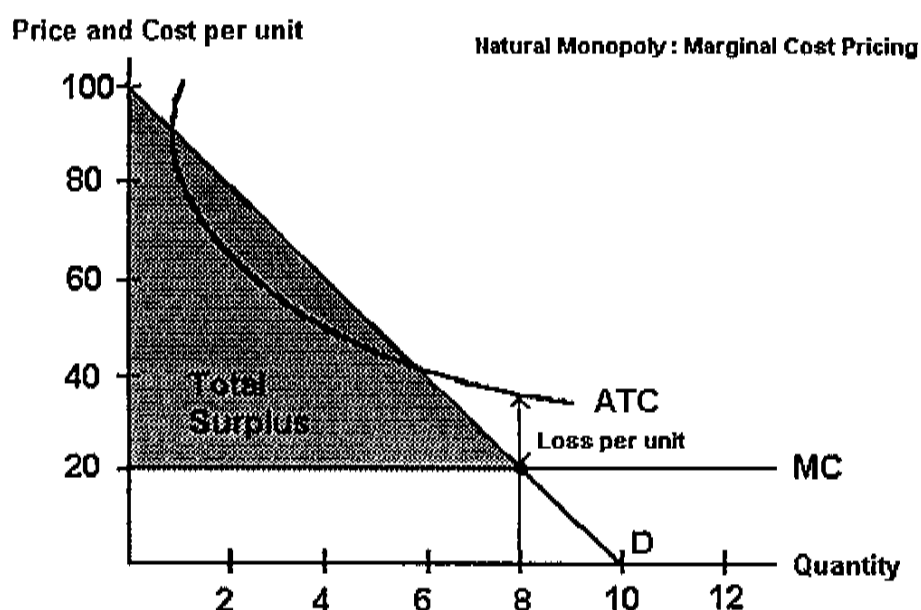
	TDM	TTCL	Telecom Namibia	Angola Telecom
Tariffs	<ul style="list-style-type: none"> Local: Decreased Int.: decreased Installation fee: gradual increase 	<ul style="list-style-type: none"> Local: substantial increase, very high charges Int.: decrease Installation fee: decrease 	<ul style="list-style-type: none"> Local: increased, Int.: substantial drop Installation fee: gradual increase 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Data services Customer Service Centers recently introduced Paging 	<ul style="list-style-type: none"> Data services Mobile phones Customer Service Centers exist 	<ul style="list-style-type: none"> 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"⁸ 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.

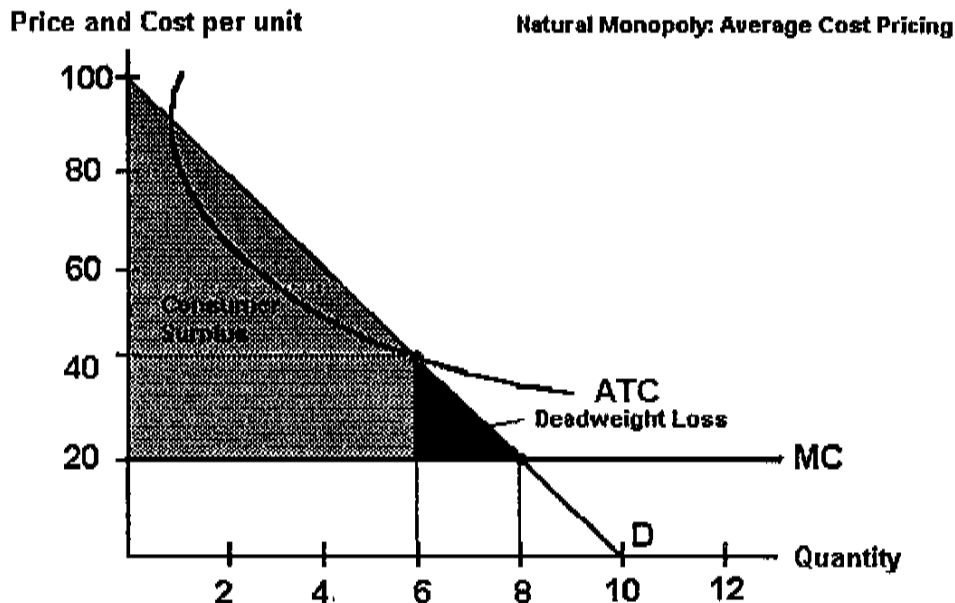


Since the marginal cost is lower than the average total cost per unit (ATC) a monopoly that prices its output at marginal cost would lose money. There are two solutions to this problem. Either the government could cover such losses by way of a subsidy or it could allow the utility to price discriminate,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

⁸ 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.

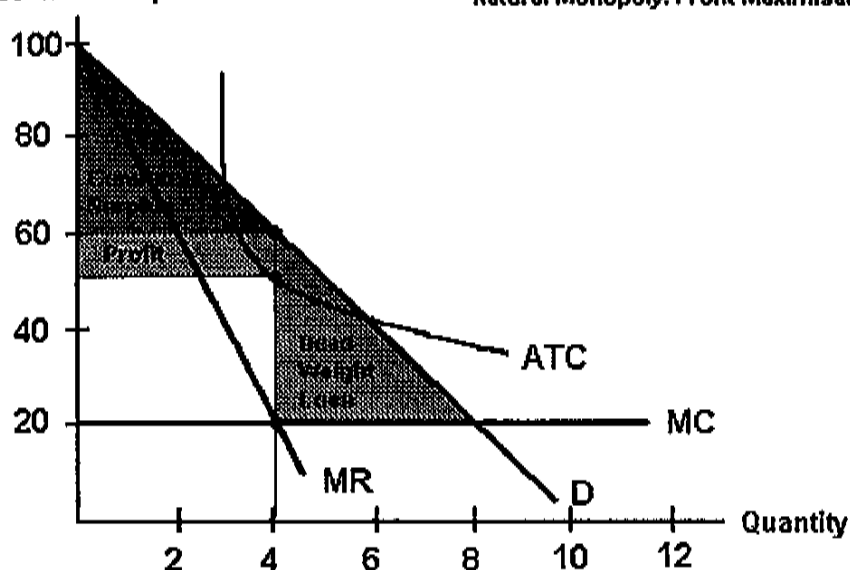


It would also result in a decrease in consumer surplus. One part of the consumer surplus would be lost to the producer but the remainder would not benefit anybody. It would be a deadweight loss, i.e. a loss of value suffered by the economy as a whole. In this case the producer surplus would increase 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 choose 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 economist 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:

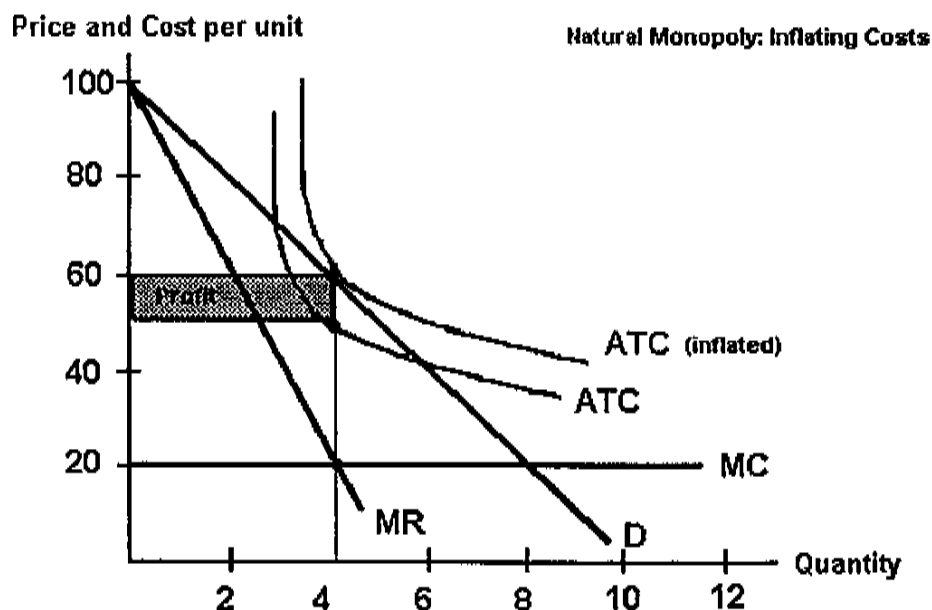
the only type of regulation that can exist over the longer term is that which maximizes producer surplus. The idea behind the theory of capture is that the cost of regulation is high and that only those regulations that increase the surplus of small and easily identifiable groups who have low organizational 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 impose 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 their numbers are large. 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-inefficiency⁹. The theory is applicable to most companies where ownership and management is 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..¹⁰ The firm would thus not be efficient in the neo-classic 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.¹¹

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.¹²

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-classic 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

⁹ Concept developed by Leibenstein, 1966.

¹⁰ Crew, M, page 110.

¹¹ Burke, Genn-Bash and Haines, page 120.

¹² 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-classic 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.¹³

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 it's 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 ..."¹⁴ 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.

¹³ Burke, Genn-Bash and Haines, page 97 ff.

¹⁴ 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 of 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"¹⁵ 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 managers 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.

¹⁵ 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, economist 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 Africa¹⁶. 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

¹⁶ 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 incumbent one. This strategy is the most lengthy and costly. The Carl Bro report states that the incumbent strategy "...is the least likely of the three to produce rapid or sustained improvements in incumbent performance"¹⁷. 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.

¹⁷ 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. The degree of achievement of the project activities in each country is discussed in more detailed in the Appendices. 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.	<p>The initial organizational structure was changed twice, in 1994/95 and in 1996 with the purpose of making Telecom Namibia more customer oriented.</p> <p>A grading system is used to describe the responsibilities for each job category.</p>	<p>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.</p> <p>A revision of the grading system is under way, and not yet fully implemented.</p>
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.	<p>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.</p> <p>Performance reviews are carried out regularly. Development programs for managers' positions are continued, according to the proposed plan.</p>
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: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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; <ul style="list-style-type: none">• 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 indicate 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, 1987-1995, 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 class rooms, 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, 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 under utilization. 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?
<p>Support to key functions</p> <ul style="list-style-type: none"> • billing • commercial dept. • Outside Plant 	<p>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.</p> <p>A new operation and maintenance function in Maputo, detached from the overall network development function, was established.</p>	<p>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 and customer data, and currently mapping the largest customers. It also performs customer surveys and market analyses.</p> <p>The systems for operation and maintenance have been improved with the use of data bases and new routines for reporting, preparation of work orders, dispatching and follow up of operations. The quantifiable results have, however, not yet been show.</p>
<p>Organizational Development process of TDM</p>	<p>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.</p>	<p>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.</p>
<p>Support to Corporate Planning Function</p>	<p>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.</p>	<p>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.</p>

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 two 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 if 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 analysis 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 the use 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:	<ul style="list-style-type: none">• What has the support contributed to?• What has been the return on the investment?
The recipient organization is unable to measure output without targets, nor can it assess the consultants expertise and efficiency.	<ul style="list-style-type: none">• What has been done?• What was the effect of this?• How do we continue from here?
The consultants have no manner of measuring their own performance, nor can they show measurable achievements.	<ul style="list-style-type: none">• What was achieved in terms of efficiency?• How big a role have the consultants played?

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 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 project 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. This has been assumed to 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	<ul style="list-style-type: none">• Increase/decrease in unutilized exchange capacity (fill rate)
Operating surplus/deficit	<ul style="list-style-type: none">• 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 tariffs 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 to 95 percent of the capacity. Certain flexibility for installing new lines or changing numbers is necessary to have. The fill rate depends, firstly, 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 country.

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

TDM has been losing, 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 a 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 for about only 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 around 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 loss of revenue as a consequence of low fill rates is represented by the number of lines which would be possible to connect if the fill rate was 90 percent (instead of the actual 65 percent) multiplied by the average revenue per line during the period. The corresponding amount indicates how much revenue TTCL loses per year on account of not being able to manage its exchange resources in an optimal manner.

The premise is, however, that there exists an unsatisfied demand for more lines that equal 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 amount increased to USD 17,8 million by 1996, which approximately equaled 42 percent of that years revenue. This corresponded to an average annual decrease of about 3 percent.

Change in loss of potential revenue

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

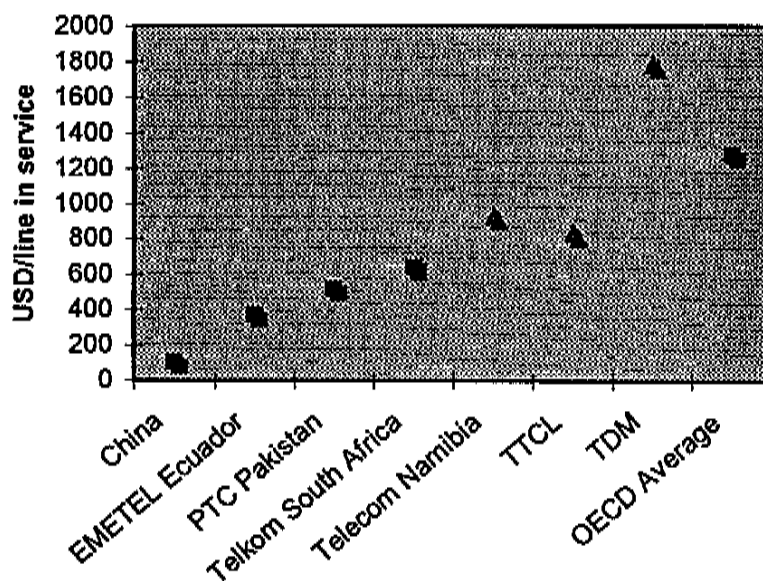
Given that the objective of Institutional Development was to improve efficiency, i.e. utilization of assets, it can be concluded that the effort by and large has failed. In al three countries for which data has been provided, the Institutional Development projects have had no positive effect at all.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

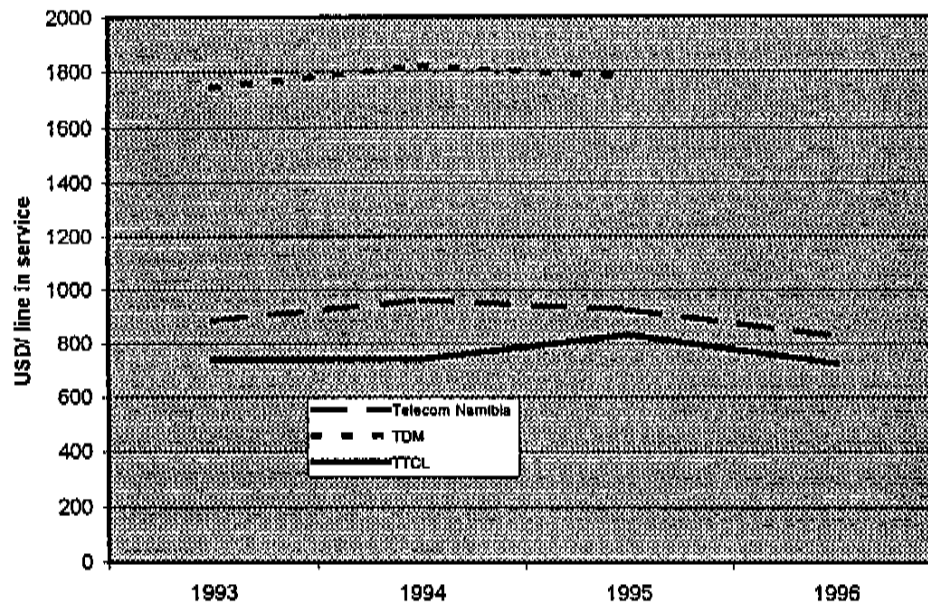
Comparison of Revenue per Line



TDM collects annual revenue per line far in excess of the average OECD revenue. Telecom Namibia and TTCL have 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 record high annual per line revenue even further during the period when 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 five percent. This would thus suggest that both tariff changes (of local and international calls) have had an effect on revenue per line. National calls, however, account for a growing part of the total revenue for all three operators. Those that can least 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.

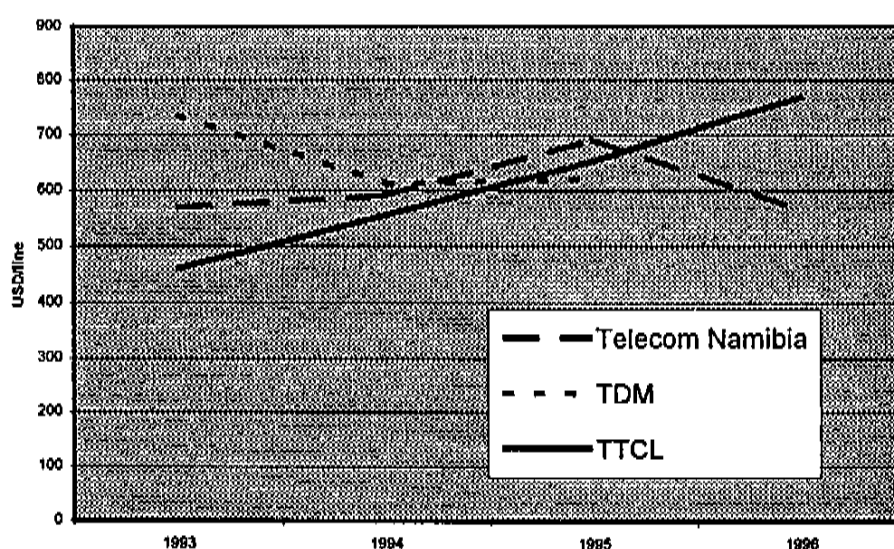
Operating costs in all three countries are also high, amongst the highest in the world. Even though the networks are small, the level of operating costs per line is so elevated that only large inefficiencies in operation and maintenance provide an explanation.

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 respectively 50 and 30 percent 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

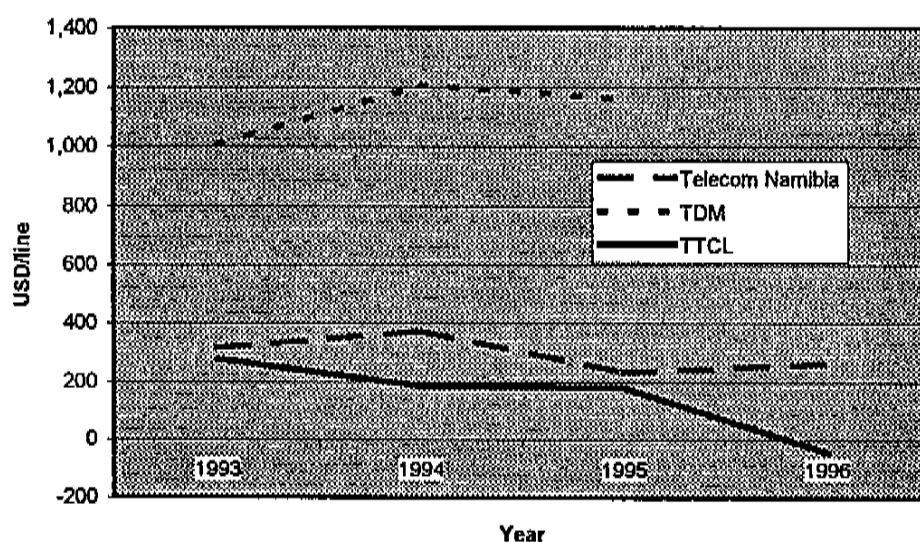


The Institutional Development projects have not helped the operators to improve productivity. Although TTCL's curve shows the largest rise, it is Telecom Namibia, which represents the most disappointing development. This is because the company failed to reap any productivity improvements during the period of an investment in the amount 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 for only 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 possibly the world's 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.

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.

For what it is worth, 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 contracts¹⁸. 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.

¹⁸ 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	NPV as % of SIDA's Support
Angola	n.a.	n.a.
Mozambique	USD -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 to also 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

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

* 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."

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 Swedtel¹⁹, 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

¹⁹ Per Olof Jansson, Swedtel.

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

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.

For a foreign donor to support foreign management is highly questionable 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

Appendix 1 Model for Evaluating the Individual Programs

Appendix 1

Model for Evaluating the Individual Programs

This study is an evaluation of the support provided by SIDA (the Swedish International Development Authority) to the Telecommunications sector in Four African countries from the beginning of 1989 to end 1996. Support to the following four countries is evaluated: Angola Mozambique, Tanzania and Namibia. The evaluation is based on, Firstly, documents from the period covering the support to the telecom sector, and secondly, interviews with staff with TDM, TTCL and Telecom Namibia, customers of the telecom operators, competitors and regulatory agencies. In the case of Angola, a desk study has been performed in agreement with the Terms of Reference and the conclusions are thus based on documents available with Sida only.

In order to measure the impact of the projects, several different aspects are studied: firstly, the design of the projects, progress and achievements and secondly the level of maturity of the organization. The following table shows the model used to evaluate the different projects.

Evaluate the project	1. Objectives 2. Consultants' performance 3. Results	Measurable, designed by whom Tasks Goals achieved
Evaluate the organization	Measure level of maturity	Level 1: The organization produces stable output Level 2: Output performance standards are measured and met Level 3: The organization can initiate and perform changes on its own Level 4: The organization is customer oriented and works to ensure that its clients are satisfied

When evaluating the organization, the Consultants have used a model which is easily explained and understood, the staircase model, which was developed by Göran Andersson and Peter Winai of SIPU International. It defines four different stages of maturity by which it is possible to measure the organizations:

	Stage 1	Stage 2	Stage 3	Stage 4
Customer orientation	Non-existent	Non-existent	Emerging signs	Existent
Administration and Management	Slow, top down approach to decisions, bureaucratic, no ability to initiate and follow through changes	Slow, bureaucratic, ability to follow up externally initiated changes	Less bureaucratic, ability to initiate and follow through changes	Lean organization, ability to initiate changes and follow through
Productivity	Low	Low	Low to medium	High
Ability to measure performance	Low	Low	Low to medium	High
Output quantity	Low	Low to medium	Medium	High
Output quality	Low	Low to medium	Medium	High
Output	Unpredictable	Regular and predictable	Regular and predictable	Regular and predictable
Resources (Equipment, Human and Financial Resources)	Poor	Adequate for regular output	Self sustainable	Self sustainable

Stage 1 Resources are poor, the equipment may be old or badly maintained, the staff is not qualified and the organization lacks financial resources that can be reinvested. Output (telecom services) is unpredictable and of low quality. The organization has difficulties in collecting operational data and statistics. Such an organization would be bureaucratic, run by the top management and not be able to change without assistance.

Stage 2 Resources are available for day to day operations and minor investments. Output is predictable and stable. The quality and the quantity of output is still low to medium.

- Stage 3** At this stage, the organization is self sustainable. It is able to produce a surplus. Output is stable and of medium quantity and quality. The organization can also initiate and follow through changes within the organization. There are emerging signs of consumer orientation.
- Stage 4** An organization at this stage has the ability to look critically at itself and propose improvements. It is less bureaucratic and decisions are decentralized. Productivity and service quality is high and the quantity of output is high. The organization is also customer oriented i.e. it seeks to provide the customers with the products they demand.

The model will be used to evaluate Angola Telecom, TDM, Telecom Namibia and TTCL if the following appendices.

Appendix 2 SIDA's Support to the Telecom Sector in Angola

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Telecommunications Project 1988-1991

In 1987, a team comprising four telecom experts from Swedtel were sent to Angola to review the situation and submit project proposals. The recommendations were included in the subsequent project beginning in 1988.

Analysis of the Objectives

The support to the telecom sector in Angola began with the signing of a "Specific Agreement" between the governments of Angola and Sweden in 1988. For the purpose of implementing the project, Swedtel was contracted to carry out the project. The general aim of the project was "to improve the service level of the existing telecom network through transfer of specialized knowledge". The consultants were to:

- assist traffic planning and network engineering departments,
- assist in operation and maintenance of the outside plant network and
- help establish a stores and spare parts department.

The overall aim of the Swedish input was to increase productivity. The project was designed as technical assistance to the three different sections of ENATEL (the government institution managing domestic telephony) mentioned above. The assistance to the outside plant department was divided into two different sub projects; block wiring and outside plant and cable maintenance. The project included organization of the staff into teams with the necessary qualifications to perform the work needed and procurement and installation of new equipment and tools to be used in day to day work. The first step comprised organizing the workers into operational units, the second, to provide the necessary tools, the third, to train them in the tasks to be performed, and fourthly, to establish routines for day to day operations and for collection of statistics.

The original budget for the period April 1988 to June 30 1991 was as follows:

	SEK '000
Fees	8,921
Allowances and Accommodation	611
International air travel	1,118
Local travel	868
Language training	147
Office costs	1,172
Project equipment	8,661
Training	515
Other	588
Total	22,601

Total number of man months was determined to approximately 200. The budget was later adjusted in December 1990 to SEK 23.4 million. SIDA's contract with Swedtel was then again extended up to the end of 1991 and the budget was increased with an additional SEK 4.8 million.

The project was designed by Swedtel in 1987. Swedtel's study coincides closely with the Terms of Reference. Information as to what extent ENATEL was involved in the preparation of project documents is not available from the documents reviewed.

The objectives were general, not specifying any quantitative results. The goals were stated as tasks to be performed by the consultants.

Analysis of the Process

Swedtel began work in Angola early in 1989. Training was practical and mainly on-the-job type. Engineers were trained in how to operate new and existing equipment and workers were trained in block wiring, cable installation and routines for record keeping etc. The occasional training course for engineers was held at the Telecommunication Training School. Swedtel found that ENATEL lacked tools and equipment needed to perform basic tasks such as cable repair etc. The project was completed within the budget, both the original and the expanded budget.

Analysis of the Results

According to Swedtel, the Terms of Reference were fulfilled. The quality of service was increased at the exchanges as a consequence of improved maintenance, but the overall result, measured in effective calls, remained unchanged. The Consultants have, however, not been able to verify the achievements in terms of output since no performance indicators were shown in the reports presented by the suppliers.

ENATEL in 1989	
Customer orientation	None
Administration and Management	Bureaucratic, centralized, unable to monitor performance. There was no information on the capabilities of management to change.
Productivity	No information
Ability to measure performance	None
Output quantity	Low, density was 0.75 lines per 100 inhabitants.
Output quality	Low, the exchanges in Luanda were saturated, outside plant consisted of very old cabling and the transmission system was inadequate.
Resources (Equipment, Human and Financial Resources)	ENATEL had old and outdated equipment a majority of the exchanges were manual, the staff lacked experience, and there were no financial resources available.

ENATEL had large receivables since the state and the armed forces were not paying for telephony services. This worsened the liquidity of the company and ENATEL's ability to buy spare parts and pay for international traffic and links. The reports of the financial situation do not analyze the cost structure nor the earnings in real terms (adjusted for inflation).

Analysis of the Organization

ENATEL as well as external consultants both had trouble collecting operational data and statistics, and there were therefore few indicators to show achievements over the period. The data that does exist is also not entirely trustworthy.

In 1991 ENATEL still had mainly analogue equipment. The exchanges were of different types which complicated maintenance. Exchanges in the main towns were still saturated and faults were frequent.

It appears as if quality of service was not significantly improved during the project. In Swedtel's report on performance indicators and targets for the future project, the ratio number of effective calls to call attempts between exchanges has deteriorated slightly from 55 percent in December 1989 to 52 percent in June 1991.

ENATEL in 1991 was highly bureaucratic, decisions were taken by the top management and few decisions were taken at lower levels. The organization also lacked experienced staff and the education level of the employees was low. There was also lack of work discipline since the workers were not motivated because of low salaries and under-staffing, which implied a higher work burden.

One indicator of the inefficiency of the management and the management's inability to plan and run ENATEL was the lack of financial data. In the beginning of 1990 the latest official and audited balance sheet and income statement available was two to three years old. Bookkeeping procedures may not have been entirely correct either, since it seemed as if revenue for example was only registered when paid, not when billed.

It would seem as if ENATEL in 1991/1992 was at stage 1 of maturity according to the staircase model:

ENATEL in 1991/1992	
Customer orientation	None
Administration and Management	Bureaucratic, centralized, unable to monitor performance.
Productivity	No indications
Ability to measure performance	None
Output quantity	Still low, there had been no improvements in density during the period.
Output quality	Low the data which is presented in the reports suggest a deterioration in service quality.
Resources (Equipment, Human and Financial Resources)	ENATEL had old and outdated equipment, inexperienced staff, and there was still a lacked of financial resources needed to employ qualified staff and to buy spare parts.

Institutional Development Project 1992 - 1994

In July 1991 two new Specific Agreements were signed by the Swedish and Angolan governments. One covered a technical assistance project in the Benguela region. The purpose was to improve the local telecom networks in the Benguela region as part of a regional project. This formed part of a larger project called the SADCC project which is not be evaluated in this report since it constitutes mainly technical rehabilitation.

The second specific agreement was to focus on ENATEL and the regulatory agency. The general objectives of the Specific Agreement were to:

- Assist in the institutional development in the telecom sector and
- Contribute to the training of the sector personnel

A new project was thus elaborated which was awarded Swedtel and ISO in the beginning of 1992. The contract was to be valid until December 1993 and focus on:

- Assistance with the *Operational Structure of the Organization* of ENATEL
- *Corporate Planning and Co-ordination*, where Swedtel/ISO was to help establish a corporate planning and co-ordination unit within ENATEL and train staff for this unit.
- *Sectional Planning and Engineering*. This included co-ordination and maintenance of local cable and subscriber networks, co-ordination of the national maintenance network, support to traffic switching and network engineering departments and establishment of a drawing office.
- *Assistance in Manpower and Training*. The consultants were to increase the capacity of Angolan training instructors in course preparation and delivery, to train technicians in power supply and air-conditioning and to hold management training, specifically in market orientation and efficiency. A dormitory and additional classrooms were also to be built.

It was proposed that performance indicators and targets be established by the consultant and ENATEL and be approved by a Steering Committee comprising ENATEL and SIDA.

The Terms of Reference also specify several ongoing tasks which should be completed, these were: the continuation of assistance to the traffic handling section and network support and the maintenance and block wiring departments.

The budget for the project is shown below:

	SEK '000
Fees	26,469
Allowances and Accommodation	5,144
Local travel	1,224
Office costs	1,152
Project equipment	11,100
Other	898
Total	45,987

The project was extended to December 1994 with an additional SEK 9.8 million for that period.

A project to assist the regulating agency DNCT was also designed as part of the second specific agreement. The main tasks included:

- determining and describing the sector's short and long term aims and the structure of the sector
- defining and describing the responsibilities of the authorities involved in the sector: the political, the regulatory and the operating entities
- defining areas of responsibility
- participating in the merger between ENATEL and EPTTEL

- improving the regulatory agency's organization and define it's duties
- providing assistance to the regulatory agency in management of radio spectrum and type-approval of equipment

Part of this project was awarded Danish Teleconsult International A/S. This project was designed differently from that of Swedtel-ISO in the manner that the consultants would during periodic visits assist the regulatory body Direcção Nacional de Correios e Telecomunicações (DNCT) instead of a continuous support from resident consultants.

Tecnologia das Comunicações (TDC) a Portuguese firm was selected to provide assistance to DNCT in the area of management of radio spectrum. Total budget for the first phase was SEK 2.8 million.

Angola Telecom Project 1992-1994

Analysis of the Objectives

Several studies of the telecom sector in Angola, funded by SIDA, were prepared in 1991 as well as Swedtel's final report. In these reports, the consultants made recommendations for continued support to the sector which can be found in Swedtel-ISO's Terms of Reference for the 1992-1994 project.

In Swedtel's final report it was recommended that the material administration project continue and that additional training in modern management in the Outside Plant department be arranged. The main focus of the new project "institutional and competence development" can be traced back to a report from 1991 by Scandinavian Project Managers. This report recommended that SIDA support the telecom operator in the areas of "training and competence development rather than physical investments"¹.

In the Terms of Reference, SIDA also required that the consultants, together with ENATEL/EPTTEL, prepare performance indicators and targets in the project document to be presented to the Steering committee for approval. Tasks not completed during the previous period should be "consolidated" and phased out.

Analysis of the Process

During January 1992 to mid 1992, tasks not finalized during the former contract were either phased out or completed. In October 1992 the Swedtel/ISO group was evacuated and work did not resume again until the beginning of 1993. The number of expatriates allowed in Luanda by the Swedish Embassy was reduced and the project was, as a consequence, prolonged to December 1994.

In May 1993 Swedtel presented a detailed plan for the project from January 1993 to June 1994. There were several tasks to be completed and decisions to be taken. The number of

¹ Brundenius, Runesson and Rylander, Jan 1991

expatriates stationed in Luanda was limited to six by the Swedish Embassy, and it was therefore decided that a number of short term assignments be performed by visiting consultants to complement the resident staff. Swedtel-ISO consultants and Angola Telecom staff (the new telecom operator comprising both ENATEL and EPTTEL) were to work in groups, employing the so called "Team Concept". Each group would be headed by a foreign consultant and an Angolan counterpart jointly responsible for the results. The purposes of this was to improve the relationship between the Swedish consultants and the Angolan staff and between ENATEL and EPTTEL staff (which were merged into Angola Telecom) and to promote effective project implementation.

In mid 1993, Swedtel and Angola Telecom presented "Proposed Performance Indicators" and targets. The indicators included output, quality of service and financial indicators. The report also emphasized that the figures for 1992 were not completely correct and that the targets should be defined more closely as the project advanced.

During the period, SIDA contracted Mr. Ruud to analyze achievements in both projects i.e. both assistance to the regulatory body and to Angola Telecom, the benefits from the SIDA project and review the overall development of the sector.

The projects executed by DTI and TDC to support the regulator were late in starting. According to Mr Ruud, this was mainly due to the fact that the DTI consultants had only visited Angola once, in January 1994 and that there was little communication between the two. The DTI consultants did, however, prepare a proposal for a new telecommunications law and proposals for staffing and re-organization of DNCT. DNCT continued working on their own, a new telecom law was drafted as well as a Program Contract (contract to assign responsibilities between Angola telecom and its owner the government) using DTI's proposals.

Analysis of the Results

During the period ENATEL and EPTTEL were merged into Angola Telecom. The merger was achieved in terms of a common corporate entity, however, the two entities did not at the beginning of 1994 have a common balance sheet. By 1994, the annual reports of ENATEL and EPTTEL for 1992 had still not been audited and the assets had not been evaluated. The reason for this was that ADB had at an earlier stage promised support in terms of financing of audits etc., but withdrew its support to Angola as a consequence of arrears in repayments and interest payments on ADB loans. No funds were put forward for this purpose by the Angolan government.

Swedtel-ISO had during the project period held seminars to achieve a common corporate climate which were successful. The corporate development group had also drafted the first business plan and installed a Management Information System (MIS). Performance indicators had been prepared with Angola Telecom staff within each area as well as targets for 1993 to 1997. In terms of assistance in financial planning, a budget simulation was prepared.

According to Mr. Ruud, the Human Resource Development part of the project had not been satisfactorily implemented. Firstly, the team itself, comprising Swedish consultants and Angola Telecom staff, had not achieved an "effective collaboration". Training had however been provided in management and "enterprise attitude".

The technical issues seemed to have progressed satisfactorily. A structure for planning and engineering activities had been established. In the case of the traffic engineering project, the short term consultants had concentrated more on fault identification work and not so much on traffic planning. Manuals, instructions, and job descriptions for the department for field operations and maintenance had been prepared.

Mr. Ruud made several visits to Angola during 1993 and 1994. The purpose of these was to review the progress of the project, appraise development of Angola Telecom and the entire sector and prepare draft project documents for future support. Mr. Ruud based his conclusions as to performance on the consultants' (Swedtel-ISO's) and Angola Telecom's own reports. The consultant did not independently evaluate the performance of Angola Telecom, the achievement of performance targets or analyze the project according to the Logical Framework Approach.

Analysis of the Organization

ENATEL in 1992

In 1992 performance indicators and targets were prepared for the first time. The Swedtel-ISO consultants were able to collect relatively reliable data for a number of operational areas. The lack of indicators prior to 1992, however, suggests that data was collected on an ad hoc basis only. The Swedtel-ISO consultants also noted that Angola Telecom would not have been able to prepare targets without the assistance.

The indicators show that Angola Telecom had a penetration rate of 0.05 subscribers per 100 inhabitants. The service quality was extremely low (number of successful calls in Luanda were down to 45 % and there were 1,500 faults per 1000 lines) and there were no information on financial performance.

Angola Telecom as an organization was not analyzed in any reports from the period, and it is therefore not possible to assess the level of bureaucracy or efficiency of the organization.

Angola Telecom in 1994

There is no data available in any reports to show the progress between 1992 and 1994 in terms of physical output, quality of services or financial data. The reasons for this may be that Angola Telecom together with Swedtel-ISO were been unable to measure performance and compliance with targets.

Project to Support the Regulatory Agency (DNCT) and Angola Telecom 1994 - 1997

In July 1994 a new Specific Agreement was signed by the Swedish and Angolan governments. The aim of this was to assist in the creation of a Sector Regulating Entity (DNCT) and to make Angola Telecom a market driven customer oriented company.

The aim was to firstly,

- to establish an interim structure for the regulatory entity,
- to issue a concession for Angola Telecom,
- to assign frequencies according to radio frequency plan,

and secondly,

- to make Angola Telecom market driven, client oriented company and
- to improve the quality of services.

The two main aims were divided into separate projects and two limited tenders were launched. In October 1994, two contracts were signed; Swedtel-ISO were awarded the contract to assist Angola Telecom and Swedtel-ISO together with Danish Teleconsult International (DTI) in cooperation with Tecnologia da Comunicacoes (TDC) signed the contract to assist the regulator. TDC was to assist in the management and planning of issuing of frequencies and DTI was to assist in policy and regulatory issues as well as general management of the regulator.

The project to assist the regulatory agency (hereafter called the DNCT project) aimed at creating an independent regulatory body. The consultants were to

- establish a new organization,
- elaborate a program for human resource development and training of staff,
- establish rules, systems and procedures for the management of telecom services and
- help formulate and apply a Program Contract between the government and Angola Telecom.

SIDA introduced the Logical Framework Approach in this project. All reporting should be done according to such a format.

The consultants were to use short term consultants as well as one resident long term project manager and one resident senior expert.

The budget for the project is shown below.

DNCT Project	SEK '000
Fees	6,900
Allowances and Accommodation	1,553
Local travel	1,466
Office costs	768
Project equipment, fellowships and study tours	2,200
Other	513
Total	13,400

The second project (referred to as the Angola Telecom project) aimed at creating a commercially oriented, financially viable and technically apt operator.

The budget for this project amounted to a total of SKE 60 million and is shown below.

Angola Telecom Project	SEK '000
Fees	35,500
Reimbursables	14,800
Housing	6,000
Project costs	3,700
Total	60,000

The DNCT Project

Analysis of the Objectives

The project was designed to a large extent by the review missions sent to Angola by SIDA in 1993. Mr. Ruud was asked to prepare draft project documents in 1993 and 1994. The conclusions and recommendations were subsequently included in the Terms of Reference for the project.

Angola Telecom and Swedtel-ISO were required to follow SIDA's guidelines for planning, management and monitoring i.e. the LFA format. The Terms of Reference specify a number of reports to be presented including a detailed plan of Operations.

Analysis of the Progress

TDC's work comprised reviewing the present situation and suggesting tasks to be implemented. According to Mr. Ruud, their work was highly appreciated by DNCT and this sub-project, frequency management, which seemed to be more or less a continuation of the previous project, was executed without any problems. The Portuguese consultants reviewed the spectrum planning, planned new channels, installed new equipment for monitoring, and routines for inspection of licenses. The team working with this sub-project, included Angola Telecom counterparts and Portuguese consultants, made

progress which was evidenced by the establishment of a frequency management and monitoring unit which issued frequencies according to a computerized plan.

The main project, that of establishing the organizational structure of DNCT manpower plans, training needs, rules and procedures etc., was slow in starting. The consultants began by preparing a Plan of operations and activities which included a LFA matrix where each separate sub-task was specified, with indicators and means of verification. The means of verification were, however, vague and not easily assessed. The indicators were in this case the existence of laws, regulations, contracts and plans for training etc.

Draft statutes for the future DNCT and a financial viability study to determine future sources of revenue were also prepared. The staff were also trained in English and in the use of equipment. Several management courses for middle management of DNCT have also been held.

The consultants also helped develop an organizational structure and assigned responsibilities for each department. Elaboration of job descriptions and recruitment also proceeded.

In 1996 a new plan of operations was elaborated according to the LFA structure. There have also been discussions about the Program Contract with several national ministries, SIDA and representatives from ministries in Zimbabwe and Mozambique.

Analysis of the Results

Several of the main objectives of the project were, however, not achieved. These were:

- formulation and application of a Program Contract,
- elaboration and implementation of the new organization and
- the legal framework necessary for the establishment of an independent regulatory body.

The telecommunication law has still not been by October 1996. The draft policy document that exist imply that there will be a clear distinction between the Ministry which sets policy, the regulator, and the telecom operators. The network would continue to be state property and all basic services would to be provided by one licensed operator: Angola Telecom. Other non-basic services would be open to competition.

The Plan of Operation for 1996 was prepared according to LFA format but is vague and the means of verification are not easily validated. According to Messrs. Hilding and Lanker (independednt consultants part of a review mission in 1996) the development of the regulatory body was, however, partly successful. The fact that there is no licensing of operators other than assignment of radio frequencies and that DNCT, on the verge of issuing licenses and concessions, will require additional assistance in this area does, however, suggest that the regulator is not able to handle its primary functions.

The lack of assistance in the billing, collection and accounting area is not explained in the reports.

Angola Telecom Project

Analysis of the Objectives

The design of the project seems to be partly the result of recommendations of the review mission in 1994 and partly based on the Angola Telecom business plan for 1994 to 1996.

The project objectives are vague and specify a number of tasks to be performed, but do not detail the overall aims or targets. The LFA format was to be used also in this project i.e. the reporting was to present objectives, expected results, the means of verifying the results and influencing external factors.

Analysis of the Process

During the period January 1995 to June 1996 the Swedish consultants were to; improve business efficiency, to increase service and customer orientation, to decentralize the organization, increase regionalization, to develop top management and to develop the Human Resource division. The Team Concept was to be applied.

The legal framework, i.e. the Program Contract between the owner (government) and Angola Telecom had still not been approved although Angola Telecom had been transformed into a public enterprise.

The consultants helped draft statutes for the new company, review and improve the MIS and increase understanding of its use as a tool to measure performance. Several training courses for management were held in Luanda and also in the Benguela and Lobito regions. The improved military situation in the provinces led to easier access to other areas and the new project therefore also included assistance to regional offices.

The concept of service and customer orientation was gradually introduced. Several new systems for control of fault complaints and network supervision were installed and staff were trained. The new systems helped increase productivity in fault repair processes. The network supervision systems were to increase the availability of technical data and thus the ability to measure and follow up technical performance indicators.

The Human Resource component was delayed due to Swedtel-ISO's difficulties in recruiting a long term expert. Once it did start, courses in Human Resources management, general financial management and in English were held for the top and middle management. A proposal for a new salary system including how to prepare job descriptions and job evaluations was presented by the consultants.

In January 1996 SIDA decided to reduce the consultancy input to Angola Telecom by 30 percent. The state reasons for this were²:

- the slow progress in improving economic stability resulting in delays in planned investments necessary for the telecom infrastructure,
- Angola's non-conformity with undertakings agreed in the Specific Agreement within the telecom sector (mainly elaboration of the legal framework),
- the lack of investments and
- the necessity to improve adaptation of the Swedish support to the reception within Angola Telecom.

The serious delays in drafting and approving a telecom law and the Program Contract which were prerequisites for the project, was affecting both the DNCT project and the Angola Telecom project. Angola had by the end of 1995 still not performed a number of the undertakings agreed upon in the specific agreement, specifically:

- adopting a legal framework for the telecom sector,
- finalizing a provisional Program Contract and
- completing the financial restructuring of Angola Telecom (i.e. auditing the accounts for ENATEL and EPTTEL)

Investments within the sector, responsibility of the government as long as Angola Telecom was not officially a state owned corporation responsible for costs and revenue (an "Empresa Pública") had not been realized. Quality of service was still low and, the lack of funds and donor support (ADB decided to cancel their part in a large investment program called Telecom II) were limiting factors. The reduction in the Swedish Support mainly affected the human resource management training which ceased³. In order to remedy this, an investment plan was prepared together with the Swedish consultants including a list of potential donors.

The relationship between the Swedish consultants and Angola Telecom staff, was according to evaluating consultants less than optimal mainly due to lack of reception by the Angolan staff.

The concept of business units in the organization was prepared and within the service and customer orientation sub-project a limited market survey of a few major clients in Luanda and Benguela was carried out.

The accounts for the years 1993, 1994 and 1995 were finally audited later in 1996, by the accounting firm Price Waterhouse, which also revised the opening account of Angola Telecom.

² Acta da Consulta Anual sobre o Apoio Sucesso ao Sector de Telecomunicações em Angola 21-23 fevereiro de 1996

³ Hilding and Lanker, Oct 1996.

Analysis of the Results

According to reviews by Messrs. Ruud, Hilding and Lanker the success of the project was only partial. Two separate evaluations of the project were carried out during the period, in February 1995 by Messrs. Hilding and Ruud, respectively, and in September 1996 by Messrs. Hilding and Lanker. All the consultants based their evaluations on discussions with Angola Telecom staff and Swedtel-ISO staff.

The evaluating consultants concluded that the method of using the LFA matrix to control, and monitor the project was not altogether successful since neither Swedtel nor Angola Telecom staff had understood the concept. The problems were not properly defined and the expected results were confused with means of verification which were vague and difficult to measure. Since the objectives of support to the organization were to improve the operation, results should be shown in terms of improved efficiency, swifter handling of complaints, improved billing of customers etc. Such indicators were absent. Responsibilities of the different departments should also have been better defined as well as how the departments were measured compared to other departments.

Assistance to the financial department was not emphasized. The financial accounts had not been audited and the accounting department within Angola Telecom was still two years behind. There seemed to be no knowledge of how to use financial data from accounting to monitor performance. The Swedish consultants and Angola Telecom focused on revenue and debts payable. Tariff increases, means of hedging against inflation, the depreciation of the exchange rate and the subsequent difficulty in determining market value of the assets and the large debts owed to the firm by government agencies were discussed in all documents. There was, however, no mentioning of reducing costs and thereby increasing profits or as a further step, reducing tariffs.

The situation as to working relationship between Angola Telecom's staff and Swedtel was "clouded". According to Mr. Ruud (visited Luanda in February 1995) the consultants had a good working relation with local staff. However, Mr. Hilding commented on the limited reception capacity of the staff and later, the limited work by consultants and staff on strategic issues. The team concept did not seem to be working especially in the Human Resource department. According to Messrs. Hilding and Lanker, the staff had no experience of a Human Resource department and "what is was for". It would seem as if the consultants were concentrating on implementing what had been agreed with SIDA, and failed to make sure that Angola Telecom needed and understood such support. During 1996, Angola Telecom had started to show signs that it was changing towards customer orientation. The process was, however, slow, but never the less noticeable in comparison to the previous year according to Mr. Ruud.

Messrs. Hilding and Lanker commented on the increasing distance between consultants and Angolan staff in 1996. Apparently, the Angolan staff had prepared a "Turn Around Plan" aiming at showing how to improve the financial situation of Angola Telecom, without the assistance of Swedtel. The consultants thereby concluded that the "Team Concept" was not working. It is, however, important to bear in mind that this was the

main purpose of the support i.e., to increase the competence of the staff so that they themselves can prepare such documents, implement the change and follow up.

Analysis of the Organization

Decentralization and improving conditions in the districts were also emphasized, during this final project, since the civil war was abating and it was possible to travel within the country.

The financial situation was, according to Messrs. Hilding and Lanker, precarious and they doubted that the firm would be financially viable by June 1997 as was one of the main goals of the project.

ENATEL in 1995/96	
Customer orientation	Signs among top management
Administration and Management	Angola Telecom is showing tendencies to decentralize geographically. It seems to have the ability to prepare operational plans such as the "Turn-Around Plan". The ability to implement it has however not been shown.
Productivity	Low
Ability to measure performance	Low, but there are indicators suggesting that performance is improving gradually.
Output quantity	Density has decreased over the period, investment plans have not been carried out.
Output quality	Low but increasing gradually
Resources (Equipment, Human and Financial Resources)	Still lack of equipment, however, the maintenance of installations has improved. The staff's knowledge of technical and administrative routines has improved. Financial resources are still scarce.

Summary

The support to the telecom sector in Angola was, firstly, more technically oriented than the support in the other countries analyzed, and secondly, covered all aspects of the telecom sector: investments in equipment (mainly spare parts, buildings, machinery, and vehicles), assistance to the top and middle management of the operator and extensive support to the regulatory entity. The main reason for this was that Angola received little assistance from other donors, and in order to achieve even limited improvements in output, equipment was needed to improve the exceptionally bad state of the existing network.

The restructuring processes, ongoing during the entire project period, to unite ENATEL and EPITEL into Angola Telecom and the civil war also contributed to the limited achievements in areas other than in Luanda.

The implementing consultant was Swedtel-ISO to a large extent, DTI and TDC. The independent consultants brought in to evaluate the process were mainly Messrs. Ruud, Hilding and Lanker. The objectivity of the review missions was limited by the fact that they were asked to, firstly, prepare the project documents for future projects and to subsequently evaluate the same projects. There are signs that this limited the propensity to criticize the project as such, since the consultants are following the assignments as defined by them. Mr. Ruud also acted more as an envoy of SIDA than a consultant on several occasions.

Is it possible that SIDA tried to do too much? To have concentrated its' effort on certain areas would have made a more efficient use of resources. By assisting all actors within the sector, each different project tends to become larger and larger, with more tasks to be done in the various sub-projects. SIDA then tends to become swamped by reports on different subjects and are unable to discern on what the focus should be.

The following summarizes the total support to the sector from 1989-1996.

Total budgeted support to ENATEL/Angola Telecom	SEK 144 million
Total budgeted support to DNCT	SEK 17.1 million

Appendix 3 SIDA's Support to the Telecom Sector in Mozambique

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Introduction

SIDA and Swedtel jointly reviewed the support to the telecom sector in Mozambique in early 1997. This report covers the entire support to the telecom sector from 1980 to 1996. The document describes each project, its design, analyses the tasks performed and draws conclusions. In order not to duplicate this work, the Consultants have limited the analysis of support to the sector to analyze actual output and the telecom organization itself at different points in time. The Consultant's assessment is based on reports produced by Swedtel, TDM and by other independent consultants during the period 1989 to 1996.

Continued Support to the Telecommunications Sector 1989-1993

Analysis of the Objectives

In 1986 a program to expand the telecom network (called Telecommunications Development Project, TDP) began which rapidly increased the size of the network. New equipment (mainly digital) was installed and more subscribers were connected. The aim of the TDP program was to extend the national network by 53,000 DELs (thereby more than doubling the capacity), 113,000 pairs of local lines and 2,900 pairs of trunk lines. This was to be done in stages, and the first stage began in 1986.

TDM and the donors, soon after the first phase had begun, realized that this expansion in capacity would seriously affect the operations of the organization. The Swedish assistance had, until then, been technically oriented (support to the training center, preparation of operation and maintenance and manpower plans and assistance with internal networks in multi-story buildings). The previous telecom project (with Swedtel as consultant) which had begun in 1985, with the signing of a Specific Agreement between Sweden and Mozambique, was thus extended to mid 1989 in preparation for a new long term project which was to begin in 1989 and was to improve the operation of the network and the management capability of TDM.

In order to co-ordinate donor support, and to design the projects TDM needed, SIDA contracted a Swedish consultant, SWECO, to prepare the so called Operation Management Plan (OMP) together with TDM and Swedtel which was to be used in a donor conference on support to TDM. At the conference some 27 projects were presented to several donors and funding for 80 percent of the projects was approved. TDM was to contract consultants which would be funded by the donors. The largest individual donor was SIDA who, through Swedtel and ITU, agreed to fund five projects whose total value was about USD 8 million out of a total of USD 23.1 million for the entire OMP. The projects funded by SIDA, executed by Swedtel and ITU, during the first phase were:

- Project co-ordination
- Development management skills
- Local network maintenance in Maputo
- Support to the planning department
- Support to the commercial department
- Support to the training department and training centers

In February 1989, SIDA signed a complementary contract with Swedtel. The aim of the additional project was to improve the operation and maintenance organization of TDM. Swedtel was to assist in the implementation of the TDP, in training of staff and with key functions (including billing, support to the commercial department and to the establishment of an outside plant function). This contract (worth SEK 51 million) was to be SIDA's final project within the telecom sector.

TDM in 1989/90

In 1989/90 TDM expanded its network substantially with the assistance of a number of donors (the TDP project). The exchange capacity was increased from less than 40,000 in 1986 to some 77,000 lines in 1990. The strain on the organization was apparent as TDM experienced difficulties in a number of areas among them maintaining the network, improving quality, issuing bills and collecting payments.

TDM was at that time highly centralized and was mainly governed through directives issued from the top management. The lower level management therefore had a tendency to pass decisions on upward.

The organization also lacked computers, thus making it difficult to easily collect and analyze information on operations. The main tasks performed by top management at this time were to create the rules to be followed, implement new systems (MIS, accounting, billing etc.), and create a new organizational structure. In order to correct these shortfalls, the OMP was prepared in 1989.

In 1989, TDM was operating at a loss. It had no resources to carry out large investments on its own and lacked staff with experience in the new technology that had been installed (through the TDP) and with new systems that were needed to operate the network. There is little data on service quality and output, but according to the reports from the period, the quality of service had increased since the start of the TDP.

The major change (the OMP) initiated during this period was mainly externally initiated by SIDA and Swedish consultants. Emerging signs of decentralization also seem to originate from recommendations by external consultants.

In 1990 TDM was characterized by the following:

TDM in 1989/90	
Customer orientation	None
Administration and Management	No ability to initiate major changes. No indications that TDM had any ability to monitor and implement changes proposed by others.
Productivity	Low, there was no control of costs or efficiency. The poor financial result was assigned to the high inflation rates and currency devaluation. The local tariffs, installation fee and monthly rental increased during the period, from USD 0.005 to USD 0.006 per minute for local charges, from USD 2 to 3 in monthly rental and from USD 69 to 82 in installation charge. Productivity in terms of staff per line was also low, TDM had 38 staff per 1,000 mainlines.
Ability to measure performance	None
Output quantity	Only about 53 percent of the installed capacity was connected to subscribers. TDM was able to supply about 58 percent of demand.
Output quality	No indicators.
Resources (Equipment, Human and Financial Resources)	The newly acquired equipment was of high quality. The staff was, however, inadequately prepared for the large increase in the network and the subsequent increase in administrative functions, need for maintenance, billing etc. Financial resources were few, the expansion was mostly financed through donors, grants and concessionary loans.

Analysis of the Progress

Swedtel was to use both resident expatriates and short term consultants for the project, and create teams comprising both local staff and Swedish consultants, where the team would be responsible for the progress.

The building of the training institute was completed and courses had begun. During 1991 and 1992 a large part of the staff and workers were trained in order to increase the general level of knowledge and a lot of technical training had been performed. There were, however, still very few courses in management and planning etc.

A number of preparatory functions had also been performed; a Program Contract between TDM and the Government had been drafted and the consultants had started preparing for a Corporate Planning Unit which would monitor performance within TDM.

After an independent review of the sector in 1991, the project aim was changed somewhat. The new project, effective from March 1993, was to focus on the

commercialization of TDM, the implementation of a Corporate Planning Unit and support to Human Resource Development and Management.

Analysis of the Organization

From 1990 to 1993 the exchange capacity increased from 78,000 lines to 88,500, about 13 percent. During the same period, the number of connected subscribers, increased by 30 percent, from 47,500 to 62,100. Utilization of the exchanges thus increased from 61 percent in 1990 to 70 percent in 1993.

In 1993, TDM was able to gather a substantial amount of data from newly installed computerized systems for maintenance and monitoring. The financial division was working with a new accounting system installed by Swedtel (to be replaced by a French system at a later date) and billing and collection had improved.

The decision making process was still very much centralized both geographically, to Maputo and within TDM. Organizational changes had been made by structuring TDM into more functional departments. Many problems underlined by consultants from the early 1990s were still evident e.g. the concentration of power to the MD, lack of initiative among lower level staff and line managers, the focus on tariff increases instead of cost efficiency etc.

Productivity in terms of staff per 1,000 DELs increased, from 58 staff per 1,000 lines in 1990 to 41 in 1993. The absolute number of staff decreased by about 250.

In terms of financial performance, revenue per line decreased over the period from USD 860 per DEL in 1990 to USD 662 in 1993. Expenditure per line also decreased, from USD 1,200 to USD 670 per line in 1993. The decrease in revenue seems mainly to be due to tariff reductions during the period. Local call charges and installation fees were decreased. During the period, with the assistance of Swedtel, the billing, and bill collection functions were improved and the bill collection rate increased from 60 percent to 70 percent. However, government institutions were still unable to pay.

The performance of TDM in 1993 is summarized in the table below:

TDM in 1993	
Customer orientation	None
Administration and Management	Problems persisted with the centralization of decision making, the lack of analytical performance indicators and distribution of responsibility. Major changes during the period seemed to be mainly in the adaptation of new planning routines and billing systems i.e. changes initiated by donors.
Productivity	Low but increasing. There was still no mention of cost efficiency.
Ability to measure performance	Medium. Performance indicators existed as to output and financial indicators, but quality of service indicators were not available.
Output quantity	Medium, the utilization of the exchange capacity was still only 70 percent and 74 percent of demand was satisfied.
Output quality	Still low
Resources (Equipment, Human and Financial Resources)	Equipment was of high quality and mainly digital and the trunk network was being replaced with satellite links. The technical experience of the staff had increased as a result of training efforts. TDM was at this time producing a surplus and as an "Empresa Pública" (a public limited liability company) had financial autonomy to use that surplus.

Support to the Institutional Development of TDM 1993 to 1996

A new Specific Agreement was signed in July 1992. The aim of the Sweden's continued support was to assist in establishing an efficient management within TDM and create financially sound and commercially oriented operations.

Analysis of Objectives

The project was designed during the former project period and was based on recommendations by Swedtel and independent evaluators. The recommendations of the independent review mission in 1991 (A.S.K. AB) to change the focus to commercial and organizational matters were taken very seriously by SIDA. The contracting of a new consultant through a tendering process was discussed, but TDM argued that the long co-operation between Swedtel and TDM was important enough not to change the consultant although criticism had been aimed at Swedtel by the review mission. As a result of discussions between SIDA and TDM, an invitation to tender was sent to Swedtel. Their first offer was rejected and they were, again invited to offer, this time together with ISO. The new contract was effective from March 1993. Total budget was for SEK 42.6 million, which was later extended and amplified to a total of SEK 57.6 million.

The main objectives of the new project were, firstly, to assist in the establishment of a Corporate Planning Unit and thereby strengthen the top and middle management's ability to control and plan the strategies for TDM, and secondly, to assist in the commercial development of TDM. The tasks under the Corporate Planning Unit included:

- High Command Management Training Program - to improve the senior management's capabilities,
- Human Resource Development - improving the middle level management's ability to plan, control and manage tasks and departments,
- Human Resource Management and Development department - to develop procedures and policies relating to Human Resource Management and
- Organizational Development - to improve TDM's organization to become more decentralized, and have better defined functional units. This sub-task also included improved efficiency and cost effectiveness.

Analysis of the Progress

The project started late, due to difficulties in recruiting personnel to the Human Resource post and disagreements between Swedtel-ISO, TDM and SIDA. After a brief pause the project commenced again during the autumn of 1993.

An independent (A.S.K.) mission was sent to Maputo in February 1994 to review the progress. The report presented was, however, not of the same quality as the last one (from 1991), and included only a limited analysis of TDM's progress during the period. The Consultants review of the situation in 1995/96 is based on Mr. Tilley's report, Mr.

Braathens (A.S.K.) and recent interviews with some of TDM's top management, performed by the Consultants in February 1997.

In 1994, there seemed to still be little delegation of power and decision making from the top management. The decentralization process was not functioning to satisfaction, since the division heads were not held responsible for the performance (or lack of performance) of their respective units. There were no incentives to reach the objectives and targets set and when negative results were presented, the division heads all blamed other factors such as lower level managers.

Much effort was put into establishing the Corporate Planning Unit which was functioning and preparing information on performance and measuring the achievement of goals by the end of the project.

The new billing, customer service, information system, Giraffe I and II, had been installed in Maputo and are currently being installed in the rest of the country.

The training institute was producing a large number of courses for different purposes but there was no correlation between need for training and courses provided. The training was, and still is, a separate functional unit, with its own budget for new projects. There is thus no demand driven training i.e. the different departments do not "pay" for training out of their respective budgets.

Analysis of the Organization

In 1995, TDM had installed exchanges with a total capacity of about 97,400 lines (an increase of 10 percent since 1993) and had some 59,800 subscribers. The number of connected lines had actually decreased over the period, thus reducing the utilization rate of the exchanges to 61 percent.

The average waiting time for an installation was, 13.6 months in 1993 which increased to 19.4 months in 1995. The percentage of faults cleared within 72 hours, was reduced, from 62 percent in 1993 to 57 percent in 1995.

TDM has made little or no effort to analyze its costs. The first time the control of operating costs was mentioned, was in Mr. Tilley's report in 1995. It also seems as if neither Swedtel nor TDM made any conscious effort to analyze the cost structures. The annual budgets are however, mentioned, but the budgets themselves are not an appropriate tool to analyze costs and revenues since the budget process and follow up of the budget outcome is inadequate. Budgets are based on previous years' budget and increased by a percentage each year. The total budget for the division is also seen as the limit as budget overruns are not analyzed, as long as the total budget for the division is not exceeded. The specific item is then transferred to a different heading. Costs are budgeted without reference to reality and there is no correlation between costs and performance (revenue).

TDM in 1995/96	
Customer orientation	Emerging signs among management.
Administration and Management	Lack of decentralization, still concentration of decision making at top management level. Changes seem, however, to be occurring, albeit with substantial help from donors.
Productivity	Low, utilization of installed capacity has decreased, and there is no measure of cost efficiency. The number of staff per line has decreased slightly from 30 to 25 staff per 1,000 DELs during the period.
Ability to measure performance	High. Performance is measured, but the incentives to adjust for and improve bad performance is lacking.
Output quantity	Medium, a large part of the demand is, however, still not satisfied.
Output quality	Low to medium, in some cases the quality of service has even deteriorated during the period.
Resources (Equipment, Human and Financial Resources)	Equipment is of high quality. The staff was been trained and are acquiring experience. The firm has, during the past two years, produced a surplus. The upcoming interest and payments on foreign loans, however, will put a strain on TDM's financial resources since they are to be repaid in foreign exchange.

TDM's Financial Performance 1993 to 1995

The following chapter discusses TDM's financial situation between 1993 and 1995. The data that exists from earlier periods, before the end of the civil war, is partially contradictory and only financial data for the period 1993 to 1995 has therefore used for the analysis at hand. Furthermore, as the company was made financial autonomous on January 1 1993, there are balance sheets for 1993-1995 only. All financial data is shown in USD equivalent at the average exchange rate for the respective year.

Summary of TDM's Income Statements (USD '000 Equivalent)

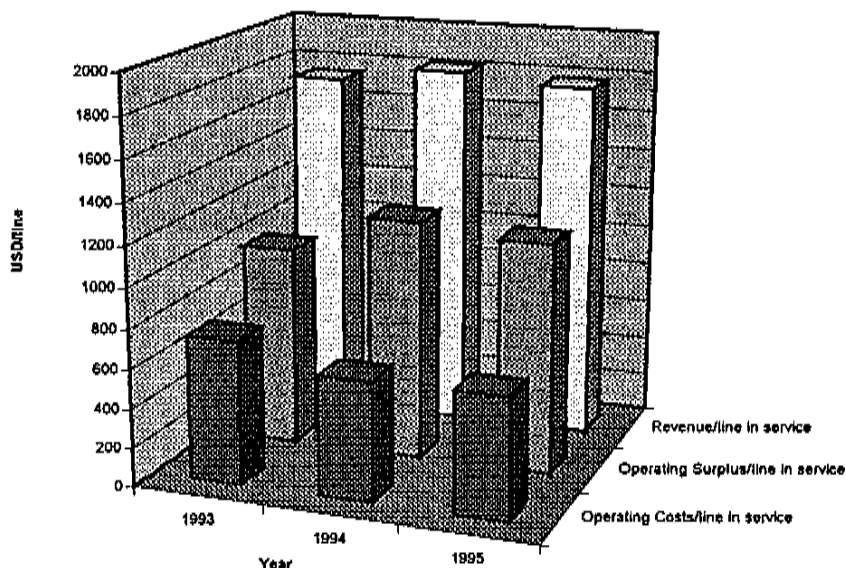
	1993	1994	1995
Revenue	96.578	105.818	105.670
Operating Costs	40.724	35.565	36.833
Operating Surplus	55.854	70.253	68.838
Depreciation	12.399	15.431	16.324
Financial Costs	6.041	5.321	11.109
Net Profit from Operations	37.414	49.502	41.404
Operating Surplus per Line of Switching Capacity	604	722	707

TDM's turnover increased by some 10 percent between 1993 and 1994 but remained unchanged the following year. Operating costs, on the other hand, decreased somewhat which resulted in a larger operating surplus.

TDM, as opposed to Telecom Namibia, has relatively high depreciation charge. This reflects the fact that TDM's assets have been continuously revalued to compensate for inflation and currency depreciation. Financial costs have also increased over the period as a consequence of increased borrowing from international organizations.

The following graph shows operating cost, revenue and operating surplus per line over the period.

TDM's Revenue, Operating Costs and Operating Surplus per Line



Revenue

The main contributing factor to the growing operating surplus seems to be the extraordinarily high annual revenue per line that TDM collects. At USD 1,800 TDM earns one of the highest per line revenues in the world. The 1993 average per line revenue for all OECD countries was approximately USD 1,100. The consequence of these excessively high costs for one of the world's poorest countries must be a stifling of demand. GDP per capita in Mozambique was USD 85 in 1995¹, which corresponds to 8 percent of TDM's revenue per line. During the period under review TDM also increased the price per minute of local calls and reduced international call charges thus decreasing the level of cross

¹ World Development Report 1997

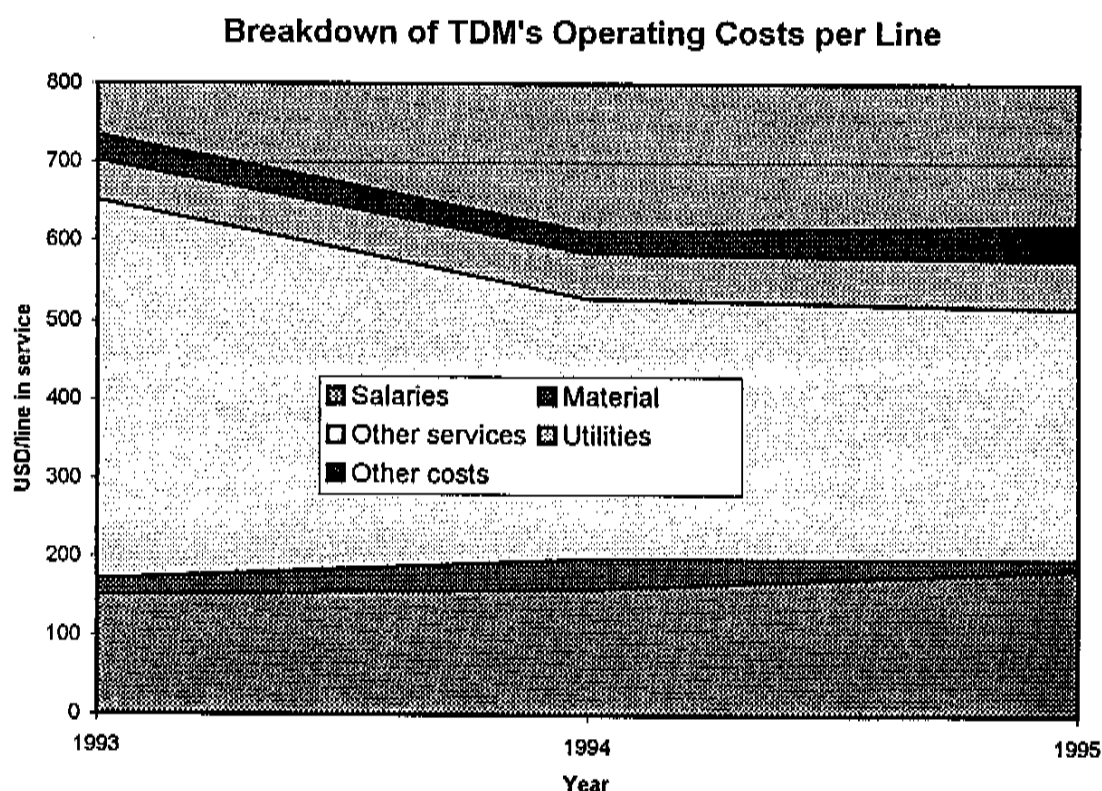
subsidization. But the effect must also have been to limit even further access to telephony by low-income households.

TDM suffers from low capacity utilization partly due to the fact that its subscribers frequently disconnecting their services due to a combination of low service, especially for long distance, and very high charges.

Operating costs

Annual operating costs have been reduced from USD 740 equivalent per line in service to USD 620. The per line operating surplus has risen to in excess of USD 1,000 per line – an exalting fantasy level of margin for any telecom operator in the world. In fact TDM's annual profit margin alone is far above most countries' total per line investment cost.

The single largest expense is that of outside services, which covers maintenance of the satellite link trunk network and fees for its usage. The following graph shows operating cost per line in service in USD broken down.



Cost of staff has increased from approximately 20 percent of total operating costs per line to 30 percent in 1995, while "other costs" i.e. the cost of satellite transmission, have decreased from 65 percent to about 50 percent. Although TDM has reduced its staff by 172 people over four years, staff remuneration (adjusted for inflation) has increased by 25 percent between 1993 and 1995. TDM currently has a staff of about 2,500 persons which

corresponds to a ratio of staff per 1,000 lines ratio of 25, which is high compared to many other telecom operators in developing countries.

Summary of TDM's Balance Sheets (USD '000 Equivalent)

TDM's total assets equaled approximately USD 400 million at the end of 1995. Current assets, including stocks and receivables, amounted to USD 137 million equivalent out of which receivables accounted for USD 23 million.

The table below summarizes TDM's balance sheets for the three years 1993, 1994 and 1995.

	1993	1994	1995
Assets			
Current Assets	104.452	103.327	136.865
of which receivables	12.518	12.472	22.872
Fixed Assets	227.667	202.433	263.830
Total Assets	332.119	305.760	400.695
Liabilities and Equity			
Current Liabilities	29.618	19.630	22.379
Long-term Liabilities	139.122	112.979	148.951
Share Capital	52.174	53.787	53.132
Reserves	111.205	119.364	176.233
Liabilities and Equity	332.120	305.760	400.695

In 1995 TDM's receivables increased by almost 50 percent compared to the previous two years. The ratio of receivables to sales thus deteriorated substantially, suggesting that the average bill, in 1995 was paid first 85 days after billing compared to 47 days in 1993. This is a strong indication that TDM's asset management competence has weakened substantially. Such long collection periods are easily avoided in an industry where the disconnection can be used to ensure payment discipline. There is, however, a possibility that the high ratio of receivables to sales is a consequence of excessively high charges.

Fixed assets, including switching equipment, buildings, outside plant etc. amounted to USD 263 million. The increase in the book value of fixed assets between 1994 and 1995 is due to both a revaluation and to acquisition of new equipment. TDM, with a network of approximately the same size as Telecom Namibia, has assets valued at about 2.5 times higher. This would suggest that TDM might have overvalued its assets while Telecom Namibia has done the opposite.

The capital employed in TDM as of December 1995 amounted to USD 378 million equivalent. It was financed to 40 percent by borrowings and to 60 percent by equity. This leverage is entirely inappropriate for a low risk company such a telecom monopoly. By decreasing the leverage the owner would force management to improve efficiency and capacity utilization in order to pay a return on investment.

One manner of measuring the performance of management is to calculate return on capital employed which is net profit before taxes and interest divided by net working capital employed (current and fixed assets less current liabilities). This ratio should be equivalent to a market rate of return. In TDM's case the return was 7.6 percent in 1993. It increased to 12.8 in 1995 in order to decline the following year to 8.6 percent as assets increased at the same time as operating profit decreased. Given the fact that TDM earns some of the highest per line revenue in the world, the return on capital must be unacceptably low. The Institutional Development projects have not given rise to any improvement of relevance.

Support to a Regulatory Entity (INCM)

In 1992 a decree was passed, creating the Insituto Nacional das Comunicações (INCM) which was to function as a regulatory agency. It was recommended in several earlier consultancy reports (among them the A.S.K. report from 1991 and Insitituto Nacional das Comunicações de Portugal , ICP) to establish a regulatory agency.

Analysis of the Objectives

The project was to commence in July 1993. The aim of the project was to speed up and consolidate the establishment of the INCM. SIDA undertook to finance the following tasks:

- Development of a national frequency plan,
- Development of sector legislation,
- Establishment of work routines, budgets, job descriptions and what was called an "institutional implementation program" and
- Establishment of training plans

The ICP was to simultaneously carry out projects in the areas of MIS, monitoring systems, regulatory documents and physical development of the working environment.

Analysis of the Process

The contracting of Swedish consultants was delayed and the project did not embark until March 1994 when ISO and Teleconsultores were contracted. The total budget for the project was SEK 2 million for the period March 1994 to June 1995.

Due to problems in INCM's capacity to co-ordinate the actions of the two consultants, (ISO-Teleconsultores and ICP) lack of progress and SIDA's wishes to phase out the support to the telecom sector, the project was suspended in May 1995.

There is no indication that any progress was made.

Summary and Conclusions

The main aim of the support to TDM was to improve operational efficiency and ensure financial viability. The assistance was therefore focused on TDM as an organization, to help establish functions which were deemed necessary such as the Human resource department and the Corporate Planning Unit. Total support amounted to about SEK 109 million.

The aims of the projects were stated in terms of tasks to be performed by the consultants, as compared to the purpose of the projects and objectives. Neither SIDA, TDM or the consultants have quantified any targets based on the aim since the aim was defined as tasks to perform. This has made evaluation of performance difficult for all parties involved. The analysis presented above has tried to measure TDM's ability in terms of customer orientation, management capacity, output and resources and come to the conclusion that TDM has advanced from a stage two on the staircase model, characterized by low to medium output and little ability to initiate changes, to a stage three. The stage three distinguishes an organization which as a medium output quality and can initiate and follow through changes.

TDM has during the period, received a substantial amount of assistance from a number of donors, among which SIDA has been one of the main benefactors. SIDA has, however, also channeled it's support through only one consultant (Swedtel, albeit together with ISO) during the entire period from the early 1980s to 1996.

New inputs are needed in large projects, to adapt to changes in the environment and to be able to find new and innovative solutions. New inputs seem, however, to have been introduced by others than Swedtel. It also seems as if Swedtel was to be the implementing consultant at all costs. The tendering process for the last project (1993-1996) leaves a lot to be desired in terms of equal opportunity and impartiality.

The lack of performance data, both from TDM and from Swedtel, is evident and the evaluation of progress is therefore made difficult. The reports produced by Swedtel, were mainly input oriented i.e. they describe the number of man-months put into the project, tasks performed, progress of the different sub-projects and the budget status. There are, however, no indicators of performance nor is there any analysis of TDM's progress in terms of quantifiable data on quality, output, resources etc. The periodic mission reports, present some data on progress, in general terms. The review missions had the main purpose of analyzing the implementing consultants and presenting recommendations how to proceed with the projects and therefore only present the telecom sector at certain points in time and do not analyze TDM's progress. The Steering Committees, were mainly used to review progress and suggest changes based on Swedtel's reports and review missions' suggestions.

Assistance to INCM

In 1992-93 SIDA agreed to support a project to help establish a regulatory body 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 two million.

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.

Appendix 4 SIDA's Support to the Telecom Sector in Namibia

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1. The DOPAT

The operation of the telecommunication network in Namibia was formerly under the South African Department of Post and Telecommunications (SAPT). In 1979 it was transferred to the Department of Post and Telecommunications (DOPAT) under the Ministry of Works, Transport and Communication. This department handled postal services, telecom and postal banking. Telecom Namibia was created in 1992, and is currently the main operator of the basic telecom network. It is a public corporation, owned, through a holding company, by the Ministry of Works and Transportation.

During the DOPAT era, the telephone network of Namibia was fairly well developed. There were automatic telephone services in all major cities, and in rural areas most settlements were linked to the national and international telephone network through manual exchanges and long overhead wire lines. In many rural areas "party lines" were, and still are, used to connect subscribers. Transmission links consisted of analogue radio links and some fiber optic cable. The majority of the equipment was, however, old and outdated. The network comprised mainly analogue equipment and it was not until the 1990s that large parts of the network became digitalized.

Telecom Namibia, has recently invested in network projects including: service automation and digitalization, establishing an international exchange with associated earth satellite stations, providing digital fiber transmission links and ring networks, and installing nodes to provide leased line services and increased capacity in local cable networks.

After independence, the government of Namibia began restructuring and deregulating certain state operated functions. The development of the network became one of the major goals for Telecom Namibia when it was formed in 1992. The expansion of the telecommunications network was to contribute to independence from South Africa, through which all international traffic had been routed, to improved cost efficiency, and to financial viability of the telecom operator.

SIDA's support to the Namibian telecom sector began in 1991, shortly after independence. SIDA then focused on the commercialization of the telecom operations and managerial improvements. The Swedish input was channeled through three consecutive contracts with ISO, Swedish Management Group. The projects were:

- Conversion of the Department of Post and Telecommunications, DOPAT, into a Public Corporation
- Management development and development and implementation of the Human Resource Development program and tasks
- Consultancy for support to establish the regulatory framework and functioning of the Namibian Communication Commission

2. Conversion of the Department of Post and Telecommunications, DOPAT, into a Public Corporation

Analysis of Objectives

The process of conversion from a government entity to a public corporation began in 1990 when Namibia gained its independence from South Africa. The rationale for the changes within the telecom sector were mainly:

- the need to establish a new and independent national telecom entity which would be able to make rapid changes and which would not be burdened by government bureaucracy,
- the government's and DOPAT staff's desire to separate the operation and maintenance of the telecom network from direct government control and
- the acknowledged need to adapt telecom operations in Namibia to the rapid changes in telecommunications (into an open competitive market).

The conversion of DOPAT into Telecom Namibia was supported by SIDA through the consultancy firm ISO. ISO was to prepare proposals for legislation for the transformation of DOPAT into a public corporation and define different projects, budgets and work schedules. The consultants prepared an inception report which outlined the following main tasks to be done:

- Drafting of new Acts for Postal and, Telecommunication Services, Radio and a Postal Savings Bank
- Drafting of an organizational structure for the new telecom operator including job descriptions and staffing
- Formulation of salary policies and manpower development strategies
- Preparation for the creation of a corporation including evaluation of assets etc.
- Reviewing tariff setting procedures

The consultants were to, in essence, create the structures and the plans needed for three organizations: Telecom Namibia, Namibia Post and Namibia Post and Telecom Holdings.

Analysis of the Process

The consultants began work in April 1991, and the first step was to define the incorporation process. The guidelines dealt with legislative enactment, transfer of assets and personnel into the corporation and initiating new structures and policies for the creation of the companies.

The second phase in the process was to mobilize the resources required to transform DOPAT into three companies. A team of specialist consultants in the field of law, finance, personnel, human resources and organizational development was assembled. The team was assisted by local consultants and specialist firms.

A distinguishing feature was the involvement of the top decision makers within Telecom Namibia from the outset. The Senior Corporate Advisor of the consultants, Mr Brust, assisted by suggesting appointments to the Board of Directors. The advisor also instructed the appointees of their roles and functions as members of an independent Board, helped search for and select the first Managing Director, and the successor. The advisor also participated in the prepara-

tions of the Performance Agreement and drafted the proposal which was later approved. The consultant also initiated and designed the program for management and human resources development.

Analysis of Results

The conversion was completed by mid 1992 and the Acts creating a holding company and two operating companies Telecom and Post were passed by the Parliament. The creation of a holding company, which would own all land and buildings, as well as 100 percent of the stocks in the two operating companies Telecom Namibia and Namibia Post, began. The Holding company would be fully owned by the government and be responsible for maintaining and investing in new buildings and providing auxiliary services such as cleaning and security. The rents charged by the holding company are currently being adjusted to reflect the value of the properties the two operating companies are using.

The transfer from a government department into three commercial companies was rapid and efficient. During the conversion, a number of issues were addressed regarding human resource development, transfer of assets, personnel policies etc. Some of the activities, not implemented during this first phase were transferred to the second project following closely upon the first.

In September 1994 a "Performance Agreement" was entered into between the Ministry and the three Companies. This was also part of the consultants' program during the continued project on Management and Human Resources Development. In essence it should have been regarded as one of the first tasks necessary to determine the relationships and responsibilities of the companies verses the owner. The Performance Agreement between the Ministry of Works, Transport and Communication and the Namibia Post and Telecom Holdings Company Ltd., Namibia Post Ltd., and Telecom Namibia Ltd. states how the Companies shall perform their functions and render their services, and covers the following:

- Aims and objectives for the operating companies
- Duties of the Minister
- Annual corporate and business plans
- Annual report and accounts
- Human resource management and development
- Key performance areas

The Performance Agreement is valid until September, 1997.

Analysis of the Organization

DOPAT in 1991	
Customer orientation	Non-existent
Administration and management	Slow, top down decision making Government department administrates personnel and keeps the financial accounts
Productivity	Low, 34 employees/1000 lines.
Ability to measure performance	Low, there was no monitoring of output, financial goals or quality
Output quantity	Low to medium; low network expansion and moderate line growth. Predictable and stable output
Output quality	Low to medium, old outdated technology was still in use
Resources (Equipment, Human and Financial Resources)	Poor to adequate for regular output. Of the staff few were well trained, most without adequate training. Finances: no financing possibilities, dependence on Government budget

3. Management Development and Human Resource Training Plan and Programs 1992-1994

A second contract was signed in May 1992, which comprised the following key development areas:

- Corporate advice, strategy and development
- Development of relevant organizational structures in the companies
- Recruitment of managers in key positions necessitated by the commercialization of the operations, and
- Initiating and developing human resource functions and activities, and conducting training programs

Analysis of the Process

Supplementary to the Management and Human Resource programs was the following input:

- the initiatives on management development issues taken by the expatriate MD, as part of his assignment and
- the participation by several managers from Telecom Namibia in management courses in Sweden (International Program on Telecommunication Management, and Operational Management).

Other activities included advising the Minister, the Board, and the top Management and training of existing managers and new recruits. The training functions were:

- Training of Board of Directors, advice in management succession matters
- Establishment of training and development units to be separate from general HRD functions
- Delivery of Management Development Programs and the establishment of a structure and in-house resources to continue the programs
- Completion of two Graduate Development Programs
- Execution of the so called Rapid Adjustment Program, a course for employees returning after independence
- Training of 200 supervisors
- Training in various functional areas
- Assistance in cultural change workshops
- assisting in locally conducted training programs (customer care, English communication skills program etc.)

Analysis of the Results

The two training programs for existing and new managers, the Management Development Program and the Graduate Development Program, were well received by the staff. Several managers, however, stated that the programs ended too early and that no training of instructors was included. The exposure to international development in telecom management through participation in the training programs in Sweden has changed (technical) managers attitude and thinking and raised the competence and decision making capability at top level.

Involvement of lower level staff in the change process has, however, been limited, although many have participated in workshops (cultural change program) or similar activities. There is

however a general feeling that the civil servants attitude remains and there is a large gap between managers and staff which suggests that personnel management skills are needed. Project management and quality control know-how and skills are also lacking.

4. The New Managing Director of Telecom Namibia

The Senior Corporate Advisor from ISO assisted the Board of Directors in the search and selection of candidates for the position as Managing Director of Telecom Namibia. Mr. Bo Eklöf, an experienced manager from Telia, was recruited for the assignment in 1993. He terminated his contract after nearly 4 years in 1996.

Analysis of the Process

Mr. Eklöf, appointed MD by the board, was to manage Telecom Namibia and improve the operations. He introduced new management principles and methods, motivated his staff to implement the changes which were proposed and established committees to initiate and follow through changes. The most noticeable effects of Mr. Eklöf's assistance is the use of performance indicators to monitor and improve performance and the profit units, which are responsible for day to day operations.

Mr Eklöf also restructured the organization in order to delegate authority and become more customer oriented. The first corporate restructuring aimed at creating more independent regional offices, while the command of the entire network development and central functions such as marketing, personnel and training was maintained at the headquarters. In a second restructuring the regional sub-units were allocated further out in the respective regions and business units were created with responsibility for costs and revenue as well as customer services. The responsibilities of the central units, such as network development and the market development, were defined more precisely. As the main means of control of the now decentralized organization the MD introduced the use of performance indicators. Each business unit was given targets established by the MD and top management that were monitored regularly. The main targets set out in the Business Plan for the Company were:

Effectiveness:

- employees per 1,000 lines
- fault rate per 1,000 lines
- operational cost per line and year, and
- revenue per employee

Reliability:

- time of delivery of new services
- restoration time/fault response time
- overall availability of services

Profitability:

- return on investment
- asset utilization
- earnings before taxes

The system of Performance Indicators was monitored by the management and the MD on a monthly and quarterly basis. Since June 1995, Telecom Namibia has also been measuring customer satisfaction by means of surveys conducted by an independent research organization and

has made calls to the customers after a fault is repaired to measure satisfaction. The customer survey collects information for nine areas, among which are:

- The delivery of new services (i.e. installations)
- The processing of faults and complaints
- The responsiveness of the operators and teleshop employees

The market survey is performed quarterly and the results are presented to all managers, and through them and the personnel newsletter "Telescope" to all staff. The customers' opinion on the tariffs and telephony costs is, however, not sought.

Analysis of the Results

The achievements as result of the MD's contribution are reflected in the overall performance of the company. The impact of the MD's contribution to creating a customer oriented and profitable company has been substantial. There is, however, a risk that the major changes can be contributed to the MD's capacity only and not that of Telecom Namibia itself. This will be clear once the Namibian management has had the opportunity to show what it can accomplish on its own. By engaging an expatriate MD to run the company, SIDA has taken away the responsibility from the Namibian management. The staff also testified to the strong position and role the MD had, as an advisor to the board, as an MD and leader of the company and as a motor for change within the company. Apparently all major decisions were initiated and implemented by the MD.

Telecom Namibia's financial performance has declined during the period 1993 to 1995. Profits have steadily decreased during the period despite large increases in local tariffs and the return on investment ratio has deteriorated.

Telecom Namibia (USD '000)	1993*	1994	1995	1996**
Revenue	59,031	64,360	67,500	76,881
Profit	16,075	15,901	10,493	14,651
Share Capital & Reserves	30,352	39,227	53,701	59,944
Return on Investment (Profit/Share Capital & Reserves)	53%	25%	14%	15%

* Arbitrarily adjusted for 14 month year.

** Preliminary data

The reasons for such large cost increases could be large restructuring costs which include severance pay for workers etc. Telecom Namibia has decreased its staff from 2,300 in 1993 to 1,700 in 1996 i.e. by about 600 over four years. This could, however, only constitute part of the reason for the poor performance. Share capital increased substantially in 1995 because a loan from the share holder was converted into share capital to increase solidity and credit worthiness. The firm has also invested in equipment which has been financed by loans. The additional cost of external borrowing seems, however, to have been deferred since 1996 was the first year when financial costs exceeded financial revenue. The conclusions would thus be that the deterioration of the ROI ratio has occurred because of declining profits.

The ability of Telecom Namibia to initiate, implement and follow up changes on its own has not yet been shown since the expatriate MD left his post only some three to four months before this report was produced.

Analysis of the Organization

Telecom Namibia in 1996	
Customer orientation	Emerging signs, customer surveys are done regularly, and tele-shops have been created to better assist the customers. The customer orientation attitude has, however, not been adapted by the staff.
Administration and management	Less bureaucratic, the expatriate MD's ability to initiate and follow through changes has been proven by the successful expansion and modernization of the network and organizational restructuring.
Productivity	Low to medium 19 employees/1,000 lines. Exchange utilization rates have declined during the period, but are, however, around 73 percent of installed capacity which is high compared to other developing countries.
Ability to measure performance	Medium. There is a system for corporate follow up which is monitored regularly. Service quality, customer satisfaction, output levels and financial indicators are measured.
Output quantity	Medium; network expansion and line growth has been increasing over the years. Output is regular and predictable, the company managers are able to handle a growing demand for telephone lines, without any signs of deteriorating service levels.
Output quality	Medium; Fault repair and service delivery are two of the main service quality indicators used. There is little data from the early 1990s, which makes it difficult to measure the improvements in service quality. Quality of service is, however, high compared to other sub-Saharan countries.
Resources (Equipment, Human and Financial Resources)	Self sustainable; Telecom Namibia makes a profit and shows an ability to borrow commercially and repay the loans. Funding of new projects is achieved by commercial loans and donor support. Analogue equipment is currently being replaced by digital and the backbone transmission network is replaced by fiber optic links. Human Resources are well trained and experienced.

Telecom Namibia's Financial Performance 1993 to 1996

This section contains an analysis of Telecom Namibia's financial situation and development since 1993, when the organization was given its current corporate structure. The first fiscal year, 1993, covered a period of 14 months for which only income statement data was available. The financial data for this period has been adjusted on a pro rata basis to correspond to 12 months. The financial information for the subsequent fiscal years have been taken from the company's audited statements and in the case of 1996 the auditors' draft financial statements.

Has Institutional Development Resulted in Improved Operational Efficiency?

During the period 1994 to 1996 Telecom Namibia increased its revenue by about 30 percent mainly as a result of increased number of lines. The number of lines in service increased by almost 40 percent with most of the increase taking place between 1995 and 96. The company's operating costs increased at a rate that equaled the increase in lines in service (38 percent) which suggests that there was virtually no gain in operational efficiency between 1993 and 1996. In spite of the discrepancy between revenue growth and rate of increase of operating cost, but because of the bigger base for the revenue there, was an increase in operating surplus by 16 percent - from USD 21 million equivalent to USD 24 million. This increase and more to it was, however, absorbed by increased interest cost so that net profit, after a slight increase in 1994, declined sharply in 1995 and fell further the following year. Net profit before tax had by the end of the period fallen to a mere 37 percent of its level in 1993. For the owners and investors this must have been a disappointing result of the Institutional Development project. Few if any owners of private sector companies would have suffered this without taking counter measures usually in the form of management changes.

The table below summarizes the operating results for the four years in respect in US dollars at the average exchange rate for the respective year.

Summary of Income Statements (USD '000 equivalent)

	1993*	1994	1995	1996
Revenue	59,031	67,116	67,500	76,881
Operating Costs	38,035	41,211	50,530	52,485
Operating Surplus**	20,996	25,905	16,970	24,396
Depreciation	4,323	7,486	7,732	7,723
Financial Costs		809	1,408	10,492
Net Profit from Operations	16,673	17,610	7,830	6,181

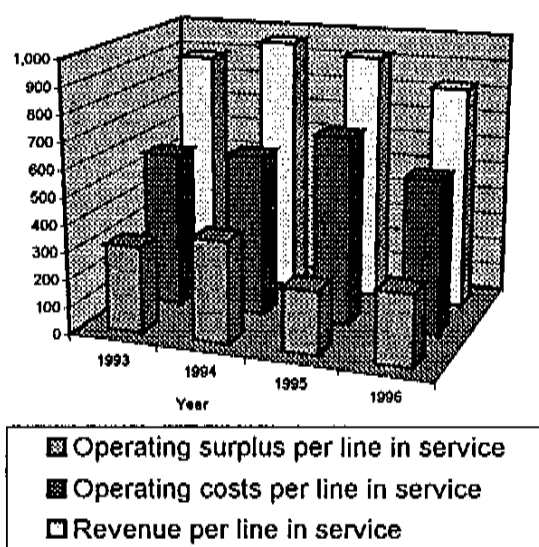
*Adjusted for 12 months

** Operating surplus is defined as Revenue less Variable and Fixed Operating Costs but before financial items and depreciation.

Financial costs increased over the period as a result of increased commercial borrowings to finance an expansion of the network. Depreciation, however, has remained essentially unchanged and is therefore unlikely to reflect the cost of the company's future replacement needs. The inadequacy of the depreciation charge is exacerbated by the fact that Telecom Namibia's assets are valued at historical costs. The 1996 accounts might therefore overstate the true profitability of the company.

In facilitate comparison with other operator's revenue, operating costs and operating surplus has been calculated per line and is shown in the graph below.

Telecom Namibia's Revenue, Operating Costs and Operating Surplus per Line



Revenue

Telecom Namibia currently earns revenue of approximately USD 820 per line and year, which is a decrease from the USD 960 in 1994. In 1995, the basis for calculating the cost of local calls was changed from a per call charge to a time related charge. The effect was a sharp increase in the cost of making local calls. Simultaneously some international charges were reduced in order to meet increased competition from mainly call back operators. The change in the local call tariff change resulted in a 13 percent reduction in the volume of national traffic at a point in time when the number of lines in service increased by 27.5 percent. The two percentages can not necessarily be added but taken together they indicated a very high elasticity of demand, i.e. increased cost results in decreased usage. In retrospect there is every reason to question the both the wisdom and the size of the tariff increase. It has, without doubt, resulted in a dramatic decrease usage and therefore in consumer surplus, without producing a corresponding surplus for the owner of Telecom Namibia. The effect that changes in tariffs have on an operator's financial performance is contingent on both elasticity of demand and on the ratio of fixed to variable costs. The higher this ratio the less favorable is reduced capacity utilization caused by tariff increases. The Consultants found no evidence of elasticity assessments within Telecom Namibia.

National calls currently contribute about 60 percent of total annual revenue per line, a decrease from about 70 percent in 1994. International calls currently account for only six percent of total revenue as compared to 14 in 1994 although traffic volume is likely to have been bolstered by tariff reductions. This suggests that low-income subscribers (using their telephones mainly for local calls) now contribute a much larger portion to Telecom Namibia's costs and profit than before.

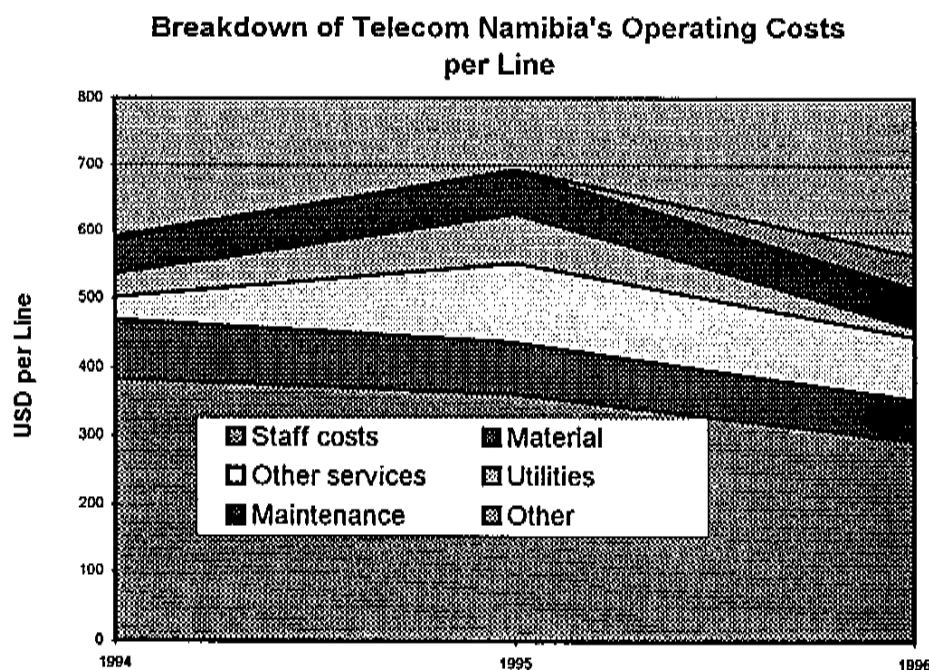
Operating Costs and Productivity Improvement

Annual operating costs per line in service remained essentially unchanged at USD 570 during the period in spite of a 40 percent increase in number of connected lines and investments in the order of USD 100 million. This is remarkable by any measure. Telecommunications is a capi-

tal-intensive industry normally associated with dramatic economy of scale effects. It appears that Telecom Namibia has yet failed to reap any cost benefits whatsoever from its considerable investments in modern technology and expanded network. The reasons for this lack productivity improvement cannot be ascertained without access to data on individual operating costs, which have not been made available to the Consultants.

One reason could be large increases in staff remuneration. Staff cost accounts for about 50 percent of total operating costs. Although the number of employees has been reduced, the average cost per staff increased during only one year (1995-96) from approximately USD 14,100 equivalent to USD 16,200 per employee and year in 1996 corresponding to an increase of 14 percent. Another contributing factor is the declining capacity utilization. It has fallen from 86 percent in 1993 to 77 percent in 1996.

The following graph shows the composition of operating cost per line and how it has changed from 1994 to 1996.



A crude but commonly used measure of telecom operator efficiency is that of employees in relation to installed lines. Namibia currently has about 14 employees per 1,000 lines, which is commensurate with Telkom in South Africa and the largest operator in Pakistan (PTC) but considerably lower than operators in many Asian and other African countries. Those operators, on the other hand, typically have much lower staff cost per employee and year. They often also have much older networks that require extensive and labor intensive maintenance.

As Telecom Namibia has improved its network by modernizing the transmission network, replacing manual and automatic exchanges with digital switches and expanding the network, operating and maintenance costs should logically have decreased. Of Telecom Namibia's 87 exchanges, 60 are digital. The old analogue transmission links have also been replaced. In 1996 Telecom Namibia had about 6,100 km of fiber optic cable compared to only 740 km in 1994.

Telecom Namibia's annual operating costs of approximately USD 570 equivalent per line are among the highest in the world. An important long-term objective for Telecom Namibia should logically be to reduce these costs and thereby make telephony affordable for lower income households. In 1994 Telkom in South Africa spent approximately USD 310 per line. PTC in Pakistan had, in the same year, operating costs of USD 80 equivalent per line whereas a representative average operating cost for a provincial operator in China would correspond to about USD 60. EMETEL in Ecuador spent USD 116 to maintain and operate its network in 1994/95. Operating costs in excess of USD 400 per line are, even for small networks, very high. They would indicate that there are large inefficiencies in the manner of operation.

Has Telecom Namibia Improved Management of its Assets and Liabilities?

Telecom Namibia had assets worth USD 125.4 million equivalent as of September 30, 1996. Of this, some USD 26 million equivalent, were current assets and the remainder, USD 99 million was fixed assets recorded at historical cost. The assets of Telecom Namibia have thus not been revalued and adjusted for inflation etc. during the period. Capital employed (total assets less current liabilities) was USD 100 million. This was financed to 40 percent by loans and deferred liabilities and to 60 percent by owners' funds.

The balance sheets for the three years 1994, 1995 and 1996 are shown in the table below.

Telecom Namibia's Balance Sheets ('000 USD equivalent)

	1994	1995	1996
<i>Assets</i>			
Current Assets	38,853	28,138	26,253
of which receivables	4,277	3,888	4,519
Fixed Assets	42,133	67,697	96,599
Investments	1,039	954	2,509
Total Assets	82,025	96,788	125,361
<i>Liabilities and Equity</i>			
Current Liabilities	18,406	20,316	24,982
Long term Liabilities	18,325	13,719	27,555
Deferred Taxation	6,067	9,053	12,880
Share Capital	18,325	31,245	30,723
Reserves	20,902	22,456	29,221
Liabilities and Equity	82,025	96,788	125,361

The very high equity to debt ratio was partly a result of the conversion in 1995 of an N\$ 62 million loan to Telecom Namibia from its shareholder into share capital. An amount slightly lower than the shareholder loan was simultaneously raised from the local capital market and from an international lender the same year. The following year another N\$ 63 million was borrowed. On the local secured loans Telecom Namibia pays interest at an average rate of 15 percent p.a. For an unsecured local loan Namibia Telecom pays 18.5 percent. The international borrowings have been in foreign currencies with interest ranging from 3.9 to 4.4 percent per year. The proceeds of the promissory notes were used to improve the trunk and local network and increase switching and other equipment. During the period 1994 to 1996 Telecom Namibia

spent a total of USD 98 million on modernizing the trunk and local networks and a satellite earth station.

Because of the low leverage (large equity in relation to small borrowings) Telecom Namibia earns a very low return to its shareholders. Had the company been leveraged in a manner more commensurate with the low risk that it faces, i.e. low equity and high borrowings which is normal for utilities, especially those with a strong market position it would have shown large and growing losses. The current leverage of Namibia Telecom suggests that owners and management are insensitive to the fact that equity being risk capital should yield a high return and be used sparingly. A leverage below 25 percent rather than the current 60 percent would be more appropriate for Telecom Namibia. This would likely have doubled the company's interest cost, caused a loss of around USD 4 million in 1996 and forced management to address the very high operating cost and low capacity utilization.

Receivables have remained stable around USD 4 million each year. The ratio of receivables to sales suggests that Telecom Namibia has ensured that its bills are paid promptly - within 21 days.

The return on capital employed, calculated as net profit before taxes and interest divided by net capital employed has declined over the period. This ratio should be equivalent to a market rate of return and represents the management's ability to generate a return with the capital (assets) they have employed. It was reduced by half between 1994 and 1995 (from 29 percent to 12 percent) but has recuperated somewhat in 1996 (to 16.6 percent). 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.

5. Establishing the Regulatory Framework of the Namibian Communication Commission

In 1991 it was decided that private broadcasting be allowed in Namibia and that a body for the regulation and licensing of broadcasting operations should be created. In April 1992 the Namibian Communications Commission (NCC) was launched for this purpose within the jurisdiction of the Ministry of Information and Broadcasting.

The Commissions' duties are to regulate private broadcasting in Namibia and be responsible for all telecommunication regulatory issues, frequency management and equipment standards. The Commission consists of nine members, with a Chairman and a vice Chairman. Three persons handling the radio frequency administration have been transferred from Telecom Namibia to form an administrative unit within the Commission.

As part of the annual consultations on Swedish support to the transport and communications sector in 1992, SIDA agreed to fund a visit by members of the NCC to Sweden, which happened in August 1993. As a result of the study visit, the needs were specified for support in establishing the legal structure and administrative functions of the Commission. In August 1994, a consultancy contract was signed between SIDA and ISO. ISO was to assist the NCC in the formulation and establishment of the legal framework, regulations and resources for its regulatory functions, primarily in the telecommunications sector.

Analysis of the Process

ISO produced the following draft proposals:

- A draft telecom policy
- Regulations, listing the concerned Acts with explanations for each act
- Recommendations in standardization matters

The draft reports were sent to the Ministry of Information and Broadcasting and to the Commission in mid 1996. A local consultant to the Commission has made an appraisal of the proposals for the Commission to be included in the proposal to the Ministry.

Analysis of Results

Since the draft proposals have not been made available, the Consultants base this account of the project on interviews with the local consultant to the Commission and the Minister of Information and Broadcasting.

The draft proposals are described as ('technically') appropriate as a basis for a final revision, but need to be adapted to the Namibian legal format. The present status of the draft proposals indicate that the tasks as specified in the Terms of Reference are not yet fulfilled. Thus the project goals have not yet been achieved.

The draft proposals are described as an appropriate basis for a final revision. The last task would be to adapt the proposal to the Namibian legal format. The final product has however not been presented. This would require discussions with the Ministry for clarifications. The present status of the draft proposals indicate that the tasks as specified in the Terms of Reference are not yet fulfilled. Thus the project goals have not yet been achieved.

Summary

Namibia has succeeded in successfully converting the Department of Post and Telecom into a publicly owned corporation operated on business principles. The telecom infrastructure in Namibia has also been improved since independence although the country did have a relatively well functioning network in 1990. There was thus no immediate need for investments in infrastructure at that time, but the entire process of creating two publicly owned corporations to operate the telecom and post functions and to improve the capacity of the management of these companies was considered difficult tasks and the Ministry of Works, Transport and Communication therefore approached SIDA with a request for assistance in 1991.

The support has been implemented by a Swedish management consultant, ISO. The consultant with expertise in the human resource and training field, has mainly assisted the top management and board of Telecom Namibia and held management training programs.

The main difference between SIDA's support to Telecom Namibia and support to other telecom operators has been the secondment of a Swedish MD. He has greatly assisted in the process of creating a corporation run on business principles. The disadvantage of such support is, however, that the Namibians themselves are not given responsibility to operate the company and are thus not able to learn from their own mistakes, handle complicated issues and make strategic plans. The additional training of managers would thus be necessary.

The results of the entire support are, however, not yet discernible. Telecom Namibia's increased productivity and quality and improvement in financial performance during the period is evident, but should be attributed to the previous management where Mr. Eklöv had a dominant role. Further improvements are however, to be shown and will if they take place show the ability of the new management.

Appendix 5 SIDA's Support to the Telecom Sector in Tanzania

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Support to Tanzanian Telecommunications Sector 1987-1996

Sweden has supported the Tanzanian Telecommunications Sector since the seventies and has, together with the World Bank Group, been one of the largest donors within the sector. At the beginning, the support was directed through the East African Post and Telecommunications Authority with Headquarters in Nairobi. After the cessation of the East African Union (EAU) in 1978, the support was directed to Tanzania Post and Telecommunications Corporation (TP&TC). Sweden assisted TP&TC through the following means: technical assistance, training and financing equipment from the Import Support Fund.

In the following pages SIDA's support to the Tanzanian telecommunications sector during the period 1987 to 1996 is analysed, focusing on the institutional aspects.

Network Support and Training Project

Analysis of the Objectives

Tanzania and Sweden agreed, in the Specific Agreement on Co-operation, to continue support to the telecom sector. The co-operation was designed in the framework of Tanzania's Economic Recovery Programme (ERP) aiming particularly at improving service quality. SIDA supported activities were grouped into two main project categories: network support and telecommunications training.

The long-term objectives for the network support project as defined in the specific agreement were to improve the operation of TP&TC's local networks and, simultaneously, to improve the quality of service (fault rate, service restoration, audibility, and connection delay) to TP&TC officially accepted levels. The telecommunications training project aimed at providing training to staff as required for efficient operations, and for a continuing improvement of both quality of service and of staff's job satisfaction. The objective would be achieved through;

- Continued organisational development
- Development of specific job-related training programmes
- Orientation courses for staff, and
- Fellowship-financed training

The impetus of the support to Tanzanian telecommunications came from TP&TC's worsening financial situation. Tariffs were established by the government and infrequent tariff increases were not sufficient to compensate for economic losses. The company was operating "in the red" and there were no surpluses for expansion of the network.

In the late 1980s "technology domination" in telecommunications was being replaced by commercial, financial and institutional aspects i.e. the commercialisation of telecom operators. The focus was to break with government dominance and bureaucracy and strive towards business like telecom operators.

The Swedish consultant Swedtel was contracted for the project and the budget for the period is shown below:

ITEM	SEK '000
Consultant fees	32,005
Reimbursables	8,007
Fellowships	3,535
Commodity Funds (equipment) ¹	64,500
TOTAL	108,047

The Specific Agreement and the ensuing project documents do not explicitly specify the objectives to be achieved. Planning documents follow a "Technical Assistance"-type of approach which splits the overall objectives into sub-projects and tasks.

The need for quantifiable indicators stem from two sources;

- To develop indicators/performance parameters in order to follow up the efficiency of project execution and the achievement of tangible results in addition to traditional budgetary and resource comparisons and
- To develop indicators which measure the organisation's ability to achieve basic objectives such as producing services for its customers (telephone connections, local calls, international calls, data communication connections, new services, etc.).

In institutional development projects, such indicators are important. In some cases carefully designed performance indicators serve both project monitoring and the achievement of the basic objective of the organisation.

The "Support Review Report" of May 1989, and the Project Manager's "Note to the Steering Committee" of the same month raised the issue of measurable Performance Indicators for project progress monitoring and state that such were being developed. Ensuing reports, including the Final Report by the External Consultant and Swedtel, do not make any reference to the fact that that such targets were not used.

Project reports (review reports, progress reports, final report) that have been examined were based on:

- Qualitative assessment of project achievement
- The use of resources (expert man-months, fellowships)
- Budgetary comparisons (fees, reimbursables, equipment costs)
- Envisaged short-term needs which normally stem from the needs in actual project environment as compared to support need assessment in the beginning of the project.

¹ Equipment support covered materials to the TP&TC projects. 80 percent of the total materials supplied was allocated to the Operations and Maintenance Center (OMC) and External Plant (SEK 36.5 million), telecoms training (SEK 8.36 million) and materials management and stores (SEK 6.2 million).

Analysis of the Process

It was the intention of the consultant, together with a Steering Committee², to change the emphasis from a "technical" type of support into institutional development. For this purpose, the Project Manager chose to create a number of sub-project groups, each headed by a co-ordinator. This led, however, to a complex project organisation and distanced the Project Manager from the project activities. Also, the projects were not sufficiently integrated into TP&TC's organisation.

Analysis of the Organisation

TTCL in 1991	
Customer orientation	No sign of customer orientation
Administration and management	Routine management operations performed but TPTC was unable to initiate changes on its own.
Productivity	Very low; staff per 1,000 DELs was 60.
Ability to measure performance	Low; there are no performance related targets defined to/by the operator. Tariffs were not raised during the period, or the increases were not sufficient to cater for inflation or the rapid devaluation of the Tanzanian Shilling. Revenue per line decreased over the period 1987 - 1991 by 40%.
Output quantity	Telephone density was low but improved from 0.25 per 100 inhabitants to 0.29. Installed capacity increased by 34 percent but the exchange fill remained at 70 percent (i.e. under-utilisation was high).
Output quality	No record is kept of the quality of output but the documentation indicates that output quality was very low.
Resources (equipment, human and financial)	Based on project reports, the facilities were in disrepair and inadequate, the work routines and procedures were ill-defined and there was a lack of adequately trained staff.

² The Steering Committee was composed of 1-2 senior officials of the SIDA office in Dar es Salaam, two officials from the TP&TC, the Swedtel Project Manager and his Tanzanian counterpart. The chairmanship was on rotation between SIDA and TP&TC.

The Interim Period 1991-1993

Analysis of the Objectives

A decision was taken in 1991, at the initiative of Swedtel and TP&TC, to extend the support to cover the period 1991-1993 while the Telecommunications Restructuring Programme (TRP) was being prepared. The support continued by successive extensions of the specific agreement and focused on the following areas:

- Corporate management
- Telecommunication services
- Finance and supplies
- Human resources development

Swedtel together with TP&TC, prepared a proposal on the basis of SIDA's letter to TP&TC. It became obvious that in spite of the efforts made in the late 1980s, under-investment continued, and that without massive mobilisation of funds, the telecommunications services would deteriorate.

Delays in the implementation of project activities and frequent changes in the recipient's organisation, were the main reasons for the continuation beyond the initially agreed period. Many activities started in the previous period 1987-1991 were continued during the second project. Such activities were; O&M development, external plant planning, traffic engineering and materials management.

In 1990 an identification mission was sent to evaluate project performance and suggest whether or not SIDA should continue its support. The identification mission recommended that the consultants focus more on institutional development of TP&TC and on management capabilities. In order to make the transfer of knowledge as effective as possible, co-operation between counterparts and the consultants was emphasised ("Teams answerable for the decisions taken within the responsibilities delegated to them"). Furthermore, the Project Manager was to become a discussion partner and counterpart to the Chief Executive (and his deputies) and assist them in practical tasks.

Swedtel was again contracted to execute the project with the following budget:

ITEM	SEK '000
Consultant fees	11,154
Reimbursables	4,473
Fellowships	3,535
TOTAL	19,162

Analysis of the Process

The activities performed included assistance and advice to the top management and co-ordination of planning activities, network planning (including external plant), transmission,

establishing of records and support to Operation and Maintenance staff. Several of the activities within the field of Operation and Maintenance of external plant were continuations from earlier projects. Support to the finance and supply functions was mainly of a technical nature and focused on purchasing procedures, material management, stores systems and quality control. The Human Resource department was assisted in manpower planning and staff training, including computer training, and technical training in engineering and external plant. Swedtel also continued to develop and plan training courses. Corporate planning was introduced, and the MIS was improved.

In the documentation, TP&TC's role remained passive which points to a lack of commitment. It can be determined from the reports that practical co-operation between the consultants and the TP&TC staff was hampered for a number of reasons. Swedtel's Final Report from 1991 lists the following key problems in meeting the objectives as planned:

- co-ordination between sub-projects related to different TP&TC units ,
- management of sub-projects within the lower layers of TP&TC's organisation hampered allocation of resources,
- shortcomings in planning function of TP&TC prevented co-ordination of various plans in the project and
- TP&TC was unable to muster sufficient human and financial resources to be available to implement tasks as agreed in the Specific Agreement.

At the donor community's initiative, a performance contract (called the Memorandum of Understanding) was signed between the Government of Tanzania and TP&TC in March 1992. This was the first attempt to introduce company-wide performance measures in the critical areas of activity (quality of services, market performance, financial performance, investment performance) and the monitoring of results.

The Memorandum of Understanding (MOU) stipulated that TP&TC prepare a report for the period January-June to the Ministry of Communications and Transport (MCT) by the 15th of August every year beginning 1992. The report should show TP&TC's performance and achievement of targets. The Government, through a newly formed regulator, should appoint an independent team of at least two consultants to carry out an audit of TP&TC's performance beginning March 1993. Despite the binding wording in the MOU, the first efficiency audit was carried out in June 1996.

The inability to develop performance indicators, or respond to the MOU obligations, stem from the following main reasons:

- Insufficient integration of the Swedtel's activities into TP&TC activities caused frustration and weariness to develop plans into practice,
- The incentives to use performance indicators were not introduced, and TP&TC staff therefore did not feel the need to monitor or analyze performance.
- The lack of awareness by Swedtel's management of the problems at project level (obviously the dialogue was from Swedtel's top management to TP&TC top management while the problems appeared within the lower layers of the organisation)

- The owner's (the Government of Tanzania through TCC) passivity in enforcing the efficiency audit.

Analysis of the Organisation

TTCL in 1993	
Customer orientation	No sign of customer orientation
Administration and management	Discussion on sector organisation and the separation of policy and operations had started.
Productivity	Improving but low; during the period staff per 1,000 lines improved from 43 to 39.
Ability to measure performance	Increasing awareness to develop performance indicators. The pressure came from the donor community and was manifested in the Memorandum of Understanding signed in August 1992. In spite of signing the Performance Contract, active follow-up of performance did not take place. The Performance Contract was first audited in mid-1996. Tariffs were revised in 1993, national call fees remained low. Cost control, apart from Government budgetary control, did not exist.
Output quantity	Telephone density did not improve from the previous levels due to TP&TC's bad financial situation. The shortage of cash brought investments to a near halt which had long-term influences on TP&TC's performance.
Output quality	The first quality measures were introduced at the request of donors in 1992. Quality targets were given for; -Fault rates -Fault clearance -Call completion rates -Operator answer times No follow-up of the output quality was carried out during 1991-1993.
Resources (equipment, human and financial)	The work routines and procedures were not defined properly and there was a lack of adequately trained staff. Financial assets were also lacking.

The Telecommunications Restructuring Programme 1993-1998

The establishment of a Telecommunications Sector Policy Statement followed by the signing of the Memorandum of Understanding (MOU) in 1992 between the Government and TP&TC, marked a change in SIDA's support. As a consequence of this, major organisational changes came into effect in January 1994. TP&TC was converted into two operating entities, Tanzania Post Corporation Ltd. (TPC) and Tanzania Telecommunications Corporation Ltd. (TTCL) and the regulatory authority, Tanzania Communications Committee (TCC) was established. A donor supported investment programme for telecommunications was formulated during 1991-1993, to provide the country and TTCL with the necessary equipment and organizational set-up. The total financing needed was estimated at USD 220 million in 1993, of which the World Bank (IDA) financed component was USD 74 million with SIDA financing USD 41.7 million, equivalent to SEK 240 million.

Co-financiers of the TRP:	USD Millions	Percentage of total funding (%)
World Bank Group (IDA)	74.4	31.9
African Development Bank	45.9	19.6
Sweden	41.7	17.9
Tanzania	30.4	13.0
EU	17.2	7.4
Kuwait Fund (added after 1993)	13.5	5.8
Denmark	8.3	3.5
Japan	2.2	0.9

The SIDA support for TRP was allocated as follows:

Component	Amount SEK '000
-Project preparation	2,000
-Project monitoring unit ³	11,000
-Capital construction supervision ⁴	23,700
-Institutional development consultancy	47,000
-Investment programme ⁵	132,000
-Contingencies	24,300
TOTAL	240,000

³ Project Monitoring Unit follows the implementation of TRP for all donor components (SIDA, ADB, JICA, DANIDA)

⁴ Supervision of all investment programmes of the TRP

⁵ Improvement of the network in two phases: Phase 1. Dar es Salaam North and Phase 2. Dar es Salaam South. The programme will add 20,000 new lines in Dar.

Analysis of the objectives

The objective of TRP is to make the telecommunications sector efficient and financially sound. This shall be achieved through improving TTCL as an organisation by establishing a market orientated approach and improving commercial operations of TTCL.

The project objectives are defined in the MOU and they aim at:

- commercialising the national operator responsible for providing basic telecommunication services,
- promoting the participation of private operators in the sector,
- expanding capacity and improving service quality for the national network,
- increasing the availability of more sophisticated telecommunication services when demand and profitability justifies such an investment
- improving the service to the customers, especially commercial customers, in order to eliminate bottle-necks which obstruct the economic development of other sectors.

The signing of the MOU was a prerequisite for the funding of the TRP and the indicators were established by the donor agencies. The performance indicators are related to the physical expansion of services, customer services, quality, efficiency and financial results.

The TRP was seriously delayed from the original time schedule. The installation of equipment started in 1994 whereas the Institutional Development Consultancy (IDC) did not begin until June 1996. The consultants, British Teleconsult (BT), have recently submitted their inception report.

Analysis of the Process

A step forward was taken through the IDC under the TRP. It provided external consultants in finance and information systems to have a responsibility for Finance Management and Information Systems Development. Other external consultants on commercial development, management and organisation and technical management have an advisor's role. The project has set the following priorities for 1997:

- Complete key strategic work
- Support customer focus
- Continue process improvements
- Review organisational effectiveness
- Ensure improved TTCL performance
- Build up transfer of skills

Analysis of the Organisation

TTCL in 1996	
Customer orientation	Emerging signs of customer orientation at top management level. Account manager concept and customer care centres are being planned.
Administration and management	The Tanzanian Telecommunications Commission (TCC) and Tanzanian Telecommunications Corporation (TTCL) were established during the period. Sector restructuring and management change has been slow and TTCL still has the remains of old "water tight compartment" and "command line" mentality.
Productivity	Improving but still low; staff per 1,000 main lines is still at 37 which is one of the highest rates. South Africa has a staff ratio of 14 and Namibia 19.
Ability to measure performance	The first concrete attempt to develop the performance related measures was the efficiency audit (Special Status Report) financed by the World Bank in June 1996. TTCL's ability to measure performance is still at its infancy.
Output quantity	The telephone density in September 1996 is at 0.3 per 100 inhabitants, i.e. at more or less the same level as in 1990. Expensive maintenance and a fragmented network drains funds from investments.
Output quality	The Special Status Report concludes that TTCL has severe problems in all the above mentioned areas. More important, TTCL is not systematically measuring the quality (or any other) performance parameters in its licence conditions or the TRP. In brief, the quality of services has not improved despite donors' support.
Resources (equipment, human and financial)	The same weaknesses continue, and in view of future competition in the telecom sector there is a need to; <ul style="list-style-type: none"> -Improve communication between the HQ and the units -Co-ordinate the flow of information in an efficient way and establish an integrated MIS -Change the organisational culture from a monolithic to a business orientated culture -Improve the working morale of staff

TTCL's Financial Performance 1993 to 1996

TTCL's performance has deteriorated during the period under study. The company has received financial assistance from a number of donors who have provided loans for new equipment, organizational support and new high tech equipment. Despite this, revenue has increased only marginally and operating surpluses have declined as a result of growing operating costs.

The following table shows TTCL's income statements for 1993 through 1996. The data for 1996 is preliminary. In order to eliminate the effect of inflation and facilitate comparisons with other operators, all financial data is shown in thousands of USD equivalent at the average exchange rate for the respective year.

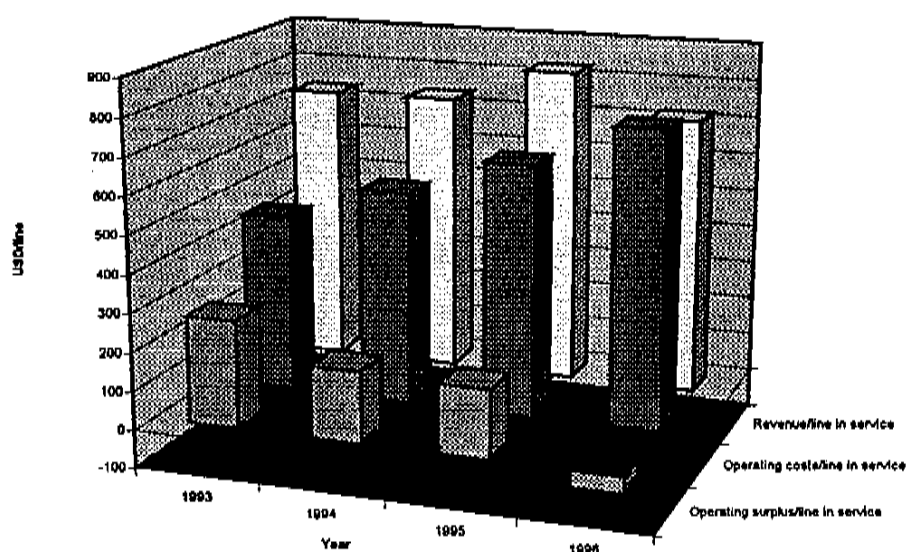
TTCL's Income Statements (USD '000 equivalent)

	1993	1994	1995	1996
Revenue	62,651	65,291	74,957	69,500
Operating Costs	39,183	49,009	58,961	73,670
Operating Surplus/Deficit	26,468	16,282	15,996	-4,170
Depreciation	3,639	3,350	3,596	3,560
Financial Costs	~2,000	2,189	2,112	~2,500
Net Profit from Operations	20,829	10,743	10,288	-9,730
Operating Surplus per Line of Installed Capacity	188	125	125	-28

Revenue increased only slightly during the period, with a peak in 1995 when it reached nearly USD 75 million. Operating costs, however, have increased steadily from USD 39 million equivalent to over USD 70 million in 1996. Depreciation has remained approximately the same, which implies that TTCL has not yet begun to carry the cost of depreciation for this equipment.

The following table shows annual revenue, operating costs and operating surplus/deficit calculated per line in service.

TTCL's Revenue, Operating Costs and Operating Surplus per Line



Revenue

Annual revenue per line has declined marginally - from approximately USD 740 per line in 1993 and 1994 to USD 724 in 1996, despite TTCL's substantial increase in local call charges. The Consultants concluded that TTCL lacks the capacity to analyze the impact that changes in tariff structure have on the usage of telephone services. This lack of insight as to elasticity of demand would be a serious shortcoming for any company operating in a competitive environment.

Of total revenue some 42.5 percent is generated through local and national calls, 26 percent from international calls and 10 percent from subscription fees.

Operating Costs

In the same period, operating costs increased steadily - from USD 46.7 million in 1993 to 79.6 million. This corresponds to an increase in real terms of 70 percent. The corresponding increase in operating cost per line in service, from USD 460 in 1993 to almost USD 770 per line in 1996, suggests that TTCL's capacity to control its costs has declined during the period under review. TTCL's per line operating costs have now reached a level where they are among the highest in the world.

Salaries and other staff costs accounted for almost 40 percent of total operating costs in 1996. TTCL currently has a staff of about 4,700 people and has laid off only 81 people during the period. The ratio staff to installed capacity, which is one indicator of the efficiency of the operator, is about 32 staff per 1,000 lines - the highest of the three operators that have been reviewed in this report. This suggests that there is considerable room to increase efficiency. TTCL had an average staff cost per employee of about USD 6,500 in 1996.

TTCL currently has a digitalization rate of 50 percent (1996) which would account for part of the higher costs, since the majority of the manual and analogue exchanges are situated in rural areas.

TTCL's difficulties in collecting revenue have not abated as a result of the Institutional Development projects. The collection period was 445 days (one year and almost three months!) in June 1996 as compared to 270 days at the beginning of the period.

TTCL was unable to make available balance sheet data to the Consultants.

Summary

In spite of massive donor support, TTCL's performance measured by any criteria, has not improved significantly. The telephone density, has remained at the same level for the past 10 years, satisfaction of demand is still as low as 40% and staff productivity, is still one of the lowest in the region, 37 staff per 1,000 main lines. In Tanzania 43 percent of main lines are digitised and the fault rate per 100 lines is at 190 and TTCL was in 1995 able to repair only 40 percent of faults within 24 hours..⁶

SIDA support has focused on the network performance improvement and staff training. Had the support been effective, one might expect an improvement in the quality of services and TTCL productivity. This, in turn, is expected to increase traffic volumes, improve the ratio of successful calls, reduce maintenance costs and improve TTCL's financial position.

Project Execution

The documents available to assess project performance were Swedtel's reports for the two periods, Steering Committee Minutes from Meetings and Review Mission Report by external consultants. Project reporting lacks criticality and, in principal, it is not sufficiently analytical. Reporting is characterised by the following:

they describe past progress without a serious attempt to identify the real causes for delays, issues or changes as compared to plan

As the progress reporting seems to be based on discussions and meetings with the top management of TP&TC and Swedtel Project Manager, the issues of integrating the various project activities/tasks into one another and into TP&TC activities remain largely unanalysed.

During the project a number of plans for TTCL were produced which are now being updated. However, the planning document as such is not sufficient unless it is understood and accepted by the counterpart and the receiving organisation. Planning documents must be co-ordinated into the tasks of executing departments and into their work schedules which again must coincide with the market requirements.

Achievement of goals

The lack of performance indicators/success criteria hampers quantitative evaluation of the achievement of goals. It is important to distinguish between two aspects, firstly, were the "products" delivered to the client, and secondly, has the organisation been able to use products delivered to improve operations or functions?

Excluding technical plans, there were not many signs in the reports from the period that the recommendations given have been implemented. It seems fair to conclude that the support failed largely to achieve the transfer of knowledge and sustainable improvement. The main reasons for this were:

The use of short term consultants was not altogether successful. During short-term assignments a lot of time was spent collecting information and producing the final product

⁶ ITU: World Telecommunication Indicators.

with no time allocated for transfer of knowledge (the consultants became "doers" instead of "facilitators"). Obviously this had a serious impact on integrating the output into long-term tasks.

The consultants were not taken in as partners. The priorities regarding the consultant's work were not discussed sufficiently with TTCL staff. The work programme of the consultant was detached from the work programme of the department where the consultant worked. This would have emphasised the responsibility of the Head of Department to integrate consultant's activities into the Department tasks.

Budget Control, Project Timing

Total budget allocation in the Specific Agreement was at SEK 30 million excluding the equipment component and fellowships. The total for period 1987-1993 including the equipment and fellowships was however SEK 127 million. The equipment component totalled SEK 64.5 million. Financing from the Swedish Import Funds proved to be impracticable for the project purposes and a change was recommended that the equipment should be financed directly from the project allocations. We understand that this has already been changed.

As for the TRP, some SEK 25 million have been disbursed out of a total allocation of SEK 132 million for the capital expansion included in the TRP. According to existing plans, the capital budget will have been used by the end of 1999.

The achievements of TTCL service quality indicators

The following table gives the grade of achievement in the key performance indicators as defined in the MOU. In short TTCL has failed to achieve the targets in all of the main areas. A discouraging fact is that over the last four years when the MOU has been effective, there has been no serious attempt from the TTCL to improve the performance.

Service quality indicator	Dec 92	Target 95	Actual 95	Achieved
Exchange capacity				
-Dar es Salaam	49,160	52,000	50,960	No
-Other	75,457	80,300	77,169	No
-Total	124,617	132,300	128,129	No
Connected lines				
- Dar es Salaam	35,664	46,000	38,831	No
-Other	49,341	53,800	51,439	No
-Total	85,005	99,800	90,270	No
Working lines				
- Dar es Salaam	33,060	41,400	35,475	No
-Other	42,285	51,110	49,452	No
-Total	75,345	92,510	84,927	No
Faults cleared (%)				
-within 24 hours	34%	40%	24%	No
-within 48 hours	54%	70%	44%	No
within 30 days	89%	93%	85%	No
Call completion rates				
-International outgoing	65%	40%	80%	Yes
-International incoming	24%	23%	40%	Yes
-National (STD)	26%	38%	35%	No
-National Manual	78%	80%	88%	Yes
-National local	74%	87%	70%	No
- Dar es Salaam local	64%	75%	66%	No
Staffing				
-Staff per 1,000 connected lines	57	43	53	No
Financial 7				
-Revenue				
-Dar es Salaam (USD millions)		46,9	34.6	No
-Other (USD million)		25,4	24.5	No
-Current Ratio (times)		1.5	0.5	No
-Collection rate (%)		92%	75%	No
-Average Collection Period (days)		265	270	No

⁷ Financial figures shall be treated with caution because they have not been monitored systematically and it is not clear which indicators are valid as TTCL also uses "revised performance indicators"

Appendix 6 List of Documents

List of documents

Name	Author	Date of registry at Sida
Angola		
The ENATEL Telecoms Project Study Mission in Angola	Swedtel	July 1987
Preliminary report of Consultancy mission to Angola for assistance in the preparation of project proposals for the future co-operation between SIDA and ENATEL.	Karl Erik Olofsson Jörgen Håkansson	900315
A proposed establishment of a material administration department.	Swedtel	February 1989
Quality, Effectiveness and Profitability. A Review of the Telecommunications Sector in Angola and Proposals for Swedish Support.	SPM, Scandinavian project Managers: Brundenius, Runesson and Rylander	910201
Human Resource Development and Human Resource management in the Angolan Telecommunications Sector.	Tjänsteutveckling i Bergslagen AB	910528
Inception report.	ENATEL Swedtel-ISO	920514
A discussion on Performance indicators and Targets for the telecommunications projects in Angola.	Swedtel/ENATEL	910910
Swedish Assistance to the Telecommunication Sector in Angola, 1988-1992.	Swedtel	920907
Proposal for Addendum to Plan of Operation for the Angola-Telecom/Swedtel-ISO project for the period July 1993 to June 1994.	Swedtel	930513
Proposed Performance Indicators with targets for 1993 to 1997.	Swedtel/Angola Telecom	930705
Swedish support to the Telecommunications sector annual sector review March 1993.	Herman Ruud	930329
Team leader's final report April 1993.	Swedtel	930513
Proposals for Continued Asdi Assistance to the Telecommunications sector of Angola.	Herman Ruud, Sven Hilding	930913

Present and Envisaged Future Swedish Assistance to the Sector through Asdi support July 1991-June 1994 and July 1994-June 1997.	Herman Ruud	40314
Annual project Progress Report January 1993-December 1993.	Angola Telecom Swedtel-ISO	940214
Annual Project Progress Report 1994.	DNCT Swedtel-ISO	950614
Plan of Operation 1995.	DNCT Swedtel-ISO	Jan 1995
Annual project Progress Report 1995.	Angola Telecom Telia Swedtel-ISO	January 1995
Telecommunications Sector Report of Consultancy Services in February 1995.	Herman Ruud	950222
Report on Mission to Angola 29 January - 15 February 1995 conc. Follow-up of Sida-supported telecommunications programme.	Sven Hilding	950410
Plano Empresarial 1996-1998.	Angola Telecom	1995
Project Progress Report January - June 1996.	Angola Telecom Telia Swedtel-ISO	August 1996
Preconditions for Prolonged Swedish Assistance to the Telecommunications sector in Angola.	Sven Hilding and Jan Lanker	961014
Avaliação da Cooperação.	Angola Telecom Telia Swedtel-ISO	September 1996
Mozambique		
Mozambican Telecommunications Sector Review.	Telecon OY	Oct 25 1990
Mozambique Telecommunications Operational Management Plan.	ITU	Nov 1990
Problemática da Gestao fo recursos humanos da TDM.	TDM	900905
Six monthly Report TDM Operational Management Plan June-November 1990.	ITU, B. Desta	910117
Report on the Swedish Support to the Telecom Sector of Mozambique 1980-1996.		1991

Telecommunications in Mozambique.	A.S.K. AB, A. Karlsson, E. Braathen, A-B, Karlsson	910528
Summarized Annual Report, project review 1991, proposed activities 1992-1993.	TDM-Swedtel	
Annual Report review of project 1990, planned activities 1991-1993.	TDM Swedtel	910213
Final Report.	TDM Swedtel	931108
Telecommunications Sector in Mozambique.	A.S.K. AB E. Braathen	940622
Report on TDM's Commercialisation and Business development: Approach and Action programme.	Bill Tilley	Feb 1995
Namibia		
Conversion of the Department of Posts and telecommunications, DOPAT, into a Public Corporation.		
Conversion of the Department of Posts and telecommunications, DOPAT, into a Public Corporation (implementation phase).		
Management development & development and implementation of the HRD programme and tasks.		
Conversion of the Department of Posts and Telecommunications into Public Corporation.		910630
Consultancy for support to establishing the regulatory framework and functioning of the Namibian Communication Commission.		1991
Policy Guidelines for the incorporation of the Namibian Posts and Telecommunications services.		911021
Progress Report for the incorporation of the Namibian Posts and Telecommunications services November 1991 - February 1992.		1992
Extension to contract for period July 1994 to June 1995 to support institutional development and HRD development.		920525
Progress Report for Telecom Namibia for Co-operation between SIDA and Telecom Namibia.	B.Eklöf, Managing Director	931006

Report on a Familiarisation Visit to Telecommunications Corporation of New Zealand and New Zealand Post.		1993
Follow-up of the Swedish Support to the Transport and Communication Section in Namibia.		931111
Progress Report on ISO Activities from January 1994 - March 1994 for Telecom Namibia and Namibia Post.		1994
Progress Report on ISO Activities from March 1994 - October 1994 for Telecom Namibia and Namibia Post.		1994
Institutional Development. The Case of Telecom Namibia.	SIPU International	May 1995
Final Report on the Project for Telecom Namibia and Namibia Post Companies.	ISO Swedish Management Group	960205
Tanzania		
SIDA Support to the Telecommunications Sector. Review of the Support.	Herman A. Ruud	890517
Project Manager's Progress Report to the TP&TC/SIDA Steering Committee.	Swedtel	Sep. 1990
Memo from the SIDA/SWEDTEL Project Manager.	Swedtel	900130
SIDA Support to the Telecommunications Sector. Sector Review Report.	Herman A. Ruud.	900206
Identification Study on Future Support.	Herman A. Ruud	900220
Project Manager's Report to the TP&TC/SIDA Steering Committee Meeting.	Swedtel	March 90
TPTC -SIDA Specific Agreement 1987/88 - 11990/91. Final Report.	Swedtel	910620
SIDA support to the Telecoms Sector. Proposed Extension of the TP&TC/SIDA Specific Agreement.	Swedtel	910202
Report on Review of Swedish Assistance to the Telecommunications Sector.	Herman A. Ruud	910621
SIDA Support to the Telecommunications Sector. Appraisal Report. Telecommunications Restructuring Programme.	Herman A. Ruud	911226.

Appraisal Report to SIDA: Plan for Technical Assistance and Training to TPTC.	Interconsult ab	920130
Swedtel Progress Report to TPTC/SIDA Steering Committee.	Swedtel	920329
Staff Appraisal Report 1993.	The World Bank	930402
Extension of the TPTC/SIDA Specific Agreement on the Support to the Telecommunications Sector July 1991 - June 1993. Consolidated Final Report.	Swedtel	930929
Draft Letter Weaknesses -Audit of the Swedish Support to TP&TC for Procurement of Materials.	Tanzanian Audit Company	1994
Comments on BT Inception Report.	The World Bank.	961022
IDC-inception report; Embassy of Sweden Dar es Salaam.	British Telecom	Oct. 1996

