

Recommendation Implementation Analysis

TELECOM DEVELOPMENT SYMPOSIUM

Organized by
the International Telecommunication Union (ITU)

Hosted by the Republic of South Africa



**ITU TELECOM
AFRICA 2001**
Johannesburg
12-16 November

TELECOM **M**
MEET THE FUTURE

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Acknowledgements

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The views expressed in the report are those of the authors and do not necessarily reflect the opinions of ITU or its membership.

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I Introduction

With a relatively low penetration rate for mobile services and a rapidly increasing number of users, Africa represents a significant opportunity for the telecommunication industry. According to the Gartner Group, there were approximately 17 million mobile customers in Africa at the end of 2000, a figure which Gartner Dataquest forecasts will increase to 47.6 million by the end of 2005.

Technological innovation, new services and rising business and consumer expectations in the region represent key challenges to the future evolution of policy and regulatory frameworks.

ITU TELECOM brings together the most influential representatives of government and the telecommunication industry to exchange ideas, knowledge and technology for the benefit of the global community, and in particular the developing world.

The ITU TELECOM Forum is the only global event of its scale that brings together high-ranking representatives from industry and government to discuss and shape the future of the telecommunication industry. CEOs, government ministers, policy makers, regulators, financiers and technical specialists will use the Forum at ITU TELECOM AFRICA 2001 to define what can and what must be done in real terms to accelerate the development of the telecommunication industry in the Africa region.

For ITU TELECOM AFRICA 2001, as for ITU TELECOM 99 and ITU TELECOM AFRICA 98, a survey based on the Telecommunication Development Symposium (TDS) recommendations was sent out to 41 countries – (Least Developed Countries (LDCs) and Low Income Countries (LICs). More than 60% of the countries responded and communicated their results. The answers were analysed with the support of the Cap Gemini Ernst & Young "Telecom Media & Networks" division, who also covered the costs of the analysis.

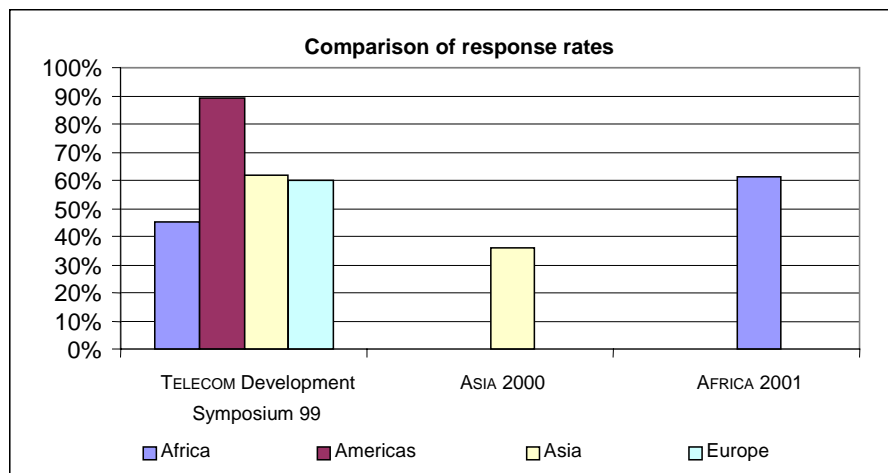
The main purpose of this report is to evaluate how the various Member States perceive the evolution of the issues that were addressed at the ITU TELECOM AFRICA 98 Telecommunication Development Symposium and to gather their expectations. A special section is dedicated to an assessment of ITU by the countries. This report is not intended to present policies or strategies, but to provide valuable input to participants at future Telecommunication Development Symposiums.

Hans Pieterse
Executive Manager
ITU TELECOM

II Developing countries and the Information Society

1 Preamble

A similar survey was sent to countries prior to the 1999 TELECOM Development Symposium held in Geneva, which did not concentrate on any particular region or continent. This provides us with a basis for comparing the rates of response. The overall rate of response in 1999 was 55%. Last year, the Asian countries' rate of response was lower than that overall rate. The rate of response to this year's survey, however, was higher than in the 1999 overall rate. Furthermore, the rate of response of the African countries rose from around 45% in the 1999 survey to over 60% in this year's survey.



Graph 1 – Percentage of responses by region

2 Results of the survey

2.1 Overview

At ITU TELECOM Interactive 97 and ITU TELECOM 99, the following recommendations were adopted in relation to the developing countries and the Information Society:

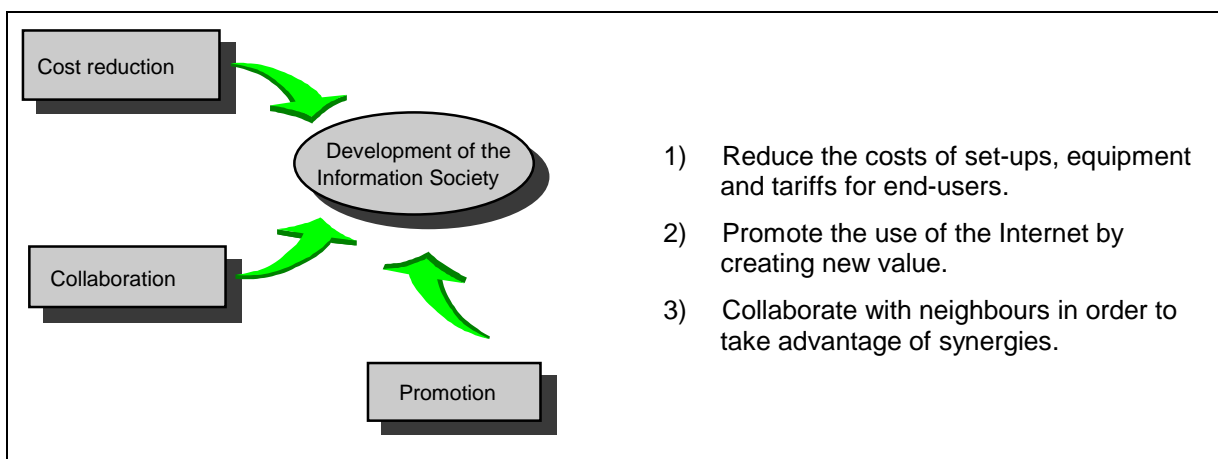


Figure 1 – Recommendation for development of the Information Society

2.2 Consolidated results of the survey

The overall results of the survey regarding the cost reduction methods used are presented in the figure below. The percentages indicate the proportion of countries that have chosen a given initiative.

ITU TELECOM AFRICA 2001								
	No initiative	1 initiative			2 initiatives			3 initiatives
Cost-reduction programmes		✓			✓	✓		✓
Promotion			✓		✓		✓	✓
Collaboration with neighbours				✓		✓	✓	✓
% of countries having chosen specific options(s)	18%	60%	20%	20%	67%	0%	33%	18%
		23%			41%			

Figure 2 – Recommendation implementation

2.3 Recommendations aimed at reducing costs

Objectives

It was recommended that countries consider lowering costs by using existing infrastructures, website cacheing, using off-line services and applying new satellite technologies (such as LEOs). It was also recommended that taxes and duties on equipment imports be cut, and usage tariffs be reduced in order to boost demand.

Evaluation of this recommendation is based on:

- i) the efficient use of existing technologies;
- ii) reduction of taxes and duties on equipment imports; and
- iii) tariff reductions.

One recommendation advocated that Internet tariff structures should be cost-based, in order to avoid both extremes – high tariffs that would restrain network usage and low tariffs that would not yield sufficient revenue to allow new investment in infrastructure.

Results of the survey

According to the survey, 59% of the countries followed the recommendations to lower costs by using existing infrastructures, website cacheing, using off-line services, applying new satellite technologies, cutting taxes and duties on equipment imports, and reducing usage tariffs in order to boost demand.

Different cost reduction methods have been implemented, as shown in the figure below:

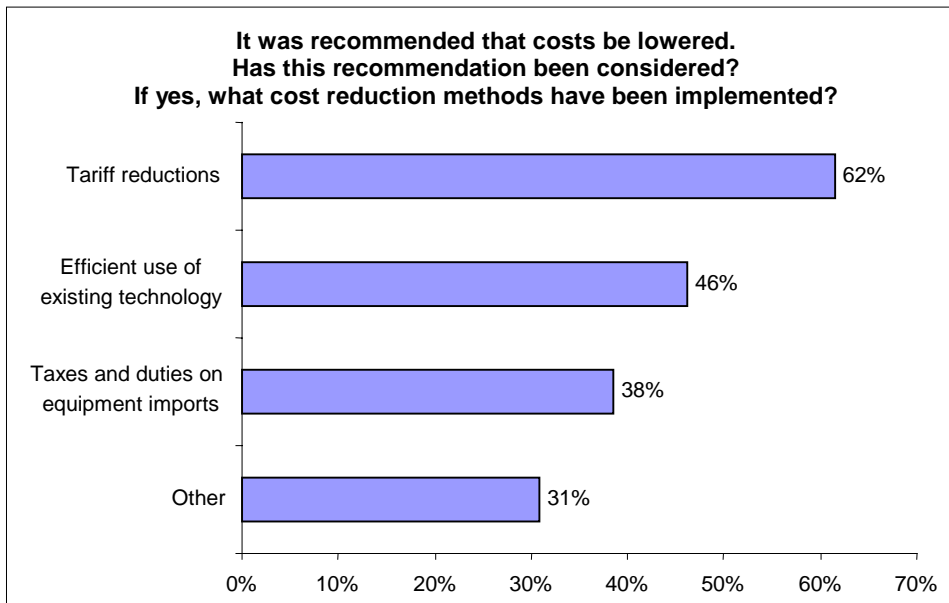


Figure 3 – Cost reduction methods

Comments

When compared with the TELECOM 99 survey, the results show that, while cost cutting was previously used in about 46% of countries, it now represents around 85% of current initiatives (a combination of tariff reduction and taxes and duty initiatives).

The average monthly price paid by the end user for an Internet subscription is a key factor in the expansion and development of access to the Internet. The figure below shows the results of the survey:

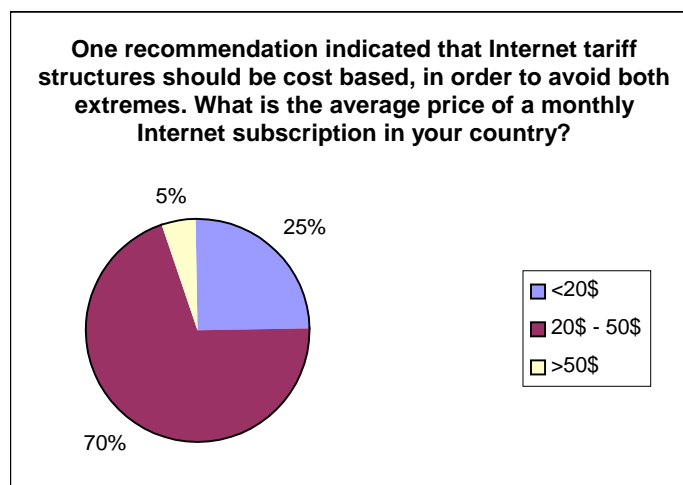


Figure 4 – Average monthly price of an Internet subscription

The number of competitors in the market, especially for leased lines, can be regarded as another key factor of cost reduction. It is generally believed that competition between a number of players drives access prices down and leads to better quality.

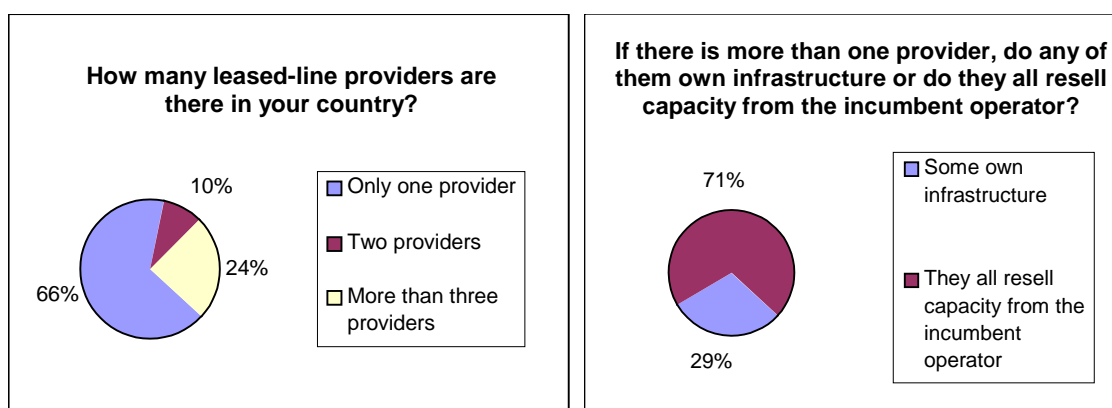


Figure 5 – Provider structure

Nonetheless, 66% of countries still have only one provider of leased lines, although 67% want to create a competitive market for leased-line services. 71% of countries that have more than one provider resell the incumbent operator's capacity, whereas in 29% of countries the providers own the infrastructure.

A comparison may be drawn with the *Recommendations Implementation Analysis* presented at ITU TELECOM Interactive 99. The table below summarizes the degree of implementation of the Internet usage cost-reduction recommendation. It shows that the rate in the African countries surveyed for the present report (67%) is higher than that observed for the other regions in 1999 but comparable with the rate observed for Africa in 1999.

Table 1 – Implementation of the recommendation aimed at reducing costs with regard to Internet usage, by region

ITU TELECOM Interactive 99					
Internet usage promotion method	Africa	Americas	Asia/Oceania	Europe	Average
Recommendation implementation	71%	33%	63%	33%	58%

Regarding the other suggested cost reduction method (Efficient use of existing technologies), the survey shows that 46% of countries are using this recommendation to promote use of the Internet. The table below presents the ITU TELECOM 99 figures:

Table 2 – Efficient use of existing technologies as an Internet promotion method, by region

ITU TELECOM Interactive 99					
Internet usage promotion method	Africa	Americas	Asia/Oceania	Europe	Average
Efficient use of existing technologies	37%	0%	30%	100%	33%

These two tables show the evolution of the methods used to promote the Internet. In order to encourage the Internet, countries, in which the Internet landscape is well developed, prefer to

promote a more efficient use of existing technologies whereas countries with less developed Internet technologies put in place taxes cutting and duties reduction policy to promote.

2.4 Recommendations aimed at generating new value for promotion of the Internet

Objectives

One recommendation suggested that the Internet is not an end in itself and that the objective is not to create content but to create value.

The following key criteria are used for the evaluation:

- Creation of a competitive market for Internet service provision
- Creation of a competitive market for the provision of leased-line services
- Encouragement of favourable tariff strategies on the public telephone network
- Promotion of applications (e.g. virtual e-mail addresses for all students)
- Use of government/academic procurement to prime the Internet backbone network
- Collaboration with neighbours to establish regional Internet hubs
- Encouragement of the creation of local content.

Results of the survey

All the countries that answered the questionnaire provide access to the Internet. Different activities have been key components of the Internet development and promotion process:

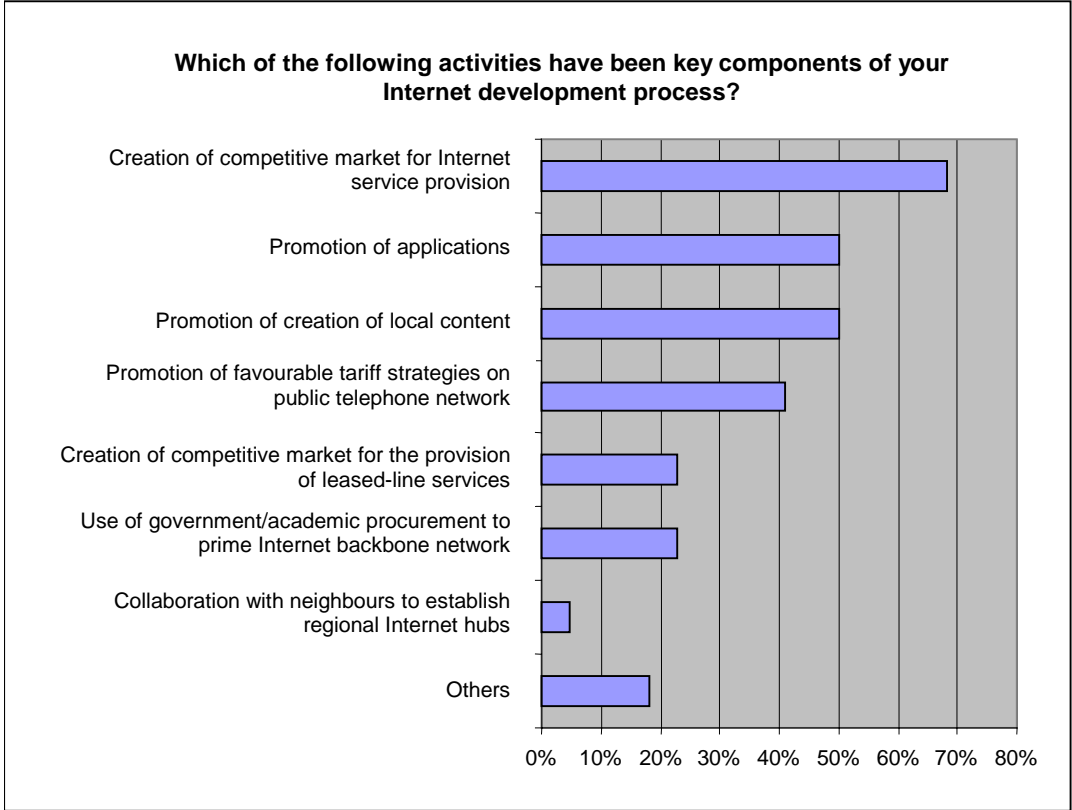


Figure 5 – Key components of the Internet development and promotion process

Comments

In 64% of countries, governments have taken the lead in promoting connectivity and use of the Internet. Many schemes have been developed by these governments to promote the Internet directly, for example free hosting, or actions to increase traffic capacity.

In 36% of countries, however, governments have still not taken the lead in promoting the Internet. The main barriers cited as obstacles to the Internet development process can be grouped in three categories:

- *Financial barriers*: both in terms of infrastructure equipment and end-user devices.
- *Technological barriers*: many countries declared that low bandwidth and poor network reliability are the main obstacles to Internet development.
- *Human barriers*: a key issue for many countries relates to the difficulty in finding qualified people. Another key factor is the high level of illiteracy in some countries or regions.

2.5 Recommendations aimed at increasing collaboration with neighbours

Objectives

It was recommended that collaboration between neighbouring countries within regions and subregions should be expanded. The use of regional Internet societies, associations and conferences should be promoted. The recommendation also suggested that small countries may achieve economies of scale by uniting efforts with neighbouring countries in order to constitute a more attractive market to equipment vendors. Also, within a given country, a similar economy of scale could be achieved by negotiating multi-annual contracts with potential suppliers.

Result of the survey

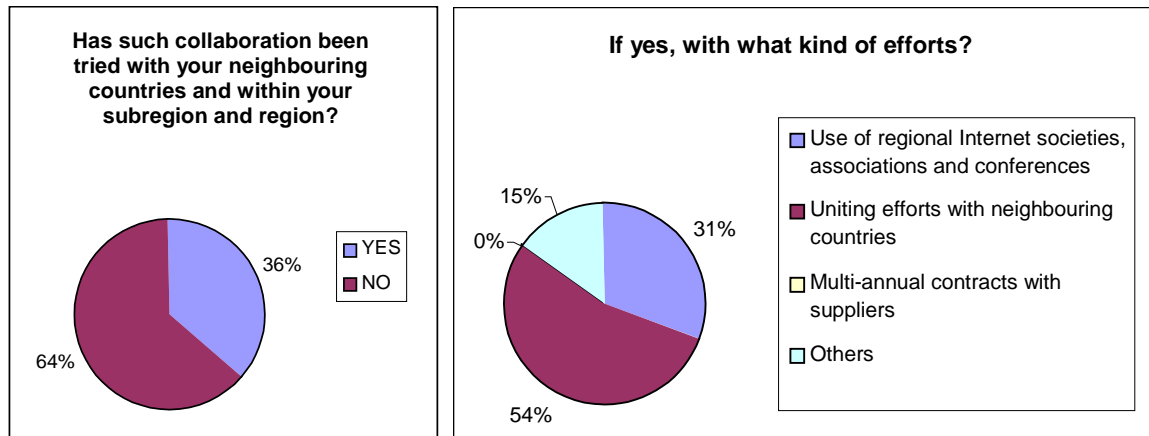


Figure 6 – Collaboration with neighbouring countries

Comments

Lack of coordination and communication between countries, as well as internal or external political issues, seem to be the main barriers to international collaboration, although only a few countries expressed any difficulties.

By way of comparison, the ITU TELECOM ASIA 2000 survey showed that 53% of Asian countries were involved in collaboration initiatives with their neighbours, whereas the ITU TELECOM AMERICAS 2000 survey indicates that only 22% of the countries concerned were involved in such programmes.

3 Summary

Figure 7 presents an overview of all recommendations:

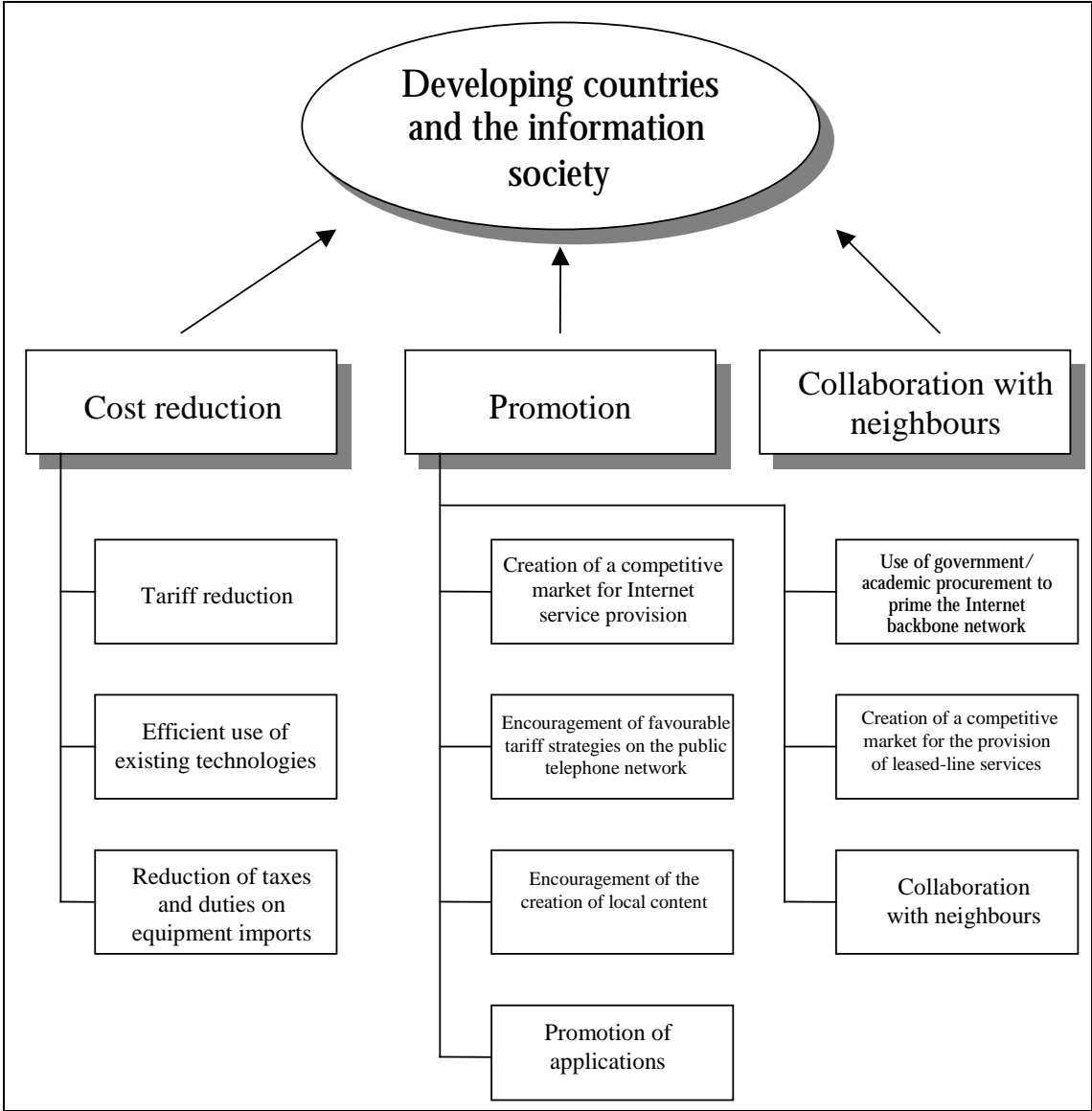


Figure 7 – Overview of the recommendations for the development of the Internet

The following figure summarizes the implementation of the three methods recommended for the development of the Internet in the developing countries.

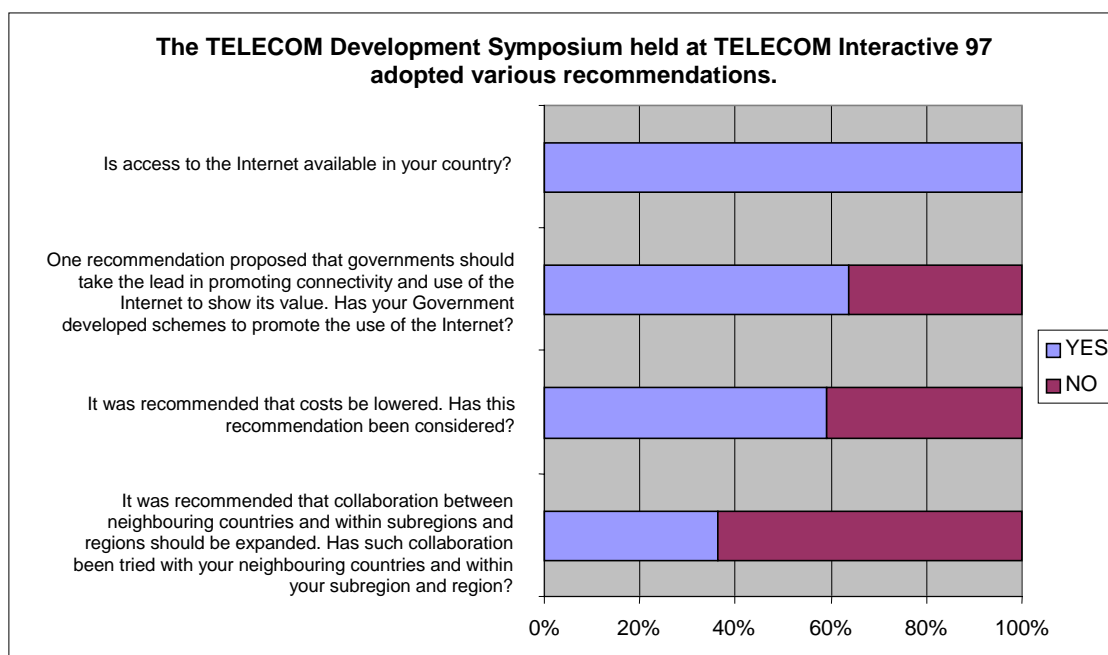


Figure 8 – Summary of recommendations for the development of the Internet

It should be noted that 18% of countries have not implemented any of the three recommendations. By way of comparison, the ITU TELECOM ASIA 2000 survey showed that 12% of countries were not implementing any of the recommendations.

III Implementation of ITU TELECOM AFRICA 98 recommendations

1 Results of the survey

1.1 Overview

The aim of this section of the survey was to assess whether countries had applied the recommendations produced at ITU TELECOM AFRICA 98.

1.2 Recommendations concerning the Internet, GMPCS, interactive TV, multimedia systems

Objectives

It was recommended at ITU TELECOM AFRICA 98 that the necessary conditions should be established to develop a framework in which new technologies could mature.

Results of the survey

Countries were asked whether they had reflected on how to continue to attract operators in rural and suburban areas:

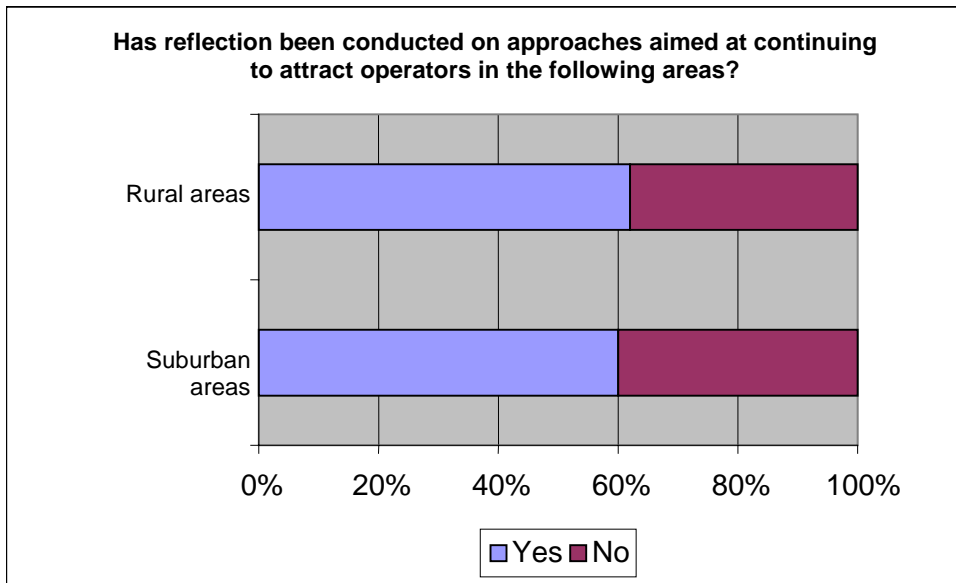


Figure 9 – Reflection on how to continue to attract operators

Countries were asked whether they had considered the implementation of new services:

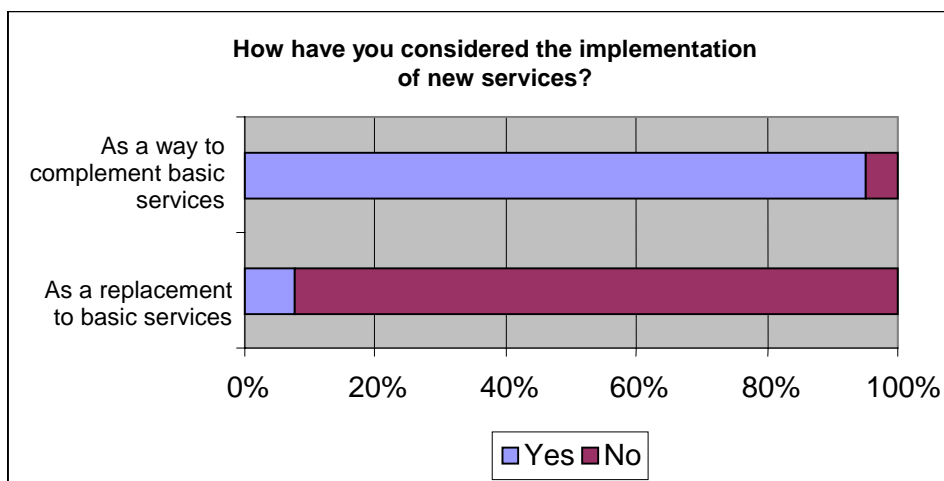


Figure 10 – Implementation of new services

Countries were asked whether they had been involved in the support of the two regional centres ESMT and AFRALTI or in regional cooperation:

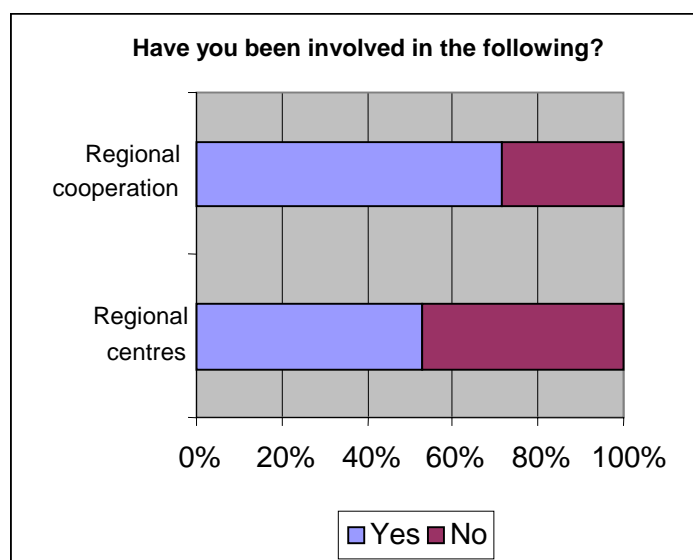


Figure 11 – Involvement in regional centres and cooperation

Comments

Globally, the ITU TELECOM AFRICA 98 recommendations concerning the Internet, GMPCS, interactive TV and multimedia systems were followed by a significant number of countries. The survey also shows that the development of new services in this domain is seen more as a way to complement basic services than as a replacement solution.

1.3 Recommendations concerning new business arrangements: strategic alliance – strategic partners

Objectives

At ITU TELECOM AFRICA 98, Working Group C concluded that strategic partnerships were essential to the development of the telecommunication sector both in terms of funding and skills transfer. It was also stated that authorities must act as facilitators in order to ensure that such new business arrangements are realized effectively.

Results of the survey

Countries were asked whether their authorities had taken steps to build up a fund to support rural telecommunication development by imposing a levy on the revenues of telecommunication companies:

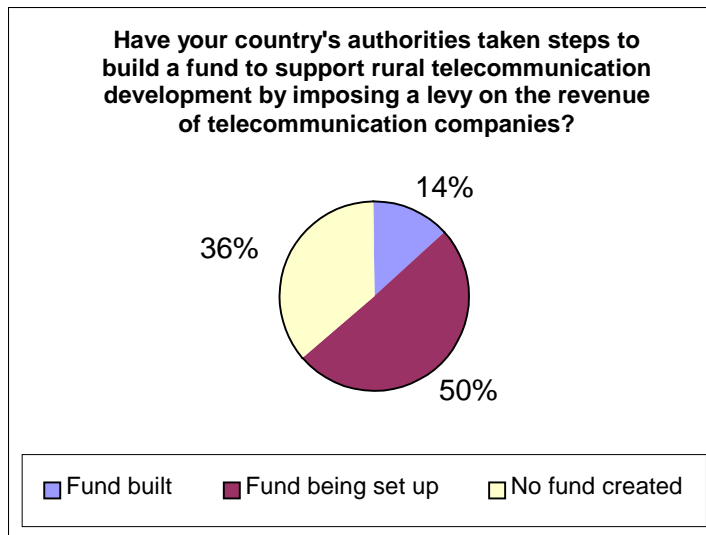


Figure 12 – Rural telecommunication fund creation

Countries were asked whether their authorities had established a dynamic, transparent, simple and flexible regulatory framework to support efficient partnership strategies:

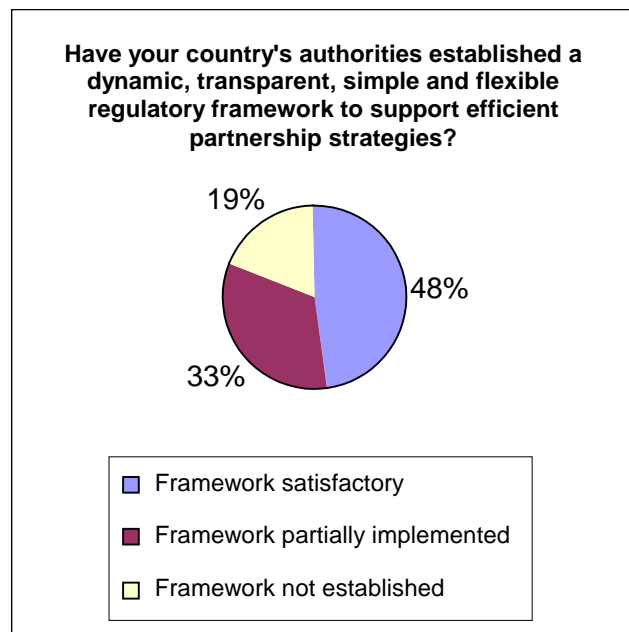


Figure 13 – Rural telecommunication fund creation

Countries were asked whether their authorities had taken steps to secure jobs for workers in the telecommunication sector in order to foster a peaceful social climate:

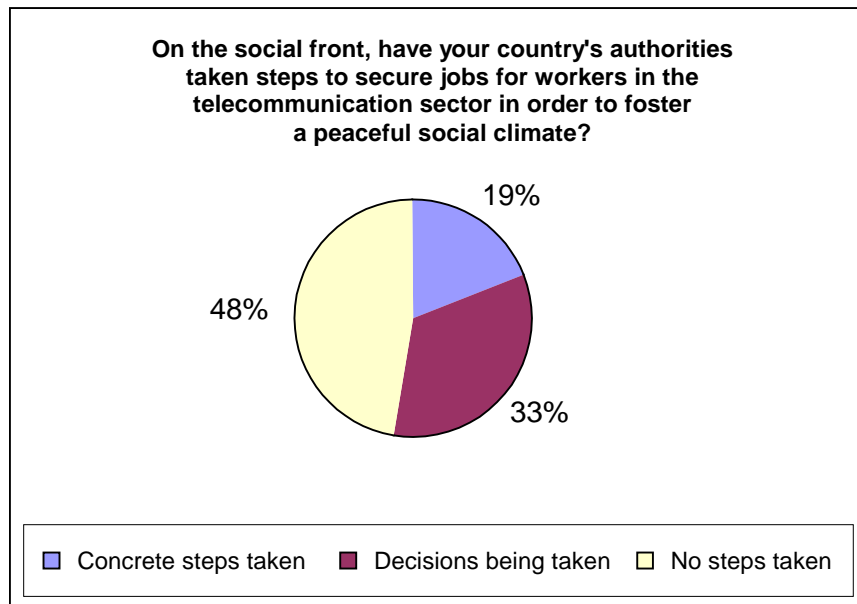


Figure 14 – Social action

Countries were asked to qualify the strategies adopted by their regulatory bodies to ensure compliance with the rules of competition:

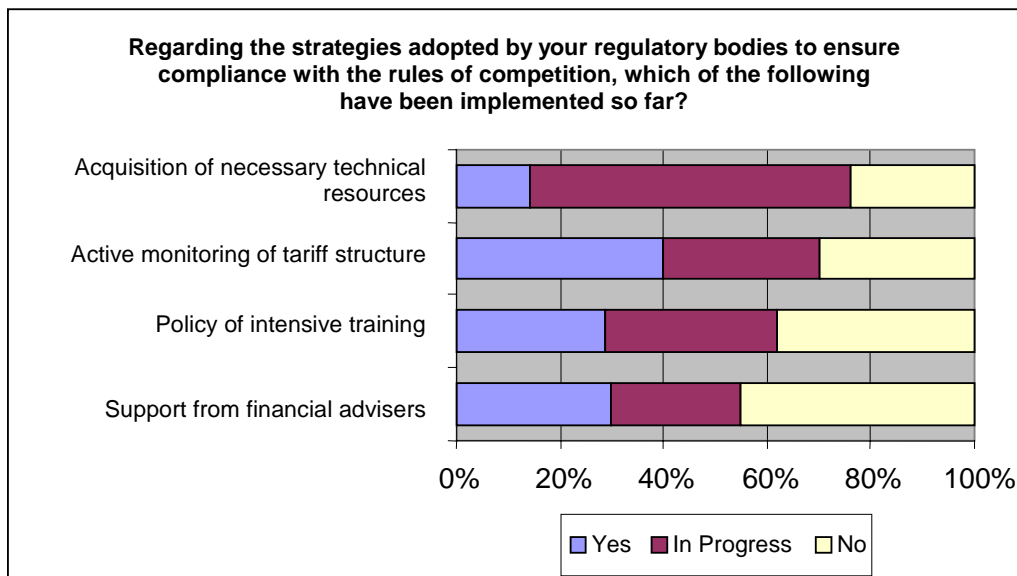


Figure 15 – Strategies adopted

Comments

The results of the survey clearly show that, in most cases, the four ITU TELECOM AFRICA 98 recommendations regarding the "NEW Business Arrangement" have not yet been implemented. Furthermore, a significant number of countries (36% regarding the rural fund, 19% regarding the regulatory framework and 48% regarding the social climate) have not taken any action on this point.

IV Assessment of the role of ITU

1 Objectives

At ITU TELECOM AFRICA 98, recommendations were drawn up on the basis of experiences exchanged and discussions held on the topic of "Customer-oriented organization".

In order to obtain feedback on the role played by ITU, three questions were included in the questionnaire:

- How do you perceive the assistance of ITU in providing ongoing training?
- How do you perceive the assistance of ITU in carrying out studies?
- How do you perceive the operational assistance of ITU?

2 Results of the survey

The responses to the questions are given in the figure below:

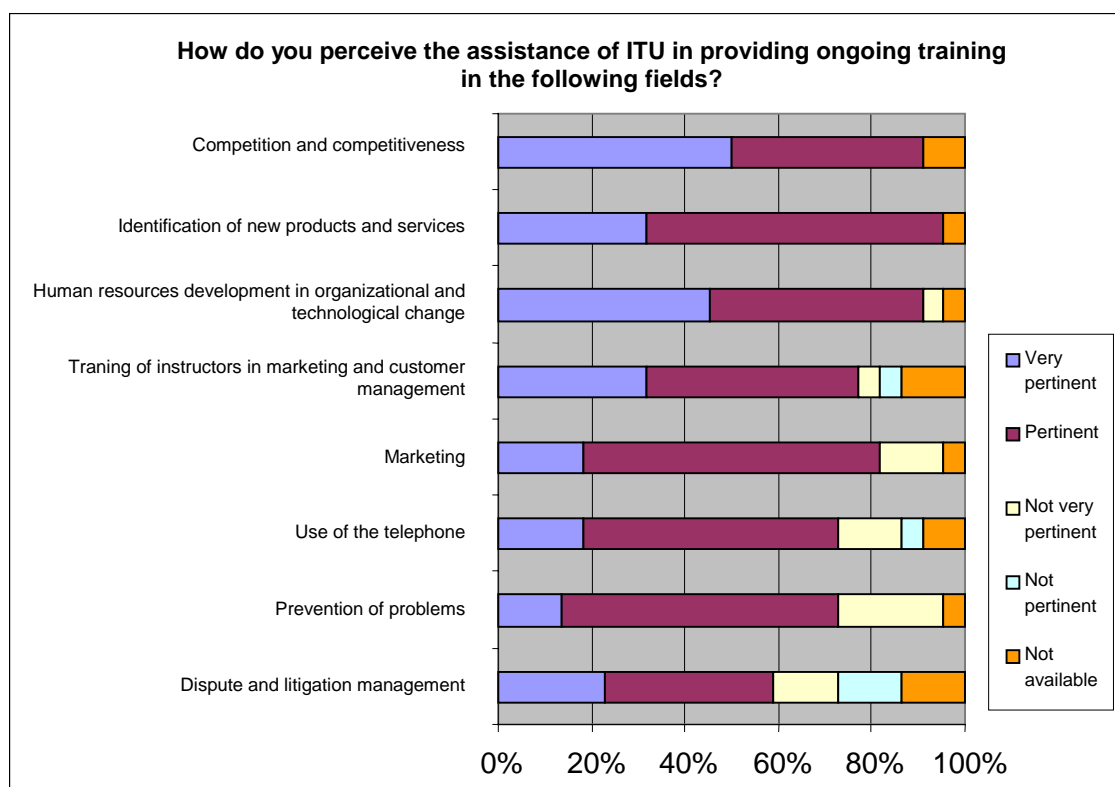


Figure 16 – Perception of ITU assistance in providing ongoing training

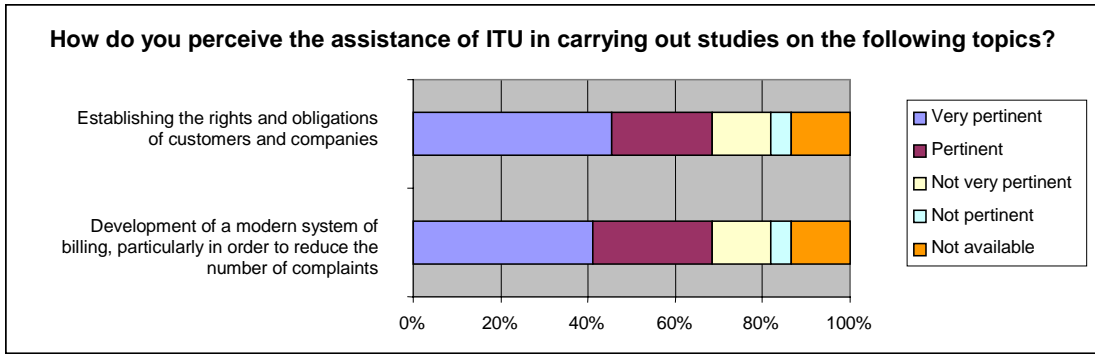


Figure 17 – Perception of ITU assistance in carrying out studies

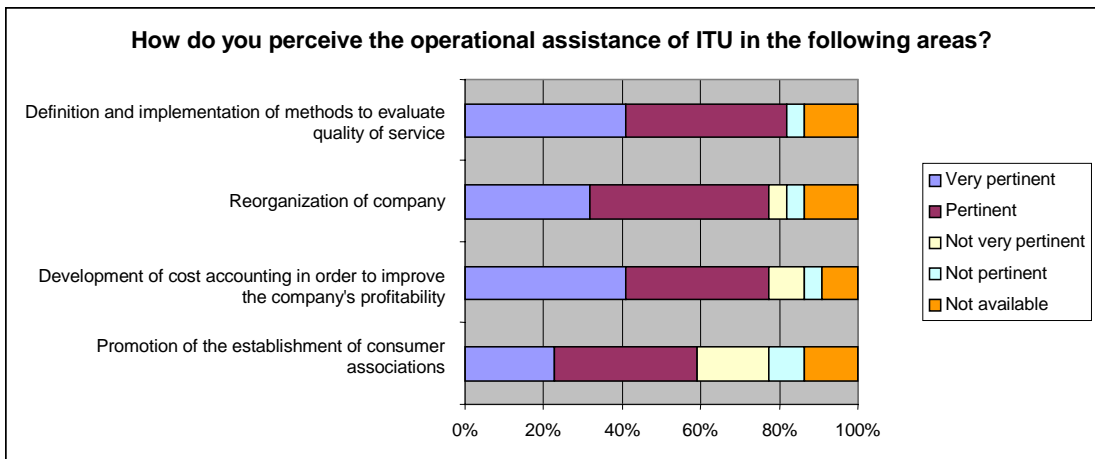


Figure 18 – Perception of ITU operational assistance

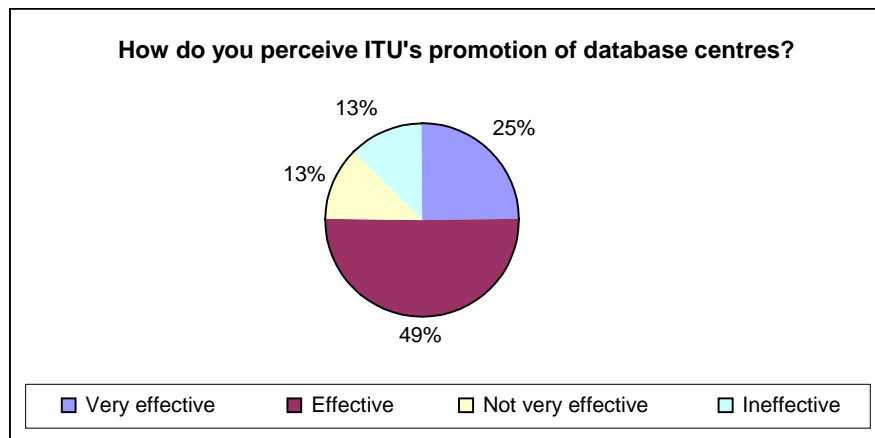


Figure 19 – Perception of ITU promotion of database centres

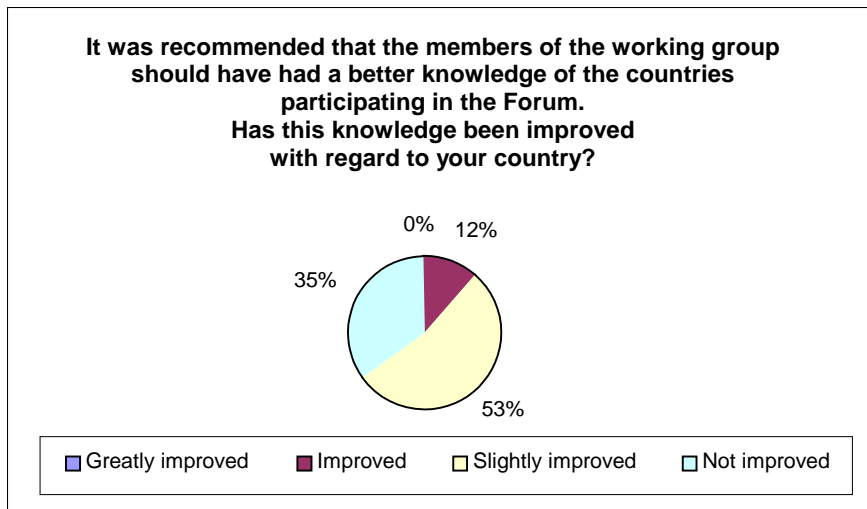


Figure 20 – Perception of the evolution of working group members' knowledge of the countries attending the Forum

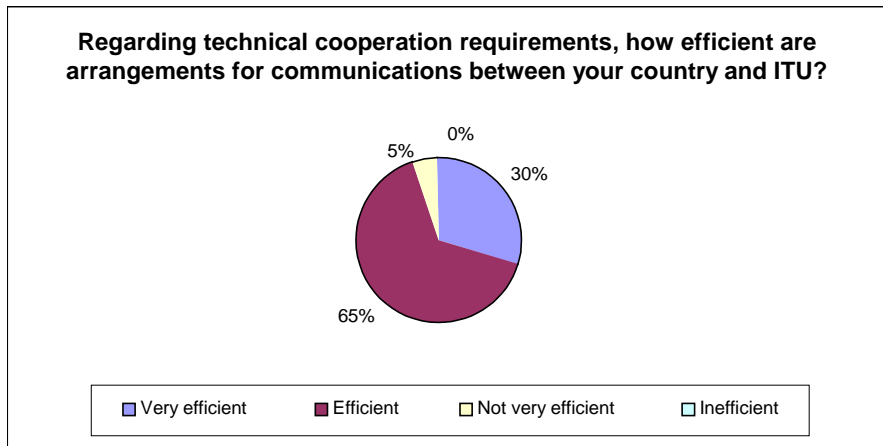


Figure 21 – Perception of the ITU communication process

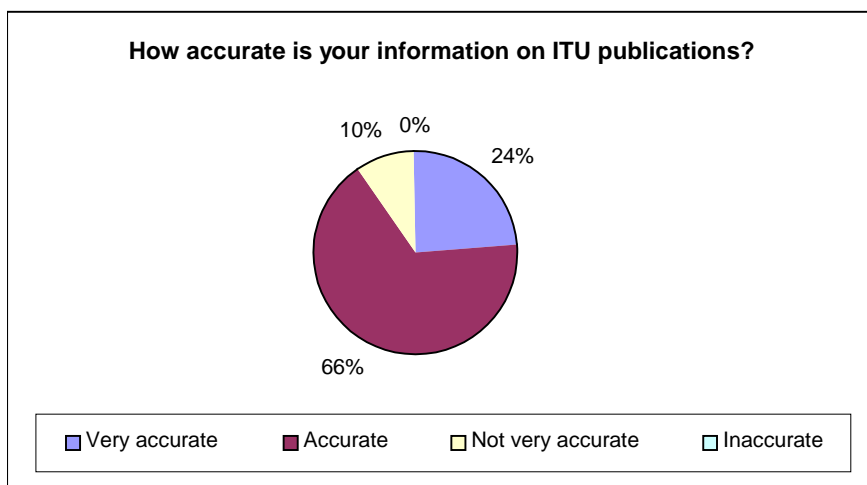


Figure 22 – Evaluation of the accuracy of information on ITU publications

3 Comments

The overall rating of ITU's role is excellent; more than 77% of countries evaluate ITU assistance as *pertinent* or *very pertinent*.

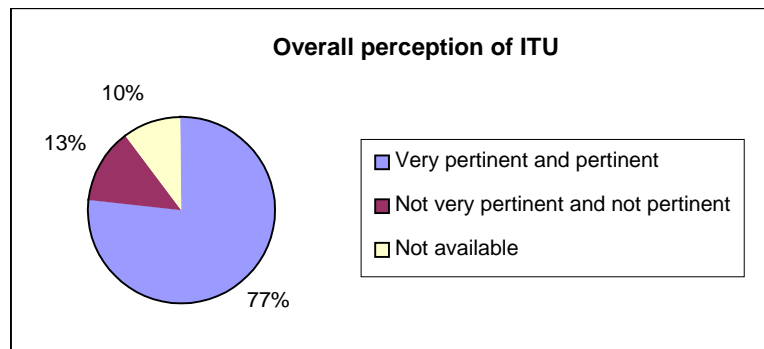


Figure 23 – Overall perception of ITU

The three figures below provide the detail of the overall perception of ITU assistance in the different areas:

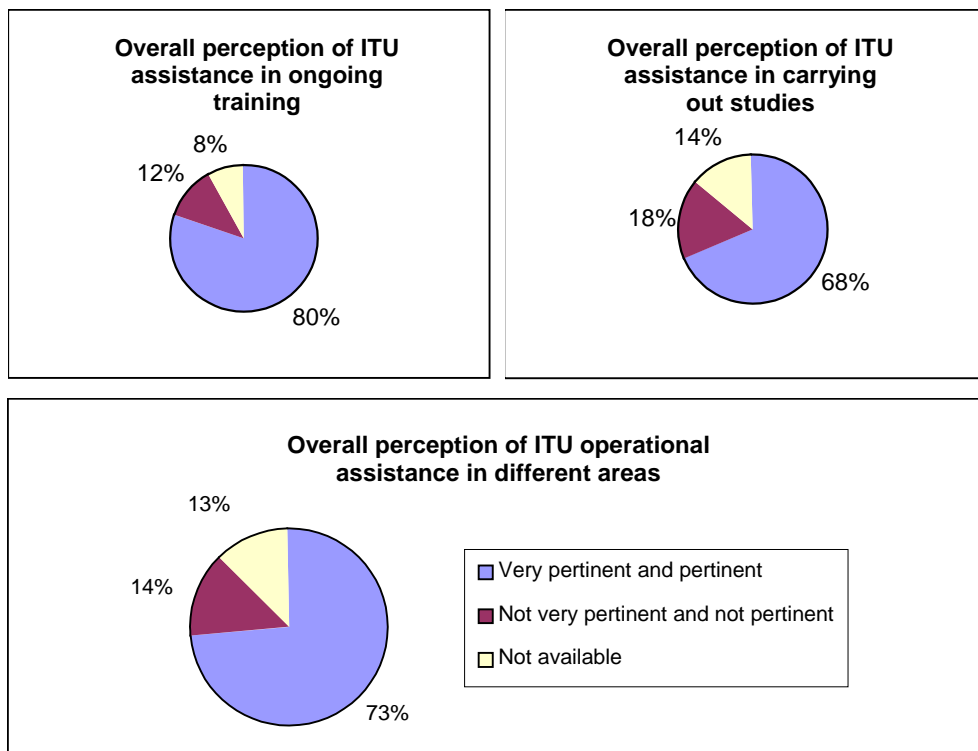


Figure 24 – Overall perception of ITU

This part of the survey shows a weak point in the perception of ITU, namely in respect of the recommendation that the members of the working group should have had a better knowledge of the countries participating in the Forum. The survey shows that 88% of countries rated the improvement of the members' knowledge as *Not improved* or *Slightly improved*.

V Comments and expectations of the fellows

1 Objectives

In order to increase the efficiency and relevance of ITU's activities, and in particular in order to ensure that future recommendations are in line with the expectations of the fellows, it is important for the needs and expectations of participating countries to be well understood. This section of the questionnaire is dedicated to assessing the current and future expectations of the fellows.

In the first part, countries were asked to comment on their expectations of ITU with regard to the development of telecommunications; in the second, they were asked what they expect from the developing countries' Forum in the near future.

2 Countries' expectations of ITU with regard to the development of telecommunications

2.1 Results of the survey

The following question was asked: "*What do you expect from ITU with regard to the development of telecommunications?*". There were 8 subtopics:

- To raise the level of awareness of decision makers concerning the role of telecommunications
- To promote the development of telecommunication networks and services
- To mobilize resources to provide assistance to developing countries
- To accelerate the transfer of technologies
- To provide information and advice on policy and structural options
- To carry out studies on telecommunication issues
- To cooperate with other organizations
- To provide accurate programme supervision and technical advice

For each topic, there were 4 possible answers:

- *Imperative*
- *Very useful*
- *Useful*
- *Not a priority*

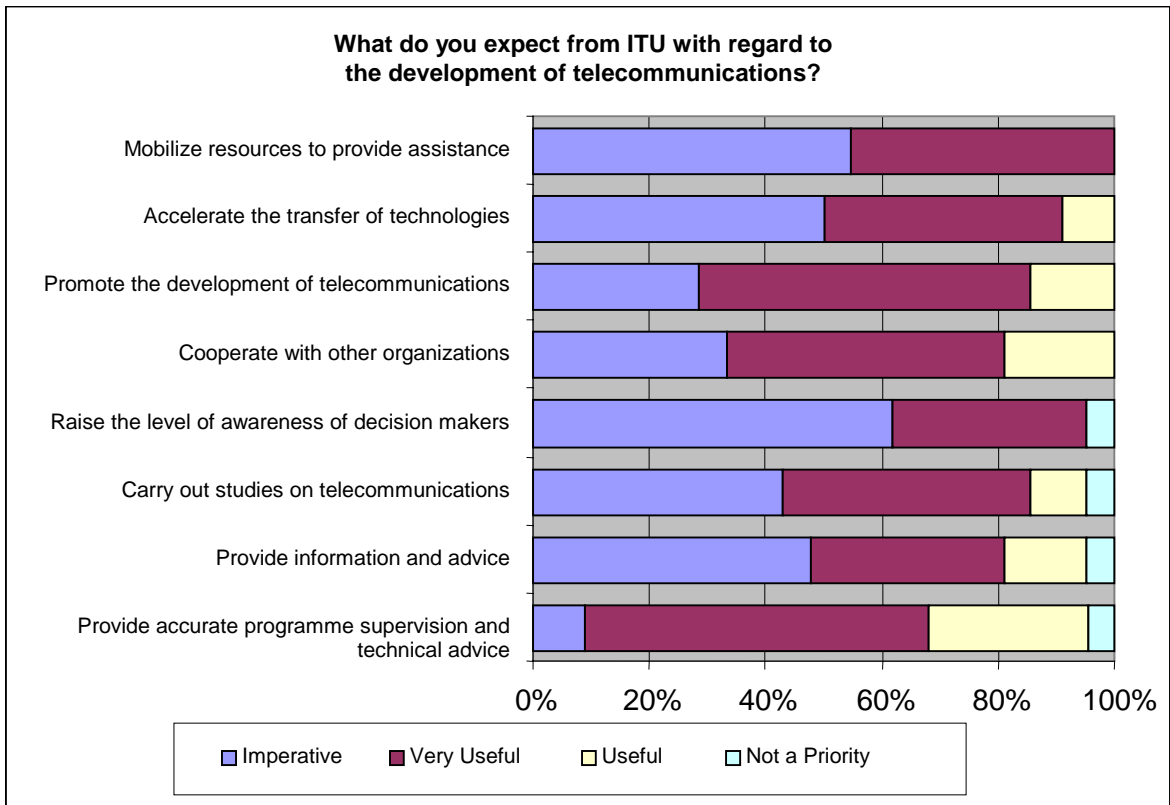


Figure 25 – Countries' expectations of ITU

2.2 Comments

The importance of carrying out studies on telecommunication issues was stressed by 85% of countries. There are three main areas:

- Technology
- Economics
- Social

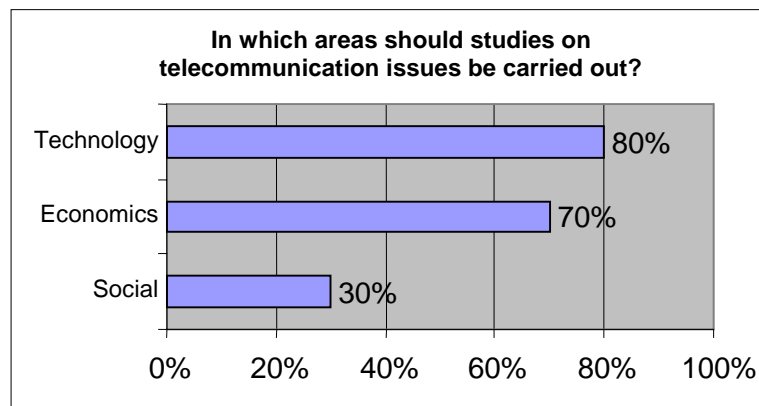


Figure 26 – Evaluation of proposed fields for ITU studies

A focus on technological issues is desired by over 80% of countries. This reflects the general lack of human and technical resources faced by many countries, as is often reflected by the survey (for example, in the preceding table, the acceleration of the transfer of technologies ranks second in Member States' expectations).

Technological issues rank first. In order to obtain a clearer idea of what countries really expect in this area, several fields were rated:

- Fixed telecommunications (Wireline)
- Mobile telecommunications (Wireless)
- Data communications
- Internet (Internet telephony, eBusiness, etc.)
- Multimedia communications
- Convergence of the Internet and mobile communications

The fields were ranked as shown in the following figure:

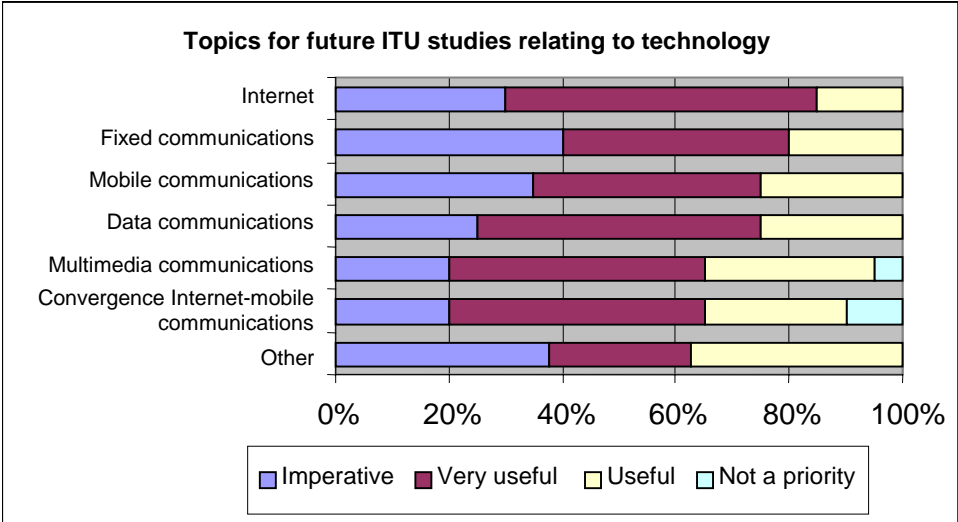


Figure 27 – Evaluation of proposed fields for ITU studies relating to technology

3 Countries' expectations of the developing countries' Forum in the near future

3.1 Objectives

In order to achieve the most efficient results at the next developing countries' Forum, the Member States surveyed were asked what they expect from it. It is hoped that the Forum programme will thus assess and concentrate on problems that are really relevant to the needs and concerns of these countries.

Expectations were grouped in seven categories:

- To stimulate further interest in telecommunication issues in developing countries
- To create stronger partnerships between ITU, telecommunication companies and Member States
- To develop more opportunities to conclude joint venture agreements

- To ensure the participation of the largest number of countries
- To better allow information sharing and knowledge transfer (publications, studies, recommendations, events, etc.)
- To better ensure that practical recommendations are adopted
- To promote the image and visibility of participating associations

3.2 Results of the survey

The overall results are ranked in order of approval in the figure below:

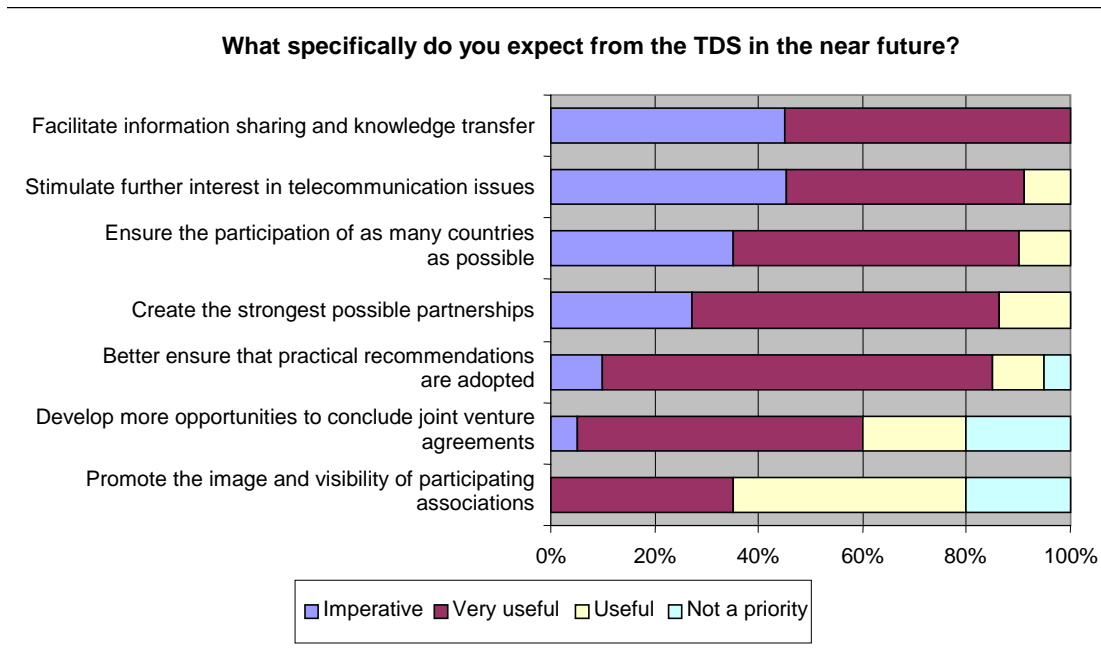


Figure 28 – Countries' expectations of the forthcoming developing countries' Forum

3.3 Comments

What countries expect most from the forthcoming developing countries' Forum is better information sharing and knowledge transfer, for example by means of publications, studies, recommendations, events, etc. This would help developing countries to more fully understand and appreciate various telecommunication issues, topics and services. The result is consistent with the general fact (already highlighted in previous sections of the survey) that the main difficulties encountered by Member States relate to technology.

To ensure the best possible dissemination of information and knowledge, the questionnaire included two vehicles that countries were asked to rate:

- The first was the organization of more regional events that would allow neighbour countries to tackle problems that are likely to be similar.
- The second was the idea of providing an efficient platform for sharing information and knowledge.

As illustrated by the figure below, these two proposals were rated *Imperative* or *Very useful* by almost all countries:

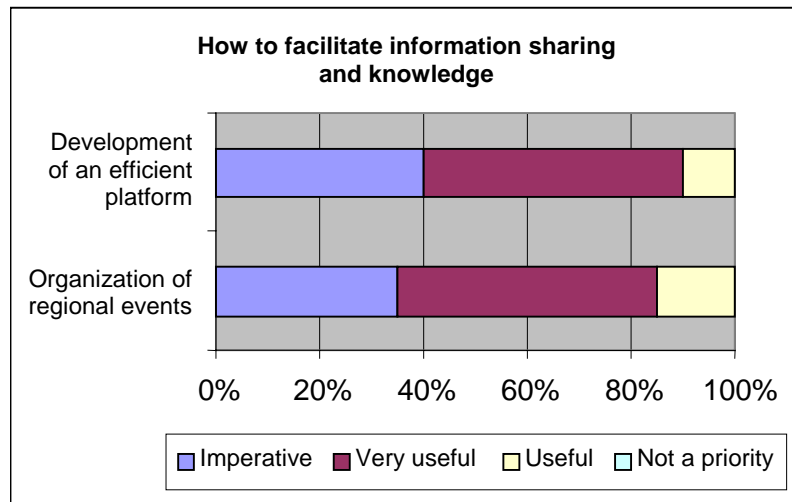


Figure 29 – Countries' expectations of the forthcoming developing countries' Forum

By way of comparison, the ITU TELECOM ASIA 2000 survey produced much lower percentages than in this study. The development of an efficient platform was rated *Imperative* or *Very useful* by 65% of countries, the organization of regional events by 59%.

VI Conclusions

The survey shows that overall countries are taking account of the ITU TELECOM AFRICA 98 recommendations. However, many countries declare facing difficulties in applying recommendations due to the geopolitical situation of a particular region, which does not provide the proper conditions for sustained economic growth.

The outcome of the ITU TELECOM AFRICA 2001 survey affirms the overall rating of ITU's roles as positive. More than 77% of the countries answering the survey ranked each of ITU's roles as *Very pertinent*.

A section devoted to the expectations of the fellows was included in the questionnaire. Topping the ranking of expectations is the need to mobilize resources to provide assistance and to accelerate the transfer of technology. In second position comes the importance of carrying out studies on telecommunication issues. There are three areas on which countries wish the studies to concentrate: technology, economics and social issues. What countries expect most from the forthcoming developing countries' Forum is better information sharing and knowledge transfer, in the form of publications, studies, recommendations, events, etc.

In order to ensure the best possible dissemination of information and knowledge, two alternatives were favoured: the organization of more regional events, and an efficient "electronic" platform for information sharing. These were rated as *Imperative* or *Very useful* by more than 80% of countries, the creation of an efficient platform being the most acclaimed proposal. Such a platform should encompass interactive services with appropriate tools for learning as well as virtual communities for information sharing.

At ITU TELECOM AFRICA 2001, participants will have a unique opportunity to actively share experiences and discuss their expectations.

Welcome to ITU TELECOM AFRICA 2001.

Hans Pieterse
Executive Manager
ITU TELECOM