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**Extracted from a presentation at TELEKOM 95 Conference
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SITA presentation :

SITA, a global network ready for the challenge of Telematics development in Africa.

Introduction

I dont know for sure if everybody in the assistance is aware of SITA network.
The world's largest Information Technology service provider has been so quiet in the past that not many people had the priviledge to hear about it. As one of the famoust telecommunications service providers said two years ago, SITA was a sleeping giant'.

The reason is simple : bound to serve a closed user group in the air transport community,there was no real need for advertising.
The objective was to provide the best quality of service to that community at the lowest cost thanks to a combination of full use of modern technologies and methodology ,together with stringent costs control.

'The right to communicate. At what price ? this joint study of ITU and UNESCO raises the right question ?

The phenomenal development of Telematics in the developed countries may not be transferable to the developing countries if it is not accompanied by serious measures,a nd we appreciate that such kinds of initiatives as the UNECA/ITU/UNESCO symposium in Addis address this issue. Everybody will agree on ITU and UNESCO's conclusion on the subject.The key to the success of this project will be the cooperation between the main operators.
According to our experience,there are two mandatory pieces (apart from funds organizations) in the jigsaw before the 'information highway 'can be opened. They are :

-the value added service provider
-the telecommunications operator

SITA comes as a de facto partner in terms of coverage and value added services provider in Africa.
Present in 214 countries worldwide among which 52 are in Africa ,using the latest technology based on Northern Telecoms packet switches handling various protocols from X28 to Frame Relay.Furthermore SITA's high Speed Network used for the transport network provides truly

managed voice services.

But how could it be possible to offer Frame Relay today in Africa ? There comes the second part of the jigsaw. As we know,the telecommunications market is not yet fully deregulated and the provision of reliable high speed international circuits still remains the responsibility of the public Telecom operators through their national PTTS.
It is therefore obvious that although the technology is available today in many African countries,its effective use requires more investment in terms of international bandwidth capacity at the level of each national PTT.

An outline History of Telecommunications development

In order to better understand the present situation, it is interesting to briefly look at the history of telecommunications progress over the past 30 years, and the forces that have shaped that progress.

There are a certain number of events, I will call them "milestones", that stand out as markers charting the course of events over this period.

The first of these milestones was the so-called "Carterphone Decision", the full significance of which was probably not appreciated at the time. In 1968, the United States Federal Communications Commission made a landmark ruling that customers were entitled to connect their own equipment, in this case an acoustic coupler, to the carriers lines. This ruling was followed by a series of further decisions, liberalising the terminal equipment market.

In the 4 years following this decision, the market for these "interconnect vendors" increased 100-fold.

My second choice of milestone is around 1984, with the ending of the quasi-monopolistic situation in North America, following antitrust action brought by the U.S. Justice Department. At that time, one carrier connected around 80% of all subscribers, under the publicity banner of the time "One policy, One system, Universal service". This marked the firm establishment of the competitive model in the United States, and also coincides with the law for privatisation of British Telecom in the United Kingdom.

The next milestone I would like to highlight is associated with technology, and is the arrival of the Personal Computer which, after a modest start with the home enthusiasts with the Radio Shack TRS80, has delivered unprecedented computing power to the individual user.

Very quickly, the need to communicate between PCs became evident. Thus PC networking, especially through Local Area Networks (LAN), and LAN interconnection, has become a major factor in data communications. LANs allow resource-sharing, permit incremental growth, and

encourage greater autonomy in an organisation, by placing the power and resources at the disposal of individuals who need them.

The combination of the computing power of the PC allied with networking, giving near-instant communicability and accessibility of files and databases, has engendered a new breed of business organisation.

This is where the organisation is no longer shaped around the physical structure of the network; rather the network has adapted to reflect the logical structure of the organisation itself. In fact, the two are inseparably entwined. The communications network has become an integral and indispensable part of the organisation.

Finally, my last chosen milestone is the advent of Multimedia; the integration of voice, data, and video.

With the increasing capabilities of the PC and networking, at first static, then moving images could be stored, displayed, and transmitted. A whole new area of activity has been opened up. The Visiophone, a curiosity of the 1970s has now become practically and economically viable. Other services are emerging, for example, video on demand; films transmitted digitally to a hybrid television/PC. The separation between voice, sound and image broadcasting, and data communications no longer exists; after all, it's all simply a case of bandwidth.

I suspect that the next milestone, not yet achieved, may well be the advent of global satellite cellular communications, permitting not just the limited voice and low-speed fax offered with today's Low Earth Orbit Satellite systems, but a wider range of applications requiring greater bandwidth. Thus communications will be independent of the infrastructure at the local or national levels.

The implications for both user and service provider will be challenging.

How market forces are shaping the telecommunications industry

It used to be said that there were three inevitabilities in a businessman's life: Death, Taxes, and Telephone Bills. These were all non-negotiable.

Deregulation and competition have ensured that at least one of those, the telephone bill, is now open to negotiation. The cost of telecommunications services, telephone included, is of major importance,

ranking as the number 2 concern of multinational businesses. The pressure on service providers to supply more for less has become paramount.

Another major force is that of the *global market*. An increasing number of companies are involved in international business, without necessarily being multinationals. Global business requires global communications. A company with a multitude of international data communications requirements does not want to be concerned with foreign telecommunications organisations or regulations; it wants to deal with one service provider, who will guarantee end-to-end performance, and provide a unique contact point for queries and complaints, fault correction, and global billing.

At an operational level, the global customer wants uniformly high network availability, plus easy access to local support facilities in the local language.

The present frenetic activity on the part of many carriers to form alliances arises from the need to offer the customer a world-wide availability, in addition to the full panoply of voice, data and messaging services.

Thus many of the carriers offering global services do so via a series of individual agreements or alliances, providing gateways with other national networks. Network management tools and facilities, maintenance procedures, available resources, and performance standards are often not harmonised. Above all, the staff and organisation you may deal with on one site will not have the same loyalties as the local staff on other sites of your global network. The lines of responsibility are blurred, and the overall result is that network performance guarantees are frequently not offered, or not respected.

Associated with the demand for global communications is the increasing need for *Value-Added Services*, and *"One-Stop Shopping"*.

As previously stated, the market requirement is not only for mere data communications, but involves the provision of value-added services, with a whole panoply of associated functionalities. It is estimated that, whilst the pure data network service offerings of the PDNs will decline, the value-added services market will double over the next five years.

An increasing number of small and medium-sized businesses are becoming users of value-added services, without the experience or resources of the larger companies equipped with DP or communications staff. Such companies often require assistance in areas such as consultancy, staff training, installation, and maintenance. From this need, the concept of "one-stop shopping" has originated.

Only a few privileged service providers are capable however, of fulfilling the need for "one-stop shopping" services world-wide.

One of the most discussed subjects of today is that of *outsourcing*. The concept is very simple; concentrate on your "core" business, and delegate the rest, by buying-in the services you require. Implemented properly, outsourcing can provide major long-term benefits to users.

As information networking becomes increasingly complex, a company is faced with a series of hard choices:

- forego the latest technology, hence possibly depriving the company of a service which could provide a critical competitive edge

- hire the (expensive) expertise to implement and manage its own network

- outsource

Outsourcing allows the company to get on with its core business, and not worry about LANs, bridges, routers and the like. The outsourcer can provide the user with a Virtual Private Network, using the resources of a common network.

Outsourcing also allows a company to take full advantage of new advances in technology or services, without the necessity for major capital investment. The fear of technological obsolescence, so prevalent with communications managers over the last decade, can be a phobia of the past.

Outsourcing to several organisations allows a company to acquire additional security for essential services.

The organisation providing the outsourcing can offer additional value-added elements, such as consultancy, installation and maintenance, service level agreements, centralised billing, and a single point of contact. It will also provide the interfacing to the different carriers, whether PTT or private, required for providing the network infrastructure.

One of the other major market forces in play is that of the *private networks*. Large companies with the need to interconnect remote offices, requiring more that the simple point-to-point facilities offered at that time by the PTTs, started creating and managing their own networks.

Other such networks have their origins in the grouping together of businesses working within the same area of activity. These closed-user networks served mainly to facilitate inter-communication, and increase the efficiency of the participating organisations./

In conclusion on this point, the market forces have combined to shake up the established order of things. The impact of new technology, the globalisation of trade, the formation of closed user groups; all have played their part.

The widespread liberalisation and privatisation of the telecommunications business has destroyed the old comfortable, if slow-moving development process, and replaced it by a commercially-driven and somewhat anarchic process that tends to lead to piecemeal improvements rather than

to global strategies. Telecommunications have become much more "tactical" and less "strategic" in the last decade.

The Profile of a Service Provider

In a survey, over 100 U.S. companies were asked what qualities they looked for in a service supplier. The following items were listed as the primordial attributes:

A. a consistent and globally uniform quality of service

B. cost-consciousness, a striving for greater efficiency and lower cost to the user

C. responsiveness to the users needs, to be "customer-driven"

This last item in fact figured top in the list of requirements in over half of the companies polled.

When asked to define their criteria for judging whether a service provider was customer driven, the following points were listed:

A. willingness to work with the customer to meet the client's own schedules and imperatives

B. flexibility to change plans to adapt to the market, and user requirements

C. provision of feedback to customer on problems or delays, before customer discovers them himself

At an operational level, customers require high network availability, with easy access to local support facilities. This point was considered primordial by multinational businesses, who valued the availability of local support, in the local language, with awareness of local conditions and contacts.

Survey participants were then requested to list the major areas of concern associated with business networking. The first of these concerns related to the complexity of modern network management, and the shortage of in-house skills adapted to this new business network environment.

The high cost of telecommunications, and the complexity of tariffs (especially for the multinational user) were also cited. Most companies also believed that cost benefits could be obtained by working through one single global service provider, rather than with the national carrier in each country.

The final concern was associated with the increasing pace of change, and the risk (and cost) of

technological obsolescence. Despite open standards, and the claims of manufacturers of upward mobility, there is real concern of being faced with the choice of investing in a technological "renewal", or being unable to profit from the performance advantages of a new functionality.

Many of the companies surveyed stated that the decision to outsource their business networking was due to the above-mentioned concerns.

As a company in the international telecommunications business since 1949, we in SITA have long realised that the business customer requires an integrated networking service, not a separate collection of lines, hardware boxes and software modules.

Evolution of SITA as a Global Service Provider

As our name indicates, SITA's origins lie in the air transport sector. Founded in 1949 by 11 members as a cooperative for the world's airlines, our exposure to the international telecommunications market started at the instant of our birth. In addition, SITA's unique situation as a cooperative meant that our customers were also our owners. Thus we are truly customer-driven; satisfying the customer was, right from the start, an obligation.

The fact that, 46 years later, with a membership of over 570 and a billion dollar turnover, would seem to indicate we have largely achieved that objective.

The air transport industry is highly competitive, witness the number of world-renowned airlines that have disappeared from our skies over the last few years.

Thus it is not surprising that, as the major service provider for the industry, SITA has long been under the most extreme pressure to reduce the costs of its services, and "provide more for less".

Making full use of modern technologies and methodologies, and stringent cost control, SITA has managed to reduce its unit message cost, one of the yardsticks used to measure our efficiency, by around 10% per year, on average.

Modern air transport is a highly complex industry, requiring a host of automated services to ensure, amongst other things, the safety of the passengers, and the commercial viability of the airlines. Air transportation as we know it today could never exist without a high level of computerisation, and efficient telecommunications. The air transport industry was one of the first to form a closed user group for telecommunications services, driven by the indispensable need for the tools of telecommunications and information processing. The continued expansion of SITA at approximately 25% per annum is proof that the Group serves its members well.

SITA has long been familiar with providing Virtual Private Network services. Despite the airlines common use of SITA for their international networking, they remain highly competitive towards each other. One of the fundamental attributes demanded of SITA's network is that of

7

data security, the inviolability of each airline's data and messages.

Thus SITA is well-versed in the concept of structuring the provision of services into VPNs. The present network provides in addition, sophisticated management tools allowing the user a seamless visibility of his connections, as though they were a truly dedicated private network.

SITA has been providing international packet switching services since the late 1960s. Other services such as global access to computer systems and databases located around the world, universally accepted today, have been provided on a regular basis by SITA since 1971. Thus our accumulated experience in these areas is unparalleled.

As the needs of the air transport industry developed, SITA's scope widened, providing inter-networking with associated manufacturing and service industries, airport authorities, hotel chains and international car hire companies, express airmail services, etc.

With the attributes of long experience in the business of global networking, a unique world-wide coverage, and a strong customer-driven company culture, it is not surprising that SITA was solicited by international business organisations, to fulfil their networking requirements.

The SITA Group now provides value-added services to over 400 multinational companies covering a wide range of activities, from banking to shipping; in addition 5 United Nations agencies, Interpol, and governmental agencies. As a prime example of outsourcing, SITA has been chosen by the Universal Postal Union as the exclusive networking service provider for POSTNET, the global X400 messaging service.

The SITA Group is unique in that, as a single source supplier, we are able to deliver a wide range of services in almost every corner of the globe, in fact in 214 countries and territories. In addition, in almost all locations, the service is monitored and controlled by SITA's own staff, physically located in each site.

As the network is controlled end-to-end by the same entity, SITA is in a unique position to control performance and service levels, and offer local customer support.

The SITA network is designed, installed and managed by the same entity. Nodal switching and access equipment are standardised. This gives a seamless uniform network, end-to-end, without the bridges and gateways often found in networks cobbled together between several distinct (and dissimilar) sub-networks.

Through its 300-strong engineering group, SITA keeps abreast of rapidly moving technology, ensuring that the network can deliver current, effective technological solutions. The success of this is shown by the award in 1994 of "Hot Product of the Year" to SITA's SNA Token Ring Access Service, by Data Communications Magazine.

Wherever possible, SITA attempts to give additional value to their service offerings. An example

of this is Frame Relay, where the service provides a Sustained Burst Support feature. This allows customers to purchase a Committed Information Rate (CIR) equal to their average traffic flow, rather than their peak requirements. The service allows the customer to exceed his CIR by up to 50% for the duration of his peak traffic period, irrespective of its duration.

Whilst planning its Frame Relay service, SITA planners took into account not only user CIRs, but burst traffic as well. The result is a net gain for the customer.

The Future

The telecommunications and networking industry is destined to become the world's largest single industry in the coming decades.

The Holy Grail of the business telecommunications industry is undoubtedly the seamless, all-embracing world-wide network. Bold and imaginative new alliances are being pursued, as the key to survival in the increasingly competitive telecommunications world. There is no doubt that the next decade will see a "sorting out" of the service providers. It is probable that, only by cultivating synergy, and achieving economies of scale, will small and medium-sized companies survive.

So far as the business user is concerned, the future is promising.

Service offerings will increase, as will available bandwidth. If ATM fulfils its promise, companies will be able to obtain bandwidth on demand. Before that promise can be realised however, an ATM network must offer LAN emulation, and products from different vendors must fully inter-operate. It is expected that the ATM picture will become clearer in 1995.

There will be regular demands from companies requiring on-site bandwidth of up to 2Mb/s, world-wide, probably within the next five years.

The greater capacities offered by Frame Relay and ATM, when widely available, will facilitate the seamless interconnection of LANs across wide area networks (WAN). This will be one of the major growth areas in business networking of the next few years.

As previously stated, value-added services will continue to grow rapidly, to the detriment of networks offering plain vanilla data transmission.

Companies will require provision of integrated services of voice, data, and video.

Outsourcing will become commonplace. Companies will regularly outsource all but their most critical or "core" functions.
Where then, will SITA be in this "brave new world" of inter-networking?

We will be at the forefront, where we have been for the last 45 years, providing seamless world-wide services for our customers, listening to the market, and fulfilling the customers' demands by providing the up-to-date services they require.

And never forgetting that in this highly competitive environment, the customer is always expecting "more for less". It is for us, as suppliers of global business networking, to exploit modern technology to the full, to fulfil that expectation.

I am sure then that 'The right to Communicate' will become a reality in Africa !

(Extract from a presentation at TELKOM 95 Conference by J. Rees ,Deputy G.M. for SITA AFRICA)