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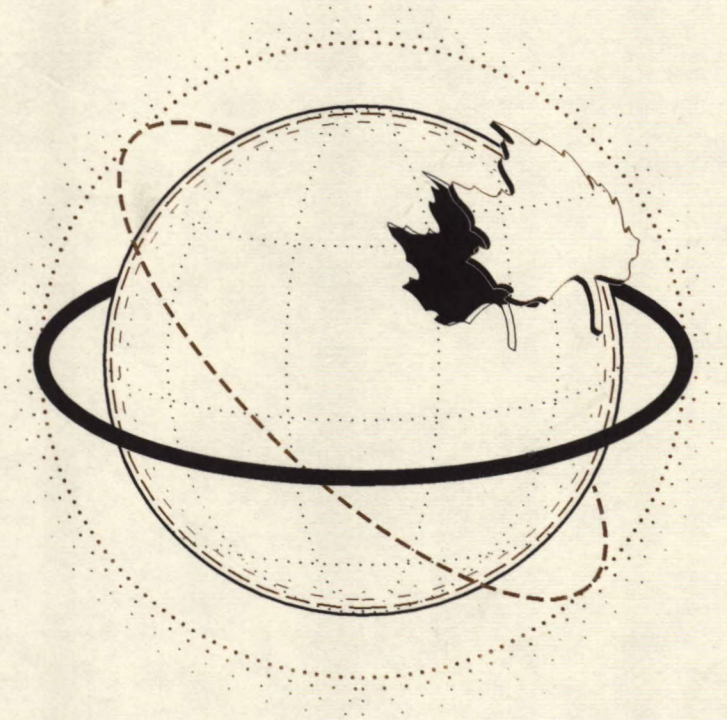

International Seminar on
Standards for
Global Connections
June 8 & 9, 1995
Ottawa

Colloque international sur
la normalisation des
connexions mondiales
8 et 9 juin 1995
Ottawa

SEMINAR PROCEEDINGS
COMPTE RENDU DU COLLOQUE

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FORWARD
Avant-propos

I have the pleasure to present to you the proceedings of the International Seminar on Standards for Global Connections held 8 & 9 June 1995 in Ottawa. This contains the Rapporteur's report and relevant papers and presentations given at the seminar.

The seminar provided a unique opportunity for discussion on standards for global connections, focusing on strategic issues related to Global Standards Collaboration with particular emphasis on Information Highways. The Rapporteur's report captures the essence of the seminar and provides a summary where specific follow-up actions could be taken by individual participants according to their needs and circumstances.

This seminar has given participants (particularly Canadians), not directly involved in Global Standards Collaboration (GSC) activities, a chance to exchange information with prominent figures in the global standardization arena, who were in Ottawa for the second Global Standards Collaboration (GSC-2) meeting.

I hope the seminar has given us all a better understanding of the role that standardization should play in building the Global Information Highway, and the timing for standardization activity.

I am extremely grateful to all the participants for their efforts in making this seminar a success.

C'est avec plaisir que je vous offre le compte rendu du Colloque international sur la normalisation des connexions mondiales qui s'est tenu à Ottawa les 8 et 9 juin 1995. Ce document contient les conclusions du rapporteur, des documents pertinents et les documents présentés lors du colloque.

Le Colloque international sur la normalisation des connexions mondiales a été l'occasion d'aborder les grandes questions que soulève la collaboration mondiale en normalisation, en particulier devant l'importance grandissante de l'autoroute de l'information. Les conclusions du rapporteur à ce sujet sont éloquentes et offrent aux participants des pistes d'actions concrètes pouvant répondre à leurs besoins tout en tenant compte des circonstances existantes.

Le colloque a permis aux participants, particulièrement ceux du Canada, qui ne sont pas impliqués directement dans des activités de collaboration mondiale en normalisation, de dialoguer avec les sommités de la scène internationale qui étaient réunis à Ottawa pour la seconde rencontre sur la collaboration mondiale en normalisation (GSC-2).

J'espère que ce colloque vous a permis de mieux comprendre le rôle que doit jouer la normalisation dans la mise au point de l'autoroute de l'information et l' àpropos de cette normalisation actuellement.

J'aimerais remercier tous les participants et ceux qui ont oeuvré à faire de ce colloque un franc succès.

Mike Israel
Chairman Président
TSACC CCCNT

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International Seminar on Standards for Global Connections

June 8 & 9, 1995

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North York, Ontario

Rapporteur's Report on
International Seminar on Standards for Global Connections

The meeting was opened by Mr Jim MacFie who welcomed all participants. The purpose of the seminar was to provide an opportunity for participants, especially Canadians, not directly involved in Global Standards Collaboration activities with a chance to exchange information with prominent figures in the global standardization area. The seminar took the form of a series of papers and presentations, each accompanied by discussion from the audience.

The opening speech was by Mr Richard Lafontaine, President of the Standards Council of Canada (SCC). He reminded participants that global standardization had, for too long, been left to junior management, but that awareness of standards was now being integrated into boardroom strategies. The need for global communications is urgent, Mr Lafontaine said, because information systems are now being used both to control the flow of knowledge and for the exchange of ideas. The challenge for standardization is immense, especially given that two dimensional graphics are now being replaced by three dimensional images incorporating movement and sound. International standards are essential to the pursuit of global connections. They also create niche opportunities for small and medium sized enterprises, converting ideas to marketable products. Collaborative efforts among standards organizations and elsewhere have not always been adequate in the past, but these organizations are now responding to the challenge. The information highway is inextricably linked to international standards, and thus the standards process can no longer afford to be reactive. When collaboration fails either internationally or nationally, serious delays are introduced. Collaboration within Canada is as necessary as collaboration internationally, and this is being accomplished through the Standards Council of Canada and Telecommunications Standard Advisory Council of Canada (TSACC), and will soon be facilitated through the Canadian standards information network. For now, the Standards Council will be accessible through Internet E mail. All stakeholders need to become involved.

Dr Theo Irmer, Director of the Telecommunication Standardization Bureau of the International Telecommunication Union (ITU-T) spoke next. He noted the large volume of material moving through the ITU-T in response to the need for global standardization, and he described how standardization was becoming increasingly "paperless" by using information technologies. He asked whether a "paperless" process can serve the needs of the less developed countries at this time, suggesting that it will be necessary to use the older methods also for developing standards the foreseeable future.

Questions were raised in the discussion after the first session: about the harnessing of the technology for the production of documents, particularly document structuring tools, about co-operation between ITU-T and ISO/IEC and, finally, about the potential for integrated standards development, for example in dealing with all aspects of Broadband ISDN or Intelligent Networks.

In his presentation, also on the first day of the seminar, Mr Thomas Frost, Chairman of ISO/IEC JTC l/SC18 outlined developments in JTC 1 subcommittees, especially as they relate to rapid standardization, collaboration with other standards bodies, and to the standards developed by other types of organizations. He began his talk by identifying the committees within JTC 1, and its main areas of concentration supporting global connections. He then noted developments being made to speed up the standards process within JTC 1, including both the use of simultaneous new work items and Committee Draft ballots, and modified procedures for Draft International Standards. He noted the increasing reliance upon information technologies in the work in JTC 1. He then outlined the Business Analysis approach now adopted by JTC 1, which involves: (l) identifying JTC l's products and services, customers and suppliers; (2) identifying its competitors and potential alliances, and (3) identifying the tools and factors to be gauged in measuring the success of JTC l. Mr Frost spoke extensively about the co-operative relationships being developed not only between JTC 1 and ITU-T but also with the Internet Society. Finally, Mr Frost outlined how JTC 1 was dealing with standards solutions developed outside JTC 1,. standards and specifications developed by industry consortia for example. He outlined JTC 1's proposed policies and actions for recognizing publicly available specifications and for collaborative work with the groups developing such specifications (approval of these policies expected at the June 1995 meeting.) Questions to Mr Frost focused on the availability of JTC l standards information, especially for small and medium sized enterprises, and on the date for a proposed meeting between ISO/IEC and ITU on the global information infrastructure.

Mr Andrew Schaper was the luncheon speaker on the second day, and he provided an overview of the users' perspective on global standardization in free trade markets. He began, however, by distinguishing between users and customers, indicating that for the purposes of standardization, "customers" was the better term, because users no longer have to accept what was given to them but increasingly operate in an environment of choice. For customers, communications is not an end goal but a tool. Business customers are interested in standards, in spite of the fact that they often do not participate in standardization directly, Mr Schaper said, Business customers make their needs and philosophies known through their own organizations, such as the Canadian Business Telecommunications Alliance (CBTA). These needs are: (l) multi-vendor, multi-technology systems; (2) reductions in costs through shared research and pre-competitive product development; (3) a "level playing field" for competition; (4) greater innovation in value added, but not basic services; (5) global compatibility and (6) the widest possible choice in selecting vendors. Standardization prevents vendor lock-in, promoting competition and lower prices. It affords third party testing and verification, and ensures that there are checks and balances in the system. Standards are not the goal, but only the means to these objectives, however. Standardization is also essential to the success of the global information highway, but many roadblocks still exist, including regulatory problems. Mr Schaper discussed the changes proposed by CBTA for regulation, including changes to the governing legislation for broadcasting and telecommunications.

A major portion of day two of the seminar was devoted to presentations from the organizations who were participants in the Global Standards Collaboration meeting (Ottawa, June 6-8, 1995), including the Australian Telecommunications Standardization Committee (ATSC), the European Telecommunications Standards Institute (ETSI), the Telecommunication Technology Committee of Japan (TTC), the Telecommunications Technology Association of Korea (TTA), Committee T1 of the United States and the Telecommunications Standards Advisory Council of Canada (TSACC).

Dr Horton of ATSC noted the great importance of telecommunications as a building block of the modern economy, and suggested that the interconnection requirements globally are now of a scale rarely seen in earlier times. For standards organizations, this means moving away from the traditional inward-looking approach, taking account of the voice of industry expressed not only through standards organizations but also in forums where the industry requirements are more easily identified. Australia has relied on ITU-T Recommendations where available, but recently there has been some divergence from this pattern, for example in cellular mobile. This divergence has come as a result of market pressure to provide services in advance of ITU-T Recommendations, and it highlights the need to participate in the work of other standards bodies in addition to the ITU, even while recognizing the pre-eminence of the ITU. Dr Horton described the developments at the G7 meetings, especially the implications for standardization arising from the global information infrastructure. He indicated that Australia had taken the concerns of the G 7 to heart, and was now focusing on the transition between existing technologies and standards and those required for the future global information infrastructure. Dr Horton reviewed recent policy documents from Australia illustrating how Australia was dealing with the new challenges.

Mr Hamelberg of ETSI provided an overview of the many standards related organizations working within the European context, and spoke about the need for co-ordination within Europe, and between the European and international standards organizations. He outlined several initiatives now being taken to integrate efforts related to standardization and to provide a strategic overview of what needs to be done. Increasingly, the role for the National Standards Organizations is becoming limited, he said, because of the emphasis on European and international levels. Mr Hamelberg noted that international standards were not always available, and that they often contained too many options. He also drew attention to the importance of major R & D initiatives in Europe with respect to standards as well as technology, and to the other groups (not standards organizations) now producing documents relevant to standardization. He indicated how essential it was to have good relations with these bodies. While the focus in ETSI is on telecommunications, ETSI also deals with private networks, applications in Information Technology (IT), radio and broadcasting. Mr Hamelberg outlined a model of the stages in technology development, starting with R & D and concluding with operation, noting how the early stages can contribute input to standardization, the later ones can provide feedback to standardization. Mr Hamelberg also reported that ETSI can now move from the adoption of a work item to a standard within two years, which is comparable with the pace set by other organizations, but that ETSI must also deal with a two step consultation process which produces many comments.

He reviewed some developments within ETSI with regard to user involvement, noting that while the technical work was best done by experts, experts were not the right people to establish need for work.

Dr Ishikawa of TTC, Japan spoke about how TTC was dealing with the promotion of interconnectivity and interoperability, seeking to realize cost reductions and greater competition, clarifying the direction and the pace of realization of new technologies, even while maintaining security and reliability and promoting technology transfer. He noted that the factors necessary for standardization in the future are: greater responsiveness to the market, more flexibility in the standardization structure, and more co-operation among the media. TTC has done a major study on industry forums, illustrating their very rapid growth since 1990. Forty-one per cent of the forums are involved in creating specifications and guidelines for implementation and interconnectivity, sixteen per cent more in the creation of pre-standards, and a further sixteen per cent in the creation of substantial de facto standards. De facto standards have gained supremacy in some business fields and are now treated as standards. They can be created quickly; they reflect market needs, and they can be experimental, but they are neither open nor are all issues connected with IPRs necessarily dealt with adequately. Dr Ishikawa outlined a model illustrating the relationships between de facto and official standards, indicating that official standards were pertinent to the network infrastructure, and possibly also to the communication equipment and information distribution layers. De facto standards pertain mainly to applications. Dr Ishikawa said that in the middle layer - communication equipment and information distribution - de facto standards can usefully be adopted as official standards, assuming that conditions for IPR, openness and non-exclusive treatment of standards can be recognized and met in advance.

Dr Minho Kang of TTA, Korea outlined changes in the standardization environment, indicating that the standardization had now become more time consuming and complex even while users required more rapid standards development. The response in the market has been the creation of specific interest groups for de facto standards. These new groups have challenged international standardization organizations. Dr Kang then turned attention to the information infrastructure, noting that the standards for the global information infrastructure integrate a wide range of components ranging from communication capabilities to information resources and content. The challenge is to allow diverse systems, products and services, all offered by multi vendors, to communicate with each other. In Korea, competition has now been introduced in the domestic market for both international and toll telephone and value added data communication services, and a massive B-ISDN development project is underway, which will be the backbone for the Public Information Super Highway. It is estimated that 60 billion dollars (U.S.) will be invested in the Korean information infrastructure by the year 2015. Dr Kang outlined the model and plans for the evolution of the New Korean Net, indicating that the governmental information superhighway (government funded, government as users) would be the focus of efforts in the time period from 1996 through 2010, while the public information superhighway - involving interactive multi media services to end users - would take longer to realize. Dr Kang also outlined the Korean standards organizations, and their relations with standards and other organizations both nationally and internationally. He indicated that the

emphasis in Korea would be on using existing domestic standards organizations, on developing core technologies, and on interface standards. TTA was in the process of re-engineering itself, focussing attention on the high interest areas for the new Korea Net and to introduce standards certification and testing system.

Two new subcommittees had been added, dealing with IPR terminology and EDH, and TTA will use interim standards where appropriate. Dr Kang then reviewed developments with respect to the Asia Pacific Information Infrastructure, including several meetings, and also the principles outlined in the Seoul declaration (May 1995)

Mr Peterson, Vice Chairman of Committee T1, introduced the model now guiding Committee T1's approach to standardization. Emphasis is now being placed on "the network of networks", with multiple network and service providers linking different users. Committee T1 is focusing efforts on the common core of network capabilities among these various network and service providers. In this connection, Mr Peterson also provided a model of a standards life cycle which includes, among other things, recognition of implementation requirements in developing user profile implementation agreements and implementation feedback. He outlines Committee T1's eight focus areas, and several initiatives being taken to increase industry awareness. Great emphasis is being placed in Committee T1 upon the management focus, thus on the improvement of quality and timeliness of outputs, building up liaisons with many groups, and increasing industry awareness. In connection with collaborative efforts, Mr Peterson noted that a Consultative Committee Telecommunications (CCT) had been established in connection with NAFTA, facilitating close working relationships with Canadian and Mexican colleagues. He also noted developments in CITEL undertaken to increase the profile of standards related activities. A collaborative relationship with TIA was developing, and Committee Tl was playing an important role as a charter member in the US Information Infrastructure Standards Panel (US-IISP.)

Mr McCrum reported on the situation in Canada, in particular the Working Group on the Information Highway set up by TSACC which has been actively working with the Canadian Information Highway Advisory Council, and which collaborates with the U.S. IISP. He noted that the market was being driven by business alliances. Standardization would be greatly assisted by having models of the global information infrastructure, although it should be recognized that some of the interconnections will not be developed. ITU has a leadership role to play, but this means developing new working methods.

In the discussion which followed these presentations, a participant, from the audience asked whether TTC had identified a list of de facto standards, to which Dr Ishikawa replied that there were issues to be dealt with related to IPR, access and the relationship of de facto standards to ITU recommendations. Mr Hamelberg noted that in Europe, adopting publicly available specifications was still to be experimented with, yet some were widely accepted.

It was suggested by a participant that models were needed to deal with fast emerging technologies more gracefully than the traditional approaches. Mr Peterson responded by noting that the model being used in Committee T1 had changed. Mr Hamelberg said that it would be an error to try to standardize everything. There is a need to concentrate on the platforms, and on the basic facilities. Beyond this, there was considerable room for differences. Another participant, a service provider, suggested that the most serious problems lie with timing, and that, in fact, the real need - given the rapid pace of technology - was for something useful within six months. Mr Hamelberg noted that a six month time frame - which is what service providers would like to see - is unrealistic, but that many problems will be solved with the development of the next generation of technologies. Dr Horton suggested that interim standards are one possible solution to the issue of timeliness, but that it was a bit of "a free for all" at this time. There is always difficulty in "picking winners" with respect to the technologies needing standardization and a need to accommodate a diversity of interfaces. Draft and de facto standards have always existed in the market: they can offer a solution if they can be made available in a non-discriminatory fashion and adopted in due course.

There was some discussion of the situation with respect to multiplicity of standards for personal communications. It was suggested that, while there appeared to be many standards in existence, these often pertained to different applications. There was also discussion of the situation in Europe, where countries are still permitted to have national additions to the European standards. Finally, there was discussion about the recognition of test results from different sources.

In the afternoon of the second day, attention was turned to the information infrastructure. This began with a presentation by Dr Alan Aitken, Executive Director OCRInet Inc., who provided an overview of work in progress with the OCRInet in the National Capital Region (Ottawa and surrounding area). This was followed by a panel on the information highway initiatives in the countries and regions represented by the Participating Standards Organizations in the Global Standards Collaboration.

In this panel discussion, Dr Horton noted that Australia has been moving towards industry self regulation especially in connection with the information infrastructure initiatives. He also noted that the future of the information infrastructure is dependent upon standardization. In Europe, Mr Hamelberg noted, the information infrastructure must be more than the interconnection of networks, but must take into account the different languages and cultures involved and must deal with multiple applications. Some regulation may be required to maintain consumer confidence. The information infrastructure in Europe might look different from that elsewhere for these reasons, but it will be fully integrated with the global information infrastructure. Japan is faced with an aging society, and with an over concentration of population in Tokyo, among other issues. The information infrastructure will be an important tool to deal with such issues creatively. APEC will play an important role in the information infrastructure, following the principles adopted in the Seoul declaration.

Emphasis was given by all panel members to the high costs of developing the global information infrastructure, and to the problems of ensuring that it does not involve duplications of effort and technological capacities. The investment will come from industry, and any company which wishes to stay in business will have to make this investment. Governments are often the first major users, and new applications will be stimulated by government use. The information infrastructure will not come about in one step, but will require attention be paid to the transition between the current systems and technologies and the new ones.

The seminar was closed by the Chairman, Mr Jim MacFie who thanked everyone for their participation and useful remarks.

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KEYNOTE SPEECH

STANDARDS CHALLENGE RELATED TO GLOBAL CONNECTIONS

Richard Lafontaine
President, Standards Council of Canada

The Standards Challenge Related To Global Connections

presented by

Richard Lafontaine
President, Standards Council of Canada

to

the International Seminar on Standards for Global Connections

Ottawa

June 8, 1995

THE STANDARDS CHALLENGE RELATED TO GLOBAL CONNECTIONS

Richard Lafontaine

On behalf of the Standards Council of Canada, I would like to welcome you to this International Seminar on Standards for Global Connections. I would especially like to welcome our guest speakers who have come from around the world to share their ideas on the topic.

Peter Drucker, the well-known guru of management and industrial change, tells a story of an information technology conference held in 1882 by the German Post Office. The topic was "how not to be afraid of the telephone". Chief executive officers from a variety of prominent companies were invited -- but not a single individual showed up. As it turned out, executives of the day were insulted by the idea that they should use the telephone. In their minds, the telephone was for support staff only.

Obviously, things have changed a great deal since 1882, but in some ways, they have stayed the same. There are still those in senior positions who are satisfied to leave the question of global connections to their juniors. Indeed, the same is true in the case of standards. There are still certain senior executives who remain dimly aware of the importance of integrating technology into board-room strategy. They have obviously not yet grasped the importance to their industries and companies of doing so. Increasingly, however, we are seeing the appointment of more and more chief information officers in business enterprises, which happily indicates a shift in attitude on the part of senior management.

When we speak of global connections, we are talking about the ability to transmit information from point to point seamlessly, quickly, easily and inexpensively. Business people today want to be able to send a multimedia presentation to a client 5,000 kilometres away as easily as they send an e-mail message to the office down the hall. And they don't want to have to worry about equipment compatibility.

Global connections must make life easier, not more complicated. Back in the 1970s, computerization enabled companies to improve the processing of financial information, such as profit and loss statements and accounts receivable.

In the 1980s, as a result of the growing sophistication of information technology, computers began to be employed to analyze operational information related to inventory, ordering and shipping. This is the period during which personal computer networking also became prevalent in the office.

The 1990s have seen technology take yet another leap forward. Today, information systems are increasingly being used to control the flow of knowledge -- acquiring it and disseminating it within the enterprise, across the country and around the world. Global connections aren't just for exchanging numbers anymore, they are for exchanging ideas.

The standards challenge related to global connections in the 1990s is immense. International interfaces must accommodate differences in language, currency, business practices and local customs. Simple, two-dimensional graphics are being replaced by three-dimensional images that incorporate movement and sound, and business people are demanding applications that not only analyze current conditions, but that also look into the future.

International standards are central to the pursuit of global connections. The existence of well-defined, widely-applied standards creates niche opportunities for small and medium-sized companies that develop new accessories and applications for standardized equipment.

Microstar Software is an example of a Canadian company that has built a thriving business developing computer programs that support international information technology (IT) standards. One area the company has focused on is Standard Generalized Markup Language, or SGML, the International Organization for Standardization (ISO) standard that provides a common structure for electronic documents.

Obviously, the existence of a standard document structure is important to the electronic exchange of information. But converting documents to SGML format can be a complex task. Microstar saw this not as a problem, but as an opportunity. The company developed software products called "NEAR & FAR" and "NEAR & FAR AUTHOR" which convert complex SGML syntax into an easy-to-understand graphical representation.

Microstar represents but one of many dynamic Canadian companies capitalizing on the existence of international standards, and their development. AIT Corporation is another good example. AIT's active involvement in an ISO technical committee, for instance, resulted in the company's now well-known machine-readable passport technology.

In addition to creating new business opportunities, international standardization plays a central role in converting ideas to marketable products. Many of you probably know the story of the fax machine. The idea for fax transmission goes back 150 years. However, the technology didn't really take off until the 1980s, with the development of the "Group 3" protocol -- a standard that enables machines made by different manufacturers to talk to one another. Would the technology for the fax machine be so sophisticated today were it not for standards?

ISO and its two counterparts, the International Electrotechnical Commission (IEC) and the International Telecommunication Union (ITU), have responded to the need for standards in a great variety of areas. Today, there are international standards for the terminology of global connections, computer keyboards, character sets, programming languages, and magnetically coded information on credit cards.

Other international standards in various stages of development deal with electronic imaging, industrial robots, and interface specifications for a broad range of computer and telecommunication systems and components, which, in many respects, also support the information highway. As a result, one might say, the information highway itself is inextricably linked to standards.

But the era when the standardization community could afford to be reactive -- to wait until a need becomes obvious, and hastily throw together a committee -- is over. To successfully provide the standards needed for tomorrow's global connections requires strong leadership and vision in the standards community today. And this leadership must be backed by a broadbased collaboration, which brings together all players in the game, from users to producers to regulators. As we might say in hockey parlance, this game is no longer limited to the local frozen pond!

An excellent example of success in collaboration is the ISO/IEC joint technical committee on information technology (JTC1). Back in 1987, the formation of a joint ISO and IEC committee seemed somewhat radical. Today, it is one of the most active standardization committees in the world, bringing together 28 countries into some 100 subcommittees and working groups, which are working on several hundred standards and other documents.

Since 1987, ISO, IEC and ITU have built on the success of JTC1, establishing an increasingly close technical working relationship. Today, the three organizations are even collaborating on the development of multimedia standards that will revolutionize the way we think of and use information technology.

This cooperation is not only taking place at the technical level, but also at the policy level. Only last fall, the three organizations established a joint Information Technology Strategies Cooperation Group (ITSCG) to make recommendations about possible areas of common choices, harmonization in implementation and strategic planning.

Another joint effort between ISO, IEC and the United Nations Economic Commission for Europe focuses on the development of Electronic Data Interchange (EDI) standards.

The need for continued collaboration is absolutely critical. This fact was made clear recently when Canada was forced to appeal the decision to approve an international information technology standard. The standard called for the use of two-pair cabling in building wiring, even though most emerging technologies need four-pair cabling.

The draft standard in question had been approved by international ballot last July. It was almost ready for publication when the Standards Council of Canada formally objected, arguing that a two-pair requirement was in conflict with an earlier standard for local area networks (LANs), and that it may prevent the full operation of emerging new LAN technologies.

The appeal was successful and the new standard will be edited accordingly. However, the damage done involves significant delay in ratification and publication of the standard, demonstrating what can happen when collaboration breaks down, or coordination falls short.

It has been estimated that the information highway carries with it potential commercial opportunities totalling 3.5 trillion dollars. This, of course, is a rough estimate, given that there are almost unlimited possibilities for products, applications and information that might be delivered through this cable, fibre and now increasingly wireless infrastructure.

To share in this bounty, Canadians must be able to participate effectively in the development of international standards and to take advantage of opportunities that arise as a result of standardization. Collaboration and leadership in standardization are needed at the national level as much as they are at the international level. Here in Canada, the Standards Council must provide leadership in promoting the use of new technologies in the field of standardization. It must also become a catalyst for the development of partnerships, and a bridge between government economic policy and industry strategy in the area of standardization. In order to achieve these ends, the Council is becoming more focused and strategic, as it should.

One obstacle to effective participation in international standardization for Canadians has been the high cost of travelling. To overcome this barrier, the Standards Council is coordinating the development of an online Canadian standards information network. By the simple use of a modem, small and medium-sized companies will be able to participate in the standards process, and will also receive standards and standards information instantaneously, as it becomes available. Close coordination with similar efforts in the United States is expected to result in a North American standards network, enabling the continent to move ahead with the economic integration foreseen by the NAFTA.

In the meantime, however, the Standards Council will be accessible by Internet E-Mail starting in the fall. This new connection between the Council and its clients will provide enhanced service and accessibility. Interested individuals will have Internet access to all Council employees, to our databases on Canadian and foreign standards, and to a "home page" which will feature facts about the Council, its programs and activities.

The Telecommunications Standards Advisory Council of Canada (TSACC) is yet another example of Canadian collaboration. TSACC is a coalition of private and public sector stakeholders focusing on strategic issues for Canada in information technology and telecommunications standards nationally and internationally. One such issue is a proposed IT & T standards network, based on a model currently being examined by the Standards Council Working Group on Information Technology (WGIT). This follows an evaluation of the TSACC IT & T database field trial conducted last year with the technical support of the Standards Council.

Just this week, TSACC hosted the Global Standards Collaboration Group, or GSC -- itself an excellent example of international collaboration in addressing standardization requirements. GSC provides a forum for coordinating the work of ITU with regional telecommunications standards efforts.

Whether internationally or nationally, for the standards community, the challenges of global connections are very clear: leadership, collaboration and responsiveness, with a particular emphasis on timeliness.

Standards must continue to be at the heart of technological evolution, and the standards community must anticipate trends, and be responsive to the requirements of users.

To this end, we need to effectively find solutions which will:

- broaden the participation of stakeholders in the standards development process, particularly small and medium sized enterprises; and

- speed up the standards-development process by using communications and information technology tools.

By doing so, we will be able to more quickly respond to the challenges of the global marketplace and thus manage more effectively the exponential growth of technological knowledge.

In closing, I would like to leave you with a quote from Tom Peters: "We've almost finally embraced the notion that change is the only constant. Well, sorry. Forget change! The word is feeble. Keep saying 'revolution'. What we do, what we make, how we work; each is the subject of nothing less than a revolution."

Le défi de la normalisation et les connexions mondiales

présenté par

Richard Lafontaine,
Président du Conseil canadien des normes

à l'occasion du

Séminaire international sur la normalisation des connexions mondiales

à Ottawa

le 8 juin 1995

LE DÉFI DE LA NORMALISATION ET LES CONNEXIONS MONDIALES

Richard Lafontaine

Au nom du Conseil canadien des normes, j'aimerais vous souhaiter la bienvenue au Séminaire international sur la normalisation des connexions mondiales. J'aimerais en particulier souhaiter la bienvenue aux conférenciers qui sont venus de tous les coins du monde pour exposer leurs idées sur le sujet.

Peter Drucker, ce gourou bien connu du changement industriel et gestionnel, raconte l'histoire d'une conférence sur les technologies de l'information organisée en 1882 par la Société des postes d'Allemagne. Le sujet de discussion était : «comment maîtriser sa peur du téléphone». Les chefs de la direction de diverses entreprises importantes y étaient invités -- mais personne n'y est allé. Il s'est avéré que les cadres dirigeants étaient insultés à l'idée qu'ils devaient utiliser le téléphone. Ils pensaient que, à l'époque, le téléphone n'était destiné qu'au personnel de soutien.

De toute évidence, les choses ont beaucoup changé depuis 1882, mais à certains égards, elles sont restées les mêmes. Il y a toujours des cadres supérieurs qui se contentent de laisser à leurs subalternes le soin de s'occuper de la question des connexions mondiales. En fait, il en est de même dans le cas des normes. Il y a toujours des cadres supérieurs qui sont vaguement conscients de l'importance d'intégrer la technologie dans leurs stratégies d'affaires. Ils n'ont évidemment pas encore saisi l'importance pour leurs industries et leurs entreprises de le faire. Toutefois, un nombre de plus en plus grand d'agents principaux de l'information sont nommés au sein d'entreprises commerciales, ce qui indique un heureux changement d'attitude de la part des cadres dirigeants.

Par connexions mondiales, nous entendons la capacité de transmettre d'un point à l'autre de l'information, rapidement, facilement et à peu de frais, peu importe les systèmes utilisés. Aujourd'hui, les gens d'affaires veulent pouvoir envoyer une présentation multimédia à un client situé à une distance de 5 000 kilomètres aussi facilement que s'il s'agissait d'un message électronique à diffuser à même leur propre bureau. Et ils ne veulent pas être obligés de se soucier de la compatibilité des équipements.

Les connexions mondiales doivent faciliter les choses, et non les compliquer davantage. Au cours des années soixante-dix, l'informatisation a permis aux entreprises d'améliorer le traitement des renseignements financiers, tels que les états des profits et des pertes et les comptes clients.

Dans les années quatre-vingt, par suite du perfectionnement croissant des technologies de l'information, les entreprises ont commencé à se servir des ordinateurs pour analyser l'information opérationnelle ayant trait aux inventaires, au placement des commandes et à l'expédition. C'est durant cette période que le réseautage des ordinateurs personnels est devenu chose courante dans le milieu des affaires.

Les années quatre-vingt-dix ont été le témoin d'un autre bond en avant des technologies. Aujourd'hui, on a de plus en plus recours aux systèmes d'information pour contrôler le cheminement de l'information -- son acquisition et sa diffusion, soit au sein de l'entreprise même, d'un bout à l'autre du pays ou dans le monde entier. Les connexions mondiales ne sont plus uniquement réservées au seul échange de numéros, elles servent aussi à échanger des idées.

Le défi que pose actuellement la normalisation des connexions mondiales est énorme. Les interfaces internationales doivent pouvoir accepter les différences de langues, de monnaies, de pratiques commerciales et de coutumes locales. Aux graphiques simples, à deux dimensions se substituent les images à trois dimensions qui incorporent le mouvement et le son, et les gens d'affaires exigent des applications capables d'analyser non seulement les conditions actuelles, mais aussi les conditions futures.

Les normes internationales sont indispensables dans la quête de connexions mondiales. L'existence de normes bien définies et d'application étendue crée des créneaux pour les petites et moyennes entreprises qui mettent au point des nouveaux accessoires et des nouvelles applications pour le matériel normalisé.

Microstar Software est un exemple d'une entreprise canadienne aux affaires florissantes qui met au point des programmes informatiques capables de soutenir les normes internationales pour les technologies de l'information. Cette entreprise a concentré son attention, entre autres, sur le «Langage normalisé de balisage généralisé» ou «SGML», une norme de l'Organisation internationale de normalisation (ISO) qui fournit une structure commune pour les documents électroniques.

De toute évidence, l'existence d'une structure de document standard est importante pour l'échange électronique des données. Mais convertir des documents en un format SGML peut être une tâche complexe. Microstar n'a pas vu cela comme un problème, mais plutôt comme une occasion à saisir. L'entreprise a mis au point des logiciels appelés «NEAR & FAR» et «NEAR & FAR AUTHOR» qui permettent la conversion d'une syntaxe SGML complexe en une représentation graphique facile à comprendre.

Microstar n'est que l'une des nombreuses entreprises canadiennes dynamiques qui tirent parti de l'existence des normes internationales et de leur élaboration. La société AIT en est un autre bon exemple. La participation active d'AIT à un comité technique de l'ISO, par exemple, a débouché sur la technique, maintenant bien connue de cette entreprise, des passeports lisibles par machine.

En plus de créer des nouvelles possibilités d'affaires, la normalisation internationale joue aussi un rôle central dans la conversion des idées en produits commercialisables. Un grand nombre d'entre vous connaissent probablement les origines du télécopieur. L'idée de l'émission de télécopie est née il y a 150 ans de cela. Mais, il a fallu attendre les années quatre-vingt pour que la technologie prenne réellement son envol, avec l'élaboration du protocole du «Groupe 3» -- une norme qui permet aux machines de fabrications différentes de se parler. La technologie du télécopieur serait-elle aussi sophistiquée aujourd'hui si ce n'était de l'existence des normes?

L'ISO et ses deux contreparties, la Commission électrotechnique internationale (CEI) et l'Union internationale des télécommunications (UIT), ont répondu au besoin de normes dans une foule de domaines variés. À l'heure actuelle, il existe des normes internationales concernant la terminologie des connexions mondiales, les claviers d'ordinateur, les jeux de caractères, les langages de programmation et le codage magnétique des données sur cartes de crédit.

D'autres normes internationales se trouvant à divers stades d'élaboration traitent de l'imagerie électronique, des robots industriels et des spécifications d'interface pour un large éventail de systèmes et de modules informatiques et de télécommunications, qui, à bien des égards, soutiennent également l'autoroute de l'information. L'autoroute de l'information est donc, si l'on peut dire, elle-même liée aux normes d'une manière inextricable.

Mais elle est révolue l'époque où le milieu de la normalisation pouvait se permettre de réagir -- c'est-à-dire d'attendre jusqu'à ce qu'un besoin se fasse évident, puis de former à la hâte un comité pour s'en occuper. Pour pouvoir fournir avec succès les normes nécessaires aux connexions mondiales de demain, il faut, aujourd'hui, que la collectivité de normalisation fasse preuve d'un leadership fort et qu'elle ait une vision de l'avenir. Ce leadership doit reposer sur une collaboration à grande échelle, qui met en présence tous les intervenants concernés, des utilisateurs aux producteurs, en passant par les organismes de réglementation. Pour faire référence au hockey, on pourrait dire que la partie ne se joue plus uniquement sur le petit étang gelé derrière la ferme!

Le Comité technique mixte ISO/CEI sur les technologies de l'information (JTC1) est un autre exemple du succès de la collaboration. En 1987, la formation d'un comité mixte de l'ISO et de la CEI semblait être une idée quelque peu radicale. Aujourd'hui, ce comité de normalisation est l'un des plus actifs du monde : il réunit 28 pays dans une centaine de sous-comités et de groupes de travail, qui travaillent sur plusieurs centaines de normes et autres documents.

Fortes du succès remporté par le JTC1, l'ISO, la CEI et l'UIT ont commencé en 1987 à établir sur le plan technique des relations de travail de plus en plus étroites. Aujourd'hui, les trois organismes collaborent même à l'élaboration de normes multimédias qui transformeront radicalement notre façon de concevoir et d'utiliser les technologies de l'information.

Cette collaboration se poursuit non seulement sur le plan technique, mais aussi au niveau des politiques. Déjà, l'automne dernier, les trois organismes ont créé le Groupe de coopération sur les stratégies en matière de technologies de l'information pour formuler des recommandations sur les domaines possibles de choix communs, sur l'harmonisation de la mise en oeuvre et sur la planification stratégique.

Un autre effort commun de l'ISO, de la CEI et de la Commission Économique des Nations Unies pour l'Europe porte sur l'élaboration de normes concernant l'échange de données informatisées (EDI).

Le besoin d'une collaboration continue est absolument crucial. Ce fait est devenu évident récemment lorsque le Canada a été forcé d'en appeler de la décision d'approuver une norme internationale concernant les technologies de l'information. La norme exigeait l'utilisation de câbles à deux paires de conducteurs dans le câblage des bâtiments même si la plupart des technologies naissantes nécessitent des câbles à quatre paires.

Le projet de norme en question avait été approuvé par scrutin international en juillet dernier. Il était presque rendu au stade de la publication lorsque le Conseil canadien des normes s'est formellement opposé à sa publication, invoquant à l'appui l'argument selon lequel l'exigence relative aux câbles à deux paires contredisait une norme déjà existante pour les réseaux locaux (LAN), et que le projet de norme risquait d'entraver tout le fonctionnement des technologies naissantes des réseaux locaux.

Le Canada a obtenu gain de cause et la nouvelle norme sera révisée en conséquence. Mais, le dommage subi retardera considérablement la ratification et la publication de la norme. Cette situation illustre ce qui peut se passer lorsqu'il y a une rupture de la collaboration ou un manque de coordination.

On évalue en tout à quelque 3,5 billions de dollars les possibilités d'affaires qui proviendront de l'autoroute de l'information. Il s'agit, bien entendu, d'une approximation, étant donné les possibilités pratiquement illimitées qu'offre au niveau des produits, des applications et des renseignements qu'elle pourrait diffuser, cette infrastructure formée à l'origine de câbles et de fibres, qui, à présent, tend de plus en plus à s'orienter vers les radiocommunications.

Pour en tirer des avantages, les Canadiens doivent être en mesure de participer efficacement à l'élaboration des normes internationales et de profiter des occasions qui se présentent en conséquence de la normalisation. Une collaboration et un leadership sont nécessaires en matière de normalisation tant à l'échelle nationale qu'à l'échelle internationale. Au pays, le Conseil canadien des normes doit montrer la voie pour ce qui est d'encourager l'utilisation des nouvelles technologies dans le domaine de la normalisation. Il doit aussi devenir un catalyseur de la formation de partenariats et un trait d'union entre la politique économique du gouvernement et la stratégie de l'industrie au chapitre de la normalisation. À cette fin, le Conseil est en train d'adopter une approche plus stratégique et plus ciblée, comme il se doit de le faire.

Le coût élevé des voyages constitue un obstacle à la participation efficace des Canadiens à la normalisation internationale. Pour le surmonter, le Conseil canadien des normes coordonne l'établissement d'un réseau canadien d'information en direct sur les normes. Les petites et moyennes entreprises n'auront tout simplement qu'à utiliser un modem pour pouvoir participer au processus de normalisation. De plus, cela leur permettra de recevoir les normes et des renseignements connexes instantanément, aussitôt qu'ils deviennent disponibles. On s'attend à ce qu'une coordination avec les États-Unis, où l'on déploie des efforts similaires, donnera lieu à un réseau nord-américain sur les normes, permettant ainsi au continent d'aller de l'avant avec l'intégration économique prévue par l'Accord de libre-échange nord-américain (ALENA).

Entre-temps, et dès l'automne, on pourra toutefois avoir accès au Conseil canadien des normes par messagerie électronique Internet. Ce nouveau lien entre le Conseil et ses clients se traduira par l'amélioration de ses services et de son accessibilité. Les personnes intéressées auront accès par Internet à tous les employés du Conseil, à ses bases de données sur les normes canadiennes et étrangères et à une «page d'accueil» qui comprendra des renseignements sur le Conseil, ses programmes et ses activités.

Le Conseil consultatif canadien sur les normes de télécommunications (CCCNT) est un autre exemple de collaboration canadienne. Le CCCNT est une coalition formée des intervenants des secteurs privé et public qui s'intéresse aux questions stratégiques pour le Canada relatives aux normes des télécommunications et des technologies de l'information, aux échelles nationale et internationale. Une de ces questions est le réseau proposé sur les normes des technologies de l'information et des télécommunications, basé sur le modèle qu'examine actuellement le Groupe de travail sur les technologies de l'information du Conseil canadien des normes. Cet examen fait suite à une évaluation de l'essai pratique de la base de données sur les technologies de l'information et les télécommunications du CCCNT, effectué l'an dernier avec le soutien technique du Conseil canadien des normes.

Justement, cette semaine, le CCCNT accueillait le Groupe de collaboration sur la normalisation mondiale ou GSC -- lui-même un autre excellent exemple de la collaboration internationale en matière d'exigences de normalisation. Le GSC fournit une tribune pour la coordination des travaux de l'UIT et les efforts régionaux déployés au chapitre de la normalisation des télécommunications.

Que ce soit à l'échelle internationale ou nationale, pour le milieu de la normalisation, les défis que posent les connexions mondiales sont très clairs : faire preuve de leadership, travailler en collaboration et être sensible aux besoins tout en mettant un accent particulier sur la rapidité d'exécution.

Les normes doivent continuer à être au coeur de l'évolution technologique, et la collectivité de la normalisation doit prévoir les tendances futures et être sensible aux besoins des utilisateurs.

À cette fin, nous devons réellement trouver des solutions qui permettront :

- d'accroître la participation des intervenants au processus d'élaboration de normes, en particulier celle des petites et moyennes entreprises; et

- d'accélérer le processus d'élaboration de normes en utilisant des outils de communication et des technologies de l'information.

Ce faisant, nous serons en mesure de relever plus rapidement les défis liés au marché mondial et, par conséquent, de gérer plus efficacement la croissance exponentielle des connaissances technologiques.

En terminant, permettez-moi de citer Tom Peters : «Nous avons presque finalement embrassé la notion selon laquelle le changement est la seule constante. Eh bien, il faut oublier cela! Le terme «changement» est un peu faible. Il faudrait plutôt parler de «révolution». Ce que nous faisons, ce que nous fabriquons, la manière dont nous travaillons, tout cela fait l'objet d'une révolution, et rien de moins».

3

LUNCHEON SPEECH

USERS' PERSPECTIVE AND STRATEGIES ON GLOBAL STANDARDIZATION IN FREE TRADE MARKETS

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THE USERS' PERSPECTIVE AND STRATEGIES ON GLOBAL STANDARDIZATION IN FREE TRADE MARKETS

NOTES FOR AN ADDRESS

BY

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CANADIAN BUSINESS TELECOMMUNICATIONS ALLIANCE

TO

INTERNATIONAL SEMINAR ON STANDARDS FOR GLOBAL CONNECTIONS

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GOVERNMENT CONFERENCE CENTRE

OTTAWA, ONTARIO

Good morning ladies and gentlemen. *Bonjour mesdames et messieurs.*

I am very pleased to be with you today and to have this opportunity to speak about a topic of such interest to the members of my association -- this nation's largest association of business telecommunications users -- the Canadian Business Telecommunications Alliance.

I have been asked to speak on the Users' Perspectives and Strategies on Global Standardization in Free Trade Markets. I have also been asked to relate my remarks to the development of the Canadian Information Superhighway.

These two apparently diverse, yet inextricably linked issues, are of great interest and importance to all CBTA members. They are also two very broad and complex subject areas. To do them real justice would, I believe, require much more time than has been allotted.

Consequently, I intend to touch on just some of the major areas of interest and concern and, hopefully, raise some issues which, may help set the stage for your subsequent Information Highway panel discussion.

I would like to begin my remarks by asking you to consider the following questions:

- Why are business and institutional users interested in Global Standardization?
- What do users hope to achieve through their interest and involvement in this area?
- What role do users play in the standards arena?
- Additionally, why are users interested in the Information Highway?
- And, finally, what are some of the major user issues concerning the Information Highway?

Before addressing these questions I would like to make one important point, which is that telecom users are not really users. I say this because the profound regulatory decisions of the last few years, which fundamentally changed the nature of the Canadian telecommunications marketplace, instantaneously transformed users into customers. Furthermore, this transformation is also taking place in many other countries throughout the world.

This distinction between user and customer is not simply a question of semantics. It is a fundamental transformation in the historic relationship between the purchasers and suppliers of telecom services and products. It is, to use that horribly overworked phrase, a real paradigm shift.

The implication of this transformation, as I see it, is that vendors, regulators, government authorities and all standards bodies must completely alter the way in which they previously saw the end user.

Today, telecom customers are no longer the passive purchasers of whatever products and services vendors may wish to offer. Today's customer no longer quietly accepts what is offered. They demand what is needed.

Obviously, the transformation, from user to customer, has a profound impact on both those groups setting industry standards and on those parties setting the regulatory and operational guidelines for the global Information Highway.

As business customers, my colleagues and I take great pride in our involvement in all areas of telecommunications. We have in the past, and continue today, to play a vital role in the development of new technologies and services. We play an equally important role in creating the telecommunications framework for the coming century. We do so because we have realized that telecom is no longer simply a communications necessity. It is a tool. It is the driving force propelling many, if not most, of our organizations.

Today's business customer has become absolutely dependent on telecommunications. It is the lifeblood of our daily activities. As such, the customer's role in all aspects of telecommunications is integral and vital to its global development.

Whether it is in the regulatory arena or in technological innovation, business customers, from every sector of the economy, will continue to play a significant and necessary role. Similarly, customers will play an important role in the area of global standardization. Why? Because it is in the customers' best interests.

With respect to many standards discussions there is the perception that the customer, the beneficiary, if you will, of all telecommunications products and services, is somehow apart or separate from the other parties at the table. This is simply not the case. Business customers are

vitally interested in standards, albeit for different reasons and with varying degrees of commitment.

At the CBTA, we believe this misapprehension about the business customers' interest is quite understandable. Earlier I spoke of parties at the table. From a customer's perspective, it was not so long ago that we were not a party at the table. We weren't even in the room! But circumstances change. Increased business customer participation in standards' discussions parallels our more active involvement in all facets of telecommunications.

If you accept the prevailing philosophy that telecommunications is no longer vendor-driven but customer-driven, then any and all discussions concerning standards, technologies, applications, and most important the Information Highway, ***must***, by definition, include customers. Hence, we must be viewed as an indispensable part of the decision-making process.

As mentioned earlier, customers do have a profound interest in standards issues, but for different reasons than, say vendors. Simply put, customers see these technologies not as ends in themselves but as means to an end. After all, customers are not in the telecom business — vendors are.

For customers, telecommunications is used only in order to provide a customer's customer with better, faster and less expensive products and services. Many vendors, and indeed, many policy makers, forget this very simple fact.

Personally, I sympathize with vendors and standards bodies, who ask, when struggling to solve a particular issue: What do customers really want? Speaking on behalf of the CBTA membership I say that what we want is the development of standards that promote the global exchange of information in ways that are vendor-independent, technology insensitive, and at the lowest reasonable rate.

The Alliance believes strongly in global standardization. Further, we believe that standards, properly formulated in an open forum, will support a truly competitive domestic and international marketplace, which will stimulate more and better services. We maintain that such an environment will result in a greatly expanded marketplace, allowing more vendors greater sales opportunities, allowing customers greater choices, ensuring lower costs, and thereby unleashing telecom's full

potential in the public and private sectors. In a nutshell, that is what business customers want and why we want it.

Another equally important question is: What do customers hope to achieve through global standardization? I believe we hope to achieve the following:

- multi-vendor, multi-technology systems;
- the reduction of costs through shared research and pre-competitive product development;
- the provision of that "level playing field" for competition, we so urgently need;
- the encouragement of greater innovation in the value-added, not the basics;
- the production global compatibility, and;
- the provision to customers with the widest possible choice when selecting a vendor.

A supplementary question you may also wish to consider is: What does standardization provide besides the standards? Here we believe that standardization helps prevent vendor lock-in, especially as it relates to the timing of product feature launches. Additionally, it helps ensure an open process for change, one which is not controlled by any one vendor. Standardization helps avoid features designed to protect a specific supplier. It promotes competition and hence lowers prices. It affords third-party testing and verification. It helps protect competitive and investment interests. Perhaps most important, standardization provides a secure system of checks and balances.

As I said earlier, customers are interested in standards but I think it is especially important for a group, such as this, to understand that for customers standards are not the real issue. Customers simply want products that do the job. Standards are a mechanism through which customers' goals can be realized. For customers, standards are not ***the*** goal in itself.

This position, I believe, explains why customers have traditionally been reluctant to become too involved in standards development. Generally speaking, customers are reluctant to become

immersed in standards issues because of the enormous technical detail involved in most discussions.

Moreover, the time and expense inherent in the process, the desire not to publicly reveal corporate plans, fears that the process will be undermined by a vendor, and a concern that a single customer's needs will never be completely satisfied through such discussions also contribute to this reluctance.

Additionally, many customers view standards development as a very inefficient process involving many years of costly meetings, which are, generally, dominated by manufacturers.

I think it is also fair to admit that most business customers lack a real awareness and understanding of standards, their value, and the extremely complex standardization process.

Now this may seem to be a complete contradiction in positions. And it is. Customers are interested in standards, are dependent on standards, and yet we generally do not participate in the process. Why? Because as I said, customers view telecommunications as a tool. Global standardization is a part of that tool. As such, I think customers feel most comfortable working through organizations like the CBTA.

As an example, through the Alliance, customers can collectively help sketch out a broad philosophical framework to represent their needs, concerns and views regarding standardization. We can then communicate to the appropriate standards bodies, through forums such as this, our collective views. Finally, by working closely together with other interested groups, all parties at the table can better see the "other guy's" perspective. In this way each group can make a positive and meaningful contribution toward the development of truly effective and efficient global standards.

Without doubt, global standardization is one of the cornerstones of the emerging world-wide Information Highway. However, if we do not solve the many standards issues, which you have been discussing over the past two days, then the possibility of creating a truly useful and efficient global Information Highway seems highly unlikely. From a customers' perspective this would be a catastrophe.

Earlier I asked you to consider: Why customers are interested in the Information Highway? Our interest lies in two basic areas:

- we wish to make effective and efficient use of the Highway to communicate faster, to help make our organizations more efficient, and to provide our customers with better, more cost-competitive products and services; additionally,
- many customers also wish to be able to develop specific product applications to open new revenue generating business possibilities, either locally, nationally or internationally.

To accomplish these goals, customers require an excellent domestic, and ultimately global Information Highway infrastructure.

Customers see the Information Highway as the next logical step in the rapidly developing global information economy. But customers also see many roadblocks on the way to realizing this goal. Some of these roadblocks may be avoided or eliminated altogether if we are able to achieve the standardization goals I described earlier.

If we can create global standards that will ensure multi-vendor, multi-technology systems, which produces international compatibility, and provides a level playing field for real competition then I believe we will have taken a major step in eliminating many of these roadblocks.

Let me stress that the importance of the Information Highway to customers cannot be over emphasized. I believe that the CBTA's Chairman and Chief Executive Officer, Brian Napier, expressed our concerns best when he recently said:

> *"Businesses are extremely worried that if Canada does not move now to make our Information Highway an affordable reality, all Canadians will suffer. If Canada does not act boldly and decisively in this area, our businesses will fall further behind those of our major trading competitors; long-term, high-paying jobs will be lost; and this nation will run the risk of becoming an information have-not society."*

Ladies and gentlemen, customers believe the issue is that simple. The stakes are that great.

Now obviously, standards play only a part, albeit an important one, in the creation of the Information Highway. In many countries throughout the world governments and their regulatory arms are struggling with myriad issues relating to their domestic information infrastructure. Canada is no exception.

As you may be aware, last Spring the Canadian Radio-television and Telecommunication Commission held lengthy public hearings, here in Ottawa, on the Canadian Information Highway. On May 19th, the CRTC released its report on these proceedings entitled: "Competition and Culture on Canada's Information Highway -- Managing the Realities of Transition."

On behalf of business customers, the CBTA took a very active part in the public proceedings. In our written submission and oral presentation, we made numerous recommendations to the Commission, some of which I am happy to report were adopted. Specifically, the Alliance recommended that:

- to foster open and sustainable competition, new entrants, as well as facilities and non facilities-based providers, must be given fair and equal opportunities to compete;
- we also recommended that open competition be encouraged for both carriage and content and that all Information Providers be assured of an environment of choice without the threat of monopoly supply of bottleneck facilities.

We were extremely pleased to learn that the Commission, in drafting its report, stated that it had been guided by a number of key principles, including the comments that:

- Fair and sustainable competition requires that consumers have increased choice among distributors of telecommunications and broadcasting services, including cable, telephone, wireless, direct-to-home satellite and others;

- As well, the Commission's report stated that barriers to competition in distribution must be removed so that both the public and content providers have affordable and non-discriminatory access to all distribution systems.

The report also proposes mechanisms designed to remove existing barriers to competition, as well as safeguards to prevent anti-competitive practices and to ensure equitable access to the Information Highway. This is excellent news for business customers and indeed all Canadians.

Unfortunately, customers remain concerned that technology may have superseded any domestic regulator's ability to control their portion of a quickly emerging global communications network.

With respect to Canada, we recommended to the Commission that sweeping changes were needed to both the 1991 Broadcasting Act and the 1993 Telecommunications Act. Business customers are concerned that confusion exists about the applicability of both Acts to the Information Highway.

For example, we believe that the definition of "broadcasting" in the *Broadcasting Act* should be revised to exclude the concept of services that are not available unless and until requested and engaged by a specific customer; and services in which the customer, by virtue of interaction with the transmission, obtains a service unique to that customer. Such a change in definition would remove these services from regulation under the *Act.*

Similar concerns exist about definitions contained in the *Telecommunications Act.* Specifically, we believe that, "exempt transmission apparatus" should be redefined to include any apparatus operated by a person, all of whose telecommunications services could reasonably be said to be provided on a competitive basis to customers. This change in definition would effectively remove non-monopoly service providers from regulation.

However, like most things in life, one rarely gets everything one wants. But the CBTA will continue to keep advocating these principles on behalf of business customers.

Without doubt, the most difficult question the CRTC had to deal with in its recent proceedings was that of "Cultural Identity". The Alliance made a number of recommendation on this — one of Canada's most sensitive questions. Let me say that the CBTA is very supportive of our

cultural identity. However, we believe it would be disastrous to attempt to apply our highly-regulated broadcast industry policy framework to the highly competitive information technology industry.

Further, we believe that all IT participants can, and will, make a significant contribution to Canadian cultural goals. Regrettably, once again, the Commission did not eagerly embrace our recommendations.

Regardless, we remain convinced that there are effective ways to ensure the integrity of Canada's cultural identity without adversely impacting the promise inherent in the Information Highway. We also believe that these issues are far from resolved.

Ladies and gentlemen, I began by saying that time prohibits a full examination of all aspects of today's topic. I sincerely hope, however, that my comments have provided you with a better insight into the customers' perspectives on global standardization. I also hope I have added some "external" fodder to your upcoming Information Highway discussion.

On behalf of the CBTA, I thank you for you attention. And to the conference organizers I thank you again for your kind invitation to speak this afternoon.

PRESENTATIONS

4

Thomas F. Frost

Challenges and Perspectives in Information Technology Standards

International Seminar on Standards for Global Connections

ISO/IEC JTC 1

Challenges and Perspectives in Information Technology Standards

Thomas F. Frost
AT&T
Chairman, JTC 1/SC 18

Joint Technical Committee 1 Information Technology

SGFS	Functional Standardization
SC 1	Vocabulary
SC 2	Coded Character Sets
SC 6	Telecommunications
SC 7	Software Engineering
SC 11	Flexible Magnetic Media
SC 14	Data Element Principles
SC 15	Volume and File Structure
SC 17	Identification Cards
SC 18	Document Processing
SC 21	OSI, Data Management and ODP

Joint Technical Committee 1 Information Technology

SC 22	Programming Languages and System Software Interfaces
SC 23	Optical Disk Cartridges
SC 24	Computer Graphics
SC 25	Interconnection of IT Equipment
SC 26	Microprocessor Systems
SC 27	IT Security Techniques
SC 28	Office Equipment
SC 29	Coding of Audio, Picture, Multimedia and Hypermedia Information
SC 30	Open-edi

Joint Technical Committee 1 Information Technology

- Types of JTC 1 Standards Supporting Global Connections
  - Encoding and Compression of Information
  - Information Interchange Protocols
  - Interchangeable Storage Media
  - System Software Interfaces
  - IT Equipment Interfaces

Challenges and Perspectives

TOPICS

- Timely Development and Delivery of Standards
- JTC 1 Business Analysis
- Cooperation with Other Organizations
- Recognition of IT Standards Developed outside of JTC 1
- Role in Global Information Infrastructures

Timely Development and Delivery of Standards

- From ISO/IEC perspective, JTC 1's "track record" for the timely development of ISO/IEC standards is very good, but . . .
- Demand for rapid development of standards in critical technology areas continues to increase

Timely Development and Delivery of Standards

- **Recent JTC 1 process improvements to accelerate standards development and delivery:**
  - **Simultaneous New Work Item Proposal (NP) and Committee Draft (CD) Ballots**
  - **Modified Procedures for Draft International Standard (DIS) Balloting (effective in April 1996)**
- **Implementation of Information Technology in JTC 1 processes**

JTC 1 Business Analysis

- Rapidly Changing Environment characterized by:
  - Technology Advances
  - New Business Arenas
  - Emergence of Industry Consortia
- Concept piloted by JTC 1/SC 21 (OSI, Data Management, ODP)
- At June 1995 Plenary, JTC 1 will analyze its role in light of the changing environment

JTC 1 Business Analysis

- **Business Analysis review will:**
  - Use business approach to articulate JTC 1's role
  - Identify JTC 1's products and services, customers and suppliers, etc.
  - Identify competitors and potential alliances
  - Determine metrics for measuring success
  - Determine critical success factors, e.g., timeliness, relevance, quality and efficiency

Cooperation with Other Organizations

- Importance of Cooperation
- Examples of Cooperation
  - International Telecommunications Union
  - Internet Society

Cooperation with Other Organizations

- International Telecommunications Union
  - Jointly developed "Guide for ITU-T and ISO/IEC JTC 1 Cooperation" documents modes of cooperation, procedural guidelines and rules for preparation of common text
  - Modes of cooperation include: liaison. collaborative interchange and collaborative team
  - Several JTC 1 SCs work collaboratively with ITU-T Study Groups

Cooperation with Other Organizations

- Areas of JTC 1 and ITU-T cooperation include:
  - Reference models
  - Naming, addressing and registration authorities
  - Communications services and protocols
  - Application services and protocols (e.g., messaging, document architecture and interchange, file transfer, systems management, directory services, etc.)
  - Coding of picture and audio information

Cooperation with Other Organizations

- Internet Society
  - Joint work in progress between Internet Society (ISOC) and several JTC 1/SCs
  - Cooperative agreement established between the ISOC and JTC 1/SC 6 (Telecommunications)
  - ISOC - SC 6 agreement being used as basis for development of cooperative procedures for use by other SCs
  - Electronic distribution of ISO/IEC documents to other organizations being addressed on case-by- case basis

Recognition of IT Standards Developed outside of JTC 1

TOPICS

- **Publicly Available Specifications**
- **Referencing of Specifications**

Publicly Available Specifications (PAS)

- **February 1994:**
  - **JTC 1 reviewed work on IT specs developed outside of JTC 1 in industry consortia, etc.**
  - **Announced policy to provide capability of accepting standards solutions to IT problems developed outside of JTC 1**
  - **Established Working Group to prepare an action plan to implement this policy**

Publicly Available Specifications (PAS)

- October 1994:
  - JTC 1 accepted the principle of transposition of PAS into International Standards and International Standardized Profiles (ISPs)
  - Approved procedures (Management Guide), and a trial period through January 1997
  - Established JTC 1 and National Body PAS Mentor positions
  - Established Working Group on Reference Specifications

Publicly Available Specifications (PAS)

- **Elements of JTC 1 PAS Process**
  - **Recognition of PAS Submitters**
  - **Submission of PAS and Explanatory Report**
  - **Established criteria for:**
    - » Recognition of organizations as PAS Submitters
    - » Acceptance of specifications
  - **Uses ISP or "fast-track"-like approval process**

Publicly Available Specifications (PAS)

- Status and Plans
  - Procedures in place to process Submitter applications and PAS
  - Appointments of JTC 1 and National Body PAS Mentors
  - Evaluation of PAS transposition process at end of trial period (January 1997)

Referencing of Specifications

- Working Group on Reference Specs (RS) established in October 1994
  - Scope and context: Normative and Informative references from IS and ISP documents to full range of PAS documents from wide range of consortia
- WG-RS to identify issues and draft policy for approval at June 1995 JTC 1 Plenary

Global Information Infrastructures (GII)

- **Background**
  - In October 1994, JTC 1 reviewed its major role in providing standards for GII
  - Identified need for effective liaisons with ITU, ISO and IEC TCs for GII standards
  - Proposed ISO/IEC/ITU international seminar on standardization aspects of GII for Fall 1995 timeframe
  - Requested NB input on GII activities

Global Information Infrastructures (GII)

- Plans
  - At June 1995 JTC 1 Plenary, National Body activities in GII to be reviewed
  - Draft agenda for ISO/IEC/ITU international seminar to be prepared
  - Outline of JTC 1's participation in seminar to be developed

5

Bob Horton

The Australian Telecommunication Standardization Committee
(ATSC)

INTERNATIONAL SEMINAR ON STANDARDS FOR GLOBAL CONNECTIONS

-THE AUSTRALIAN TELECOMMUNICATION STANDARDIZATION COMMITTEE (ATSC)

Dr. Bob Horton
Chairman, ATSC

Introduction

The ATSC is the peak body in Australia bringing together industry representatives in the telecommunications field in considering and interfacing with international and regional standardization matters. The ATSC comprises telecommunications carriers, suppliers, users, and government and private bodies who are materially affected by or have some part to play in standardisation processes. It is chaired by AUSTEL, the Australian Telecommunications Authority.

A number of issues or developments of importance to the ATSC have been under consideration over the past 15 months since GSC1 and these are highlighted in the following sections.

Participation in Standards Making:

The ATSC's linkages with other standards makers have continued. Considerable effort has been expended on development of contributions and attendance at meetings, the limiting factor being geographical isolation.

ITU

Since GSC 1, with the aid of its National Study Groups(NSGs), the ATSC has examined and responded to all ITU-T ballots for the approval Recommendations and questions. Additionally, there has been Australian participation in ITU-T Study Groups 1,2,3,4,7,9,11,13 and 15 meetings, a total of 38 contributions and an average delegation attendance of 3 persons. Australia hosted the Rapporteurs SWP2/11-3 meeting in Melbourne in January 1995 on Network Node Interfaces (NNI) and User Network Interface(UNI) for ATM Broadband networks.

ETSI

The ATSC was represented at ETSI's TA19, 20, 21 and GA19 and 22 and the Collaboration in Radiocommunication Standards meeting in October 1994.

A Contribution on alphanumeric designations on keypads was submitted to TA19 and a Contribution on the current work activity and areas of Interest to TA20.

T1

The ATSC was represented at the US Committee T1 meeting in October 1994 in an observer capacity and a Contribution on current work activity and areas of interest was presented.

TTC

A representative of the ATSC was able to attend the advanced briefing to Japanese industry on standardisation matters during October 1994, at the kind invitation of the TTC.

Standards Processes

TSAG

The ATSC was active in the deliberations of TSAG within the ITU-T. Key issues for the ATSC at TSAG Meeting #4 in January 1995 were:

- Maintenance of the momentum for ongoing reform;
- Ensuring accountability of Study Groups in clearly defined areas of responsibility;
- Further development of working methods;

The ATSC is pleased with the key outcomes in particular:

- A set of guidelines for information exchange with the ITU-T eg. with the ATM Forum;
- TSAG and RAG's joint working party on refinement of the Sectors of the ITU;
- The identification of strategic discussion topics;
- A review of the ITU publication policies and practices;
- Proposals for further refinement of working methods for approval of Recommendations.

Regional activities

APT

Australia was represented at the May 1994 Thailand meeting of the Asia Pacific Telecommunity on regional cooperation in standardization, the 14th management meeting in Malaysia in September 1994, and the management meeting in November 1994, in Thailand.

Standardization issues covered include:

- Discussion on the APT role in both upstream and downstream activities;
- Questionnaires on SDH, Broadband ISDN, Intelligent Networks, calibration of test equipment for telecommunications and examination of the basis of accreditation of test houses including the technical differences standards used for type approvals.
- Discussion on telephone fraud based on CCITT No. 5 signalling and international toll free services.

The November management meeting agreed to the final report of Study Group 6.1C on "Type Approval Processes for Telecommunications Terminal Equipment in the Asia-Pacific Region" and to a new study question on "calibration of test equipment for Telecommunications Terminal Equipment in the Asia-Pacific Region" to be coordinated by Australia.

APEC

Australia has promoted a Telecommunications Information Sharing Project, the objective being to enable interested persons in APEC economies to maintain an understanding of telecommunications standards development activities, using electronic working methods.

Australia is also actively involved in other standards related projects in the TEL working group dealing with equipment certification guidelines, mutual recognition agreements and electromagnetic compatibility.

AIC

The General Assembly and Fourteenth Working Group meetings held in Malaysia in October 1994, were significant in that the charter of the Asian ISDN Council was expanded to include B-ISDN and Information Infrastructure studies.

GSM MoU Asia Pacific Interest Group

AUSTEL and Australian carriers continue to participate in both the GSM MoU Association and the GSM MoU Asia Pacific Interest Group.

The GSM MoU Association has undergone a restructure with the formation of five special interest groups. Three of the special interest groups are regionally based, and two are specialist technology based. The three regionally based groups are: Asia Pacific region, Arab State region, and the European regional interest group. The two specialist technology based groups are USA PCS (DCS 1900) and the PCN interest group(DCS 1800).

The third meeting of the Asia Pacific Interest Group was held in November 1994 in Malaysia. Mr. Richard Midgett from Hongkong Telecom CSL was elected as Chairman for a one year term.

The issues addressed at this meeting included:

- Compilation of a data base of non-technical aspects of international roaming. AUSTEL is rapporteur to the Interest Group and has produced a questionnaire for the Asia Pacific region.

- A consistent position is being sought on the A5 encryption algorithm

- Other issues such as manufactures' terminal problems and interference/health issues.

To keep abreast of the fast moving evolution of GSM through the Asia Pacific region, the Interest Group is currently reviewing members' expectations and needs in technical and commercial areas.

National Developments - Telecommunications Policy Review

The current Australian framework of two fixed and three mobile carriers is due to end on 30 June 1997. The Australian Government, seeking advice and input as to what arrangements will be most appropriate post 1997, issued a comprehensive discussion and options paper "Beyond the Duopoly", in September 1994.

As part of the review a Telecommunications Advisory panel was formed to provide advice to the Minister on issues arising. These include the future infrastructure of standards development and interfacing with international and regional standardization activity.

The review should be completed by June 1995, to enable draft legislation to be available by December 1995.

Standards and Conformance Infrastructure Review

An independent review of Australia's standards, certification and conformance infrastructure gave wide ranging consideration to Australia's measurement, standards setting, testing, certification and accreditation services. It addressed both the regulated and non-regulated sectors.

The outcomes of the review will be taken into account in the above Telecommunications Policy Review.

Broadband Services Expert Group (BSEG)

At the same time, a Broadband Services Expert Group was established by the Government to examine the technical, economic and commercial pre-conditions for future widespread delivery of broadband services to homes, businesses and schools etc. in Australia. There was an extensive public consultation program and discussion sessions.

The final report recommended a managed evolutionary approach centred around developing existing infrastructure, and building a platform that will underpin the future information society, promote social interaction, enrich education, improve health services, enhance the delivery of government services and improve competitiveness for businesses and the economy.

Forums and Consortia

ATM Forum

A Conference on ATM held in October 1994, in Sydney, provided an opportunity for direct communication with the head of the ATM Forum, Dr. Fred Sammartino, and off line discussion regarding the establishment of a working relationship between the ATM Forum and the ITU.

The Victoria University of Technology in Melbourne hosted an ITU-T Study Group 11, Working Group 2 meeting. This event provided the opportunity for an 'ATM Broadband 95' Symposium in Melbourne in February 1995 to coincide with the ITU-T meeting. The Symposium was well supported and it enabled experts in the field to indicate latest developments to local industry.

The number of conferences and symposia on this subject highlights the relevance of this subject to the telecommunications industry, and exemplifies the need for a standards process to interact effectively, both from national and international perspectives. A local chapter of the ATM Forum has been established and its first meeting was held in March 1995.

TINA 95

The Telecommunications Information Networking architecture Consortium held TINA 95, the first international conference on the application of distributed computing and advanced telecommunication technologies to enable global information networking, in Melbourne, in February 1995. The Conference was sponsored by Telstra in cooperation with the IEEE. It was well attended by an international audience.

User involvement in Standardization Activity

Satisfactory progress continues to be made in engaging a realistic and beneficial mechanism and processes for end user involvement in standards making activities.

This is currently in the form of a Forum with the major objectives to:

- Identify areas of common interest and needs and how to determine their priority.
- Establish mechanisms to interact with the community.
- Create informal/formal representative structure(s) to develop consumer standards.
- Maintain existing standards processes as there is a need not to impede progress.

Strategies to achieve these objectives are presently under development.

Key Standardization Areas

Telecommunications network equipment deployed in Australia has been based on ITU-T (and previously CCITT) Recommendations where available. There has been some divergence from this pattern in recent years, for example, with the application of AMPS analogue cellular mobile, GSM digital mobile and cordless telephony based on the CT2 Common Air Interface. This divergence at times comes as a result of market pressure to provide services in advance of suitable ITU-T Recommendations and highlights the need to participate in the work of other standards bodies, in addition to the ITU.

Australian participation in these bodies has the objectives of introducing world competitive services, keeping informed of recent developments, ensuring that Australian industry can compete in domestic and international markets and inputting Australian requirements where necessary.

Nevertheless the ITU is viewed as the pre-eminent standards body and the ATSC continues to work towards global standards, particularly in the GSC Key Standardization Areas.

It is clear that for almost all of the key areas for standardization there remains a clear need to overcome bottlenecks, continue streamlining standards processes and to exchange information concerning related activities. ITU Joint Coordination Groups have assisted to some extent but such groups assume harmony within countries and even companies, which is not always the case.

The GSC forum can continue to assist with useful information exchange through its informal linkages and because it is well placed to look across the activities of many major standardization bodies. GSC exchange of information on FORA is also considered useful at a time when the impact of such groups is growing.

The addition of Multimedia and FPLMTS to the list of Key Standardization Areas by the GSC in 1994 has proven to be relevant and timely.

Global Information Infrastructure - standards issues

Advice from industry and the community affirms the view that standards should play a role in ensuring that the global information infrastructure provides open access to users and do not impede industry development or the take-up of new technology or services.

The following were proposed as objectives for Australia's broadband environment:

- Standards should be international, open and produced by consensus in a timely and transparent manner.
- The standards should address open access and interoperability between broadband services, service providers and users.
- The supply of broadband services should be independent of underlying transport mechanisms, thus allowing a mix of technologies to be used, from CD-ROM to high-speed multimedia delivery networks.
- Where industry-specific controls beyond existing business regulations need to be considered, industry consensus should be favoured over regulation.
- The large number of regulations confronting product and service developers should be consolidated.
- All stakeholders, including industry, regulatory and standards bodies, consumers, technology users and the research community, should have the opportunity to participate in standards setting.

Implementation of the above proposals would enhance the competitiveness of Australian industry and conform with the development of global harmonised standards and the concurrent achievement of a national information infrastructure.

The global information infrastructure should similarly be supported by the development of global harmonised standards meeting the above objectives.

6

Peter Hamelberg

Some ETSI Views

Standards for Global Connections

SOME ETSI VIEWS

Peter Hamelberg

Ottawa, 8-9 June 1995

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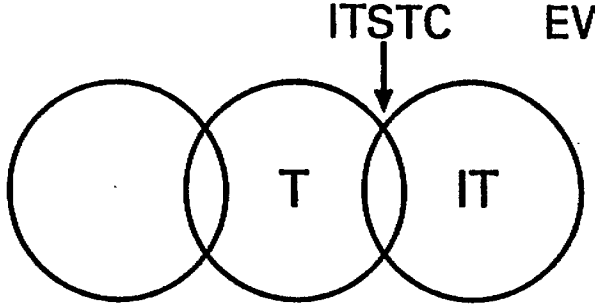
World	ITU ITU-R ITU-T	ISO JTCI	IEC
Europe	ETSI	CEN EWOS	CENELEC
EU	SOGT	SOGITS	
Country X	ETSI Members and RNSO	XSI	XEC



Review of Standards Bodies

4368

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* Intntl standards not always available

* Too many options in intntl standards

* Full interworking needed

* European contribution

Why European standardization?

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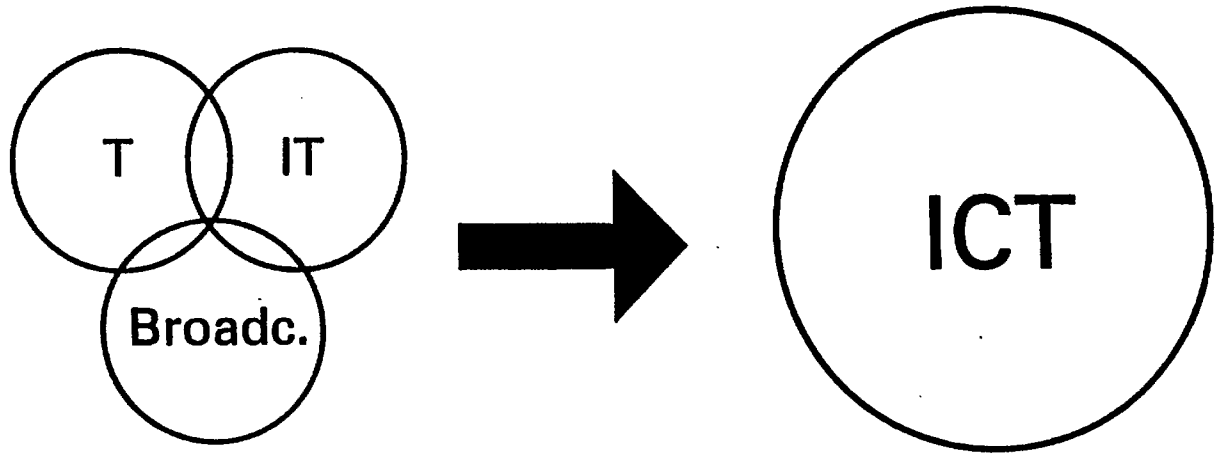

The convergence of technologies

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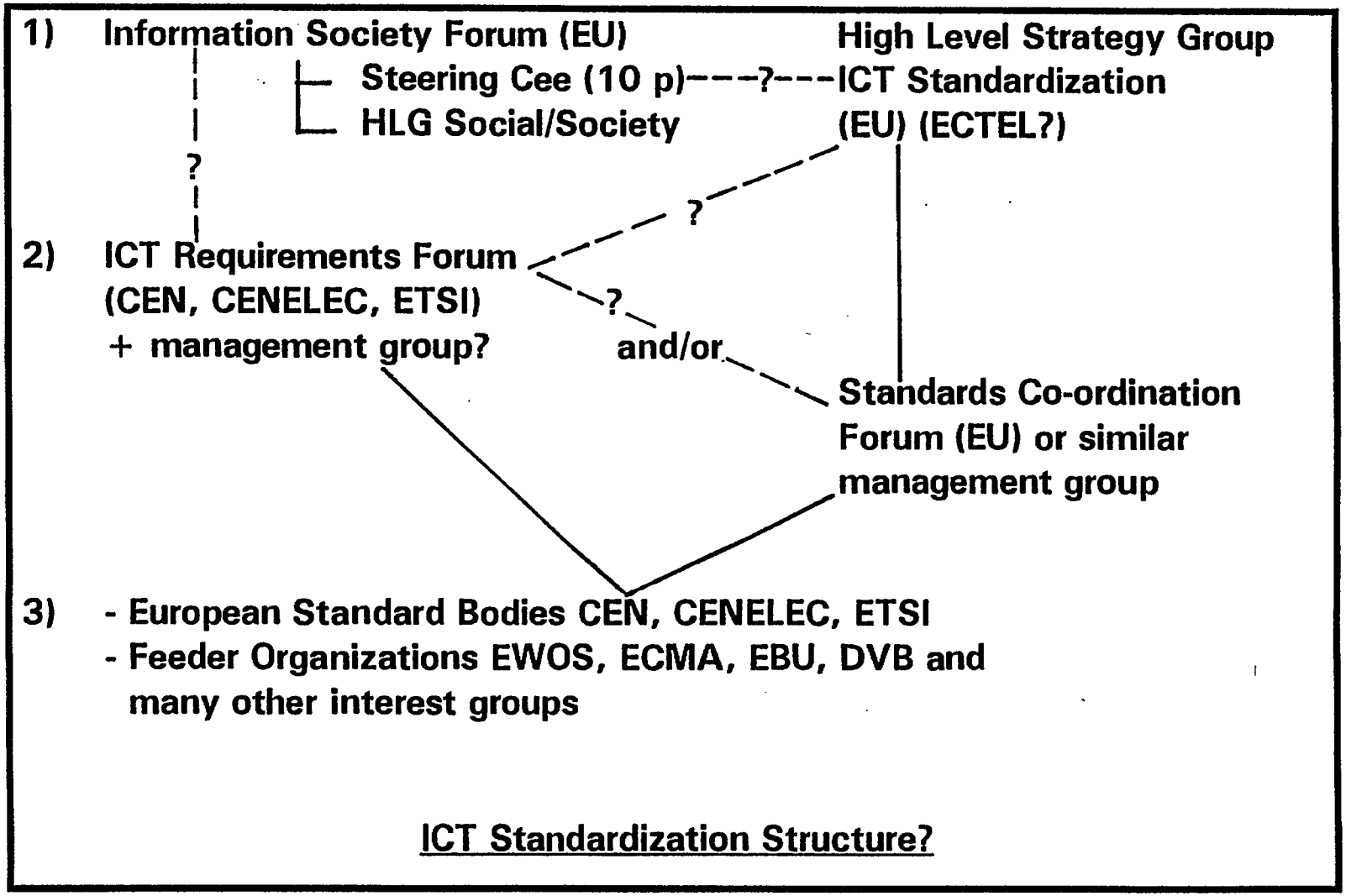
1) Information Society Forum (EU)
Steering Cee (10 p)
HLG Social/Society
?
High Level Strategy Group
ICT Standardization
(EU) (ECTEL?)
?
2) ICT Requirements Forum
(CEN, CENELEC, ETSI)
+ management group?
?
and/or
Standards Co-ordination
Forum (EU) or similar
management group
3) - European Standard Bodies CEN, CENELEC, ETSI
- Feeder Organizations EWOS, ECMA, EBU, DVB and
many other interest groups
ICT Standardization Structure?

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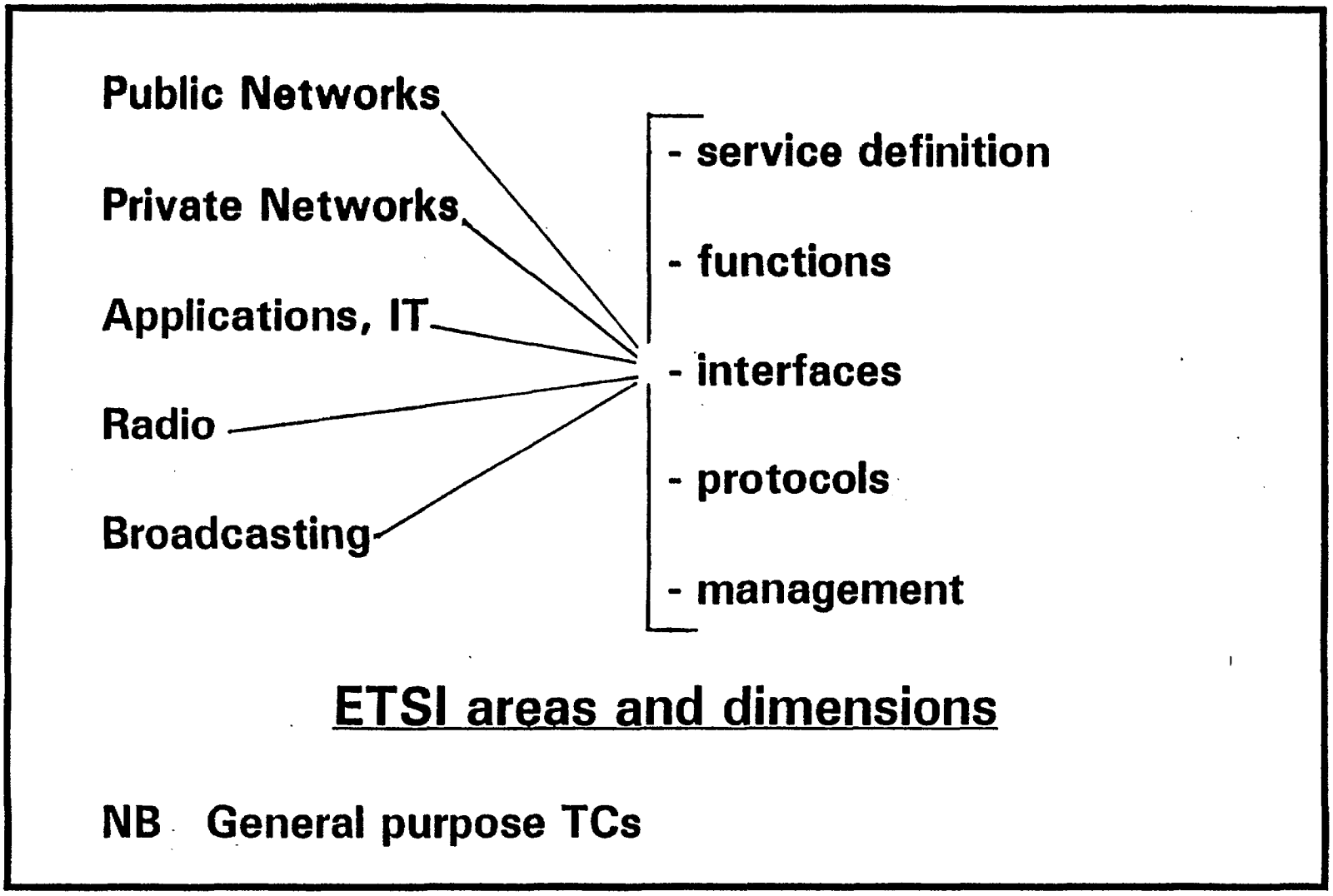

ETSI areas and dimensions

NB General purpose TCs

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1. GSM
2. ISDN
3. Intelligent Networks
4. Broadband ISDN
5. Corporate Networks
6. Telec. Mgmt. Networks
7. DECT
8. ONP
9. Virtual Networks
10. Radio LANs
11. VSATs
12. ERMES (Paging)
13. Digital TV
14. Digital Audio Broadc.
15. TETRA (Trunking)

The ETSI Top 15

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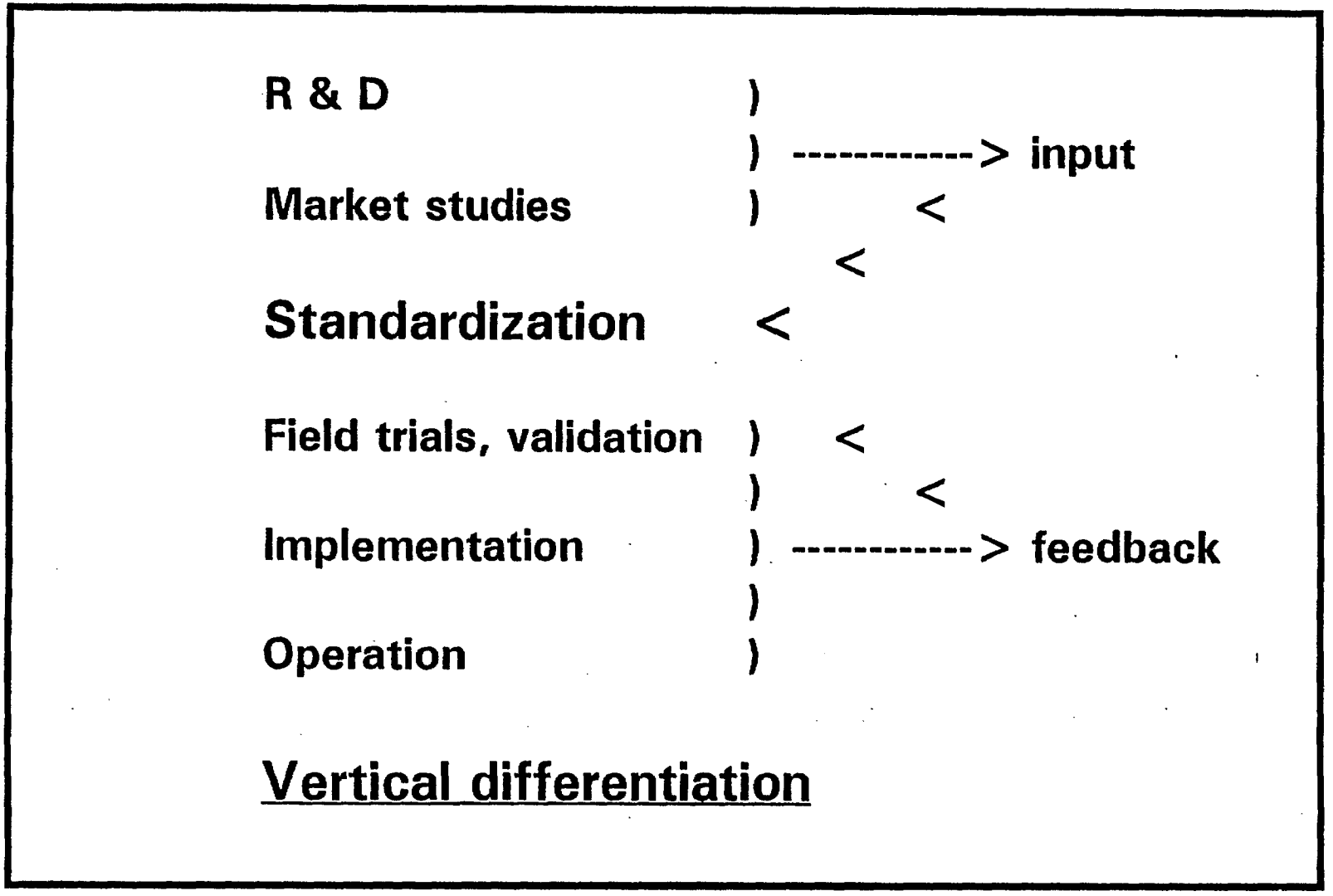
R & D
Market studies
Standardization
Field trials, validation
Implementation
Operation
input
feedback
Vertical differentiation

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* Programming
* Planning
* Technical work ⟶ draft
* Consultation (P.E.)
* Voting
* Publication

The process of standardization

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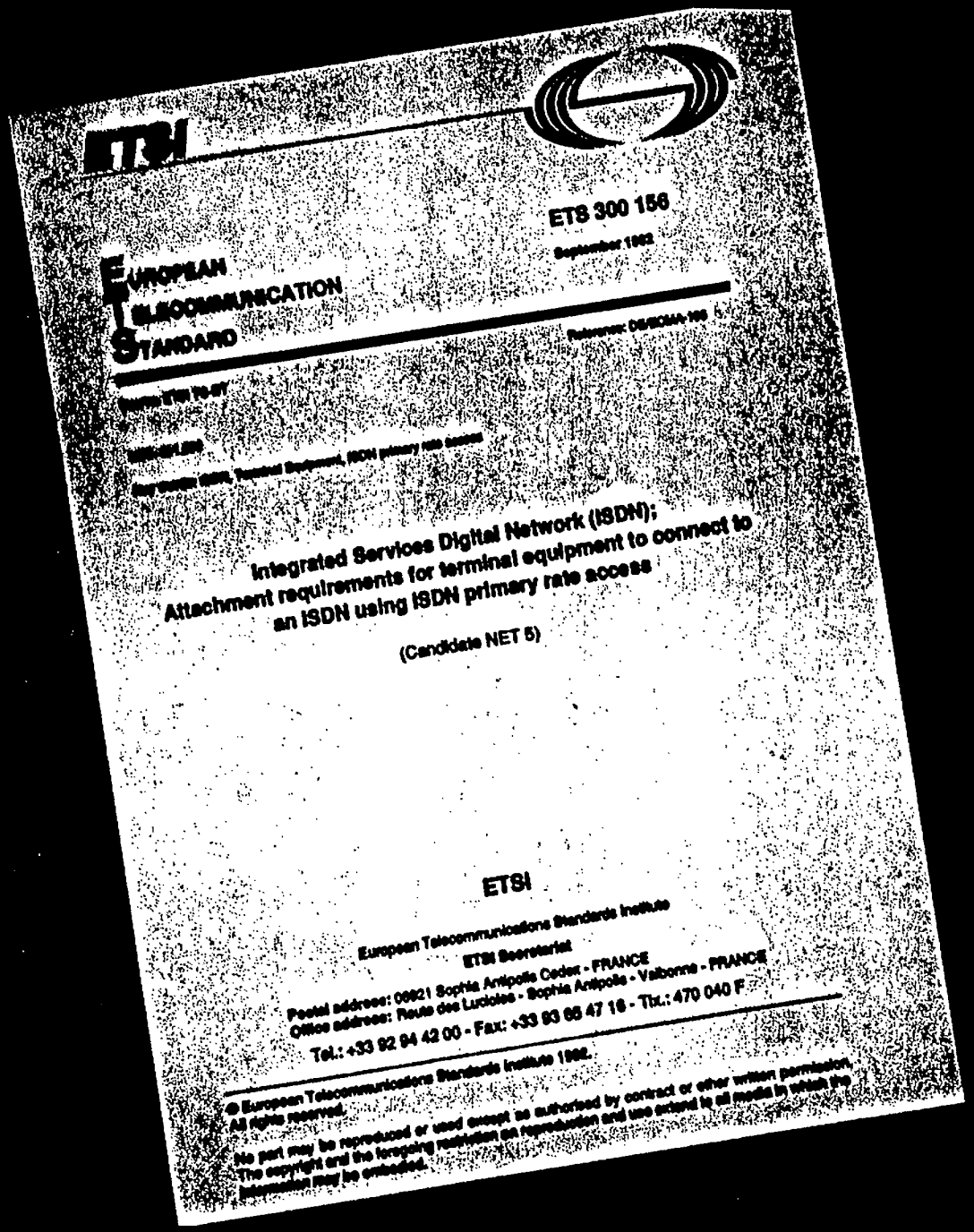

ETSI

ETSI

ETS 300 156

September 1992

EUROPEAN TELECOMMUNICATION STANDARD

Reference: DE/BOMA-100 5

Source: ETSI TC-BT

ICS: 33.080, 33.040

Key words: ISDN, Terminal Equipment, ISDN primary rate access

Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN primary rate access

(Candidate NET 5)

ETSI

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7

Hiroshi Ishikawa

Promotion of Interconnectivity and Interoperability

社団法人

電信電話技術委員会

THE TELECOMMUNICATION TECHNOLOGY COMMITTEE

An Advent of an Advanced Information Society and Standardization

= Promotion of Interconnectivity and Interoperability =

Hiroshi ISHIKAWA

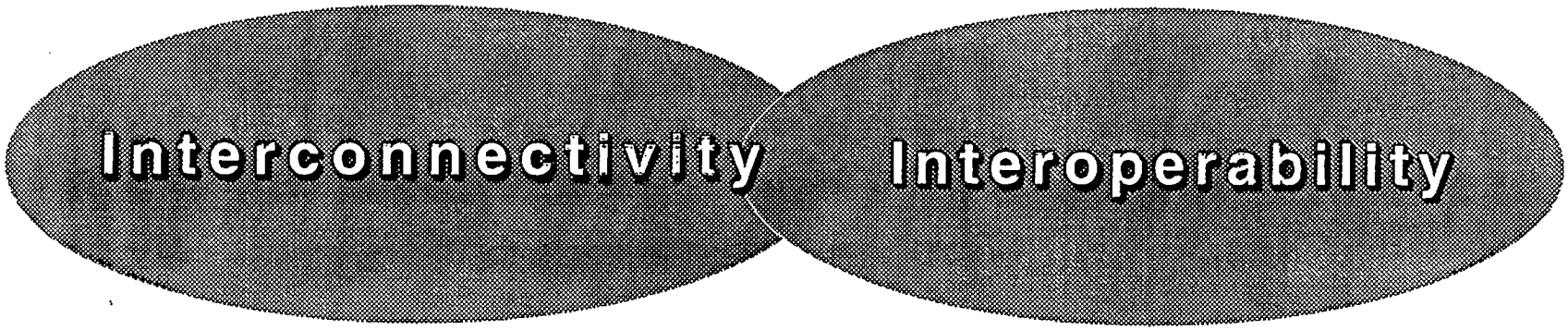
Chairman of Technical Assembly

The Telecommunication Technology Committee (TTC)

TTC

An Advent of an Advanced Information Society

"**Intelectual Society**" in the 21st Century



TTC

Significance of Standardization

① to assure interconnectivity/interoperability

② to realize a cost reduction, create a competing environment, and activate the market

③ to clarify the direction and the time of realization of technology development

④ to maintain the security and reliability

⑤ to promote the technology transfer

Factors Necessary for Standardization in the Future

① rapidity of standardization

② good responsiveness toward the market

③ flexibility of standardization structure

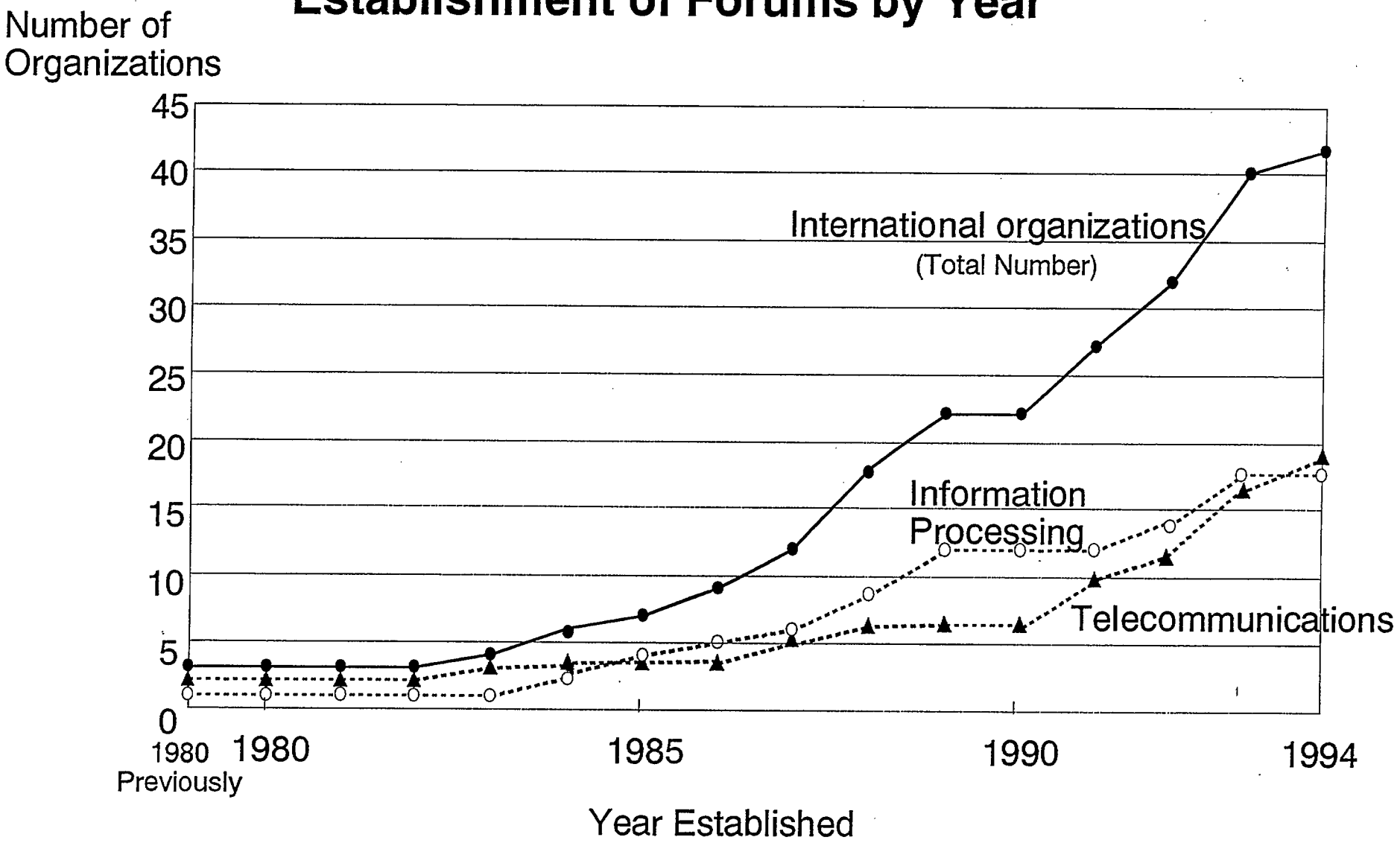
④ cooperation of standards among the media

⑤ internationality of standardization

TTC's Activities

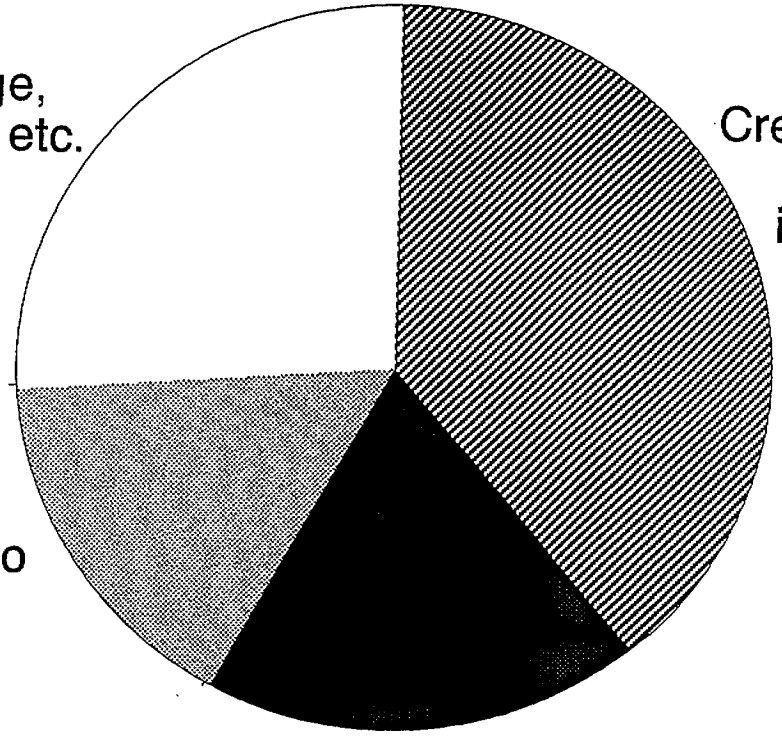
- Established 1985
- Down Stream ➡ 232 TTC Standards as of April '95
  - Draw up Domestic Standards based on International Standards
- UP Stream ➡ UPT, FPLMTS, B-ISDN, ... etc.
  - Contribute to Activities to Settle on Global Standards
- Take Part in GSC
  - Make the International Standardization Rapid and Effective

Establishment of Forums by Year



TTC

Purpose of Forum Activities



Market research, Information exchange, Diffusion/enlightment, etc.
27%
(MMCF, ITSTC, IFIP, etc.)

Creation of specifications and guideline for implementation and interconnectivity
41%
(ATMF, NMF, AOW, etc.)

Creation of substantial de facto standards
16%
(SWIFT, DAVIC, IrDA, etc.)

Creation of pre-standards to be proposed to international standardization organizations
16%
(IFSF, APS, OMG, etc.)

De Facto Standards

They are substantial standards among standards brought by standardization activities by a company or by a collaboration of companies.

They have gained supremacy in a certain field of business through a competition in the market, and receive a similar treatment as standards.

De Facto Standards

advantage: Rapid to Create

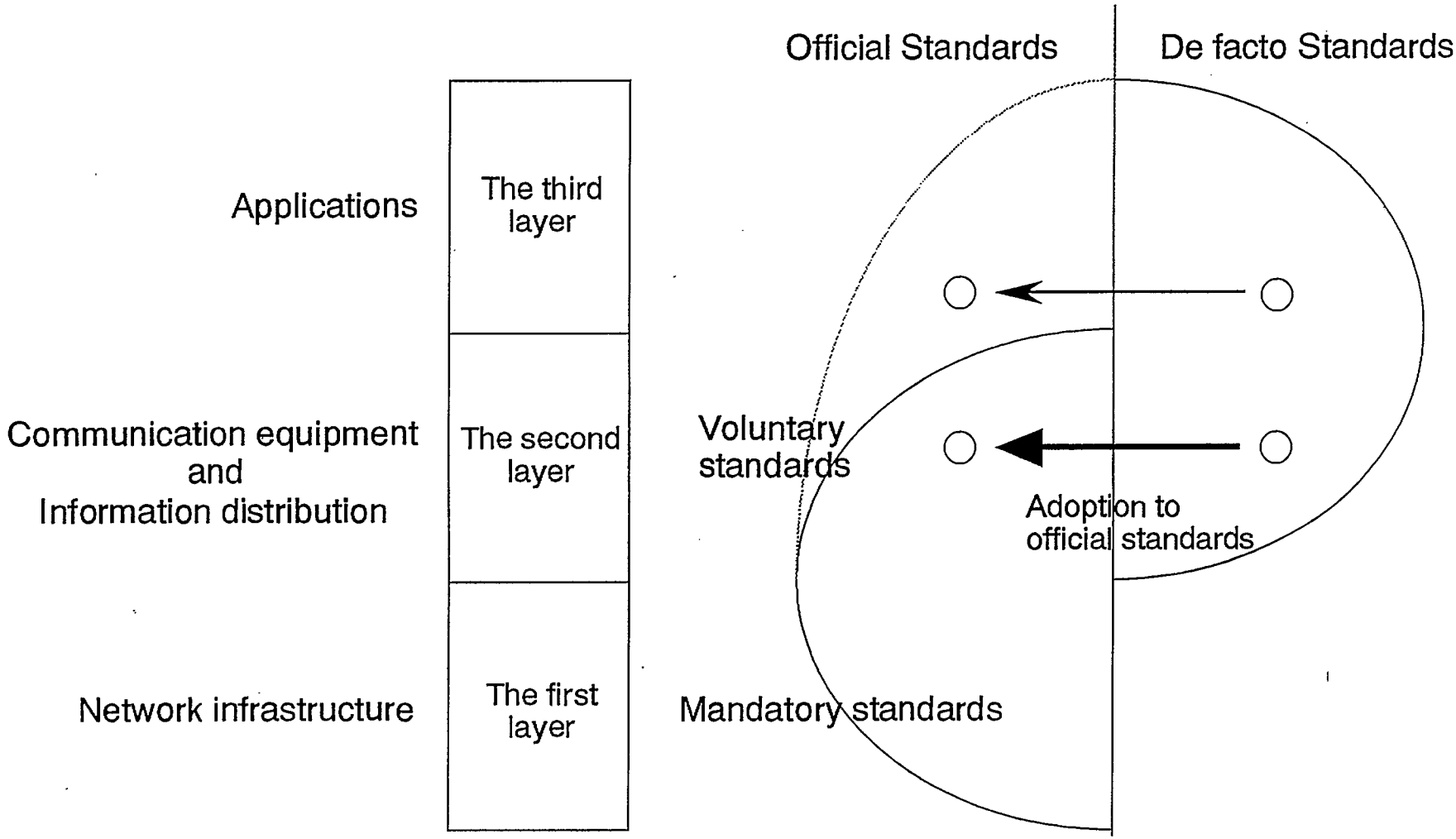
Easy to Retlect the Market Needs

Possible to make up an Experimental Technical Specification

not sufficiently clear:

Openness of its Content and Creation Process Treatment of IPR

Layers of Information Communications Structure and Standardization



TTC

Summary

① It is necessary to assure interconnectivity/interoperability to realize an advanced information society.

② For its promotion, it is of necessity to accelerate standardization activities including those of forums.

③ Official standards are needed for a basic part of networks.

④ If de facto standards already exist for a basic part of networks, it can save labor of standardization process to adopt them as official standards.

⑤ As there are some indispensable conditions for de facto standards such as "the treatment of IPR", "the openness of standards" and "a non-exclusive treatment of standards" when adopting them as official standards, it is necessary to discuss these conditions in advance.

8

Minho Kang

Korean Perspective of Standards for Global Connection

Korean Perspective of Standards for Global Connection

Minho Kang

Chairman,

Telecommunications Standards Assembly

KOREA

CONTENTS

- Changes of Standardization Environment
- Standards for Global Connection
- Korean Information Infrastructure
- Korean Status for Global Connection
- Reengineering of TTA
- Three Wheels for Global Connection

Changes of Standardization Environment (I)

- **Standards**
  - Number : dramatically increased
  - Content : complex, integrated, specified

  ☞ ***Process : More difficult, time consuming work for consensus between many interested parties***
- **User requirement**
  - Market : Competitive environments
  - Product : Shorter life cycle

  ☞ ***More rapid standards agreement for implementation***
- **Industry Forum/Consortium**
  - Faster deployment of standards in product development
  - More market-oriented standards
  - Encourage of private sector investment

  ☞ ***Create a number of specific interest groups for de facto standards***

Changes of Standardization Environment (II)

- **NII/GII**
  - Driven by government bodys for global competitiveness
  - A number of private sector participate to world market
  - ☞ ***Accelerating technology & service evolution***
  - ☞ ***Accelerating liberalization & competitiveness in global market***
  - ☞ ***Accelerating standardization activity in many standardization bodies & industrial alliance/forum***

- **Challenge to formal international standardization organizations**

Standards for Global Connection (I)

Global Connection

- Connecting NII and other regional or global networks
- Integrating a wide range of components
  - Communication capabilities
  - Computers and other information equipments
  - Software & application
  - Information resources or content
  - People who develope & make use of it

Standards for Global Connection (II)

Global Standards

- Keeps the interoperability & interconnectivity among various components in global network
- Allows diverse systems, products and services offered by multi-vender to communicate each other
- Promotes competitive market and stimulate innovation and responsiveness

☞ ***timely, high-quality and harmonized standards are one of the crucial issues*** *for early establishment of global connection*

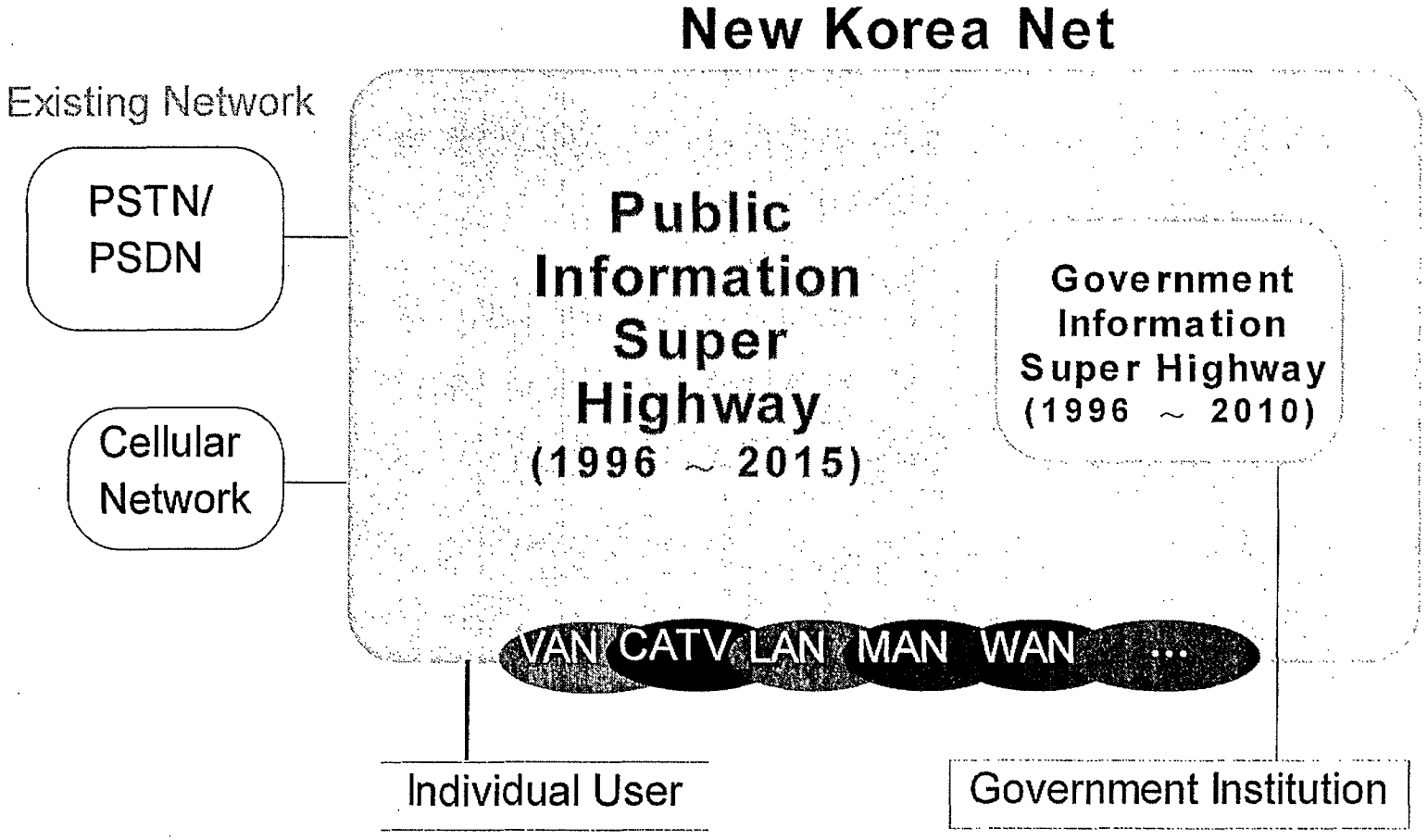
TSA / Korea

Korea Information Infrastructure *(KII)* Plan (I)

Environments

- Competition is introduced in domestic market
  - International and toll telephone services
  - Value added data communication services
- Massive B-ISDN development project is under progress
- 60 billion US dollars will be invested for New Korea Net by 2015

Korea Information Infrastructure *(KII)* Plan (II)



Korea Information Infrastructure *(KII)* Plan (III)

GISH / PISH

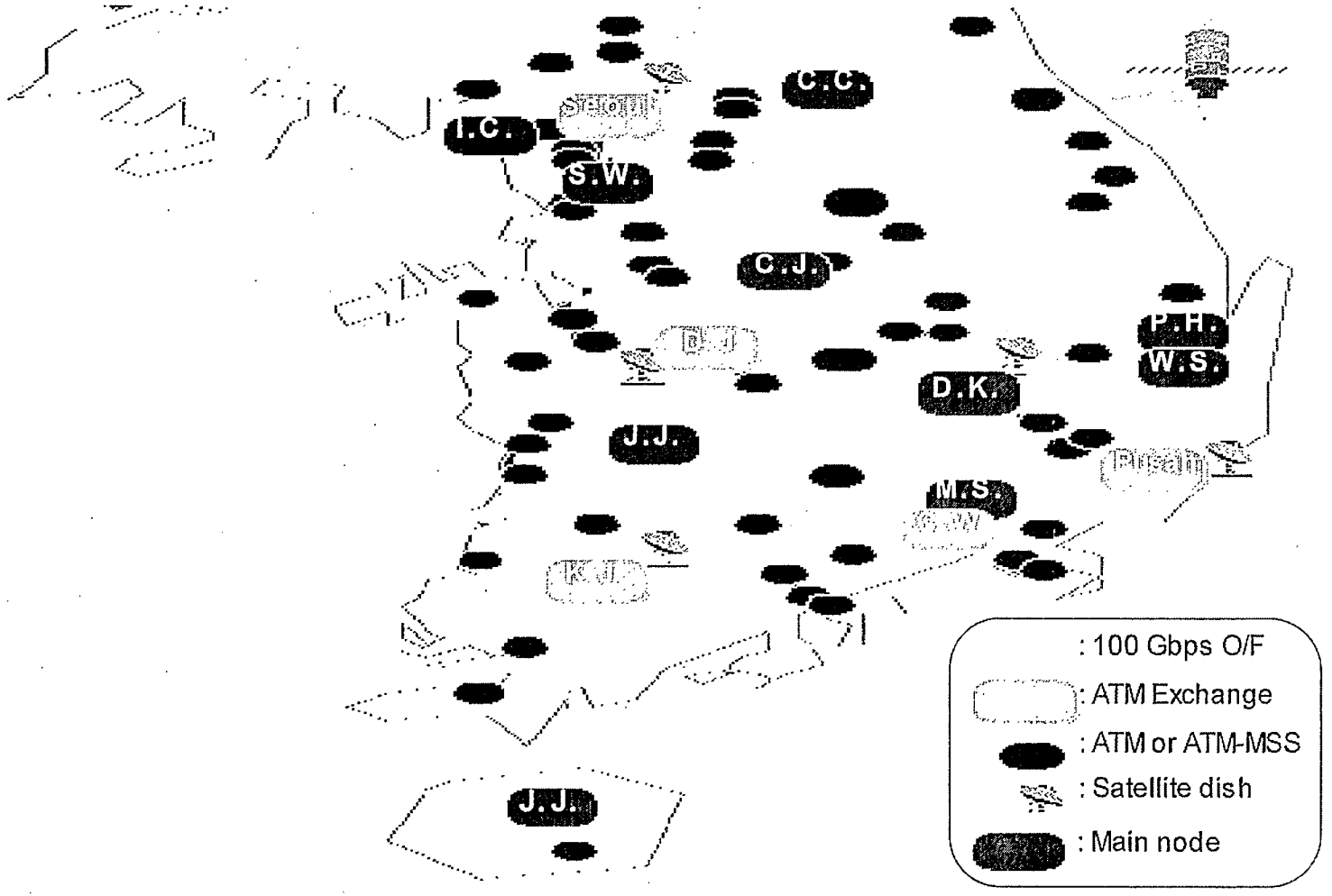
Net.	Financial Resource	User	Activities	Period
GISH	Government	Govern-ment domain	● Provide vision & direction ● Activate government information service	1996 ~ 2010
PISH	Network Providers, Industries	Public domain	● Encompass GISH ● Interactive multimedia services to end users	1996 ~ 2015

Korea Information Infrastructure *(KII)* Plan (IV)

Evolution of PISH

Phase	Phase 1	Phase 2	Phase 3
Period	'95 ~ '97	'98 ~ '02	'03 ~ '15
Node	- N-ISDN - ATM-MSS	- ATM-MSS - ATM	- ATM - ATM-MSS
Transport Capacity	- 155 ~ 622 Mbps - 2.5 Gbps	- 2.5 Gbps - 10 Gbps	- 100 Gbps
Subscriber	- FTTO - 2 Mbps	- FTTC - 45 ~155 Mbps	- FTTH - 155 Mbps

New Korea Net in 2015



Korean Status for Global Connection (I)

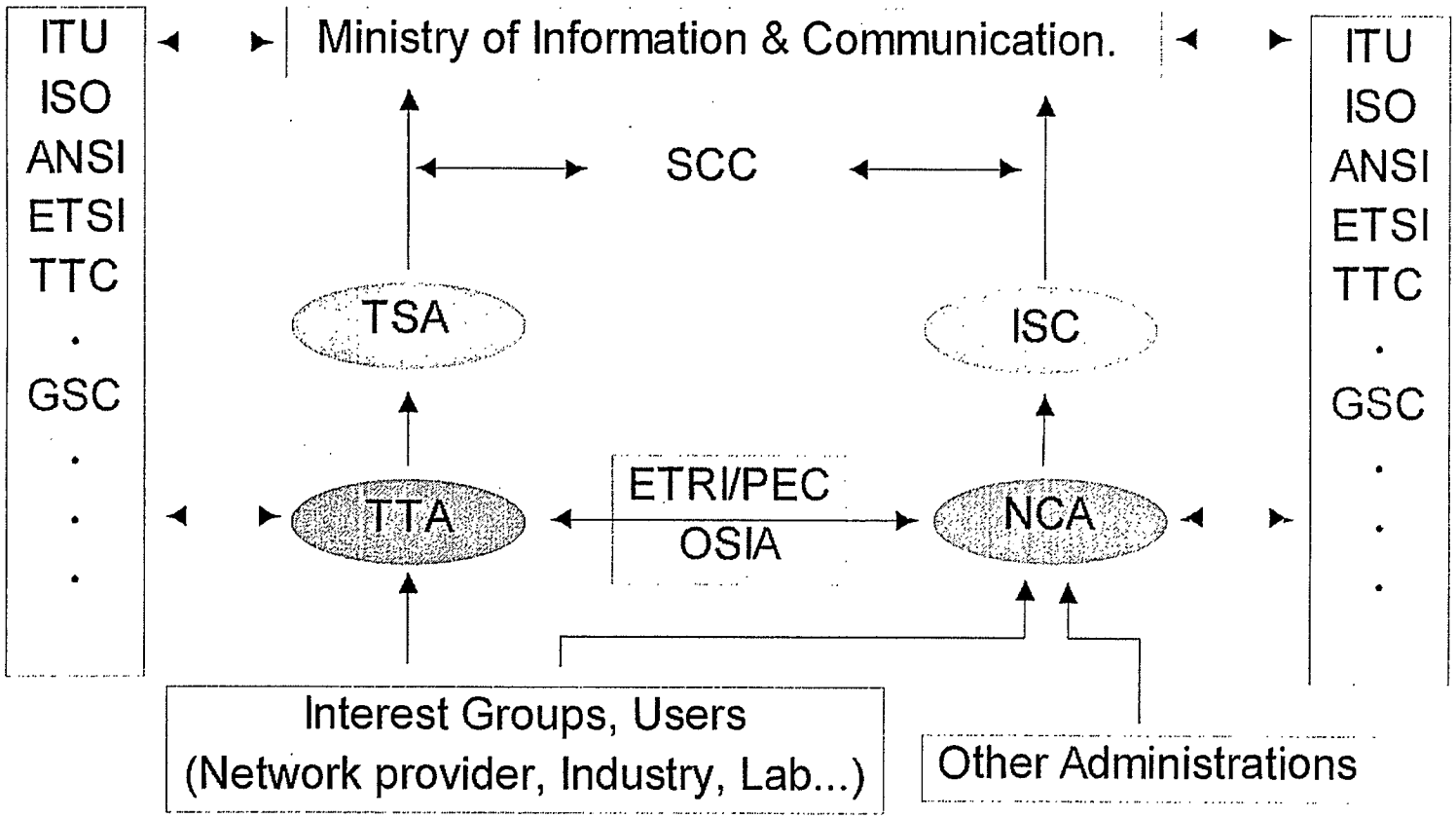
Domestic Standards Organization

Area	Communication	Information
Organization	TTA	NCA
Numbering	**KCS**-YYYY(ZZ)-I	**KIS**-YYYY(ZZ)-I
Object	Telecommunication, Broadcasting system	Computer, Software
Nr. of Standards	173 items	50 items
Study Group	11 SC, 44 SG	7 SG, 22 Committee

KCS : Korea Communication Standard
KIS : Korea Information Standard
NCA : National Computerization Agency

Korean Status for Global Connection (II)

Standardization Procedure



TSA : Telcom. Standards Assembly
ISC : Information Standards Committee
SCC : Standards Coorperation Committee

Korean Status for Global Connection (III)

- Basic Strategy for New Korea Net standards
  - Utilize existing domestic standard organizations
  - Develope core technology & standards by Research Lab.
  - Install the test-bed and reinforce conformity certification
  - Facilitate private sectors for active participation
  - Cooperate Regional/International Standards Organizations & Forums
  - Concentrate on Interface standards

Reengineering of TTA (I)

- Requirements

  - To continue a leading role to develope, set and test standards needed Korean Information Infrastructure

  - To cooperate closely with other standards organizations (ITU, ISO, GSC) to share resources on global standardization activities

  - To cope with demand of timely standards and ensure fair competitive market

Reengineering of TTA (II)

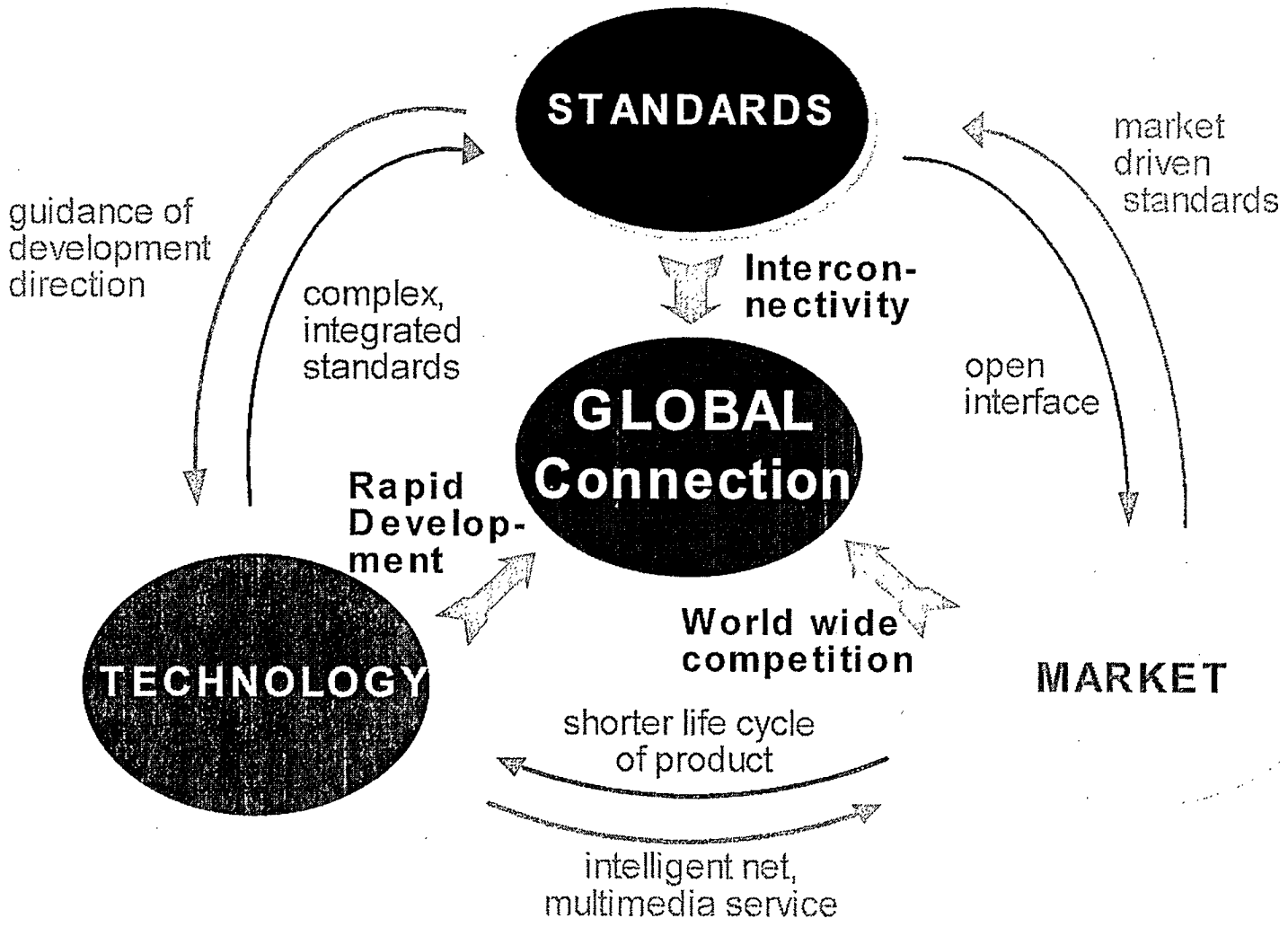
Improvement of standardization process

- Focus on high interest areas for New Korea Net
- Introduce the standards certification and testing system

- Reorganize Study committee to deal common interested items
- Add two more Subcommittees to handle IPR policy, terminology and EDH systems

- Merge 2 step committees to 1 *(TA+TSC→TSA)*
- Introduce Interim-Standards for fast track

Three wheels for Global connection



TSA / Korea

APII (Asia-Pacific Information Infrastructure)

Background

- Proposed by President Kim at 2'nd APEC Summit in Indonesia (November, 1994)
- APII is essential to translating the vision and goals of the APEC into reality
  - Liberalizing trade and investment by 2020.
  - Close technical cooperation among APEC members
- 1'st APEC ministerial meeting on Telecommunication and Information Industry (in Seoul, on 29-30, May, 1995)
- Adopt *Seoul Declaration for APII*
  - five objectives
  - ten core principles

TSA / Korea

Seoul Declaration for APII (I)

Five Objectives

- Facilitating the construction of Regional Information Infrastructure
- Encouraging technical cooperation
- Promoting free and efficient flow of information
- Furthering the exchange and development of human resources
- Encouraging the creation of policy and regulation favorable for APII

TSA / Korea

Seoul Declaration for APII (II)

Ten core principles

- Encouraging member economies
- Promoting a competition driven environment
- Encouraging business/private sector investment
- Creating a flexible policy & regulatory framework
- Narrowing infrastructure gap
- Ensuring open and non-discriminatory access
- Ensuring universal access
- Promoting diversity of content, cultural and linguestic diversity
- Ensuring the protection of IPR, privacy and data security

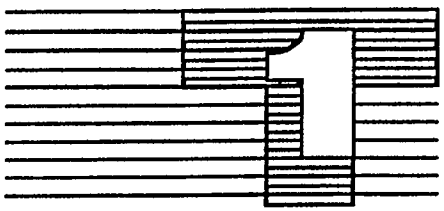
TSA / Korea

9

Gerald H. Peterson

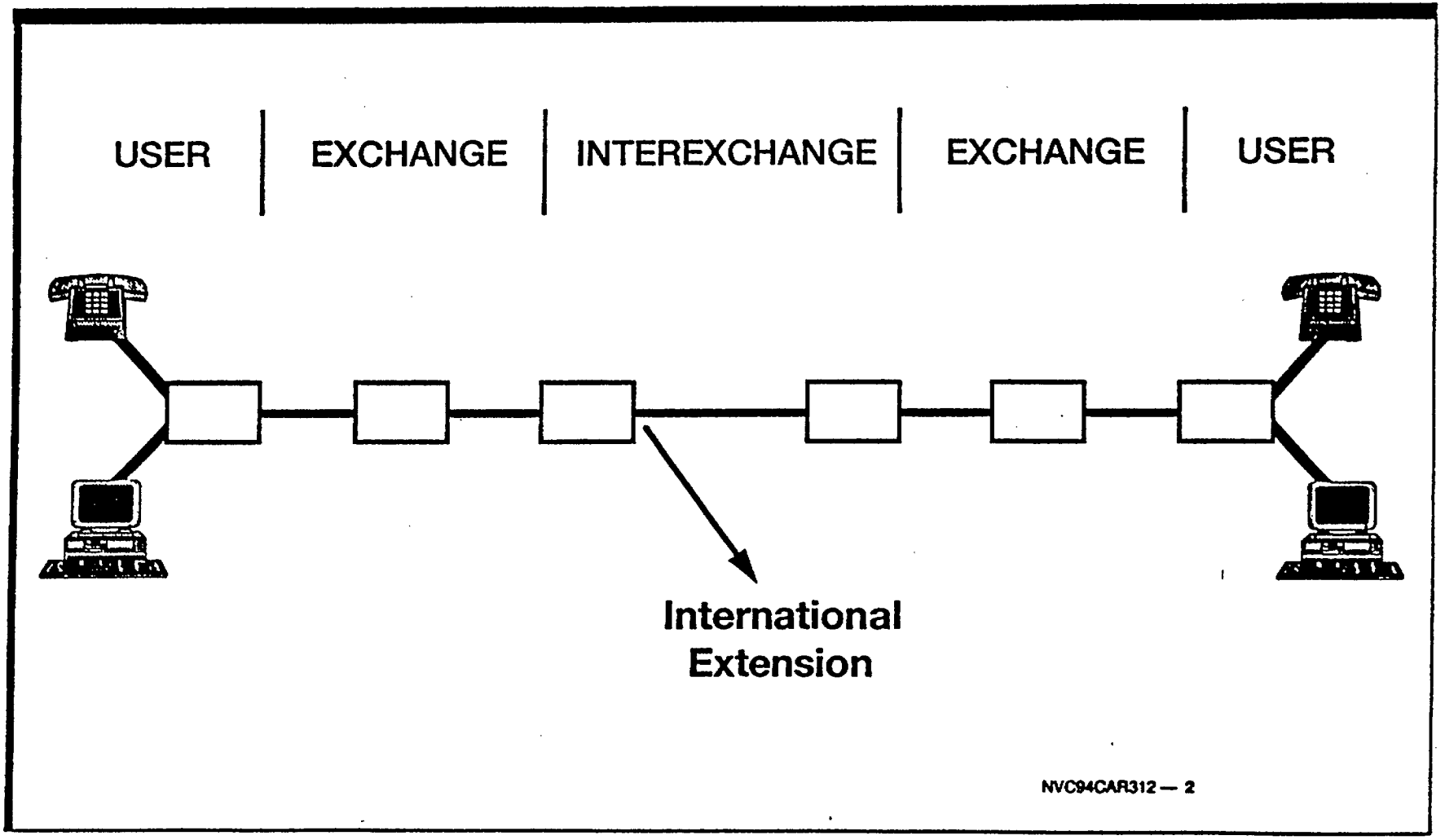
Committee T1

COMMITTEE T1

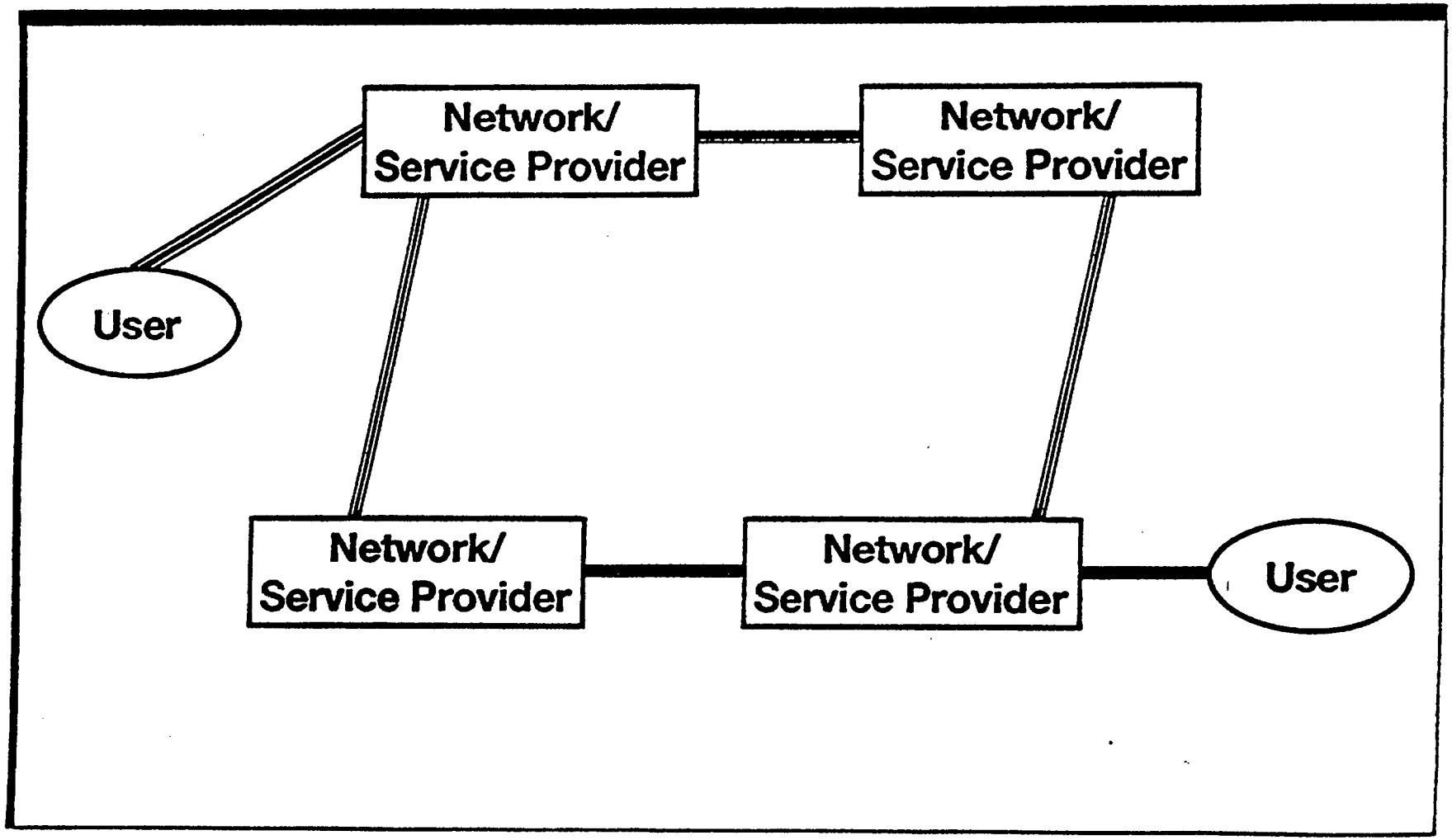


Gerald H. Peterson
Vice Chairman, Committee T1
Seminar On Standards For
Global Connections
June 8-9, 1995

U.S. TELECOMMUNICATIONS NETWORK CONNECTIONS



SAMPLE SUBSET OF U.S. "NETWORK OF NETWORKS"



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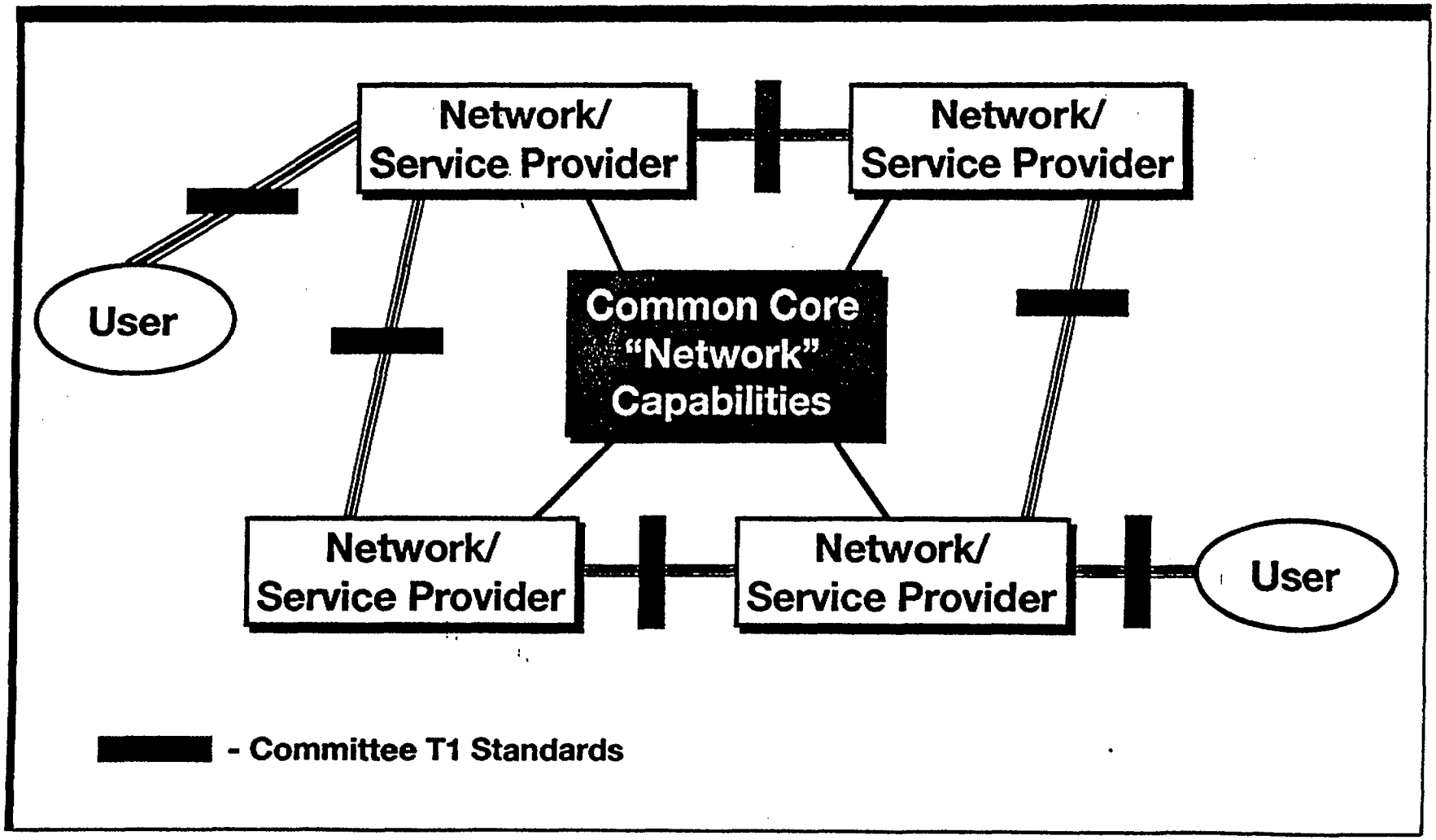
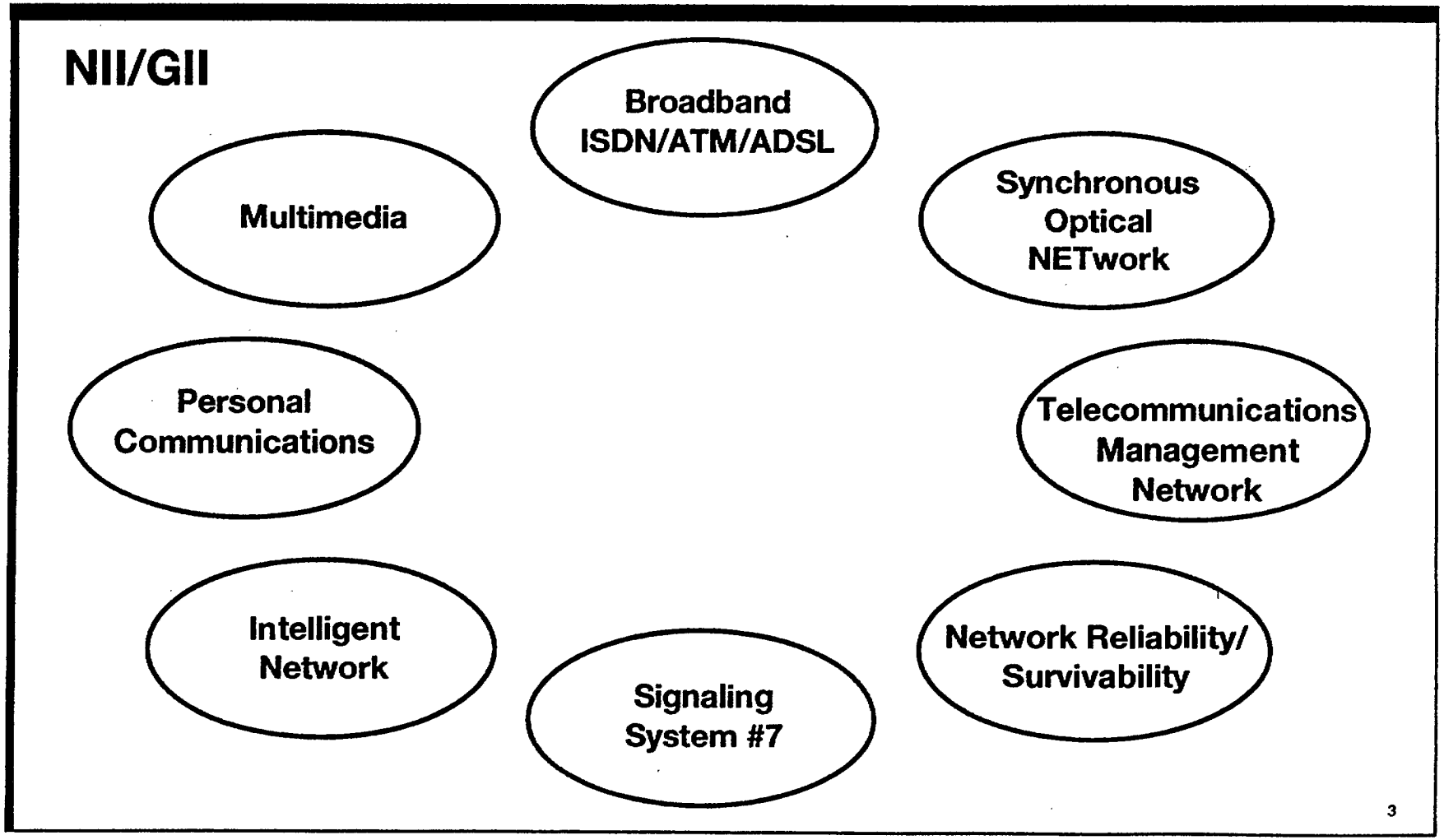


TECHNICAL FOCUS AREAS

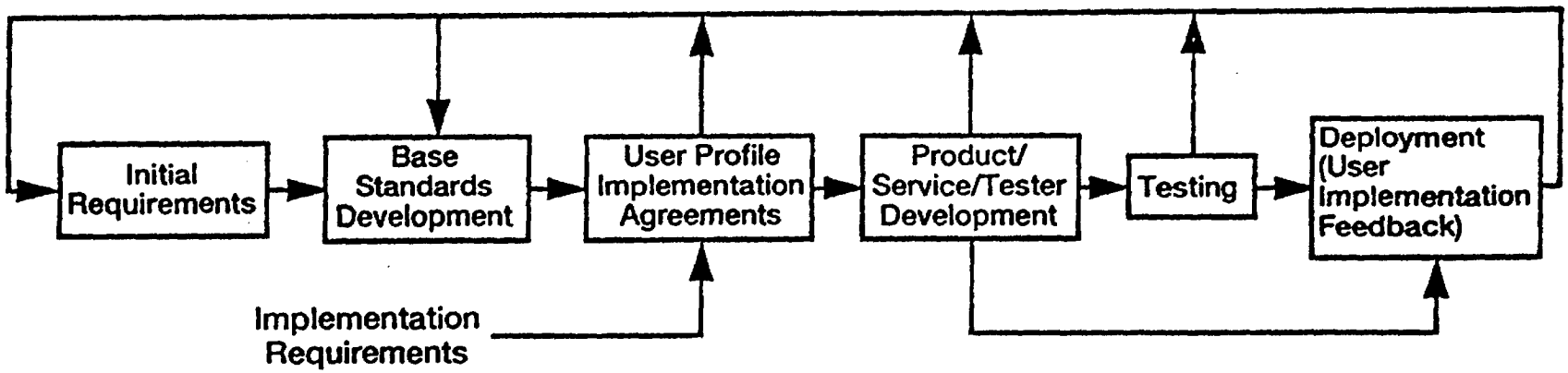


COMMITTEE T1

Standards Development

- Network Interfaces
  - Analog
  - Digital (56 kb/s to 10 Gb/s)
- Services, Architecture and Signaling
- Digital Hierarchy and Synchronization
- Performance
- Systems Engineering, Standards Planning, and Program Management
- Environmental Considerations
- Signal Processing
- Internetwork Operations, Administration, Maintenance, and Provisioning

STANDARDS LIFE CYCLE



COMMITTEE T1
Management Focus

- Improve Quality and Timeliness of Outputs
- Build Upon Liaisons - Promote Collaboration and Synergies with other Groups
- Increase Industry Awareness of the Role of Standards and Committee T1's Work

COMMITTEE T1
Improve Quality and Timeliness of Outputs

1) Standards and Technical Reports Approved at the Rate of Approximately 1-1/2 Per Week

2) ~ 75% of the Standards and Technical Reports Address 8 Technical Focus Areas

3) Committee T1 Continues to be the Primary Source of U.S. Technical Contributions to the ITU

4) Trial of Simultaneous T1 and TSC Letter Ballot Process Successfully Completed

COMMITTEE T1

Improve Quality and Timeliness of Outputs (contd.)

5) Simultaneous Letter Ballot Process Established as the Standard Mode of Operation

6) T1 Bulletin Board System (T1BBS) Enhancements: e.g. Increased Access Speed, E-mail Reflectors, "New Files" List, initial World Wide Web access

7) 1995 Edition to the T1 Strategic Plan Approved

8) Leadership Training Program Conducted

COMMITTEE T1

Build Upon Liaisons - Promote Collaboration and Synergies With Other Groups

1) Continuing Dialogue with Other Global Standards Collaboration (GSC) Participants

2) Consultative Committee Telecommunications (CCT) Established - NAFTA Support, Close Working Relationship with Canadian and Mexican Standards Colleagues

3) CITEL PTC.1/T1 Ad Hoc Group Elevated to Working Group on Standards Collaboration

COMMITTEE T1

Build Upon Liaisons - Promote Collaboration and Synergies With Other Groups (contd.)

4) Joint and Collaborative Work Programs with TIA Developed Air Interface and Signaling Standards to Meet Industry Needs

5) Committee T1 Became a Charter Member of the Information Infrastructure Standards Panel (IISP)

COMMITTEE T1

Increase Industry Awareness of the Role of Standards and Committee's T1's Work

1) First Press Conference Conducted (Joint with TIA on PCS)

2) Committee T1 Papers on the NII/GII Presented and Published

3) Impact Statements on 8 Technical Focus Areas Developed ("Angel" Brochure)

4) Heads of State at "Summit of the Americas'" Recognize the Role of Standards

COMMITTEE T1

Increase Industry Awareness of the Role of Standards and Committee's T1's Work (contd.)

5) Media Articles on T1 Technical Work, e.g. SONET, Video, Network Reliability/Survivability; Quotes from T1 leaders on the Standards Process

6) Numerous Papers Presented at Industry Conferences on T1 Technical Work

7) Recognition/Invitations; e.g. T1 Represented on FCC's Network Reliability Council Task Groups

10

Alan Aitken

Research Network in the National Capital Region
OCRInet - Canada

OCRInet

Research Network in the National Capital Region

International Seminar on Standards for Global connections

June 9, 1995

Alan Aitken

Topics

- National Test Network
- Regional High Speed Network Activities in Canada
- OCRInet
- National & International Connections
- Major Project Initiatives

Another Visionary Enterprise in the National Capital Region OCRI

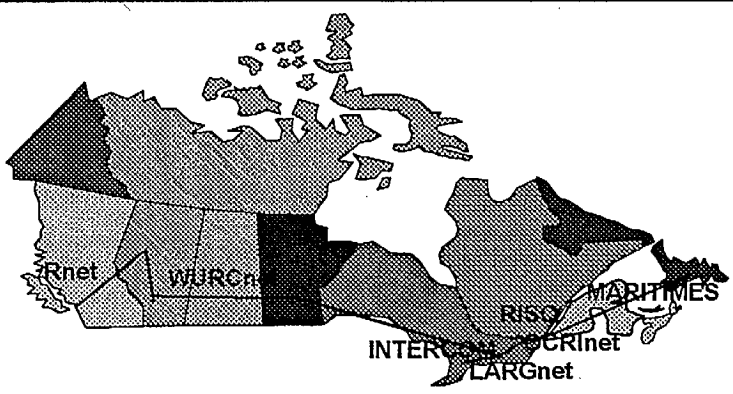
ATM: Network Technology for the next Ten Years

- Developed by the Telecommunications Industry
- Embraced by the Computer industry
- Meets the need for 100Mbps Service to each Workstation
- Bandwidth can be allocated according to the Needs of the Applications
- Standards are being approved relatively Fast

Implications of ATM Technology

- With Universal ATM, the Division between the Public Network (WAN) and the Private Network is blurred
- The Services are equivalent in many ways (Bandwidth-on-Demand) from the Networks point of View. Voice, Data, Image & Video are carried equally. Pay for Bandwidth
- The ATM Technology is really pushing the Regulatory Issues. Both the Cable and Telecommunications Industry envisage a similar Network Architecture

National Test Network



——Stentor/Unitel/Rogers/Canarie National Test Network

Network Services

- **Rnet** ATM Taxi Service
- **Wnet** ATM OC-3 Service
- **LARGnet** Lan emulation Service plus JPEG
- **OCRInet** ATM DS-3 Service
- **RISQ** LAN emulation Service
- **ACORN** ATM router Service

Major National Network Developments

- Multi-vendor and multi-architecture environment
- Routers being installed to provide IP capability and improve interoperability between customer locations
- A management System to manage a multi-vendor environment will be tested in July
- A DS-3 connection into the VBNS in the United States is in planning

Regional Networks

- Major Drivers for Broadband Communications
- Common Factor is Strong Local Support
- Clear Emphasis on Added Value to the Local Community
- Must Ensure that the Opportunity to Benefit from the Regional Networks is available to all Canadian Researchers and Industry

Canarie Testbed Resources

	Rnet	Wnet	LARGnet	OCRInet	RISQ
Health	St Paul's Hospital DC Children's Hosp Vancouver General		University Hospital Victoria Hospital St Joseph's Hospital		
Academic	Simon Fraser U UBC	University of Alberta University of Calgary	U of Western Ontario Roberts Res Institute Fanshawe College	Algonquin Woodroffe Algonquin Lees Carleton University University of Ottawa	Concordia University McGill University University de Sherbrooke University du Montreal University du Quebec University Laval
Industry	MPR Teltech	HPCC		Bell Canada Bell Northern Research Mitel Newbridge Telesat Gandalf	
Government				Communications Research Centre National Research Centre	CITI

Another Visionary Enterprise in the National Capital Region *OCRI*

Major Ottawa Based Network Initiatives

- **Freenet: 42,000 Subscribers**
- **25 local internet suppliers**
- **Ottawa Region has implemented a $1.9 million infrastructure program to bring broadband services to the public**
- **Schoolnet program to connect all Canadian schools to Internet is organized out of Carleton University**
- **Hull (Quebec) has announced an $8 million infrastructure program (incl. ATM connections)**
- **OCRInet, an ATM network**

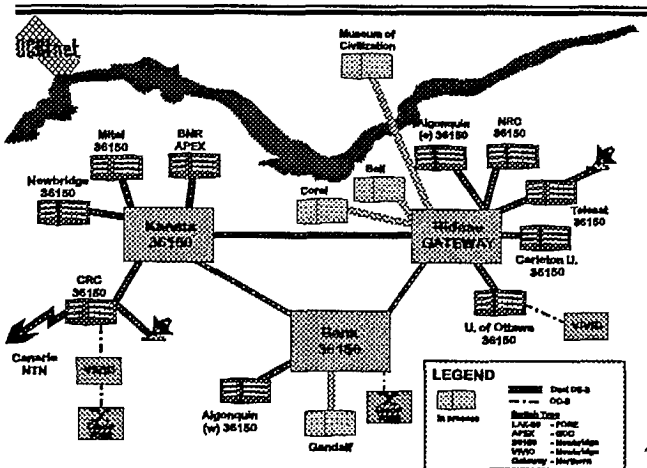
Another Visionary Enterprise in the National Capital Region *OCRI*

What Is OCRInet?

- OCRInet is a Research network
- OCRInet uses Asynchronous Transfer Mode
- OCRInet connects Users, Equipment Manufacturers, Service Providers
- OCRInet connects Industry, Academia and Government Laboratories
- OCRInet Became Operational in January 1994

Another Visionary Enterprise in the National Capital Region *OCRI*

OCRInet

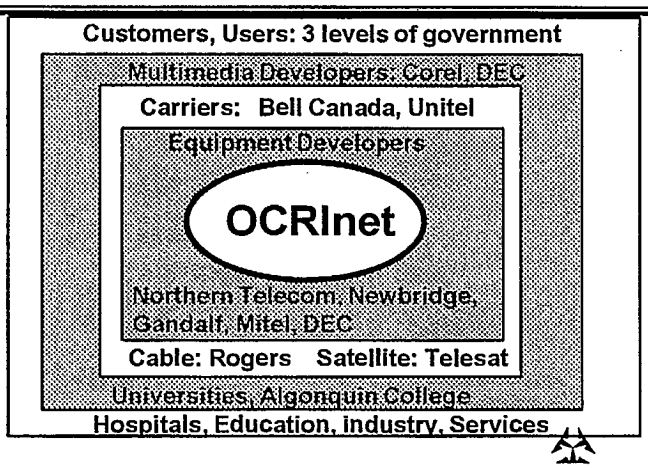


Another Visionary Enterprise in the National Capital Region *OCRI*

OCRInet Backbone

- Self-Contained User Group Network
  - Connections can be established outside of OCRInet for approved R&D experiments
- Connection to the National Test Network
- OCRInet is a Multi-Vendor ATM Network
  - Newbridge, Nortel, Fore, GDC, Cisco
- 2 DS-3 links are provided to each location
- We are looking at using ISDN service as an on-ramp to the high speed network

Ottawa Infrastructure



OCRInet Inc. Objectives

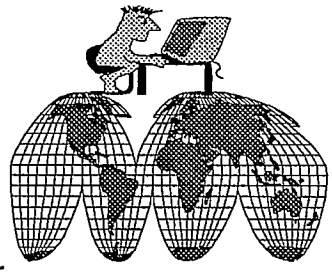
- Provide an R&D ATM Broadband Infrastructure for Innovative Product and Service Development
- Stimulate Information Technology Research and Applications
- Encourage Participation by Small Companies
- Link with the Canarie Inc. Initiatives
- The Network will be Dynamic

Interoperability & Reliability

- Good interoperability at the lower OSI layers
- Problems in interoperability at the higher layers
  - Inconsistent interpretation of the LAN emulation standards
  - Limited interoperability of different vendors applications
- Some applications designed to run on other network network technologies may not be robust in an ATM heavy traffic environment
- Traffic shaping required

Connecting to the World

- Connections to other locations in Canada and the world;
  - ATM T1 Satellite services to the North
  - ATM T1 satellite connections to New Brunswick
  - Teleglobe E3 connection to Europe
  - Planning connections to Brazil and Mexico conferences
- Participate in experiment for Internet connection from the North Pole to over 300 schools around the world



OCRInet
Major Project Initiatives

- Network Operations and Management
- Electronic Information Services
- Distance Education
- Medical Applications (Satellite and Terrestrial)
- Common Workspace for CAD and Software Development
- Broadband Services to Remote Locations
- Video on Demand
- Imaging/Interactive Video

Multimedia News Delivery Project

- *Develop a "News Journal of the Future"*
- *Technology Issues*
  - Database technology
  - Delivery Software
  - Standards
- *Economic Issues*
  - Advertising
  - Production Methodology
- *Market Issues*
  - Customer Interface

Multimedia News Delivery Project (cont.)

- Partners
  - Ottawa Citizen
  - University of Ottawa
  - Algonquin College
  - Communications Research Centre
  - Northern Telecom
  - Industry Canada (Senior Executives Network)

Another Visionary Enterprise in the National Capital Region OCRI

Remote Cardiology Consultation Project

- Broadband Communications to Allow Effective Consultation
- Satellite Communications to Reach Remote/Northern Communities
- Development of Remote Consultation Equipment & Software
- Development of Satellite ATM Equipment & Software
- Use of Network & Satellite Facilities for CME and Public Education
- Connection of Ontario Medical Networks

Remote Cardiology Consultation Project (cont.)

- Partners
  - The University of Ottawa Heart Institute
  - Bell Northern Research/Northern Telecom/Bell Canada
  - The Communications Research Centre
  - OCRInet
  - Brytech
  - Almonte General Hospital
  - Timmins District Hospital

Summary

- OCRInet is an operational ATM network with links to other regional networks across Canada
- The Multi-Vendor Network highlights the capabilitites and limitations of interoperability
- Initial activities were Network related; applications activities are now growing
- There is a unique combination of network expertise, multimedia developers and users in the Ottawa area

11

LIST OF PARTICIPANTS

Participant List

International Seminar
Standards for Global Connections
Ottawa, June 08 & 09, 1995

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