Communications Canada

Standards Council of Canada
Conseil canadien des normes

SEMINAR PROCEEDINGS
DÉBATS DU COLLOQUE

Canadian Seminar on Information Technology and Telecommunications Standards
May 9 – 10, 1991
Ottawa

Colloque canadien sur les normes des technologies de l'information et des télécommunications
9, 10 mai 1991
Ottawa

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SEMINAR PROCEEDINGS =

DÉBATS DU COLLOQUE

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Minister of Communications

Ministre des Communications

FOREWORD/AVANT-PROPOS

I have the pleasure to present to you the proceedings of the Canadian Seminar on Information Technology and Telecommunications Standards, held 9-10 May 1991 in Ottawa. This contains the Rapporteur's report and relevant papers concerning the seminar.

The seminar provided a unique opportunity for discussion and identification of key strategic issues for Canada in IT&T standards. The Rapporteur's report captures the essence of the seminar, identifies key areas of consensus and provides a summary of topics where specific follow-up actions are required.

Communications Canada will endeavour to work with government departments and the private sector to respond to this report and formulate action plans to strengthen Canada's position in the global standardization environment.

I am extremely grateful to all the participants for their efforts in making this seminar a success. Your participation in the post seminar and future standards activities is strongly solicited and I look forward to working with you in this important work.

J'ai le plaisir de vous présenter les débats du Colloque canadien sur les normes des technologies de l'information et des télécommunications, qui s'est tenu à Ottawa les 9 et 10 mai 1991. Y figurent le compte rendu du rapporteur et un certain nombre de discours présentés au colloque.

Le colloque a fourni une occasion unique d'examiner et de définir les questions stratégiques importantes pour le Canada dans le domaine des normes des technologies de l'information et des télécommunications. Dans son compte rendu, le rapporteur constate sur la nature du colloque, dégage les principaux éléments de consensus et expose brièvement les sujets nécessitant un suivi.

Communications Canada tentera, en collaboration avec le secteur privé et différents ministères, de donner suite au compte rendu du rapporteur et d'établir des plans d'action visant à renforcer la position du Canada dans le contexte mondial de la normalisation.

Je suis extrèmement reconnaissant à tous les participants de leurs efforts en vue de faire de ce colloque une réussite. Je vous engage à participer aux futurs travaux de normalisation et espère avoir le plaisir de collaborer avec vous à cette oeuvre qui me tient à coeur.

Perrin Beatty

Ottawa, Canada K1A 0C8

RAPPORTEUR'S REPORT

ON

CANADIAN SEMINAR ON INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS STANDARDS

May 9-10, 1991

Ottawa, Ontario

Dr. R.E. Olley
Professor of Economics
University of Saskatchewan
Saskatoon, Saskatchewan
and
Past Chairman, CSA

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Rapporteur's Report on

Canadian Seminar on Information Technology and Telecommunications Standards

The stated purpose of the seminar was to produce "a consensus paper reflecting industry, users and government views on what issues in information technology and telecommunications (IT & T) standards require an action plan in Canada." Further, it was stated that "the Department of Communications, in consultation with government departments and the private sector, will work to formulate an action plan to address the key issues identified." This report is intended to be the consensus paper, and to identify what kinds of action plans may be necessary.

This report is divided into three parts. First, there are some preliminary observations, largely evoked by discussions at the seminar, but not necessarily part of the consensus development process. Second, the consensus issues are reported, along with those on which no explicit consensus seemed to be apparent. Finally, a very brief conclusion is presented to identify the main strategic considerations themselves, along with a summary of the areas in which the Department of Communications can begin to formulate action plans.

PART A

Some Background Considerations

The idea of standards is at once both simple and extremely complex. At the simple level, a standard is merely a codification of how to do something or what physical features a product must have. The fact that the codification may be difficult or time-consuming to achieve is secondary to the simple essence of the standard. However, standards have consequences. Here the matter becomes very, very complex. Standards may convey or deny commercial advantage. They may promote safety to varying degrees. They may promote performance, in some sense of performance, with respect to that very complex subject. Standards may be of greater or lesser quality in technical terms, in procedural terms, or in terms of their functional usefulness. Finally, standards may be of many types, and may be best developed at many different points in the evolution of the processes or technologies to which they refer. As a result of these and other considerations, it is important in discussing strategies in the field of standards that there be reasonable clarity as to what one is, and is not, discussing.

In this seminar, there was all but no discussion of the quality of the technical content of standards. It was, therefore, apparently assumed that the voluntary consensus processes of North American standards development will endow standards with adequate technical quality. Similarly, there was no discussion of significance with respect to the multi-partite character of the standards writing process. Such discussion, as did occur touching on this matter, seemed to favour the widest possible participation, with product and service users being permitted an even wider role than they may now have in some cases.

The virtual silence of the seminar on these two matters may be taken as endorsation of the multi-partite consensus process as a method of developing standards, together with the intense reliance on volunteers in that process. While that endorsement is probably entirely proper, it leaves unanswered the question of how effective these processes are in "competing" for influence in the content of standards in international arenas where the processes may be somewhat different for other countries. Effectively, the seminar assumed that Canadian processes can lead to adequate Canadian influence in international forums. This appears on casual observation to be a valid assumption, but may deserve a bit more study to be certain that Canada's workers in the field of standards are consciously aware of the underlying strengths and weaknesses embedded in standards development processes elsewhere. Canadians are rightly proud of their standards development processes in general, but that does not mean that in the strategic manoeuvring for advantage in influencing international standards, these Canadian processes could not develop increased effectiveness.

As will become more clear, from a different perspective in the following section, Canadian processes tend to require financial and human resources which are in short supply. Recognition of strategic considerations, such as physical presence, good document access, aggressive initiation of standards projects, among others, may help to shift priorities to make more resources available.

On a different aspect of standards, there is the question of where they fit into the production processes. Many standards focus at what might be called the end of the process, emphasizing product safety. Some, also focused on a user interest, deal with aspects of performance or functionality of the product. Both types of focus do affect the way products are built, and thus exercise their influence back on the "factory floor," so to speak, in terms of design and material content. However, in information technology, the focus of standards may move much farther back into the production process, to influence the intended function of the product. In effect, this

focuses standards on the research and development process itself, raising such questions as interoperability.

Here the issues become extremely complex for two broad sets of reasons. First, there is the question of interoperability with what -- existing technologies as implemented thus far, existing technologies if they were mutated in some different way to that which currently exists, emergent new technologies in some specific applied form, or anticipated technologies in as yet unknown specific forms? While no one would agree that there should be central planning, through standards, of the longer term development of technology, everyone would probably agree that some conscious attention to standards during the R & D process would improve the flow of benefits from new technology. Just how to go about finding the right place to introduce standards, and what degree of influence they should have, remains an unanswered, and largely unaddressed question. Second, there are proprietary questions to be resolved. The farther back toward basic research the standards begin to be developed, the more does basic entrepreneurial insight become public knowledge (or worse still, become stifled). This inhibits the search for new technology by reducing the possible benefits to those who spend time and money to find new technology. Strategic commercial questions of this kind are largely unexplored, yet must, for each firm involved, remain threshold questions to be addressed before any agreement can be reached to let standards be developed and used further back in the research, development, and production processes for IT & T products and services.

This seminar mentioned some of the potential problems in these areas, in passing. On the whole, however, these questions appeared to be left to be addressed, if at all, when and as they arose in particular cases. Perhaps this is all one can do, but it does mean that any strategy with respect to IT & T standards will be severely constrained by a general unwillingness to hamper technological innovation, and a very particular unwillingness to reveal the technological bases for commercial advantages expected by participant firms.

Discussion in the seminar thus proceeded largely on that basis that the task was to try to obtain better results from existing institutions, and current paradigms with respect to the form, function, and roles of standards. That may be all one can ever do, but it means that standards strategies will always be plagued with uncertainty about which standards can lead and influence technological development, which standards should follow technology or how fast they should follow, and what it really means to try to use standards for the commercial advantage of a nation. For better or worse, that constitutes the framework within which the seminar's discussions took place.

PART B

The Consensus of the Seminar

This part of the report on consensus is based on discussion sessions, on questions, on post seminar evaluation form results, and on notes from the rapporteurs for the discussion sessions. It relies to a considerable degree on my own summary presentation but not exclusively. Extensive notes prepared by Department of Communications staff, and virtual transcript from some sessions, have permitted me to revisit the sense of the seminar and its participants, to a high degree.

In what follows, I seek to emphasize agreement on areas where work needs to be done. My intent is to report on where the Department of Communications might direct its efforts to formulate action and to act to facilitate actions "to address the key issues identified".

1. Information Technology and Telecommunications Standards

In several instances commentators noted that there is a difference between standards in the area of information technology (IT) and in the area of telecommunications. Generally, participants seemed to feel that the pattern of standards development does not match the convergence between information technology and telecommunications. That seemed to mean two principal things to observers.

First, IT standards are increasingly focusing further back in the production processes so that they may be validly regarded as part of R & D and as affecting at least some of the specifics of R & D activity. This does not appear to be the case for telecommunications, where the publicly available standards

are much closer to the end of the production process, focusing upon user safety, avoidance of harm to the network, and some aspects of performance. While discussion was not very explicit on this, it seems to imply that there is a standards gap where interoperability of information technology requires integrated use of the telecommunications system. Moreover, in the view of some participants, as information and telecommunications technologies continue to converge, it will be necessary to both publish more internal network standards, and open up the process of their development to enable wider participation. Here the nature of the required further action seems to involve establishing the degree to which there is a standards gap, and the extent to which standards may be used to solve whatever problems are identified as following from the technology convergence.

Second, participants regarded the Canadian Standards Association (CSA) Standards Steering Committee on Information Technology (SCIT) as an attractive model for developing standards in Canada. Its harmonized efforts permit international standards to be adopted in Canada with the greatest possible ease, and provide a relatively efficient mechanism to develop Canadian views and make them effectively available in international standards forums, through the Standards Council of Canada. Thus it functions both downstream to adopt international standards and upstream to provide Canadian input to the development of those standards. Telecommunications standards development in Canada did not appear to be nearly so highly regarded by participants. It is clear that some explorations require to be carried out to see if or how the development of telecommunications standards could be expanded and reorganized so that it, like SCIT, would completely match the organization of international standards and provide a similarly effective upstream and downstream conduit to bring Canadian input to international bodies, while facilitating the adoption of international standards. It is already the case that the CSA Standards Steering Committee on Telecommunications (SCOT) takes

important regional initiatives with the Telecommunications Industry Association and the Exchange Carriers Association (T1 Committee) in the United States. This initiative is largely undertaken by individuals without the existence of any formal supporting structure. It may be that expansion of the work of SCOT could help more fully meet the needs for telecommunications standards.

2. Efficiency of the Standards Development Processes

Efficiency of the standards development processes did not arise directly, but speed and timing of development of standards did. Again, the SCIT model seemed to be preferable on speed, subject to one further question. This question was whether standards were developed too early or too late in the process of the evolution of technology. Participants agreed with what was called a fast following approach. This means that once the direction of technology became reasonably clear, then standards would be developed. Such an approach would require maximum streamlining of the standards development process to keep it abreast of the technological opportunities. Whether all that can be done to streamline the process on the IT side, has in fact been done, may be a slightly open question; there is apparently no such uncertainty on the telecommunications side -- much seems to need to be done to consolidate and expedite standards development, to increase its scope, and to integrate it with international standards. Whether this perception is correct, and, if so, what needs to be done, are clearly areas for further work.

Some particular aspects of efficiency were also noted with respect to standards development. There was general agreement that the impact of standards is widening rapidly and that the volume of standards is growing extremely rapidly, especially in the IT area. Growth in the volume of standards work indicates that everything possible should be done to facilitate speeding up the

processes. Particular mention was made of the need to make more use of IT in developing standards, through teleconferencing, fax use, machine-to-machine data interchange, and so on. At the same time, it was suggested that volunteerism could be further encouraged with an expanded award system for persons and firms who participate (perhaps in the form of more public recognition). Availability of international documentation also appears to be something of a problem. In these areas the Department of Communications could formulate and promote action plans to make documents more readily available, and to create an awards system.

3. Coordination with Standards Bodies Outside of Canada

There was complete agreement that Canada should support and promote established International Standards Organization/International Telegraph and Telephone Consultative Committee (ISO/CCITT) processes wherever possible. The end goal is to develop and use international standards in all areas of IT & T technology.

At the same time, two massive and interrelated complications exist. First, there are regional standards bodies such as European Telecommunication Standards Institute (ETSI) and T1 Committee. Second, it matters to the commercial success of Canadian manufacturers which region's standards dominate the ultimate content of international standards: Canadian producers have largely optimized their technology and production processes on North American conditions, and these are different from European outcomes in many cases.

Commercially, the Canadian interest should be focused upon North America and perhaps also on South America. Everyone addressing the matter explicitly agrees that Canada should beware of becoming fully or even very extensively involved with ETSI. Observer roles are important so that the Canadian standards community keeps current with European conditions and activities. Any closer involvement creates the real and substantial risk that ETSI standards would become putatively world standards because of wider involvement of countries outside of Europe. That would undercut the status, and perhaps even the role of ISO/CCITT, thereby leading to an ultimate loss of Canadian influence on the content of international standards. ETSI participants from Europe are self-interested from a European or even national perspective in the immediate commercial implications of international standards, to the detriment of any influence non-European commercial interests might seek to promote through standards.

Participants agreed that Canada should, if it participates in any regional standards group, focus upon the North American or Pan-American region, for three reasons. First, Canada could hope to have more influence there. Second, that is where Canada's largest markets are now, and are likely to develop. Third, North American or Pan-American regional standards group could offset to some degree the European emphasis of ETSI, and simultaneously help preserve the stature of ISO/CCITT.

Somewhat peripherally, but nonetheless importantly, participants also noted that ETSI's ambitions currently far exceed its performance in the standards area. Thus, there may be much less real force to ETSI's work than at first appears to be the case. If so, there is even more merit in maintaining Canada's independence from European alliances, when it is functioning in ISO/CCITT forums. There may be considerable opportunity to influence international standards development through a North American regional

group. It was also noted that the European approach to standards is often so complex as to introduce enormous delays into standards development. Such delay is exactly contrary to the seminar's sense that greater alacrity in developing standards is what is needed. This underlines the value of the North American approach to standards development, whereby the standards writers do as much as they can, as soon as they can, intending to obtain some benefits as soon as possible, and avoiding excessively grandiose and time-consuming standards development schemes.

Considerable work remains to be done to evaluate Canada's proper stance with respect to any regional standards groups. Possibly Canada should promote a North American regional group, perhaps establishing contacts with the U.S. State Department to explore how to develop such a group to help maintain the hegemony of ISO/CCITT and International Telecommunication Union (ITU), and keep a balance with respect to ETSI and any other regional groupings that may emerge.

4. Government Procurement

Participants agreed universally that the federal government could exercise an enormous positive influence in the use and development of standards, if it used its own purchasing leverage to that end. Procurement for a large buyer is a complex process, and can hardly be expected to be homogenous throughout and on every aspect. Nevertheless, if the federal government coordinated departmental requests for IT & T purchases and emphasized the need for products to meet international standards as adopted in Canada, the process would be improved. There would be greater incentive to meet standards, but there would also be greater pressure to improve the standards and streamline the processes for their development. Clearly this is one area where the Department of Communications could exercise a leadership role.

5. Management Involvement in Standards

All participants addressing the issue agreed that greater involvement by senior management in the standards process would be very desirable. The strategic importance of standards is not widely recognized or sufficiently appreciated by senior levels of management. Just what such interest by senior managers would accomplish was not made very clear. Probably high level managers currently accept standards development as progressing reasonably well, and serving the needs that are required to be met. Moreover, there are massive sets of internal standards (as opposed to public consensus documents) which already safeguard each firm's production processes. Nevertheless, the rapid spread of application of ISO's 9000 quality management standards and of CSA's Z-299 series indicates that internal quality controls are being improved. At the same time, increasing internationalization of both trade and production indicates that buyers will, where possible, increasingly have to, and want to rely on standards.

This puts a new emphasis on standards as part of a marketing strategy, requiring that senior managers take standards into account. Standards become a matter of strategic interest both in terms of what they contain relative to firms' technologies and as a matter of meeting standards which customers regard to be relevant and important. Requisite decisions within firms to take these matters into account take high level understanding of the role and functions of standards for each firm and for industry associations within Canada. Moreover, in the IT & T field, where two sectors are converging technologically, but are not believed to be doing so in terms of standards, senior management can play a significant role in helping to bring about the necessary changes. It appeared to be these kinds of ideas which underlay the urging for more senior management involvement; it was not any

concern that at the technical and detailed process levels there existed any systematic management lapses to be remedied.

The Department of Communications can clearly play a role here to convene meetings and seminars with senior managers. That was advocated. It was also noted that such meetings should probably be short, with specific agendas and well defined objectives. While that recommendation seems sensible to make, it also implies preparatory seminars to refine the considerations so that they are focused enough to be appropriate to high level direction setting and decision making. That preparation is a complex process. Again, this is a function in which the Department of Communications can provide leadership.

6. Information Dissemination

Participants generally agreed that there should be greater dissemination of information about standards. Part of this involved senior management, as already noted. Part of it also involved greater and easier access to international documentation. But the concern was wider. It involved access to standards information by small and medium-sized firms. Some participants thought that small firms needed to know what standards to meet, so that they could pursue sales opportunities more effectively. On the other hand, some felt that participation was valuable to firms whose members could do so. The problem then became how to involve people from small and medium-sized firms more effectively. Either way, all agreed that there was a problem here to be addressed. To the extent that dissemination is the priority problem, the Department of Communications could perhaps lead the way by creating or sponsoring a relevant publication. Small company participation is more

difficult to promote, partly because of the scarcity of funds and relevant human resources, but the problem deserves investigation.

Some participants also noted that participation in international standards activity provides a tremendous opportunity for networking for those involved. Further involvement by more people is part of the resource problem for all participants, but probably some kind of publication could provide at least more extensive information, and vicarious participation.

Finally, participants discussed further seminars on their evaluation sheets. Twenty of the twenty-six responding to this question said that further seminars should be held. Most favoured sometime in the next one to three years. However, those who commented further suggested that the topics should be more focused, that there should be much more time for discussion, that discussion groups should be smaller, and that a wider cross section of interests should participate. This seems to indicate that even those who are actively involved in standards want to obtain more information, and perhaps help to develop new perspectives or information. Further seminars could be structured to help provide focused briefings to the executive level seminars suggested above for management. The Department of Communications could clearly modify the format of this seminar and continue down an otherwise similar path with subsequent ones.

7. Telecommunications Standards Advisory Council of Canada (TSACC)

Participants generally accepted that the development of Canadian strategy in the standards area requires some pointed attention. At the same time, all who spoke were very concerned about TSACC, making it clear that whatever else Canada needs, it is not another standards body. To the extent any consensus emerged, it was that TSACC should be an advisory group on strategy, made

up of a small number of very senior people, but even this was not a very general consensus.

Apparently unrelated was the observation that the Department of Communications should become the Department of Information Technology and Telecommunications. Presumably the new department would shed its cultural role, in order to focus effectively on IT & T, but this is a secondary matter.

Taking this observation, along with the observation that the first word in TSACC's name is Telecommunications, it may be that people were concerned about the lack of emphasis on information technology, and doubtful as to how an emphasis on telecommunications could lead to an effective response when the two technologies are converging while their standards are said to be developed in very different ways.

Whatever the basis for the concerns expressed, it seems clear that further work is required to be done to be certain that TSACC is understood and positioned with a mandate and operational procedures that are seen to be useful in the area of strategic advice. There can be no doubt that throughout the seminar the emphasis was on streamlining standards development processes and harmonizing with the international standards world. Everyone was averse to the creation of any institution or procedure which would further complicate or slow down the standards development processes in Canada, or internationally.

8. Certification or Conformity Testing

There was relatively little discussion of this very important matter, but it deserves mention here. Conformity testing is often required by countries or

individual buyers. Usually the testing has to be done in the buying country. This means repeated expense and delay for manufacturers, as they go through often complex certification procedures. Ideally, conformity testing bodies should be recognized internationally so that manufacturers could use one set of test data to meet all conformity requirements for common international standards. This is far from the case at present. The Department of Communications could clearly take the lead in promoting the concept of one standard, one test, one set of test data for all countries using the common standard. This would require international accreditation of testing agencies, and could probably only result from inter-governmental agreements, or at least multi-national government acquiescence with the process, as developed (with governmental promotion) between certification bodies in different countries.

9. Resources

The last area of consensus was with respect to resources for standards development. Everyone agreed that financial resources are extremely and critically scarce. Human resources presently constitute a less serious shortage, but problems here are just over the horizon. Increasingly firms are consolidating overhead functions, such as those related to standards, at their head offices or in one location, as they seek to become more efficient worldwide. For a small country, such as Canada, this means that people with the relevant skills are often located in other countries, especially as trade and production becomes more and more international in nature.

Apart from the suggestion that it is easier to obtain internal resources when standards work is part of R & D, no one had any solution to the resource problems. Since resource scarcity will ultimately impede all other standards

initiatives, and reduce their effectiveness, this is a very important matter to be resolved. Certainly existing resources can be used more effectively in some cases. Reorganization of, for example telecommunications standards, making use of the base already created by SCOT, along the lines of SCIT could probably save resources and increase the efficiency of the process. Unfortunately, the expected growth in the requirement for standards means that efficiency gains in what is now done will not meet the resource need. New ways have to be found to attract resources to standards work. The Department of Communications can exercise a leadership role in promoting the search for new techniques to use in supporting standards work in Canada.

10. The Consensus -- Summary

Consensus seemed to be very general on what are the problem areas requiring pointed attention. Although the problem areas identified above are all interrelated, they can be sufficiently separated to constitute what may be called work projects requiring that someone, in this case the Department of Communications, develop, or lead in developing plans, to address them. The extent and richness of the suggestions are impressive, but they call for a great deal of further work and ingenuity.

PART C

Conclusion: What Should the Department of Communications Do?

According to participants at this seminar, the Department of Communications should proceed bearing in mind a number of broad strategic considerations.

1. Canada should support the ITU, ISO/IEC (International Electrotechnical Commission) and CCITT as truly international organizations. It should work to help streamline their procedures, and to strengthen them.

2. Canada should take the lead in international standards work where it has an advantage in technology. Otherwise it should largely simply participate in international standards work, and adopt the resulting standards.

3. Canada needs a national industrial strategy in IT & T before it can proceed very far toward having a national standards strategy. Otherwise, the international markets will lead of their own accord, which they should do to a considerable degree in any case.

4. Users want the same, or at least interoperable products worldwide.

5. The emphasis should be on streamlining the IT & T standards system in Canada to facilitate the production of standards with greater speed, and to assure that international standards are adopted wherever possible.

6. Whatever initiatives are undertaken, Canada should be very reluctant to create new standards institutions, or more elaborate bureaucracies; the emphasis must be on efficiency in the total standards system.

7. Where technology is changing as rapidly as it is in IT & T, flexibility and adaptability should be promoted; there is no one answer for all standards questions of any given type, and the best answers will change over (not too much) time.

Recommendations

More specifically, the Department of Communications can take the lead in a number of undertakings, acting as the leader, the facilitator, or the promoter, as the case may require. There were nine areas identified wherein the Department of Communications could take specific action, and probably should do so as soon as possible.

1. **IT & T Standards**

Evaluate the apparent discordance between the converging information and telecommunications technologies, on the one hand, and their related standards processes on the other hand. To the extent there is a gap in the way in which standards match the technology convergence, propose and promote solutions.

2. **Efficiency of IT & T Standards Development**

Evaluate whether a standards model such as that of SCIT can be developed to improve the development of telecommunications standards. Promote the use of IT & T technology in standards development itself. Act to increase the flow and accessibility of international standards documents. Evaluate whether an award system for volunteers and their firms would be useful, and in what form it would work best.

3. **International Coordination**

Continue to promote strongly the ISO/CCITT system and ITU. Keep track of ETSI and other regional bodies, but do not become so closely involved as to weaken Canada's voice at CCITT and ITU, or to lead to their weakening. Evaluate the feasibility and usefulness of a North American or Pan-American regional standards organization, and promote it.

4. **Government Procurement**

Take the lead in promoting the use of IT & T standards in all federal government procurement.

5. **Management Involvement**

Develop a series of short, well organized, and pointed seminars for senior management, to assist them in understanding the strategic importance of standards in international markets. Prepare beforehand so that material is well organized for those participating.

6. **Information Dissemination**

Develop techniques to make more information about standards available to much wider audiences than at present. Develop further seminars to follow on this first one, bearing in mind the need for sharper focus and more discussion.

7. **TSACC**

Develop a clear and widely understood advisory mandate for TSACC, and a technique to obtain sufficiently senior executive involvement.

8. **Conformity Testing**

Begin at once to promote international acceptance of test results, to reduce the burden of repetitive testing on manufacturers.

9. **Resources**

On a most urgent basis, begin to lead in the exploration of new ways to obtain financial and human resources in standards development.

As the discussion of each of these areas in Part B makes clear, there are many dimensions to each one. They are, moreover, interrelated to some degree. Nevertheless each is a sufficiently separate area that one could readily envisage nine task groups beginning their work contemporaneously. As work progressed, it might be possible to combine some task groups, but that would have to await further explorations.

June 1991

COMPTE RENDU DU RAPPORTEUR

SUR LE

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

9 - 10 mai 1991

Ottawa (Ontario)

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3. Ralph Jensen, Comité T1 de l'ANSI
4. Lloyd Kubis, Président, AMEEEC
5. Tom Anderson, Vice-Président, Opérations
   Association des banquiers canadiens
6. Curt Ketchum, Vice-Président, Transport Data Network International
7. Mike Israel, Téléglobe Canada
8. Bruce Forsyth, Président, CSA/CDTI
9. David Townsend, Professeur agrégé, Université du Nouveau-Brunswick
10. Paul Racine, SMA, Politiques des communications, Communications Canada
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Compte rendu du rapporteur sur le

Colloque canadien sur les normes des technologies de l'information et des télécommunications

Ce colloque avait pour but d'établir "un rapport par consensus qui refléterait les points de vue de l'industrie, des utilisateurs et du gouvernement sur les questions clés en matière de normes des technologies de l'information et des télécommunications qui nécessitent un plan d'action au Canada". Il était, en outre, précisé qu'il appartiendrait au "ministère des Communications d'assurer le suivi de ce colloque en élaborant, de concert avec d'autres ministères et le secteur privé, un plan d'action pour l'application des mesures appropriées". Le présent document constitue ce rapport par consensus; il a pour objet de préciser les genres de plans d'action nécessaires.

Ce rapport comporte trois parties. La première est constituée de remarques préliminaires, découlant des discussions tenues lors du colloque, mais ne faisant pas forcément partie du processus consensuel. La deuxième partie traite des questions clés sur lesquelles il y avait clairement consensus ainsi que des questions n'ayant pas apparemment remporté l'adhésion de tous. Enfin, la conclusion, très brève, présente les principales considérations d'ordre stratégique ainsi qu'un aperçu des domaines dans lesquels le ministère des Communications peut formuler, dès maintenant, des plans d'action.

PARTIE A

Quelques remarques préliminaires

La notion de normes est à la fois simple et très complexe. Simple, parce qu'une norme n'est en fait qu'un code précisant comment faire quelque chose ou déterminant les caractéristiques physiques d'un produit. Que la codification soit ardue ou fastidieuse ne relève pas de la nature même de la norme. Toutefois, les normes ont des répercussions, et c'est ici que les choses se compliquent. Les normes peuvent, en effet, conférer ou supprimer un avantage commercial. Elles peuvent favoriser la sécurité à des degrés divers. Elles peuvent aussi améliorer certains aspects de la performance par rapport à ce sujet très complexe. Les normes peuvent être plus ou moins bonnes, du point de vue technique, procédural ou en ce qui a trait à leur utilité pratique. Enfin, il existe plusieurs sortes de normes qui peuvent être élaborées à différents moments, selon les processus ou les technologies auxquels elles s'appliquent. Ces considérations et bien d'autres font qu'il est important, lorsqu'on parle de stratégies en ce qui a trait aux normes, d'établir clairement ce dont il s'agit (ou ce dont il ne s'agit pas).

Le fait que, lors du colloque, on ait presque passé sous silence la qualité du contenu technique des normes semble signifier que tout le monde donne son aval au processus consensuel multilatéral d'élaboration des normes ainsi qu'au recours plus fréquent à des bénévoles à cette fin. Cette confiance est sans doute pleinement justifiée, mais il n'en demeure pas moins que la question de l'efficacité de ces processus n'a pas été résolue en ce qui a trait à l'influence que peut exercer un pays, au niveau des normes, à l'échelle internationale alors que les processus des autres pays sont parfois différents. On a, en effet, tenu pour acquis, lors du colloque, que les processus canadiens pouvaient assurer au Canada une certaine influence en la

matière, au sein des organismes internationaux. Cette hypothèse semble fondée, à première vue, mais elle devrait être examinée plus à fond de façon à ce que les Canadiens qui œuvrent dans le domaine de la normalisation se rendent bien compte des avantages et des inconvénients inhérents aux différents processus d'élaboration de normes des autres pays. Les Canadiens sont fiers, à juste titre, de leur processus d'élaboration de normes, en général, mais cela ne veut pas dire que, dans leurs manœuvres et stratégies pour influencer davantage les normes au niveau international, les procédés canadiens ne peuvent pas être plus efficaces.

Comme l'illustre clairement la section suivante, sous un autre angle, les processus canadiens exigent des ressources humaines et financières, plutôt rares à l'heure actuelle. Le simple fait de reconnaître l'importance des considérations d'ordre stratégique, tels, entre autres choses, la participation aux réunions, l'accès aux documents pertinents, le lancement systématique de projets de normalisation, pourrait entraîner une modification de l'ordre de priorité et faire en sorte que davantage de ressources soient consacrées aux normes.

Par ailleurs, on peut aussi se demander où les normes s'insèrent dans le processus de fabrication. Bien des normes visent ce qu'il est convenu d'appeler la fin du processus de fabrication, en mettant l'accent sur la sécurité du produit. D'autres, pour répondre aux intérêts des utilisateurs, s'intéressent à la performance ou à la fonctionnalité du produit. Ces deux sortes de normes influencent la fabrication du produit et ont donc des répercussions "à l'usine même", si l'on peut dire, au niveau de la conception et de la composition du produit. En ce qui a trait aux technologies de l'information, toutefois, les normes peuvent intervenir bien plus tôt dans le processus de fabrication et influencer l'utilisation prévue du produit. En effet, les normes interviennent alors dans le processus de recherche et de

développement même, en s'intéressant au problème de l'interfonctionnement, par exemple.

Les choses deviennent alors très complexes, pour deux raisons; premièrement, avec quoi doit-on assurer l'interfonctionnement ? Avec les technologies actuellement mises en application ? Avec les technologies existantes actualisées d'une façon ou d'une autre ? Avec de nouvelles technologies appliquées de façon particulière ou encore avec des technologies à venir dont la forme n'a pas été précisée ? Personne n'est prêt à admettre qu'il faut, pour élaborer des technologies à plus long terme, établir une planification centrale, au moyen de normes, mais tout le monde s'entendrait sans doute pour dire qu'en se préoccupant davantage des normes au cours du processus de R & D, on maximisera les bénéfices que l'on tire des innovations technologiques. Comment arriver à introduire les normes au bon moment et quelle devrait être leur influence sont des questions qui sont demeurées sans réponse parce qu'on ne s'y est pas vraiment attardé. Il faut aussi résoudre les problèmes de droit de propriété. Plus on établit des normes dès le début de la recherche fondamentale, plus les gens sont vite au courant des initiatives technologiques des entreprises (dont les efforts risquent alors d'être étouffés). La mise au point de nouvelles technologies sera compromise car les avantages que pourraient en tirer ceux qui y ont consacré temps et argent seraient réduits. Les questions de stratégie commerciale de ce genre n'ont pas encore été étudiées à fond, mais ce sont, pour toutes les entreprises intéressées, des questions fondamentales auxquelles il faudra répondre avant de s'entendre sur l'élaboration de normes au cours du processus de recherche, de développement et de fabrication, en matière des technologies de l'information et des télécommunications.

Au cours de ce colloque, certains des problèmes éventuels, en ce domaine, ont été mentionnés sans qu'on s'y attarde. Dans l'ensemble, toutefois, il semble que ces

questions devront être abordées, si elles le sont un jour, au moment où elles se posent. C'est peut-être tout ce qu'on peut faire, mais cela signifie que toute stratégie visant les normes des technologies de l'information et des télécommunications sera marquée par la crainte généralisée d'entraver le progrès technologique et, en particulier, une mauvaise grâce, de la part des entreprises participantes, à révéler les bases technologiques des avantages commerciaux dont elles comptent bénéficier.

Lors du colloque, les discussions avaient, dans une large mesure, comme principe de base d'obtenir un meilleur rendement des organismes existants et des paradigmes actuels en ce qui a trait à la forme, à la fonction et au rôle des normes. C'est peut-être tout ce que l'on pourra jamais faire, mais cela signifie que les stratégies, en matière de normes, seront toujours entachées d'incertitude : on ne saura pas quelles normes devraient orienter ou influencer le changement technologique, quelles normes devraient accompagner le progrès technique ni à quel moment elles devraient s'appliquer, ni ce que représente vraiment le fait, pour un pays, de se servir des normes pour obtenir un avantage commercial. Voilà, en gros, le cadre dans lequel se sont déroulées les discussions lors du colloque.

PARTIE B

Points ayant fait l'objet d'un consensus

Cette section du rapport se fonde sur les séances de discussion, les questions, les résultats de l'évaluation du colloque et les notes que les rapporteurs ont prises lors des discussions. Elle repose, en grande partie -- mais pas uniquement -- sur la brève présentation que j'ai faite. Des notes prises minutieusement par les employés du ministère des Communications et la transcription des séances de discussion m'ont permis de retrouver l'esprit du colloque et ce que voulaient dire les participants.

Dans cette section, j'ai cherché à mettre en évidence les domaines dans lesquels les participants ont trouvé qu'il fallait travailler davantage. J'ai l'intention d'indiquer comment le ministère des Communications peut orienter ses travaux pour formuler un plan d'action et faire en sorte que les mesures préconisées "abordent les questions clés relevées lors du colloque".

1. Normes des technologies de l'information et des télécommunications

À plusieurs reprises, les commentateurs ont mentionné qu'il y avait une différence entre les normes des technologies de l'information et celles des télécommunications. En général, les participants semblaient d'avis que le schéma d'élaboration des normes, en ces domaines, était loin de converger à l'instar des technologies. Aux yeux des observateurs, cela semblait indiquer deux choses essentielles :

Tout d'abord, les normes des technologies de l'information interviennent de plus en plus tôt dans le processus de fabrication, on peut donc considérer

qu'elles font partie du processus de R & D et, par conséquent, qu'elles affectent certains aspects de la R & D. Cela ne semble pas être le cas dans le domaine des communications où les normes qui existent interviennent vers la fin du processus de fabrication, en mettant l'accent sur la sécurité de l'utilisateur, la protection du réseau et certains aspects de la performance. La discussion n'était pas très claire à cet égard, mais elle semblait indiquer qu'il y avait un écart entre les normes alors que l'interfonctionnement des technologies de l'information exige l'utilisation intégrée du système des télécommunications. En outre, de l'avis de certains participants, à mesure que les technologies des télécommunications continuent de converger, il faudra à la fois publier davantage de normes régissant les réseaux internes et permettre une participation plus diversifiée à leur élaboration. Il semble que, dans ce cas, les mesures à prendre consistent à déterminer l'importance de l'écart entre les normes et la façon dont celles-ci peuvent arriver à résoudre les problèmes découlant de la convergence des technologies.

En outre, les participants considéraient que le Comité directeur de normalisation de la technologie de l'information (CDTI) de l'Association canadienne de normalisation (ACNOR) était un modèle intéressant d'élaboration de normes au Canada. Ses efforts d'harmonisation permettent, en effet, au Canada d'adopter très facilement les normes internationales, d'élaborer, de façon assez efficace, une position canadienne et de la faire valoir au sein des organismes internationaux de normalisation, par l'entremise du Conseil canadien des normes. Ce Comité agit donc à deux niveaux, en aval, en adoptant les normes internationales et, en amont, en faisant connaître la position canadienne lors de l'élaboration de ces normes. Les participants ne semblaient pas avoir une aussi bonne opinion de l'élaboration des normes en matière de télécommunications, au Canada. Il est évident qu'il faut effectuer

des recherches pour déterminer si l'élaboration de normes des télécommunications peut être étendue et réorganisée afin que, comme dans le cas du CDTI, elle corresponde parfaitement à la structure des normes internationales et qu'elle serve aussi, en amont et en aval, à faire valoir le point de vue canadien dans les organismes internationaux tout en facilitant l'adoption de normes internationales. Le Comité directeur de normalisation des télécommunications (CDNT) de l'ACNOR prend déjà d'importantes mesures, à l'échelon régional, de concert avec la Telecommunications Industry Association et la Exchange Carriers Association (Comité T1) aux États-Unis. Ces initiatives sont pour la plupart prises à titre individuel, sans structure d'appui officielle. Une intensification du travail entrepris par le CDNT pourrait peut-être ainsi permettre de mieux répondre aux besoins en matière de normes de communications.

2. Efficacité des procédés d'élaboration de normes

La question de l'efficacité des procédés d'élaboration de normes n'a pas été posée directement, mais celle de la rapidité et de l'à-propos de l'élaboration des normes l'a été. Là encore, le modèle du CDTI semble le mieux adapté pour ce qui est de la rapidité, mais il reste à déterminer si les normes sont élaborées trop tôt ou trop tard dans le processus de l'évolution technologique. Les participants optaient pour une méthode rapide : les normes doivent être élaborées dès que l'orientation technologique est claire. Il faudrait, pour ce faire, simplifier au maximum le processus d'établissement des normes pour qu'il reste au diapason des progrès technologiques. Il reste à déterminer si tout ce qu'il était possible de faire en matière de simplification de processus, dans le domaine des technologies de l'information a été réalisé; c'est une question qui se pose encore partiellement, alors qu'elle ne se pose même pas

pour les télécommunications -- il semble qu'il y ait beaucoup à faire, en ce domaine, pour unifier et accélérer le processus d'élaboration des normes, pour en augmenter la portée et pour qu'il s'intègre aux normes internationales. Il reste à déterminer si cette façon de voir les choses est juste et, si tel est le cas, ce qu'il convient de faire.

On a aussi parlé d'efficacité, d'une certaine façon, en ce qui a trait à l'élaboration des normes. Tous s'entendaient pour dire que les normes ont des répercussions de plus en plus importantes et que le nombre de normes augmente très rapidement, surtout dans le domaine des technologies de l'information. Le surcroît de travail associé aux normes indique qu'il faut faire tout ce qui est possible pour accélérer le processus. On a mentionné, en particulier, qu'il fallait se servir davantage des technologies de l'information, notamment des téléconférences, des télécopieurs, de l'échange de données de machine à machine pour élaborer les normes. On a aussi suggéré qu'on encourage le bénévolat en mettant sur pied un système complet de distinctions honorifiques et de primes pour les personnes et les entreprises participantes (peut-être sous forme d'une reconnaissance qui soit davantage publique). L'accès aux documents internationaux semble aussi poser un problème. Le ministère des Communications pourrait formuler et promouvoir des plans d'action, dans ces domaines, afin que les documents soient plus facilement accessibles et qu'un système de primes soit établi.

3. Coordination avec les organismes de normalisation étrangers

Tous s'entendaient pour dire que le Canada devrait appuyer et favoriser les processus établis de l'Organisation internationale de normalisation/Comité consultatif international télégraphique et téléphonique (ISO/CCITT), chaque

fois qu'il en a l'occasion, afin d'élaborer et d'utiliser des normes internationales dans tous les domaines des technologies de l'information et des télécommunications.

Il y a, dans ce cas, deux problèmes importants, étroitement reliés. En premier lieu, il existe des organismes de normalisation régionaux, tels que l'Institut européen des normes de télécommunication (ETSI) et le Comité T1. En second lieu, il importe, pour réussir commercialement, que les fabricants canadiens sachent quelles sont les normes régionales qui prévalent lors de l'élaboration des normes internationales. Les producteurs canadiens ont grandement amélioré les procédés de fabrication et leurs technologies en fonction des normes nord-américaines, qui, dans bien des cas, diffèrent des normes européennes.

Du point de vue commercial, le Canada devrait surtout s'intéresser à l'Amérique du Nord et peut-être aussi à l'Amérique du Sud. Tous ceux qui se sont penchés sur cette question s'entendent pour dire que le Canada devrait se garder de collaborer tout le temps ou même de trop près aux travaux de l'ETSI. Il est toutefois important qu'il joue un rôle d'observateur, afin que les personnes qui s'occupent de normalisation au Canada soient au courant des stipulations et des travaux européens. S'il participe de plus près à ces travaux, le Canada court le risque, bien réel, que les normes de l'ETSI deviennent, en quelque sorte, des normes internationales, en raison de la participation accrue de pays non européens. L'importance et sans doute même le rôle de l'ETSI s'en trouveraient diminués, ce qui se traduirait, pour le Canada, par une perte d'influence en ce qui a trait à la teneur des normes internationales. Les membres européens de l'ETSI sont, en effet, plus préoccupés des répercussions commerciales des normes internationales, au niveau européen ou même

purement national, que de l'influence que des intérêts commerciaux non européens pourraient essayer d'acquérir en défendant certaines normes.

Les participants admettaient que si le Canada consentait à faire partie d'un groupe régional de normalisation, il devrait s'en tenir à un organisme nord-américain ou panaméricain, et cela pour trois raisons. En premier lieu, le Canada peut espérer avoir plus d'influence dans un tel organisme. Deuxièmement, ce sont là les principaux marchés du Canada, à l'heure actuelle, et ils vont fort probablement encore prendre de l'expansion. En troisième lieu, un groupe de normalisation nord-américain ou panaméricain pourrait en quelque sorte contrebalancer le caractère européen de l'ETSI tout en préservant l'importance de l'ISO/CCITT.

À ce sujet, les participants ont constaté, à juste titre, que jusqu'à présent les visées de l'ETSI dépassaient de loin ses réalisations dans le domaine de la normalisation. Il se peut donc que les travaux de l'ETSI soient beaucoup moins importants qu'il n'y paraît de prime abord. Si tel est le cas, le Canada a tout avantage à ne pas faire partie des alliances européennes, alors qu'il joue un rôle au sein de l'ISO/CCITT. Il aura sans doute davantage l'occasion d'influencer l'élaboration des normes internationales en faisant partie d'un organisme régional nord-américain.

On a aussi constaté que la façon dont les Européens conçoivent les normes est souvent complexe, ce qui occasionne des retards importants dans l'élaboration des normes. Ces retards vont tout à fait à l'encontre de la plus grande rapidité qui devrait, selon les participants, présider à l'élaboration des normes. Ceci illustre bien la valeur de la conception nord-américaine de l'élaboration de normes, où les rédacteurs font du mieux qu'ils peuvent, le plus vite possible,

afin de retirer des avantages dès que possible et d'éviter de mettre au point des schémas d'élaboration de normes trop complexes et trop longs.

Il reste beaucoup à faire pour évaluer la position du Canada par rapport aux groupes de normalisation régionaux. Le Canada devrait peut-être se faire l'avocat d'un groupe régional nord-américain en communiquant avec le State Department des États-Unis, afin d'étudier la façon de mettre sur pied un groupe qui permette à la fois à l'ISO/CCITT et à l'Union internationale des télécommunications (UIT) de conserver son hégémonie et de contrebalancer l'ETSI et tout autre groupement régional qui verrait le jour.

4. Achats gouvernementaux

Les participants ont tous reconnu que le gouvernement fédéral pourrait exercer une très grande influence, fort bénéfique, en ce qui a trait à l'emploi et l'élaboration des normes, s'il se servait de son pouvoir d'achat à cette fin. Le processus d'achat est très complexe pour un acheteur de la taille du gouvernement et on ne peut s'attendre à ce qu'il soit uniforme en tout temps et en tout point. Il n'en reste pas moins que si le gouvernement fédéral coordonnait les demandes des ministères, en matière des technologies de l'information et des télécommunications, et insistait pour obtenir des produits qui répondent aux normes internationales adoptées par le Canada, le processus s'en trouverait amélioré. Cela inciterait davantage les fabricants à respecter les normes, à les améliorer et à simplifier leur processus d'élaboration. C'est manifestement là un domaine où le ministère des Communications pourrait jouer un rôle prépondérant.

5. Les gestionnaires et les normes

Tous les participants qui se sont penchés sur cette question ont reconnu qu'il serait fort souhaitable que les cadres supérieurs participent davantage au processus de normalisation. Au niveau stratégique, l'importance des normes n'est pas reconnue par tous, ni appréciée à sa juste valeur par les cadres supérieurs. On n'a toutefois pas précisé ce qu'apporterait au juste un regain d'intérêt de la part des cadres supérieurs. Il est probable que les gestionnaires de niveau supérieur croient que l'élaboration des normes progresse à un rythme convenable et qu'elle satisfait les besoins auxquels elle doit répondre. Il existe, en outre, de nombreuses normes internes (différentes des normes consensuelles) qui garantissent déjà les procédés de fabrication de chaque entreprise. Néanmoins l'application grandissante des normes 9000 de gestion de la qualité de l'ISO et de celles de la série Z-299 de l'ACNOR montre bien que les contrôles de qualité internes s'améliorent. L'internationalisation de plus en plus poussée des marchés et de la production indique aussi que, s'ils en ont la possibilité, les consommateurs seront de plus en plus amenés à s'en remettre aux normes et souhaiteront s'y plier.

Cela fait ressortir que les normes participent de la stratégie de commercialisation et que, par conséquent, les cadres supérieurs doivent en tenir compte. Les normes acquièrent donc une importance stratégique, à la fois en ce qui a trait à leur teneur technologique et en ce qu'elles répondent aux critères qui, aux yeux des clients, semblent pertinents et importants. Pour arriver à prendre, au sein de l'entreprise, les décisions nécessaires, qui tiennent compte de ces facteurs, il faut bien comprendre le rôle et les fonctions des normes dans chaque entreprise et dans les associations industrielles canadiennes. De plus, dans le domaine des technologies de l'information et des

télécommunications, deux secteurs où les technologies convergent, mais où les normes se différencient, les cadres supérieurs peuvent jouer un rôle important en facilitant les modifications nécessaires. C'est ce genre de raisonnement -- et non des lacunes systématiques de la part des gestionnaires, au niveau technique ou de l'élaboration des processus -- qui a amené les gens à favoriser une plus grande participation des cadres supérieurs.

Il est évident que le ministère des Communications peut jouer un rôle, à ce niveau, en organisant des réunions et des colloques avec les cadres supérieurs. C'est ce qui a été préconisé. Il a aussi été mentionné que ces réunions devaient être courtes, avoir un ordre du jour précis et des objectifs bien définis. Cette recommandation semble raisonnable, mais elle sous-entend que des rencontres préparatoires doivent avoir lieu pour raffiner ces considérations, de façon à ce qu'elles soient bien adaptées à l'orientation et aux décisions prises au niveau supérieur. Ces préparations sont complexes. C'est encore là un domaine où le ministère des Communications peut jouer un rôle prépondérant.

6. Diffusion de l'information

Les participants reconnaissaient, en général, que l'information sur les normes devrait être mieux diffusée. Une partie de cette tâche incomberait aux cadres supérieurs, comme nous l'avons déjà vu. Il faudrait aussi, par ailleurs, qu'on puisse avoir accès plus facilement aux documents internationaux. Mais la question ne se limite pas à cela; elle englobe aussi l'accès des petites et moyennes entreprises à l'information sur les normes. Certains participants étaient d'avis que les petites entreprises devaient savoir quelles normes respecter pour mieux arriver à vendre leurs produits. D'autres pensaient qu'il était important que les entreprises qui le désirent puissent participer au

processus. Il s'agissait alors de savoir comment arriver à faire participer efficacement les représentants des petites et moyennes entreprises. De toute façon, tous reconnaissaient qu'il y avait là un problème qu'il fallait résoudre. Si le principal problème est effectivement la diffusion de l'information, le ministère des Communications peut sans doute intervenir en créant ou en parrainant une publication. Il est plus difficile de susciter la participation des petites entreprises, en raison du peu de moyens financiers dont elles disposent et de la pénurie de ressources humaines adaptées, mais ce problème mérite toutefois qu'on s'y attarde.

Quelques participants ont aussi constaté que le fait de collaborer aux travaux de normalisation internationaux donnait l'occasion à ceux qui y participaient d'établir des réseaux. La participation d'un plus grand nombre de personnes est limitée par les ressources des participants, mais une publication pourrait donner davantage d'information et assurer une participation par procuration.

Enfin, les participants ont mentionné, sur les formulaires d'évaluation, qu'il fallait organiser des colloques ultérieurs. Vingt personnes sur les vingt-six qui ont répondu à cette question souhaitaient que d'autres colloques soient organisés, de préférence au cours des trois prochaines années. Ceux qui ont fait des commentaires plus poussés suggéraient que les sujets soient mieux définis, qu'on laisse beaucoup plus de temps pour discuter, que les groupes de discussion soient plus restreints et que des représentants d'horizons plus divers y participent. Cela semble indiquer que même ceux qui s'occupent activement de normalisation et de normes souhaitent obtenir plus d'information et peut-être contribuer à élaborer de nouveaux points de vue ou un nouveau style d'information. Les colloques suivants pourraient être structurés de façon à offrir des séances d'information mieux adaptées aux

réunions des cadres supérieurs, dont il a été question plus haut. Il est évident que le ministère des Communications devrait changer la présentation du colloque et ne rien changer pour le reste, lors des colloques ultérieurs.

7. Conseil consultatif canadien sur les normes de télécommunications (TSACC - sigle anglais)

Les participants croyaient en général que l'élaboration d'une stratégie canadienne en matière de normes exigeait une attention plus marquée. Mais tous ceux qui se sont exprimés à ce sujet manifestaient une grande inquiétude en ce qui a trait au TSACC; il était évident, à leurs yeux, que le Canada n'avait pas besoin d'un autre organisme de normalisation. On s'entendait, en général, pour dire que le TSACC devait être un groupe consultatif en matière de stratégie, composé d'un petit nombre de représentants de très haut niveau; mais cette proposition n'a pas reçu l'assentiment de tous.

Une observation, en apparence non reliée, a été faite à ce moment : le ministère des Communications devrait devenir le ministère des Technologies de l'information et des Télécommunications. Ce nouveau ministère mettrait en veilleuse son rôle culturel pour s'intéresser davantage aux technologies de l'information et des télécommunications, mais ce n'était là qu'une remarque secondaire.

Si l'on se fie à ce commentaire et au fait que dans le TSACC l'accent est surtout mis sur les télécommunications, il semblerait que les gens s'inquiétaient du peu de cas que l'on faisait des technologies de l'information, et se demandaient comment, en mettant l'accent sur les télécommunications, on parviendrait à des solutions valables car si les deux technologies

convergent, il semble que l'élaboration des normes, en ces domaines, soit fort différente.

Quoi qu'il en soit, il apparaît clairement qu'il reste du travail à faire pour s'assurer que le rôle du TSACC soit bien compris et que cet organisme soit doté d'un mandat et de procédures opérationnelles lui permettant de donner des conseils d'ordre stratégique. Il est manifeste que tout au long du colloque, l'accent a été mis sur la simplification des processus d'élaboration des normes et sur leur harmonisation avec les normes internationales. Tous étaient opposés à l'idée de créer un organisme ou d'adopter une procédure qui compliquerait ou ralentirait les processus d'élaboration des normes au Canada ou sur la scène internationale.

8. Homologation ou vérification de conformité

Cette question primordiale n'a pas fait l'objet de nombreux commentaires, mais il convient d'en parler ici. Des tests de conformité sont souvent exigés par les acheteurs, qu'il s'agisse d'États ou de particuliers. D'ordinaire, ce test s'effectue dans le pays de l'acheteur, ce qui entraîne des dépenses répétées et des retards pour les fabricants qui se soumettent aux procédures complexes d'homologation. L'idéal serait que les organismes de vérification de la conformité soient reconnus dans le monde entier, afin que les fabricants puissent utiliser un ensemble précis de données de vérification pour satisfaire à toutes les exigences de conformité des normes internationales communes. C'est loin d'être le cas à l'heure actuelle. Le ministère des Communications pourrait facilement prendre les devants et défendre l'idée "d'une seule norme, d'un seul test, d'un même ensemble de données" pour tous les pays utilisant la même norme. Il faudrait que les organismes de contrôle soient accrédités

au niveau international; ceci pourrait être réalisé au moyen d'ententes intergouvernementales ou, à tout le moins, d'une reconnaissance, de la part des gouvernements, du processus élaboré (avec l'aide des gouvernements) par les organismes de contrôle des différents pays.

9. Ressources

Les gens s'entendaient aussi sur un dernier point : celui des ressources devant être consacrées à l'élaboration des normes. Tout le monde reconnaissait que les ressources financières étaient extrêmement rares. La situation est moins dramatique, à l'heure actuelle, en ce qui concerne les ressources humaines, mais des problèmes se dessinent à l'horizon. De plus en plus, les entreprises concentrent les fonctions auxiliaires, telles celles liées aux normes, au siège social ou en un seul lieu, puisqu'elles cherchent à être plus efficaces à l'échelle internationale. Pour un petit pays, tel que le Canada, cela signifie que les spécialistes se trouvent souvent à l'étranger, d'autant plus que les marchés et la production s'internationalisent de plus en plus.

Personne n'a proposé de solution au problème du manque de ressources, sauf un participant qui a avancé qu'il était plus facile d'obtenir des ressources internes lorsque le travail de normalisation fait partie du processus de R & D. La pénurie de ressources freinera, à la longue, toutes les initiatives en matière de normes et en affectera l'efficacité; il faut donc que ce problème soit résolu immédiatement. Certaines ressources actuelles pourraient être employées à meilleur escient, dans certains cas. Par exemple, en restructurant les normes de télécommunications et en utilisant la base déjà créée par le CDNT, selon l'exemple du CDTI, on pourrait réaliser des économies de ressources et améliorer l'efficacité du processus. Malheureusement, vu l'augmentation

prévue des exigences en matière de normes, les gains réalisés au niveau de l'efficacité ne suffiront pas à combler les besoins en matière de ressources. Il faut donc trouver d'autres façons de pousser les gens à travailler à l'élaboration de normes. Le ministère des Communications peut, là encore, jouer un rôle prépondérant en incitant le public à trouver de nouvelles façons de soutenir le travail de normalisation au Canada.

10. Le consensus - Résumé

Il semble que le consensus est général en ce qui a trait aux questions qui posent problème et qui exigent une attention immédiate. Même si les problèmes identifiés ci-dessus sont tous reliés, ils sont assez différents pour qu'on en fasse des projets d'étude séparés, et, pour chacun d'eux, quelqu'un, dans ce cas-ci le ministère des Communications, devra élaborer ou diriger l'élaboration de plans d'action correctifs. La diversité et la portée des suggestions étaient impressionnantes, mais elles demandent à être approfondies davantage, en faisant appel à un grand esprit d'initiative.

PARTIE C

Conclusion : Que doit faire le ministère des Communications ?

D'après les participants de ce colloque, le ministère des Communications devrait agir en tenant compte des considérations stratégiques suivantes.

1. Le Canada devrait considérer l'UIT et l'ISO/CEI (Commission électronique internationale) et le CCITT comme de véritables organismes internationaux. Il devrait s'efforcer de les renforcer et de simplifier leurs procédures.

2. Le Canada devrait jouer le rôle de chef de file en ce qui a trait aux normes pour lesquelles il détient un avantage technologique. Sinon, il devrait se contenter de participer aux travaux de normalisation internationaux et adopter les normes qui en sont issues.

3. Le Canada doit se doter d'une stratégie industrielle nationale en matière de technologies de l'information et de télécommunications avant de pouvoir se doter d'une stratégie nationale en matière de normes. Sinon, les marchés internationaux prendront d'office les devants, ce qu'ils devraient faire de toute façon, dans une large mesure.

4. Les utilisateurs désirent que les produits soient identiques ou au moins interfonctionnels dans le monde entier.

5. L'accent devrait être mis sur la simplification du système de normes en matière de technologies de l'information et de télécommunications, au Canada, afin d'accélérer le processus d'élaboration, la production de normes et de faire

en sorte que les normes internationales soient adoptées chaque fois que c'est possible.

6. Quelles que soient ses initatives, le Canada devrait être réfractaire à l'idée de créer de nouveaux organismes de normalisation ou des bureaucraties plus complexes; l'efficacité globale du système de normalisation doit primer.

7. Lorsque la technologie évolue aussi rapidement que dans le domaine des technologies de l'information et des télécommunications, il faut favoriser la souplesse et l'adaptabilité; il n'existe pas de solutions universelles aux problèmes qui se rapportent aux normes, et même les meilleures solutions changeront avec le temps (et même en très peu de temps).

Recommandations

Plus précisément, le ministère des Communications peut prendre l'initiative dans de nombreux cas et agir, à tour de rôle, à titre de chef de file, d'animateur ou de promoteur. Il pourrait intervenir dans les neuf secteurs suivants afin de prendre les mesures appropriées, le plus vite possible.

1. **Normes des technologies de l'information et des télécommunications**

Procéder à l'évaluation de l'écart qui existe entre la convergence des technologies de l'information et des télécommunications, d'une part, et leurs processus de normalisation respectifs, d'autre part. S'il existe vraiment un fossé entre les normes et les technologies, proposer et mettre en œuvre des solutions pour y remédier.

2. **Efficacité de l'élaboration de normes des technologies de l'information et des télécommunications**

Évaluer si un modèle de normes, tel celui du CDTI, peut être utilisé pour améliorer l'élaboration de normes des télécommunications. Favoriser l'utilisation des technologies de l'information et des télécommunications, lors de l'élaboration des normes. Faire en sorte d'améliorer la circulation des documents internationaux portant sur les normes et d'en faciliter l'accès. Déterminer si un système de primes destiné aux bénévoles et aux entreprises serait utile et quelle forme il devrait revêtir pour être efficace.

3. **Coordination internationale**

Continuer à favoriser le système ISO/CCITT et l'UIT. Se tenir au courant des travaux de l'ETSI et des autres organismes régionaux, mais ne pas s'y associer de trop près, ce qui affaiblirait la position du Canada au sein du CCITT et de l'UIT ou pourrait provoquer l'affaiblissement de ces derniers. Déterminer s'il est réaliste et utile de former une organisation régionale de normalisation nord-américaine ou panaméricaine et s'en faire l'avocat.

4. **Achats gouvernementaux**

Jouer un rôle prépondérant dans la promotion de normes des technologies de l'information et des télécommunications pour tous les achats du gouvernement fédéral.

5. **Participation des gestionnaires**

Mettre au point une série de brefs colloques, bien organisés et adaptés, pour les cadres supérieurs, afin de les aider à mieux comprendre l'importance stratégique des normes pour les marchés internationaux. Préparer les réunions afin que la matière soit bien présentée aux participants.

6. **Diffusion de l'information**

Mettre au point des techniques pour faire connaître davantage d'information sur les normes, à un public bien plus vaste qu'à l'heure actuelle. Organiser d'autres colloques, après celui-ci, en veillant à ce qu'ils soient mieux ciblés et en laissant davantage de temps pour les discussions.

7. **TSACC**

Doter le TSACC d'un mandat consultatif, clair et facile à comprendre, et trouver le moyen d'assurer la participation d'un nombre suffisant de cadres supérieurs.

8. **Vérification de conformité**

Commencer dès maintenant à faire campagne pour que les résultats des tests soient admis dans le monde entier, afin de permettre aux fabricants l'économie d'essais répétés.

9. Ressources

Commencer, de toute urgence, à chercher de nouvelles façons d'obtenir des ressources humaines et financières pour élaborer des normes.

Comme le montre le développement de la partie B, chacune de ces questions comporte plusieurs aspects. Ces questions sont, en outre, toutes plus ou moins reliées. Chacun de ces problèmes est néanmoins assez distinct pour que l'on puisse envisager la création simultanée de neuf groupes de travail pour les étudier. Au fur et à mesure que leurs travaux progresseraient, il serait peut-être possible de réunir certains groupes, mais cela reste à étudier.

Juin 1991

SPEECHES

DISCOURS

OPENING ADDRESS
MINISTER OF COMMUNICATIONS

DISCOURS D'OUVERTURE
MINISTRE DES COMMUNICATIONS

Speaking Notes for

the Honourable Perrin Beatty, P.C., M.P.

Minister of Communications, Canada

Standards Seminar

Ottawa, Ontario

May 9, 1991

Good morning Ladies and Gentlemen,

I'd like to thank you very much for inviting me to join you this morning. I must say, I think it is very appropriate that you have chosen Union Station as the location for today's seminar on standards.

Not so long ago the railroad was the link which brought people and their ideas together. Today, of course, it is telecommunications which brings people together to talk to one another.

Although I am not an expert on standards, their critical importance to society has been evident to me from an early age. I remember well the great debate, which raged some years ago, over whether to buy cassettes or 8-track tapes.

A few years later a similar debate sprang up over what standard system should be set for Video Cassette Recorders. Some people said buy VHS; others recommended Beta. Beta, we were told, was a superior standard.

Sony invested millions not just in equipment but, in producing content to appear on that system. The only problem with their investment strategy was that they chose the wrong standard - it wasn't adopted internationally and Sony had to write off a very large investment. A similar debate took place about video disks, and one is about to begin about digital tape recording.

The hard facts of life are that if you don't choose the right standards, you are likely to lose your investment and in some cases your ability to compete at all.

Standards are like the window into a nation. When we want to communicate, share our ideas, and pool our resources, we typically do so by phone, fax and computer.

Without standards, we lose our ability to communicate. The cellular phone is a good example of that. Market penetration of cellular phones has been fast and widespread. Many people have them in their cars and when they cross the border into the United States, expect to be able to use them.

It just so happens they can use them because government and industry have worked extremely hard to harmonize the systems between Canada and the United States, and even into Mexico.

If you take that same piece of equipment to Europe or to Japan, however, you will find that you can't use it. What does that mean from a business point of view?

It means there might not be a market for North American products in those countries. It means the market size is limited and that eventually Canadian companies will begin to fail - unless, of course, we all adopt the same standards.

I mentioned earlier that standards are the window into the nation. They are also the window out. They are the tool which will allow us to compete internationally, to keep ourselves on the cutting edge of the field of telecommunications.

There is an urgent need for worldwide standards in information technology and telecommunications and I think Canada has a very important role to play in this process.

Throughout the world, Canada is recognized as a country which has shown a disproportionate amount of innovation in comparison with our economic size. Perhaps it is because, like the railroad, it has been essential to our survival.

Whatever the reason, the result has been a reputation for excellence in the field of telecommunications which can be capitalized upon. Combine that with a reputation for fairness as a people and it opens up opportunities internationally which must, by their very nature, help us nationally as well.

For example, it was not an accident that Canada was chosen as Chair of the Committee charged with reforming the International Telecommunication Union. If our industry is to compete effectively in the much tougher global marketplace, we must be involved in the Standards process nationally and internationally, both to influence ultimate international rules and to make our own informed choices.

The opportunities are substantial. The current world market for telecommunications equipment is estimated at between $100 and $150 billion, of which Canada's share is but $6 billion. Our goal, as proposed by the Canada Telecommunications Action Committee is for $20 billion on annual equipment revenues by the Year 2,000.

Everything I have learned, both in my travels and in my discussions at the Cabinet Table, has indicated to me that competing globally is going to demand efficiency and foresight, planning and investment.

Any company which hopes to compete internationally is going to have to put its money where its mouth is, and that means investing in Research and Development.

Regrettably, Canada and its telecommunications industry have the lowest Research and Development commitments of the world's major trade partners.

We must recognize that standards and R&D have become strategic tools among the major trading blocks and our industry must either keep up or be blocked out.

Meeting those challenges demands that government and industry work together, establishing compatible objectives, developing global standards.

That, of course, is the objective of this forum: to develop a Canadian consensus on the key issues in information technology and telecommunications standards development. Our goal is an Action Plan, through which Canada can position itself competitively in the global trading market.

Next Friday is World Telecommunications Day. It is my sincere hope that, on that day, we can look back to this seminar and believe that we took the first solid steps in strengthening our industry, building an integrated, competitive telecommunications sector which can proclaim to the world that Canada has always been in the forefront and that it intends to stay that way.

Notes pour une allocution

de l'honorable Perrin Beatty, C.P., député

Ministre des Communications du Canada

Colloque sur les normes

Ottawa (Ontario)

Le 9 mai 1991

Bonjour mesdames et messieurs,

J'aimerais vous remercier de m'avoir invité à me joindre à vous ce matin. Je dois dire que je trouve très à propos le choix de la gare centrale pour la tenue du colloque d'aujourd'hui, qui portera sur les normes.

Il n'y a pas si longtemps, c'était le chemin de fer qui rapprochait les gens et leur permettait d'échanger des idées; de nos jours, est-il besoin de le dire, ce sont les télécommunications qui les mettent en contact les uns avec les autres.

Bien que je ne sois pas un spécialiste des normes, j'ai pris conscience de leur extrême importance pour la société quand j'étais encore très jeune. Aussi, je me souviens très bien du débat animé qu'a suscité, il y a quelques années, l'arrivée sur le marché des cassettes à huit pistes.

Quelques années plus tard, un débat similaire a eu lieu à propos des normes à établir pour les magnétoscopes. Certains préconisaient l'achat d'appareils VHS, tandis que d'autres recommandaient les appareils Beta parce que ceux-ci, affirmait-on, répondaient à des normes supérieures.

La société Sony a investi des millions de dollars non seulement dans l'acquisition d'équipement, mais aussi dans la production de matériel vidéo. La seule faiblesse de sa stratégie d'investissement tenait au choix d'une norme inadéquate : celle-ci n'était pas internationale et la société a donc essuyé des pertes considérables. Un débat semblable a eu lieu au sujet des disques au laser, et un autre est imminent à propos des enregistrements numériques.

En fait, se tromper de normes, c'est risquer son investissement et, dans certains cas, c'est perdre toute chance d'être concurrentiel.

Les normes sont en quelque sorte une fenêtre ouverte sur le pays. Lorsque nous voulons communiquer, échanger nos idées et mettre ensemble nos ressources, nous le faisons habituellement par téléphone, par télécopieur ou par ordinateur.

En l'absence de normes, nous ne sommes plus en mesure de communiquer. Les téléphones cellulaires illustrent bien cette réalité. Ils se sont répandus vite et largement sur le marché. Bien des gens en ont un dans leur voiture et s'attendent à pouvoir les utiliser lorsqu'ils vont aux États-Unis.

Ils peuvent effectivement le faire parce que les gouvernements et l'industrie ont travaillé intensément pour harmoniser les systèmes du Canada, des États-Unis et même du Mexique.

Cependant, si vous apportez vos téléphones cellulaires en Europe ou au Japon, vous constaterez qu'il vous est impossible de les utiliser. D'un point de vue commercial, qu'est-ce que cela signifie ?

Cela signifie qu'il n'y a peut-être pas de débouchés pour les produits nord-américains dans ces pays. Cela signifie également que la taille du marché est limitée et que les sociétés canadiennes commenceront à décliner, à moins, bien sûr, que nous adoptions les mêmes normes que ces pays.

J'ai affirmé plus tôt que les normes étaient une fenêtre ouverte sur le pays. Mais elles permettent aussi à ce dernier d'accéder aux autres pays. Elles sont les instruments qui nous aideront à soutenir la concurrence à l'échelle internationale et à demeurer à la fine pointe des télécommunications.

Il existe un besoin urgent de normes mondiales en technologie de l'information et des télécommunications. Je crois que le Canada a un rôle important à jouer dans leur établissement.

Le Canada est reconnu dans le monde entier comme un pays innovateur en dépit de la petite taille de son marché. Peut-être s'agit-il là d'une question de survie, comme l'a été la construction des chemins de fer.

Quoi qu'il en soit, nous avons acquis une réputation enviable dans le domaine des télécommunications, sur laquelle nous pouvons miser. Si l'on ajoute à cela la réputation d'honnêteté des Canadiens, nous trouverons des débouchés internationaux qui, en raison même de leur nature, ne pourront que nous aider au niveau national.

Ce n'est pas par hasard, par exemple, qu'on a choisi le Canada pour présider le comité chargé de la réforme de l'Union Internationale des Télécommunications (UIT). Pour que notre industrie demeure concurrentielle sur un marché mondial de plus en plus féroce, nous devrons participer à l'établissement de normes nationales et internationales, à la fois pour influer sur les règles internationales et pour faire des choix éclairés.

Les occasions qui s'offrent sont considérables. Selon des données, le volume actuel du marché d'équipement de télécommunications se situe entre 100 et 150 milliards de dollars, et la part qui revient au Canada n'est que de 6 milliards. Le but proposé pour le Canada par le comité d'initiatives en télécommunications est d'atteindre des recettes annuelles de 20 milliards de dollars d'ici l'an 2000.

Tout ce que j'ai appris pendant mes voyages et lors de mes discussions au Cabinet m'indique que perspicacité, efficacité, planification et investissements sont nécessaires pour être concurrentiels sur le marché mondial.

Toute entreprise désireuse de se lancer dans la concurrence internationale devra investir son argent là où cela lui sera rentable, c'est-à-dire dans la recherche et le développement.

Malheureusement, par rapport aux industries des télécommunications des grandes puissances commerciales du monde, l'industrie canadienne a les investissements les plus faibles dans le domaine de la recherche et du développement.

Nous devons reconnaître que les normes et la R-D sont devenues des instruments stratégiques au sein des grands blocs commerciaux. Notre industrie doit donc suivre le pas, ou elle risque d'être évincée.

Pour relever ces défis, le gouvernement et l'industrie devront travailler de concert pour établir des objectifs compatibles et élaborer des normes mondiales.

C'est évidemment là l'objectif du colloque d'aujourd'hui : en arriver à un consensus sur les principales questions qui touchent l'élaboration de normes en matière de technologie de l'information et de télécommunications. Notre objectif est d'établir un plan d'action grâce auquel le Canada pourra s'affirmer comme compétiteur sérieux sur le marché mondial.

Vendredi prochain sera la Journée mondiale des télécommunications. Je souhaite sincèrement que nous pourrons alors mesurer la portée de ce colloque, parce qu'il nous aura permis de jeter les bases de l'affermissement de notre industrie et du

développement d'un secteur des télécommunications unifié et concurrentiel qui prouvera au monde entier que le Canada a toujours été dans le peloton de tête en ce domaine, et qu'il y restera.

JOHN E. KEAN

"OPEN MARKETS/OPEN SYSTEMS - THE STANDARDS CHALLENGE"

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

MARCHÉS OUVERTS ET SYSTÈMES OUVERTS LE DÉFI DE LA NORMALISATION

M. John E. Kean
Président
Association canadienne de normalisation

Le monde des affaires dans lequel nous vivons est de plus en plus complexe. Les changements, d'envergure mondiale, sont omniprésents et le système de normalisation n'y échappe pas.

Le changement s'opère sur plusieurs fronts. Le GATT, l'Accord de libre-échange entre le Canada et les États-Unis et Europe 92 ont tous été des catalyseurs du changement - principalement dans le contexte du besoin accru de normes harmonisées tout d'abord en Amérique du Nord et en Europe, mais, idéalement, à l'échelle planétaire.

La cadence des changements technologiques est un autre défi que devront relever les organisations qui élaborent des normes. Il arrive souvent que de nouvelles technologies qui ne sont pas encore bien établies doivent être normalisées.

Les gouvernements et les industries veulent le retrait des barrières non tarifaires (les normes sont perçues ainsi) à mesure que nous nous dirigeons vers un marché plus ouvert. Ceux qui se servent des systèmes de technologie de l'information et des télécommunications désirent pouvoir communiquer dans un système plus ouvert.

C'est ce qui explique le changement dans le domaine des normes et de l'évaluation de la conformité. On voudrait que les normes mondiales soient appuyées par des mesures mutuelles de mise à l'essai des produits et de vérification de la qualité, mesures qui sont les principales composantes dont on a besoin pour soutenir les programmes d'évaluation de la conformité.

Le Canada est reconnu comme leader mondial en matière d'élaboration de normes nationales. Le Canada, sous l'égide du Conseil canadien des normes, a mis sur pied un Système global de normes nationales. Les organismes canadiens de rédaction de normes jouent un rôle important dans l'amélioration du commerce international et dans l'orientation ainsi que la préparation de normes mondiales.

On attend beaucoup de la recherche de solutions nationales, régionales et internationales. Beaucoup de travail a été fait pour élaborer des normes dans les secteurs de la technologie de l'information et des télécommunications et l'apport du Canada à ces travaux est déterminant.

Il reste d'autres tâches à accomplir d'ici l'an 2000 et au-delà, mais nous nous rapprochons de l'objectif, c'est-à-dire l'adoption de normes mondiales. Cet objectif va permettre aux fabricants d'être plus efficaces sur le plan international. En outre, il apportera des avantages maximums à ceux qui achèteront leurs produits et à ceux qui utiliseront leurs systèmes à l'intérieur des marchés et des systèmes ouverts nouvellement créés.

"Open Markets / Open Systems – The Standards Challenge"

John E. Kean
President, Canadian Standards Association

For presentation at the Canadian Seminar on Information Technology and Telecommunication Standards Ottawa, May 9,1991

OPEN MARKETS/OPEN SYSTEMS - THE STANDARDS CHALLENGE

With the implementation of the Free Trade Agreement in January 1989, Canada made a major commitment to move towards an open market concept. For such a market to be truly effective we need open systems both in communications and information technology and this can only happen when we have fully harmonized standards. The larger the open market becomes, the more globally harmonized the standards have to be.

Where standards for products, processes and systems are different between trading partners, potential barriers to effective open markets and systems are automatically raised. These issues become further compounded when trading partners have different schemes for conformity assessment or fail to recognize the conformity assessment schemes of their trading partners.

Governments around the world are now trying to remove the so-called non-tariff barriers to trade with standards, and their application in conformity assessment programs, being one of the major targets. At the international level, the General Agreement on Tariffs and Trade (GATT) has developed a Code of Conduct for standards development and their usage in conformity assessment programs. The GATT Code's main purpose is to ensure that standards will not be used by governments as non-tariff barriers to trade. The Canada/U.S. Free Trade Agreement also reflects the same concerns in a separate chapter on standards which appears in the agreement. The elimination of trade barriers caused by the different standards used by the member countries of the European Community, is also the main driving force behind the Europe 1992 concept.

The challenge for the standards community, both in Canada, as well as in other countries, is to respond in a positive and pro-active manner to ensure that standards are not used as non-tariff barriers to trade. At the same time every effort must be made to ensure that all affected parties are fully involved in the standards development process. This is particularly important when the standards organizations are required to develop standards where the technology is continuing to evolve and many of the solutions to today's problems have yet to be found. The development of the Open System Interconnect Standards, with its seven layer concept, is a prime example of where standards have been produced before the development of the technology needed to satisfy the standards.

If we believe in the open market concept, and the eventual development of a truly global marketplace, then the ideal situation, at least from a manufacturer's point of view, would be "one product - one standard", with the standard being accepted in each and every country where the manufacturer of the product wishes to trade. To extend the ideal situation one step further, that same manufacturer should then be able to have a set of tests

carried out by a competent agency and have the work of that agency accepted in all the countries where the product was going to be distributed. Where the manufacturer has production facilities in more than one country, we could then extend the ideal situation to include telecommunications systems, which would allow the manufacturer to link all of the production facilities electronically and to know that the system would work.

Unfortunately, we do not live in an ideal world, nor are we likely to see one in the foreseeable future. Nevertheless, things are happening in the standards world and many of the so-called non-tariff barriers that standards and conformity assessment programs may have created are now starting to fall.

For example, under the current Canadian/U.S. Free Trade Agreement, both the Canadian and U.S. governments recognize the potential of standards to become trade barriers. In Chapter 6, the agreement states that "to the greatest extent possible....each party shall make compatible its standards-related measures". While the Free Trade Agreement is only obligatory for standards developed or adopted by our respective federal governments, it sends a clear signal to all standards-writing organizations.

In the preamble to Chapter 6, in the Canadian version of the agreement, recognition is given to the fact that most standards, in Canada and the United States, are developed by volunteer-driven organizations. The agreement encourages these organizations to continue towards achieving greater compatibility in the standards they establish.

Historically there has been very close cooperation between standards organizations on both sides of the border. Apart from the general exchange of information between these groups, many Canadians serve on U.S. standards committees and vice versa. For example, in the case of the Canadian Standards Association, approximately 1,000 memberships on CSA committees are held by U.S. citizens.

In a more tangible example of cooperation, long before the Free Trade Agreement between Canada and the United States was even thought about, the American National Standards Institute (ANSI) and CSA joined forces to develop a common standard for videotext protocols. This was back in 1983. In 1986 CSA signed a memorandum with Underwriters Laboratories Inc. (UL) to harmonize our respective electrical/electronic standards. Where it is practical, we are also harmonizing our respective standards with international standards to enhance the free flow of trade on a global basis. The over-riding factor for this harmonization is, however, that we will not compromise the level of public safety which is expected by the public in both Canada and the U.S. In the case of CSA, of course, whatever is done by our staff in this regard must be acceptable to the appropriate CSA standards committees.

In the past five years, much has been achieved in the electrical/electronics area and we are now working with another American organization, the National Fire Protection Association, for the eventual harmonization of the Canadian and American Electrical Installation Codes.

On a broader scale, in 1989, CSA signed a working agreement with the American Society for Testing and Materials (ASTM). This agreement calls for CSA and ASTM to work closely together in areas of mutual interest, leading to the publication of co-sponsored standards and other documents.

For many Canadian manufacturers, the concept of bi-national standards for the products they produce is very desirable for entering the U.S. market. However, because of the differences in the standards system in Canada and the U.S., harmonization is often a very slow and complex process. Even when it is attained, it may be short lived. For example, if one side or the other changes its respective standard, the whole harmonization process has to start all over again. What is needed is a new approach, and here the Canada/U.S. Free Trade Agreement has provided an example which appears to be working very well, at least for the resolution of the plywood issue between Canada and the U.S. Let me explain.

For years a serious trade barrier has existed between Canada and the U.S. due to the differences in the standards for plywood between our two countries. Under the Free Trade Agreement, a special Bi-national Committee has been struck with representatives from industry, standards organizations, and technical experts from both Canada and the U.S. There are co-chairmen, one from Canada and one from the U.S. When meetings are held in the U.S. they are chaired by the U.S. chairman and when they are held in Canada they are chaired by the Canadian chairman. Meetings take place alternately in each country.

Agreement has now been reached as to how to resolve the differences in the two standards and recommendations have been sent to the national organizations in both countries for adoption. Because the key stakeholders, who are members of the Bi-national Committee, are also members of the standards committees in their respective countries, it is expected that this process will be successful.

The same approach was adopted by the air-conditioning industry in North America in 1989. The industry associations in both Canada and the U.S., decided that for the good of their respective members as a whole, there should be one common North American standard for heating and cooling equipment, rather than the half dozen or so standards which existed in both countries. A special committee was struck with representatives from both countries and CSA was given the secretariat. As in the case of the plywood issue, the industry was prepared to put more than just words behind its intentions and provided seed funding to get the work done. The result was that in

just over a year agreement was reached on the technical requirements and a truly bi-national standard was produced late last year.

In the U.S. the standard was published by UL and in Canada by CSA. Except for the cover and the forward, each page in the standard is identical. The development of this bi-national standard, however, was not an end in itself. The air-conditioning industry sees itself in the global market and where possible wishes to use international standards. Because of this the industry has now submitted the new bi-national standard to the International Electrotechnical Commission (IEC) to form the basis of a world standard.

While the development of bi-national standards between Canada and the U.S. has a certain appeal, the move to international standards has an even greater appeal for those manufacturers with global aspirations. The use of one world standard in all the countries in which manufacturers wish to sell their products, enhances their potential to compete, and provides the possibility of offering cheaper products to consumers and users of their equipment.

This is a concept which is being pursued by the information technology industries in both Canada and the United States, with the Information Technology Association of Canada (ITAC) and its U.S. counterpart, the Computer Business Equipment Manufacturers Association (CBEMA), encouraging the adoption of IEC Standards as the preferred standards for use both in Canada and the United States.

While there is a great deal of cooperation between standards organizations, as well as trade associations and regulatory authorities, in developing harmonized bi-lateral standards, the same is not true in the area of conformity assessment. Many barriers have yet to be removed to allow manufacturers speedy access to their markets at minimum cost, both in time and money.

In both Canada and the United States, where safety and health are of concern, regulatory authorities at various levels often require products to be certified by an independent third party, to determine their compliance with the applicable standards before they are either sold or installed within a particular jurisdiction. The examination, evaluation and testing of representative samples by a certification organization, prior to granting certification to a manufacturer, can be time consuming and costly, often delaying entry into the marketplace by weeks and even months. Where certification organizations refuse to accept test data generated by manufacturers and insist on doing their own testing, or where certification organizations in one country will not accept the work done by a certification organization in another country, or where the regulatory authorities will not recognize certain certification marks, there can be needless duplication of effort which, in

itself, can lead to delays and higher costs.

These issues are also raised in the Canada/U.S. Free Trade Agreement. The agreement calls for the opening up of the accreditation systems operated at the national level in both countries for testing and certification organizations. Unfortunately, the arrangements we have in both countries are not the same, nor is the Free Trade Agreement binding on state and provincial governments which control most of the product conformance requirements involving safety and health.

In Canada, we have a program at the national level for the accreditation of certification and testing organizations. This program is under the sponsorship of the Standards Council of Canada (SCC). The Council was created in the early 1970s by the Federal Government, with a mandate to coordinate, on a voluntary basis, standards activities in Canada and to ensure that Canada was properly represented internationally. Prior to the signing of the Free Trade Agreement, the SCC's accreditation program was only available to Canadian organizations.

In the U.S., similar programs are administered by the Occupational Safety and Health Administration (OSHA) and by the National Institute of Standards and Technology (NIST) under its National Voluntary Laboratory Accreditation Program (NVLAP). The OSHA and NIST programs, while similar to the SCC's, cover only a very narrow range of products, whereas the SCC's programs are available for a wide range of testing and certification activities. Under the Free Trade Agreement, Canadian and American organizations can now be accredited under each other's national system. It remains to be seen, however, what influence this accreditation will have at the state and provincial level.

Within the next few years a number of organizations will be accredited both in Canada and the U.S. for a variety of products. If these organizations are then accepted by the state and provincial governments, it will enable them to offer their services on a bi-national basis, provided major buyers, such as retail chains, also recognize these organizations. For many years to come, however, U.S. manufacturers selling in Canada will probably need one of the recognized Canadian marks, such as CSA, and the same will be true for Canadian manufacturers selling in the U.S.

To alleviate the problems faced by many of their customers, certification organizations in Canada and the U.S. are forming cooperative arrangements to recognize each other's test data so at least that portion of the work will not have to be repeated for manufacturers wishing the marks of two organizations to sell both in Canada and the U.S. For example, the Canadian Gas Association and the American Gas Association offer for their respective clients a program for the mutual recognition of test results. Also the memorandum signed between CSA and UL in 1986 provided for eventual

acceptance of each other's test data and discussions are currently underway to build on this initiative.

In addition to meeting the requirements of regulatory authorities in both countries, many manufacturers are now having to demonstrate to their buyers that, in addition to meeting a specific product standard, they as organizations have to have quality assurance systems. Moreover, these systems have to be registered by an independent organization. This is particularly true for manufacturers who are selling into the European market where registration to the ISO 9000 Series of Quality Assurance Standards (or as they are called in Europe, EN 29 000) is often a must.

It is interesting to note that Canadian initiative and leadership helped create ISO's 9000 Series of Standards for Quality Assurance. The concept of quality assurance standards and the measurement of a manufacturer's ability to meet a specific level of quality, was initiated in Canada for the nuclear industry in the early 1970s. These standards, known as the CSA Z299 Series in Canada, proved to be so useful that they have since been used by major purchasers, such as utilities, and have become the basis of similar standards in other countries.

With the growing interest in quality issues in the early 1980s, it was decided by the International Organization for Standardization (ISO), to develop an International Series of Standards and Canada was asked to provide the secretariat as well as the chairman. The result was the development of the ISO 9000 Series of Standards, which are similar to the Canadian ones, except that they have three levels of quality as opposed to the four in the Z299 Series. The Z299 Series is also somewhat more rigorous than the ISO Standards.

A growing number of Canadian and U.S. organizations are now offering registration to the ISO 9000 Series of Standards. As many of you are aware, CSA established in 1984 a separate division called the Quality Management Institute (QMI) to handle quality registration programs. QMI now offers registration to both the CSA Z299 and the ISO 9000 Series of Standards for manufacturers with a major emphasis on helping Canadian manufacturers move into international markets.

In this presentation I have been careful to use the phrase "bi-national". It is very tempting, however, when talking about common projects between Canada and the U.S., such as harmonized standards, to refer to them as North American Standards, which our Mexican friends are quick to point out is incorrect. However, with the proposed U.S./Mexico/Canada Free Trade Agreement, the concept of true North American Standards may become a reality.

Representatives from the Mexican government, including standards officials, have visited standards organizations in Canada and future meetings are being planned.

There is no doubt that our standards and conformity assessment world is changing. The events surrounding the possible North American Free Trade Agreement will add to this change. There will be pressure to develop a harmononized North American Standard which, in the short term, may well serve manufacturers, purchasers and users. However, we cannot lose sight, in my mind, of the real goal - to eventually have global standards, backed up by mutually accepted product testing and quality auditing, the major components needed to support conformity assessment programs. This goal must be met so that manufacturers can trade more effectively on a global basis, and provide maximum benefits to the purchasers of their products, in the new open markets that are being and will be created.

As we move into the international arena, we can be successful in ensuring that Canadian needs are met, only if we have a strong and active national standards system - a system that is broad enough in scope to respond adequately to the needs of all who have an interest in standards and their usage. Under the auspices of the Standards Council of Canada, we have developed a comprehensive Canadian National Standards System which, in addition to allowing for the orderly development of standards in Canada, links Canada on a formal basis to the major international standards organizations. While the SCC's international activities have been aimed towards the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) and its European counterparts, CEN and CENELEC, I hope that it also can accommodate the needs of the information technology and telecommunications industries in dealings with the International Telecommunications Union (ITU) and the European Telecommunications Standards Institute (ETSI).

With the scarce technical and human resources that we have in Canada, and the current mood of constraint, much more has to be done on a cooperative basis. One key to success is to ensure that all those affected by the outcome of a standards activity are involved in development of Canadian and International Standards. Seminars, such as this one taking place in Ottawa today and tomorrow, can help develop the recommendations necessary to make this type of an activity happen.

Although Canada is a relatively small country, our international contributions in the standards field have been very significant. The standards for quality assurance and air-conditioning equipment, which were mentioned earlier, are just two recent examples of our efforts internationally. In the future, we may well have the opportunity to do more, particularly where there are no international standards currently in place, and Canada has a national standard that might be used as the basis for an international standard.

The fact that we all have to work together for the best results should be a "given". The real challenge will be to open our minds and our imaginations to ensure that we have the flexibility and ability to change, should we find our current systems and methods not suitable in the coming years. Open markets and open systems are here to stay, and we must do all we can to ensure maximum benefits for the Canadian society.

RALPH JENSEN

A COMMITTEE T1 PERSPECTIVE

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

NORMES RÉGIONALES

M. Ralph Jensen
Comité T1 de l'ANSI

L'Accredited Standards Committee T1 (Comité T1) de l'ANSI, créé en 1984, a pour mission d'élaborer des normes et des rapports destinés à appuyer l'interconnexion et l'interfonctionnement des réseaux de télécommunications aux interfaces avec les systèmes d'usagers, de télécommunicateurs, de producteurs de bases de données et de fournisseurs de services à valeur ajoutée et l'équipement dans les locaux de l'abonné. Les sous-comités techniques du Comité T1 recommandent aussi la position à adopter sur des questions examinées par d'autres organismes nord-américains et internationaux de normalisation.

Toutes les parties intéressées directement et concrètement au travail et aux activités du Comité T1 peuvent y adhérer et participer pleinement à ses activités et à celles de ses sous-comités techniques. Les membres du Comité T1 viennent des États-Unis et du Canada, et de tous les secteurs de l'industrie. En outre, un nombre appréciable de télécommunicateurs, de fabricants, d'utilisateurs et d'organismes publics d'outre-mer participent à ses travaux.

Le Comité T1 a joué un rôle de premier plan en favorisant les communications et la collaboration internationales à l'instigation de ses membres. Ces derniers reconnaissent qu'avec le développement sans cesse plus rapide des télécommunications, le monde qu'ils veulent servir devient de plus en plus petit. Même s'il faut s'intéresser aux besoins du marché à l'échelle régionale, l'interconnexion et l'interfonctionnement sont essentiels à l'échelle mondiale. En 1990, le Comité T1 a été l'hôte de la première Conférence interrégionale sur les normes en télécommunications (ISTC I), réunissant des chefs de file du domaine, venus de tous les coins du monde pour réfléchir sur le thème : comment mettre en oeuvre l'esprit de Melbourne[1].

Tout en s'efforçant de maintenir l'élan créé par la conférence interrégionale, le Comité T1 a préparé ou envisagé de lancer d'autres initiatives destinées à promouvoir l'uniformisation des télécommunications, la mise en application de normes et l'utilisation efficace des ressources humaines et techniques de l'industrie.

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[1] «L'esprit de Melbourne» renvoie à la résolution plénière de 1988 du CCITT qui invitait à la collaboration avec les organismes régionaux chargés d'élaborer des normes de télécommunications afin d'améliorer et d'accélérer le processus de normalisation internationale dans ce domaine.

CANADIAN SEMINAR ON IT&T STANDARDS

REGIONAL STANDARDS

Mr. Ralph Jensen
ANSI T1 Committee

Established in February 1984, the mission of ANSI Accredited Standards Committee T1 is to develop standards and reports supporting the interconnection and interoperability of telecommunications networks at interfaces with end-user systems, carriers, information and enhanced service providers, and customer premises equipment (CPE). The Committee T1 Technical Subcommittees also recommend positions on matters under consideration by other North American and international standards bodies.

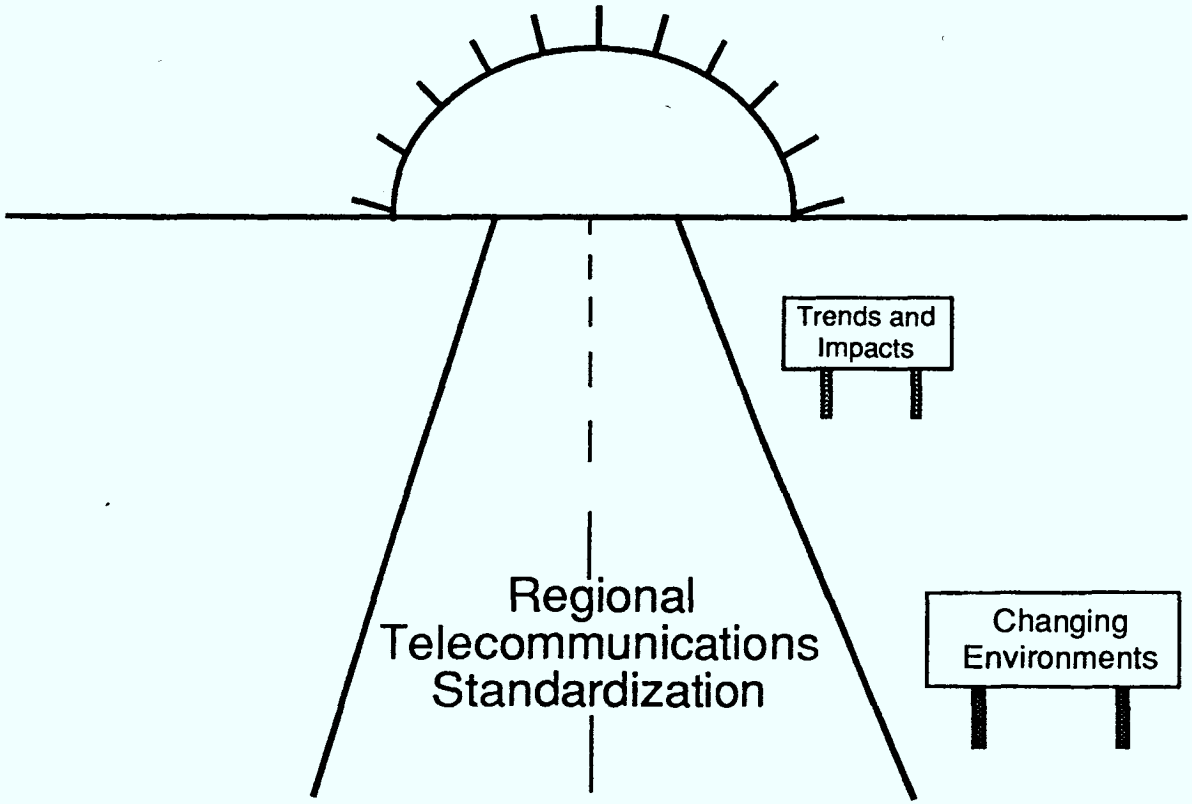
Membership and full participation in Committee T1 and its Technical Subcommittees is open to all parties with a direct and material interest in the T1 process and activities. The Committee T1 membership is drawn from all areas of the industry in the U.S. and Canada. In addition, a considerable number of overseas carriers, manufacturers, users and government entities participate in its work.

T1 has assumed a leadership role in fostering international communications and cooperation at the direction of its membership. Members recognize that, as the telecommunications industry grows at an ever-increasing rate, the world it serves is becoming smaller and smaller. While localized market needs must be addressed, interconnection and interoperability are essential on a global basis. In 1990 Committee T1 hosted the first Interregional Telecommunications Standards Conference (ITSC I) bringing together telecommunications standards leaders from around the world to consider the theme, "The Implementation of the Spirit of Melbourne[1]".

While striving to maintain the momentum of ITSC I, Committee T1 has under way or is considering still other initiatives to further promote telecommunications standardization, the implementation of standards and the efficient use of the industry's human and technical resources.

[1] "The Spirit of Melbourne" refers to the 1988 CCITT Plenary Resolution which called for the CCITT to work with the regional telecommunications standards bodies to improve and expedite the international telecommunications standards process.

A Committee T1 Perspective



Ralph Jensen
ANSI T1 Committee

Committee T1

- Pre-divestiture – Bell System was primary telecommunications standards developer
- August 1983 – Exchange Carriers Standards Association (ECSA) proposed an alternative approach:
  - An industry committee to address industry concerns
    - Open
    - Balanced
    - Due process
    - Sponsored by ECSA and accredited by the American National Standards Institute (ANSI)
- Industry Overwhelmingly supported ECSA proposal
- February 1984, T1 Committee formed
- October 1984, T1 Committee accredited
- March 1985, FCC approval of committee T1 granted

Scope of T1

- Develop standards and technical reports for network interfaces
- Develop positions relating to international standards bodies
- Focus on interconnections and interoperability of telecommunication networks
- Procedural matters at points of interconnection (e.g., maintenance and provisioning)

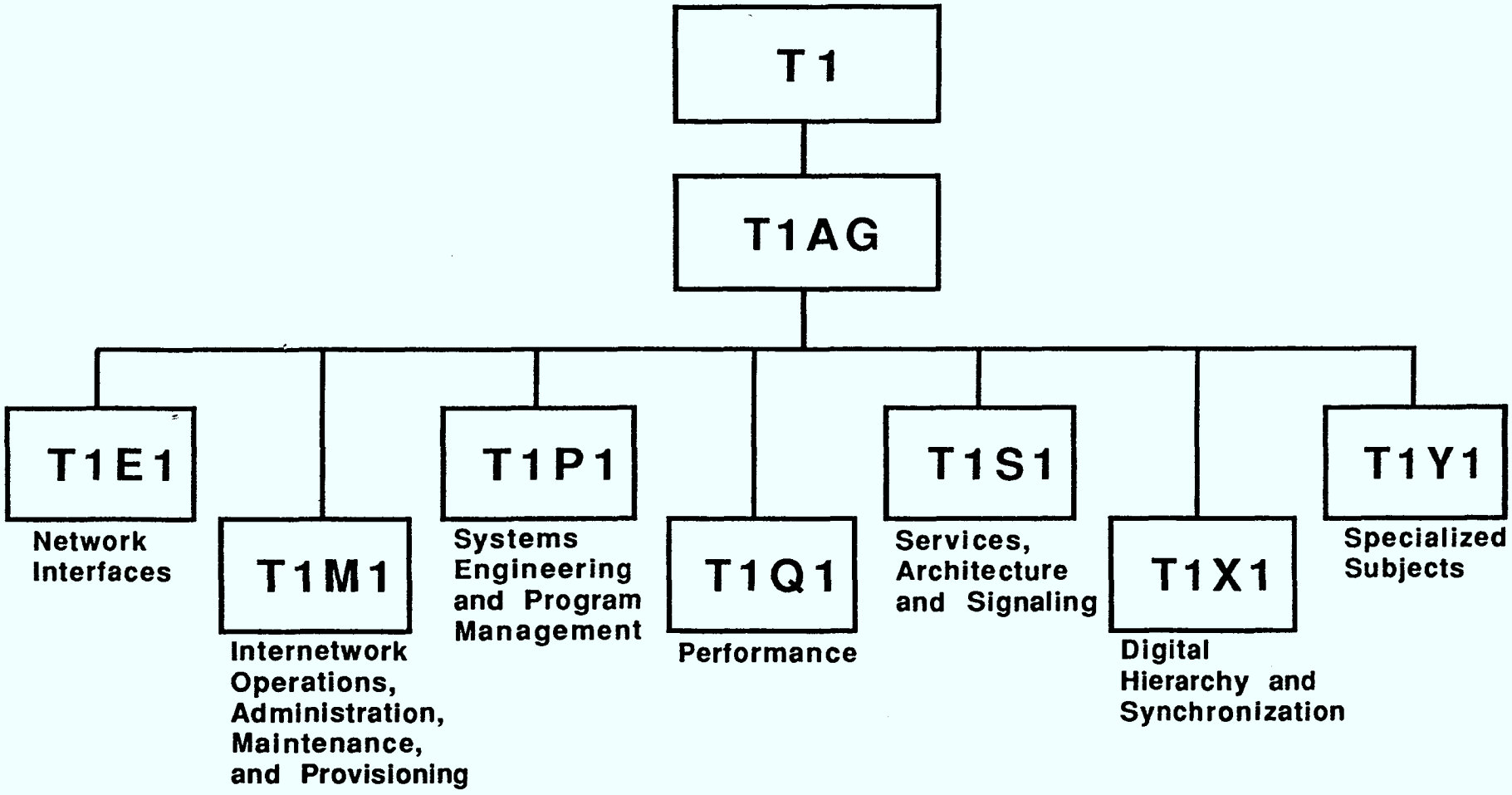
Committee T1

Membership (As of 2/1/91)

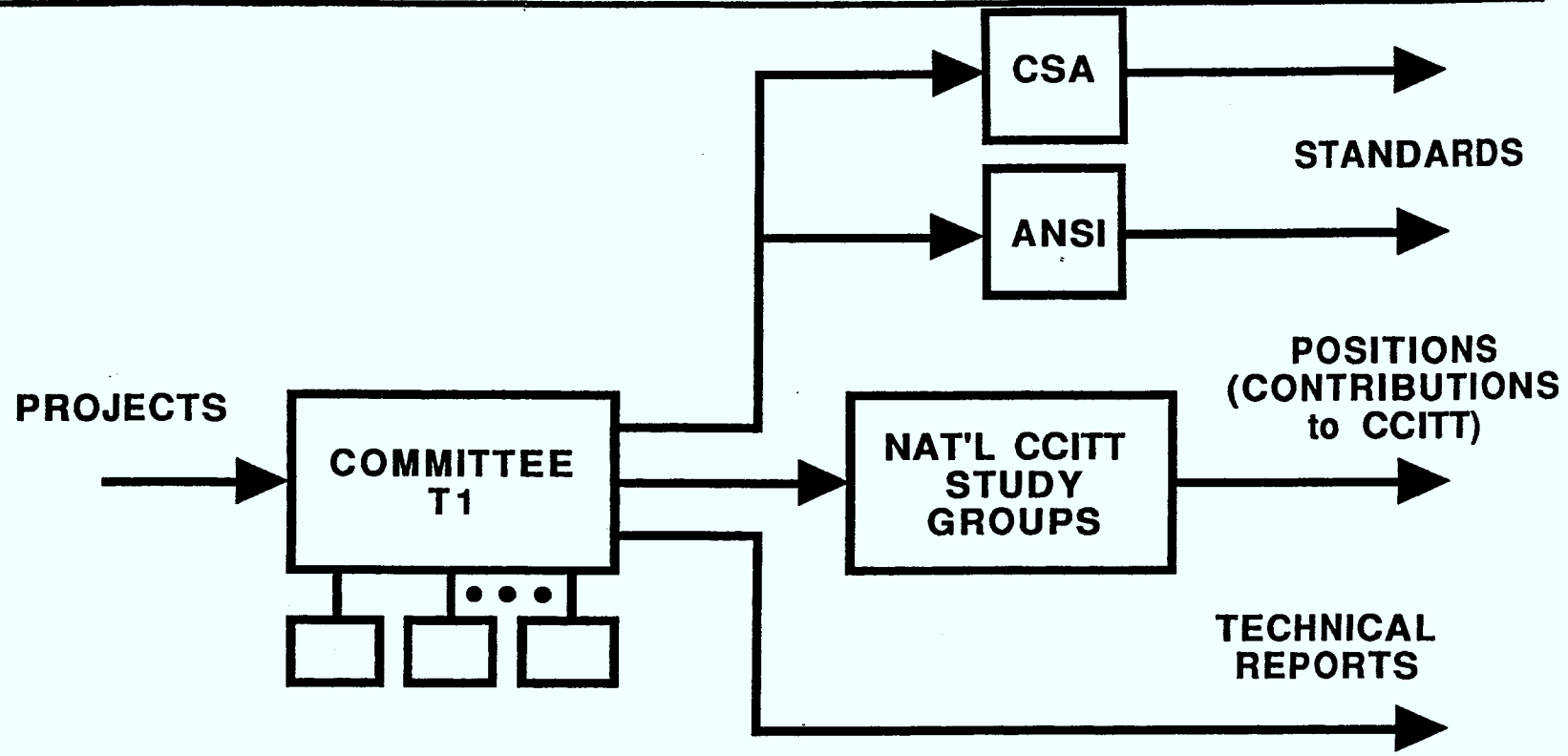
• Exchange carrier interests	18
• Interexchange carrier and reseller interests	11
• Manufacturing and vendor interests	43
• Users and general interests	18
• Observers	94
	184

Committee T1

The Structure



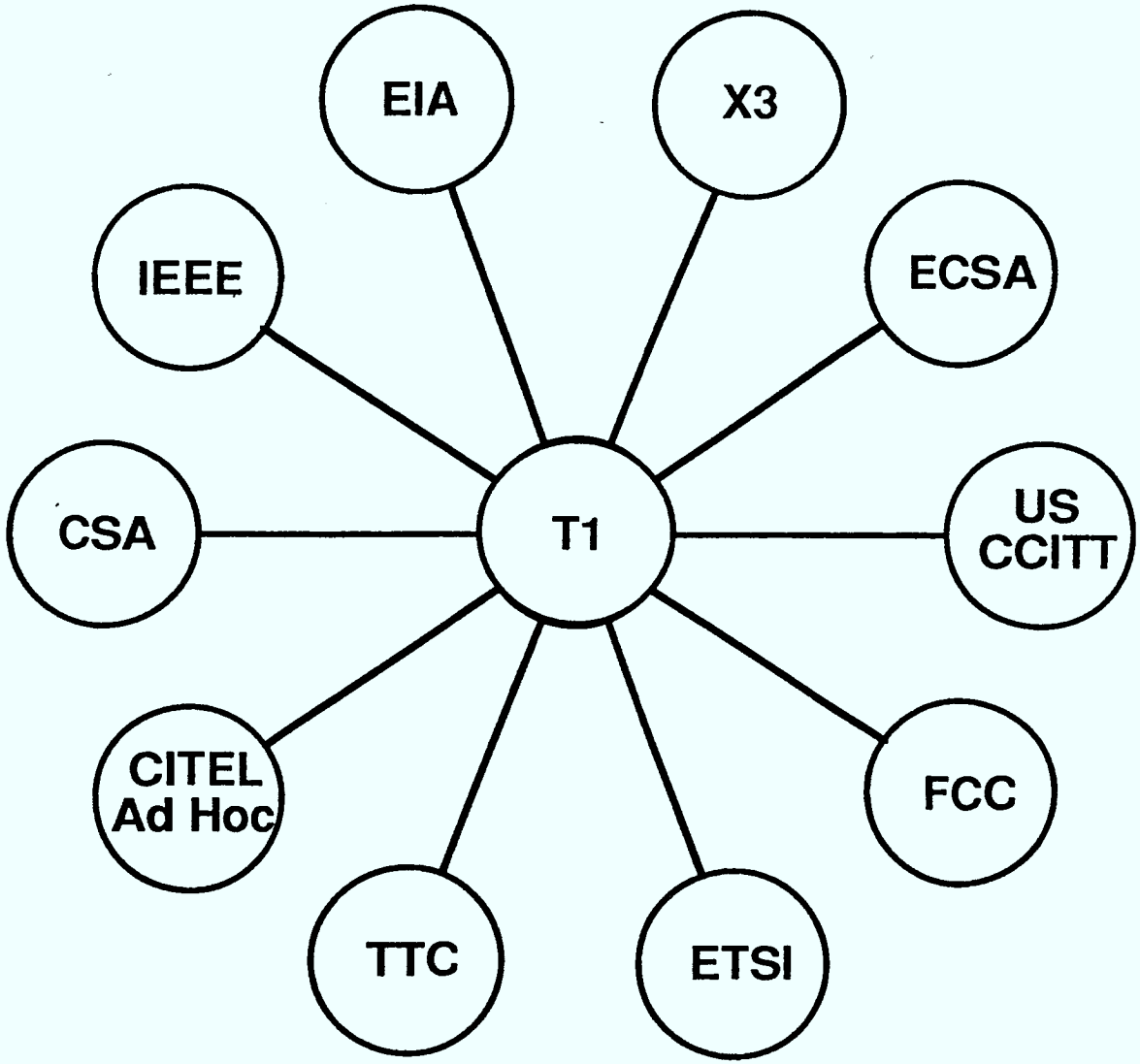
Committee T1



7 Subcommittees

- **T1E1 – Network Interfaces**
- **T1M1 – Internetwork OAM & P**
- **T1P1 – Systems Engineering and Program Management**
- **T1Q1 – Performance**
- **T1S1 – Services, Architectures and Signaling**
- **T1X1 – Digital Hierarchy and Synchronization**
- **T1Y1 – Specialized Subjects**

T1 Liaisons



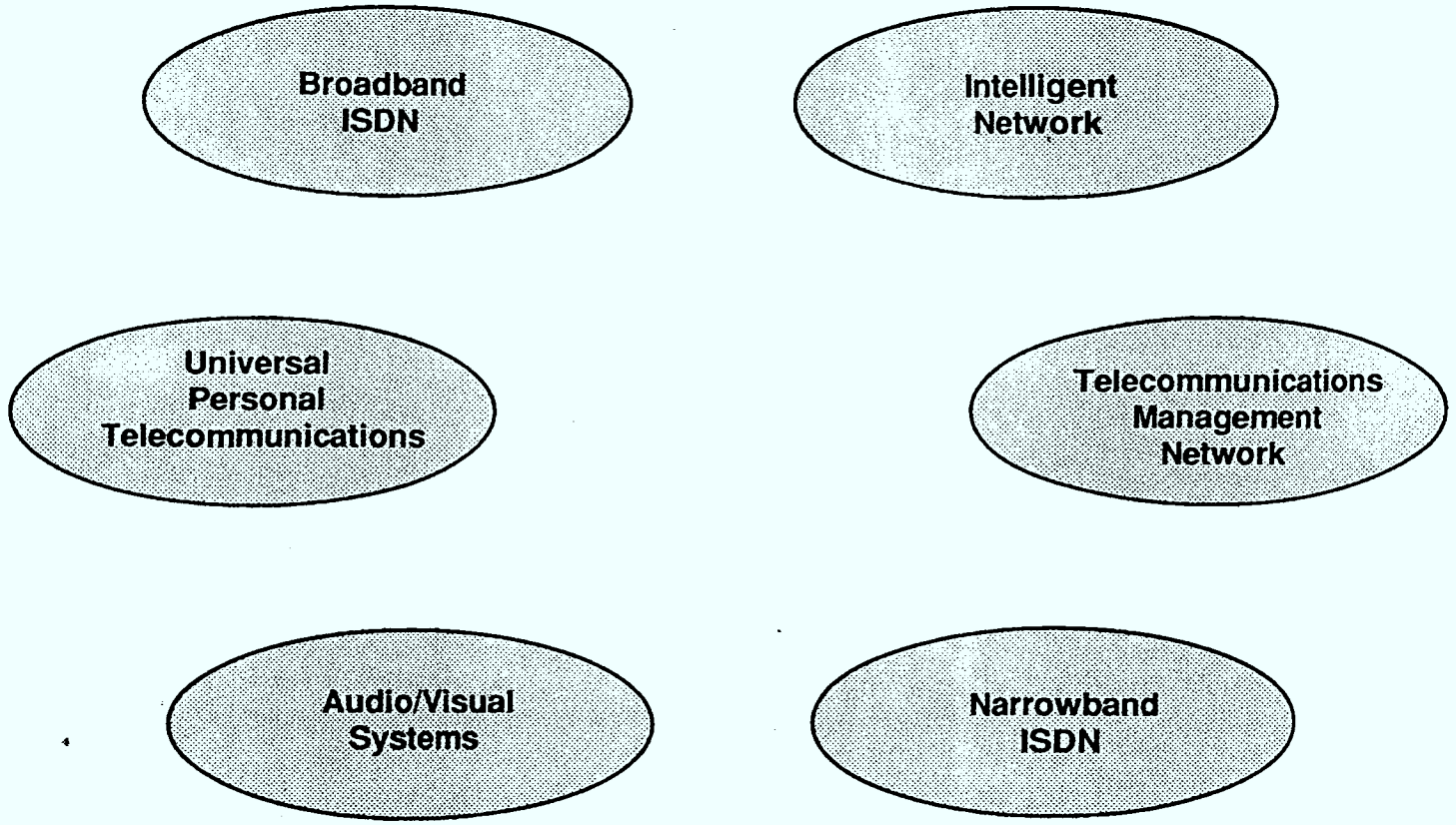
TTC

- Telecommunication Technology Committee
- Established in 1985 to accommodate the privatization of NTT
- Modeled after Committee T1 – process and structure
- Currently translates and adapts international telecommunications network standards to Japanese network
- Study being completed to permit it to develop positions relating to international bodies

ETSI

- European Telecommunications Standards Institute
- Established in 1988 to put in place telecommunications standards for EC '92
- Weighted voting on a per country basis
- Participation limited to members; project teams
- NETs – mandatory; have weight of law
- Positions developed relating to international standards bodies

Major Projects



Standardization Trends

- Increased communications with emerging national and regional standards bodies and other groups
- Process acceleration and streamlining
- Forward looking activities – systems engineering
- Major project orientation

LLOYD KUBIS

THE IMPACT OF A SINGLE EUROPEAN MARKET ON IT&T STANDARDS

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

IMPACT DU MARCHÉ EUROPÉEN UNIQUE SUR LA NORMALISATION DE LA TECHNOLOGIE DE L'INFORMATION ET LES TÉLÉCOMMUNICATIONS

M. Lloyd Kubis
Président
EEMAC

Après des siècles de rivalité et de protectionnisme, les pays d'Europe sont en voie d'établir un marché commun et une unité économique unique.

Le protectionnisme, qui avait pourtant mis des siècles à s'installer, est sur le point de disparaître dans le temps de le dire pour faire place à un nouvel ensemble de normes et de règles communes. Cet appel pressant à l'unité a déclenché dans ces pays une course à la rédaction de normes comme on n'en avait jamais connue auparavant. Par ricochet, cela a pratiquement semé la «panique» chez ceux qui préparaient les normes selon l'ancienne méthode internationale établie et qui craignent maintenant d'être dominés par les événements survenant en Europe.

Les initiatives qui se prennent en Europe ont pour objet de réformer le système séculaire qui constituait une barrière pour le commerce interne. Ces initiatives, par nécessité, visent avant tout à corriger le plus tôt possible une situation qui s'est détériorée avec le temps. Par conséquent, il en est résulté une activité européenne conçue par les Européens pour leur seul profit. Il n'y a donc pas lieu de se surprendre que cette activité ne tienne pas compte des intérêts extérieurs comme ceux du Canada, des États-Unis ou des autres pays n'appartenant pas à la CE.

Doit-on craindre la nouvelle Europe en voie de formation? Pour répondre à cette question, il faudrait savoir si les pays membres de la Communauté européenne sont prêts à adopter rapidement les nouvelles directives de la CE. Il peut s'écouler beaucoup de temps entre l'adoption d'une norme et sa mise en application.

Même si de nouvelles normes sont adoptées, il n'est pas sûr que les Canadiens pourront compter sur de nombreuses possibilités de profiter des achats européens.

L'industrie européenne des télécommunications est une industrie très protégée. De façon caractéristique, elle est d'ordinaire la propriété des diverses administrations gouvernementales. À moins d'une déréglementation qui autoriserait la concurrence, les non-Européens ne pourront que très peu tirer profit de la situation.

Il est impossible de prévoir qu'elles seront les dominantes sur le marché mondial avant de savoir dans quelle mesure l'Europe unifiée s'imposera dans le contexte des normes internationales. L'Europe constituant une unité régionale unifiée, ce sera peut-être une nouvelle puissance dont il faudra tenir compte.

THE IMPACT OF A SINGLE EUROPEAN MARKET ON IT&T STANDARDS

Presentation given to the Canadian Seminar on Information Technology and Telecommunications Standards

May 9, 1991

Presented by:

L. Kubis
Chairman of the
Electrical and Electronic
Manufacturers Association
of Canada

THE IMPACT OF A SINGLE EUROPEAN MARKET ON IT&T STANDARDS

Standards have acted as a major trade barrier between the countries of Europe for centuries. These standards, often with local testing and certification requirements, favoured the individual countries' own producers over their neighbours. This, in turn, has limited trade not only from within Europe, but also from the outside world.

The result of differing technical regulations and national standards was the fragmentation of the local market. This fragmentation added substantially to the cost of production for many of the European industrial sectors, and thus consequently to the prices for its consumers.

In a bold attempt at dismantling these technical barriers to trade within Europe, the European Commission began to harmonize national regulations across the Community. This process, however, turned out to be a very slow and difficult one. The result was that progress was very limited.

In the 15 years, for example, that the harmonization programme was in process, only an average of 10 technical directives per year were adopted by the E.C. Progress toward an open market appeared to be very much at a snail's pace.

By mid-1985, it was decided that there had to be a "new approach" to harmonization and standardization.

Decision making was centralized and streamlined.

The European Commission determined that, to speed up the process, it would lay down essential Community wide legislative requirements for health, safety and environmental protection. It also determined that for strategic industrial reasons, mandatory performance standards would also be developed in high technology areas such as telecommunications, information technology and bio-technology.

The European Commission would issue directives or regulations, which would spell out "essential requirements." The detailed work of the specifications was then carried out by the existing European Standards bodies, such as CEN, and CENELEC, and a new body ETSI.

ETSI was a new standards institute which was developed specifically to address telecommunications standards. I will talk more about ETSI later.

To encourage access to other member states markets, all member states were required to adopt immediately all of the E.C. directives or

regulations in cases where no national standard or regulation existed. If countries had existing national standards, these were to be modified to meet the essential requirements of E.C. directives.

Where no "European standard" existed, a national standard could be produced, but again, it had to meet the essential requirements of the E.C. directive. This National standard, however, could be replaced by a new European standard written at a later date.

The Commission, as well as the other member states, had to be notified of new standards or regulations being developed by another member state.

It was recognized that testing and certification can create barriers to trade, even though a product meets a new harmonized standard. Products cannot enjoy free movement if the manufacturer has to have them re-tested by each of the individual member state's certification bodies.

To resolve this, a Council Resolution in December of 1989 established a policy of mutual recognition of certification. This policy set up a certification infrastructure supervised closely by the Commission. Products approved by this system will bear a CE mark, and then enjoy free circulation throughout the Community.

Let's go back to ETSI.

ETSI was formed in March of 1988, with the intention of speeding up the establishment of common telecommunications standards.

As mentioned earlier, the E.C. has identified telecommunications as a strategic industry.

The E.C. estimated that by the year 2000, up to 7% of the Communities' GDP may be derived from telecommunications -- this compares to 2% in 1987. They also forecast that by the end of the century, up to 60% of all jobs would be dependent upon telecommunications through information technology integration.

Investment in the European telecommunications industry has not kept up to other countries. Average per capita expenditure on telecom equipment within the E.C. is C$32, a very low figure when compared with C$46 in Japan, and C$80 in the U.S.

It became apparent that there was an urgent need to modernize the telecom network in Europe to respond to the growing needs of Europe's financial and commercial institutions. It was also recognized that a fragmented system of separate national markets, would not support the required R&D investment nor the development of new products and services, at a rate to match this demand.

Therefore, telecommunications was designated as a strategic industry sector with mandatory requirements to ensure standardization. ETSI was established to develop this new sector and has essentially taken

over all standards writing from CEPT. CEPT is the European Confederation of Posts and Telecommunications Administrations. In reality, it is all the PTTs, and thus represents both the government owned network operators as well as its regulators.

ETSI is headquartered in the "hardship" location of NICE, France, with a permanent secretariat of 45 staff people, reporting to a Director. There are about 250 full time members, consisting of network operators, manufacturers, users and research bodies. There are some 30 observers, some of which are non-European.

ETSI is set up having 12 Technical Committees, each of which is subdivided into Project Teams.

Technical Committees are composed of experts who provide a forum for consensus building on a draft standard to be submitted to the Technical Assembly. The Project Teams are groups of experts that work under the guidance of Technical Committees, and prepare draft standards in response to specific technical problems.

When ETSI was initiated, it had set a target production of 100 new standards per year.

However, things are not progressing very smoothly. ETSI has "bogged-down" in a debate over Intellectual Property Rights and over other issues.

Because of the E.C.'s desire to develop a strong domestic industry, it asked all participants in the ETSI programme to sign up to a very detailed Intellectual Property Rights agreement. This agreement would give certain preferential benefits to ETSI members to technology owned by other ETSI members on a world-wide basis. For purposes of sharing in the IPR, an ETSI member could be one directly involved in the standards writing process or even a country adopting an ETSI standard.

High R&D performers are increasingly reluctant to give away their expensive technology, particularly on a world-wide basis. Consequently, there is somewhat of a stand-off currently within ETSI.

Another difficulty at ETSI is that the Commission and many members prefer minimal interface or interworking standards. On the other hand, other participants want very detailed operational standards which can be used as procurement document or for product development. This difference in objective continues to be debated at the lower working levels, and unfortunately draws the entire effort deeper into the IPR issue.

Originally, the Commission determined it required 1100 new European Standards by the end of 1992, in order to achieve a single market.

In 1990, it was discovered that 800 new standards still had to be written and adopted.

It was also recognized that despite the desire for European Standards, National standards were still being written at 10 times the rate of European ones.

Therefore, the Commission issued a Green Paper in October of 1990, calling for a fundamental overhaul of the European standards system by the end of 1991. This new system put more reliance on the existing network of sectorally-based European standards-writing institutes. Under this proposal, a European Standardization Council was formed to oversee the work of Europe regional and national standards bodies.

While we meet today, there is another organization being formed, which can have a significant effect on telecommunications standards. This is the new European Radiocommunications Office.

This new office was formed by CEPT, to allow industry people to participate in the development of spectrum management plans. Previously, CEPT was strictly limited to the various country regulators and PTTs.

It appears that the Europeans may be back to the old situation where there were a multiplicity of standards writing organizations. This must be a real challenge to the E.C. It will be interesting to see where this will lead to.

What does all this activity mean to a Canadian IT&T company that wishes to export to Europe?

Although Europe represents a very large export market, being some 38% of the world-wide total, Canada's share represents only 1% of the total imports to Europe in 1989.

In fact, our exports to the U.S. are 13 times larger than to Europe. Exports to the U.S. are growing, whereas exports to Europe are shrinking.

Moreover, if we look at what we export to Europe, it is no surprise to find that it is largely "rocks and trees" -- our typical exports. In fact, most of Europe's current imports are largely resources and food stuffs, whereas Canada's exports to the U.S. contain a large component of manufactured goods.

In examining the statistics in detail, I found that there was very little IT&T equipment exported to Europe. In 1989, there was only $109 Million of telecom equipment exported to the E.C. -- this is in reality a "very small drop in a very large bucket".

In the near term, it is my opinion that the opportunities for manufacturers off-shore to Europe will continue to be very limited. Although some of the industry has been privatized, much of the telecommunications industry remains to be owned by the respective national governments. Even if a Canadian manufacturer meets all the requirements of the new standards and achieves certification, there is

no assurance of his product being accepted by the PTTs. The Canadian manufacturer will still have to compete with local suppliers who have many years of experience and connection to the local PTTs.

Therefore, it can only be concluded that all of the activity in Europe will not have much immediate impact on Canadian telecommunications trade to Europe -- we do not sell much there now.

I believe that only extensive de-regulation of the telecommunications industry will give non-Europeans a fair "shot" at the market -- even then, it may require the manufacturer having local European facilities or joint ventures in Europe.

However, only time will tell!

A key question in my mind is whether all of the standards being produced, particularly those for new telecommunications systems, will ever be implemented in a timely manner. Writing standards, particularly with "voluntary help", doesn't cost much -- implementation of the standard, however, will require major commitment of capital.

Let's take a look at a current example.

GSM, is the acronym being used for a new pan-European all digital cellular system. This standard was started several years ago by the Groupe Speciale Mobile, a special committee delegated to write a standard for a new pan-European mobile telephone system. When ETSI was established, it took over this activity.

Eight to ten years later, we find ourselves with a standard having over 5000 pages -- and still not complete! Only one company -- a very reputable one at that -- is demonstrating working equipment to date.

The Commission, having issued a directive that service was to begin in July of '91, recently extended this directive for a 6 month period. because of the inability by the industry to construct either networks or user equipment.

The reason for this slow start may be that Germany recently opened a new 400 MHz mobile telephone system. The U.K. still has not filled its TAC's analogue cellular system. Italy just opened a new TAC's system itself.

France recently introduced a 900 MHz mobile telephone system of their own unique design.

With such a huge investment in relatively new non-GSM mobile telephone systems, it is unlikely that the national PTTs will consider additional investment in GSM soon. This could change rapidly, however, if de-regulation occurred, and non-PTTs were given the opportunity to develop such a service.

ERMES is another example of good intentions that have bogged down. ERMES was Europe's answer for a pan-European paging system. The standard was started in 1985 and completed in 1990, and is still waiting to be formally approved. Products have been designed to this system, however, construction has not started. There is concern that this standard may be superseded by new technology, before it is even implemented.

I bring these examples to your attention, only to caution everyone that having a standard does not assure that the particular service will be implemented in any timely manner. Europe, unfortunately, has a history of standards for new services and equipment, which have not gone very far.

It appears that even E.C. directives will not be able to force individual countries to make an investment, when the country decides it is not yet prepared to do so, or not able to.

I guess the old Golden Rule still applies -- "he who holds the gold makes the rules."

De-regulation of telecommunication services, however, could change the investment scenario dramatically -- in this case, the new services could be implemented far faster than current history indicates.

Now, I'd like to switch and talk a little more about the European Standards development process, and where we in the rest of the world might fit. Here, I'm talking largely to Telecom standards, but the comment will be applicable to other sectors.

There appears to be a great desire by non-European National Standards bodies to participate in the European activity. I would caution against doing this for the following reasons.

My concern is that if a large enough number of non-European National Standards bodies participate in say the ETSI programme, it could result in making the ETSI standards de-facto world-wide standards. The Europeans would be given a strong argument that through non-European participation, that all countries would have had their interests looked after in the process. Therefore, why shouldn't a process that incorporates the interests of the other countries, be considered as international in scope.

I'm afraid that this would now give the European standards much more weight than they actually deserve. It would also give European standards substantial advantage in the various ITU forums. In fact, this process could easily circumvent the need and influence of the ITU.

If one wants to be involved in the European process, my recommendation is to do it through a European base, using Nationals to look after one's interests. Nationals will be more accepted and they

will also have the ability to vote on issues, a privilege which will not likely be given to outsiders.

I am not recommending that we ignore the entire European process either -- I would strongly recommend monitoring the process and keeping Canadians informed. We should, however, avoid giving the appearance of being involved in the development and approval of the European standards on a National basis.

Instead, we should be taking a lesson out of the European book. Canada should be getting its regional neighbours together and forming our own regional standards group.

We have more in common with our neighbours than we have with the Europeans. In North America, both of our telecom networks and power systems are designed to the same or very similar standards.

Even our regulatory philosophies are "similar."

The philosophical approach to satisfying user telecommunications needs varies between North America and Europe. Europe has always encouraged telecom users to use public systems, for their telecom needs. Consequently, there are very few private systems in the E.C., with possibly the exception of the U.K. and the public safety services.

In North America, public radio systems have generally been relegated to telephone like systems serving the general public. Business users have generally used private systems either owned by themselves or shared with other similar users. These systems have been optimized to suite their business operational needs.

Private systems are not standardized because of the variety of needs. Public system standards are limited largely to the over the air interface, to permit interoperability of various manufacturer equipment. This also permits roaming between systems. This is vastly different to European standards, which are more detailed in terms of operation and even construction.

Our enlightened regulatory environment has encouraged the use of telecommunications by businesses much more in North America than in Europe. This resulting market demand encouraged investment into R&D, and the development of new systems, far more in North America than in Europe.

Another point I'd like to make is that standardization of performance or operation discourages investment in R&D -- why develop something new if one has to wait until all the standards are in place to use it. Alternatively, a manufacturer could build to a standard and avoid R&D investment all together.

Therefore, we must recognize that performance or operational standards stifle creativity and innovation.

Development of functional performance standards always involve a great deal of compromise on the part of the participants. Consequently, standardized performance always ends up to be rather mediocre, not very competitive, and far from the leading edge of technology. This characteristic has driven North American standards activity away from developing detailed performance standards.

Because of these differences, I maintain that a regional standards group for the Americas would be more appropriate than one designed for a more regulated environment.

Furthermore, our largest telecom market is with our neighbour, it should be a market to build on. We have a free trade agreement with the U.S., and possibly soon with MEXICO -- this gives Canadians considerable advantage over others to sell into these countries.

Many countries of South and Central America are now starting to develop. They have a very large need to modernize their telecom networks. If they follow the lead of MEXICO, and de-regulate their telecom industry, this will present exceptional market opportunities for Canadians. Therefore, we should ensure they follow standards designed for North American systems rather than for others.

More importantly, my vision of a Regional Standards Union for the Americas, would give us a potential for more equal representation in the International forums such as the ITU.

The E.C. now has available to it 12 votes, plus possibly 6 more from the non-EC EFTA countries, giving them a potential of 18 votes that they can use in International activities. A strong regional standards body, in my view, is the only way of balancing the growing strength of the European Standards bodies and others.

Canada is both trusted and respected by most of the countries in our region. Therefore, Canada is in an excellent position to lead such a regional role for the Americas.

From my point of view, we do not need, nor can industry support another National Standards writing body solely in Canada. Canada urgently needs to be a part of a strong regional group that can fight for its needs in the International forum. A single vote National body will get us no where.

In my view, we must go Regional !!

Major European Standards Bodies

CEN

- Committee for European Standardization

CENELEC

- Committee for Electrotechnical Standardization

ETSI

- European Telecommunications Standards Institute

Potential European Standards Area

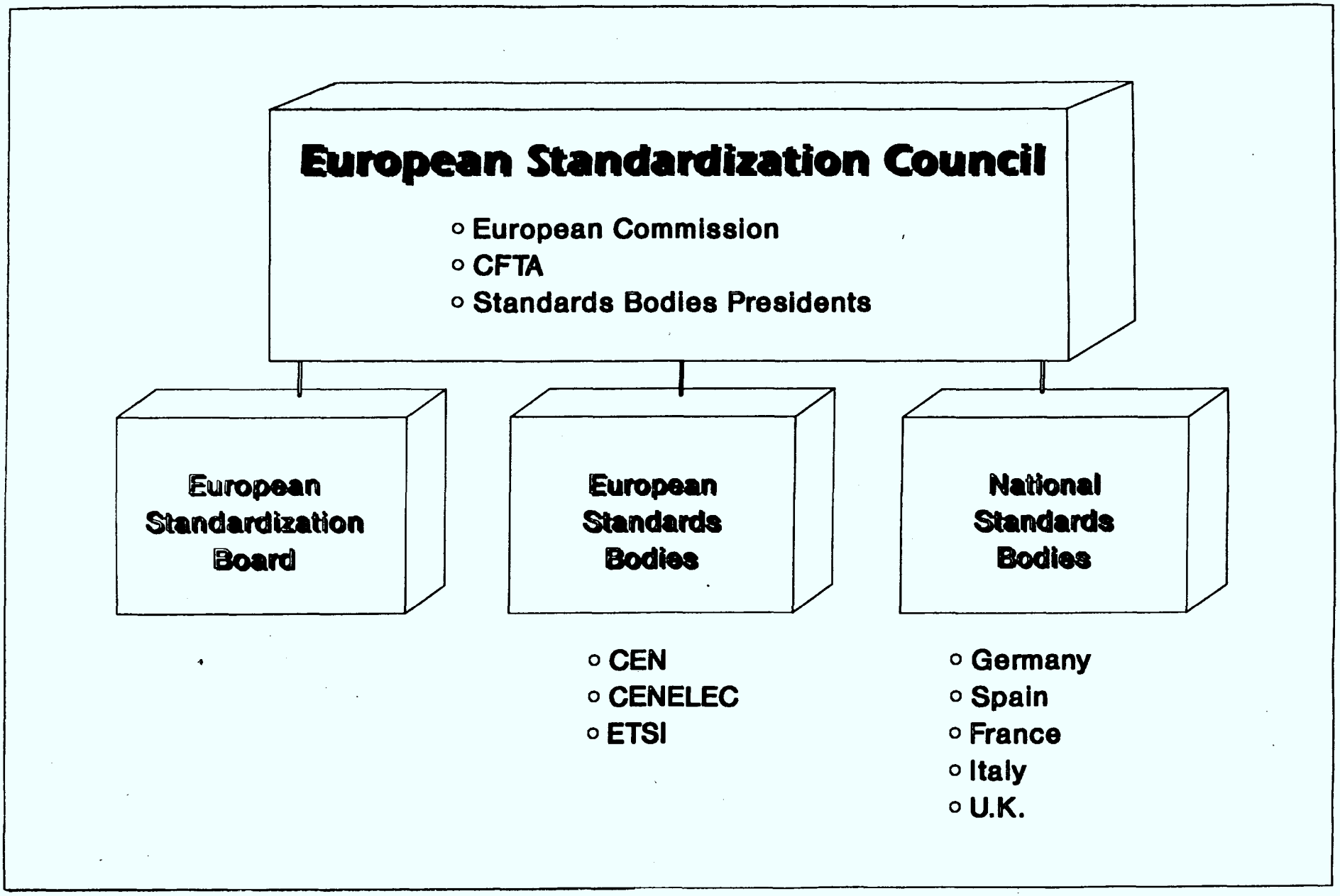
EC Countries	EFTA Countries	East Europe
Spain	Sweden	Poland
Portugal	Norway	Hungary
Netherlands	Iceland	Romania
Belgium	Switzerland	Czechoslovakia
Italy	Austria	Yugoslavia
Germany	Finland	Albania
France		Bulgaria
Ireland		
Denmark		
Greece		
U.K.		
Luxembourg		

Source: US Department of Commerce, 1990

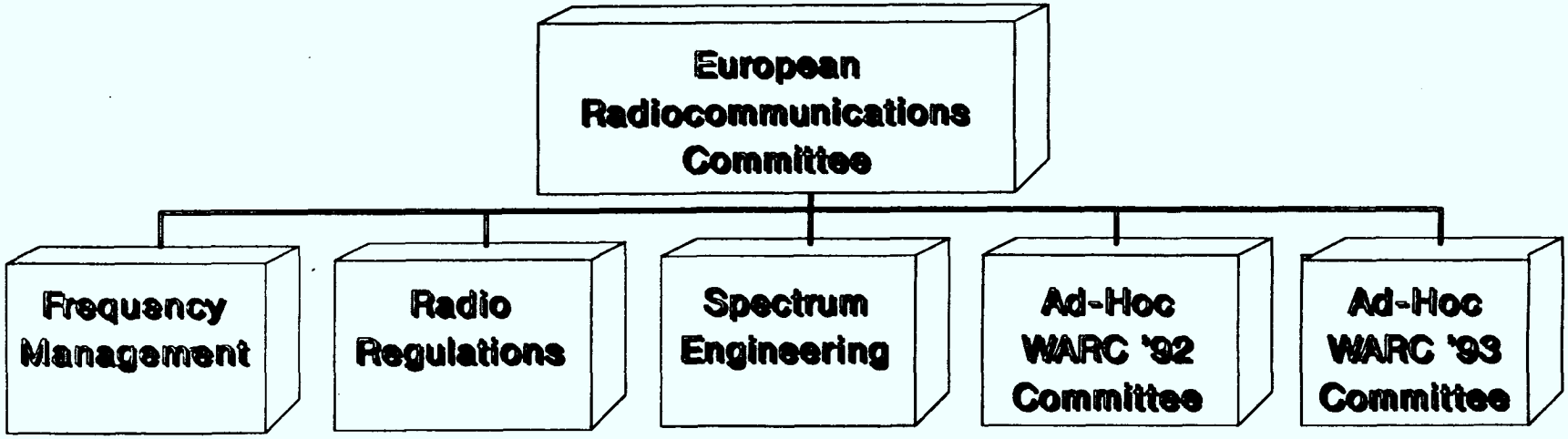
Major National Standards Organizations in the EC: 1986

Country	Institution	Staff	# of Standards	
			Annual	Cumulative
Germany	DIN	600	1,400	26,000
Spain	AENOR	70	850	2,300
France	AFNOR	450	1,100	13,500
Italy	UNI	50	270	6,500
UK	BSI	600	650	10,000

Source: Nicolas 1988, citing ISO and CEN


European Standardization Council
o European Commission
o CFTA
o Standards Bodies Presidents
European Standardization Board
European Standards Bodies
National Standards Bodies
o CEN
o CENELEC
o ETSI
o Germany
o Spain
o France
o Italy
o U.K.

European Radiocommunications Office



- Coordinate Frequency Allocation Tables
- Harmonize Allocations

- Harmonize Regulations
- Harmonize Type Approvals
- Harmonize Licencing

- Sharing Criteria
- Compatibility Requirements
- CCIR Preparations

- 1-3 GHz

- HF Broadcast

THOMAS W. ANDERSON

IMPACT OF CANADA-U.S. FREE TRADE AGREEMENT

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

IMPACT DE L'ACCORD DE LIBRE-ÉCHANGE ENTRE LE CANADA ET LES ÉTATS-UNIS

M. Thomas W. Anderson
Vice-président
Association des banquiers canadiens

La normalisation de la technologie de l'information et des télécommunications est devenue l'élément moteur de l'industrie des services financiers. Par exemple, dans l'industrie bancaire, presque tous les services que nous offrons à nos clients sont assurés par bits et par multiplets en vue d'un traitement ultérieur. Ces services sont nombreux et vont de la mise à jour des livrets de banque à l'échange des pesetas espagnoles en dollars canadiens en passant par les demandes de prêts hypothécaires. Les banques canadiennes consacrent des millions de dollars aux seuls services de télécommunications. Ce chiffre est encore plus frappant lorsqu'on pense aux millions de dollars dépensés dans les secteurs du matériel, du logiciel et du personnel.

Le conférencier commencera par donner un aperçu des possibilités que l'industrie bancaire exploite à partir de la normalisation de la technologie de l'information et des télécommunications. Il sera question des succès connus jusqu'à maintenant comme la formation de réseaux partagés de machines bancaires automatiques et le rôle que la normalisation a joué pour donner au processus sa forme actuelle. On fera également mention d'applications présentes et futures comme le transfert électronique de données (TED) et les cartes à mémoire. On profitera de l'occasion pour passer en revue la contribution de l'industrie bancaire canadienne au processus de l'ISO.

Le conférencier présentera ensuite les principaux aspects de l'Accord de libre-échange entre le Canada et les États-Unis en relation avec la technologie de l'information et des télécommunications et exposera les obstacles que le développement futur des produits devra surmonter. Aux yeux du conférencier, tout avantage découlant de l'adoption de normes canadiennes sur la technologie de l'information et les télécommunications dans un contexte de libre-échange sera limité à cause du manque de concurrence sur le marché canadien des télécommunications et faute d'une politique cohérente en matière de télécommunications nationales. Il sera en outre question des avantages des entreprises américaines par rapport à leurs homologues canadiennes.

Le conférencier donnera ensuite des avis sur l'orientation et la stratégie qu'il y aurait lieu d'adopter pour l'avenir et que les participants pourront prendre en considération s'ils le désirent.

CANADIAN SEMINAR

ON

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS

STANDARDS AND

INTERNATIONAL TRADE

IMPACT OF CANADA - U.S. FREE TRADE AGREEMENT

THOMAS W. ANDERSON
VICE-PRESIDENT, OPERATIONS
THE CANADIAN BANKERS ASSOCIATION

MAY 9, 1991

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SLIDE 1
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GOOD MORNING, LADIES AND GENTLEMEN.

WHEN I WAS FIRST APPROACHED TO SPEAK TO YOU TODAY ON IT & T STANDARDS AND THE FREE TRADE AGREEMENT, I WAS NOT SURE WHICH HAT I WAS GOING TO WEAR -- THE BANKER'S BOWLER, THE TECHNOCRAT'S THINKING CAP OR JUST YOUR PLAIN OLD "STANDARD" FEDORA.

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SLIDE 2
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AS YOU CAN SEE, I'M WEARING NO HAT AT ALL BUT, JUST THE SAME, I WILL STILL BE TALKING TO YOU ABOUT ALL THREE -- BANKING, IT & T, AND STANDARDS.

THIS SHOULD BE QUITE A BALANCING ACT SINCE I SHALL ALSO TRY AT THE SAME TIME TO STRADDLE THE U.S./CANADA

BORDER IN TYING THESE ISSUES TOGETHER UNDER THE FREE TRADE AGREEMENT.

STANDARDIZATION IN IT & T HAS BECOME INCREASINGLY IMPORTANT IN THE NEW GLOBAL INFORMATION ECONOMY. TODAY, WE ARE SEEING TRADING PARTNERSHIPS FORM AROUND THE WORLD -- IN EUROPE, NORTH AMERICA AND THE PACIFIC RIM. WHILE THESE TRADING ARRANGEMENTS HAVE FORMED AS ECONOMIC UNIONS, ONE OF THE MAJOR TIES WHICH WILL BIND THEM TOGETHER IS STANDARDS -- WHETHER THEY BE TECHNICAL STANDARDS FOR APPLICATIONS SUCH AS ISDN INTERFACES OR MORE SOCIALLY ORIENTED STANDARDS FOR SUCH DIVERSE GOALS AS ENVIRONMENTAL OR CONSUMER PROTECTION.

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SLIDE 3
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TODAY, I WOULD LIKE TO FIRST TOUCH UPON THE CANADIAN BANKING INDUSTRY AND THE IMPORTANCE STANDARDS HAVE PLAYED IN ITS DEVELOPMENT. SECONDLY, I WOULD LIKE TO

DISCUSS THE CANADA/U.S. FREE TRADE AGREEMENT, SPECIFICALLY IN THE AREA OF IT & T. AND, FINALLY, I WISH TO OFFER SOME CONCLUSIONS AND PROPOSALS WHICH YOU MAY WANT TO CONSIDER DURING YOUR GROUP MEETINGS LATER IN THE DAY.

THE CANADIAN BANKING INDUSTRY AND STANDARDS

WEARING MY BANKING HAT, I NOW WANT TO TALK TO YOU A BIT ABOUT THE IMPORTANCE OF IT & T STANDARDS TO THE BANKING INDUSTRY.

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS HAVE BECOME THE LIFEBLOOD OF CANADIAN BANKS. ALMOST EVERY SERVICE A BANK OFFERS RELIES ON THE SENDING, RECEIVING AND STORING OF INFORMATION. WHETHER YOU GO TO AN AUTOMATIC BANKING MACHINE TO WITHDRAW MONEY, OR YOU GO TO YOUR BRANCH TO APPLY FOR A MORTGAGE, BITS AND BYTES OF INFORMATION ARE MOVING ON A VAST BACKBONE

NETWORK DEVELOPED BY THE BANKS -- AND THAT NETWORK IS VAST.

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SLIDE 4
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LAST YEAR, THE LARGEST SIX BANKS IN CANADA SPENT IN EXCESS OF $400 MILLION ON TELECOMMUNICATIONS SERVICES ALONE. THIS DOES NOT TAKE INTO ACCOUNT THE MILLIONS OF DOLLARS SPENT ON HARDWARE, SOFTWARE OR PERSONNEL. THE GROWTH OF THESE EXPENDITURES HAS RISEN DRAMATICALLY IN THE LAST 8 YEARS WITH AN INCREASE OF OVER 250% SINCE 1982.

THE FINANCIAL INDUSTRY'S FOCUS ON STANDARDS HAS CHANGED DRAMATICALLY IN THE LAST 30 YEARS. THE 1960'S AND EARLY 70'S SAW THE CANADIAN BANKING COMMUNITY, THROUGH ITS INVOLVEMENT IN ISO, DEVELOPING INTERNATIONAL STANDARDS FOR PAPER INSTRUCTIONS AND FORMS.

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SLIDE 5
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BANKING SERVICES WHICH WERE RAPIDLY BEING EXTENDED BEYOND NATIONAL BORDERS REQUIRED THAT FORMS SUCH AS CHEQUE REMITTANCES, LETTERS OF CREDIT AND MAIL PAYMENT ORDERS BE STANDARDIZED. THE AIMS OF THESE STANDARDS WERE QUITE SIMPLE -- TO HARMONIZE BANKING CONVENTIONS AND PRACTICES AND TO OVERCOME LANGUAGE BARRIERS -- TO ENSURE THAT A CLERK RECEIVING A PAYMENT ORDER MAILED FROM A FOREIGN BANK COULD ACT ON INSTRUCTIONS BASED ON COMMON TERMINOLOGY AND STANDARD LOCATION ON THE FORM -- IN OTHER WORDS, TO PAY THE RIGHT PERSON, DEBIT THE RIGHT BANK AND, OF COURSE, CHARGE THE RIGHT FEE.

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SLIDE 6
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BY THE MID TO LATE 1970'S, WE WERE SEEING MORE AUTOMATION SHAPING THE INDUSTRY AND IN TURN THE

STANDARDIZATION PROCESS. STANDARDS WERE BEING DEVELOPED IN AREAS SUCH AS THE DATA CONTENT FOR THE MAGNETIC STRIPE ON A CREDIT CARD AND THE CAPTURE OF THIS DATA ON MAGNETIC TAPE FOR PROCESSING. SIMILAR STANDARDS WERE ALSO BEING DEVELOPED FOR ELECTRONIC FUNDS TRANSFER FOR PAYROLL DEPOSIT AND DIVIDEND PAYMENTS.

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SLIDE 7
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ALSO, DURING THIS TIMEFRAME, THE SOCIETY FOR WORLDWIDE INTERBANK FINANCIAL TELECOMMUNICATIONS -- S.W.I.F.T -- BECAME OPERATIONAL. ESSENTIALLY, S.W.I.F.T, WHICH IS HEADQUARTERED IN BRUSSELS, IS A PAYMENT MESSAGE SYSTEM USING STANDARDIZED ELECTRONIC MESSAGE FORMATS. THE FOUNDING MEMBERS OF S.W.I.F.T WERE BANKERS WHO BELIEVED THAT A WORLD WIDE SYSTEM WAS ESSENTIAL IN THE GLOBAL BANKING ENVIRONMENT TO SERVE INTERNATIONAL MARKETS AS THE MOVEMENT OF MONEY BECAME A 24-HOUR-A-DAY PROCESS. THE KEY TO THE

SYSTEM WAS, AND IS TODAY, STANDARDIZATION -- STANDARDIZATION TO ELIMINATE THE VAGARIES OF LANGUAGE DIFFERENCES, CURRENCIES, AND DISPARATE NATIONAL BANKING PRACTICES. TODAY, THE SWIFT SYSTEM BOASTS OVER 3000 PARTICIPANTS IN 83 COUNTRIES AROUND THE WORLD. EVERY DAY, THERE ARE OVER ONE MILLION MESSAGES PASSING OVER THE SWIFT SYSTEM.

BUT DURING THE 1980'S, A MAJOR THRUST IN OUR STANDARDS ACTIVITY TOOK PLACE BECAUSE OF ACCELERATING TECHNOLOGICAL ADVANCES BEING MADE IN IT & T. WITHIN THE BANKING INDUSTRY, A MAJOR IMPETUS FOR THIS CHANGE CAME FROM OUR CUSTOMERS WHO WERE BEGINNING TO ACCEPT ELECTRONIC SERVICES AS THE NORMAL WAY TO DO THEIR BANKING. THIS DEMAND FOR MORE EFFICIENT, CONVENIENT AND USER-FRIENDLY AUTOMATED SERVICES CREATED A TECHNOLOGICAL REVOLUTION IN OUR INDUSTRY. AS ONE BANKER PUT IT: "OUR CUSTOMERS HAVE A CHOICE -- WE DON'T."

AUTOMATIC BANKING MACHINES, ONCE USED SPORADICALLY, WERE NOW BEING FULLY ACCEPTED BY THE PUBLIC AS A KEY WAY TO DO THEIR BANKING AT ANY HOUR OF THE DAY.

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SLIDE 8,9,10
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WHEREAS THE 1970'S SAW THE EMERGENCE OF STANDARDS TO ENHANCE THE EFFICIENCY OF THE BACK OFFICE OPERATIONS OF THE BANKS, THE 1980'S SAW BANKING TECHNOLOGY MOVE FROM THE DATA CENTRE TO THE TELLER WICKET TO THE BANK LOBBY, TO THE STREET AND EVEN TO THE HOME. AND THE NEED FOR STANDARDS MOVED RIGHT ALONG WITH THE EQUIPMENT.

HOWEVER, MOST OF THESE CUSTOMER SERVICES WERE OFFERED ON A PROPRIETARY BASIS ONLY. EVEN IN THE EARLY 80'S, FEW BELIEVED THAT THE BANKS WOULD EVER SHARE THEIR SYSTEMS AND NETWORKS, LET ALONE THEIR HARDWARE AND SOFTWARE. BUT CUSTOMER DEMAND ONCE AGAIN SPURRED THE INDUSTRY AND, CONSEQUENTLY, THE

BANKS BEGAN TO SHARE THEIR SYSTEMS -- INITIALLY IN THE FORM OF AUTOMATED BANKING MACHINES (ABM'S). AND THIS AGAIN REQUIRED STANDARDS -- INTERCHANGE STANDARDS FOR SOFTWARE.

THE SHARING OF ABM NETWORKS IS PERHAPS THE MOST DRAMATIC ILLUSTRATION OF THE IMPORTANCE OF STANDARDS TO BANKING. IN THE EARLY 80'S WHEN ISO CREATED A WORK ITEM FOR BANK CARD ORIGINATED COMMUNICATIONS -- THE BASIS FOR SHARED ABM NETWORKS -- NONE OF THE CANADIAN BANKS WOULD SUPPORT DELEGATES TO SIT ON THIS WORKING GROUP. I RECALL ONE BANKER ADVISING US THAT "WE WILL NEVER SHARE OUR NETWORKS IN CANADA." BY 1982, HOWEVER, ALL OF THE BIG SIX BANKS WANTED DELEGATES ON THE GROUP. THEY WANTED TO MAKE SURE THAT THEIR SYSTEMS WOULD BE COMPATIBLE WITH THE STANDARDS BEING DEVELOPED. WE LEARNED THAT STANDARDS ARE COSTLY, BUT SYSTEMS CHANGES ARE EVEN COSTLIER.

WE WERE FORTUNATE IN CANADA -- THE STANDARDS MET OUR NEEDS. THE SAME DID NOT HOLD TRUE IN SOME OTHER COUNTRIES, AUSTRALIA FOR EXAMPLE. THEY DID NOT SEND DELEGATES TO THIS ISO WORKING GROUP UNTIL THE STANDARD WAS ALMOST COMPLETE. AND, AS A RESULT THEY WOUND UP WITH A NATIONAL ABM NETWORK THAT COULD NOT BE SHARED OUTSIDE THEIR BORDERS. THAT'S CHANGED NOW BUT IT WAS COSTLY.

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SLIDE 11
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THUS, AMONG CANADIAN SUCCESS STORIES IN OUR INDUSTRY, THE EVOLUTION OF THE INTERAC ASSOCIATION HAS BEEN A HIGHLIGHT. INTERAC WAS FORMED IN 1985 TO LINK THE ABM NETWORKS OF CANADA'S FINANCIAL INSTITUTIONS. THE SERVICE WENT LIVE IN JUNE OF 1986 WITH 2500 ABM'S, WHICH HAS GROWN TO OVER 11,500 AS OF LAST YEAR. IN ITS FIRST MONTH OF OPERATION, THERE WERE ONLY 170,000 CASH WITHDRAWLS FROM THE NETWORK. BY DECEMBER OF 1990,

THAT FIGURE HAD INCREASED TO OVER 12,000,000 WITHDRAWALS PER MONTH.

NOW THE ASSOCIATION HAS A DEBIT CARD PILOT FOR ELECTRONIC FUNDS TRANSFER AT THE POINT OF SALE IN OPERATION HERE IN THE OTTAWA-HULL AREA. THE PILOT WAS LAUNCHED IN OCTOBER LAST YEAR WITH OVER 2100 TERMINALS. TRANSACTION VOLUME HAS INCREASED FROM 40,000 LAST OCTOBER TO OVER 145,000 PER MONTH IN MARCH.

CLEARLY, THESE SERVICES WOULD NOT HAVE BEEN POSSIBLE WITHOUT THE PARTICIPATION OF CANADIAN FINANCIAL INSTITUTIONS IN THE STANDARDS PROCESS.

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SLIDE 12
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BUT WHAT ABOUT THE FUTURE? FROM A RETAIL BANKING PERSPECTIVE, THE BANKING INDUSTRY IS CLOSELY WATCHING, AND PARTICIPATING IN THE DEVELOPMENT OF SMART CARD STANDARDS. THESE CARDS, ALSO KNOWN AS INTEGRATED

CIRCUIT CARDS, HAVE THE SAME PHYSICAL DIMENSIONS AS A CREDIT CARD, BUT HAVE A MICROPROCESSOR EMBEDDED IN THEM. THEY CAN BE USED TO STORE A CUSTOMER'S CREDIT OR DEBIT CARD INFORMATION, HEALTH INFORMATION, OR EVEN BE USED AS A MEANS TO PAY YOUR DAILY COMMUTER FARE. CURRENTLY, THE DEPARTMENT OF EMPLOYMENT AND IMMIGRATION IS WORKING WITH THE BANKS TO MOUNT A PILOT USING THE CARD AS A MEANS TO MAKE U. I. C. PAYMENTS FROM THE GOVERNMENT TO THE PUBLIC.

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SLIDE 13
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ANOTHER TECHNOLOGY IN THE CORPORATE BANKING AREA, WHICH CANADIAN BANKS ARE CURRENTLY EXPLORING, IS ELECTRONIC DATA INTERCHANGE, MORE COMMONLY REFERRED TO AS EDI. QUITE SIMPLY PUT, EDI IS THE ELECTRONIC TRANSMISSION OF TRADE DATA BETWEEN ONE CORPORATION AND ANOTHER. IN ITS SIMPLEST FORM, A CUSTOMER SENDS AN ELECTRONIC PURCHASE ORDER TO A MANUFACTURER. WHEN THE GOODS ARE DELIVERED, THE MANUFACTURER WILL

ELECTRONICALLY SEND AN INVOICE TO ITS CUSTOMER, WHO IN TURN WILL MAKE THE PAYMENT WITH AN ELECTRONIC REMITTANCE. THE BANKING INDUSTRY BELIEVES THAT IT CAN EFFECTIVELY PROVIDE THE NETWORK FOR THESE MESSAGES AS IT HAS A COMMON RELATIONSHIP WITH BOTH PARTIES -- BEING BOTH THE SENDER AND RECEIVER OF PAYMENT.

AS YOU CAN IMAGINE, THE STANDARDIZATION PROCESS TO FACILITATE EDI IS ENORMOUS BECAUSE OF THE NUMBER OF TRADING PARTNERS INVOLVED WHICH MUST COMMUNICATE, AND THE DIVERSITY OF ELECTRONIC MESSAGE FORMATS WHICH MUST BE DEVELOPED. THE CANADIAN BANKERS ASSOCIATION CURRENTLY IS INVOLVED IN THE AMERICAN NATIONAL STANDARDS INSTITUTE'S -- ANSI X12 -- COMMITTEE ON EDI WHICH HAS BECOME THE FOCAL POINT FOR NORTH AMERICAN STANDARDS. WE ARE ALSO PARTICIPATING IN THE UNITED NATIONS/ECE EDI WORK EFFORT WHICH IS SPEARHEADING THE EUROPEAN EDI STANDARDS PROCESS. FURTHERMORE, WE ALSO SIT ON THE STANDARDS COUNCIL OF CANADA'S JOINT TECHNICAL COMMITTEE ON EDI AND ITS

RELATED TASK FORCES. THE NUMBER OF GROUPS NOT ONLY SOUND CONFUSING, BUT ARE. I WILL COMMENT FURTHER ON THESE ORGANIZATIONS LATER ON.

EDI WOULD NEVER HAVE BEEN ABLE TO GET OFF THE GROUND HOWEVER, UNLESS IT WAS FOR STANDARDIZATION AND THE EVOLUTION OF TECHNOLOGY. THE MERGING OF COMPUTER TECHNOLOGY WITH TELECOMMUNICATIONS HAS OPENED UP A WEALTH OF OPPORTUNITIES WHICH EVEN IN THE LAST DECADE WAS CONSIDERED BY SOME TO BE SCIENCE FICTION. THE CANADIAN BANKS ARE AMONG THE LARGEST USERS OF THESE NEW TECHNOLOGIES AND WILL CONTINUE TO EXPLORE NEW SERVICES AND WORK CLOSELY WITH THE VENDOR COMMUNITY TO BRING NEW PRODUCTS AND SERVICES TO THEIR CUSTOMERS.

THE CANADA/U.S. FREE TRADE AGREEMENT

AS YOU CAN GATHER FROM THIS BRIEF OVERVIEW OF BANKING AND IT & T STANDARDS, IT HAS BECOME MORE THAN EVIDENT TO THE BANKING INDUSTRY THAT STANDARDS CANNOT BE RESTRICTED BY NATIONAL BORDERS ...AND I BELIEVE THAT THIS HOLDS TRUE FOR VIRTUALLY ALL SECTORS OF OUR ECONOMY .

SO, WHAT THEN, ARE THE IMPLICATIONS OF THE FREE TRADE AGREEMENT ON OUR EFFORTS HERE IN CANADA TO DEVELOP STRATEGIES FOR IT & T STANDARDIZATION?

THE SUCCESS OR FAILURE -- DEPENDING ON YOUR POINT OF VIEW -- OF THE FREE TRADE AGREEMENT HAS BEEN DEBATED SINCE ITS INCEPTION BY VIRTUALLY EVERY SEGMENT OF CANADIAN SOCIETY.

BUT, PUTTING ASIDE THE RHETORIC, I WOULD LIKE TO PUT FORWARD SOME THOUGHTS ON WHAT THE FTA DOES AND DOES NOT DO FOR IT & T IN THIS COUNTRY. -- I GUESS THIS IS WHERE I SUPPOSEDLY DON MY "THINKING CAP".

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SLIDE 14
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LET'S START BY LOOKING AT THE FTA PROVISIONS RELATED TO IT &T.

THE BASIC PRINCIPLES ESTABLISHED WERE IN THE FOLLOWING AREAS: EQUIPMENT TARIFFS, TRADE IN SERVICES, TECHNICAL STANDARDS, GOVERNMENT PROCUREMENT, AND MOVEMENT OF PERSONNEL. I BELIEVE THAT FOR TODAY'S DISCUSSION, THE TRADE IN SERVICES PROVISIONS AND THE TECHNICAL STANDARDS PROVISIONS ARE THE MOST RELEVANT.

UNLIKE OTHER INTERNATIONAL TRADE AGREEMENTS WHICH ONLY COVER GOODS, THE CANADA-U.S. FREE TRADE AGREEMENT WAS THE FIRST TO ALSO COVER SERVICES. DURING THE RESEARCH LEADING TO THE TRADE NEGOTIATIONS, THE TWO GOVERNMENTS FOUND THAT SERVICES CONSTITUTE 20% OF WORLD TRADE. THEY ALSO SERVE AS A SUPPORT MECHANISM AND FACILITATOR IN THE

ACTUAL TRADE OF GOODS. CONSEQUENTLY, IT WAS DECIDED TO INCLUDE SERVICES IN THE AGREEMENT.

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HOWEVER, FROM THE TELECOMMUNICATIONS POINT OF VIEW, TRADE IN "SERVICES" WILL ONLY BE EXTENDED TO "TELECOMMUNICATIONS NETWORK-BASED ENHANCED SERVICES" AND "COMPUTER SERVICES". ENTRY OF U.S. ENTERPRISES INTO THE AREA OF "BASIC TELECOMMUNICATIONS SERVICES" HAS BEEN EXPRESSLY PROHIBITED.

ON THIS CLAUSE, HOWEVER, IT IS NOT A MATTER OF WHAT THE FREE TRADE AGREEMENT WILL DO FOR US, IT IS WHAT IT WILL NOT DO. BOTH SIDES OF THE BORDER WILL HAVE A LEVEL PLAYING FIELD WHEN IT COMES TO DISMANTLED TARIFFS, BUT NOT WHEN IT COMES TO RESEARCH AND DEVELOPMENT COSTS. THIS PLAYING FIELD WILL BE LIKE A MINOR LEAGUE BASEBALL TEAM PLAYING AGAINST THE TORONTO BLUE JAYS

--- OCCASIONALLY THEY WILL WIN, BUT MORE OFTEN THEY WILL LOSE. THIS IS BECAUSE ANOTHER CLAUSE WITHIN THE AGREEMENT STATES THAT EACH COUNTRY WILL CONTINUE TO HAVE THE RIGHT TO REGULATE TELECOMMUNICATIONS WITHIN ITS OWN BORDERS. CONSEQUENTLY, GIVEN OUR MONOPOLISTIC ENVIRONMENT IN THIS COUNTRY, THE LACK OF FACILITIES-BASED COMPETITION WILL PLACE OUR IT & T MANUFACTURERS AT A SIGNIFICANT DISADVANTAGE IN PRODUCT DEVELOPMENT COMPARED TO THEIR AMERICAN COUNTERPARTS.

AT ONE TIME, CANADA WAS TRULY THE LEADER IN TELECOMMUNICATIONS AROUND THE WORLD. AFTER ALL, THE TELEPHONE WAS INVENTED HERE AND THE FIRST LONG DISTANCE TELEPHONE CALL WAS MADE IN THIS COUNTRY. IN THE 20TH CENTURY, THE FIRST MICROWAVE SYSTEM AND THE FIRST SATELLITE SYSTEM BECAME OPERATIONAL HERE. AS CANADIANS WE CAN TRULY FEEL PROUD OF THE ACHIEVEMENTS WE HAVE MADE IN THE AREA OF TELECOMMUNICATIONS. BUT THAT HISTORY IS CHANGING. NO

LONGER CAN WE LAY CLAIM TO BEING THE LEADERS IN THIS FIELD.

ACCORDING TO A CANADIAN NEWSLETTER, "THE TELEMANAGEMENT REPORT," U.S. LONG DISTANCE RATES ARE ONE-HALF LOWER THAN CANADIAN RATES. AND THAT IS BASED ON AN OVERALL PACKAGE OF SERVICES. SOME HIGH SPEED SERVICES SUCH AS T1 NETWORKS CAN BE AS MUCH AS SEVEN TIMES HIGHER THAN THEY ARE IN THE UNITED STATES. THESE HIGH SPEED NETWORKS ARE THE LIFE BLOOD OF ANY COMPANY IN THE IT & T RESEARCH AND DEVELOPMENT INDUSTRY. HOW CAN CANADIAN COMPANIES EFFECTIVELY COMPETE AGAINST AMERICAN FIRMS WHO CAN DEVELOP A PRODUCT AT SUCH A LOWER COST?

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MICHAEL PORTER -- A PROFESSOR AT HARVARD UNIVERSITY AND A WELL- KNOWN EXPERT ON THE COMPETITIVENESS OF

NATIONS -- PUTS IT SUCCINCTLY: -- SUCCESS ONLY COMES TO THOSE WHO COMPETE AT HOME."

THIS DISPARITY BETWEEN OUR TWO COUNTRIES APPEARS TO BE WIDENING ... WITH DIRE CONSEQUENCES. IN JANUARY, HOLIDAY INN ANNOUNCED THAT IT WAS MOVING ITS NATIONAL RESERVATIONS OFFICE FROM TORONTO TO CHICAGO WITH A LOSS OF 80 JOBS. IN MEDIA REPORTS, THEY STATED THAT THEIR SAVINGS WOULD BE SIGNIFICANT BY ROUTING CANADIAN RESERVATION INQUIRIES TO THE U.S. USING A 1-800 NUMBER. DURING THE DEBATE ON OPEN SKIES, CANADIAN AIRLINES INTERNATIONAL STATED THAT THEIR COMPANY SPENDS $37 MILLION A YEAR ON TELECOMMUNICATIONS. IF THEY WERE SOUTH OF THE BORDER, THAT FIGURE WOULD BE $20 MILLION. HOW MANY MORE JOBS WILL WE HAVE TO LOSE BEFORE WE REALIZE THAT TELECOMMUNICATIONS HAS BECOME THE ENGINE THAT DRIVES THE ECONOMY?

EVEN OUR UNIVERSITIES ARE STRUGGLING WITH THE HIGH COSTS OF TELECOMMUNICATIONS FOR RESEARCH. ACCORDING

TO RECENT EVIDENCE PUT FORWARD IN THE CRTC'S REVIEW OF THE UNITEL APPLICATION FOR LONG DISTANCE SERVICES, THE UNIVERSITY OF TORONTO AND MC MASTER STATED THAT ALL UNIVERSITIES ARE BECOMING INCREASINGLY DEPENDENT ON TELECOMMUNICATIONS, NOT ONLY FOR LOCAL NEEDS BUT ALSO FOR NATIONAL AND INTERNATIONAL COMMUNICATIONS AMONG THOUSANDS OF RESEARCHERS. BUT AGAIN, IN CANADA THE COSTS FOR HIGH SPEED NETWORKS ARE PROHIBITIVE. UNIVERSITIES SIMPLY CAN NOT AFFORD THEM. THIS CAN NOT CONTINUE OR WE WILL LOSE OUR ACADEMIC PROFESSIONALS AS WELL TO THE UNITED STATES AND BEYOND.

THIS IS NOT JUST A PRICING ISSUE HOWEVER. THIS IS ALSO A SERVICES ISSUE. A NUMBER OF SERVICES ARE BEING ROLLED OUT IN THE U.S. YEARS AHEAD OF THE TIME WE SEE THEM IN CANADA. FOR EXAMPLE, ALTHOUGH BELL CANADA HAS RECENTLY ANNOUNCED ENHANCED FEATURES TO THEIR 1-800 SERVICES, THEY ARE YEARS BEHIND THE U.S. FURTHERMORE, AT & T IN THE UNITED STATES FIRST ROLLED OUT ISDN SERVICES IN 1988 AND BY THE END OF 1990, THESE SERVICES

WERE AVAILABLE IN WELL OVER 300 LOCATIONS. THIS IS BEING DONE USING SOME OF NORTHERN TELECOM'S EQUIPMENT WHICH IS MANUFACTURED RIGHT IN OUR OWN BACKYARD. BUT WHERE ARE THEY IN CANADA? CANADIAN BUSINESSES THAT WANT TO COMPETE WILL HAVE THEIR HANDS TIED IF WE CAN NOT EVEN OBTAIN THE SAME SERVICES THAT OUR COMPETITORS AROUND THE WORLD ALREADY HAVE --- ESPECIALLY IN THE NEW ENVIRONMENT OF FREE TRADE AND EUROPE 1992.

WE, IN THE BANKING INDUSTRY, DO NOT BELIEVE IT TO BE A COINCIDENCE THAT THE THREE FINANCIAL CENTRES OF THE WORLD --- LONDON, NEW YORK AND TOKYO, ARE IN COUNTRIES THAT OFFER FACILITIES-BASED COMPETITION IN TELECOMMUNICATIONS. THIS IS A SERIOUS ISSUE THAT MUST BE DEALT WITH OR ALL OF OUR DISCUSSIONS ON UTILIZING STANDARDS TO PROMOTE THE CANADIAN ECONOMY WILL ALL BE FOR NAUGHT. YOU CAN SET A STANDARD FOR A WHEEL, BUT WITHOUT THE ROAD, WHAT GOOD IS IT?

THIS SEMINAR IS VERY TIMELY GIVEN THAT THE CANADIAN RADIO-TELEVISION AND TELECOMMUNICATIONS COMMISSION IS CURRENTLY HEARING AN APPLICATION BY UNITEL AND B.C. RAIL/LIGHTEL TO OFFER LONG DISTANCE VOICE SERVICES. THE CANADIAN BANKERS ASSOCIATION STRONGLY SUPPORTS THE CONCEPT OF OPEN COMPETITION --- ALLOWING OTHER PROVIDERS TO ENTER THE MARKET EASILY AND ENFRANCHISE CANADIAN BUSINESS AND THE CANADIAN CONSUMER WITH THE POWER OF CHOICE.

THE CANADIAN STANDARDS PROCESS

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THE OTHER PROVISION OF THE FTA THAT I WISH TO FOCUS UPON RELATES TO TECHNICAL STANDARDS.

UNDER THE AGREEMENT...

NO STANDARDS-RELATED MEASURE MAY BE IMPLEMENTED BY EITHER COUNTRY THAT WILL SERVE AS AN OBSTACLE TO FREE TRADE. EACH PARTY MUST ENDEAVOUR TO MAKE ITS STANDARDS COMPATIBLE WITH THE OTHER'S.

IN THIS CASE, THE FTA DOES DO SOMETHING FOR US. IT OFFERS US AN OPPORTUNITY. BEFORE ADDRESSING THIS HOWEVER, LET'S EXAMINE THE STANDARDS PROCESS ITSELF IN CANADA. -- AND HERE I'LL SWITCH HATS AGAIN TO MY "STANDARD" FEDORA.

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A LOT OF TIME, EFFORT AND MONEY CAN BE SPENT ON DEVELOPING THE PERFECT STANDARD, BUT BY THE TIME IT IS ISSUED, NEW PRODUCTS MAY HAVE BEEN MADE AND DEPLOYED BASED ON STANDARDS AND TECHNOLOGIES WHICH MAY NOT BE THE BEST BUT WHICH WERE USED PRAGMATICALLY. STANDARDS HAVE TO MEET THE NEEDS OF THE MARKETPLACE NOW BECAUSE THE CONSUMER WILL NOT

WAIT FOR THE PERFECT STANDARD. A BANKING EXAMPLE IS INTERAC'S USE OF THE ISO STANDARD FOR SHARED ABM NETWORKS. INTERAC STARTED TO USE THE STANDARD BEFORE IT WAS EVEN APPROVED AS AN INTERNATIONAL STANDARD. INDEED, THAT STANDARD IS EVEN TODAY AGAIN BEING REVISED.

THE TERM "STANDARD" IS ALMOST AN ANOMALY TODAY -- AT LEAST IN THE IT & T DOMAINE. A STANDARD CAN NOT BE STATIC. IT HAS TO BE DYNAMIC IN THE SENSE THAT IT CHANGES OR MATURES WITH TECHNOLOGICAL INNOVATION. I SUSPECT THAT APPLICATION STANDARDS FOR IMAGE TECHNOLOGY IN THE BANKING INDUSTRY MAY WELL PROCEED IN THIS FASHION.

BECAUSE OF THE RAPID ESCALATION IN THE DEPLOYMENT OF TECHNOLOGY, WE MUST FIND A WAY TO SPEED UP THE STANDARDS-SETTING PROCESS. MORE OFTEN THAN NOT, I HEAR FROM COLLEAGUES IN ISO THAT THEIR ORGANIZATIONS

JUST CANNOT WAIT FOR THE ISSUANCE OF CONSENSUS STANDARDS.

STANDARDS WRITING ORGANIZATIONS, BOTH NATIONAL AND INTERNATIONAL, SHOULD CONSIDER THIS THEIR MAJOR PRIORITY FOR THE 1990'S.

WE ALSO MUST ENSURE THAT WE DO NOT OVERSTRUCTURE THE STANDARDS PROCESS ITSELF. STANDARDS WRITING BODIES CAN NOT DEVELOP ENORMOUS SUPERSTRUCTURES OF COMMITTEE UPON COMMITTEE CREATING A STANDARDS BUREAUCRACY WHICH THREATENS TO OVERWHELM BUSINESS AND INDUSTRY, OR THEY WILL SIMPLY NOT PARTICIPATE IN THAT PROCESS. THE RESOURCES REQUIRED BY BUSINESS TO PARTICIPATE IN STANDARDS PROGRAMS ARE HUGE BUT LIMITED.

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I MENTIONED EARLIER THAT THE LAYERS OF ORGANIZATIONS INVOLVED IN EDI STANDARDS DEVELOPMENT WERE CONFUSING. AS THIS CHART SHOWS, THEY ARE ALSO NUMEROUS. I DOUBT THERE ARE MANY OF YOU IN THIS AUDIENCE WHOSE ORGANIZATIONS HAVE THE RESOURCES TO COPE WITH THIS STRUCTURE. I CAN ASSURE YOU -- EVEN OUR BANKS DON'T.

THEREFORE, WE MUST ENSURE THAT THE STANDARDS SETTING PROCESS IS EFFICIENT AND STREAMLINED TO AVOID REDUNDANCY SO THAT THE RESOURCES APPLIED BY THE PRIVATE AND PUBLIC SECTOR GO TOWARD STANDARDS DEVELOPMENT AND NOT TO ADMINISTRATION.

AS I SAID, THE COST FACTOR IN STANDARDS DEVELOPMENT HAS BECOME CRITICAL.

CANADIAN BUSINESS CAN NOT DO IT ALONE. A PARTNERSHIP MUST BE FORMED BETWEEN BUSINESS, GOVERNMENT AND STANDARDS WRITING BODIES TO PROVIDE THE NECESSARY FINANCIAL RESOURCES AND LEADERSHIP TO ENSURE THAT

CANADA IS WELL REPRESENTED AT THE INTERNATIONAL LEVEL. AS THE CHAIRMAN OF THE CANADIAN NATIONAL COMMITTEE ON ISO, I HAVE SEEN THE BUDGET ALLOCATION FOR SUBSIDY TO CANADIAN DELEGATES TO THE INTERNATIONAL ELECTRO-TECHNICAL COMMISSION --THE IEC --- AND ISO BE REDUCED BY ALMOST 70% IN TWO YEARS. FOR COMPANIES AND INDUSTRY ASSOCIATIONS WHICH HAVE ALREADY COMMITTED EXTENSIVE RESOURCES -- FINANCIAL AND PERSONNEL -- TO SUPPORT THESE INTERNATIONAL COMMITTEES, THIS HAS HAD A SERIOUS IMPACT ON THEIR ABILITY TO CONTINUE TO PARTICIPATE IN A MEANINGFUL WAY.

IF THIS TREND CONTINUES, CANADA WILL NO LONGER BE AT THE TABLE --- AND FOR THOSE OF YOU WHO HAVE PARTICIPATED IN ISO OR IEC -- YOU KNOW THAT YOU MUST BE THERE TO BE HEARD.

FURTHERMORE, THE CANADIAN STANDARDS PROCESS ITSELF WILL BE AFFECTED BY FREE TRADE. THE UNITED STATES IS OUR LARGEST TRADING PARTNER AND TRADE WITH THEM

REPRESENTS ALMOST 75% OF OUR TOTAL EXPORTS. WE MUST RECOGNIZE THE SIZE AND IMPORTANCE OF THIS FIGURE. CANADIAN EXPORTS TO THE AMERICAN MARKET MUST CONFORM TO U.S. STANDARDS AND VICE VERSA.

AND HERE'S WHERE THAT OPPORTUNITY THAT I MENTIONED EARLIER LIES IN THE FTA.

TO STREAMLINE THE PROCESS, WE SHOULD SERIOUSLY CONSIDER THE FORMATION OF A JOINT NORTH AMERICAN STANDARDS BODY. THE TECHNICAL STANDARDS PROVISION IN THE FTA PROVIDES A DOORWAY OF OPPORTUNITY FOR US TO PARALLEL WHAT IS HAPPENING IN EUROPE IN PREPARATION FOR 1992 AND TO TRULY ENSURE THAT TECHNICAL STANDARDS MAY NOT BE USED AS TRADE BARRIERS.

THE CHALLENGE HERE IS TWOFOLD: -- FIRST, TO GET A COMMON COMMITMENT FROM OUR CANADIAN STANDARDS ORGANIZATIONS TO SUPPORT THE CONCEPT AND, -- SECOND,

TO GET OUR NEIGHBOURS TO THE SOUTH TO ALSO RECOGNIZE THE NEED FOR A U.S./CANADA (AND EVEN MEXICO) FORUM.

CONCLUSION

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IN CONCLUDING MY TALK TO YOU TODAY, I WOULD LIKE TO LEAVE YOU WITH SOME IDEAS ON WHAT WE NEED AND WHAT WE DON'T NEED IN WORKING OUT OUR STATEGIES FOR IT & T DURING THIS SEMINAR.

FIRST OF ALL, WE DON'T NEED TO BUILD MASSIVE, BUREAUCRACIES OF COMPETING STANDARDS BODIES AND FEDERAL AND PROVINCIAL GOVERNMENT DEPARTMENTS THAT

WILL OVERWHELM THE RESOURCES OF BUSINESS AND INDUSTRY TO PARTICIPATE.

WHAT WE DO NEED IS AN EFFICIENT BUSINESS-ORIENTED SYSTEM TO DEVELOP AND DEPLOY STANDARDS

QUICKLY, AND

PRAGMATICALLY

AND WE NEED TO DO IT IN NORTH AMERICA.

WHAT WE DON'T NEED TO DO IS STIFLE COMPETITION IN TELECOMMUNICATIONS IN THIS COUNTRY.

WHAT WE DO NEED IS A TELECOMMUNICATIONS ENVIRONMENT THAT WILL ALLOW COMPETITIVE PRICING, CHOICE OF SERVICE PROVIDERS, AND INNOVATIVE PRODUCTS.

AND, WE NEED TO DO IT UNDER CONSISTENT NATIONAL

POLICIES AND REGULATIONS FROM COAST-TO-COAST.

WHAT WE DON'T NEED TO DO IS LEAVE IT UP TO BUSINESS ALONE OR THE GOVERNMENT ALONE.

WHAT WE NEED TO DO IS TO FORM A PUBLIC/PRIVATE SECTOR PARTNERSHIP.

WHAT WE DON'T NEED TO DO IS CUT OUR BUDGETS FOR STANDARDS DEVELOPMENT.

WHAT WE NEED TO DO IS LOBBY OUR SENIOR GOVERNMENT OFFICIALS AS WELL AS OUR CORPORATE SENIOR MANAGEMENT TO RECOGNIZE THE IMPORTANCE OF IT & T TO THE CANADIAN ECONOMY AND TO ENSURE THAT FUNDING FOR INTERNATIONAL STANDARDS DEVELOPMENT BECOMES A PRIORITY.

GOVERNMENT SUBSIDIZATION FOR STANDARDS IS A HELP BUT IT IS NOT THE ANSWER ... WE NEED THE COMMITMENT OF BOTH THE GOVERNMENT AND THE PRIVATE SECTOR TO MOVE AHEAD.

AND FINALLY,

WE DON'T NEED THOSE THAT LOVE TO PAY LIP SERVICE TO THE IMPORTANCE OF STANDARDIZATION BUT WHEN IT COMES TO PUTTING DOLLARS ON THE TABLE, TIGHTEN THE PURSE STRINGS.

BUT WE DO NEED TO OVERCOME THAT GAP BETWEEN THE TECHNICAL STANDARDS DEVELOPERS AND OUR SENIOR MANAGEMENT. ANY OF YOU WHO HAVE EVER MADE A PRESENTATION ON YOUR STANDARDS PROGRAM TO THE UPPER ECHELONS OF YOUR COMPANY OR DEPARTMENT HAVE NO DOUBT SEEN THAT "GLAZED EYES" SYNDROME WHICH USUALLY HITS IN THE FIRST FIVE MINUTES.

SOMEHOW WE NEED TO OPEN THEIR EYES -- BUT ON THAT I HAVE NO SOLUTION. WE JUST HAVE TO KEEP ON TRYING.

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THEY SAY THAT THE TIME TO STOP TALKING IS BEFORE PEOPLE STOP LISTENING. SO, IN THE HOPE THAT I HAVE NOT INDUCED IN YOU THAT "GLAZED EYES" SYNDROME -- I SHALL TAKE OFF MY HATS -- WISH YOU A GOOD SEMINAR - AND THANK YOU.

CURT KETCHUM

STANDARDS FROM A PACIFIC RIM PERSPECTIVE

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

LA NORMALISATION DANS LA PERSPECTIVE DES PAYS DE LA RÉGION DU PACIFIQUE

M. Curt Ketchum
Vice-président
Transport Data Network International

L'un des facteurs déterminants qui permettra au Canada de protéger ses intérêts à titre d'intervenant majeur dans le commerce avec les pays de la région du Pacifique sera notre capacité de procéder à l'échange électronique d'information à caractère commercial avec nos partenaires d'outre-mer.

Les normes en matière de technologie de l'information et de télécommunications, y compris celles touchant les applications et la communication, joueront un rôle de premier plan pour faciliter l'échange efficace de données commerciales.

Le conférencier traitera de l'importance stratégique des normes en matière de technologie de l'information et de télécommunications; de la situation du Canada par rapport à d'autres pays de la région du Pacifique au chapitre de l'élaboration et de l'application de normes; et des mesures à prendre pour assurer notre succès dans ce domaine.

Standards From A Pacific Rim Perspective

Presentation To: Canadian Seminar On IT&T Standards - Ottawa May 9, 1991

Presented By: Curt Ketchum - Executive Vice President, TDNI

Slide 1

Good Morning Ladies and Gentlemen. It is a pleasure to be here with you to participate in this first Canadian Seminar on Information Technology and Telecommunications Standards.

I've been invited to spend a few minutes this morning speaking to you about Standardization from the Pacific Rim Perspective, including the key role that standards can play in facilitating an effective trading process with our partners in this region of the world.

I would like to address the strategic importance of standards; where Canada is positioned relative to other Pacific Rim countries in terms of the development and application of standards; and what we need to do to ensure our success in this area.

Before discussing a specific area of standards that I believe is important to Canada's participation in trade within the Pacific Rim, I would like to take a few moments to highlight a few areas regarding Canada's trade position and provide a bit of background about trade itself.

Slide 2

To begin with I think that it is important to put things in perspective by recognizing the significance of Canadian Trade with Pacific Rim countries. As you can see in this first slide, Pacific Rim trade represented 13% of total trade carried out by Canada in 1990. As reported by Stats Canada, total trade amounted to over 35 billion dollars for this region.

Slide 3

To put things into further perspective, when you take Canada's largest trading partner out of the picture for a moment, trade with Pacific Rim countries accounts for 42% of total trade with all remaining countries. So as you can see, trade with Pacific Rim countries is more than significant and vitally important to Canada's present and future economy.

Slide 4

Trade with this region of the world is relatively balanced and in many cases two-way in nature. Export commodities include oils, wood pulp, ores, machinery, base metals, lumber, asbestos, paper ,wheat and aircraft and parts. On the import leg comes many finished products including electrical equipment, appliances, clothing and footwear, automobiles, toys and games, data processing equipment, photographic goods, food products and machinery.

Slide 5

As far as trade in general is concerned, it's interesting to note that it has been an integral part of global business dating back as early as 1200 B.C., when the Phoenicians were at the height of their power trading throughout the Mediterranean. In fact, as early as 800 B.C. Phoenician seaman sailed into the Atlantic and are thought to have reached Britain and Africa.

Being the first to have devised an alphabet, the Phoenician traders began recording the description of goods on papyrus sheets. This is one of the earliest known applications of the ship's manifest ... a document still used to control the movement of goods on a multi-modal basis.

Over the centuries, transportation has evolved with the aid of developments in both transportation and logistics management. We have seen the coming about of the steamship, aircraft , railway and the motor carrier on the transportation side, coupled with the invention of sophisticated manufacturing and inventory control techniques.

Today, we benefit from a wide variety of sophistication including trends such as -

"JUST IN TIME MANUFACTURING"

Where goods are manufactured and transported to stock on a tightly controlled schedule allowing for the realization of maximum benefits from quick inventory turnover.

"QUICK DEMAND ORDERING"

Although not controlled on a tight schedule, like JIT goods are required on a demand basis with short lead times.

"REGIONAL DISTRIBUTION CONCEPTS"

Where manufactured products are no longer stored centrally but located in regional hubs for expeditious distribution under the JIT or Quick Demand Ordering concepts.

"INTERMODAL TRANSPORTATION"

Transportation has evolved to the point where different modes are combining resources to offer end-to-end delivery options. An example of this would be the Sea-Air product where the cost effectiveness of marine carriage is combined with speed of air carriage, resulting in an effective solution for the trading community.

AND.... "INCREASED USE OF INFORMATION SYSTEMS"

With the age of information technology having moved forward as quickly as it has, more and more parties involved in the trading community are using technology in the processes of planning and operating their businesses.

All of this sounds very progressive and innovative ..... BUT

Slide 6

All of these new innovations are plagued by challenges that date back to the days of our friends the Phoenicians. These are the challenges created by what we might eloquently state as being related to the "Documenting and exchange of trading information".... In other words, the same way of handling trade related information on papyrus sheets in the Phoenician era has been brought forward for use in 1991, the only difference being we have adopted an innovation called paper.

In what we might call the modern ages, paper has been adopted as the traditional backbone of the trading process. It is involved in virtually every component of the process, from the placement of the order; through the manufacturing of the product, to the transportation of the goods; and finally, the all important invoice and payment for goods and services.

The unfortunate thing is that, similar to the papyrus sheet, paper brings with it many challenges and inefficiencies, including the high cost of handling and the havoc that paper based processes frequently cause in the information handling chain. I'm sure that I don't have to convince too many people here today that paper is an evil that must be dealt with if we are to remain competitive in International trade. Just as a brief example, it has been confirmed through studies carried out by the International Air Transport Association that paper based processes account for approximately 50% of an air consignments total cost.

Slide 7

It is easy to say that what is required is to facilitate the effective exchange of trade related information between business partners in a paperless environment, however, the question must be, how can we deal with the difficulties that have been brought on by the many centuries of doing business with paper? The answer must be to bring forward a practical solution that can deal with the many complexities of the trading world.

Slide 8

The practical solution and the HOW to do it is through the application of Electronic Data Interchange, better known as EDI.

EDI is a process where business information is exchanged electronically between parties using standardized messages, replacing the need for paper documentation. EDI allows for the computer-to-computer communication of data between parties, offering significant benefits in the areas of one time data capture, reduction in errors, faster movement of information and improved customer service.

Slide 9

Because of its computer-to-computer nature, EDI is commonly mistaken as a technical solution, or better yet, a "state of the art technology," where in fact it is a business solution that makes use of existing technology. EDI makes use of standard transaction formats for common business information such as Purchase Orders, Bills of Lading, Invoices and Shipment Status Information. It can be applied to virtually all existing information

systems, given a certain amount of resource and time, and can be communicated over existing worldwide telecommunications systems.

Slide 10

EDI users have available to them a number of International Standards that specify structured data formats for the exchange of information. They include:

TDCC or the Transport Data Coordinating Committee standard, a North American Standard recognized as the first "open" EDI Standard;

ANSI.X12 or the American National Standards Institute X.12 standard used by many of the North American retail industries;

TDI or the Trade Data Interchange Standard, the first of standard for the European trading community;

IATA CARGO-IMP, the International Airline community's worldwide standard for cargo transportation;

and finally, EDIFACT, or EDI for Administration, Commerce and Trade, which is the United Nations initiated standard being developed through the cooperation of the global participation of industry and government, considered by some to be the universal language of EDI for the future.

Slide 11

As I've probably tipped you off by now, I've chosen EDI as the focus of my discussion regarding standardization within the Pacific Rim region. The obvious question I guess then would be why is EDI so important to Canada's trade with the Pacific Rim Region?

Slide 12

First and foremost, I believe it is the answer to the almighty paper war that I referred to earlier as being the major hindrance in the overall trade and business process. Used effectively EDI will facilitate :

Firstly, the expeditious movement and control of goods. Through the computer-to-computer exchange of accurate information, goods will move quicker through the trading chain allowing for the positive impact of benefits afforded by "Just In Time Inventory "and "Quick Demand Ordering" techniques to be fully realized. As an example in this area, one can quickly imagine the benefits to be realized by Customs preclearance of import consignments made possible by the advice of trade data made available to the authorities via EDI prior to goods arrival.

Secondly, EDI will facilitate a reduction to the cost of doing trade. I referred to a specific example earlier of the cost impact that paper has on the airline cargo business. On a broader scale, it has been estimated that EDI can offer savings of up to 15% of the value of goods that are traded. A very large sum when one considers the value of trade that Canada is involved in with Pacific Rim trade alone .

And finally, used effectively, EDI will facilitate the movement of important trade information over industry boundaries traditionally thought to be impassable. As an example, intermodal carriage of goods has traditionally been a difficult and labour intensive process due to differing paper based processes that have evolved over the years. Standardization of information through EDI has already proven in various areas that these boundaries are indeed passable if EDI is applied effectively.

Slide 13

Now that we have discussed what EDI is all about and how it is sure to have a positive affect on Pacific Rim Trade, I would like to spend a moment or two outlining the current status of this tool within the region.

Slide 14

Australia and New Zealand are known to have anywhere between 300 and 1500 EDI users. If you are wondering why there is such great uncertainty regarding the actual usage, it is because it is difficult to quantify due to a large number of users applying proprietary formats not considered as "real EDI."

EDI can be found in the manufacturing and retail trade and as well, there is a fast growing movement on the transportation side through an initiative called "Tradegate."

Tradegate involves the key players of the community including Customs Brokers, Ports, carriers, forwarders, and has the strong support and participation of Australian Customs.

The future looks bright for EDI in Australia and New Zealand as there has been significant commitment demonstrated by private and public sectors to implement "true" EDI, including the migration from current proprietary formats to international standards like EDIFACT.

Singapore has reported that there are in excess of 1200 users which is about double the number five years ago.

The EDIFACT standard is being embraced in this area and is currently being implemented in some industry specific initiatives

There is a significant level of activity in the areas of manufacturing and retail, and like Australia, a transportation EDI Ports System called "Tradenet" has been created to assist Singapore with its significant trade activity.

As a matter of interest, an EDI initiative in the legal area called "LAWNET" has been initiated to facilitate administrative procedures in the legal profession, a close rival to the transportation communities use and abuse of paper.

Slide 15

The use of EDI in Japan is difficult to gauge but many industry experts believe it is in the vicinity of several thousand users.

There are several industry specific standards using proprietary implementation including those provided by the Japanese Chainstores' Association, the All Japan Bank Association and the Electronic Industry Association of Japan.

Although these proprietary standards currently prevail, Japan has embraced the future implementation of the EDIFACT standard and now have a rapporteur representing Japan and Singapore on EDIFACT.

Japan's leading areas of current EDI usage are found in shipping, retail, electronics and banking.

Korea's most notable EDI activity has been the international EDI pilot with several North American trading partners implemented two years ago using the ANSI.X12 standard. This pilot program has reflected Korea's high interest in implementing EDI to support international trade and is expected to be at some point migrated to involve the EDIFACT standard.

Slide 16

Until recently, Taiwanese authorities have virtually stifled the implementation of EDI through imposed restrictions on transborder data flows.

It is encouraging to note that the authorities are planning to relax their stringent policies on taxing data, which should pave the way for EDI to be implemented with this trading partner.

Hong Kong has been moving ahead with their plans for EDI through a project called Shared Project for EDI.

SPEDI is a community electronic trading service using the EDIFACT standard that is being supported jointly by private sector and government.

This will indeed have a positive influence on trade with this region as we move towards 1997.

Slide 17

Our largest trading partner and neighbour to the south reports approximately 13,000 current users of EDI.

The highest levels of activity are reported in the areas of transportation, manufacturing, retail and finance.

The implementation of standards is overwhelmingly in favour of the TDCC and ANSI.X12 North American standards at this point, however, movement is being seen towards the long term use of the EDIFACT standard.

The most significant movement of support has been through the U.S. Customs' declaration that EDIFACT will be the departments standard of the future.

This will be a key move in terms of the U.S. remaining competitive in international trade.

It is currently estimated that approximately 60% of the U.S. EDI users are involved in international trade and that the growth of EDI in general over the next five years is expected to be "rapid" to say the least, in fact, many experts suggest it has the potential of growing exponentially.

Slide 18

And last, but certainly not least, we have our own country where it is estimated that there are currently approximately 1400 users.

The areas of highest activity are fairly close to our neighbour below the forty-ninth parellel with the largest being transportation, continuous manufacturing and auto/aerospace.

The TDCC and ANSI.X12 standards are predominantly employed by Canadian users, however, the EDIFACT standard is being embraced and has been used in a few applications, including one by Canada Customs for an electronic Customs Release Message.

Approximately 70% of Canadian EDI users are involved in international trade which, as you will note, is 10% greater than that of our U.S. counterparts.

There is no doubt, however, that a great deal of "Canadian" EDI has been, and will continue to be, pushed by what is happening in the U.S.A.

Industry experts believe that the growth of EDI in Canada is expected to be in the vicinity of 200% from 1990 to 1994....a phenomenal growth pattern.

Slide 19

Now that we have had a look at the current state of EDI and the application of its standards around the Pacific Rim, I would like to highlight some of the major factors in the strategic importance of EDI standards for Pacific Rim trade.

Firstly, I think it is fairly obvious by now that trade relies heavily on information exchange.

And....the effective communication of this information depends on each party understanding and processing it in a timely manner.

To do this, information must be standardized to allow for computer-to-computer exchange and processing. If we do not make the effort to do this with our trading partners, we will only take the problems experienced with paper today into the electronic age. Information bottlenecks will result with the processing of information possibly being faster, but erroneous as ever.

The facilitation and carrying out of trade will be severely handicapped if every Pacific Rim trading region decides to do their own thing with proprietary information processing.

International EDI standards like the EDIFACT, TDCC, ANSI.X12 and CARGO-IMP standards will provide a solid "Business Tool" for avoiding proprietary pitfalls if they are embraced and implemented by Canada and its trading partners.

Strategically, EDI provides the edge for us to remain competitive in the information intensive field of trade.

Slide 20

The implementation of EDI standards for trade has been slow and difficult to this point and still faces some significant challenges.

The adoption of international standards for information exchange is critical to the process. In our review of standards application in Pacific Rim countries, we have revealed that in many areas the adoption of EDI standards has only just begun. Without the embracing of EDI standards we really have nowhere to begin.

Once adopted, the standards must be applied and implemented into the "real world" of business. In Canada, this means an investment in time and resource must be made by the Canadian Government and private sector to ensure EDI is put to use "effectively." It will not be inexpensive nor will it happen overnight, but the potential benefits to Canada as a Pacific Rim trading partner are staggering.

We must also be active as Canadians in encouraging and supporting our trading partners in their adoption and applications of EDI standards. This is essential if we are to achieve the critical mass required to have EDI work as an effective business tool.

The fourth area of challenge that we must contend with is in the legal and regulatory area.

Aeronautics Acts and International conventions adopted in the 1940s did not contemplate the replacement of paper in the trading process. Terms and conditions of contract for carriage have been printed on the back of transportation documents for years, with the signature of both parties being required for execution.

To try and change the complex world involving these areas to recognize electronic data would be painful, take decades, and in the end likely prove totally unnecessary.

Practical solutions must be found to allow implementation of EDI in trade without the release of the legal profession from their missile silos. This is not impossible as many practical solutions have already been implemented in various areas, without the need for legal or regulatory change.

The final point that I would like to make in the area of challenges is that the need for education is overwhelming. Canada and its trading partners must make a concerted effort in educating organizations involved in trade of the importance and use of EDI standards.

The EDI Council of Canada is taking a lead role in this area for our country, however, the task is immense and support must come from all sectors.

This brings to a close my presentation this morning. I hope I have brought to light some of the important issues regarding the need for standardization for the support of Pacific Rim trade.

If we work together to support Information Technology and Telecommunication Standards like EDI, we are sure to remain competitive in the world of international trade.

Thank you very much.

MIKE ISRAEL

INTERNATIONAL ACTIVITIES

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

ACTIVITÉS INTERNATIONALES

M. Mike Israel
Directeur, Intelsat et Questions de normalisation
Affaires internationales et gouvernementales
Téléglobe Canada

Tout le monde reconnaît la nécessité et la valeur de normes universelles ainsi que la nécessité de revitaliser le processus de normalisation internationale au sein de l'UIT. Toutefois, la façon d'atteindre ces deux importants objectifs ne fait pas l'unanimité.

La divergence de vues quant au rôle futur de l'UIT, à sa structure et à son influence dans le processus de normalisation tire ses origines de raisons historiques, géographiques et politiques et nous devons accepter ces facteurs en tant que partie intégrante de la composition de l'UIT et conséquemment en tant qu'élément susceptible de l'aider à déterminer son orientation future dans le processus de normalisation internationale. Dans cette perspective, le Canada joue déjà un rôle important dans l'examen de la structure de l'UIT et nous sommes tous bien au courant des rôles de leadership essentiels confiés aux Canadiens dans les Commissions de haut niveau (CHN) et dans le groupe spécial de la Résolution 18 de l'UIT chargé d'examiner la structure et la méthode de travail du CCITT. En même temps, le Canada doit aussi décider des stratégies futures qu'il doit adopter pour maintenir le rôle positif qu'il joue depuis longtemps au chapitre des activités de normalisation internationale tout en profitant le plus possible de sa participation.

Quels sont les principaux problèmes qui confrontent le CCITT à l'heure actuelle et quels changements seraient requis pour adapter son rôle et ses activités de manière à répondre adéquatement aux attentes de ses membres? Y a-t-il un conflit entre le CCITT et d'autres organisations internationales? Le CCITT peut-il maintenir son leadership ou deviendra-t-il un organisme d'approbation soumis à l'influence des efforts de concertation efficaces des régions?

Le conférencier tentera de répondre à ces questions après avoir décrit brièvement la politique principale et les grands développements technologiques des deux dernières décennies. Cette analyse devrait montrer que le futur processus de normalisation internationale doit mettre à contribution divers secteurs de l'industrie dont l'intérêt pour les télécommunications procède d'une convergence croissante des technologies en vue de servir un même public. Il ne semble pas exister de conflit majeur entre le CCITT et d'autres organismes de normalisation internationale, mais il est urgent d'harmoniser leurs activités respectives au niveau du travail dans un cadre de concertation efficace et peut-être officiel.

Le conférencier est aussi d'avis que la prééminence de l'UIT mondialement reconnue dans le processus de normalisation internationale des télécommunications (pour les fins de l'adoption de normes mondiales) ne peut être réalisée pleinement qu'avec l'appui de tous ses membres agissant individuellement dans le contexte de l'esprit, des droits et des obligations prévus dans la Constitution et la Convention de l'UIT. Cela est compatible avec les efforts parallèles des membres déployés pour harmoniser les normes dans leurs propres régions pourvu que le processus régional ne se traduise pas par des contraintes déraisonnables dans l'élaboration et l'acceptation, à l'échelon universel, de normes mondiales dans le cadre de l'UIT et de son processus visant à en arriver à un consensus international.

CANADIAN SEMINAR ON
INFORMATION TECHNOLOGY AND TELECOMMUNICATION STANDARDS

REMARKS BY:

M. Israel
Teleglobe Canada Inc.

May 1991

INTRODUCTION

I WELCOME THIS OPPORTUNITY TO PARTICIPATE IN A DISCUSSION WHOSE PURPOSE IS TO ASSESS CANADA'S CAPACITY TO ADAPT TO CHANGES IN THE INTERNATIONAL TELECOMMUNICATIONS STANDARDIZATION ENVIRONMENT. MY PRESENTATION DEALS SPECIFICALLY WITH THE CCITT ENVIRONMENT AND ITS STRATEGIC IMPORTANCE IN THE HARMONIZATION OF THE INTERNATIONAL TELECOMMUNICATIONS NETWORK.

I ATTENDED A CCITT MEETING FOR THE FIRST TIME IN 1972 AT A TIME WHEN ONE OF THE MAJOR INTERNATIONAL ISSUES WAS THE REVISION OF A 50-YEAR OLD RECOMMENDATION REGARDING THE METHOD OF COUNTING WORDS IN TELEGRAMS. THREE YEARS EARLIER, IN 1969, MAN HAD LANDED ON THE MOON IN A SPECTACULAR MANIFESTATION OF THE CONVERGING TECHNOLOGIES OF COMPUTING, CONTROL, COMMUNICATIONS, VISUAL DISPLAY AND A SUPREME EXAMPLE OF THE POWER OF SYSTEMS INTEGRATION. CONSIDER THE FACT THAT MANY OF THOSE TECHNOLOGICAL ADVANCES HAVE NOW REACHED THE LEVEL OF MASS PRODUCTION. ALSO CONSIDER THE FACT THAT IN SPITE OF ITS IMPERFECTIONS AND CONSTRAINTS CCITT HAS GENERALLY MANAGED TO ACHIEVE ITS ROLE IN THE DEVELOPMENT OF THE APPROPRIATE TELECOMMUNICATIONS STANDARDS REQUIRED TO OPERATE TODAY'S NETWORK. THERE ARE THOSE THAT CRITICIZE THE SLOW PACE OF

CCITT ACTIVITY WHILE OTHERS ARGUE THAT RECOMMENDATIONS ISSUED BY CCITT REQUIRE A CERTAIN DEGREE OF MATURITY TO IMPART A SENSE OF STABILITY AND CREDIBILITY TO THE INTERNATIONAL STANDARDIZATION PROCESS. TODAY CCITT AND CCIR ARE IN THE FOREFRONT OF THE PROCESS IN SUCH AREAS AS ISDN, HDTV, INTELLIGENT NETWORKS AND UNIVERSAL PERSONAL TELECOMMUNICATIONS OR UPT AND THE PACE OF THEIR ACTIVITY WILL CONTINUE TO BE DICTATED BY THE COMBINATION OF FACTORS THAT INFLUENCE THE RATHER COMPLEX INTERNATIONAL CONSENSUS-BUILDING PROCESS.

IN A RELATIVELY SHORT SPAN OF 20 YEARS THE CONVERGING TECHNOLOGIES OF COMPUTERS AND TELECOMMUNICATIONS HAVE TRANSFORMED OUR LIFE STYLES AND OUR BUSINESS ENVIRONMENT BUT THEY HAVE ALSO PRACTICALLY TRAUMATIZED THE TRADITIONAL INTERNATIONAL PROCESSES IN THEIR EFFORTS TO ADAPT TO A RAPIDLY CHANGING STANDARDIZATION ENVIRONMENT. THERE IS HOWEVER HOPE.

TODAY, A HIGH-LEVEL COMMITTEE ESTABLISHED BY THE 1988 MELBOURNE PLENIPOTENTIARY IS CONDUCTING AN IN-DEPTH REVIEW OF THE ITU STRUCTURE IN THE CHANGING TELECOMMUNICATIONS ENVIRONMENT. ITS RECOMMENDATIONS WILL BE TABLED NEXT MONTH BY ITS CHAIRMAN, GABY WARREN OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS, SIGNALLING HOPEFULLY THE

BEGINNING OF A PROCESS OF REVITALIZATION OF THE 125-YEAR OLD INSTITUTION. IN PARALLEL, AN AD HOC GROUP CHAIRED BY ANOTHER CANADIAN, KEITH HOFFMAN, IS LOOKING AT THE STRUCTURE AND WORKING METHODS OF CCITT. IN BOTH CASES, THE ITU STANDARDIZATION FUNCTION IS BEING ADDRESSED IN THE LIGHT.OF THE REMARKABLE CHANGES OF THESE LAST 20 YEARS AND OF THEIR IMPACT IN NATIONAL AS WELL AS INTERNATIONAL STANDARDIZATION PROCESSES.

TODAY, THERE SEEMS TO BE UNIVERSAL AGREEMENT ABOUT THE VALUE OF TRULY GLOBAL STANDARDS. THE PREEMINENCE OF CCITT AS THE FOCAL POINT TO ACHIEVE GLOBAL TELECOMMUNICATIONS STANDARDS HAS BEEN FORMALLY ENDORSED IN 1988 IN MELBOURNE BY THE INTERNATIONAL TELECOMMUNICATIONS COMMUNITY. IN PRACTICE, HOWEVER, THIS SIMPLE GOAL WILL NEED TO OVERCOME A NUMBER OF HISTORICAL, GEOGRAPHICAL AND POLITICAL OBSTACLES THAT HAVE REMAINED ESSENTIALLY CONSTANT SINCE THE EARLY DAYS OF CCITT. IN THE LATE 60'S CCITT WAS STILL THE ALMOST EXCLUSIVE DOMAIN OF GOVERNMENT-OWNED OPERATING ENTITIES. STANDARDS OR RECOMMENDATIONS WERE DESIGNED TO COVER COMPREHENSIVELY THE RANGE OF NETWORK AND OPERATING STANDARDS THAT WOULD MAKE IT POSSIBLE FOR HOMOGENEOUS TELECOMMUNICATIONS ENTITIES TO PROVIDE THE THEN LIMITED NUMBER OF INTERNATIONAL SERVICES THAT WERE AVAILABLE PLUS SPECIFICATIONS OF VARIOUS TYPES OF TERMINAL EQUIPMENT

GENERALLY PROVIDED BY THE OPERATING ENTITIES THEMSELVES. LARGELY INFLUENCED BY EUROPEAN PTT'S CCITT STANDARDS WERE PRIMARILY REGARDED AS INTERCONTINENTAL AND IN PRACTICAL TERMS AS THE MEANS TO INTERCONNECT DISTINCT AND NOT NECESSARILY COMPATIBLE NETWORKS ACROSS THE OCEANS. IN THE AFTERMATH OF THE COLONIAL ERA THE EUROPEAN-INSPIRED STANDARDS WERE EQUALLY IMPORTANT FOR NON-EUROPEAN COUNTRIES IN AFRICA AND ASIA TO MAINTAIN THE NETWORK INFRASTRUCTURES INHERITED FROM THE COLONIAL ADMINISTRATIONS.

POLITICAL CHANGES AND TECHNOLOGICAL ADVANCES HAVE CONSIDERABLY ERODED THESE TRADITIONAL MARKET PATTERNS. SATELLITE COMMUNICATION, FOR INSTANCE, HAS ALLOWED MANY DEVELOPING COUNTRIES TO ESTABLISH DIRECT LINKS BYPASSING THE OBLIGATORY EUROPEAN TRANSIT ROUTES AND ACQUIRING THUS A CERTAIN INDEPENDENCE IN THE CHOICE OF TELECOMMUNICATIONS TECHNOLOGIES AND STANDARDS. AT THE SAME TIME THE CCITT ENVIRONMENT HAS HAD TO CONTEND WITH AN INCREASING AND PROACTIVE PARTICIPATION OF THE UNITED STATES, JAPAN AND CANADA IN THE INTERNATIONAL TELECOMMUNICATIONS STANDARDIZATION PROCESS. EUROPE, AS WE ALL KNOW, DID NOT WAIT LONG TO REACT TO THESE CHANGES.

CONSIDER THE FACT THAT GOVERNMENT-PLANNED VERTICAL INTEGRATION OF THE INDUSTRY, FROM RESEARCH AND DEVELOPMENT TO THE MANUFACTURING OF EQUIPMENT WAS A COMMON EUROPEAN MODEL IN THE LATE 60's TO ACHIEVE NATIONAL SOCIO-ECONOMIC OBJECTIVES. IN THAT ENVIRONMENT THE CRITERIA FOR THE DEVELOPMENT OF NATIONAL STANDARDS WAS INFLUENCED MORE BY THE IMPERATIVES OF NATIONAL POLITICAL AND COMMERCIAL STRATEGIES THAN BY THE DICTATES OF INTERNATIONAL CONNECTIVITY.

A FUNDAMENTAL PRINCIPLE GOVERNING THE ITU CONVENTION, NAMELY "INDEPENDENCE OF STATES IN RESPECT OF THEIR NATIONAL NETWORKS AND INTERDEPENDENCE IN RESPECT OF INTERNATIONAL TELECOMMUNICATIONS", REFLECTS VERY WELL THE CCITT STANDARDIZATION ENVIRONMENT OF THAT RELATIVELY RECENT TIME WHERE INTERCONNECTION OF NATIONAL NETWORKS TO PROVIDE AN INTERNATIONAL SERVICE DID NOT NECESSARILY MEAN THE ESTABLISHMENT OF END-TO-END COMPATIBILITY. TO A LARGE MEASURE THEREFORE, INTERNATIONAL COMPATIBILITY WAS PROVIDED BY THE INTERFACING INTERNATIONAL GATEWAYS.

THERE IS NO DOUBT IN OUR MIND THAT WE HAVE NOW REACHED AN ERA OF GLOBALIZATION. SEVERAL SPEAKERS AT THIS SEMINAR HAVE DISCUSSED THE DRIVING FORCES THAT HAVE LED TO THIS CHALLENGING OPPORTUNITY FOR THE EMERGING GLOBAL ECONOMY.

YES, GLOBALIZATION IS TODAY'S MAGIC WORD RAPIDLY OVERSHADOWING YESTERDAY'S SACRED PRINCIPLE OF NATIONAL INDEPENDENCE IN THE CHOICE OF STANDARDS. THE CONCEPT OF SECURE BOUNDARIES BETWEEN DISTINCT AND OFTEN INCOMPATIBLE NATIONAL NETWORKS HAS BEEN REPLACED BY THE IMPERATIVES OF A TRANSPARENT NETWORK DESIGNED TO PROVIDE END-TO-END COMPATIBILITY TO CAPITALIZE ON THE OPPORTUNITIES OFFERED BY AN EVER-EXPANDING GLOBALIZED ENVIRONMENT.

YESTERDAY'S MODELS OF GOVERNMENT-PLANNED NATIONAL VERTICAL INTEGRATION ARE BEING GRADUALLY DISPLACED BY PRIVATIZATIONS, POLICIES OF LIBERALIZATION AND THE EMERGING MODELS OF GEOGRAPHICALLY DISPERSED VERTICALLY INTEGRATED PRIVATE INDUSTRIES.

I DON'T NEED TO CITE THE NAMES OF THE LONG LIST OF MULTINATIONAL COMPANIES THAT HAVE NOW BECOME HOUSEHOLD NAMES IN MANY COUNTRIES OF THE WORLD AND WHOSE INTRA-CORPORATE COMMUNICATIONS REQUIREMENTS HAVE TODAY REACHED A LEVEL OF TECHNOLOGICAL SOPHISTICATION COMPARABLE TO, IF NOT SURPASSING, THAT OF THE OPERATING ENTITIES THEMSELVES. SIMILAR STRATEGIES OF GLOBALIZATION ARE BEING PURSUED BY EVERY ONE OF THE INDUSTRIAL SECTORS INVOLVED IN THE TELECOMMUNICATIONS FIELD INCLUDING THE OPERATING ENTITIES THEMSELVES. TELEFONICA OF SPAIN, FOR INSTANCE,

LEAD A CONSORTIUM WHICH INCLUDED CITIBANK AND AN ARGENTINIAN BUSINESS CONGLOMERATE IN THE PURCHASE OF TELCO SUR THE NEW SOUTHERN OPERATING COMPANY FORMED BY SPLITTING UP THE FORMER NATIONAL OPERATOR ENTEL. EARLY IN 1990 TELEFONICA ALSO BECAME THE MAIN SINGLE INVESTOR IN CTC OF CHILE.WITH MAJORITY CONTROL OF THE CTC'S BOARD. FRANCE, ITALY, CABLE AND WIRELESS, BRITISH TELECOM AND SEVERAL US CARRIERS ARE ALSO PURSUING THEIR STRATEGIES OF GLOBALIZATION THROUGH ALLIANCES, JOINT VENTURES AND INVESTMENTS AROUND THE WORLD. THE RATIONALE FOR GLOBAL TELECOMMUNICATIONS STANDARDS IS, I BELIEVE, WELL FOUNDED. THE IMPACT OF THIS EVOLUTION IN THE CCITT ENVIRONMENT HAS BEEN SIGNIFICANT.

THE MOST NOTABLE CHANGE IN CCITT TODAY IS PROBABLY THE DIVERSITY OR MULTI-DISCIPLINARY NATURE OF THE PARTICIPANTS. THIS CHANGE NOT ONLY EVIDENCES THE INTERDEPENDENCE OF DIFFERENT INDUSTRY SECTORS TO SERVE GLOBAL MARKET NEEDS BUT IT ALSO PROVIDES A FERTILE GROUND FOR COOPERATION AMONG ALL THOSE INVOLVED IN THE STANDARDIZATION PROCESS INCLUDING THE USERS.

ANOTHER INTERESTING OBSERVATION IS THAT MANY OF THE SAME INDIVIDUALS ARE EQUALLY ACTIVE IN OTHER RELATED INTERNATIONAL STANDARDIZATION ORGANIZATIONS SUCH AS

ISO/IEC FURTHER ENHANCING THE INTERACTION BETWEEN CCITT AND OTHER STANDARDIZATION ORGANIZATIONS. THIS IS ALSO AN EVIDENCE OF THE PRESSING NEED TO REGARD TODAY'S STANDARDIZATION ACTIVITIES IN THEIR BROADER PERSPECTIVE AND BEYOND THE SOMETIMES ARTIFICIAL BARRIERS OF YESTERDAY'S RIGID INSTITUTIONAL FRAMEWORKS.

ANOTHER NOTABLE CHANGE IN THE CCITT ENVIRONMENT IS WHAT WE MAY DESCRIBE AS A CULTURAL EVOLUTION DUE TO THE INFLUX OF REPRESENTATIVES FROM THE PRIVATE SECTOR WHICH TODAY FORM THE VAST MAJORITY OF PARTICIPANTS IN THE ACTIVITIES OF THE STUDY GROUPS. WHILE OPERATING ENTITIES ARE IN MOST CASES ACTIVELY INVOLVED IN THESE ACTIVITIES TODAY'S DELEGATIONS INCLUDE INCREASING NUMBERS OF REPRESENTATIVES FROM THE R&D, INFORMATION AND MANUFACTURING SECTORS. THE STATUS OF SCIENTIFIC AND INDUSTRIAL ORGANIZATIONS OR SIO'S IN CCITT ACTIVITIES WAS ELEVATED TO THE SAME LEVEL AS THAT OF THE OPERATING COMPANIES OR RPOA'S BY THE ITU PLENIPOTENTIARY IN 1988. THE RESULT OF THIS MULTI-DISCIPLINARY MIX IS CHARACTERIZED BY ITS IMPATIENCE WITH THE FORMALITIES OF AN INTER-GOVERNMENTAL PROCESS WHERE PROTOCOL AND RULES OF PROCEDURE ARE STILL AS PREVALENT AND POSSIBLY AS NECESSARY AS IN THE PAST.

THE COMMON DESIRE TO ACCELERATE THE PACE OF ACTIVITIES AND TO ADOPT MORE RESULT-ORIENTED WORKING METHODS IS ONLY HINDERED BY A FRAMEWORK THAT RELIES EXCLUSIVELY ON VOLUNTARY RESOURCES FROM PARTICIPATING COUNTRIES TO CARRY OUT THE BULK OF THE WORK WITH LIMITED SUPPORT FROM A SECRETARIAT SEVERELY CONSTRAINED BY BUDGETARY LIMITATIONS.

AS WE PAUSE AND REFLECT ABOUT TODAY'S CCITT ENVIRONMENT WE CAN ATTEMPT TO ASSESS THE FACTORS THAT WILL PLAY A MAJOR ROLE IN THE INTERNATIONAL STANDARDIZATION PROCESS OF THE NEXT FEW YEARS.

I MENTIONED EARLIER THE CURRENT EFFORTS TO REVITALIZE THE ITU STANDARDIZATION FUNCTION AND WE MAY SOON SEE SOME STREAMLINING OF THE STRUCTURE AND WORKING METHODS OF CCITT (OR OF THE NEW STANDARDIZATION BODY PROPOSED BY THE HIGH LEVEL COMMITTEE) BUT MORE RADICAL CHANGES MAY BE REQUIRED IN THE FUTURE TO PROVIDE CCITT WITH THE NECESSARY FINANCIAL AND HUMAN RESOURCES THAT WILL ENABLE IT TO PLAY THE LEADERSHIP ROLE THAT IS INDISPENSABLE TO SECURE ITS PREEMINENCE IN THE INTERNATIONAL TELECOMMUNICATIONS STANDARDIZATION PROCESS. IT IS UNLIKELY, IN MY VIEW, THAT CCITT CAN ACHIEVE THIS GOAL WHILE RELYING EXCLUSIVELY ON VOLUNTARY RESOURCES PROVIDED BY PARTICIPATING ENTITIES TO CARRY OUT ITS EVER-INCREASING WORK LOAD. CONSIDERATION

MAY HAVE TO BE GIVEN TO ALTERNATIVE ORGANIZATIONAL MODELS INCLUDING THE RECRUITMENT OF EXPERTS TO ASSIST IN THE DRAFTING OF RECOMMENDATIONS, THE ENHANCEMENT OF THE FUNCTIONS OF THE SECRETARIAT AND A MAXIMUM STREAMLINING OF THE MECHANISMS REQUIRED TO ENSURE THE INTERNATIONAL CONSENSUS-BUILDING PROCESS. SUCH A WORKING ENVIRONMENT, WHILE INCREASING THE PRODUCTIVITY OF THE STANDARDIZATION BODY, WOULD ALSO REDUCE THE FREQUENCY AND MULTIPLICITY OF MEETINGS. THE INCREASE IN FINANCIAL CONTRIBUTIONS REQUIRED TO FUND ADEQUATELY THIS ALTERNATIVE MODEL WOULD BE LARGELY COMPENSATED BY SUBSTANTIAL SAVINGS IN HUMAN RESOURCES AND TRAVELLING EXPENSES BY PARTICIPATING ENTITIES.

ANOTHER IMPORTANT FACTOR WILL BE CCITT'S ABILITY TO HARMONIZE ITS WORK PROGRAM AND ITS ACTIVITIES WITH THOSE OF ISO/IEC. WE KNOW THAT THERE ARE EFFORTS AT THE LEVEL OF THE RESPECTIVE SECRETARIATS TO LAY GROUNDS FOR SOME HARMONIZATION IN THE PRESENTATION OF STANDARDS. AS I MENTIONED EARLIER THERE IS ALSO A GOOD AND POSITIVE DEGREE OF INTERACTION BETWEEN EXPERTS AT THE WORKING LEVEL PARTICULARLY DUE TO INDIVIDUALS WHO PARTICIPATE ACTIVELY IN THE ACTIVITIES OF BOTH ORGANIZATIONS. IN MY VIEW, HOWEVER, THE HARMONIZATION MUST BE EXTENDED TO THE MAXIMUM POSSIBLE EXTENT WITHIN A MORE COMPREHENSIVE FUTURE FRAMEWORK OF COOPERATION, PREFERABLY A FORMAL ONE ENCOURAGED AND SUPPORTED BY ALL ADMINISTRATIONS.

THE MOST IMPORTANT OR CRUCIAL FACTOR, HOWEVER, WILL BE CCITT'S ABILITY TO MAINTAIN A REASONABLE BALANCE OF POWER BETWEEN THE TRADITIONAL DRIVING FORCES LEADING THE INTERNATIONAL STANDARDIZATION PROCESS. CEPT WAS CONSTRUED TO BE A MAJOR INFLUENTIAL BODY IN CCITT TILL A FEW YEARS AGO BUT IN REALITY EUROPEANS DID NOT ALWAYS CONSTITUTE A UNITED AND HOMOGENEOUS VOICE IN INTERNATIONAL STANDARDIZAION MATTERS. WHILE WORKING TO HARMONIZE THEIR INTRA-EUROPEAN TELECOMMUNICATIONS NETWORK CEPT MEMBERS USUALLY ACTED IN THE TRADITIONAL SPIRIT OF INDEPENDENCE FOSTERED BY THE ITU CONVENTION. THEIR INDIVIDUAL INTERESTS IN TERMS OF INTERNATIONAL STANDARDS WERE DICTATED, AS I EXPLAINED EARLIER, BY THEIR RESPECTIVE NATIONAL OBJECTIVES AND PRIORITIES INCLUDING CONSIDERATION OF THEIR CULTURAL AND ECONOMIC TIES WITH OTHER REGIONS OF THE WORLD.

ON ANOTHER PLANE, HOWEVER, EUROPEAN PTT'S SOMETIMES BANDED TOGETHER TO PROTECT THEIR VESTED INTERESTS WITH REGARDS TO THE OTHER NON-EUROPEAN DRIVING FORCES IN THE CCITT STANDARDIZATION PROCESS, NAMELY THE UNITED STATES, JAPAN, CANADA AND OTHERS. THIS OCCASIONAL REGIONAL POLARIZATION WAS PARTICULARLY EVIDENT IN THE DEVELOPMENT OF NEW SERVICES OR TECHNOLOGIES WITH PERCEIVED SUBSTANTIAL MARKETING POTENTIAL. THE END RESULT OF THIS POLARIZATION,

HOWEVER, WAS NOT NECESSARILY THE ULTIMATE COMPROMISE TO ADOPT A GLOBAL STANDARD BUT RATHER THE ELABORATION OF A SERIES OF INTERFACING PROTOCOLS AND ARRANGEMENTS TO ACCOMMODATE DIFFERENT INTERNATIONAL STANDARDS.

IN ESSENCE, THIS WAS THE ACCEPTED SPIRIT AND PATTERN OF NATIONAL INDEPENDENCE OF STATES IN RESPECT OF THEIR NATIONAL NETWORKS AND INTERDEPENDENCE IN RESPECT OF INTERNATIONAL TELECOMMUNICATIONS.

WHEN CONFRONTED WITH ISSUES OF CONSIDERABLE INDIVIDUAL NATIONAL INTERESTS THE CCITT ANSWER WAS OBVIOUSLY TO ACCOMMODATE THE DIVERGING NATIONAL INTERESTS.

THE CONVERGENCE BETWEEN THE INFORMATION AND TELECOMMUNICATIONS INDUSTRY SECTORS, THE LIBERALIZATION OF TELECOMMUNICATIONS POLICIES, THE PRESSURES OF MULTI-NATIONAL ENTITIES OPERATING IN VARIOUS COUNTRIES AND THE STRATEGIES OF GLOBALIZATION PURSUED BY THE MAIN INDUSTRY SECTORS HAVE RADICALLY CHANGED TODAY'S NATIONAL IMPERATIVES WITH REGARDS TO INTERNATIONAL STANDARDS, AND THESE FACTORS ARE ALSO LIKELY TO ALTER THE TRADITIONAL BALANCE OF POWER IN CCITT. THE RESULT OF THIS ALTERATION MAY APPEAR ON THE SURFACE AS A SIMPLE REGROUPING OF THE MAJOR PLAYERS ALONG POWERFUL REGIONAL GROUPS AS A LOGICAL

EVOLUTION FROM AN ENVIRONMENT OF NATIONAL INDEPENDENCE TO ONE OF REGIONAL COMMUNITY OF INTEREST. THIS NEW REGROUPING OF FORCES WILL HOWEVER, BE ALSO LARGELY INFLUENCED BY THE INTER-REGIONAL COMMUNITIES OF INTEREST THAT RESULT FROM THE STRATEGIES OF GLOBALIZATION OF THE VARIOUS INDUSTRY SECTORS INVOLVED IN THE STANDARDIZATION PROCESS IN EUROPE, AMERICA AND ASIA. IF POWERFUL GROUPINGS DO EMERGE THEY MAY NOT BE NECESSARILY CONFINED TO A SINGLE REGIONAL COMMUNITY OF INTEREST.

IN COMPARISON TO THE RATHER HOMOGENEOUS TELECOMMUNICATIONS CARRIER-ORIENTED FIELD OF CCITT ACTIVITY OF THE 60'S, TODAY'S THRUST COMES PRIMARILY FROM CONGLOMERATES OF MULTI-SECTORIAL INTEREST. THE MEMBERSHIP OF ETSI FOR INSTANCE, THE ONLY TRUE REGIONAL ORGANIZATION SO FAR, COMES OVERWHELMINGLY FROM THE MANUFACTURING SECTOR WHICH MAKES UP 63% OF ITS CONSTITUENCY. USERS AND SERVICE PROVIDERS SHARE A VOICE EQUIVALENT TO THAT OF PUBLIC NETWORK OPERATORS EACH REPRESENTING NO MORE THAN 10% OF THE TOTAL ETSI MEMBERSHIP. CEPT IS STILL ACTIVE AND IS REGROUPING ITS FORCES TO REPRESENT THE MINORITY INTERESTS OF PUBLIC NETWORK OPERATORS IN EUROPE SOME OF WHICH, AS I MENTIONED EARLIER, ARE ALSO ACTIVELY EXTENDING THEIR STRATEGIES OF GLOBALIZATION IN COMPETITION WITH EACH OTHER THROUGH ACQUISITIONS, ALLIANCES AND JOINT VENTURES IN OTHER REGIONS OF THE WORLD.

WE SHOULD NOT BE THEREFORE SURPRISED TO SEE THE EFFORTS OF THE VARIOUS SECTORIAL MULTINATIONAL INTERESTS TO PROMOTE AND ENCOURAGE GREATER COOPERATION BETWEEN THE TRADITIONAL DRIVING FORCES IN THE INTERNATIONAL STANDARDIZATION PROCESS. THE FREDERICKSBURG SUMMIT AND THE EFFORTS TOWARDS GREATER HARMONIZATION OF ACTIVITIES, OF WORK PROGRAMS AND OF COMMUNICATION BETWEEN THE MAJOR PLAYERS IS A DIRECT AND NATURAL RESULT OF THIS SHIFT IN THE INTERNATIONAL ENVIRONMENT.

IT IS PREMATURE TO PREDICT THE EXTENT TO WHICH THIS REPOSITIONING OF DRIVING FORCES WILL ALTER CCITT'S ABILITY TO MAINTAIN A FAIR AND REASONABLE INTERNATIONAL CONSENSUS-BUILDING PROCESS. IF THE IMPERATIVES OF THE GLOBALIZATION OF STANDARDS WERE TO PAVE THE WAY FOR CONCERTED EFFORTS BY ETSI, THE NORTH AMERICAN T1 AND THE JAPANESE TTC TO RESOLVE THEIR DIFFERENCES OUTSIDE OF CCITT AND THEN USE THEIR OVERPOWERING INFLUENCE TO HAVE THE RESULT OF THEIR TRANSACTIONS ADOPTED INTERNATIONALLY, THEN THE ROLE OF CCITT WILL BE ELEVATED TO THAT OF A RUBBER-STAMPING ORGANIZATION. CONVERSELY, IF CCITT IS TO MAINTAIN ITS LEADERSHIP ROLE IT WILL HAVE TO MAINTAIN AND STRENGTHEN ITS MECHANISMS TO PRESERVE THE FUNDAMENTAL PRINCIPLE OF INDIVIDUAL REPRESENTATION OF NATIONAL INTERESTS NAMELY ONE COUNTRY, ONE VOICE. THERE HAS BEEN NO SUGGESTION SO FAR TO CHANGE THIS PRINCIPLE.

LOOKING THEREFORE AT THE FUTURE ENVIRONMENT IT SEEMS PROBABLE THAT REGARDLESS OF THE FUTURE ROLE OF CCITT, THE DECISION-MAKING PROCESS IN TERMS OF INTERNATIONAL STANDARDS WILL EVOLVE AT THE WORKING LEVELS OF THE DIFFERENT NATIONAL AND REGIONAL ORGANIZATIONS FLOWING THROUGH VARIOUS LEVELS OF HARMONIZATION BEFORE REACHING THE INTERNATIONAL PROCESS. ULTIMATELY, THE SUCCESS OF ANY COUNTRY IN SUCH AN ENVIRONMENT WILL DEPEND ON THE STRATEGIC OBJECTIVES OF ITS INDUSTRIAL SECTORS, ON THEIR COLLECTIVE RECOGNITION OF THE IMPORTANCE OF STANDARDS AND ON THEIR WILLINGNESS TO DEVOTE THE NECESSARY HUMAN AND FINANCIAL RESOURCES TO INFLUENCE THE PROCESS AT ALL LEVELS.

AT THIS POINT I WOULD LIKE TO PROVIDE MY VIEWS ON CANADA'S ROLE IN CCITT ACTIVITIES AND ON OUR CAPACITY TO ADAPT TO THE ENVIRONMENTAL CHANGES. LET ME SAY AGAIN THAT, IN MY VIEW, THE MOST EFFICIENT WAY TO INFLUENCE ANY PROCESS IS TO PARTICIPATE ACTIVELY AT THE WORKING LEVEL WHILE PLAYING A LEADERSHIP ROLE AT THE HIGHER ECHELONS OF THE STRUCTURE.

IT IS A WELL KNOWN FACT THAT CANADIANS HAVE BEEN PLAYING A KEY LEADERSHIP ROLE IN THE ITU AND IN THE INTERNATIONAL STANDARDIZATION PROCESS. THE LIST OF COLLEAGUES WHO HAVE SERVED IN KEY POSITIONS AT ALL LEVELS OF THE INFRASTRUCTURE IS LONG AND I HAVE NO DOUBT THAT THIS

TRADITION WILL CONTINUE IN THE FUTURE. ASIDE FROM OTHER POSITIVE FACTORS FAVOURING CANADIAN LEADERSHIP IN INTERNATIONAL ACTIVITIES I ATTRIBUTE THIS SUCCESS TO THE BASIC CHARACTERISTICS OF OUR NATIONAL INFRASTRUCTURE. OUR NATIONAL BODIES HAVE BEEN CONSISTENTLY STRUCTURED TO PROVIDE A SOLID BASE OF ACTIVE EXPERTISE AT THE WORKING LEVEL SUPPORTED BY A HIGHER-LEVEL OF BROAD OVERVIEW OF THE OVERALL ACTIVITY. I CITE HERE, FOR EXAMPLE, THE CANADIAN NATIONAL ORGANIZATION OR CNO AS ONE OF OUR NATIONAL BODIES STRUCTURED IN THAT PATTERN. THIS SEEMINGLY SIMPLE APPROACH HAS FOSTERED THE DEVELOPMENT OF A WIDE BASE OF EXPERTISE AT THE WORKING LEVEL IN CANADA WITH A SUPERIOR CAPABILITY TO PARTICIPATE POSITIVELY AS A COHERENT UNIT IN INTERNATIONAL ACTIVITIES. THE STEERING COMMITTEE, IN TURN, HAS CONTINUOUSLY ASSESSED THE BROADER ORGANIZATIONAL AND MANAGEMENT ASPECTS OF THE INTERNATIONAL PROCESS CAPITALIZING ON OPPORTUNITIES TO INFLUENCE CHANGES AND TO TAKE ON KEY INTERNATIONAL ROLES. ON THE NATIONAL FRONT THE STEERING COMMITTEE HAS PROVIDED A FORUM FOR ITS MEMBERS TO DISCUSS OVERALL DIRECTION AND DEPLOYMENT OF RESOURCES TO MEET THE CHALLENGES OF THE INTERNATIONAL PROCESS NOT TO MENTION THE RESOLUTION OF DIVERGING NATIONAL POSITIONS ON INTERNATIONAL ISSUES. WHILE I HAVE CITED THE CNO AS A TYPICAL EXAMPLE, THIS SUCCESSFUL CANADIAN ORGANIZATIONAL MODEL HAS SERVED AS WELL IN MANY OTHER SECTORS OF THE INFORMATION AND TELECOMMUNICATIONS STANDARDIZATION ENVIRONMENT.

IT IS TRUE THAT ECONOMIC CONDITIONS AND CORPORATE PRIORITIES HAVE IN MANY CASES CONSTRAINED THE AVAILABILITY OF EXPERT RESOURCES TO COVER THE VAST ARRAY OF STANDARDIZATION ISSUES THAT HAVE TO BE ADDRESSED IN TODAY'S ENVIRONMENT BUT THIS CONSTRAINT HAS BEEN AND CONTINUES TO BE COMPENSATED IN LARGE MEASURE BY THE PERSONAL DEDICATION OF A NUMBER OF OUR COLLEAGUES WHO PURSUE THIS ACTIVITY NATIONALLY AND INTERNATIONALLY SACRIFICING LEISURE TIME AND FAMILY LIFE IN THE PROCESS. WHILE THIS SITUATION IS NOT UNIQUE TO CANADA LET ME EXPRESS HERE MY PERSONAL ADMIRATION FOR ALL THOSE MODERN-DAY PIONEERS BUT LET ME ALSO EXPRESS THE WISH THAT A MORE REALISTIC CORPORATE EVALUATION OF THE MERITS AND BENEFITS OF THIS ACTIVITY BE MADE BY THE ORGANIZATIONS INVOLVED IN THE STANDARDIZATION PROCESS.

CONCLUSION

MY PRESENTATION HAS DEALT SPECIFICALLY WITH THE INTERNATIONAL CCITT STANDARDIZATION ENVIRONMENT AND CANADA'S ACTIVE AND POSITIVE ROLE IN THAT PROCESS. I KNOW THAT SIMILAR SUCCESS HAS BEEN ACHIEVED BY OTHER SECTORS OF THE CANADIAN INDUSTRY IN INTERNATIONAL STANDARDIZATION PROCESSES. I HAVE NO DOUBT THAT CANADA WILL CONTINUE TO BE AT THE FOREFRONT OF INTERNATIONAL ACTIVITIES AND THAT IT WILL CONTINUE TO ADAPT TO THE CHANGING TELECOMMUNICATIONS ENVIRONMENT WITH THE SAME POSITIVE RESULTS OF THE PAST.

BRUCE FORSYTH

NATIONAL ACTIVITIES

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

ACTIVITÉS NATIONALES

M. Bruce Forsyth
Président
ACNOR/SCIT

M. Forsyth, en tant que président du Comité directeur sur la technologie de l'information de l'Association canadienne de normalisation (ACNOR/SCIT), va donner un aperçu de l'organisation du Système de normes nationales actuel et dire comment les normes de technologie de l'information sont élaborées et mises à la disposition des utilisateurs canadiens de normes dans ce domaine.

M. Forsyth va expliquer le rôle du Conseil canadien des normes (CCN) et de l'Association canadienne de normalisation (ACNOR) et montrer comment le SCIT de l'ACNOR fonctionne de façon «harmonisée», dans ce contexte, en approuvant les normes canadiennes sur un plan national et en participant, sur un plan international, aux travaux du Comité technique mixte 1 ISO/CEI.

Grâce à son expérience au sein de cette infrastructure, M. Forsyth va examiner les forces et les faiblesses du système actuel et déterminer quelques questions clés pour l'avenir.

NOTES FOR DOC IT&T STANDARDS SEMINAR - MAY 9/10, 1991

D.B. Forsyth

May 1991

NOTES FOR DOC IT&T STANDARDS SEMINAR - MAY 9/10, 1991

I. Intro & Background

- Good Morning L&G, it's my pleasure to be here this morning .....

- For those of you who don't know me, my name is Bruce Forsyth, I am the Director of Commercial Relations at IBM Canada and I have been involved with I.T. Standards in Canada for about 20 years.

- I'm here this morning in my capacity as Chairman of the CSA Standards Steering Committee on Information Technology, which as I will show you in a few minutes, is a HARMONIZED committee, as as such, also serves as Canada's ADVISORY COMMITTEE to the INTERNATIONAL I.T. standards activity in the JOINT ISO/IEC TECHNICAL COMMITTEE - JTC1.

  I have noticed many of my Colleagues on SCIT in the audience this morning, and I'm sure they will keep me honest. I just hope they don't ask all the tough questions.

  I would however like to identify ED ACHESON - Group Chief of Policy and Standards in the federal govt. TREASURY BOARD SECRETARIAT. ED serves as my VICE CHAIRMAN of SCIT, and also as CHAIR of the CAC on JTC1 (on which I serve as his VICE CHAIR). So in fact, either of us could be up here addressing you this morning.

II. Outline of Scope of my Remarks

This Session is about "CANADA's BUILDING BLOCKS, and I have been asked to speak on "NATIONAL STANDARDIZATION ACTIVITIES".

I plan to do that by using SCIT as a REFERENCE, or as an EXAMPLE of how at least one part of our NATIONAL STANDARDS SYSTEM works.

In the remarks which follow, I plan to:

- Outline something of the current structure for Cdn Standards Dev.
  - National Standards System & the roles of the SCC and CSA
  - Operation of SCIT & CAC/JTC1 within this structure;

- Identify some of the STRENGTHS AND WEAKNESSES of the current system; and,

- Make some Observations, draw some Conclusions and raise some KEY ISSUES, which, hopefully can be debated more fully in the working sessions this afternoon.

III. Overview of the Structure/Operating Mode of SCIT and CAC/JTC1

Let me turn first to the Current Structure in which SCIT and CAC/JTC1 operate.

The first point is that we operate within what is known as the NATIONAL STANDARDS SYSTEM. This is a HIERARCHICAL system which organizes and manages all VOLUNTARY standards in Canada under the auspices of the STANDARDS COUNCIL OF CANADA. (or SCC as I shall refer to it).

1. STANDARDS COUNCIL OF CANADA

I don't have time to say to much about the SCC, but in passing, let me just remind everyone that the SCC was created by an ACT OF PARLIAMENT, operates as an INDEPENDENT CROWN CORPORATION, and reports to PARLIAMENT through the MINISTER OF CONSUMER AND CORPORATE AFFAIRS.

The SCC administers the NATIONAL STANDARDS SYSTEM, and amongst other things, ACCREDITS other bodies and agencies within the system. The SCC ACCREDITS:

- o STANDARDS WRITING ORGANIZATIONS or SWOs
- o TESTING ORGANIZATIONS
- o CERTIFICATION ORGANIZATIONS

The SCC also represents Canada in both the ISO and the IEC

2. THE CANADIAN STANDARDS ASSOCIATION (CSA)

Another key piece of the NATIONAL STANDARDS SYSTEM I want to touch on is the CANADIAN STANDARDS ASSOCIATION.

Again, time does not permit me to do justice to the CSA, but you heard from John Kean yesterday, and will be hearing from Bob Olley later, so I'm sure any questions about the CSA will get answered.

Suffice it to say, that the CSA is a NON-GOVERNMENT, NOT-FOR-PROFIT, CORPORATION which has been ACCREDITED as a SWO by the SCC. It has also been accredited as a testing and certification organization, but I will focus only on its STANDARDS WRITING role.

The CSA is managed by a BOARD OF DIRECTORS elected from its members. For it's STANDARDS DEVELOPMENT ROLE, it operates a number of STANDARDS STEERING COMMITTEES (SSCs) in different fields of activity. (I think there are currently 23 SSCs).

The SSCs operate on a self-sustaining basis under PROCEDURES established by the STANDARDS POLICY BOARD, and administered under the VICE PRESIDENT of the STANDARDS DIVISION. The SSCs develop VOLUNTARY STANDARDS, using CONSENSUS principles and BALANCED committee participation.

SCIT, as one of these SSCs, is thus authorized to develop NATIONAL STANDARDS, within the National Standards System.

3. Organization/Operation of SCIT within the NATIONAL STANDARDS SYSTEM

Let me turn for a moment to how SCIT and the CAC/JTC1 operate.

I mentioned earlier that SCIT is a HARMONIZED COMMITTEE. By that I mean that it operates as a Committee with two hats, one a National hat, the other an International hat. The national role is conducted as a SSC under the CSA rules; the International role is conducted as a Canadian Advisory Committee (CAC) to JTC1 under the rules of the SCC.

To coin it in other terms, SCIT operates both in the UPSTREAM end of International Standards Development (through the SCC) and in the DOWNSTREAM end of adopting International Standards for Canadian use (through the CSA).

To give you a feel for the way the SCIT/CAC is organized, let me first show you an overview of the structure of the ISO/IEC JTC1 Organization (figure 1).

This figure shows JTC1, which is made up of the National Standards Body representatives of those members of ISO & IEC who wish to participate. The figure depicts JTC1 itself, along with 16 of its Subcommittees (SCs) covering the different aspects of Information

Technology. Also shown is the JTC1 Advisory Group (AG) and several of the Special Working Groups (SWGs) which operate under the AG. Finally, the figure shows on the upper left, the Special Group on Functional Standards which has the status of an SC and is developing International Standardized Profiles (ISPs), the new class of ISD/IEC Functional Standards.

The Canadian organization to interface into JTC1 is mirrored after the JTC1 organization as shown in Figure 2.

This figure shows SCIT and its national Technical Committees. It also depicts the Harmonization mentioned by showing the CAC designations at the JTC1 level as well as at the JTC1/SC level.

JTC1 currently has 17 active SCs and another just being formed. Canada is a Participating member of 12 of those, with 11 of the 12 operating as harmonized TCs under SCIT. SCIT also operates two other TCs which are not harmonized with the JTC1 SCs.

So much for the organization, now let me turn to how things operate.

Typically, I.T. standards projects emerge and are progressed in the International arena. If there is Canadian interest in participating, it occurs through the CAC, wearing its international hat and interfacing to the appropriate SC. The work progresses within JTC1 until an International Standard is produced. Through the CAC,

Canadian organizations can input and participate in shaping the International Standard.

Then, for most of the standards developed, the same committee puts on its national hat and as a TC under CSA approves the standard for use in Canada as a National Standard of Canada. These are then stocked and sold by CSA for use in Canada.

IV. STRENGTHS & WEAKNESSES OF THE CURRENT SYSTEM

So much for how SCIT and the CAC/JTC1 are organized and operate. Let me now turn to some comments on the strengths and weaknesses of the current system.

Before doing so, however, let me stress two of the objectives of what we are doing.

- to enable Canadians interested in IT standards to participate in the development of such standards nationally and internationally.

- to approve the resulting standards as Canadian standards and make them available to Canadian standards users.

1. STRENGTHS

The main strength of the current system is that it meets both of these objectives.

- o In short, THE SYSTEM WORKS

- o From a structural, organizational perspective, there is nothing seriously wrong with the status quo.

  - It is open to all interested participants.

  - It operates under well established rules.

  - It is harmonized, with the same technical committees serving both the international and national roles. This eliminates duplication & conserves resources. It also ensures that there is technical consistency between national and international standards.

2. WEAKNESSES

From an operational perspective there are two major weaknesses with the existing system.

- o RESOURCES

- Existing resources are being stretched to the limit.

- Both people and dollars are scarce on both the national and international fronts.

- On the national front, CSA operates each SSC on a "Pay-its-own-way" basis. Thus funding is required for committee operations, publishing, etc.. However,

  -- Overhead costs are high

  -- There are Relatively few "Paying" participants

  -- There is a particular Shortage of "management" volunteers

  Thus SCIT and many of it's TCs operate without sufficient secretarial and management support. There are just not enough dollars and man hours to go around.

- On the international front, successive funding cutbacks at the SCC have brought us to a critical point where:

  -- document distribution has been seriously curtailed by the Council

  -- delegate travel support has been cut back (again)

Both of these developments severely hampers the ability of volunteers to participate effectively at the international level. It also further increases the load on the few organizations that are already making significant contributions in both manpower and dollars.

This is a VERY SERIOUS PROBLEM, and in my view is one of the key issues we should discuss this afternoon.

We have to identify where the resources to run the system are going to come from and how they are going to be managed. Neither industry nor governments should be expected to carry this load alone. It needs to be done on a shared cooperative basis.

o EXPANDING WORKLOAD

The second major problem with the existing system is the exploding demand for standards and the resulting increase in workload.

As the I.T. world becomes more and more "standards" based the number and complexity of standards projects increases.

Over the past ten years we have witnessed the scope of the standards effort related to Open Systems Interconnection. (I estimate it to be in the thousands of person years.) In my view this SUBSTANTIAL AND SUCCESSFUL effort will pale beside that

required to meet the current demand for fully Open Systems with portability of applications and data across different operating systems and multiple vendor platforms.

Fear not, ye standards practitioners, I.T. Standards will remain a growth industry for many years to come.

V. Conclusions and Observations

From the above, I have drawn several conclusions:

1. It is becoming increasingly difficult for the "Standards" systems, both internationally, and nationally to respond on a timely basis on the demand for standards.

   We've witnessed the phenomenal growth of quasi-standards consortia over the past five years. We have literally dozens of organizations trying to expedite and tailor standards for their market requirements; such as X-OPEN, the Open Software Foundation, the Network Management Forum, the ODA Consortium, to just name a few. These organizations are moving quickly and are placing increasing demands on the traditional international standards organizations ISO, the IEC and CCITT.

2. As this demand grows, it is increasingly evident that the resources in the current system are inadequate.

   The processes in the existing system are antiquated, yet there are not sufficient resources in the system to make use of the technology we are all a part of. For the most part, the systems are still paper based with all its inherent costs and inefficiencies. While some efforts have been made to automate parts of the system, it is a classic case of too little - too late.

3. Standards are expensive, and somebody has to pay for them.

   This is something that both users and vendors have to step up to. No longer can the cost be carried by vendors without this cost being reflected in the cost of their products. This is particularly true when the costs of conformance and interoperability testing are included. The message is: if users want standardized products they should expect to pay something for them, either by helping to fund the development of the standards directly, and/or by being willing to pay more for the standardized products.

4. There is not much wrong with the structure of the system itself that a lot of people and money won't fix.

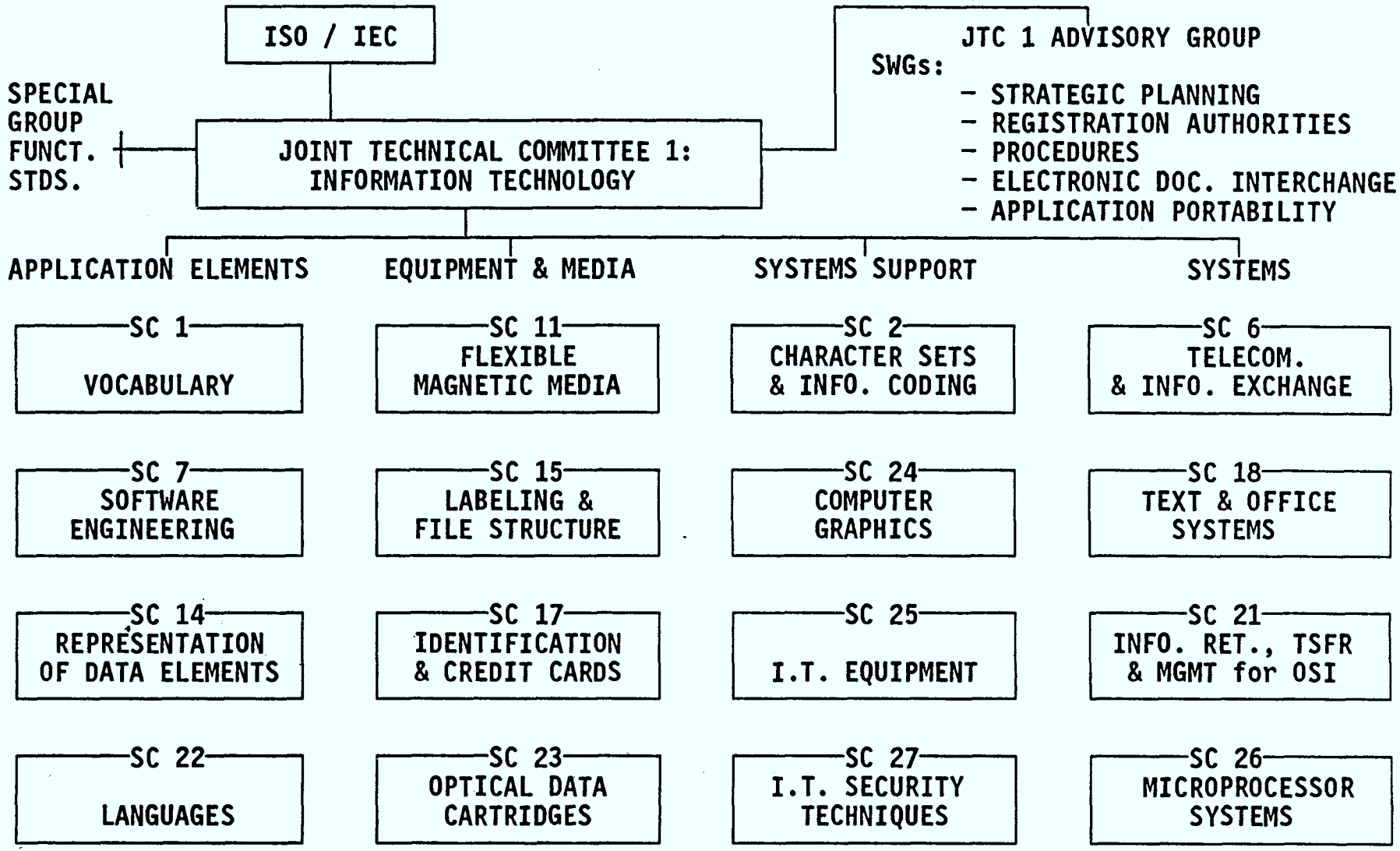
My conclusion is that at least with respect to SCIT and the CAC JTC1, the structure is fine. However, there are probably many things that can be done to support the system to make it work better.

5. Finally, we need to increasingly look at the investment in standards as an R&D investment, and treat it accordingly from an incentive and tax perspective.

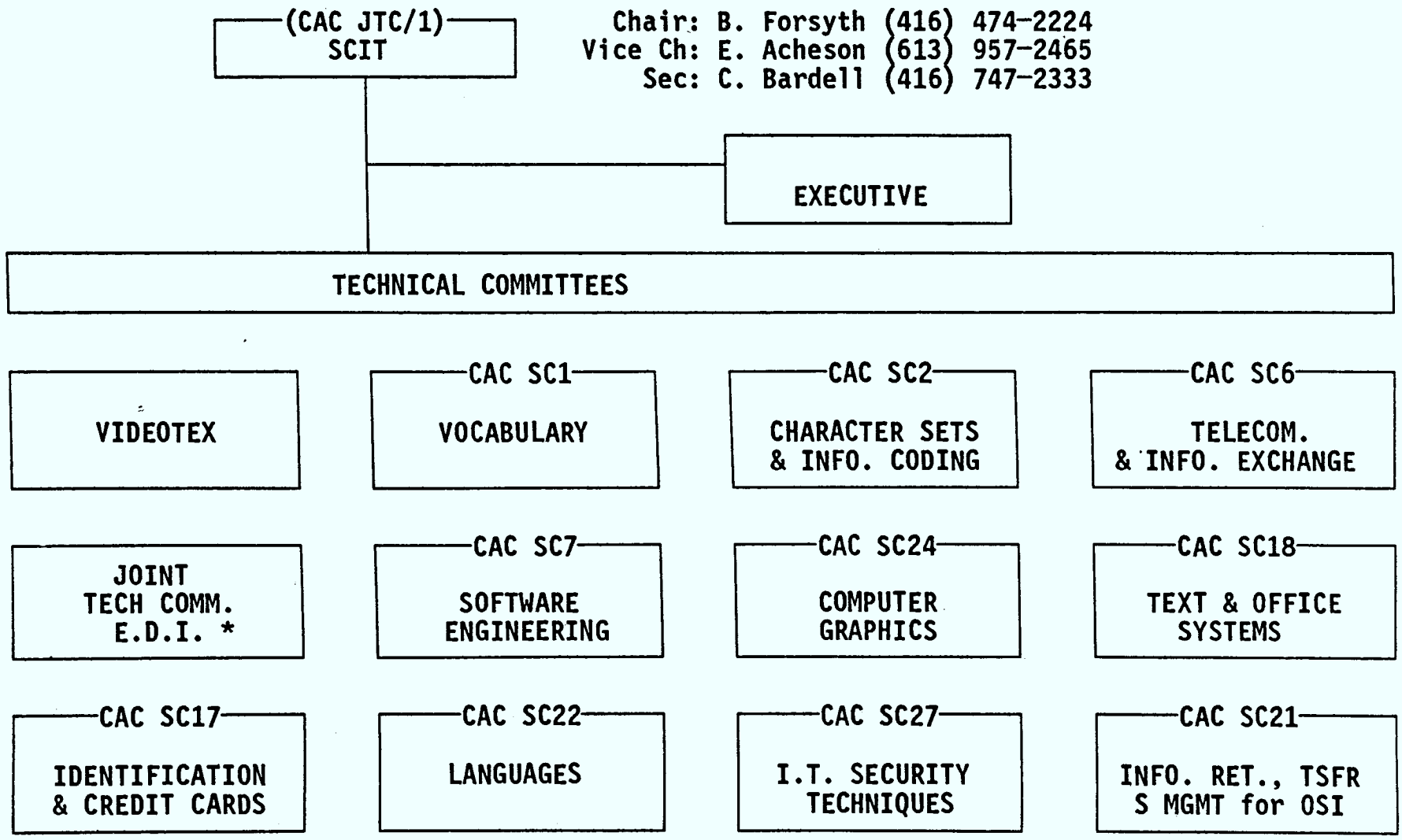
   However, it must be recognized that this investment doesn't buy you exclusivity, as other types of R&D investments do (eg patents, copyright, etc.). What it does buy you is a ticket to the party, along with some know how and perhaps a bit of lead time so that you can enjoy yourself before it gets too crowded.

Thank you for your attention. I would be happy to entertain to any questions you may have in the time available.

ISO/IEC JTC1 - INFORMATION TECHNOLOGY



CSA Steering Committee on Information Technology (SCIT)



* Electronic Data Interchange – Joint TC of CSA SCIT and the Cdn. General Stds. Board

DAVID A. TOWNSEND

AN INTRODUCTION TO THE LEGAL ISSUES WHICH SURROUND THE HARMONIZATION OF IT&T STANDARDS

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

ASPECTS JURIDIQUES DES NORMES OBLIGATOIRES

Introduction aux aspects juridiques rattachés aux normes de technologie de l'information et des télécommunications

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Les industries de la technologie de l'information et des télécommunications se développent et évoluent à un rythme sans précédent. Elles mettent au point et fournissent des services et du matériel jouant un rôle vital pour l'économie des pays modernes, axée sur l'information. Or, le succès technique et commercial de ces services et de ce matériel suppose l'élaboration de normes techniques pertinentes et à point.

Au cours des dernières années, un certain nombre de tendances nouvelles à l'échelle mondiale ont compliqué de beaucoup la tâche consistant à élaborer des normes de technologie de l'information et des télécommunications pertinentes et à point. C'est autour de la convergence croissante des technologies des télécommunications (transmission par fil et sans fil) que s'articulent l'élaboration et l'établissement de réseaux d'information, leur exploitation et leurs marchés, ainsi que l'infrastructure connexe. Les groupes d'utilisateurs exigent maintenant que les services et le matériel de technologie de l'information et des télécommunications offrent la possibilité d'une interconnexion et d'un interfonctionnement des réseaux. De nouvelles technologies ont accru de façon spectaculaire les capacités des systèmes et certaines offrent maintenant des solutions de rechange viables au réseau téléphonique public commuté (RTPC). Des institutions établies de longue date, dont la mission a consisté pendant des décennies à produire des normes de télécommunications internationales, se voient forcées de réévaluer leur structure et fonctionnement à cause de leur piètre performance par comparaison au modèle dynamique offert par certains organismes régionaux de normalisation, tel l'European Telecommunications Standards Institute (ETSI). On assiste présentement à la création de blocs commerciaux régionaux qui exigeront, comme condition préalable d'accès à leur marché, des essais de conformité à leurs normes de technologie de l'information et des télécommunications. Récemment, bien des constructeurs, serveurs et groupes d'usagers ont invité leur gouvernement à harmoniser leurs normes techniques et règles d'approbation de matériel (homologation et essais) en matière de technologie de l'information et des télécommunications avec celles de leurs principaux partenaires commerciaux.

Au moment où nous, Canadiens, envisageons diverses réponses stratégiques à cette évolution de la technologie, des services, du matériel, du régime de réglementation, des organismes internationaux et des modes d'échanges commerciaux, il nous faut connaître les incidences juridiques de ces réponses. En effet, l'infrastructure juridique peut tantôt faciliter nos choix, tantôt en entraver certains ou encore venir les limiter.

Le présent document expose certaines incidences juridiques de notre réponse aux nouveaux défis de la création de normes, en technologie de l'information et des télécommunications, par l'harmonisation de nos exigences techniques avec celles d'autres pays. Il le fait en examinant à fond les résultats de la recherche touchant les incidences, sur les lois et la réglementation, de l'harmonisation des normes et règles d'approbation de matériel impératives dans le domaine des radiocommunications au Canada, d'une part, avec les prescriptions équivalentes maintenant en vigueur aux États-Unis, d'autre part. Cette recherche a soulevé des questions de droit commercial, constitutionnel et administratif, ainsi que de droit en matière de responsabilité de produits, dont il faut tenir compte dans l'élaboration d'une politique nationale d'harmonisation technique.

Par exemple, l'Accord général sur les tarifs douaniers et le commerce (GATT), dont le Canada est signataire, et l'Accord de libre-échange (ALE) entre le Canada et les États-Unis contiennent des articles portant sur la création de normes, l'approbation de matériel, l'acceptation de données d'essais étrangers et l'accréditation de laboratoires étrangers. Le droit constitutionnel (la répartition des pouvoirs législatifs entre les paliers de gouvernement à l'intérieur de pays souverains) permet souvent au gouvernement des États et des provinces, à l'intérieur d'un pays, d'établir des prescriptions techniques impossibles à harmoniser à l'échelle internationale, le gouvernement fédéral de ces pays n'ayant pas le pouvoir de repousser ces prescriptions. En outre, cette recherche a révélé certaines des limites juridiques de la législation utilisée pour permettre la création de normes et de règles d'approbation de matériel de radiocommunications.

Au moment où nous débattons de la nécessité d'une réponse vraiment canadienne aux nombreux problèmes entourant la création de normes de technologie de l'information et des télécommunications, nous devons examiner les aspects juridiques de ces questions. Cela vaudra particulièrement si nous choisissons d'harmoniser nos prescriptions techniques avec celles d'autres pays.

An Introduction to the Legal Issues Which Surround the Harmonization of IT&T Standards

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Canadian Seminar on IT&T Standards
Ottawa, May 9-10, 1991

Introduction

Information technology and telecommunication (IT&T) industries are growing and evolving at an unprecedented rate of speed. The services and equipment which these industries develop and provide are critical to the information-based economies of modern nations. The technical and commercial success of these services and equipment is dependent upon the development of technical standards which are both appropriate and timely.

As many of the presentations made at this seminar have revealed, a number of factors now complicate the challenge of making appropriate and timely IT&T standards. We have heard about new technologies and the convergence of technologies, the need for communications systems to inter-connect and inter-operate, challenges to some of the long-standing institutional structures which have been used to create IT&T standards, the need to access equipment and service markets beyond our borders and the emergence of regional trading blocks which will require conformance testing to their IT&T standards and equipment authorization rules (certification and testing requirements) as a precondition to access to their markets.

Recently, many IT&T equipment manufacturer, service provider and user groups in Canada have called upon the federal government to respond to these challenges by harmonizing Canada's IT&T technical standards and equipment authorization rules with those of our principal trading partner, the U.S.A. Often this call for harmonization has been made without consideration of the full implications of such a move.

This presentation provides an introduction to some of the legal and regulatory implications of harmonizing technical standards and equipment approval requirements. It does so by canvassing the results of some recently conducted research which examined the implications of harmonizing Canada's mandatory radiocommunication standards and equipment authorization rules with the counterpart requirements now existing in the U.S.A.

A Harmonization Case Study

Over the past two years, James O'Shaughnessy, an Ottawa-based engineering consultant, and myself conducted a study of Canada's mandatory radio standards for the Department of Communication's Engineering Bureau. Central to the terms of the study was an examination of some of the technical, legal and policy implications of further harmonizing Canada's technical standards, specifications and equipment authorization rules, related to non-broadcasting radio regulation, with the counterpart standards, specifications and

authorization rules existing in the U.S.A. Jim and I collected data from about 50 meetings with 100 industry and government representatives. We compared the mandatory spectrum management rules in each country and we performed independent research. During this study, I concentrated my efforts upon identification of the legal and regulatory implications of harmonization, and I feel that these results may provide a useful case study for those who now advocate the harmonization of IT&T standards.

As I discuss the results of this study please keep in mind that our terms of reference called for examination of the mandatory technical regulatory requirements within Canada and the United States. Clearly, a harmonization exercise involving mandatory technical specifications and approval processes will complicated by both governmental and legal issues. And, as one might have guessed, while voluntary technical committees and private sector vested interests may find it difficult to harmonize technical matters, intensive involvement by bureaucrats and lawyers adds a whole new level of challenge.

Permit me to start by setting out some definitions for the key terms used within this discussion:

> **"radiocommunication"** - all radio frequency spectrum related services or equipment regulated under the terms of the Radiocommunication Act, excluding broadcasting services or equipment.
>
> **"mandatory standard"** - any technical parameters, rules or authorization processes with which one must comply in order to receive or maintain a radio station licence or a grant of equipment authorization. Technical parameters are usually expressed as minimum requirements. In Canada, the review of mandatory standards entailed examination of the Radiocommunication Act, the four sets of radio regulations, and the 188 (or so) technical documents (RSS's, RSP's, SRSP's, etc.) related to telecommunication regulation. For the U.S. counterpart, the Communication Act of 1934, Title 47 of the U.S. Code of Federal Regulations (CFR) and the National Telecommunications and Information Agency's (NTIA's) Manual of Regulations and Procedures for Federal Radio Frequency Management were consulted.
>
> **"equipment authorization"** - a grant under state authority of a licence, certificate or other permission for the importation, manufacturer, marketing (distribution, lease, sale, etc.) or use of radio spectrum related equipment. Authorizations could include so called "honour system" approvals where grantees must fulfil certain conditions prior to importing, manufacturing, marketing or operating their equipment, but no documentation is issued by the government.
>
> **"harmonization"** - the bringing into consonance or accord" (Webster's New Collegiate). Unfortunately, trade law principles do not define the word "harmonization" in a consistent manner. Its meaning seems to differ within different contexts and international agreements. Its definition can range from making

technical and procedural laws and rules compatible, or not inconsistent, with those of a trading partner to making them identical or uniform. Thus, the spectrum of meaning ranges from creating proximate or harmonious rules which will facilitate trade, to having technical laws, rules and processes which are so similar (or otherwise acceptable) that the trading partners are prepared to accept the test data and equipment authorizations of each trading partner in a reciprocal manner.

"Reciprocity" - a mutual exchange of privileges: specifically, a recognition by one of two countries or institutions of the validity of licenses or privileges granted by the other" (Webster's New Collegiate). Reciprocal acceptance of test data or of equipment authorizations would entail accepting (mutually) the data or the authorizations of a partner trading nation as if the data or approval had been accepted or granted domestically. (Acceptance without imposing additional testing or certification requirements.)

Because the there appears to be a range of meanings applied to the word harmonization, it is critical to clarify the meaning for each context in which it is used. During the two interview stages of the mandatory radio standard study, interviewees were asked to focus upon the desirability of making technical standards and specifications identical or uniform, and they were asked to consider the desirability of reciprocal acceptance of test data and reciprocal issuance of equipment authorizations. Once these terms of reference were clarified, almost without exception, the industry interviewees clearly endorsed the first option but were unsure about their feeling about the second. Despite this mix of views, most radio equipment manufacturers, service providers and users within Canada appeared to support a Canada/U.S.A. regional trading zone in spectrum related equipment.

The three principal motivations for this support were trade enhancement, a bigger market share for profitability (and to write off research and development costs) and an increase in the variety of equipment and operational features from which to select (procurement). The notion of a Canada/U.S.A. regional trading zone in spectrum related equipment is a very attractive one. Research performed by the study team suggests that the gross value of deliverables (including military) for such a trading zone would be 70 billion dollars annually (Canadian funds).

While the Canadian interviewees liked the idea of such a regional trading zone, they had not thought a great deal about how it might come about, what impediments now exist to its creation or about what they may be prepared to give up to get it. The two phases of the mandatory radio standards study explored some of the technical, political and legal implications of these questions. I now offer some of the legal implications of this harmonization exercise.

(a) Trade Law

A popular misconception among both the Canadian and American radio industry personnel

interviewed for this study was that the standards chapter of the Canada/U.S. Free Trade Agreement required both nations to begin to harmonize their technical and regulatory radio laws so as to create a free trade zone in spectrum related equipment. This is not the case.

Technical standards issues are addressed directly within three chapters of the Free Trade Agreement (FTA) and addressed incidentally within the "national treatment" requirement contained in Article 501 of Chapter 5 of the agreement.

Article 501 of the FTA reaffirms that the two signatories to the Free Trade Agreement shall accord "national treatment" to the goods of the other party in accord with Article III of the General Agreement on Tariffs or Trade (GATT). Thus, the two countries may not establish or maintain a domestic law, regulation or other requirement which has the effect of discriminating against the products of the other country. This does not mean that each country must treat the goods of the other contracting party in a manner identical or similar to that which they would be subject in their country of origin. The non-discriminatory treatment guaranteed in Article 501 relates to rules concerning the sale, transportation, distribution, use, taxation or country of origin requirements (of the constituent parts of a product). As no industry representative could identify any discriminatory treatment related to radio equipment regulation, this article does not offer any practical assistance to those who advocate the creation of a regional trade zone in spectrum related equipment.

The three chapters of the FTA which contain articles relating directly to technical standards issues are chapters six, seven and twenty. Of these, only the contents of Chapter Six will impact upon the technical regulation of radio equipment. Within this chapter the following provisions are the most relevant to trade in radiocommunication equipment:

> "The Parties affirm their respective rights and obligations under the GATT Agreement on Technical Barriers to Trade" (Art. 602)
>
> "Neither Party shall maintain or introduce standards-related measures or procedures for product approval that would create unnecessary obstacles to trade..." (Art. 603)
>
> "To the extent possible, and taking into account international standardization activities, each Party shall make compatible its standards-related measures and procedures for product approval with those of the other Party" (Art. 604 Para. 1) (underlining added)
>
> "Each Party shall, upon request of the other Party, take such reasonable measures a may be available to it to promote the objectives of paragraph 1 (Art. 604 Para. 1) with respect to specific standards-related measures that are developed or maintained by private standards-related organizations within its territory" (Art 604 Para.2)

> "Each Party shall provide for recognition of the accreditation systems for testing facilities, inspection agencies and certification bodies of the other Party" (Art. 605 Para. 1)
>
> "Each Party shall provide, upon request, a written explanation whenever any of its federal government bodies is unable to accept from bodies located in the territory of the other Party test results that are needed to obtain certification or product approval" (Art. 606)

Of the articles cited above, the obligation contained within Article 604, Paragraph 1 is the one which is most often cited for support for a harmonization exercise. According to this article both nations are required, to the greatest extent possible (and taking international standards activities into account), to make compatible their standards-related measures and procedures for product approval. The critical phrase "make compatible" is defined within the chapter to mean "the process by which differing standards, technical regulations or certification systems of the same scope which have been approved by different standardizing bodies are recognized as being either technically identical or technically equivalent in practice" (underlining added). It should be noted that the phrase "harmonize" was not chosen for this article, yet it does appear within an unrelated chapter of the Free Trade Agreement (dealing with agricultural products). The different choice of term is significant because, the way it is drafted, the compatibility requirement appears to be more of a reciprocal recognition (to the greatest extent possible) requirement, than an obligation to move the technical standards per se toward some acceptable common ground.

Thus, for the purposes of the technical standards covered within Chapter Six of the Free Trade Agreement (radiocommunication standards included), there exists no clear obligation for Canada and the U.S.A. to move their standards and authorization processes toward some mutually acceptable common ground. Instead, technical specifications and rules now existing within each country respectively, should be examined against their counterpart to see which might be regarded by the contracting parties as suitable for reciprocal recognition. Obviously, where significant differences exist between the contents or objectives of such standards or processes, it would be difficult to take such reciprocity very far (without reformulating the standards or process rules of one or of both countries). Thus, within the FTA, it is the spirit and not the letter of harmonization which applies to the regulation of radiocommunication equipment.

An identical 'spirit over obligation' approach was negotiated by the framers of the FTA to deal with the acceptance of test data by the respective federal authorities within each country; when such data is submitted from the other country for the purpose of securing a domestic certification or approval. At the most, there is a presumption, rather than a requirement, that test data will be accepted in a reciprocal fashion.

Article 605, Para. 1 dealing with recognition of laboratory and test house accreditation is not relevant to radiocommunication regulation because neither the U.S.A. or Canada has

a mandatory lab accreditation requirement in this area.

One trade law implication which was not considered by any of those who were consulted during the interview phase of this study was the effect of the "national treatment" articles within the FTA and the GATT treaties. If Canada and the U.S.A. created a regional trading zone in spectrum related equipment, other nations could access our combined market merely by having their equipment approved in Canada or America. The 'one stop' authorization scheme could not be denied to other nations.

(b) Administrative and Regulatory Law and Policy

There are two principle legal implications which must be addressed under this heading. The first involves drawing attention to some of the subtle difficulties of adopting laws, and underlying premises, which are very unlike your own. The second involves a discussion of the probable impact of American rulemaking laws on how a harmonization process might work in practice.

First, generally speaking, Canadian federal laws have tended to implement policies which have reflected the benign role of the federal government in society. Our government generally has operated in an active partnership arrangement with business - so that both partners might achieve their respective objectives. Private and corporate citizens have been protected from fiscal and physical risk. Compliance to Canadian federal laws has been attempted through every means but prosecution.

These profiles of law and government are very much reflected within Canadian radio spectrum law. The rules within our primary and subordinate legislation have been very discretion-based (executive discretion) and short on detail. They have contained technical and other requirements which were intended to protect, generally, the interests of Canadian radio manufacturers, service providers and users. Technical standards have been created in a partnership arrangement between the regulator and the radio industry, and the spectrum managers have been integrally involved in the standards-creation process. There has been almost no history of prosecution for non-compliant activity (other than for operating without a licence). As a final observation, Canadian communications regulators have always committed themselves to a service delivery role, and their frequency assignment and interference investigation functions clearly demonstrate this.

In sharp contrast to these observations, the American profiles of federal government and laws have reflected principles of privatization, deregulation, pluralistic rulemaking, rule-based management and vigilent enforcement. These principles are clearly reflected in American spectrum management laws and policies. For example, pluralistic rulemaking

requirements coupled with the American constitutional notion of the 'rule of law[1]', and the litigious nature of the American populous, have combined to create a unique form of radio regulation which requires many laws and many lawyers to administer. Consequently, at the Federal Communications Commission (FCC) approximately 15% of the gross budget and 300 staffing person years (PY's) can be attributed to rulemaking responsibilities. Also, it has been estimated that 25-30% of the non-clerical staff of the FCC have a law degree. The American radio industry must deal with lawyers at every turn.

Also, while Canadian regulatory provisions are discretion-based, U.S. regulations are rule-based. Their regulations are both extensive and explicit. While a count of pages approach only gives a sense of the extent of legal rules which the FCC must apply, it is startling to Canadians to note that the combined regulations for wire and wireless communications require 2500 (double column, English only) pages set out in five volumes. We have nothing to compare to this.

The second, more practical, administrative or regulatory law implication noted for discussion was the impact of the U.S. federal Administrative Procedure Act. Within the terms of this act, all mandatory federal standards, specifications, test methodologies or authorization processes must go through a formal rulemaking process. One important aspect of the legal requirements of the Act is that the final rule must be a product of the submissions made to the rulemaking body. All submissions are part of the public record and ex parte contacts with the rulemaking body, in this case the FCC, are forbidden. Ex parte contacts are discussions or meetings held, or written presentations received, without all parties having been given equal access to the rulemaking body. Historically, FCC technical staff have applied the ex parte contact rule to DOC personnel contacts, but it is debatable as to whether the Act prohibits contact with foreign government officials.

In light of the historic interpretation of this rule, it is difficult to see how the government representatives from another country, Canada in this case, could be given a status above or separate from all other participants in a particular rulemaking matter. While a rulemaking process is ongoing, FCC representatives usually will refuse to discuss the contents of a particular rule with any DOC personnel. If Canadian government representatives decide not to participate before the FCC as a regular party, their sole option is await the conclusion of rulemaking hearings, at which time they would be presented with a fait accompli to adopt in whole or in part, or to use as a model to create a compatible counterpart. Obviously, such an approach would not treat Canada as a sovereign nation deserving recognition within a process involving mutual accommodation.

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[1] The 'rule of law' is a constitutional law principle which demands, amongst other things, that the populous be governed by clear laws of direct application instead of general policies or broad discretions. While the rule is recognized in Canadian constitutional law and is cited within the preamble to the Charter of Rights and Freedoms, it has not had a comparable impact upon the form or content of legal rules.

(c) Spectrum Management Laws

To appreciate the scope of any harmonization exercise, first one must be aware of the particular fundamental differences which exist between the laws and policies in the countries involved. This section of my presentation will point out some the most important differences between Canadian and American technical and regulatory spectrum management laws.

Radio equipment authorization, by means other than by station licensing, developed in Canada and in the U.S.A. in the early 1950's. In response to a series of decisions made at a rapid succession of international and regional radio conferences to rationalize the use of the radio spectrum in the post-war era, both nations began implementing these decisions through the creation of technical radio equipment standards. These standards amounted to minimum technical performance requirements. By the mid-1950's both countries had created an equipment approval scheme and a government testing laboratory, to ensure compliance with these new standards.

In the United States, radio standards followed the pattern of other mandatory federal government standards' programs which developed in the post-war era. The radio standards scheme applied throughout the entire equipment distribution chain (manufacture/importation, distribution, sale, lease and use) and was enforced with criminal and administrative sanctions. Due the legal requirements of the Administrative Procedure Act, which had been passed in 1946, the Americans had to draft and promulgate their technical standards in the form of subordinate legislation. Their equipment approval processes also had to be encodified within subordinate legislation. This meant that both their technical standards and authorization processes had to be created and amended by means of a formal, public rulemaking procedure.

In Canada, the Department of Communications and its predecessor, the Department of Transport; developed, over a thirty-five year period, seven types of technical documents called radio regulations, schedules, procedures, specifications, plans, lists and policies. Most of these instruments were drafted by engineers and technical staff within the Department of Communications in consultation with manufacturer, service provider and user groups; and with general public consultation through notice in the Canada Gazette. With very few exceptions, they were created under the regulatory mandate of the former Radio Act, which was repealed upon proclamation of the new Radiocommunication Act on October 5, 1989. Unfortunately, the scope of application of almost all provisions of the Radio Act extended only to the licensing or use of spectrum related equipment. Consequently, most of these instruments were not drafted so as to extend their application to the importation, manufacture or marketing of such equipment.

Most of these technical instruments never had an independent legal status. The previous Radio Act did not enable their making and, while made with direct consultation with the

Canadian radio industry, they were not created through any legislative process. Their drafting was done in such a casual style that these instruments would not meet current drafting standards for subordinate legislation. This is especially so considering that they were drafted in English and translated subsequently into French.

While determination of the legal status of each policy instrument would require a considerable amount of research, generally one must conclude that many of the department's existing procedures, specifications, plans, lists and policies likely have no independent legal status. Unlike the regulations and schedules referred to above[2], these documents were not drafted as subordinate legislation, so that any legal status which they enjoy is pursuant to their subsequent incorporation into law, by means of a direct reference within a valid legislative enactment. In a number of cases such an incorporation by reference exists, but in many cases it does not.

From these initial comments, one can appreciate that while Canadian and American spectrum laws and policies attempt to achieve almost identical objectives, their nature, scope and content is often quite different. To make this point more clearly, some of the differences which will most complicate their harmonization should be canvassed.

(i) Harmonization of Technical Standards and Specifications

Any discussion of the differences which exist between the technical standards and specifications in spectrum laws in Canada and the U.S.A. must begin by acknowledging the amount of technical compatibility which already exists in this area. For example, the current standards for aeronautical, marine, cellular, and television receivers have many common or identical technical parameters and elements. Generally, where radio equipment involves a mass market, and it is very portable, these similarities are evident. In fact, when one adopts the compatibility notion of harmonization, one must conclude that for these categories of radio service the vast majority of equipment approved for the U.S. market could be readily authorized for use within Canada.

But even for categories of radio service where the technical parameters appear to be identical, Canada may have more stringent parameters and additional technical elements. While the American notion of interference management has concentrated on the control of third party harm, Canadian spectrum managers have attempted to control also the spectrum

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[2] Standards and technical requirements set out within subordinate legislation do have an independent status of law. For example, technical standards for certain interference-causing equipment are mandated within the Radio Interference Regulations.

efficiency[3] and quality of radio equipment. In other words Canadians have felt that radio equipment should not cause trouble for others and it should work well. The inclusion of equipment performance receiver standards in Canadian radio specifications illustrates the point well[4].

Some Canadian and American standands cannot be harmonized because the equipment to which they apply has been assigned to operate witin very different portions of the radio frequency spectrum in the two countries. While the chief means of authorizing access to the radio spectrum has been through licensing schemes; the nature, management and factors for consideration of licensing in the two countries often bear little resemblance. As an initial point of departure, the FCC has tended to allocate radio spectrum by public or private user-type, while this nation often has licensed by radio service-type. In other words U.S. officials have tended to license spectrum by common user characteristic (i.e. public utilities) rather than by common radio spectrum characteristic (i.e. common frequency and propagation requirements). This has resulted in much different inter-mixing of uses and users on each side of the border. Clearly, one of the intial starting points for a technical harmonization exercise would be to examine the Table of Frequency Allocations within each country.

(ii) Reciprocal Acceptance of Equipment Authorizations

One policy response to render equipment authorizations more effective and efficient would be for Canada and the U.S.A. to move toward reciprocal acceptance of the other administration's radio frequency equipment authorizations. In other words, once one administration had issued an authorization for a particular category of radio frequency equipment, the other administration would promptly issue an equivalent authorization upon being petitioned to do so by an authorized national agent of the successful foreign grantee. Under such a policy the "seconding" radio regulatory administration would impose no further testing or certification requirements.

In order to implement a program of reciprocal acceptance of foreign authorizations, a number of regulatory or practical preconditions would have to be met. At a minimum, it

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[3] Many feel that Canada has had to be more efficient with the radio spectrum available. One practical result of the fact that 90% of the Canadian population lives within 100 miles of the U.S. border, is that Canadian spectrum managers have had less radio spectrum resource to work with than their American counterparts.

[4] Over the past thirty-five years, Canadian regulators of the technical aspects of radiocommunications have been steadfast in their belief that receiver standards are an integral aspect of electromagnetic compatibility (EMC) analysis and spectrum efficiency. Testimony to this is the fact that the majority of the existing RSS's contain minimum receiver performance characteristics.

would be necessary for each country to have:

(i) - roughly equivalent equipment technical standards and technical requirements. The notification rules within the Free Trade Agreement would serve to inform the other nation of proposed changes in the standards so that equivalency might be maintained.

(ii) - roughly equivalent equipment approval test methodologies. The notification rules within the Free Trade Agreement would serve to inform the other nation of proposed changes in these methodologies so that equivalency might be maintained.

(iii) - full confidence in the integrity of the equipment authorization processes of the other administration.

(iv) - a notification process for prompt notice to the other administration of withdrawal or suspension of an equipment authorization. Such notice should include reasons for the action taken. (Either administration could cancel an authorization for cause.)

The "seconding" radio administration might participate in a reciprocal authorization scheme only if its officials had a reasonable level of confidence in the reliability of:

(i) - the test data submitted to the granting administration.

(ii) - test data which was not solicited or reviewed by the granting administration[5].

(iii) - the conformity of radio equipment which is manufactured or marketed within, or imported into the granting administration pursuant to the initial authorization.

It should be noted that Canada has gone beyond this policy with respect to two categories of unlicensed radio frequency related equipment. For some time, Canada has recognized valid FCC authorizations issued for models of Citizen Band (CB) equipment. Under the applicable RSS for the General Radio Service (GRS), U.S. approved units are regarded as lawfully being licence-exempt within Canada, despite the fact that no DOC authorization has been issued. A similar approach is now being taken with certain digital apparatus which has been authorized within the U.S.A. under Part 15 rules, and is subsequently imported into Canada. These policies are regarded as going further than the policy under

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[5] For example, the FCC's notification and verification schemes normally do not require the submission of test data or equipment samples.

investigation because the U.S. grantee is not asked to apply for a Canadian authorization and none is issued in Canada.

As an initial problem to reciprocal issuance of radio authorizations it must be appreciated that, while many of the "technical numbers" within many Canadian and American technical standards and technical requirements are identical or roughly equivalent, there are some fundamental differences also. As noted previously within this presentation, the allocation of radio spectrum differs for a number of categories of radio equipment. Additionally, there is the often-raised impediment to harmonizing activities of the existence of radio receiver performance standards within Canadian technical requirements.

As matters stand, legal and regulatory impediments to reciprocal equipment authorizations abound. For example, the U.S. Communications Act of 1934 expressly prohibits the importation of radio frequency equipment which has not been authorized pursuant to the FCC's procedural and technical authorization rules. Obtaining an amendment to primary legislation will be much more difficult than amending subordinate legislation or regulatory policy. It may also pose a problem to reciprocity that test data must be submitted in English in the U.S.A. Canada has had two official languages for some time. The Canadian requirement for the existence of a repair depot within its border, for imported equipment, may be seen as legal impediment because the U.S. has no equivalent rule. Also, while not truly a regulatory problem, it should be appreciated that the FCC frequently mandates its "verification" procedure (for which no authorization is issued by the Commission), thus there would be no state action for Canadian officials to reciprocate upon. Where the verification procedure is mandated in the U.S. enforcement action would be difficult in Canada (for non-compliance) as no promises or warranties would be made to Canadian officials.

One practical complication to reciprocity should be mentioned. As set out above, the seconding administration must put a considerable amount of faith in the functioning of the equipment approval system in the administration which issues the principal authorization. According to a number of the Canadians consulted during both phases of the radio standards study, this nation's equipment approval system should be reformed. The study team encountered three key complaints with the system as it now exists. First, the attestation role of Canadian-licensed engineers must be clarified. The content and effect of the statements which engineers are required to sign are not regarded as a sufficient check on the reliability of the data.

Second, it is well known that the Department of Communications generally does not prosecute companies for non-compliance with its radio equipment approval rules. Third, industry representatives appreciate that, for enforcement purposes, the regulatory reach of the Canadian authorization system extends only to the licensing or operation of equipment and not to its marketing or importation. Compliance activity, which must wait for non-conforming equipment to be installed or put into service is very inefficient. While these complaints were not raised by American government or private sector representatives consulted during either phase of this study, such matters are bound to cause problems if

negotiations toward harmonization become serious. One must remember how competitive the private sector is in the U.S.A. If a regional trade zone were created, the radio industry would regard Canada and the U.S.A. as one competitive market where the risk and reach of prosecutorial action should be applied equally to all.

(iii) Reciprocal Acceptance of Test Data

As an alternative to reciprocal issuance of equipment authorizations, Canada and the U.S.A. may decide to investigate the policy option of further harmonizing their processing of test data. There are two basic options here. The first is to accept in a reciprocal manner foreign test data which is submitted in conformity with domestic technical standards and test methodologies. The second, and more complex, option is to first harmonize (or make equivalent) a series of technical standards and test methodologies, and then to accept (reciprocally) data submitted from test houses located in either administration in conformance with those harmonized standards and methodologies.

As the Canadian and American radio authorization rules and processes now stand there are only a few impediments to the reciprocal acceptance of test data. On the U.S. side, the only problem is that all data must be submitted in English. Despite the fact that the submission of Canadian data to the FCC in French will not arise often as a practical matter, French is an official language in Canada yet the FCC would not process French documentation. On the Canadian side, the chief impediment to reciprocal acceptance of test data would be the requirement within Certification Procedure RSP - 100 that all data be submitted over the signature and seal of a Canadian-licensed professional engineer. While the study team has learned that a few American-based engineers do maintain a registration with a Canadian provincial governing body of engineers, such memberships are not common.

In the long term, it is likely that the reciprocal acceptance of test data for radiocommunication equipment in Canada and the U.S.A. will be settled by conformance testing rules, negotiated at the multilateral international level. Significantly, conformance testing through accredited labs would appear to be the future direction of wireline telecommunication equipment. It remains to be seen whether the U.S.A. can get access to the radiocommunication market of the European Economic Community without participating in an international lab accreditation scheme involving notified bodies. Without doubt, elements of the private sector within the U.S.A. will resist strongly the imposition of such an accreditation scheme.

Conclusion

As we deliberate the need for particularly Canadian responses to our many concerns surrounding IT&T standard-making, it is important that our deliberations include consideration of the legal implications of our options. This is especially so if we opt to harmonize our technical requirements with those of other nations. For those who advocate that Canada now harmonize the mandatory aspects of IT&T standards and product and

equipment authorization schemes with the counterpart schemes in the U.S.A. (or U.S.A. and Mexico), this presentation was written a primer for consideration of some of the legal implications of such a move.

Research into mandatory radiocommunication standards suggests that legal complications will rise dramatically, the closer major trading partners try to move toward reciprocal acceptance of test data or equipment authorizations. For IT&T equipment and products, while reciprocity in these areas will result in a true regional trade zone, the certain legal complications of that effort should be weighed carefully. An alternative to the trading zone option would be to concentrate efforts upon making the technical (as opposed to the procedural) parameters and elements within the IT&T standards between targeted trading partners as comparable or equivalent as possible. This would facilitate the trade of a large percentage of the product or equipment at issue.

PAUL RACINE

DOC PERSPECTIVES ON BUILDING BLOCK ISSUES

PERSPECTIVES DU MDC SUR LES QUESTIONS RELATIVES AUX ÉLÉMENTS DE LA STRUCTURE CANADIENNE

Good morning Ladies and Gentlemen

I am very pleased to be here today to share and exchange views on the role that Canada should play in the international telecommunications standards environment and the means that we should take here in Canada to achieve our goals.

Before I begin, I would like to congratulate my colleague Mr. Michael Binder, and his staff, in hosting the first Canadian Seminar on Information Technology and Telecommunications Standards.

As you are all aware, the telecommunications industry continues to evolve at a very rapid pace. The growing convergence of telecommunications and information technologies have brought about significant developments in information networks.

These rapid changes are due to new technology and new service opportunities, but also to the evolution of new domestic infrastructures. Innovative uses and alternative means of communications have introduced new elements to the telecommunications environment making this industry more dynamic and responsive than ever before. Meanwhile, telecommunications have become a strategic element of competitiveness for Canada, and an important component to international trade, commerce and a solid foundation for our prosperity, if we seize the opportunity.

Significant efforts are being made on the international stage to promote connectivity and use of networks, services and new information technologies, in order to provide information system users with access to as many facilities and applications as possible. To this end, international telecommunications standards which are relevant, timely and flexible must first be established.

These standards must be flexible enough to adapt to important technological transformations, while meeting the current and future needs of industry,

governments and users. Moreover, it is these needs which have put strong pressure on the institutional structures in place.

This technological evolution combined with the formation of regional trading blocs such as the European Economic Community, for example, have stimulated the creation of dynamic industry/government and user driven regional standards organizations such as the European Telecommunications Standards Institute (ETSI), as well as national standards organizations such as the United States T1 Committee, and the Telecommunications Technology Council of Japan (TTC).

There is presently increasing recognition by world administrations for the need to consider changes in structure and working methods of the International Telecommunication Union (ITU) in order to respond more effectively and rapidly to the continuing advances in telecommunications technology and services. Canada, while recognizing the growing influence of regional standards organizations, is committed to the continued preeminence of the ITU and hence strongly supports its recent initiative for introducing appropriate revisions to its structure and working methods.

To ensure that Canada can more effectively compete in the international marketplace, it must be able to strategically position itself to better cope with these very important changes.

Taking into consideration the increasing economic importance of telecommunications standards in trade, and the close linkages between standards and the marketplace, Canada must be able to benefit from its representation and participation in telecommunications standards development at the domestic, regional and international levels.

Canada is a recognized, respected and influential participant in international telecommunications standardization within the ITU. As most of you know, Canada makes an important contribution to the work of the ITU's high-level committee on restructuring through Mr. Gaby Warren of the Department of Communications. Mr. Warren is the chairman of that committee. Canada is also active in the International Telegraph and Telephone Consultative Committee (CCITT) ad hoc group mandated to examine the CCITT's working methods and structure. This group is also chaired by a Canadian, Mr. Keith Hoffman, who is currently associated with the Department of Communications. In addition, I especially want to mention the fact that Canada was instrumental in getting the accelerated standardization procedure established in the CCITT at that organization's last plenary assembly in December 1988, in Melbourne, Australia. This initiative, without a doubt, helped increase the efficiency of the standardization process in the CCITT.

The issue for Canada is how to establish the strategic alliances needed to influence a process increasingly dominated by regional organizations and supported by extensive financial and human resources which enable them to produce standards more quickly than traditional international standards bodies.

As you know, Canada has undertaken the development and implementation of a new Canadian telecommunications policy and legislation which will enable us to establish a more competitive telecommunications infrastructure to serve the needs of Canadian industry and users well into the 21st century.

An important part of this policy would be a Canadian telecommunications standards strategy. This strategy would ensure a coherent strong Canadian participation in domestic, regional and international standardization activities which would contribute to the effective evolution of telecommunications in Canada and the

competitiveness of Canadian products and services in both national and international markets.

One of the key elements of this strategy must be an appropriate structure for Canada's representation and participation at the regional and international telecommunications standardization levels.

In February 1990, Canada, represented by Mr. Gaby Warren, several other members of the Canadian telecommunications industry and myself, attended as observers the first Interregional Telecommunications Standards Conference in Fredericksburg, U.S.A. The full participants at this conference were the representatives from the regional standards organization ETSI, national standards organisations such as T1 Committee and TTC of Japan, and the international standards organisations, the CCITT and the International Radio Consultative Committee (CCIR). The stated purpose of the meeting was to ensure the preeminence of the CCITT in worldwide telecommunications standardization. An agreement was reached on the exchange of information between these bodies including implementation of a plan for the electronic means of document interchange. At the insistence of Canada, the meeting also agreed that any future interregional conferences be open to all regional and national standards bodies with an interest in mutual cooperation to increase the efficiency of the work of the International Consultative Committees (CCIs).

After considering the results of this conference, it became clear that Canada was not well positioned to be appropriately represented in future interregional conference activities, since there did not exist a telecommunications forum which could represent all Canadian interests. It also became clear to us that there was a possibility to form an alliance.

Following studies and consultations with Canadian organizations actively involved in telecommunications standards development activities, the Department of Communications and the Standards Council of Canada agreed that there was a need for the establishment of a Canadian focus group for the development and implementation of a telecommunications standards strategy for Canada and appropriate representation at the interregional and international telecommunications standardization forums.

An ad hoc group was formed in December 1990 to define the objectives, terms of reference and appropriate membership of the proposed focus group. I am pleased to inform you that this ad hoc group has completed its tasks and as a result the Department of Communications and the Standards Council of Canada will soon establish the Telecommunications Standards Advisory Council of Canada (TSACC). The inaugural meeting of TSACC will be held on May 30, 1991, in Ottawa.

TSACC is intended to address strategic Canadian telecommunications issues and develop recommendations for their resolution. The strategies needed for Canada deal not only with standards development but may also include related issues such as accreditation, conformity assessment and mutual recognition.

I would like to stress that this initiative is not intended to usurp any authority or mandate of the existing telecommunications standards infrastructure. The intent of TSACC is rather to complement and add value to this in providing a forum for developing appropriate Canadian response to telecommunications standards issues which reflect the interests of Canadian industry, governments and users.

In addition, TSACC will provide a focus for the dissemination of all relevant telecommunications standards information as well as provide a coherent

representation on strategic issues arising in interregional and international standards forums.

The objective of TSACC is to provide a national focus to enhance coordination within the existing Canadian telecommunications standards infrastructure and to develop and recommend strategies for Canadian involvement in regional, interregional and international telecommunications standardization activities.

While TSACC will focus primarily on voluntary telecommunications issues, it will also address any other issues deemed pertinent vis-à-vis regional, interregional or international telecommunications standards.

More specifically, the proposed terms of reference of TSACC are to develop and recommend national standards strategies that would firstly position Canada to deal with changing telecommunications standards issues in the regional, interregional and international standardization environment. Secondly, it will assist in the formulation and implementation of strategic direction within the existing Canadian telecommunications infrastructure. And lastly, it will promote cooperation and liaison between Canadian telecommunications standards organizations.

Membership is open to all organizations involved in the development of telecommunications standards activities in Canada. Up to now, many organizations such as telecommunications standards organizations, government, carriers, manufacturers, users, radiocommunication and telecommunication business associations have shown a great interest in participating in TSACC.

As you know, the purpose of this seminar is to give us a chance to discuss the changes now happening with respect to standards internationally, to explain these

changes and to examine their impact on foreign trade in the area of information and telecommunications technologies.

The timing couldn't be any better! Organization of the seminar and the formation of TSACC, as a primary vehicle, are positioned to generate synergy and launch a well focused action plan that will bring forward strategic issues in standards.

This seminar is very well placed to provide the TASCC with a comprehensive list of strategic issues which could provide an important first step in determining a priority list of standards issues leading to appropriate strategies for their resolution.

One issue which TSACC participants will be asked to address on a priority basis will be Canada's input as a full participant at the next Interregional Telecommunication Standards Conference which is to be held in the fall of 1991, in Nice, France.

It is my view that Canada, through TSACC, should participate actively in this conference by providing input which would clearly put forward Canada's objectives regarding these interregional telecommunications standardization activities. Since Canada ranks as the fifth most important country in the world with regards to telecommunications, we should not be satisfied with the status of being only observers at future conferences.

It is clear that the major countries in the world are now involved in these interregional standards initiatives. Canada, being one of the leading countries in telecommunications, should be represented as a full fledged member and should be recognized as such through TSACC.

The Department of Communications in organizing this standards seminar and initiating the establishment of TSACC is attempting to provide the necessary stimulus for developing a telecommunications standards strategy for Canada.

However we turn to you, the telecommunications and information technology industry, the carriers and user community to actively participate in this process in order to ensure its success. Our future depends on how Canada will continue to influence effectively the standardization process and exploit ways to enhance and position ourselves to fully utilize our capabilities to capture our share of the international marketplace.

This can only be accomplished by a higher degree of involvement and cooperation between government, industry and users at the strategic planning level. I realize that this will be most difficult to accomplish in this time of restraint but I am confident that we will succeed.

In closing, I would like to reiterate that it is vital that we ensure competitiveness of Canadian telecommunications productions and services in world markets. To achieve this, Canada must be a full fledge participant in all fora where priorities are being set for regional, interregional and international standards.

This effort must begin here at home by establishing telecommunications standards strategies that meet both national and international requirements of Canadian industry, government and users.

This involves not only full Canadian participation in the ITU and interregional standards conferences but also having close liaison with the regional standards bodies

such as ETSI and Inter-American Telecommunication Conference (CITEL), as well as other national standards organizations such as T1 Committee and TTC of Japan.

I am convinced that TSACC will be able to provide the proper vehicle to accomplish these objectives.

I would like to thank you for your attention and I look forward to meeting some of you again at the first meeting of TSACC at the end of this month.

Thank you.

Bonjour Mesdames et Messieurs

Je suis très heureux d'être ici aujourd'hui pour partager et échanger des points de vue sur le rôle que le Canada devrait jouer, sur le plan international, en matière de normalisation et sur les moyens que nous devrions prendre ici, au Canada, pour atteindre nos objectifs.

Avant d'aller plus loin, j'aimerais féliciter mon collègue, Monsieur Michael Binder, ainsi que ses collaborateurs, pour s'être fait les hôtes du premier colloque canadien sur les normes des technologies de l'information et des télécommunications.

Comme vous le savez tous, l'industrie des télécommunications continue d'évoluer à un rythme très rapide. La convergence grandissante des technologies de l'information et des télécommunications ont amené des changements importants dans les réseaux d'information.

Ces changements rapides sont attribuables à de nouvelles technologies et aux occasions qu'elles offrent de mettre en place de nouveaux services, mais aussi à l'évolution de nouvelles infrastructures sur le plan national. Des utilisations novatrices et des moyens de communication complémentaires ont permis l'introduction de nouveaux éléments dans le secteur des télécommunications, rendant cette industrie plus que jamais dynamique et sensible au changement. Parallèlement, les télécommunications sont devenues un élément stratégique de la compétitivité canadienne sur les marchés internationaux, une composante importante de nos échanges commerciaux et, si nous en saisissons l'occasion, une base solide pour notre prospérité.

D'importants efforts sont consacrés, sur la scène internationale, à la promotion de la connectivité et de l'exploitation des réseaux, des services et de nouvelles technologies de l'information de façon à donner accès au plus grand nombre possible d'installations et d'applications aux utilisateurs de systèmes d'information. A cette

fin, il est essentiel d'établir, au préalable, des normes internationales de télécommunications qui soient pertinentes, opportunes et souples.

Ces normes doivent être suffisamment souples pour s'adapter à d'importantes transformations technologiques tout en répondant aux besoins actuels et futurs de l'industrie, des gouvernements et des utilisateurs. D'ailleurs, ce sont ces besoins qui ont exercé une forte pression sur les structures institutionnelles en place.

Cette évolution technologique, ainsi que la formation de blocs commerciaux régionaux tels que la Communauté économique européenne, pour ne citer que cet exemple, ont favorisé la création d'organismes régionaux de normalisation mis sur pied de concert par l'industrie, les gouvernements et les utilisateurs. Je parle entre autres de l'Institut européen des normes de télécommunication (ETSI), du Comité T1 aux États-Unis, et du Conseil japonais de technologie des télécommunications (TTC).

À l'heure actuelle, les gouvernements de par le monde reconnaissent de plus en plus la nécessité d'apporter des changements aux structures et aux méthodes de travail de l'Union Internationale des Communications (UIT) afin de répondre plus rapidement et de façon plus efficace aux progrès continus des technologies et des télécommunications. Le Canada, bien que reconnaissant l'influence grandissante des organismes régionaux de normalisation, est engagé au maintien de la prééminence de l'UIT et c'est pourquoi il appuie énergiquement son récent projet de révision appropriée de ses structures et méthodes de travail.

Dans le but de veiller à ce que le Canada puisse occuper une position concurrentielle sur les marchés internationaux, il doit pouvoir se positionner stratégiquement afin de mieux faire face à ces changements très importants.

Si l'on tient compte de l'importance économique croissante des normes de télécommunications dans les échanges commerciaux, et des liens étroits qui unissent normes et marchés, le Canada doit pouvoir tirer avantage de sa représentation et de sa participation au sein des organismes de normalisation des télécommunications sur les plans national, régional et international.

Le Canada est un pays membre reconnu, respecté et influent dans le milieu de la normalisation internationale des télécommunications au sein de l'UIT. Comme la plupart d'entre vous le savent, le Canada participe de façon importante au travail du Comité à haut niveau de l'UIT sur la restructuration et ceci grâce à M. Gaby Warren du ministère des Communications qui en est le président. Le Canada est de plus actif auprès du Groupe Ad Hoc du Comité consultatif international télégraphique et téléphonique (CCITT) chargé d'examiner les méthodes de travail et la structure du CCITT. Ce groupe est aussi présidé par un Canadien présentement associé au ministère des Communications, M. Keith Hoffman. De plus, je ne voudrais surtout laisser sous silence l'excellent travail du Canada en tant que maître d'oeuvre de l'établissement de la procédure de normalisation accélérée au sein du CCITT, lors de sa dernière Assemblée plénière, en décembre 1988, à Melbourne, en Australie. Cette initiative a sans aucun doute contribué à accroître l'efficacité du processus de normalisation au sein du CCITT.

La question, telle qu'elle se pose pour le Canada, consiste à trouver des moyens par lesquels établir les alliances stratégiques nécessaires pour influencer un processus de plus en plus dominé par des organismes régionaux dotés de ressources financières et humaines considérables qui leur permettent d'établir des normes plus rapidement que les organismes internationaux traditionnels chargés de la normalisation.

Comme vous le savez, le Canada a entrepris l'élaboration et la mise en oeuvre d'une nouvelle politique et d'une nouvelle législation canadiennes en matière de télécommunications qui nous permettront de mettre sur pied une infrastructure de télécommunications plus concurrentielle, destinée à satisfaire les besoins de l'industrie canadienne et des utilisateurs pour une bonne partie du 21^{e} siècle.

Une stratégie canadienne à l'égard des normes constituerait un aspect important de cette politique. Elle assurerait une participation active et cohérente du Canada aux activités de normalisation sur les plans national, régional et international, ce qui en retour contribuerait à l'évolution réelle des télécommunications au Canada en plus d'assurer la compétitivité des produits et services canadiens sur les marchés nationaux et internationaux.

Un des éléments clés de cette stratégie doit être une structure appropriée pour la représentation et la participation du Canada auprès des instances régionales et internationales de normalisation.

En février 1990, le Canada représenté par M. Gaby Warren, plusieurs représentants de l'industrie canadienne des télécommunications et moi-même avons participé à titre d'observateurs à la première Conférence interrégionale des normes de télécommunications qui se tenait à Fredericksburg, aux États-Unis. Les participants à part entière convoqués à cette conférence étaient des représentants de l'organisme régional de normalisation ETSI, d'organismes nationaux tels le Comité T1 et le Conseil japonais de technologie des télécommunications (TTC) ainsi que des organismes internationaux de normalisation, le CCITT et le Comité consultatif international sur la radio (CCIR). L'objectif de cette rencontre visait à assurer la prééminence du CCITT dans la normalisation des télécommunications internationales. Un accord portant sur l'échange d'information est intervenu entre ces

organismes, comprenant la mise en oeuvre d'un plan destiné aux modes d'échange électronique des documents. À la demande du Canada, les participants ont en outre convenu que, désormais, toute conférence interrégionale serait ouverte à tous les organismes régionaux et nationaux de normalisation intéressés à collaborer en vue d'accroître l'efficacité des travaux des comités consultatifs internationaux (CCIs).

L'étude des résultats de cette conférence a permis de constater clairement que leCanada n'était pas représenté de façon appropriée lors des prochaines conférences interrégionales car il n'existe aucun forum de télécommunications pouvant représenter adéquatement tous les intérêts canadiens. Il était de plus évident qu'il existait la possibilité de former une alliance.

À la suite d'études et de consultations auprès des organismes canadiens participant activement aux activités de normalisation, le ministère des Communications et le Conseil canadien des normes ont convenu de la nécessité de créer un groupe de consultation dont le mandat consisterait à élaborer et à mettre en oeuvre une stratégie canadienne en matière de normes de télécommunications ainsi qu'à assurer une représentation appropriée auprès des forums interrégionaux et internationaux de normalisation.

En décembre 1990, un comité ad hoc a été formé dans le but de déterminer les objectifs, le mandat et la composition du groupe de consultation proposé. Je suis heureux de vous informer que le comité ad hoc a terminé ses travaux et qu'en conséquence, le ministère des Communications et le Conseil canadien des normes établiront d'ici peu le Conseil consultatif canadien sur les normes de télécommunications (TSACC, en anglais - Telecommunications Standards Advisory Council of Canada). La première réunion du Conseil se tiendra le 30 mai 1991 à Ottawa.

Le TSACC a pour objectif de discuter des questions canadiennes stratégiques en matière de télécommunications et de formuler des recommandations à leur égard. Les stratégies dont le Canada a besoin ne portent pas uniquement sur l'élaboration de normes mais ont aussi trait à des questions connexes telles que l'accréditation, l'évaluation de la conformité et la reconnaissance mutuelle.

Je tiens à préciser que cet organisme n'a aucunement l'intention de s'approprier quelque autorité ou mandat que ce soit qui relève des infrastructures existantes de normalisation. Le but du TSACC est plutôt de venir compléter et ajouter à leur action en fournissant un forum qui permette au Canada de réagir de façon appropriée aux questions relatives à la normalisation des télécommunications et qui reflète les intérêts de l'industrie, des gouvernements et des utilisateurs canadiens.

En outre, le TSACC agira à titre de centre de liaison pour la diffusion de toute l'information portant sur les normes de télécommunications et assurera une représentation cohérente à l'égard de questions stratégiques débattues dans les forums régionaux et internationaux de normalisation.

L'objectif du TSACC consiste à être le centre nerveux de la coordination entre les composantes de l'infrastructure actuelle des normes de télécommunications au Canada ainsi que d'élaborer et de recommander les stratégies qui sous-tendent la participation canadienne aux activités de normalisation sur les plans régional, interrégional et international.

Bien que le TSACC concentrera son action sur des questions de normalisation volontaire en matière de télécommunications, il traitera aussi de toute autre question

jugée pertinente aux normes interrégionales et internationales de télécommunications.

En termes plus précis, le mandat qui est proposé pour le TSACC est d'élaborer et de recommander des stratégies nationales en matière de normalisation qui permettraient au Canada de suivre l'évolution des questions de normalisation sur la scène régionale, interrégionale et internationale. Elle contribuera aussi à déterminer et à appliquer une orientation stratégique au sein de l'infrastructure actuelle des télécommunications canadiennes. Enfin, elle encouragera la coopération et l'échange entre les organismes canadiens de normalisation.

Tous les organismes participant aux activités d'élaboration de normes de télécommunications au Canada sont invités à devenir membres. À ce jour, plusieurs organismes tels ceux chargés des activités de normalisation, le gouvernement, des exploitants, des fabricants, des utilisateurs ainsi que des associations professionnelles du milieu des radiocommunications et des télécommunications ont exprimé un vif intérêt à participer aux travaux du TSACC.

Comme vous le savez, le but de ce colloque est de nous donner la chance de pouvoir discuter des changements actuels se produisant dans le domaine international des normes, de pouvoir expliquer ces changements et examiner leurs incidences sur le commerce extérieur relativement aux technologies de l'information et des télécommunications.

Le moment est des plus propice! L'organisation de ce colloque et la création du TSACC comme premier intervenant sont destinés à créer un mouvement de synergie et à mettre de l'avant un plan d'action concerté qui permettront de faire face aux questions stratégiques en matière de normalisation.

Ce colloque a l'avantage de permettre au TSACC de dresser une liste complète des questions stratégiques, ce qui constitue le premier pas vers l'établissement d'un inventaire de thèmes prioritaires servant à déterminer les stratégies à adopter.

Une des questions qui retiendra prioritairement l'attention des membres sera la participation du Canada, à titre de membre à part entière, à la prochaine Conférence interrégionale de normalisation des télécommunications qui doit se tenir à l'automne 1991 à Nice en France.

Je suis d'avis que le Canada, par l'entremise du TSACC, devrait participer activement à cette conférence et faire part sans équivoque de ses objectifs à l'égard des activités interrégionales de normalisation des télécommunications. Puisqu'à l'échelle mondiale, le Canada se situe au cinquième rang en ce qui a trait aux communications, nous ne devrions pas nous satisfaire d'un statut de simple observateur lors des conférences à venir.

Il est clair que les grandes puissances mondiales prennent maintenant part à ces activités interrégionales de normalisation. Le Canada, parce qu'il est un des leaders mondiaux dans le domaine des télécommunications, devrait être représenté comme un membre à part entière et reconnu à ce titre par l'entremise du TSACC.

Le ministère des Communications tente, en organisant ce colloque sur la normalisation et en mettant sur pied le TSACC, de fournir le déclencheur nécessaire à l'élaboration d'une stratégie canadienne des normes de télécommunications.

Nous nous tournons cependant vers vous, membres de l'industrie des télécommunications et des technologies de l'information, exploitants et groupes d'utilisateurs pour participer activement à ce processus et ainsi assurer sa réussite.

Notre avenir dépend de la façon dont le Canada continuera d'exercer une influence concrète sur le processus de normalisation et de saisir toutes les occasions lui permettant d'exploiter son potentiel et de prendre la place qui lui revient sur les marchés internationaux.

Ceci ne peut s'accomplir que grâce à un degré élevé de participation et de collaboration entre le gouvernement, l'industrie et les utilisateurs sur le plan de la planification stratégique. Je sais qu'en ces temps difficiles, ce défi est de taille, mais je suis confiant que nous pourrons le relever.

En terminant, je voudrais réitérer l'importance d'assurer que les produits et services canadiens de télécommunications soient concurrentiels sur les marchés internationaux. Pour ce faire, le Canada doit jouir d'un statut de participant à part entière à tous les forums où sont déterminées les priorités en matière de normalisation, qu'ils soient régionaux, interrégionaux ou internationaux.

Ce travail doit en premier lieu s'amorcer ici par l'établissement de stratégies relatives aux normes des télécommunications qui cadrent avec les exigences nationales et internationales de l'industrie, du gouvernement et des utilisateurs canadiens.

Ceci suppose non seulement une participation pleine et entière du Canada à l'UIT et aux conférences interrégionales de normalisation des télécommunications, mais aussi d'entretenir des liens étroits avec les organismes régionaux de normalisation comme l'ETSI et la Conférence interaméricaine sur les télécommunications (CITEL) ainsi qu'avec les organismes nationaux tels le Comité T1 aux États-Unis et le Conseil japonais de technologie des télécommunications.

Je suis persuadé que le TSACC sera l'instrument qui nous permettra d'atteindre ces objectifs.

J'aimerais vous remercier de votre attention et j'espère avoir l'occasion de rencontrer certains d'entre vous à la première réunion du TSACC à la fin du mois.

Merci.

MICHAEL BINDER

CLOSING SPEECH

DISCOURS DE CLÔTURE

CANADIAN SEMINAR ON INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS STANDARDS

CLOSING SPEECH BY MICHAEL BINDER
ASSISTANT DEPUTY MINISTER, RESEARCH AND SPECTRUM
COMMUNICATIONS CANADA

OPENING REMARKS

Good morning, ladies and gentlemen.

I am very happy to be here today to close this seminar. I'm not sure if you are saving the best for the last -- given that the Minister spoke first.

Since this is Friday afternoon, and some of you have a plane to catch, I'll try to keep this short.

INTRODUCTION

One of the first things I did when I took on my present job, about a year ago, was to try and figure out what we were doing in standards.

DOC expends significant resources each year in support of Canada's activities in international standards bodies.

Lots of people are travelling to exotic places around the world discussing standards in organizations with funny names -- CCITT, CCIR, CITEL, EWOS, ETSI, etc.

In addition, a good number of our scientific researchers, engineers and technicians are in the process of developing either technologies which will lead to establishment of a standard, or technologies which depend directly on implementation

of certain standards. On the other hand, our efforts last year to electronically connect all deputy ministers across town were continually stymied by incompatible office systems. And when I took my cellular phone to Tokyo last fall, it didn't work.

Since that time, I have heard a lot about Open Systems Interconnection, the 7-layer model and ISDN. But as a user of technology, I am still frustrated by the length of time it is taking us to realize the dream of seamless interconnectivity through standards.

IMPORTANCE TO USERS AND INDUSTRY

It is important to remain very conscious of the user's perspective, because we are all users. As a user, I really don't want to know about standards. I don't want to learn about X-400 gateways in order to make my E-mails compatible. I also don't want to pay for the absence of standards. We cannot afford the price of incompatibility.

Our industry cannot afford it either. The world market for telecommunications equipment alone is estimated at $100 to 150 billion.

If our industry wants to compete effectively, it must be able to access enormous markets. To do this, we need international standards.

REVIEW OF THE SEMINAR

Over the last two days, you have heard how our competitors have reacted.

They have recognized the critical importance of standards to trade and industry viability.

Standards development work is being fast-tracked by aggressive new regional and national bodies which are beginning to dominate the international standards setting process. European governments are subsidizing the standards work of the private sector. The field is being taken over by highly qualified and well briefed technical strategists -- who understand both the technology and the hidden agenda.

Many of you are concerned about Canada's ability to influence the international standardization process. We share these concerns.

STRATEGIC APPROACH

You have also explored some of the solutions during this seminar. One of the key elements of the response is the need to change the way we think about standards. We must recognize their strategic importance to Canadian competitiveness and prosperity, and to plan our intervention accordingly.

To illustrate what I mean by a strategic approach to standards, let me tell you the story about the accountant and the standards engineer.

Both had been found guilty of a capital crime and were strapped into side-by-side electric chairs. Now the accountant was extremely nervous, as only accountants can be, and he was puzzled by the smug, self-confident smile on the standards engineer's face.

The prison warden noticed this too and asked the standards man what was so funny. "Well", he said triumphantly, "you idiots are using a semi-linear, 3-phase, fold-back whatchamecallit to connect the chairs to the power source! It's non-standard and won't work!

What you need is a straight ISO 7-pin connector rated for 600 amps."

"No-o-o-o problem" said the warden, and changed the plug.

The point is that we must not restrict our focus just to the best technical solution. Economic, social and other implications for users and industry are also important considerations.

We must also consider how standards fit into other strategies -- one must strike a balance between providing enough flexibility to encourage innovation and risk-taking, and providing new services to our clients and customers at competitive prices.

We need to become better at predicting the future -- where technology is headed, where standards are needed -- if we are to rationally determine where we should place our emphasis for maximum gain.

I'm reminded of the statement published in business week in 1979 which read QUOTE : "with over 50 foreign cars already on sale here, the Japanese auto industry isn't likely to carve out a big slice of the U.S. Market!" UNQUOTE

If our strategies are to be forward looking and anticipatory, we must continue high levels of investment in research and development. Many of the innovative ideas coming out of industry and government labs are the raw material for standards.

DOC has always pushed, and will continue to push, for higher investment and smarter investment in R&D -- through focused R&D agenda and collaborative consortia.

COLLABORATIVE APPROACH

Another key theme from this seminar is that no one can resolve these standards issues alone. Collaboration will be essential if we are to make real progress.

The 1990's will be characterized by government working in close partnership with industry to achieve common goals and to share the risk of research and innovation. This is not something that we do well in Canada, but we will have to learn and learn fast.

VISION 2000 -- A PRACTICAL EXAMPLE

Let me give you a concrete example of tomorrow's technology which illustrates the need for collaboration in order to address standards issues -- Vision 2000.

Vision 2000 is a joint government-industry project. Its purpose is to accelerate development and implementation of personal communications and give Canadian industry an opportunity to dominate certain key markets. The vision is one of the future, in which we can communicate with anyone, from anywhere, at any time.

Vision 2000 communications technology will bring unprecedented access, mobility and user-friendly convenience to Canadians engaging in information interchange.

This vision of personal communications networking combines all of the traditionally distinct domains of image, voice and data, as well as radio, satellite, fibre and land line networks and systems.

It involves such elements as personal numbering schemes, new communications protocols, communications security, new billing and accounting mechanisms, and so on.

This is a mega-standards project. Standards are essential to ensure that each component of the system fits together and can interoperate.

The standards must be international if the technology is to work in different countries. International standards are also the only way to ensure the large market volumes necessary for mass production techniques and very large scale integrated circuit technology. Canadian marketing success will depend upon competitively priced systems and terminals.

Test laboratory accreditation schemes, product certification procedures and their world-wide harmonization are equally vital to success.

Clearly, such a project is an enormous undertaking, and I encourage all of you to join us and Vision 2000 Inc. in coming to grips with the opportunities that it offers.

DOC'S COMMITMENT TO STANDARDS

Let me speak briefly about some of the recent initiatives within DOC which will help support you in standards work. Last year, I established the Standards Program Office. Headed by Bill McCrum, this office has the job of coordinating technical standards work within DOC.

You are witnessing one of the first outputs from this new group -- this seminar.

Over the coming months you will see more evidence of their efforts, as they will provide the focal point and driving force for the follow-up action plan and will disseminate the results of this seminar across Canada. Above all, they will be responsible for providing that strategic dimension I mentioned earlier.

You have also heard about the efforts being made to work out testing, certification, accreditation and mutual recognition arrangements with other countries.

Paul Racine spoke to you about DOC's intention to develop a strategy for effective Canadian participation in regional and international standardization activities, and the formation of the Telecommunications Standards Advisory Council of Canada.

I am sure that there will be other initiatives coming out of these last two days of discussion.

This seminar was intended to discuss standards issues in some depth, and to hear the widest possible expression of views among those most concerned with these matters. We are committed to a process of consultation and consensus in developing

any follow-up required. If you think that this seminar has been a useful vehicle for sharing your views and experiences, we will schedule other such events.

THANKS AND CLOSING

In closing I would like to thank you all for your involvement. I hope you found it stimulating and useful.

My special thanks go to those organizations which co-sponsored the seminar and contributed so generously as hosts. The work of the program committee and the advisory committee are much appreciated, as is the work of my own staff from the Standards Program Office.

I would also mention the excellent work of our rapporteur Dr. Olley, whose report we can all look forward to receiving, and of course special thanks to John Gilbert for his expert chairmanship of the overall event.

Finally I should thank the interpreters for their contribution and all those involved with the organizing committee who made this a successful and professionally run seminar.

Obviously, this seminar has set a new standards for excellence. Thank you all and have a safe trip home.

COLLOQUE CANADIEN SUR LES NORMES DES TECHNOLOGIES DE L'INFORMATION ET DES TÉLÉCOMMUNICATIONS

DISCOURS DE CLÔTURE DE MICHAEL BINDER
SOUS-MINISTRE ADJOINT, RECHERCHE ET SPECTRE
COMMUNICATIONS CANADA

PROPOS LIMINAIRES

Bonjour mesdames et messieurs.

Je suis très heureux de me trouver ici pour clore ce colloque. Je ne suis pas sûr que vous ayez gardé le meilleur pour la fin, étant donné que le Ministre a été le premier à vous adresser la parole.

Comme nous en sommes au vendredi après-midi, et que certains d'entre vous avez des avions à prendre, j'essaierai d'être bref.

INTRODUCTION

Une des premières choses que j'ai faites lorsque je suis entré en fonction, il y a environ un an, a été d'essayer de comprendre ce que nous faisions sur le plan des normes.

Chaque année, le ministère des Communications consacre des ressources considérables pour le maintien des activités du Canada au sein des organismes internationaux de normalisation.

Beaucoup de gens voyagent partout dans le monde, vers des destinations exotiques, et discutent de normes à des réunions d'organisations qui portent de drôles de noms -- CCITT, CCIR, CITEL, EWOS, ETSI, etc.

De plus, un bon nombre de nos chercheurs scientifiques, ingénieurs et techniciens sont en train d'élaborer soit des technologies qui aboutiront à l'établissement d'une norme, soit des technologies qui dépendent directement de la mise en oeuvre de certaines normes. Par contre, l'an dernier, nos efforts visant à assurer un lien électronique entre tous les sous-ministres, où qu'ils soient dans la ville, ont été constamment contrecarrés par des systèmes de bureautique incompatibles. Et lorsque je me suis rendu à Tokyo, l'an dernier, il m'était impossible d'activer mon téléphone cellulaire.

Depuis lors, j'ai beaucoup entendu parler de l'interconnexion des systèmes ouverts, du modèle à 7 couches et du RNIS. Mais en tant qu'utilisateur des technologies, je suis toujours aussi déçu de constater le temps que nous prenons à concrétiser le rêve d'une interconnectivité transparente par l'adoption de normes.

IMPORTANCE POUR LES UTILISATEURS ET POUR L'INDUSTRIE

Il importe de demeurer très sensible au point de vue de l'utilisateur, car nous sommes tous des utilisateurs. Personnellement, comme utilisateur, je ne veux pas avoir à me préoccuper des normes. Je ne veux pas avoir à apprendre ce que sont des noeuds de transit X-400 afin de rendre mon courrier électronique compatible. Mais je ne veux pas, non plus, avoir à payer pour l'absence de normes. Nous ne pouvons nous permettre de payer le prix de l'absence de compatibilité.

Notre industrie, elle non plus, ne peut se le payer. On estime qu'à lui seul, le marché mondial de l'équipement de télécommunications se situe entre 100 et 150 milliards de dollars.

Si notre industrie veut concurrencer de manière efficace, elle doit pouvoir accéder aux énormes marchés. Et pour cela, nous avons besoin de normes internationales.

RÉTROSPECTIVE SUR LE COLLOQUE

Au cours des deux dernières journées, vous avez été informé de la réaction de nos concurrents.

Ils ont reconnu l'importance capitale des normes pour la viabilité du commerce et de l'industrie.

Le travail d'élaboration des normes se trouve accéléré par l'action de nouveaux organismes régionaux et nationaux fort dynamiques qui commencent à dominer le processus international d'établissement des normes. Les gouvernements européens subventionnent le travail de normalisation effectué par le secteur privé. Le domaine de la normalisation est en voie de passer sous le contrôle de stratèges techniques, hautement qualifiés et bien renseignés, qui comprennent à la fois les technologies et les stratégies occultes.

La capacité du Canada d'influencer le processus international de normalisation préoccupe bon nombre d'entre vous. Nous partageons ces inquiétudes.

APPROCHE STRATÉGIQUE

Au cours de ce colloque, nous avons aussi étudié certaines solutions. Un des éléments clés consiste à modifier la perception que nous avons des normes. Nous

devons reconnaître leur importance stratégique pour la compétitivité et la prospérité canadiennes et planifier notre intervention en conséquence.

Afin d'illustrer ce que j'entends par une approche stratégique à l'égard des normes, laissez-moi vous raconter l'histoire du comptable et de l'ingénieur en normalisation.

Les deux individus avaient été reconnus coupables d'un crime passible de la peine de mort, et étaient maintenant installés sur des chaises électriques côtes-à-côtes, attendant le moment fatidique. Le comptable était très nerveux, comme seuls les comptables peuvent l'être. Il était, en outre, fort intrigué par le sourire suffisant, pour ne pas dire confiant, qu'arborait l'ingénieur en normalisation.

Un gardien de prison constatant la même chose demande à l'ingénieur ce qui peut bien le faire rire. «Eh bien», dit l'ingénieur d'un air triomphant, «vous vous servez d'un bidule à rabat semi-linéaire à trois phases pour brancher les chaises à la source de courant! Ce n'est pas du matériel normalisé et ça ne fonctionnera tout simplement pas!»

«Ce dont vous avez besoin, c'est une prise directe ISO à sept contacts de puissance nominale de 600 ampères.»

«Oh! Mais pas de problème!» dit le gardien qui, sur le champ, change la prise.

Ce que je veux dire, c'est que nous ne devons pas nous borner à trouver les solutions idéales sur le plan technique. Il importe de tenir compte des incidences économiques, sociales et autres pour les utilisateurs et pour l'industrie. Nous devons aussi étudier la façon dont les normes s'imbriquent à l'intérieur d'autres stratégies.

Il convient de rechercher un équilibre entre un degré de souplesse qui sache encourager l'innovation et le goût du risque et l'offre de nouveaux services à nos clients, et ce à des prix concurrentiels.

Nous devons améliorer notre faculté d'anticipation, c'est-à-dire être en mesure de prévoir l'orientation des technologies et les secteurs où les normes s'avéreront nécessaires, si nous voulons déterminer de façon rationnelle là où il faut déployer des efforts afin de retirer un maximum de bénéfices.

Je me souviens d'un article publié en 1979 dans un périodique spécialisé où l'auteur disait, et je cite : «Avec déjà plus de cinquante modèles de voitures importées en vente ici, l'industrie automobile japonaise risque fort peu de se tailler une place enviable sur le marché américain!», fin de la citation.

Pour que nos stratégies soient orientées vers l'avenir et puissent l'anticiper, nous devons maintenir des niveaux élevés d'investissement dans la recherche et le développement. Plusieurs des idées novatrices issues des laboratoires de l'industrie et du gouvernement constituent la matière première à partir de laquelle sont élaborées les normes.

Le ministère des Communications a toujours défendu et continuera de défendre le principe d'investissements plus importants et plus judicieux en recherche et développement à l'aide de programmes convergents et de consortiums de collaboration.

APPROCHE DE COLLABORATION

Un autre des thèmes clés abordés au cours de ce colloque est l'impuissance d'un seul intervenant à résoudre seul les problèmes de normalisation. La collaboration sera essentielle à la réalisation de progrès réels.

Les années quatre-vingt-dix verront le gouvernement travailler étroitement avec l'industrie dans le but d'atteindre des objectifs communs et de partager les risques que comportent la recherche et l'innovation. Il s'agit d'une approche que nous ne maîtrisons pas très bien, au Canada, mais nous devons apprendre à le faire et ce rapidement.

UN EXEMPLE CONCRET : VISION 2000

Permettez-moi de vous décrire un exemple concret des technologies de demain qui illustre la nécessité de collaborer afin de régler la question des normes. Je veux parler ici de Vision 2000.

Vision 2000 est une entreprise conjointe du gouvernement et de l'industrie. Ce projet a pour but d'accélérer le développement et la mise en oeuvre de communications personnelles et d'offrir à l'industrie canadienne la possibilité de dominer certains marchés clés. Cette vision en est une d'avenir, un monde dans lequel on peut communiquer avec n'importe qui, de n'importe où, à tout heure du jour ou de la nuit.

Les technologies de communications Vision 2000 offriront aux Canadiens un accès, une mobilité et une convivialité de caractère inédit dans le domaine de l'échange d'information.

Cette vision des réseaux de communication personnelle intègre tous les domaines traditionnellement distincts de l'image, de la voix et des données ainsi que les systèmes et réseaux par radio, satellite, fibre et conventionnels.

Elle signifie le recours à des projets de codes d'identification personnels, à de nouveaux protocoles de communication, à des mesures visant la confidentialité des communications, à de nouveaux mécanismes de facturation et de comptabilisation, etc.

Sur le plan de la normalisation, il s'agit d'un «mégaprojet». Les normes sont essentielles à l'intégration et à l'interfonctionnement de chacune des composantes du système.

Pour que les technologies soit utilisées dans différents pays, les normes doivent avoir une portée internationale, ce qui assure en outre des volumes de marchés importants nécessaires aux techniques de production en série et aux technologies des circuits d'intégration à très grande échelle. La réussite de la mise en marché canadienne reposera sur des systèmes et des terminaux offerts à des prix concurrentiels.

Les projets d'accréditation des laboratoires d'essais, les procédures d'homologation des produits et leur harmonisation à l'échelle mondiale sont également essentiels à notre réussite.

Il est clair qu'un tel projet représente une entreprise de taille et je vous encourage tous à vous joindre à nous et à Vision 2000 Inc. afin de vous prévaloir des occasions qu'elle offre.

L'ENGAGEMENT DU MDC À L'ÉGARD DES NORMES

Laissez-moi vous dire quelques mots sur certains des projets récemment mis sur pied au Ministère afin d'appuyer vos efforts consacrés au travail de normalisation. L'an dernier, j'ai créé le Bureau de programmation des normes. Sous la direction de Bill McCrum, ce bureau a pour tâche de coordonner le travail de normalisation technique au sein du Ministère.

Vous êtes témoins d'une des premières réalisations des membres de ce groupe, c'est-à-dire ce colloque.

Au cours des prochains mois, vous serez à même de constater l'ampleur de leurs efforts alors qu'ils fourniront l'orientation et l'impulsion nécessaires au plan de suivi et qu'ils diffuseront, à l'échelle du pays, les résultats de ce colloque. Mais, avant tout, ils seront responsables d'offrir la dimension stratégique dont j'ai déjà parlé.

Vous avez aussi entendu parler des efforts déployés en vue de résoudre les questions de mise à l'essai, d'homologation, d'accréditation et d'ententes mutuelles de reconnaissance avec les autres pays.

Paul Racine vous a entretenu des intentions du Ministère quant à l'élaboration d'une stratégie qui sache assurer une participation efficace du Canada aux activités régionales et internationales de normalisation, ainsi que de la création du Conseil consultatif canadien sur les normes de télécommunications.

Je suis persuadé que ces deux journées de discussion donneront lieu à la mise sur pied d'autres projets.

Ce colloque avait pour but de discuter plus à fond des questions relatives aux normes et de permettre à ceux qui sont touchés par ces questions d'émettre les points de vue les plus divers. Nous sommes engagés à adopter un processus de consultation et d'établissement de consensus sur les mesures de suivi qui s'imposent. Si vous croyez que ce colloque a constitué une occasion valable de partager vos vues et vos expériences, nous organiserons d'autres rencontres semblables.

REMERCIEMENTS ET CLÔTURE

En terminant, je souhaite vous remercier tous de votre participation. J'espère qu'elle aura su vous stimuler et qu'elle s'avérera utile.

J'aimerais aussi remercier les organismes qui ont parrainé ce colloque et qui y ont contribué de façon si généreuse en se faisant les hôtes. Le travail du comité du programme et du comité consultatif est très apprécié, comme l'est celui de mes propres collaborateurs du Bureau de programmation des normes.

J'aimerais aussi souligner l'excellent travail de notre rapporteur, le docteur Olley, dont le compte rendu sera attendu avec impatience par tous, et bien sûr adresser des remerciements spéciaux à John Gilbert pour avoir assuré de main de maître la présidence de cet événement.

Enfin, j'aimerais remercier les interprètes pour leur précieuse contribution, ainsi que tous ceux qui ont participé aux travaux du comité organisateur qui a su faire de cet événement un colloque couronné de succès et mené de main habile.

De toute évidence, ce colloque a établi une nouvelle norme d'excellence. Merci à tous et bon voyage.

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LISTE DES PARTICIPANTS

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