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**Spectrum / Telecom
Program Renewal
FINAL REPORT**

*** Rebuilding For The Future ***

With thanks from the Steering Committee



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Program Renewal
FINAL REPORT
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SPECTRUM//TELECOM PROGRAM RENEWAL

“ REBUILDING FOR THE FUTURE “

Steering Committee

August 1996

*“If you don’t know where you are going, you’ll most probably end up
somewhere else.”*

Lawrence J. Peter

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EXECUTIVE SUMMARY

Early last year, a decision was taken to initiate a fundamental re-examination of what was then limited to the Spectrum Management Program but which was later extended to include Telecommunications given the impact of convergence. The intended **purpose** of this renewal initiative was not to introduce radical change but rather to preserve core strengths and rebuild the Spectrum/Telecom Program to meet future challenges and opportunities. It was also recognized that the review would have to address a number of key issues that were emerging - in particular to strengthen overall program leadership, organizational integration and decision-making processes. The first major conclusion that was reached was that the Spectrum/ Telecom Program is firmly grounded in legislation and that the central role for the Program continues to be one of balancing public and private benefit in a manner that supports Industry Canada's broader mandate. From an external perspective, there is a clear need to respond to the convergence of communication services, the continuing evolution of the Information Highway and the accelerating pace of innovation. Finally, it was also recognized that an ever-growing demand for the Program's services can be expected despite the pressures of continuing restraint. This then describes the context for the renewal work that was done on vision, services and infrastructure.

With respect to **VISION**, an agreement was reached on a **Mission Statement** for the Program:

The mission for the Spectrum/Telecom Program is to facilitate the development and use of world-class communication infrastructure, technologies and services by:

- *ensuring flexible and efficient use of the radio frequency spectrum as a strategic national resource;*
- *supporting timely and equitable access to high-quality and affordable communication systems and services, and;*
- *promoting industrial development by facilitating exports, innovation and investment in Canada's communication infrastructure.*

The ultimate objective of the Program is to contribute to enhancing Canada's competitiveness, economic growth and the quality of life of all Canadians.

In line with this Mission Statement, six complementary **Principles** or values were proposed that capture the aspirations that were expressed by many employees. These principles which must now be actioned through specific practices include:

- *Providing effective leadership both externally and within the Program;*
- *Ensuring that the organization is focussed on clients and provides high-quality service;*
- *Promoting a culture of creative renewal based on innovation and continuous improvement;*

- *Building a strong commitment to employees founded on personal development and incentives;*
- *Encouraging delegation and providing opportunities for team work; and,*
- *Promoting a culture of open communication, information sharing and consultation.*

The objective of the work on **SERVICES** was to identify ways to redirect our collective effort to those activities and services that will provide the highest value-added in the future. In this regard, it was concluded that the Program will need to be increasingly directed towards strategic services that tend to be pro-active, largely analytic, and require a longer-term perspective.

Three new strategic services have been proposed and include business and economic research, the identification of market opportunities, and, regional liaison and analysis. In addition, the effort devoted to services such as international, engineering and planning as well as spectrum quality assurance will need to be enhanced. Other services such as the development of regulations together with standards and procedures should continue at their current level of activity. Finally, an opportunity exists to gradually de-emphasize transactional activities such as fixed parameter licensing, radio operator examination, and CATV certification. This transition from transactional to strategic services will ultimately provide Regions with the opportunity to build their capacity to strengthen the liaison and analysis service as well as to contribute to other new and enhanced services initiated in either the Regions or Headquarters. The intent is to fully utilize all the resources at our disposal and to develop the skills sets necessary to deliver a renewed suite of services of the highest possible quality.

The major conclusion flowing from the work on **INFRASTRUCTURE** is that a much greater degree of integration and coordination will be required in the future. Rather than introducing reorganization which often tends to be disruptive, it was concluded that the solution to ensuring integrated action in the future is more likely to be managerial. In effect, the proposed approach centers on leadership and the introduction of a number of key management practices. In this regard, an Executive Committee, chaired by the ADM SITT, will be created to set strategic direction for the Program, to oversee the implementation of renewal and to provide guidance on major program-related issues. In addition, a process of delegation which has been termed the "Office of Primary Interest" (OPI) will be implemented. Under this regime, individuals will be assigned lead responsibility for particular projects or areas for which they will be held directly accountable. OPIs will be given clear statements of expectations together with sufficient authority to deliver the required results. The intent is to maximize delegation, and in so doing, to build a more responsive and action-oriented organization. In this connection, we will be looking increasingly to the Regions to assume lead responsibility for specific projects and services. The intent is to ultimately establish "spheres of expertise" in the Regions so as to facilitate the challenge of redirecting our effort and renewing our suite of services.

A number of key decisions have been taken with respect to **implementation**. The ADM SITT will be using the new Executive Committee to champion the process and, as well, will be appointing a fully-dedicated Executive Director to spearhead implementation as a major priority. The overall strategy for implementation will be to build momentum and create a climate of progression based on demonstrated successes. The approach will be to introduce a series of concrete, achievable and medium-term actions which are clearly recognized as being central to the renewal initiative. Extensive communication and consultation will be employed to encourage participation and together build a truly effective Program - one that will help position Canada at the leading edge of tomorrow's information society.

BACKGROUND

In February of 1995, the Spectrum Management Committee (SMC), led by Ron Begley and comprised of senior Regional and Headquarter managers, took a decision to initiate a fundamental re-examination of the Spectrum Management Program. This renewal initiative was to involve a comprehensive examination of all aspects of the Program - in particular, its mission, core services as well as structural options for program administration and delivery. It was felt by SMC that the time was right to reposition the Program to meet emerging challenges and opportunities associated with a rapidly changing external environment. Examples of challenges confronting the Program in the future include the convergence of communication services, the future evolution of the Information Highway, and, the accelerating pace of innovation as reflected in the continuing emergence of entirely new services. In effect, the intent is to prepare for the global and technological developments that are anticipated over the next several years. There is also the opportunity to take advantage of changing work patterns and management practices as well as a possibility of using the Program renewal initiative to help relieve continuing budgetary pressures. This could be accomplished by, for example, considering entirely new approaches such as various forms of self-regulation and partnerships with other delivery agencies. It should be emphasized however that the intent is not to introduce radical change or focus on resources, but rather, to preserve core strengths and rebuild the Program to better meet future needs.

This paper documents the outcome of this renewal initiative and points to the strategy that will be used for its implementation over the next two to three years.

METHODOLOGY

Several key **principles** were employed to shape the renewal exercise:

- Rather than being externally imposed, the initiative was to be internally driven with the direct support of the Spectrum Management Committee;

- The process was to be entirely open, maximizing communication as well as employee participation;
- The initiative was to focus on strategic renewal, rather than being limited to incremental change;
- The initiative was not intended to be a cost-cutting exercise;
- The exercise was to focus on the basics as well as to build on core strengths;
- In carrying out the exercise, the methodology used was to be as innovative as possible - all options and opportunities were to be explored;
- Finally, the exercise was to promote a climate that would institutionalize continuous improvement of the Program.

The work was **structured** around three major and interrelated components:

- The work on *Vision* would set the longer-term direction for the Program.
- The *Services* work would focus on core activities and redefine the Program's suite of services.
- The work on *Infrastructure* would define the organization and practices needed to deliver services in support of the new vision.

In terms of **organizational arrangements**, the renewal initiative was guided by a Steering Committee which provided overall direction, coordinated inter-team work for the various components, and provided direct liaison with the Spectrum Management Committee as well as other levels of management, including the ADM SITT. The Steering Committee was initially chaired by Ron Begley (DGSE) and consisted of Jan Skora (DGRB), Mike Helm (DGTP) and Pierre Lemay (DG, Quebec Region). Bob McCaughern replaced Ron Begley upon the latter's retirement and Jan Skora assumed the role of chairperson. Bob Chartrand, a Principal Consultant with the Department's Management Consulting Centre, helped structure the initiative and provided overall facilitation and advice.

Work under the various Task Groups vis-à-vis vision, services, and infrastructure was led by Team Leaders. The role of the Team Leaders was to develop a work plan, select members, conduct studies, and report results to the Steering Committee. In addition, they were to coordinate their work with other teams and provide overall facilitation within their respective groups. Tom Racine led the Vision Task Group while André Simard directed two Task Groups addressing Services. The Steering Committee assumed direct responsibility for much of the Infrastructure work given the nature of this task.

Every attempt was made to introduce a high level of employee participation, either through direct membership on the various teams or through specific assignments. In addition, employees were encouraged to provide feedback on the discussion papers that were prepared and distributed by the Tasks Groups.

OVERVIEW OF ISSUES

The Steering Committee led a process of extensive consultations both in Headquarters and across all five Regions. These consultations reflected a consensus on three major points:

- It was concluded that overall, the Program had been generally effective in the past;
- Moreover, it was recognized that renewal was more a matter of evolution in terms of repositioning the Program for the future; and,
- Finally, it was concluded that certain **key issues** would need to be directly addressed - in particular;
 - Overall leadership of the Program would need to be firmly established;
 - Organizational integration across the Program would need to be strengthened;
 - Decision-making within the Program would need to be vastly improved; and,
 - The informatics function was identified as an area requiring special examination.

These specific issues would be considered and addressed in the course of the work on vision, services and infrastructure.

RESULTS - CONTEXT

The following **externalities and internal factors** have had a major impact on the renewal of the Spectrum/Telecom Program and provided an important context.

The rapid increase in technological sophistication and innovation, together with a greater demand for services, will continue to characterize the telecommunication environment in general and the radiocommunication industry in particular. Growth in affordable communication technologies coupled with the convergence of once separate services will accelerate. The merging of wireline and wireless, the advent of the Internet as a cornerstone of the Information Highway and the continuing impact of digital technology underscore this convergence. In contrast to these growth factors is the decreasing availability of usable spectrum in certain bands. Moreover, users of the radio frequency spectrum will expect more and better service from the Program. Communication equipment and products are now more readily available and society is becoming generally more demanding and less tolerant of delays. In addition, licensees are more cognizant of fee structures and are increasingly insisting on maximum value-for-money. Program clients now expect "smarter regulation" and there is an inescapable trend towards self-regulation as well as other related-market solutions.

Internationally, competition over spectrum allocation is becoming more intense and international organizations will have to adapt to a rapidly changing communication environment as well as to move more strategically and quickly in order to effectively represent national interests.

Domestically, Canada's environment is increasingly influenced by the trend towards heightened competition in the provision of advanced communication services world-wide. In fact, competitive forces rather than government regulation will serve to direct and discipline telecommunication carriers to a much greater degree than in the past. Monopolies are steadily disappearing and competition between service providers is now actively encouraged. In the final analysis, market factors are emerging as the dominate force influencing the communication industry.

Internally, the managers of the Spectrum/Telecom Program will increasingly be under pressure to do more with less, to do it better as well as faster, and, to anticipate new service demands. Aggressive innovation and continuous improvement will dominate the mode of program management in the future. Various alliances, partnerships and devolution arrangements will all need to be explored as alternative delivery vehicles. Finally, technology as well as new internal practices and working arrangements will need to be identified and exploited.

VISION - OVERALL CONCLUSIONS

It was recognized that the Program's **objective** would have to clearly identify the core purpose of the Program which, in fact, defines our immediate area of direct accountability. In addition, the objective would have to be described in such a way as to identify its contributory impact - that is, the contribution the Program makes to a broader government /departmental mandate.

It was also concluded that the Program's **scope** would have to capture the evolving convergence which in the future implies trade-offs and harmonization among competing technologies and services. Accordingly, this scope needs to be described within an expanded communication context which extends beyond radiocommunications.

Finally, it was concluded that there was no singularity of **clients**. Rather, it was recognized that we work with and through various stakeholders - with the Canadian public being clearly viewed as the ultimate beneficiary.

VISION - RECOMMENDATIONS

Given these general conclusions, a **Mission Statement** was developed for the Program. In general, a mission statement identifies what a Program is to accomplish, how it is to accomplish it, and finally, why.

The mission of the Spectrum/Telecom Program is to facilitate the development and use of world-class communication infrastructure, technologies and services by:

- *ensuring flexible and efficient use of the radio frequency spectrum as a strategic national resource;*
- *supporting timely and equitable access to high-quality, affordable communication systems and services, and;*
- *promoting industrial development by facilitating exports, innovation and investment in Canada's communication infrastructure.*

The ultimate objective of the Spectrum/Telecom Program is to contribute to enhancing Canada's competitiveness, economic growth and the quality of life of all Canadians.

Note that the Mission Statement uses the term "communication" rather than the more restricted terms "radiocommunications" or "telecommunications". As identified earlier, a much broader and far-reaching perspective is needed to capture the impact of convergence among competing technologies and services. In addition, the Mission Statement highlights the broader contribution that the Program will increasingly have vis-a-vis Canada's industrial competitiveness, economic growth and quality of life.

Six **complementary principles** were subsequently identified that collectively define the values that are to guide the delivery of this mission. These principles or values capture the aspirations that have been expressed by many employees. Finally, they represent key areas that need to be actioned if the renewal of the Program is to be successful.

Leadership

External leadership will need to be provided in order to champion the development of Canadian industry, to secure a high level of competition, to ensure quality and choice of services, and to encourage partnership as well as harmonization both with the private sector and across all levels of government.

Leadership will equally be needed within the Program to ensure the development of a progressive culture, provide clarity of direction, and, to build a responsive organization that centres on people and is dedicated to results. Ownership of such leadership across the Program must be shared by all managers and expressed through personal example and integrity.

Client Focus and Quality Service

In order to ensure a high level of client focus and quality service, two key perspectives must be adopted. First, the creation of a service culture across the entire organization which accepts the notion that all Program employees have a client. A service mode exists irrespective of whether the client is the Minister, the general public, a special interest group, industry generally, specific stakeholders, or, an internal client. In addition, there is also the need to move beyond the simple notion that service is essentially responsive - in effect, a requirement to be more proactive and to constantly anticipate or interpret client needs. Finally, realistic expectations and standards must be established, clients should be advised accordingly and performance should be monitored on a regular basis. On this latter point, we must continuously measure ourselves based on client satisfaction.

Innovation and Continuous Improvement

Establishing and maintaining a culture of creative renewal as an on-going force is an imperative given our current and future climate. This means being prepared to consider a diversity of perspectives, exploring fresh ideas and embracing continuous learning as a matter of principle. Employees should be encouraged to seek improvement in Program services, systems, working practices and external relations. Most importantly, they must be actively supported and rewarded for their creative efforts and their willingness to venture into new territory. Related to this is the need to cultivate a progressive environment. In essence, viewing change in a positive sense as a direct opportunity for organizational as well as personal renewal and development.

Commitment to Employees

A firm commitment to employee development must become a major management priority with employees sharing in the responsibility for their personal development. In the future, employee development will increasingly require retraining to, among other things, facilitate the move toward more strategic services.

One element of employee development is succession planning and in this respect the concept of using "shadow positions" should be considered. This simply involves informal management positions that are created to provide employees with opportunities to develop into more senior roles. Other instruments for employee development also need to be embraced including the use of mentorships, interchanges, secondments and team assignments across the Program.

In addition to employee development, it is essential that a system of incentives be put into play as touched on earlier. We must collectively recognize, reward and celebrate accomplishments at both the individual and team levels as well as deal directly with inadequate performance. Incentives can take the form of open praise and recognition, increased delegation and authority as well as special participation in interesting or high-profile assignments. Other tangibles include recognition of authorship, opportunities for travel, special awards, etc.

Most importantly, every employee possesses an individuality which must be recognized by being treated equitably and with respect as well as through the exercise of linguistic and other rights. In addition, recruitment must continue to reflect the diversity of Canadian society. Finally, we must strive to be ever vigilant of, and advocate, a proper balance between home and work life.

The establishment of these and other practices will go a long way towards creating an environment that attracts and retains the very best people.

Teamwork and Delegation

Related to commitment to employees, is an important principle centering around teamwork and delegation which promotes collective accomplishment while preserving accountability. As will be discussed further, a process of delegation is to be implemented which has been termed the "Office of Primary Interest" or OPI. The intent is to maximize empowerment within existing line management structures, and, in so doing, to build a more responsive and action-oriented organization. Combining this concept with teaming arrangements will provide opportunities for cross-fertilization between the different parts of the Program while at the same time, support staff development. At all times, our approach must ensure a culture built on respect for the talents, capabilities and backgrounds of others. These dual principles of teamwork and delegation add synergy to future decisions and/or actions. In addition, teamwork creates staffing flexibility and contributes to continuous learning. Finally, the use of teams builds unity of purpose and understanding within the Program. Two past examples of effective teamwork and delegation are LMCS and PCS.

Communications and Consultation

The sixth and final principle involves a commitment and firm belief in the importance of internal communications and consultation as a means of ensuring the well-being, creativity and productivity of the individual, the teams and the entire organization. As mentioned earlier, leadership means ensuring that our mission, principles and priorities are clearly understood and supported by employees across the Program.

In order to be effective, communications must be open and sincere. Moreover, the process of communications must be continuous and allow for a two-way dialogue. As mentioned earlier, consultation and information-sharing is essential. The process of consultation is an opportunity to allow people to participate in the formulation of a decision or the development of a product. While not all inputs or views can be accommodated in this final decision or product, it is important that the rationale underlying the outcome be explained to all contributors.

The preceding set of principles provide a framework for institutionalizing specific practices that will contribute to the building of a truly effective Spectrum / Telecom Program - one that will be delivered by a dedicated, motivated and highly-skilled organization. It is important to point out that these principles are intentionally broad and encompassing and, as such, capture the various specific practices and actions that have already been proposed by various groups including the Employees Council. The challenge now is to collectively begin to put into play the specific practices that will fully activate these broad principles or values.

SERVICES - OVERALL CONCLUSIONS

Three major conclusions were reached by the Task Group working on program services:

- It was concluded that there was a clear need to redirect effort to those priority services or activities offering the highest possible value-added;
- In this respect, it was also concluded that the Program's future will increasingly be directed toward strategic services. These types of services tend to be essentially proactive and issue-driven. Moreover, strategic services are often largely analytical and require a longer-term perspective; and,
- Finally, it was concluded that there is a major opportunity to increasingly involve the Regions as well as Headquarters in the development and delivery of such strategic services.

One major implication of these conclusions is that a longer-term human resource development effort will be needed to broaden and diversify our skills-mix across the Program - in particular to enhance our ability to assess not only technical but as well, commercial aspects in both domestic and international contexts.

SERVICES - RECOMMENDATIONS

The Task Group on services examined the full range of existing services that are currently being delivered in addition to exploring new and emerging services. As touched on earlier, the goal was to identify ways to redirect our collect effort to those priority activities and services that will be most critical in the future. As a result, new and emerging services were identified and opportunities to de-emphasize lower priority services were also examined. The resulting recommendations are presented in five major categories. *Please note that considerably more detail regarding specific actions on services are presented in the annex to this report. In addition, the annex also includes a list of the various working documents which were produced and which can be accessed on SITT's Document Management System.*

In the first category, three strategic services which are **primarily new** were identified as key challenge areas for the future. In view of the critical nature of these new services, it is imperative that priority attention be given to their development and to ensuring the sharing of the

results of work in these areas across the entire Program. The first area has been termed *Business and Economic Research*. Given the externalities which are rapidly unfolding, together with the more strategic nature of the Program in the future, there will be an ever increasing need to access environmental information on domestic and international business, economic, and, technological trends and developments. The quality of this information will, in the future, contribute considerably not only to the development of Spectrum/Telecom policy, but as well, to major programming decisions for both domestic application and in international forums. The second challenge area has been termed *Market Opportunities*. The main thrust of activities in this area is to collectively identify and promote market opportunities for Canadian industry in the natural course of our on-going work across the Program. This will go a long way towards achieving our objective of contributing to enhancing Canada's competitive position internationally. The third and final challenge area has been identified as *Regional Liaison and Analysis*. The main thrust of this work is to coordinate and share high-quality analysis which originates in Regional and District Offices as an off-shoot of direct liaison with program clients. The development and sharing of this information has potential for not only for strengthening the quality of all services delivered locally, but as well, for contributing to services originating in Headquarters.

Secondly, it was concluded that the current effort in the International, Engineering and Planning as well as the Spectrum Quality Assurance areas would need to be considerably **enhanced** in the future. The purpose of International services is to protect Canada's rights and interests regarding the uses of telecommunication facilities and of the radio frequency spectrum primarily through international agreements and regulations. This service will become increasingly important in the future and more attention should be dedicated to all international activities. This is especially the case with respect to preparatory work, the application of the results of international activities domestically, and, in the area of standards-setting. To extend this point, international activity must increasingly be viewed as being trade-related and as providing opportunities for Canadian industry. Engineering and Planning services are essential to secure access to telecommunications facilities in the radio frequency spectrum. This service must also be enhanced in the future in order to prepare for the introduction of new technologies and related communication services. Increased attention must be devoted to "linking" engineering and planning activities with policy work as well as operations in order to more effectively identify and promote commercial opportunities. Additional support is also needed in order to conduct more complex spectrum sharing and access studies, assess spectrum value and quality, represent Canada's interest in the globalization of telecommunications and information technology, and, to improve regional harmonization. The third area that will need to be enhanced is Spectrum Quality Assurance. The purpose here is to ensure compliance with Spectrum Management rules and regulations as a means of maintaining the quality of the spectrum and to ensure a fair marketplace. An enhanced service in this area implies the continuing development of regional and local spectrum monitoring systems to meet future requirements. This will entail new automated tools and the capacity to map representations of the radio environment in order to adequately maintain our knowledge base. This is particularly the case in congested areas where a large demand for spectrum access exists. In addition, efforts should be made to support our partners in the private sector with information and systems to allow them to make their own

analyses of problems as well as to identify and take corrective action. Finally, increased effort should be made to support enforcement measures. This could include entirely new approaches such as ticketing and notices-to-appear.

Thirdly, services and activities that are considered to be receiving adequate attention and should **continue at their present levels** include Policy Framework, Regulations, Standards and Procedures, Systems/Band Authorizations, and, the Terminal Attachment Program. These services provide a means of creating an environment to meet the legitimate expectations of the Canadian marketplace while at the same time fostering the development of telecommunication and radiocommunication facilities, networks and services. As such, these activities provide an important means of responding to the rapidly evolving and converging communications industries as well as in meeting the Government's desire to enhance competition.

As a fourth category, a major opportunity exists to gradually **de-emphasize** transactional services, which by definition tend to be highly resource intensive. This de-emphasization could involve a variety of different options depending on the service and inherent circumstances. For example, there may be an opportunity to re-engineer or downsize the service, to transfer the service to another government department, to privatize, deregulate or perhaps even discontinue the service. Examples of such transitional services include the issuance of licenses for individual amateur, aircraft and ship stations and the issuances of technical certificates to CATV systems. Another example would involve delegating the administration of all classes of radio operator examinations. This transition away from transactional services will be gradual and will need to be carefully planned and managed over time. It should however, provide Regional and District Offices with the opportunity to build their capacity to strengthen the liaison and analysis function as well as the quality assurance service mentioned earlier. In addition, it should enable the Regions to contribute to other new and enhanced services initiated in Headquarters. The intent is to fully utilize all of the resources at our disposal and to develop the skill sets necessary to deliver a renewed set of services of the highest possible quality. Further information on distributed work sharing is provided in the Infrastructure section.

Finally, the Spectrum /Telecom Program is **mandated** to provide services in a number of critical areas. Provision of these essential services must be maintained. Examples of such mandated services include emergency telecommunications, technology transfer, as well as, external training and technical expertise directed to both industry and foreign countries.

INFRASTRUCTURE - OVERALL CONCLUSIONS

The purpose of the work that was done on infrastructure was to match organization and management practices to the future delivery needs of a renewed Spectrum/Telecom Program.

The major conclusion flowing from this work is that a much greater degree of integration will be required to establish organizational synergy, flexibility and responsiveness. In reaching this conclusion, the Task Group identified a number of aspects requiring pre-emptive action.

First, as a result of a lack of integration, it was felt that the Program was without a unifying vision - hence the mission statement presented earlier. The observation was also made that distinct organizational solitudes have evolved which inevitably introduce resource and organizational rigidities. In addition, there appeared to be a degeneration in decision-making capacity within the Program as well as a certain amount of ambiguity regarding accountability. The traditional response to this type of situation (i.e., an overall lack of integration) is re-organization which tends to produce marginal gains often at the expense of a considerable amount of disruption. It was felt however that the ultimate solution to ensuring integrated action in the future is more likely to be managerial rather than major restructuring. As a result, the approach to renewing the infrastructure aspects of the Program centers on leadership and the introduction of a number of key management practices.

INFRASTRUCTURE - RECOMMENDATIONS

While there is a need to continue to effectively manage ongoing activities, a major effort will be required to take action on both the leadership and management practice fronts.

Effective **leadership** will be needed to oversee and coordinate the new challenge areas that were mentioned earlier as being vital to the Program's future success. This leadership will involve seeking agreement on priorities leading to coordinated programs of work and ensuring a sharing of the results of this work across the entire organization. DGTP will assume leadership for developing and coordinating the *Business and Economic Research function* while DGSE will assume similar responsibilities to develop the *Market Opportunities* service. In the interests of assuring high-quality service and maintaining effective integration across the Program, DGRB will assume leadership for coordinating the *Delivery of Operational Services* area. The Regional Offices will be tasked with developing the *Liaison and Analysis* function as a national service. Finally, further thought will be given to consolidating the internal *Management Services* in Headquarters. Such services could include program planning and budgeting, informatics and documentation, human resources, communications and administration. With respect to Informatics, an independent Working Group chaired by Andrew Simon of CDD has been established to review the current state of SITT's informatics function, specifically identify its strengths and weaknesses, and provide recommendations on both short-term and longer-term solutions.

As a means of further strengthening leadership, integration and decision-making, three important **management practices** have been identified.

The first involves the formation of an *Executive Committee* chaired by the ADM SITT. The role of the Executive Committee is to provide strategic leadership for the Spectrum /Telecom Program in three key areas:

- First, strategic planning discussions visibly driven by the Executive Committee members to establish overall Program direction, set broad priorities, allocate budgets as well as to periodically review and redirect the Program as required.

It is expected that the Executive Committee would set aside two meetings a year for this purpose. It may be appropriate at some point to later extend the scope of these planning sessions to cover the entire SITT Sector.

- Second, given the importance of this renewal exercise, the Executive Committee will provide a forum to oversee implementation and to provide guidance on specific issues as necessary; and,
- Finally, the Executive Committee is to be the central mechanism for providing strategic direction on major Program-related issues that require advance discussion given their potential future impact. The Program Directors General in Headquarters are to collectively develop agendas proposing such issues in consultation with the Regional Directors General. By and large, the issues to be included will be those that are likely to be of interest to more than one branch, involve a longer-term perspective, and require strategic discussion on the part of the ADM SITT and his Program executive. Examples of such issues include the need to develop strategic direction for market-driven spectrum allocation mechanisms, downstream GATT negotiations, DBS orbital slots, major regional issues, etc. Note that while the intent is to focus on strategic issues, it may be necessary on occasion to consider exceptional operational issues. However, the onus will be on the Directors General to largely resolve operational issues on their own and to propose suitably strategic agendas for discussion by the Executive Committee.

Given the visibility, importance and strategic focus of the Executive Committee, it is considered essential that the ADM be the chairperson and that members include the five Directors Generals in Headquarters, the Executive Director of the Information Highway Secretariat, and, the five Regional Directors Generals. The Executive Committee is to meet bi-weekly or otherwise as required subject to the acceptance of a proposed agenda by the ADM. The future role, membership and possible extension of this committee will be reviewed at the end of a six-month period.

Also on the matter of leadership and decision-making, the issue of responsibility and accountability for decisions needs to be resolved. One message that has come through loud and clear is the plea on the part of all staff for management to exercise leadership by dispensing with the practice of continuously attempting to reach decisions through consensus apart from the tendency to push decisions upward. A *process of delegation* will therefore be implemented which has been described earlier as the "Office of Primary Interest" or OPI regime. Under this regime, individuals in Headquarters as well as in the District and Regional Offices will be assigned lead responsibility for particular projects or areas. OPIs will be given clear statements of expectations together with sufficient authority to deliver the required results. As such they will be held directly accountable. While consultation is essential, the OPI will need to exercise judgement in determining what amount is appropriate and what views should be taken into consideration in the final product. Empowerment must become a reality - the authority to act and take decisions must be delegated to the maximum extent possible. In this respect, program managers and employees

alike will be constantly encouraged to assume a much higher degree of personal accountability for action and decision-making. This does not at all suggest that decisions are to be taken in isolation. Consultation, teaming arrangement, the uses of committees etc. are essential tools that enable a decision-maker (or the OPI) to add perspective and depth to his or her decision. The intent as mentioned earlier is to maximize delegation, and in so doing, to build a more responsive and action-oriented organization.

Combining this OPI concept with teaming arrangements will provide opportunities for cross-fertilization between the different parts of the Program as well as support staff development. Moreover, the widespread use of teamwork is particularly effective in building unity of purpose and a shared sense of identity. Given today's electronic computing environment, there is little reason why work cannot be distributed on a project teaming basis with the OPI taking the lead role drawing on contributors across the Program. Organizational flexibility will be realized if resources are drawn from throughout the organization based on skills and availability as opposed to hierarchy, location or other boundaries such as professional background or classification. With this in mind, the principle of *distributed work-sharing* will be adopted to further break down organizational disconnect and to re-balance workload and more fully utilize our expertise across the Program. The various Branches in Headquarters will be developing a menu of projects or files that can be assumed by the Regional and/or District Offices. The intent is to ultimately develop "spheres of expertise" in the regions that will facilitate the challenge of redirecting our effort and renewing our suite of services. Some existing and potential examples of possible transfers include; re-engineering of the business process for microwave licensing, ALS integration, review of the safety code six model, EMC models for digital and wide-band systems, and, tracking as well as analysing regulatory proceedings for individual telecommunication operators. On a final note, experience has clearly demonstrated that one of the key determinants for successful teaming arrangements is clarity of assignment coupled with sufficient authority and expertise to effectively carry out the project.

A number of **other specific practices** will also be used to strengthen integration and improve coordination across the Program. Apart from the use of the Executive Committee, the individual program Directors General in Headquarters will meet on a regular weekly basis. In addition, operational committees will be considered where necessary to coordinate Headquarter and Regional activities. In this respect, DGRB as mentioned earlier is to assume leadership for overseeing the delivery of operational services as a key challenge area.

IMPLEMENTATION

The overall strategy for implementation will be to build momentum based on demonstrated successes in order to create a climate of progression. Several underlying **principles** have been identified to guide the implementation process:

- The general approach will be to initiate a series of concrete, achievable and medium-term actions which are clearly recognized as being central to renewal;
- The successful implementation of these actions will be reinforced through a process of continuous communication both across the Program and more generally, throughout Industry Canada;
- Dedicated leadership together with a high level of professional competency will be established to spearhead implementation;
- The management of the implementation process will incorporate techniques that will specifically demonstrate many of the practices that are proposed for the Program at-large,
- Extensive communication and consultation will be employed to encourage participation and maintain a sense of collective achievement; and,
- Every effort will be made to ensure that renewal actions contribute to other broader-level SITT initiatives.

The following **organizational arrangements** are to be made to ensure effective implementation:

- The ADM SITT will champion implementation of the renewal initiative. To this end, the ADM will use the Executive Committee to oversee implementation as well as to provide direction on major issues as appropriate;
- A fully dedicated Executive Director will be appointed for a period of up to three years to spearhead implementation;
- The Executive Director will be supported by a small core group drawn from the various branches and regions;
- In addition, and in the interests of maximizing participation, a host of OPIs will be sought to lead specific action teams; and,
- Spectrum/Telecom Program managers will be invited to directly contribute to various aspects of implementation.

The **work plan** over the first twelve to eighteen months will concentrate on the following three major and complementary priorities:

- *Communication and consultation* across the Program to explain the outcome of the initiative, invite views on implementation and identify opportunities for employee participation;
- Movement on the *key leadership and management practices* that have been identified earlier, and in particular, the establishment of the Executive Committee and the implementation of the Office of Primary Interest regime in connection with specific implementation assignments, and;
- Implementation of medium-term *actions on program services* in three specific areas:
 - Development of the key challenge areas as new strategic services;
 - Development of regional centers of expertise with the transfer of select projects and files from Headquarters to the Regions; and,
 - Targeted action to address an initial set of transactional services.

CONCLUDING REMARKS

The broad direction and specific actions that have emerged from the Spectrum / Telecom Program renewal initiative were recently endorsed by the ADM SITT as announced in his communiqué to all staff dated July 15, 1996.

The extensive consultations which have taken place have clearly identified the need to not only reposition the Program but as well, to strengthen overall leadership, organizational integration, and, our decision-making processes. We are determined that the course of action on which we are about to embark will effectively address these and other related issues. While a critical juncture has been reached, we are confident that we are on the correct path. The immediate challenge is to maintain our momentum and follow-through with concrete action on a number of fronts.

In the final analysis, we are confident that implementation of the renewal initiative will significantly enhance the effectiveness of the Spectrum / Telecom Program in future years as well as its contribution to enhancing Canada's competitiveness, economic growth and the quality of life of all Canadians.

We would like to close this report by once again thanking the many people who participated in this initiative and to seek your continuing support.

Steering Committee

Jan Skora

Mike Helm

Bob McCaughern

Pierre Lemay

ANNEX

Specific actions on SERVICES

Actions to be completed on services in the short term (within the next 2 years)

- Stop investigating complaints of radio interference to domestic radio or non-radio equipment. Only make determinations as prescribed in the Radiocommunication Act. General public to be prepared to resolve their own radio interference problems.
- Transfer our expertise to the private sector for General Public Investigations and ensure our clients have access to competent external resources and are provided with appropriate information material.
- Delegate the administration of all classes of radio operator examinations and the issuance of all radio operator certificates.
- Stop issuing licences for individual amateur, aircraft and ship radio stations. We should target delegation for spectrum management of certain frequency bands or frequencies, to specific clients already involved in the process:
 - radioamateur bands to an organization that would subsequently provide authority for individual amateurs to operate on prescribed bands,
 - Frequency Coordination System Association (FCSA) to access our database and perform EMC analyses for microwave stations,
 - maritime and aeronautical bands to MOT for all stations (except DND) of a specific category (fixed, vessels and aircraft),
 - issue a single licence to DND for their maritime and aeronautical radio installations,
 - railway frequency plan to the railroad association, and
 - issue system licences to GLMRS operators.
- Exempt from technical certification or give the CRTC a class category of certification to cover the vast majority of CATV systems. With proper enforcement mechanisms, the burden should be entirely on the operators to demonstrate they meet our requirements and maintain their qualification.
- Define and implement national, regional and local spectrum monitoring programs to meet future requirements for spectrum management. As an example, we need to target the appropriate quality indicators for radio spectrum to evaluate the fluctuations in its quality and apply the appropriate corrective measures.
- Develop a comprehensive client interface program using a variety of current technologies that will provide information about departmental initiatives to our clients and also provide a means for them to consult with us directly regarding issues that concern them.

- Increase our presence and relations with external partners to make sure we stay aware of client needs to positively influence spectrum planning and regulations development as well as to control the quality of the work they perform for the Program.
- Put emphasis on enforcing the rules to maintain control of the appropriate spectrum usage by better educating partners and radio users, by reengineering our proactive program like sensing the radio environment, compliance surveys or investigations and by applying enforcement measures where necessary that would include new approaches like ticketing and notices to appear.
- Increase the involvement of the regions in the development of national procedures. Regions should lead these as much as possible since they are closer to the requirement
- Establish a minimum base funding to be committed to informatics spending to ensure that we continue to invest in the tools necessary for our long term productivity. Involvement of regions in the development of operational applications will ensure that national developments better reflect end user needs. These developments must be fully co-ordinated, standardized, managed and prioritized.

Actions to be completed beyond the short term

- Revise the application of present policy to not divulge technical details of protected safety service assignments since it may impede implementation of future spectrum management initiatives.
- Acquire and analyse, with automated tools, information on spectrum use and its quality, in support to other services of the program like for the planning of the refarming in the bands below 500 MHz.
- Transfer our expertise to the private sector for Radiocommunication Investigations and provide our partners access to all pertinent information and systems to make their own analysis of the problems and identify the necessary corrective measure. Same approach as for interference to domestic equipment could then apply for these type of complaints.
- Canadian industry to be further involved and invest additional resources in long term spectrum issues, international activities and in the development of standards.
- Continue developing smarter, simpler and broader regulations and take the opportunity to incorporate pertinent policies, standards and procedures. The new regulations must encourage service providers to become self regulatory in maximizing their use of the radio spectrum.

- Ensure that the licence fee structure treats spectrum users in different services equitably, reflects the true value of the spectrum or can act as an incentive to good spectrum management.
- Re-engineer our automated systems, policies, procedures, etc. in such a manner to reduce our burden in the evaluation process of applications for authorizations. Clients could progressively ensure the technical compatibilities of their installations in the radio environment by accessing a reliable common database of every fixed station and using the same EMC analysis criterias. We will have to subsequently provide large clients with the appropriate support to adequately use our spectrum management tools.
- Re-engineer our processes in order to decrease service delays and administrative burden for clients. For example this reengineering should be in the areas of:
 - revisions to existing international coordination agreements,
 - ensuring spectrum access to qualified competitors whenever there is an opportunity through a simplified selection process like an hybrid comparative/auction approach,
 - using electronic consultation and information distribution process to improve client interface activities,
 - revise our frequency assignment process for broadcasting stations (AM/FM/TV) particularly with the advent of the new digital technologies, and
 - favouring single point of service to deliver different government authorizations where partners (other agencies or Departments) could be issuing some form of authorizations or certification like for aircraft, ship or broadcasting radio stations.
- Departmental resources and expertise to support governmental agencies need to be well documented and only provided on a full cost-recovery basis.

Actions to be taken to improve expertise

- We must equip our staff with skills in telecom and switching systems to handle the increased workload in areas such as CILC, TAPAC and MRA negotiations.
- Our staff must become more diverse and be capable of considering economic issues as well as technical issues to meet challenges of our new working environment. In addition to receiving the basic training, employees should have an appropriate exposure to these new responsibilities.
- Staff to upgrade their skills, both in domestic as well as in international activities, in view of the rapidly changing technology environment. An employees' training program and a transition plan to upgrade to these new skills.

- As we will be doing less transactions with our clients, expert systems could help maintain our technical expertise.

Other actions to be taken to improve service to clients

- Forms and procedures need to be simplified with less duplication in the documentation and information, improved content and simpler consultation tools (common electronic format).
- Regular measurement of client satisfaction needs to be taken to ensure we meet our established service standards and that they meet client expectations.
- Reliable performance measurement mechanisms for the Program need to be put in place before we can target improvements.

Rationale for recommendations

More specific proposals and further details that could be starting elements to begin reengineering the program, can be found in reference documents being stored on the Document management system on the following subjects:

A. International Activities

1. International Representation including ITU
2. Core Engineering Services and Activities
3. Negotiation of agreements
4. Regulations

B. Engineering and Planning (Telecom and Wireless)

1. Planning & engineering.
2. Business Planning for the Spectrum Management Program

C. Regulations, Standards, Procedures, Policies

1. Summary of Telecommunications Policy Functions
2. Fees for spectrum management

D. Authorizations

1. Broadcast Certification
2. Aeronautical licensing
3. Radio amateur licensing
4. Maritime licensing
5. Radio Operator Certification
6. Foreign Perspectives (ref. 2. to 5. above)

7. Land mobile licensing
8. Microwave licensing
9. Earth station licensing
10. Satellite networks international coordination and notification
11. Equipment approval (standards, certification, audit and testing)
12. Terminal attachment program
13. Frequency coordination
14. International notification

E. Spectrum Quality Assurance

1. General Public Interference Investigations
2. Radiocommunication Interference Investigations
3. Enforcement of regulations
4. Spectrum monitoring

F. Support functions

1. Operational procedures
2. Mission Information Systems Services

G. Others

1. Emergency telecommunications
2. Agreements not specifically related to spectrum management
(see Negotiation of agreements)
3. Decision making process

