Industry Canada Industrie Canada

REVIEW OF THE COMPARATIVE SELECTION AND RADIO LICENSING PROCESS

- FINDINGS -

FEBRUARY 20, 1996

Canada

Industry Canada

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Executive Summary

Presented here are the findings of Industry Canada's review of the Comparative Selection and Radio Licensing Process, wherein we summarize the interventions received and present conclusions resulting from consideration of the public's response to Canada Gazette Notice No. SMRR-001-94 and the associated information paper, entitled "Public Review of the Comparative Selection and Radio Licensing Process".

The Minister of Industry is responsible, under the *Radiocommunication Act (RA)*, for ensuring the orderly development of radiocommunication systems in Canada. Consistent with existing policies, the Department assigns portions of the radio frequency spectrum on a first-come, first-served basis. However, in instances where the expressed demand for a given allocation of spectrum exceeds the amount of spectrum available, the Department has employed a comparative selection process in dealing with the implementation of public commercial services to identify which of the various proposed systems will be authorised, based on relative merit.

Some concerns had been expressed about certain aspects of the comparative process and, as a consequence, the Department determined that a public review of the process would be held to address these concerns. The review considered comments and suggestions on all aspects of the current process as well as other options or alternatives and issues and factors deemed relevant. In all, twenty-two parties participated in the review.

With an eye to profiting from the experiences of foreign administrations, the Department also reviewed the licensing processes utilized by several other nations for assigning spectrum under similar circumstances. It is generally accepted that there are three basic options: lotteries, auctions and comparative evaluations. Further to those three, there are also various combinations or "hybrids".

In reviewing the responses to the Canada Gazette Notice, it was evident that many respondents wished to highlight their views on spectrum auctions. Most respondents indicated opposition to spectrum auctioning, citing various concerns. Several submissions drew attention to the considerable potential of spectrum pricing, derived through competitive bidding, to promote both spectral and economic efficiency and to constitute a more transparent process.

After considering the submissions and exploring the various options, the Department believes that a more streamlined version of the current comparative process should be retained and that, at the same time, establishing an alternative competitive selection process, incorporating a bidding procedure, would best serve the public interest in instances where reliance on market forces is appropriate. The Department will pursue the appropriate means to establish such an alternative.

For illustration, the Department presents an alternative process and solicits further public comment on its findings, the process and certain specific issues identified herein.

Background

Consistent with existing policies, the Department assigned portions of the radio frequency spectrum on a first-come, first-served basis. For the most part, it still does.

However, where there is newly available spectrum, insufficient to meet expressed demand at the outset, that approach may not adequately address all the appropriate considerations. On those occasions, the Department has used the comparative selection and radio licensing process to identify service providers.

The current comparative process, as it has evolved over the years, is now generally conducted in three phases. In the first phase, the Department publishes a call for expressions of interest in the Canada Gazette. In the second phase, the Department invites those who responded to the call to file detailed written submissions. Once the Department has evaluated the written submissions and the Minister has selected the successful applicants, the Department invites those applicants to file site specific applications, in the third phase, prior to the issuance of radio licences for the spectrum under consideration.

The *Radiocommunication Act (RA)* establishes the Minister's powers to regulate the radio frequency spectrum and ensure the orderly development of radiocommunication. In addition, section 5.(1.1) of the *RA* provides for the Minister's consideration of the objectives of Canadian telecommunications policy set out in section 7 of the *Telecommunications Act*:

"7. It is hereby affirmed that telecommunications performs an essential role in the maintenance of Canada's identity and sovereignty and that the Canadian telecommunications policy has as its objectives

(a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;

(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;

(c) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;

(d) to promote the ownership and control of Canadian carriers by Canadians;

(e) to promote the use of Canadian transmission facilities for telecommunications within Canada and between Canada and points outside Canada;

(f) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;

(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;

(h) to respond to the economic and social requirements of users of telecommunications services; and

(i) to contribute to the protection of the privacy of persons."

Statement of Issues

During the application of the comparative selection and radio licensing process on previous occasions, some concerns were expressed about certain aspects of the process, such as its ability to respond to the demands of the radiocommunication industry for a fast, efficient and flexible method of spectrum assignment.

The award of limited rights and privileges by government must be performed with respect to procedural fairness in decision-making. The growing economic significance of the opportunity to exploit increasingly scarce radio frequency spectrum reinforces that need.

Lastly, innovations in the licensing processes implemented by other administrations and the accompanying body of literature on the associated issues lead the Department to the view that a review of the existing comparative process could be enhanced by examining those international developments.

In its document, "Spectrum Policy Framework for Canada" (1992), the then Department of Communications stated its intent to continue to refine its administrative comparative process and its intent to implement any market-based approaches only after full consultation.

Selection Process Options

There are three basic types of competitive allocation processes currently in use by various administrations. In addition to those three types, one can also find various hybrids, combining different elements of the three.

- In a **lottery**, the Government identifies available spectrum and prescribes, as required, minimum qualification criteria and conditions of authorization. Applicants participate in a random draw for the available spectrum, in the expectation that equity is achieved if each applicant has an equal chance of winning.

- In an **auction**, the Government identifies the available spectrum and invites applicants to submit bids, with the underlying assumption being that awarding the spectrum to whoever values it the most will result in economically efficient outcomes and resource rent capture by the public.

- In a **comparative process**, proposals are judged on their merits with spectrum being allotted to applicants who best meet predetermined criteria. One can tailor the criteria to emphasize those concerns of relevance to the issuing authority, eg. previous record in providing similar services, financial backing, research and development investment.
- **Hybrids** combine a comparative evaluation with either an auction or a lottery. Applicants' submissions are first evaluated against a qualifying set of criteria with those applicants, whose submissions meet or surpass these criteria, advancing to the auction or

lottery phase. In such a hybrid, the issuing authority may tailor the evaluation criteria to address technical issues of concern and, through these criteria, determine who should be permitted to participate in the second phase.

Gazette Notice Issues and Responses

On April 30, 1994, the Department published Canada Gazette Notice No. SMRR-001-94, entitled "Public Review of the Comparative Selection and Radio Licensing Process". The Notice referred interested parties to an information paper of the same name, for details of the review, and an extensive bibliography related to selection and radio licensing processes. In the Notice, the Department invited interested parties to comment on or before July 23, 1994. At the request of several parties, the Department extended that deadline to September 30, 1994.

Issues for which Comments Were Sought

The ten issues, targeted in the review, are listed below with a summary of the comments received:

- ***Responsiveness.*** *Does the current comparative process respond to the various demands of the telecommunications industry and public in a timely manner? Is it flexible in accommodating these demands? Are there any alternative processes or procedures that could respond more effectively and/or be more flexible?*

While some respondents felt that the process could be accelerated to avoid economic costs to the industry, resulting from delays in introducing new services, the majority felt that the current process responded well to their various needs. One respondent suggested time limits be imposed on the decision making process, permitting successful applicants to respond more quickly to marketplace requirements.

Yet another respondent noted that protection of the public interest was more important than the tool used to achieve that goal.

One respondent noted that the current process is sufficiently flexible to be tailored to meet the needs of each situation in which it is employed.

- ***Openness.*** *What procedures should be employed in a selection process and what information, submitted by applicants, should be made public and when? Should specific evaluation criteria for a comparative process be made available? What, if any, portion of a selection process should be held in a public forum? What form would this public forum take? Should applicants be allowed to direct comments toward the merits of other applicants prior to the selection of the successful applicants?*

The majority identified a need for more openness at both the beginning and the end of the process. They proposed publicized selection criteria and/or a detailed rationale, supporting the selection of the successful candidates.

Opinions were divided as to whether a public tribunal would be desirable. While some respondents suggested that applicants be allowed to comment on their competitors' proposals as well as to rebut their comments, the majority opposed public hearings as being overly time-consuming. Some respondents noted that such hearings favoured those with the resources to make elaborate representations.

There was also support for having information, relating to the submissions of successful applicants, made public at the end of the process. Several respondents opposed both suggestions, based on concerns related to the release of commercial information. Yet another respondent felt advisory groups, comprised of business and consumer members, could explore and evaluate the selection criteria.

Another respondent noted that the Canada Gazette was not suitable as the sole medium of notifying the public of departmental policies and activities.

Another suggested that applicants be permitted to discuss their proposals with departmental officials.

- ***Encouragement of Innovation.*** *Does the comparative process encourage innovation in the areas of spectrum utilization and advanced radio services? What procedures or alternative selection processes could encourage innovation? Should preference be given to applicants that would commit significant resources to the development of innovative technology or services?*

Approximately half of the respondents indicated that the comparative process fostered and provided opportunity for innovative ideas. Two of those respondents agreed that the desired degree of innovation should be established as policy and incorporated in the selection criteria.

The remainder suggested that the marketplace, rather than government policy, should drive research and development, with one respondent observing that market forces are more effective than bureaucrats in finding applicants who are true innovators.

Two respondents argued that a past record of innovation or technological developments in other telecommunication services should be considered in allocation decisions. An opposing opinion suggested that a "Pioneer's Preference" should only be given to companies having already committed significant resources to developing the technology and services for which spectrum was being licensed, and who were prepared to commit more.

- ***Cost.*** *What are the costs to applicants associated with a comparative selection process and are they reasonable? Are there alternative processes or procedures that would be less costly?*

All but one respondent agreed that the comparative process is very affordable, with one respondent noting that the current costs are minimal compared to that of full service deployment and another respondent cautioning that costs should be kept as low as possible.

One respondent suggested that there be a special class of applications and licences for those serving niche markets in remote and northern communities.

- ***Economic Allocation.*** *Does the comparative process allow for the efficient allocation of spectrum and economic resources? To what extent might market forces be relied upon to efficiently allot the radio frequency spectrum and under what circumstances? How might the comparative selection process be modified to let market forces work? How should non-market factors be considered in the process?*

The majority indicated that market forces should not be given a higher profile, satisfied with the current process that emphasizes non-market factors. One in particular noted that the current comparative process already efficiently allocates spectrum to the most qualified applicants.

While one respondent indicated that market based allocation approaches may be appropriate for some uses, but not for allocating spectrum to essential public services, another indicated that broadcasters and telecommunication service providers should be granted priority over other spectrum applicants due to the public benefits provided by their services.

While one respondent expressed concerns that the Canadian population and demographics may make market approaches untenable and that such approaches may neglect the government's social objectives, another commented that technological advances may well render current allocation and assignment procedures irrelevant.

- ***Accommodation.*** *Does the comparative process accommodate the needs of telecommunications and radiocommunication service providers who operate on a local, regional, or national level? Are there alternative processes or procedures that would be better able to accommodate the differing needs of these different service providers?*

Respondents were split three ways. Some felt that this is not an issue. Others commented that the current process accommodates industry demands and responds to local, regional and national needs. There was also support for either reserving some spectrum for regional services or for making allocations on a regional, rather than a national, basis.

Rather than rely on the Canada Gazette, one suggested the Department provide information through media that is more accessible to small and regional entrepreneurs.

While one respondent indicated that the current selection process could easily be used to accommodate the needs of different service providers, another observed that neither the comparative selection process nor any of its alternatives had any impact on the fundamental questions of when a market will be opened up or how many licences will be created in a given market.

- ***Encourage System Implementation.*** *Does the comparative process encourage successful applicants to implement their systems in a timely manner? What mechanisms or incentives could the Department use to ensure that licensees meet their*

commitments, for example charging performance bonds?

While opinions were divided regarding whether posting a bond would ensure system implementation, several respondents proposed establishment of a reasonable time limit for system implementation. Failure to significantly implement at the end of that period would be grounds for revoking the radio authorization. Should performance bonds be used, one respondent urged that details and conditions be clearly stipulated from the outset of the process.

Several respondents indicated that the current process adequately encourages spectrum development through the requirement of implementation plans, annual reports and the consideration of past performance and that system implementation could be encouraged by licensing a feasible number of competitors in each market.

Other respondents suggested that industry be allowed to set its own standards and that the Department consider the use of positive incentives, such as innovative licence fee structures or fee incentives that reward early deployment, rather than performance bonds.

One respondent noted that market forces play a role after licences have been awarded, under the rule that licences may only be transferred once a service is implemented.

- ***Spectrum assignment.*** *Should a time limit, similar to a lease, be placed on the allotment of spectrum to the successful applicants? Should the spectrum be re-assigned at the end of the lease through another call for applications? Are there alternative procedures to re-assign the spectrum?*

Only half the respondents addressed this issue but they were agreed that licences should not be subject to a time limit because it would stifle innovation.

Another suggested that tradable spectrum rights would render time limits unnecessary.

- ***Use.*** *Under what circumstances should the comparative process, or any alternative process, be used? Should it be used only for the introduction of new public radiocommunication services or newly available spectrum? Should it be extended to other situations such as frequency reassignment in a highly spectrum congested area, where more applicants are anticipated than can be satisfied with this spectrum?*

Many felt that Industry Canada should continue to use the 'first-come first-served' process when allotting licences for safety bands, microwave point-to-point systems and other existing services. On the other hand, the comparative process was found to be most effective when introducing new public commercial services and in cases where expressed demand would exceed supply. One respondent urged that local telephone companies, serving rural and northern communities, should have right of first refusal to provide new services.

Another recommended creation of a market in spectrum usage rights, rather than attempting to improve administrative (non-market) assignments and allocations.

- ***Spectrum revenues.*** *The revenues accrued to the Crown are prescribed by the Governor in Council through regulation and are not part of the selection process. These*

revenues are raised through annual radio licence fees. Should the determination of radio licence fees, for the service being introduced, be part of the selection process? What form could this take?

The majority agreed that revenue should not be a selection criterion. Other comments tended to be more unique and are listed below:

- Only one licence fee should be administered at the beginning.

- Licence fees should reflect population congestion.

- Licence fees should be limited to cost recovery.

- The fee regime should be defined before the selection process begins.

- Market pricing permits the extraction of more revenue from scarce resources.

- Fees should be set at a level to encourage growth and could be tied to profits.

- Competitive bidding would negate the need for fees based on usage.

- Fees should be based on profitability or intensity of spectrum exploitation.

Auctions

Auctions were given no particular profile in the Gazette Notice, nor were they identified for specific comment to any greater or lesser extent than other possible selection mechanisms, yet almost all of the twenty-two respondents provided comments on the advisability of using competitive bidding to select spectrum licensees. No doubt, the high visibility of the American decision to auction spectrum licences was largely responsible for the amount of attention given to this issue by the respondents. Given this high level of interest, the fact that respondents' opinions were divided on the question of spectrum auctions, and the growing number of countries around the world who are implementing auctions as part of their spectrum management activities, the Department felt that a thorough examination of the issue was warranted. Accordingly, the Department carefully examined the comments received, the content of available reference documents (from the bibliography cited in the consultation document) as well as ongoing developments in other countries.

Comments in favour of the use of auctions for selecting service providers generally revolved around the following themes:

- Auctions will result in an economically efficient allocation of the spectrum resource.
- Auctions can be conducted quickly.
- Auctions are an open and objective method of selecting service providers.
- Auctions will establish a market value for the spectrum in question.
- Auctions will capture economic rents for the public for the use of the public's radio frequency spectrum resource.

These claims were not disputed in the submissions that expressed opposition to auctioning. As well, the literature reviewed by the Department supports these conclusions, provided that care is taken in the design of the auction.

Many comments against the use of auctions were submitted, citing particular features of the auctions employed by the Federal Communications Commission (FCC) in the United States, as opposed to the broader policy considerations and merits of the incorporation of market-based approaches.

Concern was expressed that the introduction of spectrum auctions would negate government's ability to effect social policy objectives through its radio licensing activities. Examples include:

- Auctions will confer ownership of the radio frequency spectrum on service providers, thus eliminating the Department's ability to set and implement policy.
- Auctions eliminate the Department's discretion in the selection process.
- Auctions would limit deployment to only the largest markets, contrary to the objective of universal service.
- Attempts in auction design to incorporate provisions designed to benefit "designated entities" do not meet with success.
- Auctions would work against the public interest by forcing organizations such as police departments, fire departments, and ambulance services to bid against commercial interests for spectrum access.

Although not subject to specific contrary comment, the first objection assumes a change in current departmental policy which is not inherent in auctions themselves. The literature does not suggest that the use of competitive bidding must necessarily change the nature of the right granted to the licensee, but merely represents a different method of deciding who receives an authorization.

With respect to the elimination or limitation of the Department's policy function, one respondent noted that auctions are consistent with applicants meeting certain requirements of the licensing authority. For example, the authorities can make those requirements a condition of holding the licence, regardless of who wins.

The observation, made in the fall of 1994, that "designated entity" provisions do not achieve their objectives would appear to have been superseded by subsequent events. The FCC's Regional Narrowband Personal Communication Service (PCS) Auction, in which many designated entities came away with licences after some "fine-tuning" of the system, would appear to demonstrate that measures can be successfully implemented to favour specified groups, should that be government policy.

Finally, the Department could find no instance where a country, having adopted auctions, so implemented them so as to compromise their public safety services.

Other objections to the use of auctions dealt with financial considerations. Specific points include the following:

- The large up-front sum that must be paid by an auction winner constitutes a barrier to rapid service deployment.

- Any amount paid in an auction for an authorization will be passed on to consumers in the form of higher prices.

- Fees should not be set any higher than the costs incurred by the Department in administering the Spectrum Management Program.

One respondent noted that auctions for spectrum might encourage rapid exploitation, since the licence price has to be recovered quickly.

With respect to the second point the Department notes that several countries, that have implemented auctions, have done so in the belief that, in competitive markets for telecommunications services, individual firms will lack the market power to dictate prices. The literature provides no assurances that the assignment of spectrum, by means other than auctioning, shields the consumer from paying anything other than the highest prices that the market will bear for the services provided. Suppliers in functioning markets price their products according to the willingness of consumers to pay, as moderated by competitive pressures. Service providers will extract “what the market will bear”, regardless of what they have paid by way of input costs. The Department considers that bidders for spectrum will fashion their bids after carefully studying potential consumer demand for the service(s) they would offer, determining the consumer's willingness to pay for such services and allowing for costs and profits. Thus, it is prices that will determine bids and not, as some would suggest, bids that will determine prices.

The position that the Department's revenues should not be greater than its costs leads to the question of what currently happens to the economic rents generated by the scarce spectrum resource. In addition to economic theory and the analyses conducted by several administrations, having adopted market-based techniques in their spectrum management, one respondent suggested that when the market value of spectrum is not captured by government, it is captured by somebody else. Given that the radio frequency spectrum is a public resource, the capture of these resource rents by anyone other than the public would seem inappropriate.

The specific nature of the Canadian market for spectrum-based products and services, and the potential impact that auctioning could have in this market, were also areas of concern. Comments related to these matters included:

- Auctions may be applicable to the United States, but not to a much smaller country like Canada that faces lower levels of spectrum congestion.

- The adoption and development of digital technology and spread spectrum systems will render the current spectrum usage paradigm obsolete. Thus, assignment methodologies associated with this paradigm, like auctioning, are inappropriate and may retard the development and application of new technologies.

- Auctions may give rise to situations where one party would out-bid a rival simply to prevent competition, thus resulting in the creation of monopolies.

- Auctions could benefit incumbents at the expense of new entrants with innovative ideas and technologies, but little market share and financial capital.

- Auctions may attract speculators whose intention is to hoard or "warehouse" spectrum and then resell it at a profit to firms who are actually interested in using it to provide goods and services.

The Department's research indicates that many administrations, whose population density, economy and spectrum usage vary considerably, have turned to auctions for assigning spectrum.

The extent to which certain technologies may render spectrum scarcity moot in the future cannot be known with certainty. While technological advances may well bring greater efficiencies, there is no "free ride" and information movement needs may well keep traffic demands at levels where spectrum access remains a matter of contention. Several administrations have permitted greater flexibility by their licensees in the technologies they choose to employ in the expectation that enhanced competition will work to provide sufficient efficiency incentive. In any event, auctions are generally only utilized following consultations that have considered, at the policy level, determinations with respect to frequency allocations, band plans and technologies to be employed, and thus only determine who among several mutually exclusive contenders will have access to limited spectrum and cannot, post facto, retard these determinations and evolution.

In regard to the third and fourth points, the Department observes that other administrations have addressed undue market concentration by limiting the amount of spectrum that certain individual users or classes of users may acquire, thus ensuring that several competing licensees, including newer and smaller companies, will be in operation for any given service. If so desired, preferential treatment in the form of bidding credits, for example, have been extended to "small players".

In response to the fifth point, other administrations have obviated speculative or frivolous bidding through a screening process intended to weed out those with no intention to implement services or by incorporating "Use it or lose it" provisions as licence conditions.

Finally, some respondents were concerned with process issues, such as the time that might be required to hold an auction. The Department notes that the FCC auction for Blocks A and B of the 2 GHz PCS band required less than 100 days. One of the respondents commented that auctions have the advantage of being relatively fast, and very objective.

In fact, many countries cite the speed with which auctions allow spectrum licences to be awarded as a major factor in their decision to adopt them.

To summarize, although no specific comment was sought on the subject, auctions received more comment than any of the issues raised by the Department in its consultation paper. The opposition expressed by the majority of respondents is consistent with that received previously in the consultative process conducted in the formulation of the Spectrum Policy Framework.

Review Findings

The Department has noted the concern expressed by some parties that any revised selection process should not apply to certain users of the radio frequency spectrum. In revising the process, the Department does not intend to broaden the scope of application beyond that employed in the past where an administrative comparative process has been used to select from among competing applicants seeking to provide commercial spectrum-based services to the public. The Department does not foresee any application of the revised process in circumstances where priority users would contend with other applicants in a process where mutual exclusion was foreseen. The Department continues to be of the view, expressed in the 1992 Spectrum Policy Framework, that:

> "Radiocommunication systems vital to sovereignty and national security, national defence, public security, safety and emergency will be granted high priority and support in the access and use of the radio spectrum. Also, essential government operations, and other agencies providing critical services to the general public, will have high priority in use of the spectrum."

The Department has carefully considered the interventions that it received, regarding the comparative selection and licensing process, and has examined the practices and rationale of other administrations in similar circumstances. This consideration recognizes and does not disagree with the views expressed by many respondents that the current process has resulted in notable success in several instances and that it has generally met industry needs.

For that reason, the Department proposes to retain a slightly modified, more open comparative selection and licensing process for those instances where the Department has identified that process as the optimum for allocating spectrum. These changes could be noted in the recent application of the comparative process for the selection of applicants for PCS, when the Department provided potential applicants with more detailed information, regarding the criteria to be used in evaluating their submissions, by identifying those elements that were considered to be of greater significance.

At the same time, the Department recognizes that the telecommunications environment is undergoing significant change, bringing new demands for which the current process may be seriously inadequate. In responding to a myriad of new applications, demand for radio frequency spectrum is expected to continue to outstrip the available supply. Consequently, the value of the spectrum will grow, as will the importance of ensuring that the limited spectrum available is put to the use most highly valued by Canadian society. The powerful enabling potential of the spectrum, to bring efficiencies to other economic activities and thus contribute to Canada's international competitiveness, reinforces the need to ensure its optimal use.

As was indicated by many respondents, any selection process must ensure that the public

interest is best served. The Department believes that the alternative process, described herein, will have the capability and flexibility to address the multiple objectives that collectively comprise the public interest. Specifically, the Department believes that the alternative process will both contribute to the orderly development of the radio frequency spectrum and take into account Canada's telecommunications policy objectives.

The Department is also quite sensitive to the requirement for procedural fairness in any government process that awards highly valued and limited rights and privileges and has strived to incorporate a greater degree of transparency in the revised process, while avoiding proceedings that would be overly burdensome and time-consuming to all parties concerned.

Ideally, the Department's selection process should not be burdensome, in its demands for information from potential applicants, as it strives to identify those services that will best meet the needs of Canadians. Nor should the Department continue to attempt to select the optimum combination of technology, service offerings, implementation strategy, business plan, etcetera, in an environment of rapid technological change, convergence, and changing consumer demands and expectations, not to mention factors such as increased and increasing global competition. Rather, the Department should seek to confine its determinations, based on its evaluation of information submitted by applicants, to whether mandatory requirements have been met. Notwithstanding the above, the Department may also consider to what extent, if any, a representation from an applicant, with respect to the announced policy to apply to the spectrum in question, warrants the consideration of any application except in strict accordance with that policy. This provides a significant departure from the existing practice of basing the selection itself on the information provided. The consequential reduction in the volume of information demanded of applicants should also alleviate much of the concern expressed with respect to the potential release of proprietary or commercial confidential information.

In the same vein, the Department considers that administrative decision-making may not be as effective as market forces in encouraging innovation in spectrum utilization and service provision. Consumers should ultimately decide what services they want and from whom and at what cost. The Department will accordingly de-emphasize these aspects in its decision-making in the alternative selection process.

In its exercise of the comparative selection and licensing process, the Department's decision-making depended, in part, on an evaluation of the applicants' stated intentions with respect to what they would implement if selected. Inasmuch as it is much easier to make promises than to deliver infrastructure and services, the Department has required licensees to submit annual progress reports to measure their performance against their commitments. Experience has shown that even the best of intentions may be thwarted by changing marketplace condition. Given these circumstances, the Department is reconsidering the role of such commitments, typically made when the services and the technologies, upon which they are based, will in all probability be in their early development stages. The Department believes that the revised selection process will permit service providers a greater degree of flexibility to change their plans to respond to changing conditions, while providing them with every incentive to put the spectrum associated with their licences to early and productive use.

In weighing the representations received, the Department recognizes the desirability of avoiding any additional administrative burden or any process that would introduce additional delays to those seeking to rapidly bring innovative new services to the marketplace. Accordingly, in proposing changes to the current process, the Department will also strive to ensure that current time frames are not lengthened but are reduced wherever

possible.

Given the evolution of a flourishing, competitive, telecommunications industry and a policy objective to “foster increased reliance on market forces for the provision of telecommunications services”, the Department believes that it should reduce its role in defining services and determining technological choices (while continuing to ensure spectrum compatibility). With increasing reliance on market forces to make these determinations, the Department's need for differentiating between competing applications in administrative decision-making is commensurately reduced.

The current comparative selection process leaves little, if any, opportunity for the influence of Canadian consumers to manifest itself. Incorporation of a market-based mechanism in any new process would ultimately work to ensure that those, who have identified how to most efficiently address the wants and needs of telecommunications consumers, will have access to the spectrum they require to carry out their plans.

The Department notes that new spectrum-based technologies have significant potential to compete with, and to displace in some measure, non-spectrum-based transmission technologies (e.g. copper twisted pair, coaxial cable, fibre optic) in the provision of telecommunications services. The Department is concerned that the choice of technologies not be distorted by the availability of spectrum at a cost that is not representative of the opportunity cost associated with its use. While the Department has the ability to establish the de facto cost of radio frequency spectrum by virtue of its annual radio licence fee, it has no satisfactory mechanism to estimate the value of the spectrum as it does not have access to the business plans of the many companies that would use it. Nor does it have access to information about the capital constraints and risks that limit the ability and willingness of these companies to pay. The Department believes that only the market can determine the true value of the spectrum.

Similarly the Department notes that, in the absence of predetermined technologies, the question of how to ensure spectral efficiency arises. The Department's spectral efficiency determinations have always been a trade-off between spectrum availability and demand on one hand and the costs incurred by users to achieve greater efficiencies on the other. Other relevant considerations include the grade-of-service to be offered and the volume of traffic to be carried. With competition and market-induced innovation, the Department anticipates that it cannot, and should not, if market forces are to prevail and be real, stand in judgement of these matters in the authorization process (while continuing to consider similar factors more generally at the higher, frequency allocation level). Grade-of-service provisions represent a characteristic by which competing service providers may choose to differentiate themselves in the eyes of their potential customers and, therefore, should not be the subject of decree by the Department. The Department is of the view that service providers, facing the market-determined opportunity cost for spectrum, will be led to appropriately trade spectrum consumption against other costs and thus will, through their actions, strike that balance which represents both spectral and economic efficiency. Conversely, in the absence of the true value of the spectrum to guide those who exploit it, the ever increasing burden of determining what constitutes spectral and economic efficiency falls on the Department.

The Department has been particularly struck by the opposition to auctioning in the majority of received comments. Cognizant of an unmistakable trend towards market-driven allocation mechanisms by administrations having diverse telecommunications infrastructures, economies and demographies, the Department has examined the pros and cons of auctions in depth. In particular, the Department has examined to what extent both auction methodology and design and terms and conditions of authorizations can affect the

merits and concerns.

Concern has been expressed that the radio-frequency spectrum is a public resource that should not become the subject of private ownership through auctioning. The Department does not see that incorporation of a bidding procedure into its selection and authorization process necessitates, in itself, any change whatsoever in the nature of the entitlement bestowed by the radio authorization. The General Radio Regulations, Part II, section 20 state:

> "The assignment of a frequency or frequencies to any station does not confer a monopoly of the use of such frequency or frequencies nor shall a licence be construed as conferring any right of continued tenure in respect of such frequency or frequencies."

The Department sees no need to change this in entertaining a selection process, that involves bids representing someone's willingness to pay for the use of spectrum. Bids would presumably be based on the limited privileges acquired, should an authorization be granted.

Nor should the use of a bidding procedure in any way limit the Minister's ability to exercise his responsibilities under the *Radiocommunication Act, Telecommunications Act* or *Industry Canada Act*. The Minister would continue to have full authority to allocate the radio frequency spectrum, establish policy and to fix the terms and conditions of radio authorizations.

In the interventions received, the Department noted the concerns of several parties that large up-front payments could impose hardships on new entrants who would also have to acquire the capital to construct the facilities required to offer the newly authorized service. The Department, seeking not to aggravate the financial challenges faced by service providers when their capital requirements are most intense, does not consider lump sum payment as a requisite feature and, in fact, considers that the bids could well represent the bidders willingness to pay an annual fee. By not insisting on lump sum payment, the government, and therefore the Canadian public, assumes some of the risk associated with the new venture.

At the same time, payment of an annual fee, reflective of the opportunity cost of the resource being consumed, should encourage service providers to implement systems in a timely fashion and minimize the profitability of speculative acquisition of spectrum.

The Department has found unconvincing those arguments suggesting that competitive bidding would mean that higher costs would be passed through to consumers. Firstly, those arguments fail to note spectrum is a rent-producing resource and that auctioning merely places those economic rents in the hands of the public, rather than allowing them to be absorbed into corporate profits. Secondly, suppliers in functioning markets price their products according to the willingness of consumers to pay, as moderated by competitive pressures. Service providers will extract "what the market will bear", regardless of what they have paid by way of input costs. The Department considers that bidders for spectrum will fashion their bids after carefully studying potential consumer demand for the service(s) they would offer, determining the consumer's willingness to pay for such services and allowing for costs and profits. Thus, it is prices that will determine bids and not, as some would suggest, bids that will determine prices.

The minority comments in favour of auctions that the Department received cited benefits to auctioning based on well-established, microeconomic, resource allocation and price

mechanism fundamentals. Included in these are: the provision of the spectrum resource to those whose use will be most highly valued by society, the efficient combination of spectrum and non-spectrum resources via the price mechanism, and the capture of economic rents for the owners of the resource. These benefits and their supporting theory invariably appear in the analyses and policies of those many administrations having adopted market-based techniques in spectrum management and thus have been found to be applicable to the spectrum resource in the estimation of a large number of experts working independently worldwide. The Department's own analysis agrees with these findings.

Conclusions

The Department concludes, following what it believes to be a thorough consideration, that it must differ with the majority opposition, expressed in this review, to the introduction of competitive bidding procedures. This finding should not be interpreted as indifference to the industry's input to this proceeding. The Department, while respecting the industry views, cannot base its decisions solely on such input for to do so would equate industry interest with that of the public. While these interests may indeed often coincide, the Department's must weigh all considerations and, in this review, avail itself of all available information and analyses. The Department recognizes that the adoption of competitive bidding procedures, in cases where mutually exclusive demand for spectrum exists, represents a significant departure from past practice, but evolving circumstances are such that this option is warranted and in the public interest. The Department seeks to ensure that Canadians receive the benefits of such changes to its selection process while respecting the commitment made in the Spectrum Policy Framework for a full consultation. Accordingly, the Department will pursue the appropriate means to adopt competitive bidding, for use in future selection processes where mutually exclusive demand is evident and where, in the estimation of the Department, the circumstances warrant. The Department presents herein, for illustrative purposes, a potential process incorporating a competitive bidding procedure.

Illustrative Competitive Bidding Selection Process

▹ Stage 1 - Call for Expressions of Interest and for Applications for Qualified Service Provider Certification

The Call for Expressions of Interest and for Applications for Qualified Service Provider Certification would follow the release of the applicable policy and be designed to identify those parties qualified to provide a radio service in the spectrum available and to thus establish their eligibility to proceed to selection. Such a Call would only be made where the Department had reason to believe that the amount of available spectrum would not be sufficient to accommodate all users on a first-come, first-served basis.

The Call would refer interested parties to the policy established for that particular spectrum and radio service. The policy would, in turn, address such issues as eligibility to participate, the nature of the service to be provided (to the extent it is to be defined), technical specifications and limits, band plans, national/regional/local allocations, service areas, the amount of spectrum available and other related issues. This stage would also provide applicants with an opportunity to make representations as to why their candidacy should be considered in any manner other than that in strict adherence with the announced policy.

The Call would also.:

- describe the requirement to demonstrate financial qualifications or capability,

- include a statement explaining the rules for transferring authorizations and the minimum length of the period for which an authorization will be granted,

- describe the details of the bidding procedure, any deposit requirements and any minimum acceptable bid amounts that may apply, and

- prescribe the deadline for responding to Stage 1 and the timetable for the selection process.

Applicants would address the issues identified above and indicate the quantity of spectrum they would seek if certified and their intended service area(s).

The Minister would consider all responses and issue certificates to all qualified applicants, certifying them as Qualified Service Providers for the spectrum under consideration. Should there be enough spectrum to accommodate all of the Qualified Service Providers, the Department would revert to the consideration of their applications, on a first-come, first-served basis.

▹ Stage 2 - Establishment of Fees and Award of Authorizations

1. Confirmation of Participation

If there was insufficient spectrum to meet the needs of the Qualified Service Providers for the spectrum concerned, they would be invited to confirm their interest and intent to participate in competitive bidding to select successful candidates and to establish the annual fee to be paid. The Invitation would include but not necessarily be limited to the following:

- a request for confirmation of intent to participate, including payment of a deposit, and

- an indication of the deadline for receipt of confirmation.

Here again, should this step, by virtue of the possible withdrawal by some parties, result in the elimination of the previously identified mutual exclusivity, the Department would revert to the consideration of applications, on a first-come, first-served basis.

2. The Bidding Procedure, Establishment of Fees and Award of Authorizations

Where confirmed participation demonstrated mutually exclusive contention for the available spectrum, the Department would conduct a bidding procedure for the establishment of fees and the award of authorizations.

The choice of a specific bidding procedure (traditional oral out-cry, sealed bid, multiple round simultaneous, etc.) would depend on the specific attributes of the authorizations in question. For example, if only a few "national" authorizations were available and bidders were not permitted to acquire more than one authorization each, then a simple bid format might be appropriate. On the other hand, if a large number of authorizations were available and aggregation was contemplated (with appropriate safeguards to prevent excessive market concentration), then their values would be interdependent. That is to say, an authorization for Calgary/southern Alberta might be more valuable to an applicant who was also seeking one for Edmonton/northern Alberta. Equally, a frequency block in an area might be more valuable to an applicant who was seeking a contiguous block in the same area. In these situations, a more complex format, eg. simultaneous open bidding, might be beneficial in that it would permit economically efficient aggregations of spectrum.

The successful applicants would have their deposits credited towards their first year's fees and would have to render the balance within thirty days of the Minister's announcement. Failure to do so would result in forfeiture of the deposit. The authorizations in default would be offered to other Qualified Service Providers.

Where authorizations are awarded via these procedures, the associated fees will be based on the basis of authorized rather than utilized spectrum so as to preserve the implementation and deployment incentive of the fee and to recognize that the resource has effectively been consumed and denied to other potential users.

Specific Aspects for which Further Comment is Sought

As previously stated, the Department intends to establish and employ the general process, described herein, where it concludes that market forces may be relied upon to appropriately assign spectrum within the provision of the applicable policy. The Department invites comments from interested parties on appropriate measures for the Department to take with respect to the following issues:

1. Term and Renewal of Authorizations

To guarantee that any bidding process is both fair and efficient, it will be necessary to ensure that all aspects of the authorizations concerned are clearly defined. In order to effectively participate in the bidding procedure, bidders must know exactly that upon which they are bidding. A crucial aspect is the time dimension - for how long is the authorization valid, and once that period is up, what happens in terms of re-assignment?

There are two competing influences which must be balanced when determining an appropriate term for spectrum authorizations. On the one hand, long terms (of say ten or twenty years) and a high probability of renewal at the end of a term are desirable in that they provide service providers with the certainty and stability they will require if they are to make large investments in infrastructure. Obviously any entity would be reluctant to invest if it felt that its authorization might expire after only a few years, before it had a chance to earn a return on those investments.

On the other hand, shorter terms, without renewal guarantees, facilitate the reallocation of spectrum from one service type to another when such a change is warranted.

Different spectrum management administrations have taken different approaches with respect to this issue. In Australia, current proposals are for licence terms to be set at ten years, but with no option for renewal. Once the ten year period is up, licences will once again be put up for auction. It should be noted, however, that ten years of experience and investment may well give incumbents a decided edge should they wish, as they likely would, to enter bidding for the "second term" of the licence. New Zealand's system is similar, except that licence terms there may be up to twenty years in length, rather than ten.

In the United States, both narrowband and broadband PCS licences were issued for ten year terms, but with a "significant expectancy of renewal" attached. This policy means that licensees can expect to have their licences reassigned, provided they have demonstrated "good behaviour" in their operations and dealings with the FCC over the term of their licence. Thus, the American licences actually exhibit more of a quasi-perpetual nature than a fixed-term one.

- *Should spectrum authorizations be granted for a fixed term? If so, how long should that fixed term be?*

- *At the end of a fixed term, should service providers have some form of renewal guarantee or preferential status in a re-assignment process?*

2. Transferability

One must also address the issue of whether spectrum will be transferable (and divisible), and if so, subject to what conditions or limitations. One of the key arguments in favour of moving to an assignment process, that includes a bidding element, is that it more effectively ensures an economically efficient allocation of the spectrum resource. If such an allocation is to persist into the future, economic theory holds that authorities should be defined as flexibly as possible in terms of usage, and should be made transferable. This will ensure that as technology and market conditions evolve, spectrum access rights continuously migrate to those uses with the highest societal value. Consequently, there should be less need for government to intervene and administratively reallocate spectrum from one service to another.

Important factors to consider, with respect to spectrum transferability, include the need to deter speculative dealing in spectrum that delays or impedes provision of new services and the need to prevent excessive concentration of spectrum resources that could diminish competition in the marketplace.

As one example of how these concerns can be addressed, the FCC has established:

- a transfer disclosure requirement for PCS licences traded within three years of initial assignment,

- service roll-out deadlines for licensees to ensure that spectrum is not "ware-housed", and

- spectrum aggregation limits in the PCS and cellular bands to ensure that each market will have several competing service providers.

- *Should spectrum authorizations be made transferable? If so, what conditions or limitations should be attached to transferability?*

3. Financial Aspects

Previously in this paper, it has been noted that the large lump sum payments required of winning bidders in the American PCS auctions were a major source of concern to respondents. Respondents felt that such a payment mechanism imposes financial constraints on service providers precisely at the time when large amounts of capital are required to begin service roll-out, and that it may also particularly hinder the opportunities for smaller players with less extensive access to financial capital.

The Department is sensitive to these concerns and thus does not propose a requirement for a lump sum payment. Rather, the Department foresees a process in which applicants disclose the amount that they are willing to pay as an annual fee. This allows service providers to spread their payments out over the life of their authorizations, rather than having to pay the entire amount before they have even generated a single dollar in service revenues. Obviously, the need to establish the length of the term and the procedures to be followed at its end is again highlighted.

As a final matter, the Department's review and analysis of various auction mechanisms indicate that in virtually all cases a refundable, pre-auction, bid deposit is a crucial element in auction design. As one example of its importance, the bid deposit is critical as a means of ensuring that frivolous bidders are deterred from entering and compromising the auction process.

The Department seeks further comments on the payment process in general, and specific comments with regard to the following questions:

- *What would be an appropriate basis for determining the value of bid deposits?*
- *Should these deposits be in the form of cash, or some other instrument, perhaps along the lines of a performance bond?*
- *Should some other safeguard (again possibly along the lines of a performance bond), in addition to the potential loss of an authorization, be implemented to better ensure that annual fees, committed to in the bidding procedure, are actually paid?*

Instructions for Filing your Comments

Comments may be submitted in writing and/or in electronic format. Address your submission to:

Review of the Comparative Selection and Radio Licensing Process
Spectrum Management Operations

Radiocommunications & Broadcasting Regulations Branch
Industry Canada
300 Slater Street
15th Floor
Ottawa (Ontario)
K1A 0C8

Attention: DOSP-C

We can also receive comments electronically via the Internet at:
Compproc@ic.gc.ca

To ensure your comments are considered, your submission must be received at the above address within 90 days after the publication of the notice in the Canada Gazette.

Public Access

Submissions received in response to this review will be made available for public viewing for a period of one year following the closing date for filing submissions. These submissions may be seen in the libraries of the Department at 365 Laurier Avenue, 2nd Floor, Ottawa, or the Department's spectrum management offices in Moncton, Montréal, Toronto, Winnipeg and Vancouver.