Public Notice CRTC 2001-113

FACT FINDING INQUIRY ON INTERACTIVITY

Comments of the

Canadian Broadcasting Corporation

February 15, 2002

Table of Contents

Executive Summary

The Commission's initiative is extremely timely in view of increased consumer awareness and interest in interactive services, and the important role that these services will play in the Canadian broadcasting industry.

Two key conclusions have emerged from the CBC's review of the industry and from the CBC's own recent experiences with interactive services:

> i.) interactive features and applications will form an integral part of broadcasting services in the near future;
>
> ii.) the establishment of an over-riding policy framework to resolve the problems associated with undue preference, and access to the bottleneck services and essential facilities associated with the provision of interactive services is a critical first step in creating a productive environment for the development of these services.

In addition to the generally applicable objectives of the broadcasting policy for Canada, (encouraging diversity of programming services, and adaptability of the broadcasting system to technological change), section 3(1)(m) of the Broadcasting Act specifically requires that programming provided by the CBC:

> (iii) actively contribute to the flow and exchange of cultural expression

In recent years, the CBC has been experimenting with new ways of providing Canadians with opportunities for more direct input into program formats. A good example of these initiatives is the town hall programming format for public affairs that provides for electronic input by viewers.

Interactivity is presenting an exciting new way for the CBC to provide greater and more direct interaction with Canadians and a forum for the exchange of culture and ideas.

It is important to the fulfilment of the CBC's mandate, and to the future development of the interactive services marketplace in Canada, that the opportunity to expand the involvement of Canadians in the public broadcaster's programming and broadcasting services not be inhibited by an absence of public policy and regulatory rules that leave BDUs in control of the CBC's offerings of interactive programming features.

The importance of interactivity to broadcasting services and the Canadian broadcasting industry, and the seriousness of the bottleneck facility and undue preference issues in possibly impeding the future development of interactive services to the detriment of Canadians and the Canadian industry, underscore the requirement for an over-riding regulatory framework for the distribution and offering of these services.

The CBC therefore urges the Commission to initiate a public proceeding with the goal of establishing a policy framework and regulatory rules that are conducive to the successful development of interactive services in Canada.

In these comments, in addition to providing a broad review of interactive services and the interactive services marketplace in Canada, the CBC proposes four policy principles that it believes could serve as a starting point for the development of a regulatory framework to govern the provision of interactive services. These principles, which are discussed in detail in these comments, are:

i.) Interactivity will become an essential component of future broadcasting services and should be considered within the context of the goals and objectives of the Canadian broadcasting policy.

ii.) In order to promote investment and development of interactive programming services in Canada, and in order to provide consumers with a broad range of innovative services, rules must be developed to ensure non-discriminatory access to facilities required to deliver these services to Canadians.

iii.) The quality and feature-rich nature of enhanced broadcasting signals must not be diminished or distorted by distributors.

iv.) The cost of providing non-discriminatory access to enhanced broadcasting services and the cost of delivering these services to the public should be recovered by distributors from their subscribers.

The CBC looks forward to a full and open discussion of all of these issues following the conclusion of the Commission's fact finding inquiry.

Part I: Introduction

1 The Canadian Broadcasting Corporation (CBC) is pleased to provide its comments in response to the Commission's PN CRTC 2001-113 *Fact Finding Inquiry on Interactivity*.

2 This initiative is extremely timely in view of the increased consumer awareness and interest in interactive services, and the important role that these services will play in the Canadian broadcasting industry.

3 Indeed, not only has the Commission noted the recent proliferation of interactive services in Canada, but in deciding to issue PN 2001-113 at this time, the Commission has also recognised:

> The importance that interactivity may play in the development of new and existing Canadian programming services, as well as the potential of such services to provide tremendous value to consumers.
>
> The advent of digital distribution, and the ever increasing number of subscribers to digital service… …stand to open a broad range of opportunities to enhance the viewing choices and the level and type of service provided to subscribers.

4 In developing its response to PN 2001-113, the CBC has drawn heavily on its recent experiences developing interactive services, and making these services available to Canadians. In addition, and as set out in Part II below, the CBC has reviewed the interactive services sector, and identified some of the important business and technical issues associated with that market.

5 Two key conclusions have emerged from this review and the CBC's own recent experiences. These conclusions, which are discussed and explored further throughout these comments, are:

> i.) Interactive features and applications will form an integral part of broadcasting services in the near future;

ii.) The establishment of an over-riding policy framework to resolve the problems associated with undue preference, and access to the bottleneck services and essential facilities associated with the provision of interactive services is a critical first step in creating a productive environment for the development of interactive services.

6 In regard to the first conclusion, it is apparent to all industry participants that the digital revolution and the widespread adoption of enabling technologies are creating fantastic opportunities for audio-visual information and entertainment services. In turn, and complementing this growth in opportunities, more knowledgeable consumers will soon begin to demand a greater level of information and sophistication from their broadcasting services.

7 This demand will of necessity be met by broadcasters, both as a means to limit audience erosion to the Internet experience, and increasingly, as digital technologies advance, because the technical restrictions that previously prevented broadcasters from doing so, are now evaporating.

8 Moreover, the opportunities for the development of interactive services and the demands by consumers for more interesting broadcasting services are global phenomena. Increasingly, there will be pressures for the Canadian industry to keep pace with these developments and to show leadership in the development of relevant and innovative interactive services for Canadians.

9 Therefore, broadcasting services will necessarily contain and provide interactive features as an integral component of the program experience.

10 The second conclusion above, the need for an over-riding policy framework, reflects both the historical experience of the Canadian broadcasting and telecommunications industries in respect of distribution systems with high levels of market power, and the CBC's own experiences in attempting to develop and offer new interactive services to the public. The near absolute control over distribution outlets exercised by distributors and the proprietary elements being used by these distributors in the establishment of interactive service offerings, have demonstrated to the CBC that it does not have significant opportunity or flexibility to promote and gain experience with its interactive services.

11 There are two aspects to this issue. First, distributors control essential or bottleneck facilities used in the offering of interactive broadcasting services. Access to both the set-top box (STB), and the underlying distribution facilities are essential in order for consumers to be able to access interactive services – both broadcasting and non-broadcasting.

12 This is not an issue that can necessarily be resolved by achieving a minimum level of competition in the BDU industry. Competitive forces alone will not provide sufficient incentives for BDUs to open their networks and their STBs to broadcasters' interactive services. The economic advantages of creating a "walled garden," of giving undue preference to affiliated interactive services, and of leveraging BDU bottleneck facilities to extract a monopoly rent, could out weigh the advantages of offering subscribers a greater variety of services. The economic cost to consumers of changing BDUs (including the costs of satellite dishes, installation, STBs, etc.) may also limit subscribers' freedom to switch BDUs.

13 In the CBC's view, the choice and variety of interactive broadcasting services available to Canadian consumers is not a decision that should be left to BDUs. It has long been an over-riding principle of Canadian broadcasting policy that Canadians are entitled to receive maximum possible choice and diversity of programming and broadcasting services. This principle, which is embodied in the Broadcasting Act, applies equally to interactive programming services.

14 In addition to the generally applicable objectives of the broadcasting policy for Canada, (encouraging diversity of programming services, and adaptability of the broadcasting system to technological change,) section 3(1)(m) of the Broadcasting Act specifically requires that programming provided by the CBC:

> (iii) actively contribute to the flow and exchange of cultural expression

15 This requirement has historically been met by the CBC through the offering of a variety of programming and broadcasting services, and through the use of modern and innovative technical distribution platforms.

16 The CBC has been on the forefront of new media developments, providing a variety of interactive content through the Internet. With the continued development and integration of technologies, interactive content is now being made available for multiple platforms. Therefore, the CBC now has the technical capability to leverage its extensive interactive experiences in new media and the Internet toward all of its other media platforms, and most importantly, toward its core broadcasting services platform.

17 In recent years, the CBC has been experimenting with new ways of providing Canadians with the opportunity for more direct input into program formats. A good example of these initiatives is the town hall programming format for public affairs that provides for electronic input by viewers.

18 Interactivity is presenting an exciting new way for the CBC to advance these initiatives, providing greater and more direct interaction with Canadians and a forum for the exchange of culture and ideas. It is important to the fulfilment of the CBC's mandate that this opportunity to expand the involvement of Canadians in the public broadcaster's programming and broadcasting services not be inhibited by an absence of public policy and regulatory rules that leave BDUs in control of our offerings of interactive programming features.

19 The importance of establishing rules to ensure access to bottleneck services and facilities has long been recognised by the Commission in telecommunications, where equal access and interconnection have become standard requirements – irrespective of

market shares and despite the availability of competitive distribution alternatives. Not only have these requirements become standard in Canadian telecommunications, but the underlying policy rationale and public policy benefits of opening essential or bottleneck facilities to common access are well understood and accepted throughout the Canadian industry.

20 Secondly, the potential for discrimination and undue preference have increasingly become a concern in Canadian broadcasting, as distributors have become integrated with broadcasters and other content providers. Indeed, in the United States, where high levels of vertical integration in broadcasting have existed for a number of years, the FCC's number one concern in its review of the distribution of interactive services is the potential for undue preference. Last year, the FCC's Notice of Inquiry on interactive services set out to determine whether cable distributors should be prohibited from discriminating among interactive television service providers, and to determine the types of mechanisms that could be used to achieve this prohibition.

21 The importance of interactivity to broadcasting services and the Canadian broadcasting industry, and the seriousness of the bottleneck facility and undue preference issues in possibly impeding the future development of interactive services to the detriment of Canadians and the Canadian industry, underscore the requirement for an over-riding regulatory framework for the distribution and offering of these services.

22 The alternative, a case-by-case review of these issues as they emerge, would not be effective.

23 Such an approach would be extremely time consuming, both from the point of view of reaching resolution on the many and varied sub-issues that will come before the Commission, and in terms of the time to establish an effective level of regulatory direction in the area. Moreover, this approach would not promote innovation and investment in the development of Canadian interactive services since it would create the greatest level of uncertainty for the industry.

24 A case-by-case approach is also likely to be the most expensive, since it would result in the application of remedies to anti-competitive or other non-productive situations

only after they are put into place or develop. This would potentially create large costs for those parties, such as distributors, required to alter or to change-out certain technical or marketing arrangements related to the cause of the problem, and could inhibit the growth of interactive services in Canadian broadcasting.

25 A more economical and productive approach would ensure that all parties are aware of the public policy goals and objectives and associated regulatory rules prior to establishing their commercial and technical arrangements. This model requires that the Commission move now to establish a sound policy and regulatory framework for the future development of interactive services in Canada.

26 Specifically, in order for Canadian interactive services to evolve in a systematic way, it is necessary for the Commission to develop a regulatory framework that addresses certain fundamental issues that will inevitably arise.

27 These issues must be addressed at an early stage in order to create an environment that is conducive to investment in and development of enhanced broadcasting services and in which all major stakeholders know their respective rights and obligations.

28 While existing regulations and policies under the *Broadcasting Act* will assist in achieving this goal, it is important to consider how these regulations and policies will be applied to interactive broadcasting services, and where they might be deficient.

29 In Part III of these comments, the CBC has put forward a number of overriding principles that it considers should guide this process. The rationale for these principles is discussed and the adequacy of existing policies and regulations to implement these principles in respect of interactive broadcasting services is assessed.

30 The four regulatory principles proposed by the CBC are as follows:

i.) Interactivity will become an essential component of future broadcasting services and should be considered within the context of the goals and objectives of the Canadian

broadcasting policy.

ii.) In order to promote investment and development of interactive programming services in Canada, and in order to provide consumers with a broad range of innovative services, rules must be developed to ensure non-discriminatory access to facilities required to deliver these services to Canadians.

iii.) The quality and feature-rich nature of enhanced broadcasting signals must not be diminished or distorted by distributors.

iv.) The cost of providing non-discriminatory access to enhanced broadcasting services and the cost of delivering these services to the public should be recovered by distributors from their subscribers.

31 In Part IV of these comments, the CBC discusses some of the next steps in this process and provides suggestions to the Commission on the most effective procedural approach for moving forward and encouraging the growth and development of interactive services in Canada.

32 Finally, in Part V, the CBC provides additional information in response to the specific information items identified by the Commission in PN 2001-113.

Part II: The Interactive Services Market

Overview

33 Interactive TV (or iTV) is an omnibus term that has been adopted to describe a number of diverse new services that have all been enabled by the application of digital technology to television. The deployment of digital set top boxes (STBs) essentially adds computing power to a television. The addition of a telecom return-path (e.g. cable or telephony) further broadens the types of applications that can be made available through the television.

34 As the iTV market evolves and consumers adopt specific services, the term iTV will lose its utility. However, at present, there are four streams of applications that are generally thought to constitute iTV:

- Enhanced broadcasting;
- Content control;
- TV-based Web Access; and
- TV Portals.

35 In the following sections of Part II, the CBC examines the nature of these iTV applications, and provides summaries of the activities of various industry players – including BDUs, broadcasters, and equipment providers – in each of these areas.

Enhanced Broadcasting

36 Enhanced Broadcasting refers to applications that are added onto, or built into the broadcast signal, enhancing the programming by adding new functionality. The new functions being developed vary, but generally include:

- Additional data or information that is related to the program or advertisement being broadcast, such as sports scores, additional news information on a breaking story or information on a product being advertised;

- T-commerce, where a consumer can purchase products related to a program or being advertised in a commercial;

- Personalised video, where a consumer can change camera angles while watching sports or concerts; and

- Interactive programs, where viewers can play along with a game show or participate in an interactive poll on news shows or during court trials.

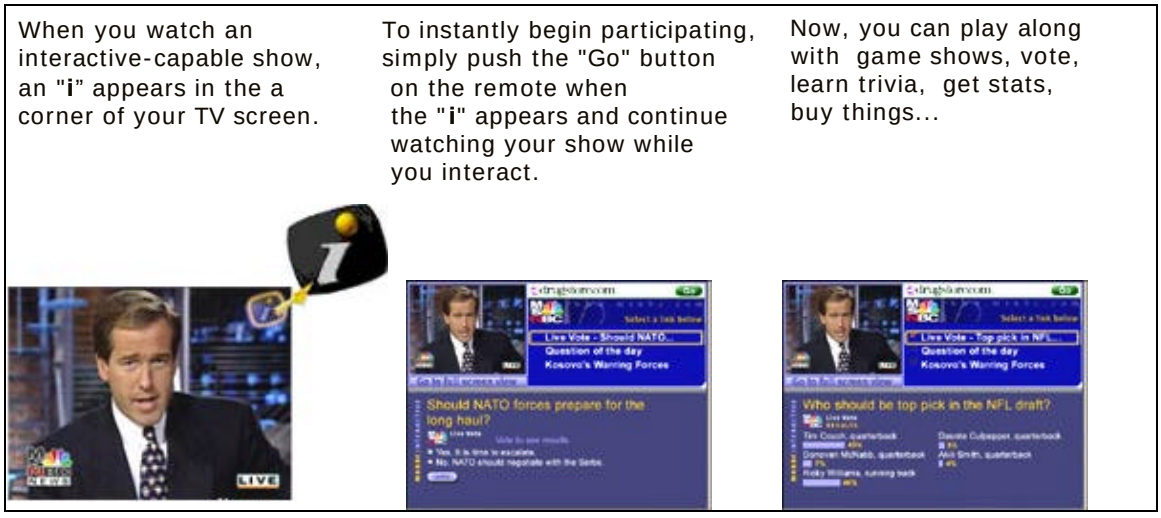
37 Generally, broadcasters are able to develop program enhancements on their own, but in order for them to be delivered in interactive format to consumers, they must be compatible with the interactive features of cable and satellite STBs. That is, enhanced broadcasting applications require the co-ordination of - at a minimum - a broadcaster, a BDU and a common software standard that the broadcaster uses to author the enhancements and the BDU deploys in its STB to read the enhancements.

38 In addition, if the enhancement enables consumers to execute financial transactions, there will most likely be the need for a third party to validate and fulfil the transaction (e.g. Wink, RespondTV). Financial transactions of this sort require that consumers purchase a telecom return path that is connected to the STB, either using a telephone line or a cable-based Internet service.

39 The involvement of multiple parties in the offering of enhanced broadcasting services makes the use and acceptance of standardised technologies very important. While there are numerous vendors that already develop software for publishing content over the iTV platform (e.g. Blue Zone, ACTV, Wink), a single iTV standard does not currently exist.

40 Enhanced broadcasting applications appear to be the most appealing iTV application as they best enhance what consumers naturally turn to the TV for – programming.

41 Enhanced broadcasting provides enhancements to programming when content is encoded with data and consumers have an STB enabled with software to read the data. Enhancements include, but are by no means limited to, news, sports scores, financial data, actor bios, program promotions, and promotional offers. Enhancements are signalled by an icon in the corner of the TV screen, providing the consumer with the option to enable the enhancement by clicking 'select' on their remote control. An example of this process is provided in the graphic below.



42 In addition to enhancing a program with additional information and statistics, there is a growing market for interactive advertisements and t-commerce.

43 Advertisers are willing to pay for 'leads', when consumers request information on a product advertised, and 'commissions', when consumers conduct a t-commerce transaction. According to Wink, whose service is in 5 million homes in North America, approximately 1.5% of Wink enabled households click onto Wink's interactive icon to request information, and of those, 40% actually accept the offer.[1]

[1] "Media Conference: Highlights from the Interactive TV Presentations." UBS Warburg. December 4, 2001.

44 According to Forrester, advertisers pay Wink $0.25 per customer that 'clicks' on the icon and $1.60 per customer that accepts the offer.[2] In terms of revenue splits, Forrester reports that Wink retains 80% of the commissions while broadcasters and BDUs are left to share the remaining 20%.

45 Rogers is the only BDU in Canada to deploy Wink on its set-top boxes. The service is reported to be accessible by 250,000 customers for free.[3] Bell ExpressVu recently signed a deal with Wink to deploy its technology, but there is no public information on the launch date as of yet.[4]

46 CHUM is the only broadcaster to launch enhanced broadcasting services using Wink technology. Sportnet and CFMT are planning to a launch Wink enhancement in 2002. Other broadcasters, including the CBC, are evaluating the Wink platform. U.S. broadcasters, such as CNN, MSNBC, TBS, NBC, CBS and FOX, have programming enhanced with Wink technology that is currently carried in Canada by most BDUs.

47 Videotron is undertaking trials of some interactive TV shows in conjunction with its community channel and TVA using the PowerTV platform.

48 CTV has employed Blue Zone technology to create and publish content for multiple platforms, such as on the Internet, cell phones, PDA (e.g. Palm Pilots) and iTV. Microsoft's WebTV devices can read Blue Zone data and information, so Rogers' interactive customers should be able to read Blue Zone program-related data on CTV's services.

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[2] "Quick as Wink, CPG Should Pursue Interactive TV", Forrester, August 6, 2001

[3] "Broadcasters set to introduce basic interactive elements to programming", CCR, January 31, 2002.

[4] "Wink Signs Five-Year Distribution Deal with Bell ExpressVu, Canada's Largest DBS broadcaster," TORONTO and ALAMEDA, CA - February 6, 2001

49 Leveraging its historical success in providing interactive content on the Internet, the CBC is continuing to develop and launch programming that contains enhanced interactive elements.

50 The CBC's experience with interactive enhanced broadcasting formally began with "Drop the Beat" in 1999, where it helped develop and broadcast the youth-culture drama, which was produced by Alliance Atlantis. However, the CBC's experiences in interactive programming began even earlier in 1998, with the development of French-language program enhancement experiments with the WebTV platform.

51 In 1999, audience reaction to the interactive components of Drop the Beat was very positive, but total audience numbers were not significant due to the very small base of installed STBs capable of reading the interactive program enhancements.

52 The CBC was also involved in supporting the Producer's successful application to the Bell New Media fund, and it broadcast iTV content triggers (for Web TV and Liberate set-top boxes) through its television network.

53 The CBC also broadcast the interactive programming, "Our Hero" in 2001, which was developed along similar lines as Drop the Beat, with expanded web content. In addition, in 2001, the CBC experimented with interactive polling, conducting a interactive poll for the French-language children's show "0340". This initiative followed on the earlier success of an interactive promotion, that in conjunction with the Radio-Canada web-site for children, allowed children to design the wardrobes used in subsequent broadcasts.

54 The newest addition to the CBC's interactive line-up is the enhanced broadcasting program 'Zed', an experimental TV program airing after 11PM. Zed's interactive features allow viewers to contribute to the program and directly influence the story-line of the on-air broadcast. Zed's programming will also offer a number of other enhanced broadcasting features.

55 The CBC's experiences in the area of iTV have provided three key lessons for the continuing development of iTV programs:

> i.) Developing high quality interactive content is expensive and time-consuming, and requires extremely close co-ordination with television producers from the outset;
>
> ii.) The economics of iTV content development depend on achieving access to a critical mass of subscribers, (which in turn depends on the establishment of STB and middle-ware standards);
>
> iii.) The ownership and operation of distribution networks and access to end-users provide network operators with considerable control, including technical control, over the development and offering of iTV services.

56 The CBC is continuing to evaluate the use of interactive program enhancements for its programming broadcast throughout the broadcast day, particularly in prime-time. The CBC is also actively attempting to participate in enhanced broadcasting experiments and developments being undertaken on various BDU's platforms.

57 If a policy framework can be established that reflects the above lessons, enhanced broadcasting applications will become extremely popular as they bring a blend of 'pull' technology that consumers find appealing on the Internet, with the power of the easy to use 'push' broadcasting technology.

58 In particular, many genres, such as news, documentary and sports, are well suited to benefit from the possibilities of interactive enhanced broadcasting services. In addition, based on the success of 'special features' on DVDs, drama and variety programming formats appear to be well suited for some forms of interactivity, despite claims to the contrary.

Content Control Applications

59 iTV applications and services that assist in the viewing of TV programming are classified as content control applications. This includes video-on-demand (VOD), personal video recorders (PVRs), and interactive program guides (IPGs).

VOD:

60 Although VOD services are often thought of as iTV services because of the consumer's ability to view a program on demand, the programming delivered using this medium is not necessarily interactive. Using VOD applications, consumers can purchase movies, music, news and a variety of other types of content on-demand via their TV remote with full VCR-like functionality.

61 Cable operators offering VOD typically employ a third party vendor (e.g. DIVA, SeaChange) to install a VOD solution, which includes banks of VOD servers at the cable head-end and associated VOD software. Cable operators can employ a third-party to aggregate and license content (e.g. similar to Viewers Choice pay-per-view) or can license content directly from content providers (e.g. US studios).

62 VOD market trials by Canadian cable operators are reported to begin this year, with Cogeco scheduled to trial launch in the first quarter of 2002 using Concurrent's VOD solution. Rogers has publicly stated that it will conduct a market trial in the beginning of 2002 using SeaChange's VOD solution. Shaw has indicated it will conduct a VOD trial in Calgary in 2002, but no date or vendor has been determined as of yet.

63 VOD has traditionally been billed as a killer cable application in the US and Canada in terms of providing cable companies' with the tools to fend off competition from DTH (i.e. VOD is not an iTV application that DTH operators could easily duplicate). It is expected to reduce churn and create an additional revenue source for cable operators, particularly by siphoning market share from the home video market.

64 The technology for VOD has been available for over a decade, but the business case has been poor. A decade of cable plant upgrades, declines in IT costs, competition from DTH and a softening of US studio's stance on digital distribution have led cablecos to revisit VOD through market trials. However, the business case for VOD has yet to be validated by the market and it is too early to tell if it will be successful this time around. Pay-per-view and subscription VOD models are both being explored.

65 Technology and bandwidth costs as well as piracy protection; copyright royalties; access to content; and consumer pricing models are the issues that remain to be sorted out before VOD applications will be commercially successful.

PVRs:

66 This equipment is essentially a digital VCR that records programs on a digital hard-drive rather than an analogue VCR tape.

67 PVRs also have other functions, such as recording live TV and permitting VCR-like functionality (e.g. pause, rewind), and personalised TV, where the device learns what programs you do or don't like, and seeks out and records programs for you to view.

68 PVRs are available on a stand-alone basis in retail outlets in the United States (e.g. Replay TV, TiVO) or integrated into a cable or DTH set-top box.

69 In Canada, PVRs are not as readily available as a standalone retail product as they are in the US. Bell ExpressVu launched a set-top box with an integrated PVR in the fall of 2001 (i.e. 5100 series). In July 2000, TiVO signed a letter of intent with Cancom to integrate their PVR technology into Starchoice set-top boxes. However, no launch date has been announced.

70 Rogers is likely to include PVR capabilities as part of its 'Triple Play' home networking solution, which is expected to go to trial by the end of 2002. Triple play combines video, voice and high-speed Internet services.

71 When PVRs debuted at the Consumers Electronics Show in 1999, they were immediately billed a technology to be reckoned with. It was thought that this new form of VCR with increased functionality and intelligence would disintegrate the economics of broadcast television by allowing consumers to watch programming at their convenience and by-pass commercials. Today, however, PVRs have yet to obtain a significant installed base.

72 Many analysts believe consumers are unwilling to pay a premium for a 'souped-up' VCR and do not like the monthly fees associated with the device for the programming recommendation engines.

73 PVR manufacturers have virtually abandoned their retail strategy for one that involves integrating their technology in cable and satellite STBs.

74 The switch from a retail to STB strategy does not limit the potential impact that PVRs present to the business model of commercial broadcasters (i.e. by-passing commercials). However, with integration into the STB, there is a greater chance that addressable advertising could develop to replace the traditional advertising model. Also, if PVRs are integrated in the STB, instead of being marketed separately as a 'souped-up VCR', the integration of the PVR increases the possibility of having content delivered directly to the PVR for 'on-demand' viewing.[5] Therefore, while a PVR can be viewed as a retail device, it should also be viewed as infrastructure for program delivery when integrated in an STB.

IPG:

75 The IPG is essentially the electronic program guide (or EPG) of the past that is available currently on DTH and digital cable, renamed to reflect the expansion of the service into interactive advertisements and t-commerce.

76 Currently, BDUs control the STB that the IPG resides in and outsource operations to a third-party IPG provider (e.g. Gemstar-TV Guide, TVGateway, iSurfTV), although over-the-air program guides are also possible. In the future IPG technology will be integrated directly into digital televisions (DTVs), PVRs and other consumer electronics equipment.

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[5] This is particularly how DTH operators plan to compete with VOD – by making movies available on customers' PVRs. It is being called virtual video-on-demand (or VVOD).

77 In Canada, the IPG is probably the most widely deployed iTV application and every MSO that has launched digital cable and both DTH providers have IPGs.

78 Gemstar-TV Guide is the undisputed leader in this market. Gemstar-TV Guide has acquired hundreds of patents for IPGs and has pursued numerous legal suits in this area, claiming patent infringement.[6]

79 iSurfTV is a small competitor that has designed a 'wheel based' IPG and has signed a deal with the National Cable Television Cooperative to distribute its IPG to small cable operators across the United States. WorldGate partnered with a number of the top cable operators in the US to develop TVGateway, an alternative IPG to that provided by Gemstar-TV Guide, but three of the four major US cable operators have since signed with Gemstar-TV Guide.

80 The significance of the IPG should not be underestimated – it is much more than a simple listing of programs. As the number of TV channels expand, consumers will need effective tools to assist them in selecting programs and in navigating through the universe of program offerings. Consequently, the IPG could become an essential viewing tool for consumers, and therefore a necessary platform for broadcasters.

81 In addition, the IPG could become the defacto standard for iTV advertising and t-commerce - Gemstar-TV Guide is already pursuing an open licensing policy that would see many iTV applications integrated into its IPG. Gemstar-TV Guide has also already developed integration deals or alliances with Wink for enhanced broadcasting applications – Concurrent for VOD and A.C. Neilsen for audience data.

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[6] *Electronic Media* (Dec. 3, 2001) reports Gemstar-TV Guide has over 4,000 lawsuit filings and claims. Most notable are its claims against Echostar, Pioneer, Scientific Atlanta and TiVO.

82 Apart from the reported US $1 per subscriber per month that is the starting negotiation position for use of Gemstar-TV Guide's IPG, Gemstar-TV Guide has also established that it will take a large part of the related revenues: 85% of advertising revenues and 50% of t-commerce revenues.[7]

TV-Based Web Access

83 With a digital set-top box and a telecom return path, cable and DTH operators have been able to offer Internet or web browsing through the TV and ancillary web activities, such as e-mail, chat, etc. Cable and satellite operators can either develop a proprietary system or outsource to a third-party (e.g. Ultimate TV (formerly WebTV), Rogers Interactive, AOLTV).

84 Rogers and Videotron have commercially launched TV-Based web access. Shaw and Cogeco have also announced plans to launch. However, consumer adoption of this product has been much lower than anticipated.

85 When introduced by Web-TV (which was later bought by Microsoft), access to the Internet over the television was thought to be a killer application since it provided cheaper - non-computer – access to the Internet.

86 However, technical limitations and consumer misunderstanding has plagued this service. First, the set-top box does not come close to matching the processing power and functionality of a Personal Computer.

87 Second, the television screen contains only about half of the resolution of a computer screen, leading to a very poor visual experience. Lastly, the television is traditionally a passive medium, so web pages that are designed for PC users are not necessarily attractive to TV users – even if technical limitations of the set-top box and resolution of the television screen are overcome.

[7] Source CED, (Cahners) December 2001

88 TV based web access may get a boost now that the Internet market has evolved to recognise that content is created for platforms other than the PC (e.g. PDA, cell phone, iTV) and many web sites are being created with this in mind.

TV Portals

89 TV Portals[8] are proprietary sites provided exclusively by cable and satellite operators that provide access to the Internet, but also provide exclusive information, entertainment and shopping sites.

90 Operators generally lease space out to third parties. For example, Chapters-Indigo might lease space from ExpressVu or Rogers to set up a site in their TV Portal. Cable and satellite TV Portals can be designed and managed in-house, or can be outsourced and managed by a third party (e.g. LocalSource, MetaTV, WorldGate).

91 Videotron is the only BDU that currently has a commercially launched TV portal. The portal bears the Canoe brand (which is owned by Quebecor) and borrows much of its content.

92 TV Portals are much like TV-based web access. Cable and satellite operators typically outsource content and services to a third party with a business model similar to traditional shopping malls – that lease space to stores and take a share of their sales.

93 Cable and satellite operators can design and manage the TV Portal themselves, or outsource it to a third party (e.g. LocalSource, MetaTV, WorldGate). The benefits of TV Portals over TV-Based Web Access are: 1) the content is designed with the TV viewer in mind; and 2) it provides a 'mall' type environment that is more user-friendly.

[8] Also goes by the name of 'walled gardens' and 'virtual channels'.

ITV Technology Activity in Canada

94 As noted above, iTV is enabled by the application of digital technology to television and the deployment of digital set-top boxes (or STBs) that add computing power to a television.

95 The following sections provide an overview of the current capabilities of the iTV technology and the state of its deployment in the market.

Deployment of iTV Technology

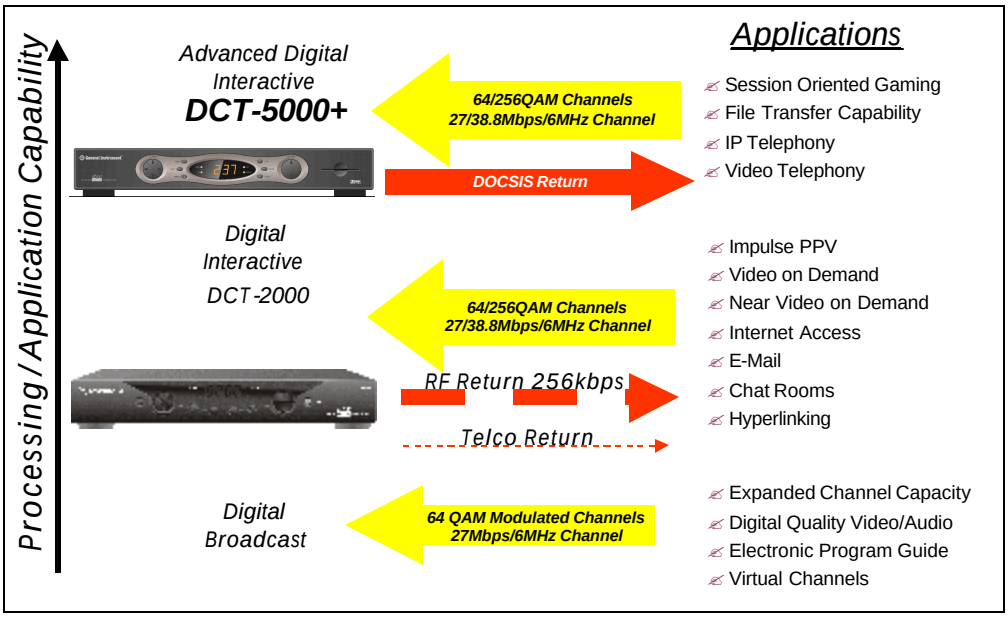
96 Much like PCs, the technological development of digital STBs continues at a rapid pace.

97 The evolution of Motorolla's GI series of digital set-top boxes, as set out in the following graph, provides a good illustration of how this process is working.

98 The first generation of digital STBs (i.e. labeled 'Digital Broadcast') began rolling out in the mid '90s and was principally focussed on the cable product – expanding channel capacity and providing digital audio and video quality. However, rudimentary iTV applications, such as EPGs and virtual channels (which are now more commonly referred to as IPG and TV Portal channels/pages respectively), were also supported.

99 The current generation of STBs (i.e. the DCT-2000) began rolling out in the late '90s and continues to be rolled out today. The DCT-2000 can support numerous iTV applications, including: IPG, TV Portals (referred to below as virtual channels), TV-based Web Access (i.e. internet, chat, e-mail), VOD and enhanced broadcasting (referred to below as hyperlinking).

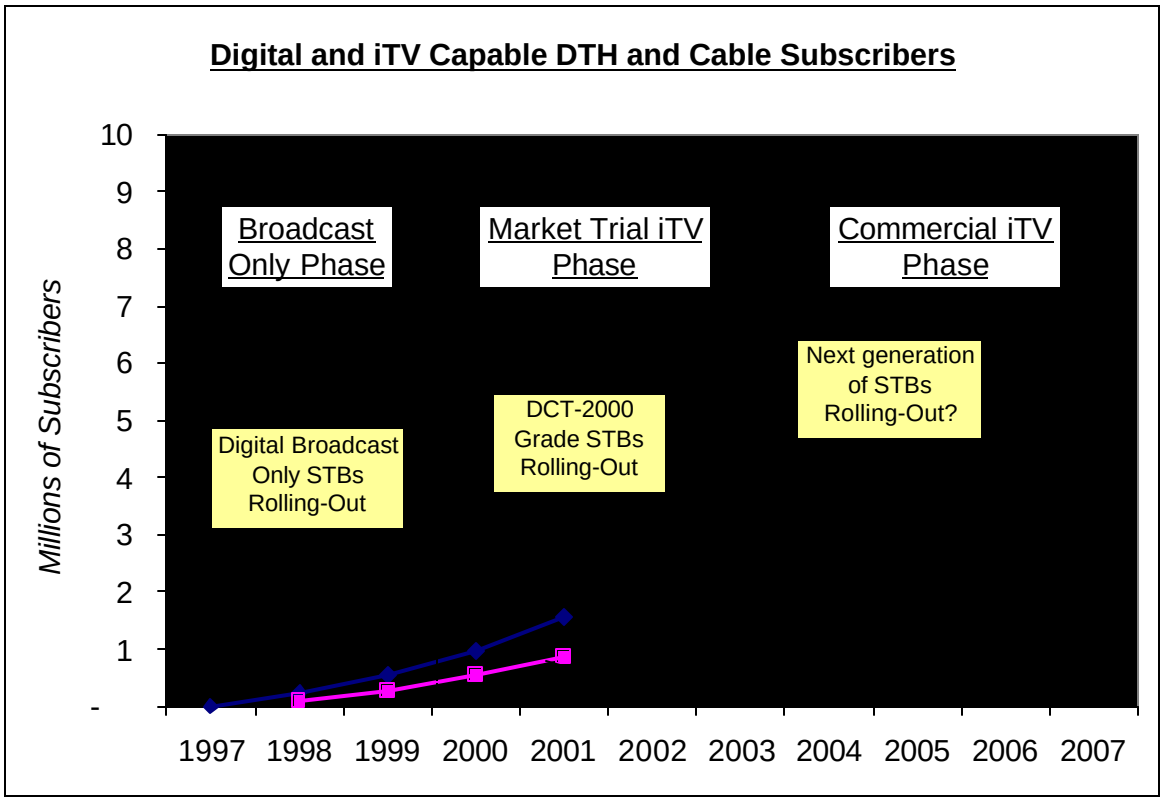
100 The next generation of Motorola GI STBs, while not yet commercially available, will be the DCT-5000. However, the launch of various mid-range STBs will likely occur in the interim period. This will include the 2500, with more processing power, and the 2600, with an integrated PVR.



101 Key factors in the speed of roll-out of new generations of STBs are the technical reliability of the advanced features and the associated increase in price. This is particularly an issue for distributors at this time, since they are leasing or selling the STB at a reduced rate.

102 Based on the take-up of digital subscribers and the general rollout dates of various grades of digital STBs, there is a growing number of digital subscribers that have iTV capable boxes.

103 This is shown in the graph below. While the number of iTV capable boxes is relatively small at this time, growth rates are increasing significantly. As a result, a number of commercial trials and launches of iTV services are underway. As the number of iTV capable boxes grows and the next generation of STBs begin to deploy, iTV services will move from the experimental stage to full commercial rollout.



Source: Subscriber estimates based on CRTC, Decima and Company Reports

Other Technical Considerations

104 The technology for digital STBs is to a large degree still proprietary. As the specifications for each box vary significantly between manufactures, content creators must be extremely flexible with regard to the capabilities of different boxes, and must write separate programming code in anticipation of different box requirements. Clearly, in the long run, standardisation of digital STBs (either through the selection of one standard or the acceptance and offering of multiple standards in STBs) is necessary for the success of iTV.

105 Each iTV application is essentially a software application. In the PC world, software is written in anticipation that it will run on a particular operating system (e.g. Microsoft Windows). This is no different in the iTV world, except that there is an additional layer of middleware between the operating system in the STB and the iTV application.

106 The middleware translates requests from the iTV applications into language that the operating system of the STB can execute (i.e. the operating systems for each STB manufacturer is proprietary). Currently, there are a number of competing middleware providers, including: Liberate, WorldGate, Microsoft, OpenTV, PowerTV and Canal Plus/MediaHighway. Listed in the table below are examples of BDU choices for middleware providers.

Operator	**Middleware**
Rogers	? Liberate - Deployed
Shaw	? Liberate - Planned
Videotron	? PowerTV - Deployed
Cogeco	? Worldgate - Planned
Bell ExpressVu	? Open TV - Planned
Starchoice	? Liberate - Planned

Source: Company reports.

107 As in any market, standards in the interactive services market would greatly assist in the creation of equipment and accompanying content.

108 Does the Commission have a role to play in determining such important and fundamental commercial issues? The best answer is probably both no and yes.

109 No, the Commission should clearly not attempt to dictate technology choices for industry participants.

110 However, yes, the Commission does have a role and a responsibility to establish regulatory principles and parameters that will enable industry participants to make commercial decisions that are consistent with and support public policy goals.

111 These issues, and particularly the regulatory principles necessary to achieve the best policy goals for the interactive marketplace in Canada, are discussed in more detail in Part III below.

Part III: Regulatory Principles

112 In order for Canadian interactive services to evolve in a systematic way, it is necessary for the Commission to develop a regulatory framework that addresses certain fundamental issues that will inevitably arise.

113 These issues must be addressed at an early stage in order to create an environment that is conducive to investment in and development of enhanced broadcasting services and in which all major stakeholders know their respective rights and obligations.

114 While existing regulations and policies under the *Broadcasting Act* will assist in achieving this goal, it is important to consider how these regulations and policies will be applied to interactive broadcasting services, and where they might be deficient.

115 In this part of its comments, the CBC has put forward a number of overriding principles which it considers should guide this process. The rationale for these principles is discussed and the adequacy of existing policies and regulations to implement these principles in respect of interactive broadcasting services is assessed.

116 The four regulatory principles proposed by the CBC are as follows:

i.) Interactivity will become an essential component of future broadcasting services and should be considered within the context of the goals and objectives of the Canadian broadcasting policy.

ii.) In order to promote investment and development of interactive programming services in Canada, and in order to provide consumers with a broad range of innovative services, rules must be developed to ensure non-discriminatory access to facilities required to deliver these services to Canadians.

iii.) The quality and feature-rich nature of enhanced broadcasting signals must not be diminished or distorted by distributors.

iv.) The cost of providing non-discriminatory access to enhanced broadcasting services and the cost of delivering these services to the public should be recovered by distributors from their subscribers.

Principle 1

Interactivity will become an essential component of future broadcasting services and should be considered within the context of the goals and objectives of the Canadian broadcasting policy.

117 As the Commission is well aware, broadcasting is not a static concept and the Canadian broadcasting system has been evolving since its inception.

118 This system has adapted to changes in technology on an on-going basis. One only needs to look at the manner in which Canadians now receive their broadcasting services using a variety of distribution media ranging from off-air to fibre/coax, to direct to home (DTH) satellite services, to SMATVs and MMDSs. The quality of the signals being delivered has also continued to improve as we move from analogue to digital to high definition television.

119 With each of these advancements in technology, the regulatory framework has been applied in a flexible manner designed to fulfil the broadcasting policy for Canada and the regulatory policy embodied in the *Broadcasting Act*.

120 It is important to note in this regard that two of the objectives of regulatory policy identified in section 5(2) of the *Broadcasting Act* specifically provide for adaptation to technological change:

5 (2) The Canadian broadcasting system should be regulated and supervised in a flexible manner that:

> (c) is readily adaptable to scientific and technological change; and
>
> (f) does not inhibit the development of information technologies and their application or the delivery of resultant services to Canadians.

121 In addition to these very clear policy objectives, section 3(1)(d) of the *Broadcasting* Act requires that the Canadian broadcasting system should be "readily adaptable to scientific and technological change."

122 It is therefore important to consider the development of interactive broadcasting services in the context of this on-going evolution of the Canadian broadcasting system. The addition of interactive features to broadcasting services is but one more step, albeit a significant one, in this evolutionary process. As in the past, the regulatory framework must adapt to these technological changes and provide an environment that is conducive to the achievement of the broadcasting policy for Canada.

123 As discussed further below, in many cases, the addition of interactive features to programming services will simply enhance the programming services and add to the richness of the viewing experience. Care must be taken to recognise the interactive features of programming services for what they are – a new feature of an existing programming service.

124 The *Broadcasting Act* has proven itself adaptable to technological change in the past and is well-suited to handle the regulatory challenges posed by interactive services. While some of the issues raised by interactivity are new in a broadcasting context, and may necessitate some old rules to be further developed and adapted to new circumstances, the CBC believes that the principles underlying the broadcasting policy for Canada, and the regulatory policy set out in the *Broadcasting Act,* provide an appropriate framework for establishing a regulatory model that is conducive to investment in and the development of Canadian interactive broadcasting services.

(a) The Definition of “Programming”

125 In order to be regulated under the *Broadcasting Act*, the Commission must conclude that an undertaking which provides a programming service that includes interactive content would continue to satisfy the criteria for a “broadcasting” undertaking under the *Act*.

126 Under the *Broadcasting Act*, the Commission has the authority to regulate undertakings that are engaged in “broadcasting”, which is defined in subsection 2(1) as follows:

> “broadcasting" means any transmission of programs, whether or not encrypted, by radio waves or other means of telecommunication for reception by the public by means of broadcasting receiving apparatus, but does not include any such transmission of programs that is made solely for performance or display in a public place;
>
> A "program" is, also defined in subsection 2(1) as follows:
>
> “program” means sounds or visual images, or a combination of sounds and visual images, that are intended to inform, enlighten or entertain, but does not include visual images, whether or not combined with sounds, that consist predominantly of alphanumeric text.

127 In Telecom Decision CRTC 96-1, *Regulation of Broadcasting Distribution Undertakings that Provide Non-programming Services*, 30 January 1996 (Decision 96-1), the Commission concluded that companies which are broadcasting distribution undertakings (BDUs) under the *Broadcasting Act* may also in certain circumstances be Canadian carriers within the meaning of the *Telecommunications Act* when they distribute non-programming services. In that Decision, the Commission distinguished between “programming services” and “non-programming services”, and noted that the term "non-programming services" refers to telecommunications services that do not involve "programs" or "broadcasting" as those terms are defined in the *Broadcasting Act*.

128 The Commission also concluded that it would be appropriate to group non-programming services into two categories: "full channel TV services" and "other non-

programming services". Both categories of non-programming services are telecommunications services within the meaning of the *Telecommunications Act*. "Full channel TV services" are those services that are distributed using a full analog TV channel and are displayed on the television screen, including services consisting predominantly of alphanumeric text. The term other "non-programming services" was defined as services that were not full channel TV services and included Internet and security services that are provided by cable distributors.

129 In Telecom Decision CRTC 97-2 *Regulation of Full Channel TV Services (e.g. Alphanumeric Services)*, the Commission attempted to refine the distinction it drew between programming and non-programming services by explaining that the term "predominantly", which is found in the definition of "program", is used in its ordinary sense "to signify that which is influential or powerful". The Commission went on to state that even where a moving image occupies one-quarter of the television screen, the service may be characterised as a "program" if the moving image is the focus of attention.

130 In light of the manner in which the Commission has distinguished between programming and non-programming services, it is the position of the CBC that in many instances the interactive content that is delivered in a subsidiary signal of a programming service would be considered to be part of the "program", as that term is defined in the *Broadcasting Act*. Provided that the interactive content does not become the most influential or powerful part of the service – or does not become the primary focus of the service – it is our view that the provision of interactive content in a subsidiary signal would not change a broadcasting service into a telecommunications service.

131 A number of interactive features when provided as add-ons to the service offered by a licensed programming undertaking, would be considered to be part of that licensee's "program", as that term is defined in the *Broadcasting Act*. For example, interactive features such as data and information that is related to the program being broadcast, t-commerce which permits a viewer to purchase products related to the programs or advertisements being watched, personalised video where a viewer can choose camera angles and interactive services that allow a viewer to participate in a program, would be offered to viewers as enhancements to existing programs, in much

the same way as closed-captioning and descriptive video are currently provided to viewers.

132 This interpretation is consistent with the Commission's approach to regulating the alphanumeric and other non-programming elements of a number of existing programming services. The Commission has authorised licensed and license exempt programming services to provide as part of their services a significant amount of alphanumeric text and other content that would not independently qualify as "programming", under the *Broadcasting Act*.

133 For example, all programming services operating under the *Broadcasting Act* provide viewers with programming that contains closed captioning in their vertical blanking intervals. If it were examined independently, closed-captioning would be a non-programming, alphanumeric service.

134 In addition, a number of programming services provide alphanumeric scrolls and other non-programming information as part of their services. The Weather Network and Météomédia devote a significant portion of their respective program schedules to alphanumeric information. Similarly, Headline Sports and CTV NewsNet devote a portion of their channel to alphanumeric information that scrolls across the TV screen.

135 It is also notable that teleshopping services, like The Shopping Channel, are authorised to offer a form of interactivity when they provide their service to the public. Viewers are expected to call into the services to acquire the products that are on display.

136 If the predominant character of the overall programming service would not change as a result of adding on the interactive features and the visual images and sounds would continue to be the most influential or powerful aspect of the programming service, a programming service, that provides viewers with additional interactive information or content that is related to or connected with the main programming service, would continue to have all of these activities regulated under the *Broadcasting Act*.

(b) Non-Interference with Programming Services

137 In light of the important role that interactivity will play in the evolution of the Canadian broadcasting system and given the manner in which "programming" has been defined, the CBC believes that the Commission should adopt a principle of non-interference with respect to the distribution of the interactive elements of a licensed programming service, provided that those elements are themselves programming services or are related to the programming that is being broadcast.

138 As the Commission is aware, the principle of non-interference with content has been a fundamental component of the regulatory framework governing telecommunications carriers in Canada. Section 36 of the *Telecommunications Act* contains a general prohibition on interference with the content of telecommunications carried by Canadian carriers:

> 36. Except where the Commission approves otherwise, a Canadian carrier shall not control the content or influence the meaning or purpose of telecommunications carried by it for the public.

139 The CRTC has recognised that the involvement of telecommunications carriers in the provision of their own Internet services necessitates their involvement in content manipulation and provision. It has therefore granted its approval under section 36 to this type of content control (See for example Telecom Decision CRTC 99-4), but has maintained the prohibition on carrier interference with third party provided content transmitted on carriers' networks.

140 In the CBC's view, a similar approach can and should be adopted under the *Broadcasting Act* with respect to the interactive elements of programming services that are distributed by BDUs. The Commission has, in fact, already implemented regulations, specifically, section 7 of the *Broadcasting Distribution Regulations*, that place strict limitations on a BDU's ability to alter or delete the programming services that it distributes. It is the CBC's submission that this provision could be applied in a manner that would ensure that BDUs do not interfere with, or alter or delete, the interactive elements of licensed programming services.

141 As the Commission is aware, paragraph 7(f) of the *Broadcasting Distribution Regulations* prohibits a BDU from altering or deleting a subsidiary signal of a programming service in the course of its distribution where the signal is itself a programming service or is related to the service being distributed. In effect, this provision requires a BDU to distribute the information and/or programming contained in the subsidiary signal of a programming service if that information or programming is related to the service being distributed. The Commission has recognised in a number of instances that BDUs are prohibited from deleting subsidiary signals, such as closed-captioning contained in the VBI and descriptive video contained in the SAP, which are related to the programming service. (see for example Public Notice CRTC 1997-15)

142 In Public Notice CRTC 2001-62, *Call for Comments on a Proposed Policy to Oversee the Transition from Analog to Digital Over-the-air Television Broadcasting*, the Commission outlined a number of issues regarding the use and distribution of subsidiary signals during the transition phase from analog to digital to digital technology for over-the-air broadcasters. The Commission also noted a number of potential benefit associated with allowing broadcasters to utilise their subsidiary signals:

> Broadcasters could also use their 6 MHz digital transmitting channels to download non-programming material such as data files, alphanumeric news reports, dedicated video clips not intended for reception by the public, commercial data (e.g. inventories or sales receipts for commercial business clients), and Internet services to individuals and/or business customers. The provision of such services could be a new revenue source for broadcasters during the digital transition…
>
> As a matter of policy, broadcasting services should be given carriage priority over non-programming material such as data signals associated with digital over-the-air signals. Under the current distribution regulations, licensees are prohibited from deleting a subsidiary signal if it is, itself, a programming service or is related to the service being distributed.

143 Given that the current prohibition against deleting subsidiary signals in paragraph 7(f) of the *Broadcasting Distribution Regulations* would appear to include subsidiary signals that contain non-programming material, it would appear that the Commission already has put in place a regulatory mechanism to ensure that BDUs do not interfere with the interactive content that is contained in the subsidiary signals of programming

services, provided that the interactive content is “related to” the main programming service.

144 The CBC would also point out that the Commission has consistently expressed the view that its rules and regulations apply equally to both analog and digital services. For instance, in Public Notice CRTC 1999-84 and Telecom Public Notice CRTC 99-14, *New Media*, the Commission noted the following:

> The Commission notes that the definition of “broadcasting” [in the *Broadcasting Act*] includes the transmission of programs, whether or not encrypted, by other means of telecommunications. This definition is, and was intended to be, technologically neutral. (Broadcasting Public Notice CRTC 1999-84 and Telecom Public Notice CRTC 99-14, *New Media*, May 17, 1999)

145 This policy of “technology-neutrality” would appear to apply in the context of paragraph 7(f) of the *Broadcasting Distribution Regulations* in respect of the distribution of programming services that have an interactive component.

146 In the CBC’s view, the Commission needs to examine the application of section 7(f) to interactive broadcasting services and clearly enunciate a policy of non-interference with the interactive features of such services carried in digital format.

(c) Broadcasting should have priority over Telecommunications

147 The Commission has the authority under the *Broadcasting Act* to ensure that broadcasting distributors give priority to the distribution of broadcasting services. This power is expressly granted to the Commission in paragraph 9(1)(g) of the *Broadcasting Act*, which provides as follows:

> 9(1) Subject to this Part, the Commission may, in furtherance of its objects,
>
> (g) require any licensee who is authorised to carry on a distribution undertaking to give priority to the carriage of broadcasting.

148 One of those objects outlined in subparagraph 3(1(t)(i) of the Broadcasting Act provides as follows:

> 3(1) It is hereby declared as the broadcasting policy for Canada that
>
> (t) distribution undertakings
>
> (i) should give priority to the carriage of Canadian programming services and, in particular, to the carriage of local Canadian stations.

149 The Commission has consistently adopted a regulatory framework that requires BDUs to use their facilities for the distribution of programming services, and limits the distribution of non-programming services on those same facilities. In a *Public Announcement* issued on March 26, 1979 entitled "Non-Programming Services by Cable Television Licensees", the Commission indicated that it would require distribution undertakings to obtain prior authorisation for the carriage of non-programming services in order to ensure that the introduction of the new services would not adversely affect the achievement of the objectives of the *Broadcasting Act*. The rationale for imposing a prior approval requirement on distribution undertakings was outlined as follows by the Commission in that *Public Announcement*:

> The Commission's concern is to ensure that priority claims of off-air and locally originated programming services, in terms of channel capacity and spectrum space, both present and future, are not compromised.

150 More recently, in Telecom Decisions CRTC 96-1 and 97-2, the Commission reiterated its view that non-programming services should be subject to pre-emption for the distribution of programming services as defined in the *Broadcasting Act*. As the Commission noted in Telecom Decision CRTC 96-1:

> Parties generally agreed that the requirements of the two statutes [the *Telecommunications Act* and the *Broadcasting Act*] as they apply to broadcast carriers can be reconciled, and that priority should be given by a broadcast carrier to the distribution of broadcasting over non-broadcasting services.

151 In light of the above, it is clear that the Commission has the statutory authority to ensure that BDUs give priority to the carriage of broadcasting services. The CBC believes that the Commission has adopted the appropriate approach to regulating the distribution on non-programming services by BDUs.

152 Going forward, the Commission and the industry need to examine ways to ensure that BDUs devote enough capacity on their distribution networks to the distribution of programming services, which includes the interactive elements of those services, and to ensure that the Commission's regulations are adequate to achieve this result.

Principle 2

> **In order to promote investment and development of interactive programming services in Canada, and in order to provide consumers with a broad range of innovative services, rules must be developed to ensure non-discriminatory access to facilities required to deliver these services to Canadians.**

153 Given the critical role that interactivity will play in the broadcasting system, and given the gate-keeping function that can be exercised by BDUs with respect to that interactivity, the CBC believes that it is important for the Commission to establish rules to govern non-discriminatory access.

154 The Commission incorporated a provision into the *Broadcasting Distribution Regulations* in 1998 that prohibits the granting of undue preferences or undue disadvantages to any person. The specific provision (section 9) provides as follows:

> No licensee shall give an undue preference to any person, including itself, or subject any person to an undue disadvantage.

155 In Public Notice CRTC 1997-150, *Broadcasting Distribution Regulations*, the Commission outlined a number of circumstances that it considered would constitute instances of undue preference or disadvantage under section 9 of the *Broadcasting Distribution Regulations*. One of the examples provided by the Commission related to the distribution of programming services on different terms and conditions:

> The acquisition of a programming service for distribution by a licensee, other than the service of an exempt programming undertaking, at a price or upon terms and conditions that are more advantageous than the price or terms and conditions available to another licensee, when such differences are not justified by a difference in cost. Legitimate cost differences include economies of scale and other direct and legitimate economic benefits reasonably attributable to the number of subscribers served by the licensee.

156 Since 1998, the Commission has, on a number of occasions, been asked to consider whether a BDU has breached section 9 of the Regulations, and has therefore provided some further examples of circumstances that would constitute undue preferences or disadvantages.

157 In one of the cases decided under section 9 – which involved the deletion by Shaw of infomercials broadcast on Torstar's exempt programming services – the Commission found that the BDU's decision to delete certain programming material out of a programming service was contrary to section 9 of the Regulations. This case is significant because the Commission rejected Shaw's contention that it should have some ability to determine the kinds of programs or information that a programming undertaking is able to offer as part of its service. The Commission found that Shaw's attempt to act as a "gatekeeper" by unilaterally controlling the terms under which Torstar's service gained access to its network contravened the undue preference provision in the Regulations.

158 In another case – which involved the terms and conditions under which Shaw distributed the PrideVision specialty service – the Commission found that the BDU breached section 9 the Regulations by treating one service differently from the other programming services that were launched at the same time. This case is significant because the Commission concluded that a BDU that treats a programming service in a

manner that is disadvantageous relative to other services would be found to have breached section 9 of the Regulations.

159 In addition to these cases, it should also be noted that in the licence renewal Decision for The Weather Network/Météomédia (Decision CRTC 2001-668), the Commission stated that the refusal to make The Weather Channel/Météomédia's interactive elements available to subscribers, where the BDU is offering interactivity for other programming services, could be reviewed pursuant to the provisions pertaining to undue preference in the *Broadcasting Distribution Regulations*.

160 These cases provide some guidance with respect to the circumstances under which a BDU will be found to have breached section 9 of the *Broadcasting Distribution Regulations*. If a BDU acts as a "gatekeeper" and attempts to unilaterally control the terms under which a programming service gains access to its network, it can be argued that the BDU is conferring an undue disadvantage on the programming service, contrary to section 9 of the Regulations. Accordingly, a BDU that deletes an enhanced broadcasting service that is provided as an add-on to a licensed specialty service would be conferring an undue disadvantage on that specialty service.

161 Similarly, where a BDU distributes programming services under different terms and conditions – including the interactive elements of a service – and those differences are not justified in terms of cost and result in financial harm to the programming service, it is arguable that the BDU has conferred an undue preference on itself and an undue disadvantage on the programming service. A BDU that agrees to distribute the enhanced broadcasting services of one licensed programming service, but deletes similar enhanced services that are provided as add-ons to another service could therefore be found to have breached section 9 of the *Regulations*.

162 This principle is also very important for the successful development and use of IPGs in Canada. If, as noted above, IPGs become the defacto standard for iTV advertising and t-commerce, operating as the most important window for iTV and controlling navigation opportunities to a large part of iTV, then ensuring non-discriminatory access to this tool will be critical for the development of interactivity in Canada.

163 Where the principles embodied in section 9 have yet to be applied in the broadcasting context is in the area of non-proprietary access standards and technical parameters of interconnection. This is understandable given that these types of issues have generally not arisen in the broadcasting sector. These types of issues have, however, been dealt with extensively under subsection 27(2) of the *Telecommunications Act*, which contains a non-discrimination provision that is very similar to section 9 of the *BDU* Regulations:

> 27(2) No Canadian carrier shall, in relation to the provision of a telecommunications service or the charging of a rate for it, unjustly discriminate or give an undue or unreasonable preference toward any person, including itself, or subject any person to an undue or unreasonable disadvantage.

164 Section 27(2) of the *Telecommunications Act* has been well-developed through judicial and CRTC interpretation over the years. Due to the similar wording of the two non-discrimination provisions, it is relevant to consider some of the determinations that have been made under the *Telecommunications Act* in assessing the application of section 9 of the *BDU* Regulations to access issues.

165 For example, the Commission has been vigilant under the *Telecommunications Act* to ensure that in the realm of “enhanced services” the telephone companies make available to competing service providers who utilise their networks, equivalent or comparable network capability and features as the carriers themselves use to provide their own enhanced services. This approach could be used by the Commission to ensure enhanced broadcasting services gain access to the interactive features or software incorporated into set-top boxes that is required to deliver interactive programming services to end users.

166 While the focus in the *Broadcasting Act* has been primarily on non-discriminatory treatment of programming services, the focus under the *Telecommunications Act* has been on network interconnection and access to network features required to provide competitive services. This makes the application of section 27(2) relevant to the issue of access to interactive features in the networks or set top boxes of BDUs.

167 One of the first applications of section 27(2) was in the context of the mobile telephone market in 1977. In the case of *Challenge Communications vs. Bell Canada*, the CRTC struck down as discriminatory restrictions in Bell Canada's tariffs that prevented customers using competitively supplied mobile telephone equipment to access Bell Canada's local telephone network. The CRTC found that Bell Canada had conferred on its own mobile telephone business an undue preference or advantage by providing network connectivity to its own mobile phones while denying it to mobile phones purchased from its competitors. The CRTC therefore ordered Bell Canada to develop a network access protocol for use by its competitors (Telecom Decisions CRTC 77-11 and 12). The CRTC's decision was upheld on appeal to the Federal Court of Appeal.

168 In later proceedings, these principles were developed further to ensure that competitors could gain access to network features that they require to provide enhanced services to the public that are comparable to those offered by the telephone companies. This concept has become known as "comparably efficient interconnection."

169 A good example of this approach is found in the CRTC's 1992 decision to permit competitors to offer public long distance (MTS/WATS) services:

> The Commission acknowledges that technically the local bottleneck may be at the end office switch, but such a demarcation is of little utility in developing principles of fair competition in the long distance market. If the Commission were to require respondents to provide competitors with access only to monopoly services and facilities, it would be granting the respondents an unfair competitive advantage flowing from their provision of monopoly local telephone service. The Commission considers that safeguards should focus on equivalent access to the type of services and facilities that the telephone companies require in order to provide their own long distance services.
> (Telecom Decision CRTC 92-12, page 134)

170 A similar approach was taken by the CRTC with respect to the issue of third party ISP access to cable TV companies' broadband networks.

171 The cable television companies were initially required by the CRTC to provide competitive access to their broadband distribution networks as a precondition to their entry into the high-speed Internet services market (Telecom Decision CRTC 96-1, *Regulation of Broadcasting Distribution Undertakings that Provide Non-Programming Services*).

172 However, unlike the long distance market, where equal access software was readily available for the telephone companies to deploy when the market was opened to competition in 1992, no equivalent access system had been developed for competitive access to cable television distribution plant in 1996.

173 For this reason, the CRTC permitted the cable companies to begin offering high-speed Internet access services in 1996 without permitting comparable access by competing ISPs. It did so on the understanding that the cable industry would work to develop a satisfactory interconnection arrangement with ISPs.

174 In its decision on *Local Competition* the CRTC extended the obligation to provide comparably efficient interconnection to new entrants who wished to provide local telephone service to the public. The imposition of these obligations on new entrants was considered necessary in order to ensure that all telephone subscribers have the capability to communicate with each other regardless of their service provider, and to ensure that new entrants would not be able to use their newly acquired bottleneck to prevent their customers from accessing services offered by competitive suppliers of long distance and wireless services (Telecom Decision CRTC 97-8).

175 In all of these cases, it was the control of bottleneck facilities that gave rise to the obligation on the part of ILECs, CLECs and BDUs to provide non-discriminatory access to their networks and certain network features that were required in order for competing service providers to offer comparable services. In a number of these cases, the CRTC

ordered the development of non-proprietary access protocols and in others, access to network features and components was ordered.

176 In the CBC's view, the delivery of interactive broadcasting services raises very similar issues. The prospect of "walled gardens", incorporation of proprietary access protocols into set-top boxes, and negotiated access with gatekeeper BDUs could all inhibit the development of interactive broadcasting services by broadcasters that are not affiliated with BDUs. These problems will be exacerbated when it is considered that the same issues will arise with each BDU that is licensed to distribute programming. Interactive broadcasting services will not flourish in Canada in this type of environment and Canadians will be denied the choice and range of services they might otherwise enjoy.

177 As noted above, the importance of obtaining non-discriminatory access to set-top boxes and other BDU facilities also applies to the Interactive Program Guides ("IPG"). In a digital distribution environment where subscribers are relying more on the IPG for navigation to the programs that they want to watch, it is crucial that all programming services be treated in a non-discriminatory manner with respect to the position that they occupy on the IPG and the features that they offer to subscribers through the IPG.

178 For these reasons, it is important that the Commission consider the approach that it has taken to non-discriminatory access and access to bottleneck facilities under the *Telecommunications Act* and assess the degree to which these principles can be applied in the context of section 9 of the *BDU Regulations*. In particular, the CBC urges the Commission to consider the need for new rules to govern access to STBs and other bottleneck facilities controlled by BDUs that are necessary for the delivery of interactive programming services.

Principle 3

> **The quality and feature-rich nature of enhanced broadcasting signals must not be diminished or distorted by distributors.**

179 In addition to ensuring that consumers have ready access to enhanced broadcasting services on a non-discriminatory basis, it will be important to ensure that distributors are prevented from diminishing the quality or feature-rich nature of the services they are delivering.

180 This requires assurances that distributors will devote sufficient bandwidth to the carriage of enhanced broadcasting services to ensure not only that a high quality video signal is delivered – but also to ensure that the interactive portion of the service is unimpaired.

181 This does not necessarily mean developing a standard unit of bandwidth for the carriage of broadcasting services. The CBC recognises the merits of allowing BDUs to manage their networks in an efficient manner using dynamic bandwidth management and other approaches to efficient carriage of services on their networks. Rather than trying to dictate capacity usage requirements to distributors, the CBC considers it more useful to affirm the BDU's obligation to deliver an unimpaired programming signal of high quality to end users, including the interactive features associated with such programming.

182 This is not a new principle. In fact, it is embodied in section 5(2)(f) of the *Broadcasting Act*, which provides as follows:

> 5(2) The Canadian broadcasting system should be regulated and supervised in a flexible manner that
>
> (f) does not inhibit the development of information technologies and their application or the delivery of resultant services to Canadians.

183 A number of existing regulations can also be brought to bear on this issue including section 7(f) and 9 of the *BDU Regulations* and section 9(1)(g) of the *Broadcasting Act* – all of which have been discussed above.

184 Not only must the Commission make sure that sufficient capacity on BDU systems is devoted to the delivery of programming in general, including any related interactive features of such services, but BDUs must also ensure that the signals of competing programming services are not diminished in preference to those of affiliated services.

185 The CBC therefore urges the Commission and other parties to consider this principle, as the industry moves forward to develop and formulate a policy framework for the delivery of interactive broadcasting services.

Principle 4

> **The cost of providing non-discriminatory access to enhanced broadcasting services and the cost of delivering these services to the public should be recovered by distributors from their subscribers.**

186 It has long been a principle of Canadian broadcasting policy that BDUs have an obligation to carry priority signals without charge to the broadcaster. As a corollary to this principle, BDUs have not had to pay broadcasters of priority signals for the right to distribute their programming and BDUs have been permitted to recover their cost of delivering priority signals through the rates that they charge to their subscribers.

187 While the approach to non-discretionary and discretionary specialty channels has been somewhat different, insofar as the revenues generated by the distribution of these services have been split between broadcasters and distributors, the underlying principle has remained the same. The BDUs have recovered their costs of distribution from their subscribers who receive the services (whether as part of their basic service rate, or through a subscription price charged for discretionary services).

188 In the CBC's view, the development of interactive broadcasting services should not change this model.

189 While the CBC acknowledges that there may be some additional costs incurred by BDUs in providing the access arrangements that are required to distribute enhanced broadcasting services on a non-discriminatory basis, and some additional capacity may be used to distribute these services, these costs are unlikely to be large when spread across the base of BDU subscribers that will benefit from receiving these services.

190 Moreover, the development of enhanced broadcasting services will not occur overnight. While we are starting to see the emergence of the first rudimentary services now, the rollout of the feature-rich interactive broadcasting services is still in the future. The rollout of these services will be a gradual one and is unlikely to strain the capacity of BDUs.

191 It is the need to create a regulatory environment that is conducive to the development of Canadian interactive broadcasting services that is driving the requirement to develop a regulatory framework at this point in time – not a sudden demand for immediate capacity to deliver these services over BDUs' networks.

192 In formulating its policy on interactive broadcasting services, the Commission must address the issue of cost recovery.

193 The CBC notes that the issue of cost recovery was recently raised in the context of Pelmorex's licence renewal for The Weather Network (Decision CRTC 2001-668). In that proceeding, Pelmorex took the position that costs associated with the delivery of interactive services over BDU networks should be recovered by the BDUs from their subscribers. The CBC agrees with Pelmorex's view that the existing regulatory bargain between BDUs and broadcasters continues to be appropriate and that BDUs should continue to look to their own subscribers to recover their costs. This is, however, an issue that the Commission and other parties will want to explore further in the context of an overall policy review.

Part IV: Next Steps

194 As explained in the preceding parts of these comments, interactivity is presenting exciting new opportunities for the Canadian broadcasting industry. In particular, interactivity is providing new ways for the CBC to provide greater and more direct interaction with Canadians and a forum for the exchange of culture and ideas.

195 It is important to the fulfilment of the CBC's mandate, and to the future development of the interactive services marketplace in Canada, that the opportunity to expand the involvement of Canadians in the public broadcaster's programming and broadcasting services not be inhibited by an absence of public policy and regulatory rules that leave BDUs in control of the CBC's offerings of interactive programming features.

196 The importance of interactivity to broadcasting services and the Canadian broadcasting industry, and the seriousness of the bottleneck facility and undue preference issues in possibly impeding the future development of interactive services to the detriment of Canadians and the Canadian industry, underscore the need for an over-riding regulatory framework for the distribution and offering of these services.

197 The alternative, a case-by-case review of these issues as they emerge, would not be effective. Such an approach would discourage investment by enhancing rather than diminishing uncertainty in the marketplace, and would create protracted regulatory evaluations of piece-meal matters as they are brought one-by-one before the Commission.

198 A far more productive approach would ensure that all parties are aware of the public policy goals and objectives and associated regulatory rules prior to establishing their commercial and technical arrangements. This model requires that the Commission move now to establish a sound policy and regulatory framework for the future development of interactive services in Canada.

199 The CBC therefore urges the Commission to initiate a public proceeding following completion of its initial fact finding inquiry with the goal of establishing a policy framework and regulatory rules for the development and delivery of interactive services in Canada.

200 This proceeding could build on the base of information that the Commission amasses through its current fact finding proceeding. In the CBC's view, it will be important to institute a full public proceeding on the appropriate policy and regulatory framework in order to provide all stakeholders with an opportunity to make their views known and in order for the Commission to have a complete record on which to base its policy.

Part V: Information Items Identified in PN 2001-113

201 In response to the specific information items identified by the Commission in PN 2001-113, the CBC provides the following additional material, elaborating further on the its comments above. Reference to the location of the relevant discussion in the CBC's comments is also provided wherever possible.

Information Item 1:

The CRTC is of the preliminary view that the following characteristics may apply to interactive services:

> ***a) A process that involves some form of two-way communication between viewer and content provider (or distributor), and which allows the viewer to provide some form of response including interaction with the set-top box.***
>
> ***b) A process that provides information or viewing options (including alternative video or audio signals) in relation to the offer of programming services.***

Parties are asked to submit information on any other characteristics that may apply to existing or planned interactive services.

202 The characteristics identified by the Commission capture the interactive services identified by the CBC in these comments.

203 In addition, the CBC notes and supports the FCC's characterisation of iTV services:

> iTV is a service that supports subscriber-initiated choices or actions that are related to one or more video programming streams.
>
> (CS Docket No. 017, Nondiscrimination in the Distribution of Interactive Television Services Over Cable)

204 The CBC also notes that the Commission's characteristics should be seen as indicative, but not necessarily a complete catalogue of characteristics for the identification of interactive services. For example, interactivity does not necessarily

connote “two-way communication between viewer and content provider” as suggested in the Commission’s proposed characteristics. In the case of public opinion polling or other public response to contests etc., there may only be one-way communication.

Information Item 2:

Parties are asked to submit information on the types of activities currently underway that they consider to be interactive, and the licensed services that they are related to or may have an impact on.

205 See Part II above, and the following tables.

Summary Table of iTV Activity by BDU

Company	iTV Initiatives	IPG	VOD	PVR	Web Access	TV Portal	Enhanced television
Cogeco	? Signed 10-year agreement to deploy Gemstar IPG	C					
	? Has a VOD license from the CRTC. Chose Concurrent for VOD service in both Ontario and Quebec		P				
	? Multi-year deployment agreement with WorldGate to provide e-mail, web surfing, and search capabilities				P	?	
Bell ExpressVu	? Proprietary IPG	C					
	? Agreement to deploy ITV using OpenTV platform and OpenTV Studios customised ITV content, to offer interactive weather and t-commerce						P
	? Signed agreement with Wink for t-commerce to 1M household over five years						P
	? ComboBox convergence product, with ExtendMedia Expected launch in first half of 2002	P		P	P	P	
	? 30 hour Personal Video recorder (5100 System)			C			
Videotron	? iLLICO service including e-mail, web surfing through canoe portal, look up TV listings, chat, join newsgroups and access a complete interactive TV	C			C	C	

	guide.						
Shaw Cable	? Agreement with Gemstar for IPG	C					
	? VOD trial in Calgary. Shaw has a national VOD license from the CRTC through Corus.		P				
	? Discussed potential deployment of TV-based web access, e-mail and chat, but has not made public its specific plans regarding interactive TV				P	?	
Starchoice	? Proprietary IPG	C					
	? Letter of intent with TiVO			P			
Rogers	? Proprietary IPG	C					
	? Co-branded with WebTV include Web surfing, e-mail, online banking and shopping.				C	?	
	? Enhanced television available using Wink technology, allowing t-commerce (on-line shopping) for some US networks. Canadian program launch expected early 2002.						C
	? Partnered with Kodak Photonet tv to allow photos to be displayed through Internet on television.				P		
	? Rogers has a VOD license from the CRTC. Agreement with SeaChange for VOD.		P				
	? Triple-play (home networking solution using Ucentric) combines video (television set), data (high-speed internet) and voice (radio/stereo system). (PVR upgrade possibility) No rollout date announced.			P	P		P

Source: Company reports.

Legend:

- "P" is for planned trial or commercial launch;
- "T" is for trial underway;
- "C" is for commercial launch; and
- "?" as to whether it is a component.

Summary Table of iTV Activity by Broadcaster

Company	iTV Initiatives	IPG	VOD	PVR	Web Access	TV Portal	Enhanced television
CBC	? Continues to launch enhanced broadcasting with select programs, including "Drop the Beat" and "Our Hero"						C
	? Providing content for a VOD trial with Aliant (i.e. "Coaches Corner")		T				
CTV	? With BlueZone, content management database video/audio/text (author once/publish many)						C
CanWest Global							
Corus	? Has a VOD license from CRTC. No deals with BDUs as of yet.		P				
CHUM	? Exploring T-commerce (on-line shopping) opportunities in association with Rogers' enhanced television.						P
Alliance Atlantis							
Astral	? Has a VOD license from CRTC. No deals with BDUs as of yet.		P				
SRC	? Developing content for Videotron's TV Portal					T	
TVA	? Trialing interactive TV shows.						T
TQS							

Source: Company reports.

Legend:

- "P" is for planned trial or commercial launch;
- "T" is for trial underway; and
- "C" is for commercial launch.

Information Item 3:

Parties are asked to submit information on a description of these interactive services, the content and how they work.

206 See Part II above.

Information Item 4:

Parties are asked to submit information on a description of the equipment needed by the viewer, producer, broadcaster or distributor and data concerning the availability and affordability of this equipment.

207 See Part II above and the information provided in Information Item 2.

Information Item 5:

Parties are asked to submit information on a description of the business models and current and potential demand for interactive services.

208 See Part II above.

Information Item 6:

Parties are asked to submit information on descriptions of partnerships with producers, broadcasters and distributors relating to the provision of interactive services.

209 See Part II above and the information provided in Information Item 2.

Information Item 7:

Parties are asked to submit information on which of these interactive activities they consider to be broadcasting, and why.

210 In Part II of its comments, the CBC has discussed four broad categories of iTV services: enhanced broadcasting; content control applications; TV-based Web Access; and TV Portals.

211 Enhanced Broadcasting refers to applications that are added onto or built into the broadcast signal, enhancing the programming by adding new functionality. The new functions being developed vary, but generally include:

- Additional data or information that is related to the program or advertisement being broadcast, such as sports scores, additional news information on a breaking story or information on a product being advertised;

- T-commerce, where a consumer can purchase products related to the program or being advertised in a commercial; and

- Personalised video, where a consumer can change camera angles while watching sports or concerts; and

- Interactive programs, where viewers can play along with a game show or participate in an interactive poll on news shows or during court trials.

212 A number of interactive features when provided as add-ons to the service offered by a licensed programming undertaking, should be considered to be part of that licensee's "program", as that term is defined in the *Broadcasting Act*.

213 Interactive features such as data and information that is related to the program being broadcast, t-commerce that permits a viewer to purchase products related to the programs or advertisements being watched, and interactive services that allow a viewer

to participate in a program, would be offered to viewers as enhancements to existing programs, in much the same way as closed-captioning and descriptive video are currently provided to viewers.

214 This interpretation is consistent with the Commission's approach to regulating the alphanumeric and other non-programming elements of a number of existing programming services, as explained in Part III above. The Commission has authorised licensed and license exempt programming services to provide as part of their services a significant amount of alphanumeric text and other content that would not independently qualify as "programming", under the *Broadcasting Act*.

215 For example, all programming services operating under the *Broadcasting Act* provide viewers with programming that contains closed captioning in their vertical blanking intervals. If it were examined independently, closed-captioning would be a non-programming, alphanumeric service.

216 As discussed in detail in Part III above, if the predominant character of the overall programming service would not change as a result of adding on the interactive features and the visual images and sounds would continue to be the most influential or powerful aspect of the programming service, a programming service, that provides viewers with additional interactive information or content that is related to or connected with the main programming service, would continue to have all of these activities regulated under the *Broadcasting Act*.

217 iTV applications and services that assist in the viewing of TV programming are classified as content control applications. These applications include video-on-demand (VOD), personal video recorders (PVRs) and interactive program guides (IPGs).

218 The interactive features of VOD services provide consumers with the ability to select programming services on demand. They do not alter the nature of the programming service being offered. The same is true of interactive features that permit the viewer to alter the camera angle of a programming service – but do not alter the essential nature of the programming service. VOD services are currently licensed by the Commission as programming services.

219 IPGs present a more difficult case since they are evolving into more than just alphanumeric services. As more video and sound is used in conjunction with the IPG to market programming services or to advertise products and services to consumers, the programming features of IPGs may become predominant causing them to fall into the category of programming services.

220 PVRs operate in much the same way as VCRs do today, although they have much more sophisticated program selection capability and much greater storage capacity than ordinary VCRs. The CBC views PVRs as terminal devices that do not alter the nature of the programming services being offered by the broadcaster or specialty service.

221 TV-based Web Access and TV Portals provide Internet or web browsing through the TV, as well as related electronic services such as e-mail. These services fall within the realm of Internet services. It is only the delivery medium that is new. To the extent to which any of these Internet services include programming services, they should be dealt with under the New Media exemption order.

Information Item 8:

Parties are asked to submit information on which of these interactive activities they consider to fall under the new media exemption order (Public Notice CRTC 1999-197), and why.

222 See Information Item 7. In these comments, the CBC has focussed principally on those interactive services that fall directly within the domain of the *Broadcasting Act*, and that would not therefore fall under the new media exemption.

Information Item 9:

Parties are asked to submit information on planned developments related to interactivity in the coming year (or to be launched soon).

223 See Part II above.

Information Item 10:

Parties are asked to submit information on planned developments in the long term;

224 See part II above.

Information Item 11:

Parties are asked to submit information on other information that parties consider would be of interest to this fact-finding inquiry.

225 See Parts III and IV above. In these parts of its comments, the CBC discusses the regulatory principles and the procedural process that the Commission may wish to employ in establishing a policy framework and regulatory rules for the successful development of the interactive services marketplace.