Audiences are the primary product manufactured and sold by advertiser-supported media. In selling audiences to advertisers, media firms deal in human attention, which resists the type of exact verification and quantification typical of transactions in other industries (Napoli forthcoming). Verifying the presence of human attention to media generally requires entering people’s living rooms, bedrooms and cars, and monitoring their behaviour. For such monitoring to be maximally effective requires audience members’ explicit permission and cooperation to turn something as abstract as attention into tangible data that can be sold in the marketplace. In addition, the audience product is produced from raw materials (consumers) that the producers (media organizations and audience measurement firms) can not control (Berry & Waldfogel 1999). Since the production of audiences is not controlled by the manufacturers, any efforts to bring predictability and rationality to the process of producing audiences must draw upon a sophisticated understanding of the essentially uncontrollable, yet somewhat predictable, behaviour of media audiences. Thus, the economics of advertising-supported media revolve around efforts to predict and measure the behaviour of media consumers. Such efforts persist because greater effectiveness in audience prediction and audience measurement brings greater efficiency and greater revenues to the audience marketplace (Barnes & Thomson 1988, 1994; Fournier & Martin 1983). By the same token, conditions that undermine such efforts damage the audience marketplace.

Ongoing changes in the media environment have the potential to cause such damage. The purpose of this article is to identify the key means by which the new media environment is threatening to undermine the audience marketplace. By focusing on such issues, this article is intended to serve as a counterweight to the prominent discourse emphasizing the opportunities and benefits the new media environment offers advertisers and content providers. This analysis is organized around a conceptual model in which the audience product is separated into three interrelated components: (a) the predicted audience; (b) the measured audience; and (c) the actual audience. As this article will illustrate, the new media environment is increasing the disconnects between these components of the audience product.

**Conceptualizing the Audience Product**

The audience product is best understood as an aggregate measure of consumer attention to media content and – to a lesser degree – the integrated advertising messages. The term consumers is used here in reference to the audience product to reflect that advertisers are concerned with reaching potential purchasers of their products and services. Certainly, the use of the term consumers reflects a limited view of the processes by which individuals interact with media. Being part of a media audience is a complex phenomenon containing numerous layers of meaning and multiple points of analysis (Ang 1991; Webster 1998). This analysis recognizes the frequent criticism that media organizations, advertisers and measurement firms operate with a very limited conceptualization of what it means to be part of a media audience. However, because the focus here is on the role of audiences within the economics of media industries, the analytical perspective narrows considerably.

Nevertheless, the audience product is a multifaceted construct. Figure 1 presents the audience product as three separate but interrelated components, represented as three intersecting spheres. The first component of the audience product is the ‘predicted’ audience. The exchange of audiences initially is based upon the exchange of predicted audiences; that is, upon forecasts of the likely size and composition of the audience consuming a media product. The second key component is the ‘measured’ audience. The measured audience refers to the audience as quantified by audience measurement firms. While it may be possible to predict that a particular media product is going to attract a particular audience, without the ability to subsequently verify the accuracy of that prediction, the ability to sell an audience is compromised. The actual audience represents the elusive and essentially unknowable totality of a media product’s audience. Given that measured audiences are a product of projections from a small sample of the population, and also are affected by the limitations of the measurement process, the actual audience likely represents a different audience from the one that is measured.
The main thrust of the model is that buyers and sellers of audiences must cope with three different facets of the audience product, given that the elusiveness and unpredictability inherent in the audience product mitigate against a complete convergence of these three components. Thus, there is persistent uncertainty about whether predicted audiences will correlate properly with measured audiences. This slippage between the predicted and measured audiences is reflected in the incomplete overlap between the first and second spheres in the model (see Figure 1). In addition, there is comparable uncertainty as to whether measured audiences correlate properly with actual audiences. This slippage between the measured and actual audiences is reflected in the incomplete overlap between the second and third spheres in the model.

Both the producers and the purchasers of audiences seek to minimize the disconnects between these components of the audience product in an effort to maximize the efficiency of their exchanges. The primary mechanisms for minimizing these disconnects are listed directly beneath their appropriate point of intersection in Figure 1, as forces pushing towards the centre of the model. However, changes in the media environment are working against such convergence. These changes are represented in Figure 1 as forces pushing outward from the centre, undermining the congruence between predicted and measured audiences, and between measured and actual audiences. This article argues that the techniques and technologies of audience prediction and audience measurement will not keep up with changes in the media environment, resulting in increasing disconnects between the various components of the audience product; and that these increasing disconnects may have significant implications for the economics of media industries.

The Predicted Audience – Measured Audience Relationship

The exchange of audiences typically begins with the exchange of predicted audiences. That is, contracts between buyers and sellers of audiences generally are based on agreed-upon forecasts of the likely size and composition of a particular media product’s audience. These contracts are formed before the media product is made available; however, until a media product is presented and the audience data are available, nobody knows the exact size or composition of the audience purchased. This situation represents a fairly unique marketplace arrangement: one in which transactions are based upon educated guesses about the size and composition of the product being purchased.

The obvious risk inherent in dealing in audiences involves the possibility that the measured audience that a media product delivers proves to be very different from the predicted audience upon which the transaction was based. Such disconnects between the predicted and measured audience (see Figure 1) raise the possibility that advertisers are not receiving the product they purchased and media organizations are not delivering the product they were contracted to deliver. Of course, such disconnects between the predicted and measured audience are inevitable (Napoli 2001), given the unique nature of the audience product. As Berry and Waldfogel (1999) noted of radio broadcasting, ‘The production process ... is unusual in that the primary inputs, listeners, are not purchased by the firm but rather make a free choice about listening’ (p. 399). Thus, when considering the audience product, ‘output is determined by [audience] behavior rather than a traditional production function’ (Berry & Waldfogel 1999, p. 399).

As these statements suggest, audiences are an inherently uncontrollable and unpredictable product. However, participants in the audience marketplace have developed a variety of techniques for predicting and controlling audience behaviour. For instance, pre-testing media products has become an increasingly prominent phenomenon and has become more influential in
decisions (see Schlosser 2001). Television programs, radio formats and playlists, and magazine concepts all are pre-tested with small audiences, whose feedback is then utilized to develop audience forecasts (Greene 2000; MacFarland 1997; Miller 1994). Sophisticated quantitative models of audience behavior also have been developed to further reduce the uncertainty associated with predicting audience behavior (see Webster & Phalen 1997). From these models, a variety of content scheduling and placement strategies have been developed in an effort to increase content providers’ control over audience behavior (Eastman 1998; Napoli forthcoming).

The Predicted Audience – Measured Audience Relationship in the New Media Environment

Despite continued efforts in the field of audience prediction, recent data suggest that media audiences are becoming increasingly difficult to predict (see Kirkham, 1996). Napoli (2001), for instance, found that the magnitude of error in the advertising industry’s share predictions for new prime-time network television programs increased significantly throughout the 1990s. Thus, it appears that the media industry’s ability to predict the behavior of media audiences can not keep pace with the significant changes taking place within the media environment. Over the past decade, the number of media technologies available to the typical media consumer has increased, as has the channel capacity and variety of content options in older media such as broadcast television, radio, cable, and magazines. This increasing inter-media and intra-media fragmentation makes it increasingly difficult for forecasters to predict how audience members will distribute themselves across available content options, thereby undermining the potential for congruence between the predicted audience and the measured audience (Napoli 2001).

In addition, the developing media environment is one in which audience members increasingly are able to seek out the content that interests them, rather than being ‘programmed to’ by media organizations. Developments such as personal video recorders, on demand music and video clips available over the Internet, and the increasing availability and diversity of pay-per-view television programming, all enhance the degree to which individual media consumers are able to control the media consumption process (e.g. Wirtz & Schwarz 2001). The increases in audience autonomy that these technologies provide undermine the effectiveness of media organizations’ traditional strategies for managing audience flow and controlling and anticipating the behavioural patterns of media audiences (see Adams 1993). Thus, for instance, the strategy of using established ‘lead-in’ and ‘lead-out’ programs to attract and retain television audiences has grown less effective over time, due in part to the fact that audiences have a range of technologies and services at their disposal that make it easier for them to find an alternative program, rather than accept the program on the channel they are currently watching (Eastman, 1998). Thus, the increasing autonomy facilitated by the new media environment is working against traditional means of controlling media audiences – and hence making their behaviours less predictable. Moreover, emerging technologies and services, such as interactive television and video-on-demand, promise even greater audience autonomy and additional challenges to the process of predicting audience behaviour, suggesting that such efforts will become even less effective in the future.

Implications for Advertiser-Supported Media

What does the increasing unpredictability of media audiences mean for the economics of advertiser-supported media? Most likely, it means an increase in the degree to which predictability is a factor affecting audience transactions. As predicting audience behaviour becomes increasingly problematic, the ‘predictability’ of audiences may emerge as a significant factor affecting audience value. Inter-media competition may be affected by the degree to which the audiences for one medium are more predictable than the audiences for another medium. Certain demographic groups may have their value affected by the degree to which their behaviours can be predicted better than others. Certain program types or formats may have their value affected by the certainty with which they deliver audiences. Underlying these speculations is the presumption that the more audience predictability becomes a problem within the media industries, the more likely it is to become a factor affecting advertiser valuations of media audiences. From a decision-making standpoint, greater uncertainty equates with higher risk. Advertisers and media buyers, like most economic actors, are risk averse, and thus are likely to favor transactions presenting lower levels of risk (Fournier & Martin 1983; Napoli 2001).

The Measured Audience – Actual Audience Relationship

The second key relationship being affected by the new media environment is the relationship between the measured audience and the actual audience. The central defining characteristic of the measured audience is that it is comprised of only a very small fraction of the actual audience for a media product. For example, the sample size for Nielsen’s national broadcast television ratings service is 5,000 out of a possible 102 million households in the United States. The two major Internet audience measurement firms, Jupiter Media Metrix and Nielsen NetRatings, generate data from samples of 55,000 to 65,000 U.S. computer users. The pre-
sumed representativeness of these samples allows for projections to the U.S. population as a whole. Unfortunately, even rigorously generated probability samples never can provide a perfect representation of the characteristics of the population as a whole. Generating accurate samples is complicated further by issues such as many potential participants’ unwillingness to participate (see below), the accuracy of available data about the characteristics of the population, and difficulties in ensuring that all potential participants have an equal likelihood of being selected (Poltrack 1988; Webster, Phalen & Lichty 2000).

Another key characteristic of the measured audience is that its size and composition are, to a large degree, a reflection of the techniques used to monitor it. Individuals participating in the measurement process may forget or refuse to record their media consumption activities, or they may deliberately or unintentionally misrepresent their media consumption activities. Such occurrences increase the degree to which the data provide an inaccurate picture of actual audience behaviour. Some measurement techniques and technologies may produce more such error than others, or may produce error levels that vary in accordance with certain audience types, leading to systematic biases in the data that are gathered, packaged and used as the basis for audience transactions (Danaher & Beed 1993; Soong 1988).

The key point of this discussion is that the measured audience more than likely represents an incomplete and/or distorted picture of the true nature of any media product’s audience. This disconnect between the measured audience and the actual audience is represented by the incomplete overlap between spheres 2 and 3 in Figure 1. The audience marketplace is plagued with uncertainty over the nature and extent of the deviations between the measured audience and the actual audience. For this reason, there is an ongoing imperative to improve the processes by which measured audiences are created. Just as participants in the audience marketplace constantly are seeking to improve their abilities to predict audience behaviour, so too are they constantly seeking to improve their abilities to measure audience behaviour.

In an effort to improve the congruence between the measured audience and the actual audience, measurement firms constantly are seeking to improve the representativeness of their samples and the accuracy of their measurement techniques and technologies. These mechanisms are illustrated below spheres 2 and 3 in Figure 1 as forces pushing towards the centre of the model. Nielsen Media Research’s ongoing efforts to improve and expand its samples provide a useful case in point. The size of Nielsen’s national television audience sample has grown from 1,000 in 1987 to 5,000 today, and is expected to reach 10,000 in the near future. Samples generated for the measurement of local television markets have increased as well. In addition, Nielsen has instituted a variety of mechanisms for maximizing the participation of groups (particularly minority groups) that traditionally have been underrepresented in the measured audience (Nielsen Media Research 2001). The end result of these larger, more representative samples is, presumably, a greater congruence between the measured audience and the actual audience.

It is also possible to increase the congruence between the measured audience and the actual audience by introducing more advanced systems of audience measurement. Nielsen’s transition from paper diaries and audimeters to people meters at the national level (and, eventually, the local level; see Lotoski 2001) has taken place under the presumption that these advancements, which come at a significant cost, will result in measured audiences that more closely reflect the composition and size of actual audiences. Recently, Arbitron introduced a Personal Portable Meter, a small electronic device about the size of a pager that subjects carry with them during the day (Patchen & Kolessar 1999). This device detects an inaudible signal in all participating radio, television, and Internet audio and video broadcasts, thereby allowing Arbitron to compile a thorough record of a subject’s electronic media exposure throughout the day, without the subject having to fill out diaries or punch buttons on a meter.

The Measured Audience – Actual Audience Relationship and the New Media Environment

Just as there are forces working against the congruence between the predicted audience and the measured audience, so too are there forces working against the congruence between the measured audience and the actual audience. The two primary forces at issue are: (a) consumers’ increasing unwillingness to participate in the measurement process; and (b) the increasing fragmentation of the media environment (represented as forces pushing outward in Figure 1).

Looking first at the issue of participation, recent studies indicate a steady decline in the response rates for mail-in radio and television diaries, as well as a steady decline in the rate of household acceptance of the people meter (Ephron 2000; Gunzerath 2000). The lower the response rates in any form of behavioural research, the less the data gathered will reflect the behavioural patterns of the population as a whole. Individuals and households that agree to participate in the measurement process are likely to deviate in significant ways from those individuals and households that refuse (Poltrack 1988).

In an effort to bring finer detail to the audience product, audience measurement systems sometimes impose
greater burdens upon participants. Thus, for example, the people meter imposes a greater burden on participants than the audimeter, since participants must log in and log out each time they watch television. These greater burdens facilitate the collection of demographic data, but also can discourage participation and lead to less reliable data (Ephron 2000). To counteract such effects, audience measurement firms constantly are seeking to develop measurement systems that reduce the burdens on the participants (i.e., ‘passive’ measurement systems). Thus, newer systems of audience measurement such as Arbitron’s Personal Portable Meter and the measurement software installed on participants’ hard drives by Internet audience measurement services such as Nielsen NetRatings and Jupiter Media Metrix, require very little from participants. However, the down side to such strategies is that they often are perceived by potential participants as imposing unacceptable intrusions into personal privacy, which can again drive down participation rates (Gunzerath 2000).

Similar privacy concerns have arisen within the context of utilizing ‘media-based’ systems of audience measurement as an alternative to traditional ‘audience-based’ measurement systems. Unlike audience-based measurement systems, which derive data from a panel of media consumers, media-based systems derive data from the media organizations that provide the content. Media-based systems are best exemplified by the server log analysis approach to Internet audience measurement (see Lake 2000) and the utilization of interactive television services such as TiVo to measure television audience exposure (see Martin 2001). These systems can record automatically audience members’ exposure patterns when they visit a site or utilize a service. Such systems have the potential to measure the entire population of the audience for a media product, as opposed to a small sample. In addition, such systems are inherently passive. Thus, they represent a potential countermeasure to the problems plaguing traditional measurement systems. However, for media-based measurement systems to be maximally effective (particularly in terms of providing audience demographic data) they generally require privacy intrusions7 that are widely considered unacceptable (see Center for Digital Democracy 2001). As privacy concerns are becoming a defining characteristic of the new media environment, it seems unlikely that audience measurement firms will be able to reverse the trend of decreased participation rates to any significant degree.

Looking next at the issue of media fragmentation, as the number of content options that any one audience measurement service has to measure increases, the reliability of the data declines (Webster, Phalen & Lichte 2000). Thus, in a highly fragmented media environment, audience estimates for some content options may be projected from only a handful of viewers or listeners, thereby decreasing the likelihood that such projections accurately reflect the behaviour of the population as a whole. Nielsen’s system of television audience measurement already is struggling to measure adequately a television environment in which cable system channel capacities have improved dramatically in the past decade (Hulks & Santini 1994; Menneer & Syfret 1994). The diffusion of digital cable and direct broadcast satellite, along with the potential for ‘multi-plexed’ digital television in the future, will only exacerbate the shortcomings of the existing system. Arbitron faces similar issues in terms of its radio audience measurement system, as satellite radio and low power FM service threaten to bring increased fragmentation to radio audiences. Absent substantial increases in sample size (increases that are not always financially feasible), the extent to which measurement systems can capture reliably the increasingly fragmented media audience is likely to decline. Moreover, recall-based measurement systems (such as the diary and survey recall systems used to measure radio, magazine, and local television audiences) become increasingly unreliable as the number of available content options increases (e.g. Soong 1988). As one advertising executive said of local broadcast measurement: ‘Yeah, we do have pretty [poor] measurement, and it’s going to be even worse as it gets more and more fragmented. ... We don’t know what we’re buying to a certain degree...’ (Saltzman 2001, p. 28).

Implications for Advertiser-Supported Media

What does it mean for the economics of advertiser-supported media if measurement systems can not keep pace with media fragmentation and consumer resistance to the measurement process? At the most obvious level, the ‘quality’ of the audience product suffers, in that there is a lower likelihood that the measured audience accurately reflects the behaviour of actual audience members. Advertisers are likely to see the increased disconnect between the measured audience and the actual audience as lowering the value of the audience product. As one advertising executive recently said in regards to the quality of local television audience measurement: ‘It is so bad I would be surprised if anybody continued to spend money based upon that information’ (Saltzman 2001, p. 28).

This statement highlights an important fact about the audience marketplace: To the extent that particular content options or media technologies deal in less reliable audience data than the competition, then those content options or technologies are likely to suffer economically, as risk-averse advertisers gravitate to the more reliable audience data. Variations in the per-
ceived disconnect between the measured audience and the actual audience are a prominent factor affecting advertisers’ decision making (see Barnes & Thomson 1988; Webster & Phalen 1997). Media technologies whose audience measurement systems are less evolved, and therefore less reliable, can find it difficult to make inroads into the audience marketplace (Barnes & Thomson 1994). The Internet provides a useful example, as the still-developing and distrusted measurement system has led many advertisers to focus their dollars on other media (Fattah 2000; Helft 2000). Perceived variations in the quality of audience measurement could become increasingly influential in affecting the competitive dynamics among segments of the media industry as the media environment becomes increasingly fragmented.

In addition, content options that target small, niche audiences may face increasing challenges to monetizing their audiences due to the low levels of reliability characteristic of small audience numbers in an increasingly fragmented media environment (see above), even if those audiences are demographically desirable (Hallford 2000). A valuable demographic is only valuable if it is measured in a way that advertisers consider reliable. This problem plagued cable networks until increased sample sizes and the introduction of the people meter brought greater quality to cable audience data (Barnes & Thomson 1994) and it is likely to become an issue of increasing prominence in a media environment in which the rate of fragmentation is outpacing the rate of improvement in systems of audience measurement.

Conclusion

An important recurring theme of this analysis is that the overall ‘quality’ of the audience product is in decline and that further declines are likely. If such declines persist, advertisers may divert expenditures away from advertiser-supported media and towards other marketing venues, such as direct response mail, event sponsorship, and new mechanisms for one-to-one electronic marketing such as e-mail and the web, where audience prediction and audience measurement are not central concerns. Or, advertisers may become increasingly resistant to exposure-based models of audience valuation, pushing instead for cost-per-action (CPA) models (i.e. paying on the basis of ‘click-throughs’ or some other form of consumer activity). Such models have become increasingly prominent within the Internet context (Media Dynamics 2001b) and are becoming increasingly prominent in other media as well. Within the television industry, ‘direct response’ advertising, in which programmers receive compensation based upon the number of consumers who make a purchase via an on-screen phone number, is becoming increasingly popular (Waterman 2001). As television’s interactive capabilities improve, such pricing models are likely to become more prominent. However, CPA models of audience valuation are not likely to be as lucrative to content providers as traditional exposure-based models, given that, within such models, content providers are able to monetize only a fraction of their audience. The production budgets of media content likely would be reduced by any such alteration in the dynamics of the audience marketplace.

Developments such as these suggest a general decline in the audience marketplace. Any such decline is likely to provoke strategic changes on the part of media organizations. Specifically, we are likely to see a move away from pure advertising-supported models of content provision. Thus, we are likely to see content producers increasingly provide advertisers not only with the opportunity to reach audiences, but with other types of products and services, such as audience members’ personal data, research services, and various cross-promotional opportunities. This process is well-represented by current developments in the magazine industry, where publishers not only are marketing their subscriber databases more aggressively, but also are providing services to advertisers such as event marketing, primary research, and supplying speakers for advertiser-sponsored functions (Rose 2001). Although such strategic maneuvers are a function of a variety of factors, the key point here is that declines in the quality of the audience product should be recognized as a factor behind such transitions.

The decline of the audience marketplace also is likely to fuel an evolution toward more direct payment content distribution models over ad-supported models. Such a trend already is underway on the Internet, with an increasing number of sites that once provided free content now charging fees (Zeitchik 2001). Although there are multiple causes for this shift (the softening economy; the lack of evidence of Internet advertising effectiveness), the inability of Internet audience measurement systems to thoroughly and reliably capture Internet audience behaviour must be incorporated into this set of factors. Emerging media technologies such as satellite radio and digital television are likely to focus on audience payment for content, rather than advertising support (see Alleyne, 2001), suggesting that in the new media environment content production and distribution increasingly will be supported by consumers rather than advertisers. The idea that the media environment of the future will increasingly emphasize direct pricing over advertising-supported models is not a new one (e.g. Waterman 2001); however, the key point here is that declines in the quality of the audience product will be an important driving force behind such a transition. If such a transition takes place, then the media envi-
rnment of the future will be one in which the audience and content markets increasingly are divorced from one another. As a result, media content will become less a reflection of advertisers’ audience preferences and more a reflection of the preferences of those audience segments with the greatest willingness to pay. Such a shift in the economic underpinnings of media content could have a significant effect on the nature of the content that media organizations produce. Future research should investigate how content might evolve, as well as the broader cultural and economic implications of such a transition.

Notes

1 It is important to note that most U.S. audience measurement systems measure the audience for the content, as opposed to the audience for the advertisements. Across media, the audience actually viewing an advertisement is estimated at anywhere from ten to fifty per cent lower than the audience reported by the measurement system (Media Dynamics, 2001b). However, because content audiences provide the basis for most audience transactions, they are the focus of this article. Nonetheless, changes taking place in the media environment discussed in this article also are likely to undermine further the extent to which measured audiences accurately reflect the audiences for advertisements (see Napoli forthcoming).

2 In some instances (such as the broadcast network ‘upfront’ market), advertisers receive make-goods (additional commercial time) if a program fails to deliver the predicted audience. However, make-good slots may not deliver the demographic composition desired by the advertiser; thus they do not necessarily eliminate all of the risk involved in purchasing audiences (see Napoli 2001).

3 In some instances, media organizations will prefer a less accurate measurement system if the inaccuracies of the system produce audience figures that are favorable to their economic interests.

4 Audimeters are set-top meters that record channel tuning but do not record audience demographic data.

5 People meters are similar to audimeters, but with the ability to record demographic data.

6 One important reflection of the extent to which new audience measurement systems can not keep pace with media technology is ongoing experiments in ‘modeling’ audience behaviour (in both the television and Internet contexts), rather than measuring it directly (see Ephron 2000; Stoughton, 2001).

7 Within the Internet context, server log analysis only can provide the necessary demographic data if audience members voluntarily provide it, or if ‘cookies’ or ‘web bugs’ are placed on hard drives and then linked with personal information (a practice that has drawn repeated criticism from privacy advocates). Within the television context, there has been much controversy recently over whether PVRs and other interactive television services can be used to monitor audiences’ media consumption and link this consumption data to demographic information (without users’ consent (see Center for Digital Democracy 2001; Martin 2001).

8 Today, the average television household receives sixty-three channels, compared to 27 in 1990 (Media Dynamics 2001a).

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