

## **A Conceptual Inventory of the Three Generations of Television**

Douglas A. Ferguson

Department of Communication  
College of Charleston  
Charleston, SC 29424  
843.953.7854  
[fergusond@cofc.edu](mailto:fergusond@cofc.edu)

Paper presented to the Management & Sales Division  
at the April 2002 annual convention of the Broadcast Education Association, Las Vegas.  
**SECOND-PLACE WINNER**

## Abstract

This paper presents a meta-analysis of the underlying differences among the three generations of television: broadcast, multichannel, and interactive. Using a variation of Rogers' propositional inventory, a conceptual map is constructed to explore how the evolution of television-related technology has changed theoretical models of content strategies and audience behavior. Several programming, structural, and economic factors are examined. A new model of interactive viewing behavior is proposed.

## **A Conceptual Inventory of the Three Generations of Television**

The television world has changed, again, and is on the brink of evolving into a different medium on an unfamiliar landscape. Navigating this change requires some kind of conceptual map that shows the boundaries of the three generations of television: broadcast, multichannel, and interactive. This paper simultaneously examines several conceptual frameworks to create such a map, leading to a proposed new model of interactive television viewing behavior.

Understanding how the television industry is changing can be confusing. Predicting how events will further unfold is a theoretical challenge. Looking at theories in isolation may not be the best solution. If only for heuristic purposes, this present attempt to make sense of three generations of television is likely a step in the right direction.

Walker and Ferguson (1998) describe three generations of television (pp. 37-38). The first generation (TV1G) is the original network/affiliate model which grew naturally from its roots in radio. The second generation (TV2G) marked the arrival of a multichannel world with its requisite remote control devices (RCDs) and videocassette recorders (VCRs), offering sufficient choice to change viewing behavior. The third generation (TV3G) is interactive, or “smart” TV, that promises to turn the old broadcast/cable model on its head. Although its eventual form is yet undetermined, a fundamental shift has clearly taken place nevertheless. New media analysts (e.g., Gary Arlen) are insistent that television viewing will be forever changed by the arrival in 1999 of such TV3G devices as personal video recorders (PVRs).

### Conceptual Inventory

If meta-research (Rogers, 1985) is useful in understanding multiple studies, then a “meta-model” should help us understand multiple concepts of how the television industry works at

a structural, technological, and economic level, leading to a new model of viewing behavior.

Previous attempts to explain viewing behavior, for example, have focused on particular generations of television. Webster and Wakshlag (1983) created the first useful model, which focused on audience availability, program type preference, and the structure of available options. This model was clearly anchored in the three-network television generation (TV1G). Subsequent Webster models (Webster and Lichty, 1991; Webster and Phalen, 1997) used media factors and audience factors to expand on the 1983 model, in order to account for features of the second generation of television (TV2G), a generation which included multichannel options, VCRs and remote control devices. Heeter (1985) also identified predictors of program choice with her re-evaluation model of multichannel television, a model which featured channel repertoire, channel familiarity, channel searching, and the use of channel guides. Cooper (1993) offered a model of syndicated program choice that bridged both generations of television by accounting for cable penetration (see also Ferguson, 1992). Cooper (1996) also presented a comprehensive model of audience behavior, but grounded it TV1G theory and research. Finally, Rosenstein and Grant (1997) recast the TV1G model to reconceptualize habit as an active role, rather than a passive one.

Rogers (1985) distinguished two types of meta-research: meta-analysis and propositional inventories. Although meta-analysis entails the statistical analysis of previous quantitative research, propositional inventories "utilize more qualitative approaches to the synthesis of research findings, yielding a set of verbal conclusions in the form of a propositional inventory" (Dutton et al., 1988, p. 222). The

propositional inventories approach is most useful in the early stages of a field of inquiry (Rogers, 1985; Klopfenstein and Ferguson, 1991).

Assuming that theory-construction and model-making for the third generation of television is in its earliest stages, a qualitative meta-model approach to understanding all three generations of television should lead the way to a model for interactive television. The following analysis, then, examines television from a number of different directions: program factors, structural factors, technology, theoretical models, economics, and regulation.

### Program Factors

Several program factors outlined in Table 1 frame the differences among the three generations of television (TV1G, TV2G, and TV3G). The “content is king” mantra from decades of programming lore was first threatened in the 1990s by the importance of channel distribution (Walker and Ferguson, 1998, pp. 195-198). Rather than a victory for either content or distribution, it now appears that the two “kings” would make a winning combination in TV3G. Recent media mergers have focused on the convergence of content and distribution.

-----  
 Table 1 about here  
 -----

Content itself has moved from mainstream “one size fits all” programming to customized shows, depending on the level of interaction and technology. More important, program schedules will likely evolve into menus (Ferguson, 2002, p. 326). With regard to theoretical models, then, the time-based availability of audiences (Webster, 1983) yielded to the channel-based number of choices in a viewer’s repertoire (Heeter, 1985; Ferguson and Perse, 1993) in TV2G. But in TV3G each viewer can seek individual programs instead of channels or

time periods. As PVRs and iTV (interactive television) unshackle audiences from the constraints of real-time and dayparts, menu-based systems like TiVo and SVOD (subscription video-on-demand) will negate flow strategies like blocking, hammocking and tent-poling (Ferguson and Perse, 2001). The networks' attempts to accelerate audience flow by making the breaks between shows seamless (Eastman, Newton, Riggs and Neal-Lunsford, 1997) may prove to be fruitless once viewers can choose all or most of their network programs from menus. Network programmers have evolved into channel schedulers and are now becoming content providers (Ferguson, 2002, p. 326).

The number of alternative choices in TV3G will mushroom, too. Where broadcast independents in TV1G and foundation cable channels in TV2G once dominated the landscape, homegrown internet alternatives may usher in "desktop networks" where everyone with an internet account can send and receive video-streamed content over broadband connections. The major suppliers in TV3G, however, may return to the studio roots of TV1G, leaving many independent players and their network packagers in the cold.

With regard to changes across the generations of television, two examples of specialized program content bear mention: sports and children's shows. In the case of sports in TV1G, the networks packaged national and regional slates of major sports by purchasing the rights. This system changed in TV2G when more channels became available and multichannel distributors were able to charge a premium for extra games. Some sports events, previously supported entirely by advertising, were paid by subscription fees from viewers. With sports-on-demand (interactive) services, sports fans can choose sporting events a la carte. Whether sports will continue to be subsidized by spot advertising is unclear, but product-placement opportunities at

sporting venues will surely remain the same. If anything, the ability of content providers to target different advertising signage to specific groups (using virtual insertion technology) will be enhanced by interactive (TV3G) systems that are sufficiently smart to learn users' habits and preferences.

Children's programs have evolved from hosted show with beloved characters (e.g., Captain Kangaroo, Mr. Rogers, and Bozo the Clown) to pre-packaged children's networks (e.g., Nickelodeon and the Cartoon Network). In the third generation of television, programs will more autonomous and character-based. Shows such as SpongeBob SquarePants, Powerpuff Girls, and Bob the Builder are nothing new, but their association with identifiable cross-promotion products will make them more viable in a menu-based viewing world where viewer demand trumps scheduling strategies.

### Structural Factors

What structural factors underlie the evolution of the three generations of television? The primary difference is the level of interaction between the program content and the viewing audience. Except for the occasional live call-in program, broadcast and most cable television is a one-way form of communication with no interaction. The failure of cable-based interactive channels (e.g., Qube) notwithstanding, television networks have begun to use the internet to create an enhanced form of television that is largely one-way but has elements of two-way communication. For example, many games shows and sporting events now invite the viewer to visit a website to play along or obtain further information. In the near future, viewers can choose to interact with programs (e.g., choosing camera angles in a sporting events). Even the most passive viewer can interact with a menu of VOD movies.

Ferguson (2002) outlined the natural limitations of electronic content distribution across the three generations of television. In the case of broadcast signals, the power and antenna height of transmission systems (regulated by the FCC) serve to limit the geographic coverage of each network-affiliated or independent station. Cable television has no such limits, but is constrained by the number of channels that it can push down the coaxial line. For many years the limit was between 36 and 54 channels, but newer technologies (including digital compression) has pushed the limit much higher. Still, the number of cable channels is finite, measured in the hundreds instead of the thousands, slightly more for direct-to-home (DTH) satellite channels. Interactive television has nearly unlimited reach because the internet plays a role, but third-generation television is limited by the narrow bandwidth of present-day connections. Fiber-to-the-home is many years away, though fiber-to-the-curb is coming sooner. The ability of PVRs to serve as decentralized video servers for the most popular content may eventually resolve the bandwidth problem. Using hard disk space on a set-top PVR, high-demand programming can be distributed during low-demand time periods (e.g., overnight) using underutilized full-bandwidth channels and then stored for later playback from easy-to-navigate menus.

The structural system that identifies each generation is based on the dominant networks. The three networks (ABC, CBS, NBC) dominated PBS and a few independent signals in TV1G. More recently, cable/satellite networks challenged the expanded network oligopoly (now including Fox, UPN, WB, Paxnet) in TV2G. Internet-based program sources have barely surfaced in the past two years and may prove to be the vanguard of TV3G. The inability to identify definitively the dominant channels in TV3G, however, is the nature of the beast; channels are less likely to dominate in a system whose unit of analysis is becoming the individual program



rather than the service on which the show is located.

The level of specialization, too, changes with each generation. No niche channels were feasible in TV1G. Perhaps an independent channel could specialize in movies or sports, PBS could cater to children or high-brow audiences, or a market affiliate could be the leader in local news, but first-generation television was still essentially a mass medium with limited choices and enormous cultural impact. Cable, and later satellite, distribution changed all that. MTV and CNN catered to specialized audiences and the effects of mainstream programs diminished as choices grew (Perse, Ferguson, and McLeod, 1993). As the 1990s came to a close, subniche channels (e.g., The Golf Channel and HGTV) opened television (and its advertisers) to small numbers of loyal viewers. Subniche and microniche channels are a defining characteristic of TV3G.

As a result of smaller and smaller audiences, television moved from mass (largely homogenous) audiences to fractionalized audiences. Advertisers who sought to reach a large undifferentiated mass audience for such common products as bathroom tissue found TV2G less efficient because the viewing groups were splintered across more channels. On the other hand, advertisers who wanted to reach golfers or gardeners found a panacea. In the third generation of television, the availability of the video service will itself become a walled garden (not unlike the controlled aspects of hotel television systems). Watching television may become more like using the world's most user-friendly computer. An operating system and a homepage (without the keyboard or learning curve) will undergird the third generation. TV3G will permit even late-adopter passive viewers to find what they want, when they want it (to borrow the TiVo mantra).

The ambiance of the television experience is changing, too. Rather than one screen, the viewer can opt for picture-in-picture display of another program or extra windows for other activities. Newspapers and magazines will phase out television listings because the electronic program guides (EPGs) and interactive program guides (IPGs) will be as ubiquitous (and necessary) in TV3G as the remote control device became in TV2G. Subdivided screens will be particularly inviting to multitasking Generation Y viewers, who have become addicted to instant-messaging (IM) at the turn of the century (Thomas, 2001). The TV2G controversy that arose when lower-corner channel bugs and upper-corner score boxes invaded the pristine screen in the 1990s will pale in comparison to the on-screen clutter of TV3G. Will audiences become accustomed to show-me-more advertising buttons that overlay program content (and commercials, if they survive)?

### Technology

Of all the factors, technological features are the most defining elements of the generations of television. Old-style television had dials and knobs, and the signal found life in NTSC analog format on a 4 by 3 aspect ratio screen. A receiving antenna (rabbit ears, bow tie, aerial) was necessary and occasionally needed to be rotated, which made cable or satellite reception desirable.

The picture was black-and-white for many years, the sound was monaural, tubes had to warm up, and manual tuners needed to be fine-adjusted. The advent of color pictures, stereo sound, instant-on circuitry, and all-electronic tuners were welcome changes. The picture and VCR storage were still analog in TV2G, but buttons replaced the knobs and dials, usually connected from a distance by the infrared light of RCDs. Coaxial wiring substituted for receiving antennae

and the NTSC signal was (and still is) remodulated onto different channels at the whim of the multichannel provider.

The all-digital television system for TV3G looms large, though it has yet to fully arrive. No longer the television set in the corner of the room, home theaters with surround sound and digital cable or satellite reception offer a 9 by 5 aspect ratio (movie-style) screen that is slated to receive ATSC high-definition signals by the end of the decade or sooner. Depending on the level of sophistication, these home entertainment systems offer either computer connections (e.g., firewire) or set-top box (STB) tuners and routers, a far cry from the built-in tuners found in television receivers that had featured separate knobs for VHF and UHF channels.

The channels in TV1G were live from a central source, played unscrambled through a hard-wired setup designed strictly for what we now recognize as VOS (video on supply). Not until premium movie channels came along in the 1970s did TV2G need to scramble the signal for the nonpaying viewer. The only hard-wiring in TV2G was inside the STB, a modular solution to an evolving multichannel approach to television. VCRs supplanted some live television, infrequently with time-shifted recordings but usually with rented videos from Blockbuster. Near video on demand (NVOD) supplemented such pay channels as Showtime and HBO.

The chief technological contributions of TV3G are digital encryption, digital compression, and digital storage. PVRs (e.g., TiVO, ReplayTV, UltimateTV) simplified the timeshifting functions of VCRs while offering such totally new features as pausing live programs and simultaneously watching the beginning of a show while recording the remainder of it. Digital cable systems on the cusp of TV3G introduced most of the audience to electronic program guides (EPGs) and menus, but PVRs made the extra functions available even to unwired and

undownlinked homes. Bellamy and Walker (2001) noted that the reprogrammable nature of PVR software is a significant break with the past. In the first two generations it was impossible to dramatically alter the features of a television receiver or storage device, but the PVR's operating system is connected via telephone to the system designers who can change the software to limit its obsolescence. Users of TV3G technology need not replace their gadgets to get the latest features.

### Theoretical Factors

From a theoretical standpoint, the three generations of television are conceptually distinct. First-generation television (where it still exists) operates in real time and favors the "lean-back" passive viewer. Audience availability supersedes program availability in TV1G, and the ritualistic viewer (Rubin, 1984) is a willing participant in an elaborate scheduling game, where compatible shows are arranged to flow across compatible dayparts.

The increase in program options offered by multichannel television (cable and satellite) ushered in a new kind of viewing experience, where channel surfing offered its own rewards. Increased shelf space and digital compression expanded the television universe to hundreds of channels, which led viewers to specialize in a subset of options known as channel repertoire (Heeter, 1985, 1988; Ferguson and Perse, 1993). As described earlier, viewers picked up their remote controls, but programmers responded with seamless strategies. Over time, the home video market (videocassette and DVD rentals) usurped the amount of primetime viewing, especially on Fridays and Saturdays.

The third generation of television brought forth "discontinuous change" (Ferguson, 2002). When viewing is asynchronous video-on-demand (VOD), the concept of audience flow no longer

makes sense. As instrumental (and ritualistic) viewers become more “lean-forward” active, their viewing motivations take precedence over structural considerations and programming strategies. In a menu-driven world, the focus is on the audience. Thus, TV1G was source-centered, TV2G, is medium-centered, and TV3G will be audience-centered. The shift in control changes everything, and may overthrow the advertising-supported model of television. From the producer’s standpoint, the center of control moved from the network (which once controlled the production studios) to the multichannel owners, and then back to the production studios themselves (which now own the networks and the channels).

Still, audience demand is central to a new model of television choice because the audience, not the supplier or the programmer, finally has the most control. Audience loyalty has shifted over the three generations, too, from channel loyalty to genre loyalty to program loyalty. Where viewing was thought to be located in the home (e.g., homes using TV, or HUT), television activity became more person-centered in TV2G. Will some home viewing migrate to portable handheld devices? Will TV3G take up residence in cyberspace?

#### Economic and Regulatory Considerations

Television is expensive. Economic models have evolved to account for how expense, revenue, and value are compensated. The first, second, and third generations are known by their corresponding number of revenue streams. TV1G is advertising-supported, with other income in the broadcast model being negligible. TV2G added the subscription model, which was sufficiently strong to overshadow advertising revenues for many years. TV3G added the ability to sell merchandise, owing to the interactive (transactional) nature of the internet and two-way television.

When the barriers to entry were compounded by spectrum scarcity, having a network affiliation during the height of TV1G was considered a license to print money. As competition from new competition grew more fierce and audiences became fractionalized in TV2G, broadcasters and cablecasters alike sought to brand their channels to enhance value. New competitors such as VCRs and premium movie channels altered the order of program windows, pushing the availability of expensive Hollywood movies further from the hands of broadcast networks and their affiliates. In TV3G, however, the focus on the program itself rather than the channel is leading to shared windows, where the producer sells nonexclusive rights for fresh content (sometimes permitting an episode of a show to air one week on the mass audience networks and the following week on a specialized cable channel).

Competition for leisure time has played an important role in the evolution of television generations, too. During TV1G, primetime television had too few compelling activities in the home as competitors, certainly none from the consumer electronics industry. Especially for someone living alone with ritualistic motivations, television was the primary leisure activity in prime time. VCRs and video games opened a small window for other home entertainment during TV2G, but nothing like the lure of the internet in the last half of the 1990s. Web surfing has not overtaken channel surfing, certainly not in number of hours per day in the average TV home, but one can reasonably wonder if television still dominates individual leisure time to the same extent as in TV1G (Ferguson and Perse, 2000).

Advertising itself seems less compelling than ever before because it is so much more easily avoided in TV3G, thanks to PVRs. In TV1G viewers had to leave the room to miss a commercial. Unlike a newspaper, advertising content could not be skipped past. Only the

remote control device (RCD) offered the viewer some escape from commercials by means of muting and channel flipping. When VCRs introduced zipping and zapping in TV2G, the advertisers got nervous until they learned that timeshifted programs accounted for less VCR use than rental tapes.

But PVRs make timeshifting too easy, and PVR designers have included commercial-skipping features for even time-delayed programs. The enterprising PVR user can set the device to record a primetime block such that the viewing can be delayed twenty or thirty minutes (slightly behind real-time) and commercials can be skipped in the process of “catching up with real time.” Even if the user miscalculates and catches up before primetime concludes, he or she can press pause (presumably to attend to some other brief activity) to fall sufficiently behind real time to be able to skip more commercials. Many users just get season passes for their favorite shows and watch them from the PVR menu whenever they want. More recent PVR models even offer automatic commercial-skipping, ensuring that timeshifters will see no commercials without interceding during playback. Small wonder that the major broadcast networks and Hollywood studios are bringing lawsuits against PVR maker ReplayTV (Kerschbaumer, 2001).

If all looked gloomy for first-generation mass marketing, TV2G tried to compensate by offering segmented marketing to enhance the third element of advertising's big four: reach, frequency, selectivity, and efficiency. Products and services themselves have grown more narrow because direct and database marketing makes it possible. TV3G promises one-to-one marketing, with targeted ads to reach individuals rather than groups, going for share of customer rather than share of market (Peppers and Rogers, 1997). PVR makers and other interactive system

designers (e.g., OpenTV, SeaChange, Navic Systems) have plans to download (to set-top storage) targeted ads that can be dropped into a real-time (unskippable) commercial break. In the near future, viewers who watch the same programs will see different commercials, increasing selectivity and perhaps frequency. Television will eventually be able to compete with zoned editions of magazines. More important, local television affiliates may become less relevant to regional advertisers' marketing plans.

Although government regulation could (and should) be another study, it seems safe to believe internet channels will be unregulated. Such a free and unfettered marketplace for news, entertainment, and advertising is a substantial change from the days of FCC broadcast regulation based on localism. The electronic mass media have been deregulated, and television is no exception.

### Unresolved Issues

What is not at all clear is the timing for these three generations of television. When did one generation end and the other begin? How much overlap is involved? Clearly, some aspects of TV3G have already begun and others are on the drawing board. Although some elements of TV1G seem quaint (e.g., uncluttered screens), others (e.g., mass appeal content) will remain forever in some form.

TV1G is defined by the broadcast model that began in 1948 and declined in the 1980s. TV2G is defined primarily by the cable television model that, despite an early start in 1949, took hold in the 1960s and reached fifty-percent penetration in 1989. RCDs (1955) and VCRs (1976) also define TV2G, but both reached maturity in the late 1980s. Although home computers and interactive access did not reach fifty-percent maturity until 2000 and 2001, respectively, the



true defining feature of interactive TV3G is the digitization of the television signal, which found rapid acceptance by the production and distribution community after its invention by Woo Paik in 1992 (Brinkley, 1998). Real-time analog television (and analog storage) is hopelessly sequential, but digital television follows the asynchronous nature of networked computers and packet-switched internet systems. The two-way interactive connection is only half the picture: Being digital is the rest.

Some will dispute the general acceptance of interactivity, questioning the demand for such capabilities (or digital HDTV in general). Lee and Lee (1995) report findings that most viewers are too passive (and technologically-impaired) to demand interactive television. But if one defines interactivity as finding useful two-way features for all audience members, not just the gadget-lovers, then even the most inactive, undereducated viewer can easily learn to press new buttons and navigate a menu. A journal article (from an unknown author) under review by *Journal of Broadcasting & Electronic Media* in late 2001 suggests that education is not a factor in the use of interactive program guides readily available from digital cable companies.

The question of demand is a red herring if the features are supplied by companies with economic reasons to lure viewers into the interactive world. The designers of interactive STBs want to avoid the pitfalls that kept people from setting their VCR clocks or timeshifting, so they have engineered their devices to be no more difficult to operate than an RCD, or the proverbial toaster (Levy, 1989). Critics aside, it looks as if interactive television will be seamlessly integrated into existing STBs and stand-alone equipment.

Others will point to all the things that have *not* changed throughout the three generations of television. Advertising may wither or change, but privately-owned, highly-concentrated media empires have always controlled the system, creating mindless drivel instead of enriching content. Disintermediation is eliminating the middleman, but media content middlemen have begun to consolidate with their “wholesale” suppliers. First-generation broadcasters and second-generation cable MSOs have given way to movies studios (e.g., Disney) and online giants (e.g., AOL), but the underlying corporate hegemony is intact. Their mantra is “consumption is king.” Still, it is not quite the same world as before the digital 1990s. Discontinuous change invites all kinds of unexpected opportunities.

If TV3G has really begun, when will its presence be felt? PVRs have yet to diffuse to a million homes and iTV is still being tested. Forecasters suggested in 2000 that 25 percent of homes would have PVRs by 2002, but that was much too optimistic (Dickson, 2000). Even so, the concept may finally blossom by 2005 when most set manufacturers and cable STB providers build PVR and iTV functions into traditional receivers for the living room. If the diffusion of other devices is any predictor, it may be 2015 before TV3G is in full swing. But there is no need to wait until then to examine a new model for television viewing behavior.

#### A New Model for TV3G

Stepping back to consider our conceptual map of competing frameworks, it is possible to offer a new model for television in an audience-centered, interactive age. See Figure 1.

-----  
Figure 1 about here  
-----

The audience demand process involves four related stages. The pre-choice stage contains the pre-conditions: viewer uses and gratifications, leisure time, and connectivity. The choice stage involves preferences and menus which interact with the device stage (where the interactivity is monitored). The final stage is program choice, or some other audience behavior (e.g., channel surfing, web surfing, video games).

Some elements of previous models are no longer relevant in TV3G. Awareness, for example, is far less important because technology keeps track of viewing guide information, optionally making suggestions to viewers based on past preferences through the intervention of artificial intelligence (AI). One woman on a 60 Minutes segment about PVRs told Mike Wallace that she did not know which night Ally McBeal was scheduled. She simply chose the program from a menu when she wanted to watch it, because her season-pass for the show had already made sure it was recorded. She did not seem to care when shows were scheduled, just that she was able to see them (CBS, 2001).

Structural considerations, prevalent in the Webster models, are also greatly diminished in TV3G. Individual media factors (e.g., multichannel access, VCRs, RCDs) are nearly ubiquitous by now, so they are also dropped in this new model. Connectivity, on the other hand, is not universal and will greatly determine the eventual dominance of the new model because interactivity is key. "Thinking outside the box" can literally mean going beyond the usual

television receiver and STB. Without connectivity, the viewer falls under the influence of previous models, for however long they remain relevant.

Competition for leisure time activities that involve a viewing screen (e.g., video games, DVD/VCR rental, web surfing) is another new variable. In previous generations of television, these options were less important as functional alternatives to television (Ferguson and Perse, 2000). On the other hand, program availability is absent from this model because, especially in subscription VOD systems currently rolling out from Time-Warner, programs are continuously available (or at least readily available to PVR users with season passes).

Viewer gratifications (i.e., needs/tastes/preferences in the most recent Webster models) have always been a factor, but now appear to be more important than before because the power has shifted from the content provider to the audience member (Cowles, 1989). Preferences are considered to be a separate stage in this model because of the influence of technology. Using artificial intelligence within the device, present-day PVRs (and similar interactive television innovations) potentially function as “viewing robots” that learn preferences and make suggestions which could influence the preferences themselves.

In large part, the presence of menus defines TV3G, so they are included at the choice stage. Viewing behavior is the measurable outcome of the process. The model is focused entirely on the audience (receiver) and the influence of technology, leaving out the usual elements of linear models (e.g., source/sender, message, channel, feedback). In economic terms, the model is skewed entirely toward a demand-side solution. Supply is still relevant to an audience-center model, but its inclusion is peripheral rather than central. Re-evaluation also continues to be an important consideration, but more peripheral than it was in the finite-choice

Heeter model.

### Closing Remarks

Taking inventory of old and new realities, as well as old and new boundaries, is useful in creating new models. In the same manner, understanding the new models leads to data collection and testing. This paper offers an exploratory map and invites other cartographers to refine it and test it.

New structures and new systems also call for new measures. The long tradition of using Nielsen ratings as an easily-obtained criterion is ending. The early models that did use industry data were not flawed, but they will become far less relevant in the near future. Qualitative methods should be explored and greater attention to the individual should be adopted.

In some cases, uncharted areas need to be added to the map. In more cases, additional depth on individual aspects of the third generation of television is necessary. In all cases, other researchers and theorists should join the debate on how the new generation will unfold and raise questions about how to make sense of change.

References

Bellamy, R.V., & Walker, J. R (2001, November). What RCD research tells us about the 'new' television viewer. Paper presented at the annual meeting of the National Communication Association for Education (NCA), Atlanta, GA.

Brinkley, J. (1997). Defining vision: The battle for the future of television. New York: Harcourt Brace.

CBS. (2001, March 18). 60 Minutes. [videotape of on-air segment].

Cooper, R. (1993). An expanded, integrated model for determining audience exposure to television. Journal of Broadcasting & Electronic Media, 37, 401-418.

Cooper, R. (1996). The status and future of audience duplication research: An assessment of ratings-based theories of audience behavior. Journal of Broadcasting & Electronic Media, 40, 96-111.

Cowles, D. (1989). Consumer perceptions of interactive media. Journal of Broadcasting & Electronic Media, 33, 83-89.

Dickson, G. (2000, June 26) KPMG: Rosy future for PVRs. Broadcasting & Cable, p. 50.

Dutton, W. H., Rogers, E. M., & Jun, S. (1987). Diffusion and social impacts of personal computers. Communication Research, 14(2), 219-250.

Eastman, S. T., Ferguson, D. A., & Klein, R. A. (2002). Promotion & Marketing for Broadcasting, Cable, & the Web (4th Ed.). Boston: Focal Press.

Eastman, S. T., & Ferguson, D. A. (2002). Broadcast/Cable/Web Programming: Strategies and Practices (6th Ed.). Belmont, CA: Wadsworth.

Eastman, S. T., Newton, G. D., Riggs, K. E., and Neal-Lunsford, J. (1997). Accelerating the flow: A transition effect in programming theory? Journal of Broadcasting & Electronic Media, 41, 265-283.

Ferguson, D. A. (1992). Predicting inheritance effects from VCR and cable penetration. Dowden Center Journal, 1(1), 28-40, also available from his 1990 dissertation.

Ferguson, D. A. (2002). Online video and audio programming. In S. T. Eastman and D. A. Ferguson (Eds.), Broadcast/Cable/Web Programming: Strategies and Practices (6th Ed.) (pp. 322-348). Belmont, CA: Wadsworth.

Ferguson, D. A., & Perse, E. M. (1993). Media structure and audience influences on channel repertoire. Journal of Broadcasting & Electronic Media, 37(1), 31-47.

Ferguson, D. A., & Perse, E. M. (2000). The World Wide Web as a functional alternative to television. Journal of Broadcasting & Electronic Media, 44(2), 155-174.

Ferguson, D. A., & Perse, E. M., (2001, August). Enhanced television viewing with digital video recorders (DVRs): Audience satisfaction in an asynchronous television environment. Paper presented at the annual meeting of the Association for Education in Journalism and Mass Communication (AEJMC), Washington, DC.

Heeter, C. (1985). Program selection with abundance of choice: A process model. Human Communication Research, 12(1), 126-152.

Heeter, C. (1988). The choice process model. In C. Heeter & B. S. Greenberg (Eds.), Cableviewing (pp. 11-32). Norwood, NJ: Ablex.

Kerschbaumer, K. (2001, November 5). Hollywood takes on PVRs. Broadcasting & Cable [online version of article published in the magazine].

Klopfenstein, B. C., & Ferguson, D. A. (1991, April). VCR survey meta-research: An application of the propositional inventory. Paper presented to the annual meeting of the Broadcast Education Association, Las Vegas.

Lee, B., & Lee, R. S. (1995). How and why people watch TV: implications for the future of interactive television. Journal of Advertising Research, 35(6), 9-18.

Levy, M. R. (1989). Why VCRs are not pop-up toasters. In M. R. Levy (Ed.), The VCR age: Home video and mass communication. Newbury Park: Sage.

Peppers, D., & Rogers, M. (1997). The one to one future: Building relationships one customer at a time. New York: Currency/Doubleday.

Perse, E. M., & Ferguson, D. A. (1993). The impact of the newer television technologies on television satisfaction. Journalism Quarterly, 70(4), 843-853.

Perse, E. M., Ferguson, D. A., & McLeod, D. M. (1994). Cultivation in the newer media environment. Communication Research, 21(1), 79-104.

Rogers, E. M. (1985). Methodology for meta-research. In H. H. Greenbaum, S. A. Hellweg, & J. W. Walter (Eds.), Organizational communication: Abstracts, analysis, and overview (Vol. 10). Beverly Hills, CA: Sage.

Rosenstein, A. W., & Grant, A. E. (1997). Reconceptualizing the role of habit: A new model of television audience activity. Journal of Broadcasting & Electronic Media, 41, 324-344.

Rubin, A. M. (1984). Ritualized and instrumental uses of television. Journal of Communication, 34(3), 67-77.

Thomas, K. (2001, June 21). Online teens are instantly in touch. USA Today, p. D1.

Walker, J. R., & Bellamy, R.V. (Eds.) (1993). The Remote Control in the New Age of Television. Westport, CT: Praeger.

Walker, J. R., & Ferguson, D. A. (1998). The Broadcast Television Industry. Boston: Allyn & Bacon.

Webster, J. G. (1986). Audience behavior in the new media environment. Journal of Communication, 36(3), 77-91.

Webster, J. G., & Lichty, L. W. (1991). Ratings analysis: Theory and practice. Hillsdale, NJ: Erlbaum.



Webster, J. G., & Phalen, P. F. (1997). The mass audience: Rediscovering the dominant model. Mahwah, NJ: Lawrence Erlbaum.

Webster, J. G., & Wakshlag, J. (1983). A theory of television program choice. Communication Research, 10, 430-447.

Table 1

Conceptual Grid for the Three Generations of Television

|  |   |                              |
|--|---|------------------------------|
| <b>Program Factors</b>                     |   |                              |
| content is king                            | distribution is king                    | convergence is king          |
| time-based schedules                       | channel-based schedules                 | program-based menus          |
| dayparting                                 | channel matching                        | menu-driven                  |
| free content paid by advertising/donations | pay per channel                         | PPV                          |
| independents for other choices             | cable for cornucopic choice             | homegrown choices            |
| spinoffs within shows                      | cross-promotion between shows           | cross-platform tie-ins       |
| studio supplier                            | independent supplier                    | studio supplier              |
| <b>Structural Factors</b>                  |   |                              |
| one-way                                    | enhanced one-way                        | two-way                      |
| reach limited by terrestrial signals       | reach limited by channel capacity       | reach limited by bandwidth   |
| 3 networks and PBS                         | new broadcast networks and netlets      | web-based/DBS                |
| no niche                                   | niche (MTV)                             | subniche (Golf Channel)      |
| mass homogeneity                           | fractionalization                       | walled gardens               |
| one screen                                 | picture-in-picture                      | multiplexing                 |
| printed guides                             | scrolling guide                         | IPG/EPG                      |
| no logos, no score boxes, low clutter      | channel bugs                            | computers; cluttered screens |
| <b>Technical Factors</b>                   |   |                              |
| analog propagation; dials and knobs        | analog storage; buttons                 | digital                      |
| NTSC 4:3                                   | midband/channel positioning             | ATSC 9:5                     |
| antennae (rabbit ears, bow ties, aerial)   | wired coaxial                           | wired fiber and satellite    |
| B&W; warm up; fine tuning; monaural        | color; instant-on; elec. tuning; stereo | home theater; surround sound |
| standalone tuner                           | set-top tuner and routers               | firewire                     |

|                                 |                                      |                                    |
|---------------------------------|--------------------------------------|------------------------------------|
| unscrambled                     | analog scrambling                    | digital encryption                 |
| video-on-supply                 | PPV/NVOD                             | VOD/PPV                            |
| central playback (live)         | VCR                                  | PVR                                |
| hard-wired                      | modular (e.g., set-top box)          | reprogrammable (i.e., integration) |
| <b>Theoretical Models</b>       |                                      |                                    |
| real-time                       | compressed multiplexing              | asynchronous                       |
| lean-back passive               | channel surfing                      | lean-forward active                |
| dayparting                      | rentals; sell-throughs               | SVOD                               |
| audience availability (Webster) | channel repertoire (Heeter) (Cooper) | interactive (Ferguson)             |
| source-centered control         | medium-centered control              | audience-centered control          |
| network-centered production     | channel-centered production          | studio-centered production         |
| channel loyalty                 | genre loyalty                        | program loyalty                    |
| home-centered                   | person-centered                      | cyber-centered                     |
| <b>Economics and Regulation</b> |                                      |                                    |
| one stream (advertising)        | two streams (subscriptions)          | three streams (merchandise)        |
| license to print money          | branding for value                   | multiple windows                   |
| no primetime media competition  | video games                          | web surfing                        |
| minor commercial avoidance      | zipping, zapping, flipping to avoid  | automatic commercial skipping      |
| mass marketing                  | segmented marketing                  | targeted ads                       |
| FCC regulation (localism)       | deregulation (common carrier)        | unregulated internet               |

Figure 1

Model of Interactive Television Viewing Behavior

