IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TV Guide Online, Inc. and TV Guide Online, LLC Plaintiffs, v. Tribune Media Services, Inc., Defendant.	Civil Action No. 05-CV-725-KAJ **REDACTED - PUBLIC VERSION**

EXPERT REPORT OF DR. CHRISTOPHER A. VELLTURO

I. OVERVIEW

A. Qualifications and Experience

1. I am the founder and president of Quantitative Economic Solutions, LLC, an economic consulting firm. I received a Doctor of Philosophy degree (Ph.D.) in Economics from the Massachusetts Institute of Technology in Cambridge, Massachusetts in 1989. My fields of specialization include industrial organization and econometrics. My curriculum vitae, which includes all publications and testimony for the last four years, is attached as Exhibit 1. I have extensive experience in the valuation of intellectual property and in the assessment of economic injury/damages sustained as a result of copyright, trademark,

and/or patent infringement. Industries that I have studied in this context include: internet advertising, computer hardware and software, chemicals and derivative products, consumer products, pharmaceutical products, medical devices and instruments, and semiconductors. I have also conducted research into the valuation of internet domain names, including the assessment of sell-through commission models relating to internet commerce.

B. Statement of Assignment

2. I was retained by Ropes & Gray LLP, counsel for plaintiffs TV Guide Online, Inc. and TV Guide Online LLC[1] in connection with this litigation.[2] I was asked to perform economic analyses to assess an appropriate measure and quantum of damages in the event a trier of fact determines liability with respect to United States Patent No. 5,988,078 ("the '078 patent"). The '078 patent entitled "Method and Apparatus for Receiving Customized Television Programming Information by Transmitting Geographic Location to a Service Provider Through a Wide-Area Network" issued on November 23, 1999. I understand that the patented invention at issue in this action pertains to methods and systems used to enable a user to obtain localized television program listings based on geographical information provided through the user's computer. I understand that from January 1998 until October 2005, Index Systems Inc.[3] was the assignee of the '078 patent. Currently, TV Guide Online, LLC is the assignee of the '078 patent.

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[1] I understand TV Guide Online, Inc. and TV Guide Online, LLC are both wholly-owned subsidiaries of Gemstar-TV Guide International, Inc. ("Gemstar").

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[3] Index Systems, Inc. as well as TV Guide Online, Inc. and TV Guide Online, LLC are wholly owned subsidiaries of Gemstar-TV Guide International, Inc. (See Exhibit 21 to Gemstar-TV Guide International, Inc. SEC Form 10-K, 2005.) Gemstar-TV Guide International was formed through a merger of Gemstar International, Inc. and TV Guide, Inc. that was announced in 1999 and completed in July 2000. Prior to the merger, Index Systems, Inc. was a wholly-owned subsidiary of Gemstar International, Inc.

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3. I further understand that Defendant Tribune Media Services, Inc. ("TMS") is alleged to infringe the '078 patent. For my analysis in this report, I assume that the '078 patent is valid, enforceable and infringed and that TV Guide is entitled to recover damages for the infringement of this patent. My findings are predicated on the assumption that TMS has infringed the '078 patent through its operation of www.Zap2it.com, and through its operation and sales of syndicated program listing services that offer localized television program listings based on geographical information provided through the user's computer. However, I express no opinion on the issues of liability.

C. Documents Relied Upon

4. In connection with this matter, I, or others working under my direction, have considered information from the following sources:

- Financial documents, including sales, price and cost information produced by the Plaintiffs and Defendant;
- Documents related to pricing and business strategy and agreements produced by the Plaintiffs and Defendant;
- Internet traffic/usage reports/data, as contained in the business documents produced by Plaintiffs and Defendant;
- Conversations with TV Guide personnel;
- Discussions with plaintiffs' technical expert, Mr. Tipton Cole, on issues related to the patented invention and infringement;
- Relevant publicly available information on the online television program listing industry (and on the program listings industry generally);
- Deposition testimony; and
- Various court filings, including the pleadings.

5. A complete list of the documents I considered and the names of TV Guide personnel with whom I spoke in forming my opinions can be found in Exhibit 2 of this report. I understand discovery is ongoing. If additional information or materials are made available to me, I intend to review such information and materials, and may revise or refine my opinions if appropriate.

D. Summary of Conclusions

6. I determine that lost profits are appropriate for a portion of the TMS' alleged infringement REDACTED Under a finding of liability for infringement, damages are appropriately assessed through a determination of lost profits at TV Guide due to lost advertising revenues for a portion of TMS' infringing activity, and lost royalties payable to TV Guide Online, Inc. from licensees to the '078 patent for an additional portion. REDACTED

I assess reasonable royalty damages on Zap2it.com's infringing activity. Generally, I determine the appropriate reasonable royalty rate using an economic analysis of the commercial importance of the patent in suit in the context of a hypothetical license negotiation between Index Systems, Inc. and TMS at about the time of the first infringement. Specifically, I evaluate the bargaining positions of the parties in a negotiation such as the one posited here. Furthermore, I apply various factors as enumerated in *Georgia-Pacific Corp. v. U.S. Plywood*,[6] ("*Georgia-Pacific* factors") to further refine my royalty rate analysis.

7. With respect to damages, I find:

- TV Guide Online, Inc. sustained lost profits through lost advertising revenue. "But for" TMS' infringement, TV Guide Online, Inc. would have earned greater advertising revenue at TVGuide.com, and through additional revenues generated through incremental syndication agreements for TV Guide's online program listing services. REDACTED

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[6] *Georgia-Pacific Corp. v. United States Plywood*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

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II. BACKGROUND

A. Online Television Program Listings

8. Online television program listings allow consumers to view information on upcoming television programming (typically by network/channel number and by time, and often including brief descriptions of the program content) over the internet. These program guides are commonly referred to as "program grids." I understand that the '078 patent enables such grids to be customized for end users, by accessing localized television program listings based on geographical information provided through the user's computer.[8]

1. Demand

a. Consumers

9. Consumer demand for online television program listings has grown as a result of the strong penetration of cable/satellite television in the United States, the expansion of cable television viewing choices as a result of the cable industry's shift toward digital service, the increased variation in local cable program options and the myriad service plans offered in a given locale, and, quite naturally, as a result of the rapid expansion of PC ownership and internet usage among U.S. households.

10. Cable and satellite television access is now pervasive through the United States. As of 2006, approximately 98% of U.S households with a television, or 110.2 million, have access to cable television.[9] Approximately 65.4 million households or 60% of

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[8] I understand that both TVGuide.com and Zap2it.com offer users the opportunity to customize the television listings grid they receive to reflect specific networks or stations selected by the user. (See, *e.g.*, http://tvlistings5.zap2it.com/tvlistings/CustomizeAction.do#customize and http://www.tvguide.com/listings/default.aspx, accessed November 7, 2006.) When I refer to customization in this report however, I am referring to the feature of both websites that enables a user to input his/her zip code in order to get local television listings, and not (unless otherwise noted) this additional customization step users may undertake.

[9] National Cable & Telecommunications Association, 2006 Industry Overview, p. 6 (http://i.ncta.com/ncta_com/PDFs/NCTAAnnual%20Report4-06FINAL.pdf, accessed November 21, 2006) ("NACT 2006 Industry Overview").

households with a television purchase some form of cable programming package, while an additional 26.1 million purchase television programming from satellite providers. All told, 83% of U.S. households with a television purchase cable and/or satellite television service.[10]

11. The average number of channels provided through cable service has increased markedly in recent years, largely as the result of the expanding deployment of digital cable services across the U.S. In late 1995, there were 139 cable programming channels available nationwide. By 2006, that figure has almost quadrupled to 530.[11] In addition, the variety and variance of programming available across various cable and satellite providers has changed materially, as programming agreements between cable-satellite providers and content providers (e.g., Viacom) have become more customized, and regional/local content expands. In addition to the 530 nationwide cable programming channels, there are 96 regional networks. Among these hundreds of channels, there are a wide variety of specialty cable programming channels for viewers with diverse interests such as sports (*e.g.*, the families of ESPN and Fox Sports channels), news and public affairs (*e.g.*, CNN, Fox News, MSNBC), home improvement (*e.g.*, Home and Garden Television, Discovery Home, Home Improvement Channel), and children and family programming (*e.g.*, the family of Nickelodeon channels, Disney Channel, Sprout, Discovery Kids). There are also numerous cable programming channels aimed at distinct cultural groups (*e.g.*, Russian Television Network of America, Cine Latino, National Greek Television, National Iranian Television, ImaginAsian TV, Zhong Tian Channel). The content of regional network includes sports (*e.g.*, New England Sports Network, Yankee Entertainment and Sports Network, Carolina Sports Entertainment TV) and news (*e.g.*, New York 1 News, Chicagoland Television News, Pittsburgh Cable News Channel, Northwest Cable News).[12]

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[10] Federal Trade Commission, "Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming," ("2006 FCC Video Programming Competition Report") March 3, 2006, pp. 4-5 and NACT 2006 Industry Overview, p. 6.

[11] NACT 2006 Industry Overview, p. 6.

[12] Cable Network Search, National Cable & Telecommunications Association website

12. In addition, consumer access to the internet and consumer use of the internet have expanded at a rapid pace during this period. By 2003, 70 million households in the United States, or 61.8%, owned a personal computer (PC), up from 42.1% just five years earlier. In 2003, 54.7% of households (62 million) had internet access, more than double the rate observed (26.2%) five years before.[13]

13. The convergence of richer and more localized television program options and use of the internet has led to significant demand for online television program listings. Industry statistics from 2003 indicate that 23 million unique internet users sought entertainment-related content on the internet per day, and of these users, 23% sought information on television program listings online.

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b. Online Advertisers

14. As consumer access and use of the internet has proliferated, the marketplace for internet based media advertising has grown dramatically. In 1999, internet based advertising expenditures in the United States were estimated to be $1.9 billion.[16] In 2005, internet-based media spending was estimated to be $8.3 billion, an increase of 436%.[17]

15. Internet users are particularly attractive to many advertisers as such users tend to have relatively higher incomes than the U.S. population as a whole.

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(http://www.ncta.com/Organizations.aspx?type=orgtyp2&contentId=2907, accessed November 21, 2006).

[13] U.S. Census Bureau, "Computer and Internet Use in the United States: 2003," October 2005 (http://www.census.gov/prod/2005pubs/p23-208.pdf, accessed November 7, 2006).

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[16] TNS Media Intelligence/CMR, "Internet Ad Spending Continues Along Strong Growth Track," February 5, 2001 (http://www.tns-mi.com/news/02052001.htm, accessed November 7, 2006).

[17] TNS Media Intelligence, "TNS Media Intelligence Reports U.S. Advertising Expenditures Increased 3.0 Percent in 2005," February 27, 2006 (http://www.tns-mi.com/news/02282006.htm, accessed November 7, 2006).

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17. Consumers who access online program listing services are particularly attractive to advertisers in the entertainment industry generally, and in the television industry in particular. Users of online program listing services reveal themselves (though their "self-selection" to visit the site) to be in the marketplace to view televised programming in the near future.

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2. Providers of Online Television Program Listings

18. Providers of online television listings collect or purchase data on upcoming televised programming, format these data in the form of program grids, and provide consumers access to these data through their internet web sites. For consumers seeking a

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comprehensive listing of programming available in their service area that is specific to the form of access and the plan to which the consumer subscribes, there are sites that offer access to program grids specific to the user's geography and service type.[22] Moreover, such sites can offer the user additional customization, by allowing users to select certain networks for their grids that the user can save and return to in future visits.

19. For example, when a user goes to www.TVGuide.com, he or she will see a generalized listings grid and a prompt to "View your local listings."[24] Once the user clicks on this option, he or she will be prompted to input his or her zip code.[25] Upon inputting a zip code, the user will be prompted to choose a service provider.[26] Once the user has chosen a service provider, a localized listings grid will appear for that user's geography and cable system.[27]

20. TVGuide.com: TV Guide Magazine is a weekly periodical that provided television program listings, beginning in 1953. Throughout its history TV Guide Magazine has been the largest-selling weekly U.S. magazine.

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[22] Some websites provide network specific content (*e.g.*, ESPN.com provides program listings at the national level for its selection of ESPN-related networks (http://sports.espn.go.com/espntv/espnGuide, accessed November 7, 2006)).

[24] http://www.tvguide.com, accessed November 7, 2006.

[25] http://www.tvguide.com/listings/setup/localize.aspx, accessed November 7, 2006.

[26] http://www.tvguide.com/listings/setup/localizeus.aspx, accessed November 7, 2006.

[27] http://www.tvguide.com/listings/default.aspx, accessed November 7, 2006.

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22. Internet Portals (MSN, Yahoo, America Online (AOL)): Internet portal sites, including MSN, Yahoo, and AOL, offer (among a menu of services) consumer access to localized television listings based on geographical information provided through the user's computer.[32]

23. Other Providers: Other sites dedicated to television/related media content provide television program grids to varying degrees. For example, TV.com provides television-related content, including localized program grids based on geographical information provided through the user's computer.[33] Other providers of customized program grid information are AccessHollywood.com and IMDB.com.[34]

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[32] http://tvlistings.aol.com/listings/state/city/provider?zipcode=, http://tv.msn.com/tv/default.aspx?stTz=300&dstTz=240, and http://tv.yahoo.com/lineup/?co=us&.intl=us&.done=%2Fgrid%2F, accessed November 8, 2006.

[33] http://www.tv.com/listings/index.html?tag=nav-top;listings and http://www.cnetnetworks.com/aboutus/brands.html, accessed November 8, 2006.

[34] http://www.accesshollywood.com/television/ and http://www.imdb.com/tvgrid/2006-11-07/2000/, accessed November 8, 2006.

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3. Competition between TVGuide.com and Zap2it.com for Consumers of Online Television Program Listings

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27. Given the proliferation of the internet, there are numerous advertising options available to companies seeking to peddle their wares on cyberspace.

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In this sense, internet websites represent "differentiated

[35] Between April 2005 and September 2006, there was only one month, April 2006, in which Zap2it.com had more page views than TVGuide.com. (See Exhibit 6.)

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products" in the minds of advertisers, wherein certain websites are considered to be "closer substitutes" to one another relative to other available websites. Products closer to each other in differentiated product space tend to exert greater competitive (often, price) pressure on each other than do other available, more distant substitutes.[39]

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[39] For a general primer on the economics of competition among differentiated products, see Christopher Vellturo, *Creating an Effective Diversion: Evaluating Mergers with Differentiated Products*, 11 Antitrust 16 (Spring 1997).

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30. Indeed, as an economic matter, the closeness of competition between TVGuide.com and Zap2it.com is starkly demonstrated by considering the firms that advertise with greater frequency and intensity on the two websites.

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These data indicate that the websites are particularly close substitutes in terms of end user demographic, and, consequently, advertiser demand.

B. Syndication Services for Online Television Program Listings

1. Demand for Syndication Services for Online Television Program Listings

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2. Providers of Syndication Services for Online Television Program Listings

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33. The revenue model associated with these services is largely comparable to that generated by the proprietary websites of TVGuide.com and Zap2it.com described above. Under a syndication agreement, the service provider (*e.g.*, TV Guide) provides or hosts the syndicated service and in return is generally entitled to sell associated advertising inventory on the relevant pages and retain some or all associated revenue. Syndication agreements vary in the amount and type of advertising inventory the service provider is entitled to sell.

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3. **Competition between TV Guide and TMS for Syndication Services for Online Television Program Listings**

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C. The '078 Patent and Related Infringement Claims

37. The '078 patent issued on November 23, 1999 to Michael Levine and was assigned to Index Systems, Inc. I understand that until October 2005, Index Systems, Inc. was the assignee of the '078 patent. Currently, TV Guide Online, LLC is the assignee of the '078 patent.

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I understand the claimed invention in the '078 patent and asserted in this infringement action relates to the methods and system used to enable a user to obtain localized television program listings based on geographical information provided through the user's computer.

38. I understand TV Guide asserts in this action that the online television program information services, that provide localized listings information based on geographical information provided through the user's computer, provided by TMS directly through its Zap2it.com website and to others through TMS' provision of related syndication services practice the '078 patent and, therefore, infringe. I understand that TMS' alleged infringement commenced in approximately May 2000 and continues presently.

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39. It is also my understanding that all other industry participants in the provision of online localized television program listings based on geographical information provided through the user's computer either 1) do so under a license to the '078 patent; or 2) infringe the '078 patent.

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III. FRAMEWORK FOR DAMAGES ANALYSIS

41. I have been asked to determine the form and quantum of damages in this matter. Damages in patent infringement matters can take the form of lost profits (including lost profits on lost sales, and lost profits due to reduced royalties earned from licensees as a result of competition with the infringing product), a reasonable royalty or a combination of the two.[64] I first consider a lost profits approach to damages. In other words, I

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[64] I understand that the courts have affirmed guidelines in *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F. 2d 1152 (6th Cir. 1978) and *Georgia-Pacific Corp. v. United States Plywood*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) for the consideration of the appropriate measure and estimation of damages.

determine whether, as a result of the infringement, TV Guide suffered lost sales and concomitant lost profits as a result of TMS' infringement. If, as a result of my analysis, I determine that TV Guide would have garnered additional sales and profits in the world "but for" infringement, I then seek to determine whether the quantum of such lost sales and their associated profitability can be determined on a non-speculative basis.

42. Additionally, I consider whether additional infringing activity at TMS results in reduced revenues from TV Guide Online, Inc. licensees. Having identified such reduced revenues, I estimate lost profits at TV Guide Online, Inc. in the form of reduced royalties earned, using the royalty fees provided in the relevant licenses between TV Guide Online, Inc. and its licensees.

43. Finally, I was asked to assess damages under a "reasonable royalty only" approach during that period when Index Systems, Inc. was the assignee to the '078 patent. The reasonable royalty rate is based upon the likely royalty amount the parties would have agreed to in a hypothetical licensing exercise that would have taken place at about the time of initial infringement, under the condition that all parties recognized the patent at issue to be valid, enforceable and infringed. In a reasonable royalty damages consideration, I apply the reasonable royalty rate identified above to all infringing activity for the period when Index Systems, Inc. was the assignee to the '078 patent. I was also asked to assess damages under a "reasonable royalty only" approach for the entire damages period.

IV. LOST PROFITS ANALYSIS

44. The fundamental question in a lost profits analysis is what customers who actually used the infringing method and system of the Defendant would have done if the infringing method and system were not available. To estimate lost profits, it is necessary to determine what the users of TMS' infringing method and system would have done in a "but-for" world in which the Defendant's method and system did not practice the patented invention. I find that a significant proportion of end users who accessed Zap2it.com would have, in the "but for" world, turned to TVGuide.com instead. As a result, TV Guide Online, Inc. sustained lost profits in the form of lost advertising revenue

associated with the greater end user traffic and related end user advertising impressions that would have been generated at the site "but for" TMS' infringement.[65]

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A. Lost Profits Due to Reduced User Traffic and Advertising Revenues at TVGuide.com

47. In assessing the potential for lost profits, I consider whether TVGuide.com sustained reduced end user traffic and associated lost profits related to lost advertising revenue as a result of TMS' infringement through the Zap2it.com website. That is, "but for" TMS' conduct, what additional profits would Online, Inc. have made through TVGuide.com? I consider the suitability of lost profits by applying the factors relating to lost profits set forward in *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*[67] (the "Panduit Test"). An affirmative finding with respect to all four factors enumerated in the Panduit Test indicates that damages due to lost profits are warranted. The four factors are:

- Demand for the patented product;
- Absence of acceptable non-infringing substitutes;
- Manufacturing/marketing capability to exploit demand; and
- Amount of profit that would have been made.

48. I find that all four factors found in the Panduit Test are met in the current instance. Having made such a determination, I assess and quantify damages relating to lost profits.

1. Demand for the Patented Method and System

49. I find there exists significant demand for the patented invention disclosed in the '078 patent. This finding is based upon at least the following:

- Pervasive deployment of online localized television program listing services in which a local program grid can be obtained based on geographical information provided through a user's computer;
- Substantial end user use of the patented invention at TVGuide.com, Zap2it.com, and other websites;
- Substantial business planning and strategic plans at TV Guide and TMS that establish the perceived value to end users of the patented method and system;

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[67] *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F. 2d 1152 (6th Cir. 1978).

- Substantial business planning and strategic plans at TV Guide and TMS that establish the perceived value of advertising content specifically tailored on a geographic basis; and
- The willingness of licensees to share significant advertising revenues with TV Guide Online, Inc. under the terms of these agreements.

a. Pervasive deployment of online television program listing services in which a local program grid can be obtained based on geographical information provided through a user's computer

50. A review of the major internet portal sites that provide TV listing services to end users accessing their "home" pages (and listed services) demonstrates that every such portal site offers online television program listings through a feature that enables the user to receive localized program grids based on geographical information provided through the user's computer. In Exhibit 11, I provide printouts of the relevant pages from Yahoo, AOL, and MSN.

51. A review of the most significant (in terms of unique visitor traffic counts) television/entertainment-related websites demonstrates that most of them utilize a search capability in which the user receives a localized program grid based on geographical information (zip code, or city/state) provided through the user's computer. I provide printouts of the relevant pages from TitanTV.com, TV.com, TVGuide.com, and Zap2it.com in Exhibit 12.

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b. Substantial end user use of the patented invention at TVGuide.com, Zap2it.com, and Other websites

53. Website traffic information provided at both TVGuide.com and Zap2it.com indicates that a substantial proportion of site visits (unique visitors) access television program grids by providing geographical information through the users' computers.

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c. Substantial business planning and strategic plans at TV Guide and TMS that establish the perceived value to end users of the patented method and system

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d. **Substantial business planning and strategic plans at TV Guide and TMS that establish the perceived value of advertising content specifically tailored on a geographic basis**

REDACTED

REDACTED

e. **The willingness of licensees to pay significant commissions to TV Guide Online, Inc.**

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2. **Absence of Acceptable Non-infringing Substitutes**

REDACTED

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3. **Manufacturing/Marketing Capability to Exploit Demand**

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4. Amount of Profit That Would Have Been Made

65. To determine the amount of the lost profits at TVGuide Online, Inc. as a result of TMS' infringement at Zap2it.com, I utilize a model of traffic diversion from Zap2it to other sites that would occur were TMS not to have infringed the '078 patent followed by an assessment of associated incremental advertising revenue and related profitability at TV Guide Online, Inc. The details of this analysis and the specific bases for the parameterization of the model are provided in Exhibit 14, though I provide a summary of the operational components of the model presently.

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Given that these users specifically indicated by their actions the value derived from

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accessing such information, and the fact that there would have been other websites (including TVGuide.com) that offered such services, I find that these page view volumes in the world "but for" infringement, would have migrated to other sites that offered end users the service they directly sought.

67. Additionally, I consider whether additional end user traffic and page views at Zap2it.com would have migrated to other sites, given that Zap2it no longer offered the option to obtain listings using the patented invention.[88] Zap2it.com offered services other than the allegedly infringing service, primarily including original television-related content, and access to movies listings and related original content. Given the importance of access to television program listing information through the patented method and system to consumer interest in Zap2it.com (noting that listings access represents the single most frequent service used by visitors to Zap2it.com), I find it unlikely that end users interested in television-related products and services that would have had access to other sites that offered original content and the patented method and system would have continued to visit Zap2it.com in any significant numbers.

68. I find, however, that some traffic would have continued to flow into Zap2it.com in the "but for" world: specifically, traffic to its movie-related content and listings. Therefore, I determine that Zap2it.com would have, in the "but for" world, retained its traffic volume (page views) that accessed movie-related content and listings.[89] The page views that

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[89] I consider this determination to be a highly conservative one. First, it is likely that some visitors to Zap2it.com accessed both television and movie information, and, absent access to relevant television listings, would have shifted all of their page views (*i.e.*, their "visit") to sites using the patented invention. I implicitly assume that the movie-related page views of such users would remain at Zap2it.com, and therefore, likely understate the true volume of page views that would have migrated out of Zap2it.com in the world "but for" infringement. Further,

accessed television related content (listings or original content) at Zap2it.com would have been generated at other sites in the "but for" world and are, therefore candidates for a lost profits consideration.

69. Having determined the end user traffic that would have turned elsewhere to obtain television-related content in the "but for" world, I apportion this traffic to sites legally practicing the '078 patented invention. This apportionment results in a conservatively low estimate of the incremental traffic that would have flowed to TVGuide.com, for reasons explained, in Section IV.A.2, *supra*.

70. I apply TVGuide.com's historically observed advertising revenue rates to assess the incremental advertising revenues that the additional traffic would have generated at TVGuide.com, "but for" infringement.

71. Finally, I deduct from these incremental advertising revenues the incremental costs that TV Guide Online, Inc. would have incurred to manage this revenue and its related site traffic.

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there are likely visitors to the site that accessed only movie-related content on any given visit, yet chose to return to Zap2it.com for their entertainment services needs knowing that (in the actual world) television and movie related listings were available. In the "but for" world, these uses may well have gone elsewhere, shifting to sites (such as TVGuide.com) that afforded them the opportunity to access listings relating to movies and television.

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C. Lost Profits Due to Reduced Syndication-Generated User Traffic and Advertising Revenues at TV Guide

74. As noted above, TMS also utilized the invention claimed in the '078 patent to provide syndicated/affiliate services to other website providers who sought to provide their users with access to localized television program listings based on geographical information provided through the user's computer. In the world "but for" infringement, TMS would not have been able to provide this service offering.

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76. With respect to the remaining Panduit considerations for lost profits, I find the demand for the patent and the marketing and sales capacity factors are met. These analyses proceed analogously to those provided in the previous section; I incorporate that analysis here by reference.

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D. Summary: Lost Profits/Lost Royalties Sustained by TV Guide as a Result of TMS' Infringement of the '078 Patent

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V. REASONABLE ROYALTY DAMAGES CONSIDERATION

82. As noted in the previous section, I determined that TV Guide Online, Inc. sustained damages as a result of lost profits on lost sales/lost royalties in some form on all of the infringing activity at TMS October 6, 2005 forward:

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83. Under a reasonable royalty approach to damages, I determine the likely royalty rate that Index Systems, Inc. and TMS would have agreed upon for a license to the '078 patent

about the time of initial infringement. I understand that as part of this hypothetical negotiation, both parties consider the patent at issue to be valid and infringed by the technology that is to be licensed. This hypothetical licensing negotiation is considered to take place at about the time the infringement commenced.

A. Reasonable Royalty Rate

84. I determine a reasonable royalty through a two-step process. First, I evaluate the incentives that Index Systems, Inc. and TMS would have had at about the time of first infringement to enter into a royalty agreement. REDACTED

This analysis ("Edgeworth Box Analysis" or the application of *Georgia-Pacific* Factor 15) provides a range of likely royalty rates which the parties would *both* consider economically reasonable. Having determined this range of royalty rates, I apply the remaining fourteen *Georgia-Pacific* factors (excluding Factor 15)[97] to determine which of the feasible royalty rates represents the most plausible royalty rate to which the parties would have agreed.

B. Initial Conditions and Parameters

1. Date of Negotiation

85. I understand initial infringement began with TMS launching its method and system by which users could obtain online localized television program listings based on geographical information provided through the user's computer at Zap2it.com.

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[97] *Georgia-Pacific Corp. v. United States Plywood*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

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2. Nature of License

86. Despite the hypothetical nature of the exercise, I create a licensing scenario that closely matches what a real-world licensing session at the time of first infringement would have looked like. Since TV Guide Online, Inc. was using the '078 patent through TVGuide.com as of 2000, I determined that the license granted to TMS would have been non-exclusive.

87. Given that the revenues and profits associated with a license to the '078 patent are derived from several sources (*e.g.*, advertising revenues and fixed per monthly fees for syndicated grid services), the reasonable royalty rate would need to be applied along a dimension that captures the value of the patented technology across all revenue-generating products and services. In this context, I evaluate the reasonable royalty by determining the value of the patent license on a dollar per thousand website page view basis.

3. Patent Validity, Enforceability and Infringement

88. I assume that the parties would arrive at the negotiating table with a common understanding that the '078 patent is valid and enforceable, and that TMS' television listings method and system would infringe on at least one claim of the '078 patent.

4. Reasonable Foresight

89. Finally, I assume that the parties had reasonable foresight as to trends in the online television information industry going forward and the ongoing importance of the '078 patent to the ability of TMS to successfully compete for internet traffic (and related advertising revenues) associated with television listing information. Therefore, in

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forecasting the expected benefits to TMS of taking a license and the expected cost to TV Guide Online, Inc. of granting such a license, I assume the parties would have reasonable foresight with which to estimate projected values.

C. Edgeworth Box Analysis (Application of *Georgia-Pacific* Factor 15)

90. Under an Edgeworth Box Analysis, the likely price at which an agreement can be struck between two parties to exchange a good or asset is bounded by the expected valuations each party anticipates it would lose if the transaction does not take place. The rate that the parties would agree to is bounded by the maximum TMS would be willing to pay for a license to the patent at issue and the minimum Index Systems, Inc. would be willing to accept.

1. TMS' Maximum Willingness to Pay

91. For TMS, I estimate the maximum willingness to pay based on the profits it would expect to lose by not taking a license. Absent a license, TMS would not be in a position to offer its infringing method and system either directly to end users through Zap2it.com or through its syndication services to other websites, and would not be in a position to earn related advertising revenues associated with internet traffic directed to its site. Most likely under this scenario, TMS would have continued to offer access to movie-related listings and content through Zap2it.com (directly and through syndication). Given the revealed importance of the patented method and system, however, without a license, the television-related traffic into Zap2it.com and the syndication services TMS would have been able to sell would have been sharply reduced (if not eliminated entirely).

92. At a minimum, TMS would have recognized that the financial implications of not obtaining a license to the '078 patent would be lost advertising revenue and associated profits due to reduced direct end user volume at Zap2it.com, and due to reduced syndication-related traffic at TMS.

93. In Exhibit 18, I estimate the operating margin that TMS would have expected to earn through the television portion of Zap2it.com and its syndication business under license to

the '078 patent in the mid-year 2000 time period. Without a license, TMS would likely have been unable to generate any traffic and associated revenue (either directly or through syndication) that related to television-based interest on the part of the end user. With a license, TMS would have been in a position to offer the infringing television-based aspects of Zap2it.com and syndication business legally.

REDACTED

2. Index System, Inc.'s Minimum Willingness to Accept

95. From the licensor's perspective, Index Systems, Inc. would not be willing to grant TMS a license to the '078 patent unless the royalties it expected to receive under such a license would exceed the additional advertising revenues/profits and related royalties that would be received if it did not license TMS. As detailed extensively above, through their TVGuide.com and Zap2it.com offerings, TV Guide Online, Inc. and TMS were and continue to be significant rivals and the Levine patented method and system would have represented an important competitive advantage for TVGuide.com over Zap2it.com. Given the important competitive advantage the patented method and system afforded TV Guide Online, Inc. over a principal rival, a relatively high royalty rate would be required to compensate it for eliminating this advantage.

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Online, Inc. would have expected to earn on TMS' portion of national listings with a portion of TMS' expected profits.

97. I assess the minimum acceptable royalty in Exhibit 19.

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3. Summary of Range

98.

REDACTED

These ranges are summarized in Exhibit 20. This analysis provides insight into the starting point in a hypothetical negotiation between the parties regarding a license to the '078 patent. The *Georgia-Pacific* factors provide further insights as to what that royalty rate would be.

D. Consideration of the Remaining *Georgia-Pacific* Factors

99. In this section, I consider the data and evidence available in this action to determine how the various bargaining dynamics proposed in the *Georgia-Pacific* factors would have affected the final rate between the parties. I find that the *Georgia-Pacific* factors indicate that Index Systems, Inc. would have been in a favorable bargaining position relative to TMS. This outcome implies that Index Systems, Inc. and TMS would have agreed to a rate near the top of the range described above. As a conservative measure, I determined that the reasonable royalty between the parties would have been at the midpoint of the bargaining range. I consider each of the *Georgia-Pacific* factors below.

1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.

REDACTED

REDACTED

REDACTED

REDACTED

2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.

REDACTED

REDACTED

3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.

106. As noted earlier in this section, the hypothetical license would be non-exclusive, as TV Guide Online, Inc. would continue to use the patented technology on its own site. This dynamic is implicitly captured in the Edgeworth Box analysis (*Georgia-Pacific* Factor 15) I undertook *supra*, and thus no incremental adjustment is warranted here.

4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.

107. See Factor 1. TV Guide Online, Inc. has licensed its intellectual property (including the '078 patent). Patent owners who do not seek to maintain their monopoly tend to license patents at lower rates than those who do seek to maintain their patent monopoly. However, I have already significantly accounted for this policy in determining the maximum and minimum willingness to pay as considered in the previous section, and therefore, I give this factor little additional weight in considering where within the Edgeworth Box the parties would likely ultimately reach an agreement.

5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are the inventor and promoter.

108. As noted above, TV Guide Online, Inc. and TMS are direct competitors for end user traffic related to television (and other entertainment) information and content through their respective sites, TVGuide.com and Zap2it.com. Moreover, as discussed above, the parties are direct competitors (and, essentially exclusive competitors) in the provision of

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syndicated online television listing services to third parties. As a matter of economics, firms seek higher royalty rates from competitors than non-competitors, as the business garnered by the rival under the license is likely to come – to some degree – at the expense of the licensor. The licensor would take this financial impact into account in its willingness to license.

REDACTED

6. The effect of selling the patented specialty in promoting sales of other products of the licensee; the existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales

110. REDACTED In this context, consumer awareness, use, and satisfaction with TV Guide.com and their satisfaction with the listing services available as a result of the deployment of the inventions claimed in the '078 patent exert a positive influence (referred to by economists as a positive "externality" or "feedback effect"[112]) on the brand as a whole. This enhanced value associated with TV Guide Online, Inc.'s use of the '078 patent would provide Index

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[112] See Paul A. Samuelson and William D. Nordhaus, *Economics, Seventeenth Edition* (New York, NY 2001), pp. 372-384.

Systems, Inc. with greater incentive to maintain proprietary rights to the technology, and thereby raise the royalty rate they would seek in a hypothetical negotiation.

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112. I find this Factor indicates a royalty rate toward the top end of the Edgeworth Box.

7. The duration of the patent and the term of the license.

113. The patent issued at the time of the hypothetical negotiation, and would have had its full term to run under the license. Typically, I find this factor to be neutral as to the likely royalty rate, unless the patent is close to expiration (in which case the value of the license may be very short-lived compared to the costs of implementing the patented advantage). As this is not the case here, I find this factor to be neutral as to the likely royalty rate.

8. The established profitability of the product made under the patent; its commercial success; and its current popularity.

114. As noted above, users of TVGuide.com and Zap2it.com make extensive use of these sites' features that allows users to obtain localized television program listings based on geographical information provided through the users' computers.

115. A review of the major internet portal sites that provide TV listing services to end users accessing their "home" pages (and listed services) demonstrates that every such portal site offers online localized television program listings through a feature that enables the user to receive localized program grids based on geographical information provided through the user's computer. In addition, the most significant (in terms of unique visitor traffic counts) television/entertainment-related websites utilize a search capability in

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which geographical information (zip code or city/state) is provided through the user's computer to receive a localized program grid.

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119. This factor would tend to indicate a royalty rate toward the higher end of the Edgeworth Box.

9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.

120. See Factor 8. This factor suggests a royalty rate toward the higher end of the range.

10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.

121. See Factor 8. This factor suggests a royalty rate toward the higher end of the range.

11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

122. See Factor 8. This factor suggests a royalty rate toward the higher end of the range.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

123. I am unaware of any customary apportionment of profit or selling prices that are used in this particular business, other than the values implicit in the revenue sharing agreement with MSN.com, as detailed under Factor 1.

124. I find this factor provides no incremental insight (beyond its incorporation into my assessment of Factor 1) as to the likely royalty rate here.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

125. Both TVGuide.com and Zap2it.com include additional listings information relating to movies, and original content directed at television, movies, and other forms of

REDACTED

entertainment. As noted above, however, I limit the traffic considered under the financial evaluation of the license here to be traffic specifically generated by the use of the '078 patent. In other words, traffic at Zap2it.com unrelated to television listings and content are determined to remain with Zap2it.com, with or without a license to the '078 patent.[121] In this context, non-patented elements are explicitly considered in my determination of the Edgeworth Box, and therefore, no incremental consideration is warranted here.

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14. The opinion testimony of qualified experts.

127. In forming my opinions on this matter, I reviewed and considered the report of Mr. Tipton Cole for input on the technical aspects of the '078 patent, TV Guide's patented method and system, and TMS' infringing method and system.

15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily

[121] As explained in footnote 89, *supra*, I believe this to be conservative assumption that understates the importance/value of the invention claimed in the '078 patent.

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> **trying to reach an agreement; that is, the amount which a prudent licensee - who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention - would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.**

128. This factor represents a restatement of the Edgeworth Box Analysis I originally undertook to establish the likely boundaries of a hypothetical negotiation. Thus, this factor provides no incremental value in determining where within the Edgeworth Box a rate would likely be obtained.

E. Conclusions on the Reasonable Royalty Rate

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F. Royalty Base

130. For reasons noted earlier (see Section V.B.2), I assess the reasonable royalty rate on a dollar-per-thousand-page view basis, and limit the application of the royalty rate to those pages at the licensee that directly relate to television content. Under such an approach, the reasonable royalty rate determined above is applied to each television-related page view at Zap2it.com.

G. Residual Royalty Damages

REDACTED

VI. SUMMARY OF DAMAGES

A. Total Lost Profits and Reasonable Royalty Damages

REDACTED

B. Prejudgment Interest

134. In order to compensate TV Guide for the time value of money and the implicit risk TV Guide undertook as an unwilling investor in TMS over the period of infringement, I have calculated appropriate pre-judgment interest. "But for" TMS' infringement, TV Guide should have earned additional profits as a result of increased advertising revenue and licensee royalties. In the real world, TMS has retained these sums and put them to work in the development of its businesses. In this sense, TV Guide has been an unwilling

investor in TMS, and is entitled to, at a minimum, the same return on its investment that other investors in TMS have sought and earned.

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C. Total Damages (Including Prejudgment Interest)

REDACTED

VII. ALTERNATIVE DAMAGES APPROACH

REDACTED

December 15, 2006

Dr. Christopher A. Vellturo

CERTIFICATE OF SERVICE

I hereby certify that on December 15, 2006 true and correct copies of the Expert Report of Dr. Christopher A. Vellturo were caused to be served on counsel of record at the following addresses as indicated:

BY ELECTRONIC MAIL
Richard K. Herrmann, Esquire
Mary B. Matterer, Esquire
Morris James, LLP
500 Delaware Avenue
Suite 1500
Wilmington, DE 19801-1494

BY ELECTRONIC MAIL
Mark A. Pals, P.C., Esquire
Linda S. DeBruin, Esquire
Michael A. Parks, Esquire
Meredith Zinanni, Esquire
Kirkland & Ellis, LLP
200 East Randolph Drive
Chicago, IL 60601



Danielle C. Schillinger, Esq.
Fish & Neave IP Group
Ropes & Gray LLP
1251 Avenue of the Americas
New York, NY 10020
Attorneys for Plaintiffs
TV Guide Online, LLC and TV Guide Online, Inc.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

I hereby certify that on July 12, 2007 I electronically filed the foregoing document with the Clerk of Court using CM/ECF which will send notification of such filing(s) and Electronic Mail to the following:

Richard K. Herrmann, Esquire
Mary B. Matterer, Esquire
Morris James LLP
500 Delaware Avenue, Suite 1500
Wilmington, DE 19899

I hereby certify that on July 12, 2007, I have sent by Electronic Mail, the foregoing document to the following non-registered participants:

Mark A. Pals, Esquire
Kirkland & Ellis, LLP
200 East Randolph Drive
Chicago, IL 60601

Steven J. Fineman (#4025)