

protracted bargaining between independent parties to a transaction can reasonably be anticipated, internalization becomes attractive... Especially relevant in this connection is that, when conflicts develop, the firm possesses a comparatively efficient conflict resolution mechanism. To illustrate, fiat is frequently a more efficient way to settle minor conflicts (say differences of interpretation) than is haggling or litigation... The firm may also resort to internalization on account of the economies of information exchange... It is widely accepted, for example, that communication with respect to complex matters is facilitated by common training and experiences and if a compact code is developed in the process. Repeated interpersonal interactions may permit even further economies of communication; subtle nuances may come through in familiar circumstances which in an unfamiliar relationship could be achieved only with great effort.<sup>83</sup>

55. In addition to the economic literature on the benefits of vertical integration, there is also a large body of economic literature that describes corporate control as a valuable asset in its own right and important in facilitating change in an organization.<sup>84</sup> A change in corporate control can enhance vertical integration efficiencies by providing a different vision based on the new management's experience and viewpoint about how to maximize profits and minimize transactional frictions. As a result, changes in control can have a large effect on the direction and strategy of a firm.

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<sup>83</sup> See Williamson (1971) pp. 113-114.

<sup>84</sup> See Henry Manne (1965), "Mergers and the Market for Corporate Control," *Journal of Political Economy*, Vol. 73, No. 2, pp. 110-120 at p. 112 ("The basic proposition advanced in this paper is that the control of corporations constitute a valuable asset; that this asset exists independent of any interest in either economies of scale or monopoly profits; that an active market for corporate control exists; and that a great many mergers are probably the result of the successful workings of this special market"); see also Michael Jensen (1988), "Takeovers: Their Causes and Consequences," *Journal of Economic Perspectives*, Vol. 2, No. 1, pp. 21-48 at p. 23 ("Takeovers generally occur because changing technology or market conditions require a major restructuring of corporate assets, and it is easier for new top-level managers with a fresh view of the business and no ties with current employees or communities to make such changes"); see also Jeffrey Allen and Gordon Phillips (2000), "Corporate Equity Ownership, Strategic Alliances, and Product Market Relationships," *The Journal of Finance*, Vol. 55, No. 6, pp. 2791-2815 at p. 2792 ("There are several possible reasons why target and purchasing firms might benefit from establishing long-term partial ownership positions. First, block ownership might be useful in aligning the incentives of the firms involved in alliances or joint ventures. Contracting or monitoring costs between firms may be reduced if a significant ownership stake increases the incentives of firms to invest in product market relationships or other relationship-specific assets . . . . Second, block equity purchases by corporations could mitigate information problems regarding the investment opportunities of target firms. For example, if asymmetric information has an adverse impact on the cost and availability of external capital, it may be less costly to sell equity to an informed party such as an outside corporation. . . . Third, as with other large blockholders, purchasing corporations may also be able to effectively monitor or influence management.").

**B. Application to Comcast–NBCU**

56. The economic literature on the benefits of vertical integration and changes in corporate control is directly relevant to the Comcast–NBCU transaction. Comcast must incur significant upfront and ongoing investments to develop new media platforms.<sup>85</sup> There is a greater incentive for it to make these investments when it has secure access to sufficient content at arm’s length terms so that it can offer, and demonstrate the success of, efficient new services on innovative platforms.<sup>86</sup> Absent assurances that sufficient content would be available to demonstrate the viability of its new platforms for a reasonable amount of time, Comcast would be wary of the potential for opportunistic behavior on the part of content companies that could demand high prices for content after Comcast has sunk investment in the distribution platform. As is described in the vertical integration literature, concern about high prices after a firm has made a sunk investment will lead a firm to try to protect itself in advance of sinking the investment. However, because of the complexity of video distribution contracts and the changing nature of business models for video distribution, this is not simple and therefore efficient contracts between unaffiliated parties can be delayed or never agreed upon. Comcast’s experiences with VOD, DVD day-and-date release, and Fancast Xfinity TV show that it failed to get such *ex ante* guarantees, which delayed the roll-out of these platforms to consumers.

57. In the dynamic video programming marketplace, technology, costs, and demand for products, platforms, and services change quickly. Content providers and distributors are uncertain about the emerging revenue models – what type of content works on what types of platforms and the best mix of subscription, transactional, and advertising revenues. This concern is particularly relevant for online video distribution, where there is considerable uncertainty about which business models will survive, what consumers will demand, and the evolution of technologies.

58. As discussed above, it is difficult to anticipate and account for in a contract all the potential issues that may emerge in the development of new video products, platforms, and services. Given the significant uncertainties inherent in a new video distribution service, it is

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<sup>85</sup> See Exhibit 1; see also Pick Declaration, ¶ 18.

<sup>86</sup> See Pick Declaration, ¶ 18.

difficult to write and agree on complete incentive-compatible contingent contracts. As a result, contracts will be incomplete, which can lead to greater potential for *ex post* opportunistic behavior and a resulting increase in the difficulty of reaching any agreement. Vertical integration can help overcome these obstacles because the parties do not have to specify every clause and contingency, and can experiment and make adjustments to the contracts more easily.

59. Comcast, with its considerable experience as a distributor, has a different vision of how to maximize the returns to content than do many content owners.<sup>87</sup> Because there is significant uncertainty, companies differ in how to maximize the returns from content. Many content owners believe that the use of limited outlets is the best way to maximize returns, whereas others (including Comcast) believe that greater exposure through the use of more outlets will increase returns. Comcast and content providers likely need to experiment with variety of business models on different platforms to determine which platforms turn out to be successful, and Comcast needs assurances that the content will not be withdrawn or its quality reduced after the risky testing and upfront investment is sunk. The new entity's content business is likely to reflect Comcast's management strategy of increasing experimentation and content availability once Comcast takes control of NBCU.<sup>88</sup>

60. While the transaction is not initially a complete vertical integration, the structure of the transaction will allow the companies to overcome some of the contracting difficulties because Comcast's control will ensure that deals (by written contract at arm's length terms) between NBCU and Comcast affiliates can move forward.<sup>89</sup> The acquisition of a 51% ownership in, and control of, NBCU will substantially facilitate and accelerate negotiations because Comcast management, as it has in the past with VOD, DVD day-and-date release, and Fancast Xfinity

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<sup>87</sup> Per David L. Cohen, Executive Vice President, Comcast Corp., Nov. 19, 2009, Mar. 27, 2010, Apr. 09, 2010, Apr. 28, 2010, and Robert Pick, Senior Vice President, Corporate Development, Comcast Corp., Apr. 2, 2010, Apr. 22, 2010, Apr. 27, 2010.

<sup>88</sup> See "TWX – Comcast and Time Warner Partner to Advance TV Everywhere Initiative Conference Call," Thomson StreetEvents, Jun. 24, 2009, pp. 3-4 (Third Party Attachment #5). Comcast Chairman and CEO Brian Roberts stated, "At Comcast, some of you remember at the beginning of last year we laid out a multi-year strategy called Project Infinity. And our view as technologists was that we were going to be able to use our platform to offer a consumer whatever they want, in theory, [infinity] of choices; that's our goal, to figure out architecturally how to offer whatever they might want, whether it's new shows, historical shows, on whatever device they want and when they want it." *Id.*

<sup>89</sup> See Allen and Phillips (2000), p. 2792.

TV, plans to push for increased content availability, distribution, and experimentation with content.

61. The NBCU limited liability company Agreement provides that the new entity will be managed by or under the direction of a board whose majority will be appointed by Comcast.<sup>90</sup> Comcast can enter into agreements with the new entity for distribution of NBCU content. The agreement provides that such related-party transactions must be on arm's length terms.<sup>91</sup> It is my understanding that the terms of the agreement state that, while GE has the right to withhold consent to deals between the new entity and Comcast that are outside the ordinary course,<sup>92</sup> GE cannot block or "veto" ordinary-course deals between the new NBCU and Comcast; it can only challenge whether the terms of such ordinary-course deals are in fact arm's length.<sup>93</sup> Thus, the structure of the transaction will reduce the concern over *ex post* opportunism between the content and distribution businesses of the commonly controlled companies.<sup>94</sup>

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<sup>90</sup> See Public Interest Statement, App. 4, pp. 40-42, § 5.01(a)-(f).

<sup>91</sup> The Agreement states that agreements between NBCU and Comcast must be entered into on "arm's length terms" defined as "terms that are no less favorable to the Company [the joint venture] or such Subsidiary than those that would have been obtained in a comparable transaction by the Company or such Subsidiary with an unrelated Person." See Public Interest Statement, App. 4, p. 93, § 10.02(a).

<sup>92</sup> An ordinary course related party transaction "means a Related Party Transaction that is within the ordinary course of business of the Company and its Subsidiaries. Examples of Ordinary Course Related Party Transactions include the entering into by the Company or any of its Subsidiaries with Comcast or any of its Affiliates of programming agreements, affiliation agreements, agreements with respect to corporate overhead and support services (other than the Comcast Services Agreement (as defined in the Master Agreement)) and other commercial agreements of a type that are entered into between content producers and distributors in the ordinary course of business. It is understood that entering into agreements of this type will be considered Ordinary Course Related Party Transactions even if they relate to new technologies or new types of arrangements that have not previously been in place between the Company and its Subsidiaries and Comcast and its Subsidiaries." See Public Interest Statement, App. 4, p. 19, § 1.01, and pp. 94-95, § 10.02(d-i).

<sup>93</sup> GE has the right to dispute whether a given ordinary course related party transaction is in fact on arm's length terms through a dispute resolution process that could culminate in binding arbitration. Once the arbitrator issues a decision, Comcast has the option to cause NBCU or the relevant NBCU subsidiary to enter into the proposed related party transaction on the terms specified by the arbitrator, or not to enter into the transaction. *Id.*, p. 94-95, § 10.02(d-i).

<sup>94</sup> While vertical integration will help Comcast overcome the transactional frictions described earlier, News Corp/DirecTV and Time Warner/Time Warner Cable have recently separated their content and distribution businesses, presumably because their circumstances were different from the Comcast-NBCU joint venture. News Corp., however, remains vertically integrated throughout the world, and Liberty Media, with the acquisition of DirecTV, became more vertically integrated. See "News, Liberty Poised to Deal," *Multichannel News*, Dec. 11, 2006, available at [http://findarticles.com/p/news-articles/executive-quote-and-information-service-equis/mi\\_8119/is\\_20061211/news-liberty-poised-multichannel-news/ai\\_n50628983/](http://findarticles.com/p/news-articles/executive-quote-and-information-service-equis/mi_8119/is_20061211/news-liberty-poised-multichannel-news/ai_n50628983/).

62. The proposed transaction will enable Comcast to obtain access to NBCU content on arm's length terms for use in launching new initiatives without the delays that it has encountered in the past in attempting to obtain such rights through negotiations with third parties.<sup>95</sup> Vertical integration will allow Comcast to invest in new distribution platforms with the assurance that it will have access to content and a reduced fear of opportunistic behavior on the part of NBCU, helping it to establish the new platform.

63. Thus, by gaining control of NBCU, Comcast will be able to decide whether to use NBCU content in various new initiatives and platforms (subject to the condition that it contract with NBCU on arm's length terms). In other words, Comcast will have the assurance that it can get content on arm's length terms from NBCU now and in the future. Such an assurance previously was missing in Comcast's efforts to get sufficient content from unaffiliated entities. Comcast views NBCU's broad array of content, including feature films, television series, and older "library" content (including both television series and feature films) as providing an attractive base for potential use in its current and future distribution endeavors. Importantly, the NBCU content is not merely a substitute for current Comcast content. Comcast only has limited programming and does not have the variety of attractive programming that NBCU can provide. NBCU content, while still small relative to the overall video marketplace, is of sufficient quality, quantity, and variety to help Comcast to introduce new distribution businesses and experiment with distribution methods.

64. After this transaction, Comcast will also be NBCU's partner in negotiating to obtain content rights from third parties. The new entity would be more likely to acquire broader rights to content because it would have more confidence it would come to an agreement with distributors for its content on multiple platforms, raising the profitability from acquiring additional upstream rights. Without vertical integration, it would be difficult for a distributor, such as Comcast, and a significant content provider, such as NBCU, to align incentives to negotiate jointly with third parties for broader rights to distribute content. Increased confidence about distribution agreements and subsequent higher value of distribution would make NBCU

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<sup>95</sup> See Pick Declaration, ¶¶ 4-5.

more likely to strike deals with its upstream suppliers and partners for extensive distribution rights to minimize transaction costs and increase the returns to content.

65. The better alignment of incentives made possible by this transaction will also encourage NBCU to invest in new and innovative programming suited to these multiple platforms.

Professor Christopher Yoo's point about historical investment examples is instructive:

Guaranteed distribution allows new networks to invest in their programs with greater confidence. Indeed, industry participants confirm that vertical integration was essential in getting programming stars such as CNN, C-Span, the Discovery Channel, BET, and TNT off the ground.<sup>96</sup>

66. One of the important outcomes from the change in control of NBCU is that Comcast's vision of maximizing the return to content through deployment on a wide array of platforms will lead to increased content availability from other content providers and availability on other platforms. If a firm increases the availability of its content through one distribution mechanism or provider, competitive forces will encourage other content companies to make their content more available as well. At the same time, competitive forces will encourage other distributors to make deals for additional content to compete with the new distribution methods of the first distributor.<sup>97</sup> These reactions by other companies will increase content availability to the benefit of consumers.<sup>98</sup> The vertical relationship and new ownership of NBCU is likely to create some of this competitive dynamic.

67. In addition to this transaction providing incentives for investing in programming and expanding the range of platforms on which this content is available, more efficient access to NBCU's content should provide Comcast with the ability and incentive to accelerate

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<sup>96</sup> See Christopher Yoo (2002), "Vertical Integration and Media Regulation in the New Economy," *Yale Journal on Regulation*, Vol. 19, pp. 171-300 at p. 233.

<sup>97</sup> See "Comcast's VOD Guru; His Vision Broadened On-Demand Offerings," *Television Week*, Jul. 19, 2004.

<sup>98</sup> For a general description of this competitive process, see Marvin Lieberman and Shigeru Asaba (2006), "Why Do Firms Imitate Each Other?" *Academy of Management Review*, Vol. 31, No. 2, pp. 366-385 at pp. 2-3 ("Firms may imitate to avoid falling behind their rivals, or because they believe that others' actions convey information . . . Imitation of superior products, processes and managerial systems is widely recognized as a fundamental part of the competitive process.").

development of advanced interactive advertising services.<sup>99</sup> The assurance of an agreement with NBCU will provide a base for experimenting with and implementing advanced advertising, learning from that experience and modifying technology and business models to create better, consumer-friendly services. If NBCU – in light of the breadth and quality of its cable properties – were to demonstrate that advanced advertising capabilities (such as interactivity, addressability and new metrics) are effective, other national TV networks may be more likely to adopt them as well. NBCU’s extensive advertising relationships, research expertise, and industry-leading content also position it well to potentially accelerate for Comcast the design and implementation of these new advertising capabilities.<sup>100</sup> If advanced advertising proves to be successful, then MVPDs, content owners, advertisers, and viewers will all benefit. According to *The Wall Street Journal*:

As Comcast gets close to a deal for control of General Electric’s NBC Universal, the big cable operator and Madison Avenue think the merger could lead to some major changes in the \$65 billion U.S. television advertising market. The potential new company could speed the development of interactive TV ads and “addressable advertising.”<sup>101</sup>

### **C. Future Platforms and Services**

68. The economic literature on vertical integration and changes in corporate control and Comcast’s experience with attempting to develop and expand new services while relying on content obtained from unaffiliated parties indicates that the present transaction is likely to accelerate development of new distribution outlets that will benefit consumers. For example, NBCU has current production of feature film and television programming, a library of approximately [ ] episodes of TV shows and made-for-television movies, and

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<sup>99</sup> See “Comcast-NBCU: Madison Ave.’s Wish List – Speed Up Addressable Advertising, Fix the Network,” *Broadcasting & Cable*, available at [http://www.broadcastingcable.com/article/423422-Comcast\\_NBCU\\_Madison\\_Ave\\_s\\_Wish\\_List.php](http://www.broadcastingcable.com/article/423422-Comcast_NBCU_Madison_Ave_s_Wish_List.php) (“Madison Avenue is busy weighing the implications of Comcast’s acquisition of a majority stake in NBC Universal . . . . CEO of Starcom MediaVest Group Laura Desmond said: ‘We think this is a seminal deal and signals a change in the media landscape because putting together a distributor with a mass broadcaster unleashes all sorts of advances in TV measurement from the set top box. There are also national and local synergies.’”).

<sup>100</sup> Per Edward Swindler, Executive Vice President and COO, Ad Sales, NBCU, Apr. 28, 2010.

<sup>101</sup> See Suzanne Vranica and Sam Schechner, “Two-Way Communications: NBC could push Comcast towards Interactive Ads,” *The Wall Street Journal*, Nov. 16, 2009, available at <http://online.wsj.com/article/SB10001424052748703811604574534272928283340.html>.

approximately [[            ]] motion pictures.<sup>102</sup> Easier access to this content on arm's length terms will enable Comcast to accelerate the rollout of content across multiple platforms and invest to introduce new platforms and business models that will allow consumers to watch video programs via the Internet.

69. Furthermore, the successful rollout of new platforms and services will encourage other content suppliers and distributors to emulate Comcast and the joint venture. Successes by the combined entity will provide valuable information to competitors and will give competitors an incentive to develop and provide innovative new video options of their own. For example, because data on DVD sales and show ratings are available to them, other content suppliers and distributors will be able to analyze the impact of Comcast's day-and-date release of movies on DVD sales even if they do not participate themselves.<sup>103</sup> Other MVPDs would likely reap the benefit from Comcast's efforts to achieve more favorable film VOD release windows since studios frequently adopt a "one size fits all" model when distributing their titles.<sup>104</sup>

70. Thus, as the proposed transaction increases the success of Comcast's new video ventures, not only Comcast subscribers but viewers across the nation and across MVPDs will directly benefit from new and expanded video options.

## **VI. Additional Efficiencies from the Transaction**

### **A. Sharing of Resources**

71. The transaction will lead to synergies from the sharing of resources in sports, local news, and entertainment programming. While there is a limited amount of sharing of resources between unaffiliated media companies by contract, the ability to share resources is greater with commonly controlled companies. Sharing of resources would enable the combined company to reduce costs, expand output, and improve the quality of programming and promotion.

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<sup>102</sup> Per Gavin Imai, Vice President, Financial Planning & Analysis, TV Production, NBCU, Apr. 30, 2010 and Jason Beesley, Senior Vice President, Financial Planning & Analysis, Universal Pictures & Studios, Apr. 30, 2010.

<sup>103</sup> For example, show ratings are available through Nielsen while DVD revenues and units shipped for most theatrical and many direct-to-video movies are available through Baseline Research.

<sup>104</sup> Per Matthew Strauss, Senior Vice President, New Media, Content Acquisition, Comcast Cable, Apr. 27, 2010 and Michael Bonner, Senior Vice President, Digital Distribution, NBCU, Apr. 29, 2010.

72. The proposed transaction will facilitate the sharing of news and sports-related assets and other resources by Comcast and NBCU including on-air talent and studio capabilities.

Comcast's RSNs could take advantage of the sports production capabilities, local sports reporters, and on-air sports talent of NBC's owned-and-operated stations ("O&Os") in areas where both operate.<sup>105</sup> Similarly, NBCU and its local O&Os could take advantage of Comcast's sports resources to upgrade their sports programming and news.

73. In addition, the transaction will enable the two companies to engage in talent exchanges (e.g., a host from a program on one network appearing on a program on another network). Such arrangements are much less common for nonaffiliated networks. NBCU already uses talent exchanges among its programming assets. For example, Al Roker has appeared on multiple NBCU outlets – NBC News' "Today Show," WNBC-TV's "Live at 5" evening newscast, and The Weather Channel's "Wake Up With Al."<sup>106</sup> Similarly, hosts of NBCU's shows, such as Brian Williams of "Nightly News" and David Gregory of "Meet the Press," routinely appear on related MSNBC shows "Hardball" and "The Rachel Maddow Show."

74. In terms of sharing of content and on-air talent, potential synergies exist between Comcast's Golf Channel and golf events on the NBC broadcast network and between sporting events such as NHL games on Versus and on the NBC broadcast network. Comcast's recent experience in sharing programming and talent is instructive. In 2009 it acquired a controlling interest in New England Cable News ("NECN"), a regional channel providing news, weather, sports, and other information of interest to viewers in the New England area where Comcast also owns an RSN, Comcast SportsNet New England ("CSN-NE").<sup>107</sup> After gaining control of NECN, Comcast was able to arrange for CSN-NE to use the news facilities and personnel of NECN to launch new morning and evening local sports news programs without hiring a whole new crew of sports news workers. Simultaneously NECN has drawn on CSN-NE's strengths to

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<sup>105</sup> Comcast has ownership interest in an RSN and NBC has an O&O in Boston, Chicago, Hartford, New York, Philadelphia, San Francisco, and Washington, D.C.

<sup>106</sup> See [msnbc.com](http://today.msnbc.msn.com/id/4515729), "Al Roker: Weather and feature reporter, TODAY," available at <http://today.msnbc.msn.com/id/4515729>, accessed on Apr. 30, 2010.

<sup>107</sup> See Johnny Diaz, "Comcast assumes full ownership of NECN," *The Boston Globe*, Jun. 18, 2009, available at [http://www.boston.com/business/ticker/2009/06/comcast\\_assumes.html](http://www.boston.com/business/ticker/2009/06/comcast_assumes.html).

add more local sports content to its news programming.<sup>108</sup> This could serve as a template for achieving similar synergies between Comcast's RSNs and NBC's O&O stations. Essentially these synergies arise from increasing the scale and scope of the programming organization. It is difficult to do that absent a merger or acquisition of another programmer because starting new networks takes significant time and expense and is risky. Even if successful, such an effort would delay the benefits by many years until the new networks reached sufficient scale.

75. Similar synergies are likely to arise with the entertainment programming that will be part of the content joint venture. For example, in women's/lifestyle programming, the joint venture will combine NBCU's assets in Oxygen and Bravo with Comcast's assets in E! and Style. While each network is differentiated from the others in various ways, the majority of viewers for these networks are adult women.<sup>109</sup> The joint venture could share programming, production facilities, reporting, and on-air talent among multiple platforms.<sup>110</sup> For example, Access Hollywood and E! News brands and resources could be optimized, or the E! News brand could be extended into non-English programming by airing Spanish-language E! News updates on Telemundo.<sup>111</sup> This type of sharing is extremely unlikely to occur by contract between unaffiliated entities for branding and other reasons. My understanding is that sharing of on-air talent across networks also makes it easier to retain top talent by increasing their exposure, value, and ultimately compensation. Combining Comcast's cable networks with NBCU would significantly increase the opportunity for talent sharing.

76. The transaction is also likely to lead to sharing of advertising resources to realize economies of scale and scope and provide more attractive advertising services to advertisers and consumers. In a number of local markets, the parties have between two and four advertising sales forces from among: (1) Comcast Spotlight, the local advertising division of Comcast

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<sup>108</sup> See Johnny Diaz, "NECN, SportsNet Find Way to Share Strengths," *The Boston Globe*, Oct. 31, 2009, available at [http://www.boston.com/business/articles/2009/10/31/necn\\_beefs\\_up\\_sports\\_programming\\_as\\_sportsnet\\_makes\\_more\\_hires/](http://www.boston.com/business/articles/2009/10/31/necn_beefs_up_sports_programming_as_sportsnet_makes_more_hires/) ("The news cable channel [NECN] is getting more sports programming and a \$1 million-plus upgrade to high-definition broadcasting, while the sports outlet is hiring more journalists.").

<sup>109</sup> See Public Interest Statement, p. 52.

<sup>110</sup> *Id.* pp. 51-52.

<sup>111</sup> Per John Miller, Chief Marketing Officer, NBCU Television Group, Apr. 29, 2010.

Cable;<sup>112</sup> (2) Comcast RSN; (3) an NBC O&O; and (4) a Telemundo O&O. By combining resources among these entities,<sup>113</sup> the joint venture should be able to offer improved advertising services.

77. For example, Spanish-language advertisers are likely to benefit by the joint venture combining its Spanish-language advertising sales, using Telemundo sales teams, which have close relationships with Spanish-language advertisers, to sell advertising time supplied by Comcast Spotlight.<sup>114</sup> Currently, Comcast's Spanish-language advertising sales are extremely small, and the company is not a significant factor in the Spanish-language advertising business. Telemundo's existing relationships with Spanish-language advertisers could help Comcast increase its sales of Spanish-language advertisements. These improved Spanish-language advertising services would be difficult to achieve between unaffiliated parties and it would be difficult for either party to increase its scale internally to achieve the same efficiencies.

## **B. Cross-Promotions**

78. The transaction will also allow Comcast and NBCU to overcome difficulties associated with cross-promotions – the promotions of networks and shows on other networks either in the form of short advertisements or within programming itself. Cross-promotions are recognized in the media industry and academic literature as important for targeting consumers, expanding audiences and ratings of shows and networks, and building brand identities.<sup>115</sup> Media companies,

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<sup>112</sup> Spotlight has a presence in {{ }} DMAs and generates approximately {{ }} billion of gross advertising revenue annually from the sale of spot television advertising on more than {{ }} ad-inserted cable networks. Per Robert Klippel, Vice President, New Products and Operations, Comcast Spotlight, Apr. 30, 2010.

<sup>113</sup> At the local level, NBCU O&O stations and Spotlight could realize cost synergies including market research and back-office support. Per Robert Klippel, Vice President, New Products and Operations, Comcast Spotlight, Apr. 29, 2010. As a result of having additional breadth and reach, the combined entity may have more flexibility in designing attractive packages of advertising inventory to reach audiences attractive to advertisers. Per Muriel Malka, Senior Vice President, Corporate Strategy & Development, NBCU, Mar. 24, 2010, Apr. 28, 2010.

<sup>114</sup> Per Muriel Malka, Senior Vice President, Corporate Strategy & Development, NBCU, Mar. 24, 2010, Apr. 28, 2010.

<sup>115</sup> Given that the majority of U.S. households receive over 100 channels, it is difficult for consumers to be informed about all of their viewing options. See, e.g., Robert Bellamy and Paul Traudt (2000), "Television Branding as Promotion," S.T. Eastman (ed.), *Research in Media Promotion*, p. 130 ("Of critical importance in the cluttered television environment is getting television users to sample programs and channels – the traditional function of promotion. . . . [T]he network brand name can be easily applied to new channels, outdoor advertising, cooperative promotion/advertising and spin-off products and services . . ."); Maria Norback (2005), "Cross-Promotion and Branding of Media Product Portfolios," *Media Product Portfolios: Issues in Management of Multiple Products and Services*, pp. 139, 153 ("Cross-promotion and branding are critical for the creation and use of media product

such as NBCU, already engage in frequent internal cross-promotion within their existing families of broadcast and cable networks. For example, NBCU used cross-promotions to grow Bravo's ratings after it acquired Bravo in 2002.<sup>116</sup> Similarly, Oxygen's ratings increased once it had the Bravo platform for cross-promotion.<sup>117</sup> Cross-promotion between NBC and Universal properties increased after NBC acquired Universal.<sup>118</sup>

79. Currently, cross-promotion between Comcast and NBCU is limited.<sup>119</sup> Once Comcast's and NBCU's networks are in the same family, the frequency and scale of the cross-promotions will likely increase.<sup>120</sup> For example, the new NBCU could cross-promote among four women-oriented cable networks (Bravo, Oxygen, E!, and Style) and among NBC's O&O's and Comcast's RSNs. NBC's O&O's and Comcast's RSNs have not engaged in cross-promotion

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portfolios. . . Cross-product promotion could also be a way to strengthen a brand. . . . Products within the same brand also allow for logical cross-product promotion. . . . Portfolio owners will, furthermore, achieve a promotional effect just by owning different product types within the same brand. . . . Cross-product promotion can also be used for the creation of customer loyalty – when a customer is a consumer of one product, the promotion of other products is a way to strengthen this loyalty by getting the consumer interested in other products within the portfolio.”).

<sup>116</sup> See Wayne Friedman, “NBCU to Acquire Oxygen, Extend Reach with Women Viewers,” *MediaDailyNews*, Oct. 10, 2007, available at [http://www.mediapost.com/publications/index.cfm?fa=Articles.showArticle&art\\_aid=68902](http://www.mediapost.com/publications/index.cfm?fa=Articles.showArticle&art_aid=68902).

<sup>117</sup> See Anne Becker, “NBCU Names Zalaznick to Head Oxygen. Closes Deal,” *Broadcasting & Cable*, Nov. 20, 2007, available at [http://www.broadcastingcable.com/article/92064-NBCU\\_Names\\_Zalaznick\\_to\\_Head\\_Oxygen\\_Closes\\_Deal.php](http://www.broadcastingcable.com/article/92064-NBCU_Names_Zalaznick_to_Head_Oxygen_Closes_Deal.php) (“Oxygen gains the cross-promotional power that it could never leverage as an independent.”); see also Nellie Andreeva and Andrew Wallenstein, “Zalaznick adds Oxygen to portfolio,” *The Hollywood Reporter*, Nov. 21, 2007, available at [http://www.hollywoodreporter.com/hr/content\\_display/television/news/e3i8795cac930e98bab43213801fb98af57](http://www.hollywoodreporter.com/hr/content_display/television/news/e3i8795cac930e98bab43213801fb98af57) (“Cross-promotion will undoubtedly be a priority with Oxygen likely to benefit from marketing exposure on other NBC Uni series.”). Following its purchase by NBCU, Oxygen had its “best-ever year” in 2008, followed by a “best and most watched year ever in 2009.” See “USA Network Tops Cable (and the CW) for 2008,” *The Hollywood Reporter*, Dec. 17, 2008, available at <http://livefeed.hollywoodreporter.com/2008/12/usa-network-top.html>; see also Oxygen Press Release, *Oxygen Celebrates Best and Most-Watched Year Ever in 2009*, Dec. 28, 2009, available at <http://tvbythenumbers.com/2009/12/28/oxygen-celebrates-best-and-most-watched-year-ever-in-2009/37214>.

<sup>118</sup> After NBC acquired Universal it formed the NBC Universal Marketing Council to create a mechanism for company cross promotion and marketing and to share best practices. Per John Miller, Chief Marketing Officer, NBCU Television Group, Apr. 29, 2010.

<sup>119</sup> Per Edward Harbert, President, Comcast Entertainment Group, Apr. 27, 2010.

<sup>120</sup> The new entity will allow Comcast and NBCU to cross promote across an expanded array of assets, including broadcast networks, cable networks, English and Hispanic local media, websites, and theme parks and across multiple platforms (linear, VOD, online, mobile). Per Edward Harbert, President, Comcast Entertainment Group, Apr. 29, 2010; per John Miller, Chief Marketing Officer, NBCU Television Group, Apr. 29, 2010. See also Pick Declaration, ¶ 19.

while under separate ownership. After the transaction, they would have a greater incentive to cross-promote.<sup>121</sup>

### **C. Reduction of Double Marginalization**

80. One significant procompetitive effect of vertical integration that has long been recognized by economists is the “elimination of double marginalization.”<sup>122</sup> The application to this transaction is straightforward. Despite the fact that the marginal cost to NBCU when MVPDs distribute NBCU programming to an additional subscriber is typically near zero, NBCU charges Comcast (and other MVPDs) a per-subscriber price that is above zero for most of its content.<sup>123</sup> As a separate firm, Comcast then uses the price it pays to NBCU for content (rather than the true, near-zero marginal cost of that content) as a component of its marginal cost per subscriber, to determine the packages that it offers consumers.<sup>124</sup> In contrast, following (full) vertical integration with NBCU, Comcast would use the true, near-zero marginal cost of NBCU content to calculate its marginal cost for use in determining its packages. When faced with lower marginal costs after the transaction, Comcast may choose to attract additional subscribers through greater investments in service, expanded program offerings, or other non-price alternatives. As explained by Church and Ware, the effect is to increase consumer welfare:

Instead of paying a wholesale price that includes a markup over marginal cost, the integrated firm will transfer the input internally post merger at only marginal cost.

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<sup>121</sup> A simple, passive form of on-air cross-promotion would be adoption of a single on-screen logo, or “bug,” that would be displayed on both NBCU and Comcast’s sports programming.

<sup>122</sup> See Tirole (1988), p. 175 (“The objective of vertical integration is to avoid the double price distortion that occurs when each firm adds to its own price-cost margin at each stage of production.”).

<sup>123</sup> Note that this does not imply that NBCU has monopoly power (or even market power in the antitrust sense). For example, in a competitive industry with fixed costs, prices will be above marginal cost. The price content providers charge for the rights to distribute their content is above marginal cost because once the content has been created, the marginal cost is very low. If the price were set equal to cost, content creators would not be able to recover their fixed costs.

<sup>124</sup> See Reply to Comments and Petitions to Deny Applications for Consent to Transfer Control of AT&T Corp. and Comcast Corp., *In the Matter of Applications for Consent to the Transfer of Control of Licenses, Comcast Corporation and AT&T Corp., Transferors, To AT&T Comcast Corporation, Transferee*, MB Docket No. 02-70 (May 21, 2002), App. 4 (Declaration of Howard Shelanski), pp. 21-22 (“Video programming is a good for which marginal costs of distribution are negligible but the fixed costs of distribution are very high.”). Again, the fact that Comcast sets a price above marginal cost does not imply that Comcast has monopoly power or market power in the antitrust sense. Similar to content providers, distributors make significant investments in their networks and systems so that distribution should be expected to be priced above marginal cost even when there is competition, as is required to recoup the upfront investment costs.

This gives it an incentive to increase output downstream, to the benefit of consumers.<sup>125</sup>

81. Vertical integration, by eliminating double marginalization, allows a firm to internalize the cost of the upstream input rather than treating the cost equal to the price paid for the upstream product and thus creates an incentive to provide a more attractive package for consumers. As such, following vertical integration, economics predicts not only that consumers will get more attractive packages, but also that the resultant increase in output will be sufficient to increase total profits accruing to the integrated firm. Hence, by eliminating double marginalization, vertical integration leads (all else equal) to increased consumer welfare.<sup>126</sup>

82. Despite the fact that Comcast is obtaining only a 51% interest in NBCU (at the time the transaction closes), the theory of double marginalization is relevant to the proposed transaction. Post-transaction, for every dollar that Comcast pays to NBCU, it retains ownership of 51 cents through its interest in NBCU. As a result, even though the amount paid by Comcast to license the NBCU cable networks will continue to be governed by the terms of their pre-transaction contract, as a simple matter of economics, post-transaction (for purposes of determining the packages it offers) Comcast will behave as though 51% of its per-subscriber payments to NBCU are no longer marginal costs, thus generating more attractive packages and effective output expansion.

83. To illustrate the impact of these double marginalization savings, Exhibit 6 lists the top four NBCU-owned cable networks according to SNL Kagan subscriber data.<sup>127</sup> It is important to note that the actual form of the consumer benefit will not necessarily be a reduction in Comcast's prices relative to current prices or prices that would otherwise be charged, but consumer benefit could also come from increased investment by Comcast in programming and distribution leading

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<sup>125</sup> See Jeffrey Church (2008), "Vertical Mergers," *Issues in Competition Law and Policy*, Vol. 2, pp. 1455-1501 at p. 1461.

<sup>126</sup> It is possible to avoid double marginalization without vertical integration – for example, with contracts that set lump-sum fees and marginal cost pricing. However, there may be market and regulatory reasons why such contracts do not occur frequently. Whatever the reason, MVPDs (including Comcast) usually pay content producers (including NBCU) on a per-subscriber basis despite the fact that per-subscriber marginal costs are near zero, indicating that double marginalization exists in this industry.

<sup>127</sup> The values in Exhibit 6 are based on SNL Kagan and Media Business Corp. data. According to SNL Kagan, affiliate fees and subscribers per network are estimates.

to higher quality and more consumer choice. In addition, Comcast may choose to attract additional subscribers through greater investments in service, expanded program offerings as part of less-expensive tiers, or other non-price alternatives. The key point is that, because Comcast will internalize a portion of the payments it makes to NBCU, it will view the margin earned per subscriber as larger and thus have an incentive to increase output and provide a more attractive package to consumers in any or all of these ways.

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84. Based on Exhibit 6, Comcast’s payments for the top four NBCU cable networks generate marginal costs equal to approximately [[ ]] per subscriber per month.<sup>128</sup> Across all Comcast customers receiving these [[ ]], the marginal costs add up to approximately [[ ]] per month or [[ ]] per year. As a result, the transaction will lead to an approximate annual aggregate implicit marginal cost reduction of 51% of [[ ]] per year, which is equal to [[ ]] per year.

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<sup>128</sup> For households with subscription packages that include [[ ]]. For households with more networks with per-subscriber charges, the savings would be greater.

85. To illustrate the consumer benefits of reducing double marginalization, I rely on an estimate of the pass-through rate. Calculating the price reduction implied by the pass-through of marginal costs simply provides a straightforward way to quantify the magnitude of the associated consumer benefits, but as discussed above, these consumer benefits could be in the form of higher-quality packages because of increased Comcast investment.

86. Previous economic literature has found changes in programming costs are passed through to MVPD subscribers at a rate of about 50 percent.<sup>129</sup> According to Professor Shelanski:

The case for pass-through of efficiencies is compelling for a firm that faces competition, particularly competition as vigorous as that in the MVPD market. . . . Reductions in the direct costs of procuring programs will result in both a lower cost per-program for subscribers and in an increased number of programs being made available to subscribers. . . . Efficiency gains from the merger may also be passed through to consumers in a less direct way through increased investment in network upgrades and the development and deployment of innovative services.<sup>130</sup>

87. Using an assumed pass through rate of 50 percent, a simple illustration of the benefits to Comcast subscribers from the elimination of double marginalization is given by 50 percent of the  $\Delta$  in effective marginal cost reduction, or  $\Delta$  per year.

88. Two points are important to keep in mind regarding this simple estimate. First, it is likely to underestimate the effect of the reduction in double marginalization on a number of dimensions. For one, it only calculates the benefits to existing Comcast subscribers for these four networks. As described above, one effect of Comcast's more attractive packages will be to attract more subscribers, thus increasing welfare for those consumers who find the post-transaction Comcast offering attractive enough to switch away from their pre-transaction MVPD choice. In addition, basic economics suggests that other MVPDs – particularly the Direct

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<sup>129</sup> See George Ford and John Jackson (1997), "Horizontal Concentration and Vertical Integration in the Cable Television Industry," *Review of Industrial Organization*, Vol. 12, No. 4, pp. 501-518 at pp. 513-514. Note that 50% is also the value of the pass-through rate for a monopolist facing linear demand curve. For many models that are commonly used in merger simulations – in which competitors react to one another's price cuts by lowering their own prices and in which demand takes alternative functional forms such as logit or AIDS – pass-through rates are substantially higher than 50%, so this may be a conservative estimate of the actual benefits from eliminating double marginalization.

<sup>130</sup> See Reply to Comments and Petitions to Deny Applications for Consent to Transfer Control of AT&T Corp. and Comcast Corp., *In the Matter of Applications for Consent to the Transfer of Control of Licenses, Comcast Corporation and AT&T Corp., Transferors, To AT&T Comcast Corporation, Transferee*, MB Docket No. 02-70 (May 21, 2002), App. 4 (Declaration of Howard Shelanski), pp. 21-22.

Broadcast Satellite (“DBS”) and telco providers who compete directly with Comcast – are likely to react to Comcast’s improved service or lower prices with service enhancements or price reductions of their own.

89. Second, my calculation was simplified by assuming that the estimated affiliate fees charged by NBCU (to Comcast and other MVPDs) would not change due to the transaction. This simplification is supported by the terms of the proposed transaction and by the fact that there is a long-term agreement in place governing the terms on which NBCU provides its networks to Comcast. In particular, as described in the declaration by Dr. Mark Israel and Professor Michael Katz,<sup>131</sup> under the terms of the joint venture agreement, the officers and directors of the joint venture have a fiduciary duty to run NBCU to maximize its own profits (not the combined profits of Comcast and NBCU). Hence, while it is possible that some pricing incentives could change due to the combination of content created by the proposed transaction, current NBCU prices should provide a reasonable approximation of post-transaction prices. More generally, while there are certainly complications that one could add to the model (including adjustments for the ways in which the model is an underestimate, described above), my calculation provides a simple, useful summary measure of the magnitude of consumer benefits that should be expected to result from the elimination of double marginalization following the proposed transaction.

90. In connection with the 2003 DirecTV–News Corp. transaction, Professors Salop and Shapiro, and their co-authors, developed a model to show the magnitude of the effects of the reduction in double marginalization.<sup>132</sup> The economic logic of their model, which is also relevant

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<sup>131</sup> See Mark Israel and Michael L. Katz, “Application of the Commission Staff Model of Vertical Foreclosure to the Proposed Comcast-NBCU Transaction,” *In the Matter of Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc. For Consent to Assign Licenses or Transfer Control of Licensees*, MB Docket No. 10-56 (Mar. 5, 2010), ¶ 16.

<sup>132</sup> See Opposition to Petition to Deny and Reply Comments of News Corp., General Motors Corp., and Hughes Electronics Corp., *Application of General Motors Corporation and Hughes Electronics Corporation, Transferors, And The News Corporation Limited, Transferee, For Authority to Transfer Control*, MB Docket No. 03-124 (July 1, 2003), Exhibit B (CRA Expert Report); Ex Parte of News Corp., General Motors Corp., and Hughes Electronics Corp., *Application of General Motors Corporation and Hughes Electronics Corporation, Transferors, And The News Corporation Limited, Transferee, For Authority to Transfer Control*, MB Docket No. 03-124 (Sept. 8, 2003) (CRA Second Expert Report).

to the proposed transaction, shows that vertical integration of content and distribution can benefit consumers by reducing double marginalization.

## **VII. Conclusions**

91. Economic analysis shows that the proposed transaction between Comcast and NBCU is likely to lead to a substantial investment in programming and an increase in the quantity, quality, and viewing convenience of video programming. The major benefits to consumers and the companies come from vertical efficiencies that lead to increased investment in distribution and programming and the expansion of output. In particular, the transaction will increase the ability of Comcast and NBCU as commonly controlled companies to enter into contracts that will increase the supply of content to Comcast so that it can accelerate the provision of innovative video programming services on new distribution platforms.

92. The efficiencies from this transaction are likely to result in benefits that go beyond expansions of output and reductions in effective prices. Consumer welfare depends on innovation and the introduction of new products and services.<sup>133</sup> This transaction is likely to lead to greater investments in new platforms and services. Comcast is ready to make those investments because the transaction will reduce contracting frictions between Comcast and NBCU and bring their incentives into closer alignment. The transaction will enable Comcast to speed up the introduction of new distribution platforms that will enable it to provide video services to consumers whenever, wherever, and however consumers want them. While it is unclear what the next innovative platform or distribution mechanism will be, it will surely involve coordination between distribution and content. Minimizing contracting difficulties and aligning incentives between providers of content and distribution can lead to greater

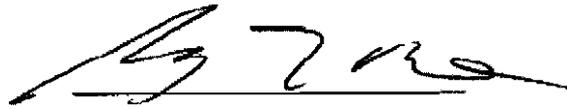
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<sup>133</sup> See Antitrust Modernization Commission, Report and Recommendation, Apr. 2007, pp. 39-40. (“Innovation provides a significant share of the consumer benefits associated with competition, particularly in the most dynamic industries. New and improved products and services, as well as new business methods and production processes, are created through innovation. To improve the application of antitrust in new economy industries, antitrust enforcers should give further consideration to efficiencies that lead to more rapid or enhanced innovation. The potential benefits to consumer welfare from such efficiencies are great, thus warranting careful assessments of the potential for certain business conduct to create more rapid or enhanced innovation.”); see also Testimony of Carl Shapiro, “New Economy” Antitrust Modernization Commission, Nov. 8, 2005, p. 2 (“[A]t least over the medium to long term, the lion’s share of consumer benefits associated with competition in our most dynamic industries results from innovation. Here I use the term ‘innovation’ broadly, including the introduction of new and improved products as well as the adoption of new business methods and production processes. Put simply: ‘Innovation is King.’”).

experimentation with different models and provide better information about what new methods will be successful at serving consumer demand. Because of its ability to increase consumer welfare directly through increased output and innovation, and indirectly through other efficiencies, this transaction will benefit consumers.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 4<sup>th</sup> day of May, 2010.

A handwritten signature in black ink, appearing to read "G. L. Rosston", written over a horizontal line.

Gregory L. Rosston, Ph.D.

# **Appendix 1**

## **Gregory L. Rosston**

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### **Employment**

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Deputy Director, Public Policy Program, 2006-  
Senior Research Fellow, Stanford Institute for Economic Policy Research, 2004-  
Research Fellow, Stanford Institute for Economic Policy Research, 1997-2004  
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Federal Communications Commission, Washington, DC  
Deputy Chief Economist, 1995-1997  
Acting Chief Economist, Common Carrier Bureau, 1996  
Senior Economist, Office of Plans and Policy, 1994-1995

Law and Economics Consulting Group, Berkeley, CA  
Senior Economist, 1990-1994

Economists Incorporated, Washington, DC  
Economist/Research Associate, 1986-1988

### **Education**

Stanford University, M.A., Ph.D., in Economics, Specialized in the fields of Industrial Organization and Public Finance. 1986, 1994.

University of California, Berkeley, A.B. in Economics with Honors. 1984.

### **Papers and Publications**

“An Economic Analysis of the Effects of FCC Regulation on Land Mobile Radio,” unpublished Ph.D. dissertation, Stanford University. 1994.

“Competition in Local Telecommunications: Implications of Unbundling for Antitrust Policy” in Brock, G., (ed.) Toward a Competitive Telecommunication Industry: Selected Papers from the 1994 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1995 (with Harris, R. and Teece, D.).

“Competition and 'Local' Communications: Innovation, Entry and Integration,” *Journal of Industrial and Corporate Change*. 1995 (with Teece, D.).

“Spectrum Flexibility will Promote Competition and the Public Interest,” *IEEE Communications Magazine*, December, 1995 pp 2-5. (with Hundt, R.).

“Interconnecting Interoperable Systems: The Regulators' Perspective.” *Information, Infrastructure and Policy*. 1995 (with Katz, M., and Anspacher, J.).

“Everything You Need To Know About Spectrum Auctions, But Didn't Think To Ask,” *Washington Telecom News*, Vol. 4, No. 5. February 5, 1996 p-5. (with Hundt, R.).

The Internet and Telecommunications Policy: Selected Papers from the 1995 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1996 (ed. with Brock, G.).

“Introduction,” in Brock, G., and Rosston, G., (ed.s) (1996) The Internet and Telecommunications Policy: Selected Papers from the 1995 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1996 (with Brock, G.).

“Competition and ‘Local’ Communications: Innovation, Entry and Integration,” in Noam, E., (ed.) The End of Territoriality in Communications: Globalism and Localism, Elsevier. 1997 (with Teece, D.).

“Using Market-Based Spectrum Policy to Promote the Public Interest,” FCC Staff Paper, 1997. Also published in *Federal Communications Law Journal*, Vol. 50, No. 1. 1997 (with Steinberg, J.).

“A New Spectrum Policy: Letting the Market Work” *Radio Communication Reports*, March 3, 1997, pp 59-64.

“The Telecommunications Act Trilogy,” *Media Law and Policy*. Vol V, No. 2 Winter 1997, pp 1-12.

“Interconnection and Competition Policy,” *Cable TV and New Media*. Vol XV, No. 3 May, 1997, pp 1-4.

“Pricing Principles to Advance Telephone Competition,” *Cable TV and New Media*. Vol XV, No. 4 June, 1997, pp 1-3.

Interconnection and The Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1997 (ed. with Waterman, D.).

“Introduction,” in Waterman, D., and Rosston, G., (ed.s) (1997) Interconnection and The Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1997 (with Waterman, D.).

“Comment on the Value of New Services in Telecommunications” *Brookings Papers on Microeconomic Activity--Microeconomics*, 1997.

“Universal Service Reform: An Economist’s Perspective,” *Cable TV and New Media*. Vol XV No. 11, January, 1998, pp 1-4.

“Alternative Paths to Broadband Deployment,” *IEEE Communications Magazine*, July, 1998 pp 2-4. (with Hundt, R.).

“An Insiders’ View of FCC Spectrum Auctions,” *Journal of Regulatory Economics*, Vol 17, No. 3, 253-289, 2000 (with Kwerel, E.).

“The High Cost of Universal Service,” *CCH Power and Telecom Law*, January-February 1999 (with Wimmer, B.).

“Effects of Unbundling Proposals on Cable Investment Incentives,” *The Party Line, Newsletter of the Communications Industry Committee, American Bar Association Section of Antitrust Law*, March 1999 (with Owen, B.).

“The ABC’s of Universal Service: Arbitrage, Big Bucks and Competition,” *Hastings Law Journal*, Vol. 50, No. 6, August 1999 (with Wimmer, B.).

“Winners and Losers from the Universal Service Subsidy Battle,” in Vogelsang, I. and Compaine, B. (ed.s) The Internet Upheaval: Raising Questions, Seeking Answers in Communications Policy, Cambridge, MA: MIT Press, 2000 (with Wimmer, B.).

“The Telecommunications Sector” in Kessides, I. (ed.) Hungary: A Regulatory and Structural Review of Selected Infrastructure Sectors, World Bank Technical Paper No. 474, Washington, DC, June 2000.

“The ‘State’ of Universal Service,” *Information, Economics and Policy*, Vol. 12, No. 3. 261-283, September 2000 (with Wimmer, B.).

“From C to Shining C: Competition and Cross-Subsidy in Communications,” in Compaine, B. and Greenstein, S. (ed.s) Communications Policy in Transition: The Internet and Beyond. Selected Papers from the 2000 Telecommunications Policy Research Conference, Cambridge, MA: MIT Press, 2001 (with Wimmer, B.).

“Universal Service, Competition and Economic Growth: The Case of the Hidden Subsidy,” April 2001 in Dossani, R. (ed.) Reforms in the Telecommunications Sector in India, Greenwood Press (with Wimmer, B.).

“The Digital Divide: Definitions, Measurement, and Policy Issues,” in Bridging the Digital Divide, California Council on Science and Technology, May 2001 (with Noll, R., Older-Aguilar, D. and Ross, R.).

“The Long and Winding Road: The FCC Paves the Path with Good Intentions,” *Telecommunications Policy*, Vol. 27, No. 7. 501-515, August 2003.

“Spectrum Allocation and the Internet,” *Cyber Policy and Economics in an Internet Age*, Lehr W. and Pupillo, L. (ed.s) , Kluwer Academic Publishers, New York, 2002. (with Owen, B.).

“The Economics of the Supreme Court's Decision On Forward Looking Costs,” *Review of Network Economics*, September, 2002 Vol. 1, No. 2, September 2002 (with Noll, R.)

“Local Broadband Access: Primum Non Nocere or Primum Processi? A Property Rights Approach,” in Net Neutrality or Net Neutering: Should Broadband Internet Services be Regulated, Lenard, T. and May, R. (ed.s) Springer: New York. 2006 (with Owen, B.)

“A Losing Battle for All Sides: The Sad State of Spectrum Management” *Federal Communications Law Journal*, Vol. 56 No. 2, March 2004.

Review of *The Second Information Revolution*. by Gerald W. Brock, *Journal of Economic Literature*, Vol. XLII, June, 2004 pp 1157-1158

“Local Telephone Rate Structures Before and After the Act,” *Information, Economics and Policy* , Vol. 17, No. 1. pp 13-34, January 2005 (with Wimmer, B.).

“Communications Policy for 2005 and Beyond,” *Federal Communications Law Journal*, Vol. 58 No. 1, December 2005 (with Hundt, R.).

“The Effect of Private Interests on Regulated Retail and Wholesale Prices,” *Journal of Law and Economics*, Vol. 51, No 3. August 2008 (with Savage, S. and Wimmer, B).

“The Rise and Fall of Third-party High-speed Access,” *Information, Economics and Policy* Vol. 21 No. 1 February 2009 pp 21-33.

“Low-Income Demand for Local Telephone Service: Effects of Lifeline and Linkup,” Stanford Institute for Economic Policy Research Discussion Paper No. 07-32 (with Ackerberg, D., Riordan, M. and Wimmer, B.)

“An Antitrust Analysis of the Case for Wireless Net Neutrality,” (with Topper, M.)

“Market Opening, Entry, and the Structure of Local Telephone Prices,” (with Savage, S. and Wimmer, B)

“Household Demand for Broadband Internet Service,” Stanford Institute for Economic Policy Research Discussion Paper No. 09-08 (with Savage, S. and Waldman, D.)