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Requiem for the long tail: Towards a political economy of content aggregation and fragmentation

ABSTRACT

This article revisits the long tail phenomenon, a dozen years after it was first articulated as a model for the digital media economy. As this article illustrates, both the research evidence and the evolution of industry practice have demonstrated that the long tail phenomenon has failed to take hold to the extent expected. This article outlines the interconnected technological, institutional and economic factors that explain the decline of the long tail, and considers the implications of this decline for media policy and media research.

INTRODUCTION

As has been well-documented, the discourse surrounding new communications technologies tends to swing on a pendulum ranging from utopian to apocalyptic. So, for instance, social media, which not long ago were being praised for their democratizing potential and their ability to facilitate uprisings against repression, are now being characterized as undermining

the democratic process through their facilitation of the spread of surveillance, propaganda and fake news (see, e.g., El-Bermawy 2016; MacKinnon 2012).

Looking back a bit further, another area of initial optimism involved the Internet's facilitation of the democratization and diversification of cultural production and consumption. This perspective was a reflection of the many ways in which the Internet and the associated digitization of content have the capacity to circumvent fundamental characteristics of traditional media, such as high barriers to entry, significant distribution costs and technological and editorial bottlenecks, that limited the diversity of content produced, disseminated and consumed. This perspective was perhaps best reflected in Chris Anderson's (2004, 2006) hugely influential article (and subsequent book), *The Long Tail*. The long tail concept helped bring to the foreground the specific mechanisms by which the Internet and digital content distribution were going to democratize and diversify the production and consumption of media and cultural products.

The central premise of the long tail was that, in a media environment in which content was searched for and/or accessed online, the shelf space constraints of physical retail locations and the channel capacity constraints of analog media would be alleviated. At the same time, digital platforms would be able to take advantage of their inherent interactivity to provide sophisticated search and recommendation systems that would increase the likelihood of audiences discovering more obscure content. These two conditions would create an environment in which a much greater array of content options would be provided to audiences, and – crucially – a much greater array of content options would be consumed; so much so that, in the aggregate, the low-popularity content (the long tail) would represent an equal or greater share of audience attention than the 'fat head' (the popular content).

Twelve years is a very long time in Internet time, and so it is time to revisit the long tail concept that has been so influential in researchers', industry professionals' and policy-makers' thinking about our media and cultural environment. In particular, it is important to consider evidence that the promise of the long tail has failed to materialize, and, given that, to consider some of the reasons why this has been the case. The argument put forth here is that the combination of research findings and industry practices suggests that the long tail phenomenon has not emerged as a defining characteristic of the digital age, and that it should no longer be used as a heuristic by researchers and policy-makers for understanding the contemporary media ecosystem. This article describes the interconnected technological, institutional and economic reasons why this has proven to be the case, and concludes with a consideration of media policy implications and avenues for future research.

THE LONG TAIL: A BRIEF INTELLECTUAL HISTORY

The long tail phenomenon is, in many ways, an extension and modification of the well-known Pareto Principle. The Pareto Principle broadly stated that 80% of effects emerge from 20 per cent of causes (Pareto [1896] 1964). Within the media industries, the principle had been well-demonstrated by the fact that across many industry sectors, roughly 80% of the revenue generated has tended to come from roughly 20% of the content produced, and/or that roughly 80% of audience attention has focused on roughly 20% of the

available content (Brynjolfsson et al. 2011; Webster and Lin 2002). With the *Long Tail*, Anderson (2006) demonstrated how the Internet made it possible for this Pareto distribution of audience preferences to be better served, as well as how the dynamics of searching for and consuming content online could alter this dynamic and relax, to some extent, the stranglehold that a relatively small proportion of available content had on the totality of available revenues and audience attention.

The long tail concept proved influential both to academic research and industry strategy. According to a Google Scholar search, over 600 articles addressing the long tail phenomenon have been published since 2005. Not all of these studies, it should be emphasized, focus on media. Indeed, despite the relatively narrow focus of Anderson's analysis on the media sector, the long tail concept has been applied to a wide array of industrial contexts, including tourism (Lew 2008) and financial services (Serrano-Cinca and Gutierrez-Nieto 2013).

Within the media industries, the long tail concept took hold as a guiding strategic principle. The concept became a common topic in industry trade publications and at industry conferences. Netflix, as one of Anderson's (2006) exemplars of the long tail strategy, touched off an explosion of start-ups seeking to be 'The Netflix for _____', whether it be for magazines, music, video games, books, news, podcasts, or any other discrete category of media content that could be digitally aggregated.

The research findings were, from the outset, somewhat inconsistent, with some studies showing that the digital migration of content and consumer interaction was enhancing the size and viability of the long tail (see, e.g., Brynjolfsson et al. 2011; McKinnon 2015), and others showing that in fact the dynamics of online consumption, search and recommendation could actually further favour the content in the head (i.e., the hits) (see, e.g., Benghozi and Benhamou 2010; Elberse and Oberholzer-Gee 2008; Mulligan 2014; Zhong and Michahelles 2013). Harvard Business School's Anita Elberse emerged as a particularly vocal, though empirically-grounded, critic, first in her *Harvard Business Review* article, provocatively titled 'Should you invest in the Long Tail?' (Elberse 2008), and then, subsequently, in her book-length response, *Blockbusters: Hit-Making, Risk-Taking, and the Big Business of Entertainment* (Elberse 2013). Building upon Rosen's (1981) work on the economics of superstars, Elberse (2013) provided empirical examples of how the dynamics of the digital media environment may actually favour content with mass appeal, so much so that industry stakeholders should pursue 'blockbuster' strategies (i.e., investing in expensive, high-risk, high-reward content) rather than long tail strategies (i.e., investing in a wide expanse of content options that serve the full range of audience interests). In a similar vein, a number of studies have found that strategic approaches that emphasize serving the long tail have not positively affected – or are not likely to positively affect – an organization's financial performance, in contexts such as online news and video on demand (see, e.g., Evens et al. 2010; Huang and Wang 2014).

In an effort to reconcile these often contradictory findings, researchers have explored the specific structural, content and social factors that might drive audience attention towards either the head or the tail (e.g., Kendall and Tsui 2011; for a review, see Napoli 2011a). Research has found, for instance, that the extent to which recommendation systems use inputs such as demonstrated popularity in making their recommendations can actually lead to greater concentration in consumption (Fleder and Hosanagar 2009). The

dynamic here is essentially a Matthew Effect (see, e.g., Rigney 2013), in which users are directed to popular content, which in turn enhances the demonstrated popularity of that content, which in turn further increases the likelihood of that content being recommended (see Webster 2014's discussion of 'user information regimes'). Thus, modifications to the inputs of search and recommendation systems have the capacity to migrate consumption in one direction or the other (Hinz et al. 2011). This is, of course, a dynamic that could be intentionally exploited by any content aggregator who might have an economic interest in shifting audience attention towards the head rather than the tail (a possibility discussed in greater detail below).

The key points to take away from this brief overview are that (a) the empirical findings about the extent to which the long tail dynamic emerges from environments with massive content variety and sophisticated search and recommendations systems, as well as the extent to which serving the long tail is an advantageous strategic approach, are, at best, inconsistent; and (b) that the mechanisms intended to migrate audience attention into the long tail can be manipulated in ways that push attention back into the head. Given these findings, it is difficult to consider the long tail phenomenon as a compelling strategic approach or an inevitable outcome in the contemporary digital media marketplace.

THE LONG TAIL IN PRACTICE: THE EVOLUTION OF NETFLIX AND OTHER CONTENT AGGREGATORS

The above findings provide context for a range of industry developments over the past few years. The evolution of Netflix, in particular, serves as an important case study in the evolution of the Long Tail as a viable business strategy. Netflix's business model actually helped to inspire Anderson's initial thinking about the long tail, and thus it is instructive to revisit the state of Netflix as a starting point for assessing the current state of the long tail. The goal here is to first illustrate organizational migrations away from the long tail strategy, and then to consider the underlying reasons behind this trend.

In the United States, Netflix's digital title inventory has declined from roughly 11,000 titles in 2012 to approximately 5300 today (Juel 2016) – an over 50 per cent decline over the past four years. Clearly, from a strategic standpoint, the company has become less focused on providing its subscribers with access to a tremendous library of selections. In addition, recent research tells us that the best predictors of whether a film ends up in the Netflix streaming library today are its age (with newer films much more likely to be available than older films) and box office grosses (with higher grossing films more likely to be selected than lower grossing films) (Hiller 2016).

In combination, these data depict a scenario that bears a striking resemblance to the traditional video rental stores that Netflix effectively eliminated. According to Anderson (2006), the typical video store carried approximately 3000 titles. And, of course, the video rental store business model overwhelmingly emphasized stocking newer titles (with older titles relegated to the back of the store), as well as stocking as many box office hits as possible, often focusing primarily on devoting the majority of shelf space to dozens of copies of the most recent box-office hits. What we are seeing then, with Netflix's digital strategy, is a migration away from serving the long tail back to serving the fat head, although, as will be discussed below, the nature of that fat head is undergoing change.

FACTORS UNDERMINING THE LONG TAIL

Netflix's evolutionary path is reflective of a set of factors that, both individually and in combination, make serving the long tail a less appealing proposition. As will frequently be illustrated below, the factors discussed here seldom work in isolation. Rather they facilitate and reinforce each other in ways that compound the disincentives for content aggregators to serve the long tail. And, as will also be illustrated below, these factors are affecting other content aggregators, compelling them down evolutionary paths that are similar to that of Netflix.

Digital licensing

In developing his long tail argument, Anderson (2006) relied heavily on examples provided by online content providers such as Amazon and Netflix. As the argument goes, these content providers took advantage of the Internet as a way of reaching a large customer base and providing them with access to content without having to incur the enormous costs associated with maintaining brick and mortar stores in high-traffic areas.

What we cannot forget, though, is that when Anderson (2006) was putting Amazon and Netflix forward as exemplars of the long tail phenomenon in the mid-2000s, these companies were still dealing primarily in physical versions of media products. That is, their business model was still primarily oriented around providing physical books and DVDs by mail, with the online interface providing the mechanism for the search and recommendation systems to drive audience consumption into the long tail of the media products provided by these aggregators.

Of course, Amazon and Netflix soon focused their efforts on making large libraries of books and videos available in digital form, through eBooks and online streaming of videos. From Anderson's (2006) perspective, the migration from providing books and DVDs by mail to digital distribution should have made serving the long tail even easier, by further reducing the costs of distribution (by eliminating costs associated with purchasing, storing and mailing multiple copies). However, one of the greatest ironies of the long tail phenomenon has been the extent to which the transition from physical to digital goods, which theoretically should have provided further fuel to the long tail phenomenon, appears to have had the exact opposite effect.

One key reason for this somewhat paradoxical situation has to do with licensing costs (see, e.g., Manjoo 2014). One example of the way digital licensing can undermine the long tail can be found in the challenges faced by music streaming services such as Pandora. The success of services such as Pandora is highly dependent upon their being able to provide users with access to the long tail of music, and their ability to attract a large user base. However, Pandora found that the more users it added, the more money it lost (Trefis Team 2015). In some ways, these developments fly in the face of what media economics has long told us is the beauty of the migration to the 'pure public good' model of digital distribution. What was happening with Pandora was that the per-stream license fees that they were paying for each song were less than they were earning in advertising revenues from each listener to each song. This deficit applied only to non-subscribing listeners, who choose instead to hear ads. Unfortunately, this category describes the majority of Pandora users. So, the more non-subscribing listeners the company added, and the more songs they streamed, the more money they lost (Richter 2013; Trefis Team 2015).

Similarly, 'Netflix for eBooks' services such as Scribd have proven unsuccessful because the per-reader licensing costs associated with popular content from major publishers cost the company more than can be recouped in subscription fees (Albanese 2016). So, for instance, voracious readers of romance novels were costing Scribd well more than the company was earning through its monthly subscription fee. In the case of eBooks, it seems that the only way a Netflix-style pricing and access model works is when the content available is limited primarily to self-published books, or when limited amounts of content are made available on a rotating basis, and availability is determined, at least in part, by the licensing terms that are agreed upon (Albanese 2016). Obviously, such models are a far cry from serving the entirety of the long tail.

Netflix for magazines services such as Texture (previously called Next Issue) and Magster have similarly struggled to gain access to popular titles under their monthly subscription plans (Brustein 2015). The issue is that content providers prefer the revenue model associated with a la carte sales/ subscriptions, rather than bundling their content within a broader subscription package offered by a content aggregator. So, for instance, only 2000 of the 5000 magazines available through Magster's app have opted to make themselves available under the bundled subscription model (Brustein 2015).

These dynamics help explain why Netflix is being much more selective in terms of what content it licenses and what it is willing to pay for these licenses. In Netflix's cost–benefit calculus, the licensing fees being demanded by many content creators are simply too high to make licensing the content worthwhile. And in a media environment in which there remain multiple 'windows' through which to monetize content, there is insufficient incentive for content providers to make their content available to aggregators such as Netflix under terms that the aggregators would find acceptable (Manjoo 2014). This scenario is in many ways a reflection of what Knee, Greenwald and Seave (2011) contend is one of the fundamental rules of the media industries – that the creators/owners of quality content are consistently able to extract and retain most of the economic value of that content, leaving little, if any, for those licensing/distributing that content.

Furthermore, the fact that so many content creators are, apparently, not finding it in their best interests to license their content to services such as Netflix and Scribd at prices these services are willing to pay (see Fox 2015) points to other interacting factors at work here, such as vertical integration and competition (see below). In the case of Netflix, for instance, content creators are often finding it preferable to distribute their content themselves through their own vertically integrated content aggregation services, or to license their content to one of the many competitors to Netflix that have emerged, at terms that are more favourable than those offered by Netflix (see below).

The issues that Netflix has faced in licensing digital versions of the many films and television programmes that are available through the company's discs-by-mail service are highlighted by the story of Redbox. Redbox is a video rental service that operates self-service disc rental kiosks outside supermarkets, drug stores and other big box retailers. They are in the opposite of the long tail business. Their kiosks can hold a limited number of discs, and thus tend to carry only the latest hits.

Like Netflix, Redbox ran into challenges when negotiating with the movie studios, to the point that the studios were going to refuse to sell their films to Redbox (Masnick 2009). It is important to emphasize that, within the context

of physical goods such as DVDs, the content is sold rather than licensed (as is the case with digital content). In response to this stalemate, Redbox threatened to simply purchase the DVDs necessary to stock their kiosks through retail outlets such as Wal-Mart (Masnick 2009); and according to some accounts, ultimately moved forward with obtaining nearly 40 per cent of its inventory from such retail outlets (Masnick 2010). This is allowable in the United States. under what is known as the first sale doctrine. Once an individual or organization buys a physical copy of a media product, it is theirs to do with as they wish – rent, sell, give away, etc. And, regardless of how much revenue you generate through each copy, none of that revenue needs to be shared with the content creator.

As these examples illustrate, the counterintuitive reality of digital curation and distribution has been that the rights and access terms associated with physical versions of media products are, in many ways, more conducive to services catering to the long tail of audience preferences than are the rights and access terms associated with digital versions. In addition, underlying all of these examples is the fact that subscription models, rather than (or, in addition to) a la carte pricing, have essentially taken hold as the de facto model for content aggregation, despite the likelihood of much larger content libraries being obtainable if a la carte pricing were incorporated (see above). This is likely a reflection of both the underlying economics of the monthly subscription model (relatively stable, predictable income; lower transaction costs; and the subsidies that accrue from infrequent users) and audience preferences (the appeal of unlimited consumption for a low fixed cost). The lesson here would seem to be that the incorporation of a la carte transactions to better serve the long tail has been deemed by content aggregators as not worth the effort or cost associated with facilitating individual transactions, nor, perhaps, worth the potential negative consumer response associated with making the limitations of the subscription content package more readily apparent by simultaneously making a host of a la carte offerings available.

Vertical integration

Another important factor that has undermined the prevalence of the long tail phenomenon is vertical integration. Vertical integration is, in many ways, a defining characteristic of the history of media (Napoli and Caplan in press). In the early days of film, motion picture studios vertically integrated into theatre ownership. The vertical integration of television production studios and television networks became a defining characteristic of the television industry. And now, online content aggregators/distributors such as Amazon, Hulu and Netflix have all aggressively vertically integrated into content creation.

To some extent, this shift among digital content aggregators can be seen as a response to the content licensing challenges discussed above. Content aggregators who are unable to obtain licenses to quality content at favourable terms can, as an alternative, produce such content on their own (see, e.g., Fox 2015). And so, licensing challenges beget vertical integration.

At the same time, vertical integration creates disincentives for meeting the licensing fees sought by content creators. As these platforms migrate into original content creation, their commitment to serving the long tail can be expected to diminish (see, e.g., Kelleher 2011). This commitment diminishes because a) resources previously devoted to licensing content to fill the

long tail are now being devoted to producing original content, and b) the incentive to guide users into the long tail is undermined by the desire to guide users to the home-grown content, in order to justify the expenditures on that content.

Looking at the first point, the decision to incur the substantial costs of producing original content represents an obvious shift in priorities from seeking to amass as large and diverse a content library as possible. As resources are diverted to content creation, fewer resources are available for licensing unaffiliated content.

In terms of the second point, once a content aggregator vertically integrates into content creation, all of the unaffiliated, licensed content available on the service now represents competition to the home-grown content. Therefore, as Netflix's library of licensed content decreases, the potential audience for its internally produced content increases. The irony of this situation is that Netflix rose to prominence and vanquished its competitors on the basis of the quality of its search and recommendation system, and that system's ability to migrate consumption into the long tail (Keating 2012). User confidence in – and reliance on – this search and recommendation system can now be leveraged to try to push viewership towards internally produced content. Anyone who subscribes to Netflix cannot help but notice, at this point, that no matter what you watch, you will be recommended *House of Cards* (2013), *Orange is the New Black* (2013) and *Stranger Things* (2016) – all programming that Netflix produces – even if you have already watched every episode of these programmes. This is where the issue of the manipulability of search and recommendation systems discussed above comes into play. Given the massive costs that companies such as Netflix are incurring to produce original programming, they simply cannot risk the possibility that this content will occupy some remote position deep in the long tail. This is necessary both because this content is now receiving strategic priority as the means of attracting and retaining subscribers, and because the full revenue potential for this content within the broader windowing sequence is to some extent dependent on the popularity that it achieves in its initial window. For these reasons, this content will likely always receive favoured status in the search and recommendation systems that subscribers use to navigate their content options.

And, of course, vertical integration can also flow from content creator to content distributor, with similar effect. For instance, programmers such as HBO and CBS have launched their own stand-alone streaming services (Bensinger 2016) into an increasingly crowded streaming marketplace (see below). These new entrants obviously seek to leverage the libraries of content they have produced over the years, which means none of this content will likely be made available to competing streaming services that might be aspiring to serve the long tail.

Years ago, American media mogul Sumner Redstone famously declared that 'Content is king' (della Cava 2016). The point of this simple statement is that those companies who control access to premium content are in the best position to succeed. The industry developments discussed above and below continue to prove that adage correct. For instance, the increased competition discussed below can be seen as another driver towards vertical integration, as content ownership can be leveraged as a form of competitive advantage (see, e.g., Knee et al. 2011). The recently announced merger of AT&T and Time Warner in the United States provides the most recent illustration, given that

this merger is motivated in large part by AT&T's desire to vertically integrate and own, rather than license, content (Cox 2016). In this digital age, *given the challenges associated with licensing content*, content appears to be king as much as it has ever been, if not more so.

Competition

The lower barriers to entry that the Internet has facilitated across various media sectors also apply to some extent to the content aggregation business. Not only do the large content aggregators like Netflix, Hulu and Amazon compete with each other to obtain exclusive licenses to content, but if you use a device like Roku you will see dozens of additional aggregators, many of them focusing on serving specific niches better than any of these larger-scale aggregators. Many digital video services describe themselves as "the Netflix for" a particular type or genre of content. For instance, Flix Premiere describes itself as the Netflix for Forgotten Films (Scipioni 2016); Shudder describes itself as the Netflix for Horror Films (Woodward 2016); Mubi describes itself as the Netflix for Independent Films (McAlone 2016); and Popcorn Time even describes itself as the Netflix for Pirated Films (Matthews 2016). As a result, the long tail essentially gets chopped up and reallocated in discrete chunks across multiple aggregators (within which, in all likelihood, miniature long tail distributions ultimately take shape), as these various aggregators each obtain exclusive access to different content collections. In this more competitive environment, no single provider is in a position to truly serve the entirety of the long tail in accordance with the ideal that Anderson (2006) originally put forth. Indeed, the existence of multiple competing aggregators offering discrete subcategories of the same general type of content is in many ways antithetical to the very idea of the long tail.

The extent to which competing as a content aggregator does not mean having to aspire to serve the entirety of the long tail creates conditions that are more conducive to more entrants, as the barriers to entry from a content offerings standpoint are lowered. A smaller library of content needs to be aggregated in order to enter the marketplace. Thus, as the other factors discussed here dissuade large content aggregators such as Netflix from serving the long tail, the result is a scenario that encourages more competition in the content aggregation space. This, in turn, further diminishes the extent to which any aggregators are likely to fully serve the long tail. In today's competitive digital media environment, serving *a* niche is a much more achievable undertaking than serving *all* niches.

Interactivity

A key source of competitive advantage for online content aggregators such as Netflix and Amazon relative to their analogue competitors has been their interactivity. Interactivity is synonymous with more data, as interactivity results in audiences leaving trails of information about their content preferences and consumption patterns (Nocera 2016). More data means less uncertainty and more predictive power in relation to audience demand for content. Less uncertainty and more predictive power means having a better sense, ahead of time, in terms of what is going to be popular and what is going to be unpopular (Napoli 2011a).

It seems reasonable, then, to expect that this greater knowledge about how various content options will perform will facilitate greater selectivity in

content aggregation. If all of the analytics, big data gathering and predictive algorithms that are increasingly serving as the backbone of the media sector (see Napoli 2011a) have any value whatsoever, then it should be easier to zero in on the content worth keeping and avoid the rest. From this standpoint, the strategic necessity of serving the long tail declines as information about audiences' preferences increases over time. So, for instance, Netflix's vast knowledge of its subscribers' viewing preferences and behaviours should help the company in being more selective in deciding which content options to obtain or retain.

Here again these factors are mutually reinforcing. For instance, the increasing challenges associated with licensing high-value content can also be seen as creating greater incentives for content aggregators to invest further in data analytics, in order to improve their effectiveness in obtaining and recommending the most-appealing content within their more limited libraries (see, e.g., Salmon 2014). These data also have the potential to exert downward pressure on the licensing costs that an aggregator is willing to pay, thus contributing to the shrinking of content libraries. Streaming media services such as Amazon, Hulu and Netflix have troves of content performance data at their disposal when negotiating licenses to obtain/retain content – data that these companies have been notoriously unwilling to share, in part to enhance their leverage in licensing negotiations (Cox 2016).

The availability of a growing store of data was a primary catalyst (along with content licensing costs) for Netflix to vertically integrate into content creation. Through its data on consumers' viewing habits and expressed preferences, Netflix was able to determine the types of content most likely to succeed with its viewers (Smith and Telang 2016), making the migration into content creation a much less risky and more appealing enterprise. Aggregators such as Amazon have followed a similar data-driven path in their move towards vertical integration (Sharma 2013). In this way, the consumer data derived from the interactivity inherent in digital distribution facilitate the vertical integration that also undermines service to the long tail.

CONCLUSION

This article has considered the long tail phenomenon from the standpoint of both its empirical record and its evolution in industry practice. As this article has illustrated, the empirical support for the long tail phenomenon is inconclusive at best. Furthermore, recent industry practices suggest that strategic approaches to serving the long tail are being dramatically scaled back. This pattern is a function of structural, technological and economic conditions in the contemporary media environment, ranging from licensing costs to vertical integration to competition to interactivity and the associated greater availability of audience data. These conditions – both individually and in combination – have served to undermine the viability of the long tail phenomenon as a principle around which industry strategies and business models are constructed.

The story of the rise and decline of the long tail is an important case study in the intersection of technological capabilities with institutional incentives and constraints. From this standpoint, this analysis has attempted to lay out the basic political economy of the long tail and its limitations. It is a scenario that evokes Winston's (1986) enduring *law of the suppression of radical potential*, in which the ability of a new communications technology or service to

reach its full potential is curtailed by established institutional conditions and interests. Netflix is, in many ways, a poster child for Winston's (1986) law, evolving from aspirations of providing subscribers with digital, on-demand access to the entirety of Hollywood's film libraries (Nocera 2016) to merely aspiring to be HBO (Levine-Weinberg 2015).

From a media policy standpoint, there are a number of implications to draw from this situation. The first is that technology does not appear to have dramatically reconfigured the incentives for serving niche audience interests to the extent that we might have hoped. As has been discussed elsewhere (see, e.g., Napoli 2011a; Webster 2014), the economic incentives for *producing* niche content have continued to be offset by a range of disincentives. The discussion here has focused specifically on content *aggregation/distribution*, where many of the impediments and disincentives for serving niche audience interests appeared to have been dramatically reduced. Certainly, the scenario today is one of a greater diversity of audience interests being served than in the pre-digital age, but when we evaluate the current scenario *against the capabilities of the available technologies* (see Napoli 2009 for a discussion of this evaluative approach), there certainly appears to be an increasing gap as the long tail both retracts and fragments.

Second, we should consider the dynamics discussed here within the context of the dynamics of the consumption of media and cultural products. As has been illustrated here, navigating the long tail of content (to the extent that it is available) is itself becoming a more fragmented and complex process, with content distributed across multiple aggregators/platforms. From this standpoint, the 'one-stop shop' ideal of the long tail is in decline. Given that previous research has found the reduction of search costs to be a key driver of audience attention into the long tail (see, e.g., Brynjolfsson et al. 2011), as the content aggregation space grows more fragmented – and thus more complex – it seems reasonable to assume that search costs will increase and the migration of audience attention into the long tail (i.e., diversity of consumption) will be diminished. And, of course, there is the added dimension of access to multiple content aggregators requiring multiple subscriptions, which adds a financial cost factor to audiences' efforts to effectively navigate the full extent of the long tail. As the consumption/exposure dimension of media diversity has achieved greater prominence in media policy-making circles (see Napoli 2011b), these dynamics may represent a cause for concern.

Finally, this analysis has highlighted the potentially significant ripple effects of vertical integration in media and cultural industries, illustrating how vertical integration has potentially played a significant role in undermining audiences' access to a greater array of content options, a pattern in keeping with some of the research findings on older media platforms (see, e.g., Ji and Waterman 2015). Of course, this process of vertical integration has also spawned new sources of original content, which complicates the cost-benefit calculus. Despite these complexities, media policy-makers in some countries (such as the United States.) continue to marginalize vertical integration as a compelling policy concern, choosing instead to maintain the more traditional antic-competitive focus on horizontal integration. This tendency is why there is a strong possibility that even a massive merger such as that being proposed by AT&T and Time Warner is likely to gain approval (Fox 2016).

The conditions discussed here point the way towards some avenues for future research. First, it would seem that there is much more to learn about the types of content that are advantaged and disadvantaged in the current content aggregation environment. The standard delineation between 'popular' and 'niche' content is far too broad. We need a more granular understanding of the nature of the content underlying these descriptors. Specifically, we need to understand if and how the relative availability of content types that may correspond with specific policy concerns or cultural values, criteria or groups/interests is being affected in different ways. Studies of content diversity on digital content aggregators such as Netflix and Amazon – particularly in terms of its evolution over time and the factors that might affect this diversity – are sorely lacking.

We also need to know much more about how media consumers navigate their available platforms and content options. Essentially, we need updates and extensions of the 'program choice' and 'channel repertoire' research traditions (for reviews, see Napoli 2003) that seek to provide generalizable insights into the interaction of audience and media factors in the dynamics of contemporary content consumption. This research needs to look beyond the macro-level patterns that have been the focal point of much long tail research to date, to also explore the individual-level dynamics associated with the processes of searching for, learning about, deciding to pay for, and consuming content.

In the end, the long tail has come to represent more of an ideal-type than a reality for the digital media marketplace. Its failure to fully take hold puts media policy-makers in the difficult position of evaluating whether the improvements that digital content curation and distribution have brought to the marketplace represent a sufficient realization of technological potential, or whether further intervention is necessary.

REFERENCES

Albanese, A. (2016), 'Scribd revises its subscription model', *Publishers Weekly*, 16 February, http://www.publishersweekly.com/pw/by-topic/digital/content- and-e-books/article/69414-scribd-tweaks-its-subscription-model.html.

Anderson, C. (2004), 'The long tail', *Wired*, October, https://www.wired.com/2004/10/tail/. Accessed 26 November 2016.

—— (2006), *The Long Tail: Why the Future of Business is Selling Less of More*, New York: Hyperion.

Benghozi, P. and Benhamou, F. (2010), 'The long tail: Myth or reality?', *International Journal of Arts Management*, 12: 3, pp. 43–53.

Bensinger, G. (2016), 'Amazon ups the ante on streaming video, challenging Netflix', *Wall Street Journal*, 18 April, http://www.wsj.com/articles/amazon-ups-the-ante-on-streaming-video-1460944802. Accessed 5 January 2017.

Brustein, J. (2015), 'Why almost nobody wants to pay for the "Netflix of magazines"', *Bloomberg*, 18 January, https://www.bloomberg.com/news/articles/2015-01-19/why-almost-nobody-wants-to-pay-for-the-netflix-of-magazines-. Accessed 5 January 2017.

Brynjolfsson, E., Hu, Y. and Simester, D. (2011), 'Goodbye Pareto Principle, hello Long Tail: The effect of search costs on the concentration of product sales', *Management Science*, 57: 8, pp. 373–1386.

Cox, J. (2016), 'It's time for Netflix to release its viewership data', *The Verge*, 30 June, http://www.theverge.com/2016/6/30/12060664/netflix-streaming-ratings-nielsen-orange-is-the-new-black. Accessed 5 January 2017.

Cox, K. (2016), 'Why AT&T is buying Time Warner, and why so many people aren't happy about it', *Consumerist*, 24 October, https://consumerist.com/2016/10/24/why-att-is-buying-time-warner-and-why-so-many-people-arent-happy-about-it/. Accessed 5 January 2017.

della Cava, M. (2016), 'The curious case of Sumner Redstone', *USA Today*, 15 June, http://www.usatoday.com/story/money/2016/06/15/curious-case-sumner-redstone/85670662/. Accessed 5 January 2017.

El-Bermawy, M. M. (2016), 'Your filter bubble is destroying democracy', *Wired*, 18 November, https://www.wired.com/2016/11/filter-bubble-destroying-democracy/. Accessed 5 January 2017.

Elberse, A. (2008), 'Should you invest in the Long Tail?', *Harvard Business Review*, July–August, pp. 1–9.

—— (2013), *Blockbusters: Hit-Making, Risk-Taking and the Big Business of Entertainment*, New York: Henry Holt.

Elberse, A. and Oberholzer-Gee, F. (2008), 'Superstars and underdogs: An examination of the long tail phenomenon in video sales', working paper, Cambridge, MA: Harvard Business School.

Evens, T., Marez, L. De, Hauttekeete, L. and Biltereyst, D. (2010), 'Attracting the un-served audience: The sustainability of long tail business models of cultural television content', *New Media & Society*, 12: 6, pp. 1205–23.

Fleder, D. and Hosanagar, K. (2009), 'Blockbuster culture's next rise or fall: The impact of recommender systems on sales diversity', *Management Science*, 55: 5, pp. 697–712.

Fox, J. (2015), 'Netflix wags its short tail', *Bloomberg*, 17 April, https://www.bloomberg.com/view/articles/2015-04-17/former-long-tail-exemplar-netflix-goes-hollywood. Accessed 5 January 2017.

Fox, M. (2016), 'AT&T-Time Warner deal will likely get done, but won't be pretty: Former FCC commissioner', MSNBC, 24 October, http://www.cnbc.com/2016/10/24/att-time-warner-deal-will-likely-get-done-but-wont-be-pretty-former-fcc-commissioner.html. Accessed 5 January 2017.

Hiller, R. S. (2016), 'Profitably bundling information goods: Evidence from the evolving video library of Netflix', working paper, Fairfield University, Fairfield, CT: http://faculty.fairfield.edu/rhiller/Research/Netflix.pdf. Accessed 5 January 2017.

Hinz, O., Eckert, J. and Skiera, B. (2011), 'Drivers of the long tail phenomenon: An empirical analysis', *Journal of Management Information Systems*, 23: 4, pp. 43–69.

House of Cards (2013, USA: Netflix).

Huang, J. S. and Wang, W. (2014), 'Application of the long tail economy to the online news market: Examining predictors of market performance', *Journal of Media Economics*, 27: 3, pp. 158–76.

Ji, S. and Waterman, D. (2015), 'Vertical ownership, technology, and programming content', in R. G. Picard and S. S. Wildman (eds), *Handbook on the Economics of the Media*, Cheltenham, Edward Elgar, pp. 36–52.

Juel, T. (2016), 'The number of titles in the Netflix library is down 50 percent the past four years', *Exstreamist*, 28 September, http://exstreamist.com/the-numer-of-titles-in-the-netflix-library-is-down-50-over-the-past-four-years/. Accessed 5 January 2017.

Keating, J. (2012), *Netflixed: The Epic Battle for America's Eyeballs*, New York: Penguin.

Kelleher, K. (2011), 'Is Netflix losing its soul?', *Fortune*, http://fortune.com/2011/09/27/is-netflix-losing-its-soul/. Accessed 5 January 2017.

Kendall, T. D. and Tsui, K. K. (2011), 'The economics of the long tail', *B.E. Journal of Economic Analysis & Policy*, 11: 1, Article 76, pp. 1–20.

Knee, J. A., Greenwald, B. C. and Seave, A. (2011), *Curse of the Mogul: What's Wrong with the World's Leading Media Companies?*, New York: Penguin.

Levine-Weinberg, A. (2015), Netflix is becoming more like HBO, for better or for worse', The Motley Fool, 8 September, http://www.fool.com/investing/general/2015/09/08/netflix-is-becoming-more-like-hbo-for-better-or-wo.aspx. Accessed 5 January 2017.

Lew, A. A. (2008), 'Long tail tourism: The new geographies for marketing niche tourism products', *Journal of Travel & Tourism Marketing*, 25: 3&4, pp. 409–19.

MacKinnon, R. (2012), *Consent of the Networked: The Worldwide Struggle for Internet Freedom*, New York: Basic Books.

Masnick, M. (2009), 'Looking at the Redbox antitrust fight', *Techdirt*, 20 October, https://www.techdirt.com/articles/20091019/0403026583.shtml. Accessed 5 January 2017.

—— (2010), 'Wal-Mart, Target trying to prevent Redbox from purchasing DVDs?', *Techdirt*, 4 February, https://www.techdirt.com/articles/20100204/1222178053.shtml. Accessed 5 January 2017.

Matthews, C. (2016), 'The "Netflix for pirates" is making a triumphant return', *Fortune*, 6 February, http://fortune.com/2016/02/26/popcorn-time-netflix-pirates/. Accessed 5 January 2017.

McAlone, N. (2016), 'The "Netflix for indie movies" looks nothing like Netflix – and it's worth $125 million', *VentureBeat*, 6 March, http://venturebeat.com/2016/03/06/the-netflix-for-indie-movies-looks-nothing-like-netflix-and-its-worth-125-million/. Accessed 5 January 2017.

McKinnon, J. G. (2015), 'Adoption of e-book platform by historical New York Times best sellers: An examination of the "long tail" theory in action', *Publishing Research Quarterly*, 31: 3, pp. 201–14.

Mulligan, M. (2014), 'The death of the long tail: The superstar music economy', MIDiA Consulting, http://www.promus.dk/files/MIDiA_Consulting_-_The_Death_of_the_Long_Tail.pdf. Accessed 5 January 2017.

Napoli, P. M. (2003), *Audience Economics: Media Institutions and the Audience Marketplace*, New York: Columbia University Press.

—— (2009), 'Rethinking the media ownership policy agenda', in A. M. Schejter (ed.), *… And communications for All: A Policy Agenda for a New Administration*, Lanham, MD: Lexington Books, pp. 167–78.

—— (2011a), *Audience Evolution: New Technologies and the Transformation of Media Audiences*, New York: Columbia University Press.

—— (2011b), 'Diminished, enduring, and emergent diversity policy concerns in an evolving media environment', *International Journal of Communication*, 5, pp. 1182–96.

Napoli, P. M. and Caplan, R. (in press, 2017), 'Platform or publisher?', *Intermedia*.

Nocera, J. (2016), 'Can Netflix survive in the new world it created?', *New York Times*, 15 June, http://www.nytimes.com/2016/06/19/magazine/can-netflix-survive-in-the-new-world-it-created.html. Accessed 5 January 2017.

Orange is the New Black (2013, USA, Netflix).

Pareto, V. ([1896] 1964), 'Cours d'economie politique', in G. H. Bousquet and G. Busino (eds), *Oevres completes de Vilfredo Pareto*, vol. 1, Geneva: Librairie Droz.

Richter, F. (2013), 'Pandora's royalty costs outgrow its revenue', *Statista*, 8 March, https://www.statista.com/chart/972/pandoras-revenue-vs-royalty-costs/. Accessed 5 January 2017.

Rigney, D. (2013), *The Matthew Effect: How Advantage Begets Further Advantage*, New York: Columbia University Press.

Rosen, S. (1981), 'The economics of superstars', *The American Economic Review*, 71: 5, pp. 845–58.

Salmon, F. (2014), 'Netflix's dumbed-down algorithm', *Reuters*, http://blogs.reuters.com/felix-salmon/2014/01/03/netflixs-dumbed-down-algorithms/. Accessed 5 January 2017.

Scipioni, J. (2016), 'Flix Premiere: The "Netflix" for forgotten films', *Fox Business*, 6 April, http://www.foxbusiness.com/features/2016/04/07/flix-premiere-netflix-for-forgotten-films.html. Accessed 5 January 2017.

Serrano-Cinca, C. and Gutierrez-Nieto, B. (2013), 'Microfinance, the long tail, and mission drift', *International Business Review*, 23: 1, pp. 181–94.

Sharma, A. (2013), 'Amazon mines its data trove to bet on TV's next hit', *Wall Street Journal*, 1 November, http://www.wsj.com/articles/SB10001424052702304200804579163861637839706. Accessed 5 January 2017.

Smith, M. D. and Telang, R. (2016), *Streaming, Sharing, Stealing: Big Data and the Future of Entertainment*, Cambridge, MA: MIT Press.

Stranger Things (2016, USA, Netflix).

Trefis Team (2015), 'Why the subscription business is important for Pandora and where is it going?', *Forbes*, 4 September, http://www.forbes.com/sites/greatspeculations/2015/09/04/why-the-subscription-business-is-important-for-pandora-and-where-is-it-going/#6d07f9b165ce. Accessed 5 January 2017.

Webster, J. G. (2014), *The Marketplace of Attention: How Audiences take Shape in the Digital Age*, New Haven, CT: Yale University Press.

Webster, J. G. and Lin, S. (2002), 'The Internet audience: Web use as mass behavior', *Journal of Broadcasting & Electronic Media*, 46:1, pp. 1–12.

Winston, B. (1986), *Misunderstanding Media*, Cambridge, MA: Harvard University Press.

Woodward, D. (2016), 'Welcome to Shudder, the Netflix of horror films', *Yahoo News*, 20 October, https://www.yahoo.com/news/welcome-shudder-netflix-horror-films-052300056.html. Accessed 5 January 2017.

Zhong, N. and Micahelles, F. (2013), 'Google Play is not a long tail market: An empirical analysis of app adoption in the Google Play app market', paper presented at the *SAC Conference*, Coimbra, Portugal, 18–22 March.

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