

Academic Research Conflicts With 'Long Tail'

September 21, 2009 | [By Glenn Peoples, Nashville](#)

According to paper by a pair of Wharton researchers, Netflix data shows trends that conflict with some of the main themes of the 2006 book "The Long Tail." The paper, titled "Is Tom Cruise Threatened: Using Netflix Prize Data to Examine the Long Tail of Electronic Commerce," ([download PDF here](#)) was written by [Sergui Netessine](#), associate professor of operations and information management, and Tom F. Tan. It is the latest in research into the theories espoused in the 2006 book "The Long Tail."

We find that, if we define the popularity of a movie in relative terms, the Long Tail effect is absent -- in fact, the demand for hits increases, whereas the demand for niches decreases. Specifically, we find that demand for the top 0.1% of movies increases five times as fast as demand for the top 10%, indicating that demand for the "hits of the hits" continues to skyrocket. The same finding is manifested by changes in the Pareto principle over time: while Anderson argues that the 80/20 rule will weaken (the top 20% of products will constitute less than 80% of demand), we find that the opposite is true: the share of demand for the top 20% of movies increases over time from 86% in 2000 to 90% in 2005.

Anderson's defense, found in an [article on the paper at Knowledge@Wharton](#), is that such evaluations of "The Long Tail" are not relevant because they define the head and tail in relative terms (such as defining each in terms of the percent of total sales). "Although academics are free to do all the relative analysis they want," he wrote in an email, "it is incorrect to apply it to my theory." Online services' growing supplies make relative comparisons weaker than absolute comparisons. For example, it may be better, as Anderson argues, to look at sales or rental data for the top 1,000 titles instead of the top 5% since 1,000 is a fixed measure and the 5% figure changes as supply changes. In his book, Anderson usually described the "head" of demand in fixed unit terms (such as the number of titles found in a brick-and-mortar mass merchant).

Even though they expressed it relative terms, the researchers found that Netflix's top 20% of movies accounted for 86% of all rentals in 2000 and increased to 90% in 2005. In his analysis of the same data, Anderson, sticking to a fixed number of titles, found the titles outside of the top 3,000 accounted for 15% of rentals.

One of the key predictions in "The Long Tail" is that digital consumers will embrace niche content and reject the hits. Just as Anita Elberse from Harvard Business School found in [her research](#), Netessine and Tan found from their analysis of customer ratings that niche titles provided less satisfaction than hit titles.

Furthermore, Anderson (2004, 2006) has argued that more and more consumers will choose niche products because they will tend to satisfy consumer preferences better. We, however, find that, contrary to Anderson's suggestion and independent of how popularity is measured, consumers tend to be less satisfied with niche movies than with hit movies and moreover, it is mostly heavy movie watchers, who constitute a small fraction of all consumers, that venture into niche movies.

The researchers also found that consumer demand does not shift in the way that Anderson claimed was already happening when "The Long Tail" was published. While consumers watched more niche content over time, "the rate at which consumers shift demand from the hits to the niches is considerably lower than the growth rate of product variety." In other words, consumer demand did not keep up with the growth of supply and ended up watching more hits.

In their conclusion, the researchers warned of "irrational expansion into niche products" for more traditional physical products as well as the problems fast-rising inventory - and, as a result, a growing number of undiscovered titles - can present to online services.

Combine this Wharton research with that of Elberse and [PRS For Music's Will Page](#) and you have an increasingly clear picture that the marketplace envisioned in the "The Long Tail" is not becoming a reality. The tail does not appear to be making substantial inroads on the head. Consumers do not appear to be flocking toward niches at the expense of hits, nor does it appear consumers like niche titles more than they like hits. Whatever filters and recommendation engines exist to facilitate tail exploration have failed to increase the value of the tail as much as Anderson had predicted. Then again, maybe too much is expected of such discovery tools. Even in an era of unlimited online choice, consumers still congregate around the most popular titles and have limited time to spend browsing through obscure titles.

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