Innovative Methods for Video-on-Demand Research

TITLE

A comparative analysis of the content prominence strategies of Netflix, Prime Video and Disney+ using a novel data collection method

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Introduction

Major VOD services in all markets rely on prominence strategies, whereby some titles are given more visibility than others on their interface, to drive user retention. While this is not a new phenomenon — a TV program's visibility is determined by its position in the TV schedule and the channel on which it airs, a theatrical release's visibility is determined by its number of copies — the visibility of titles on VOD interfaces has escaped measurement for more than a decade. Using a novel method to precisely locate each thumbnail on a service's homepage and identify the title it promotes, we analyse content prominence on the three main VOD services in France (Netflix, Prime Video and Disney+) over a 4-week period in June 2024. The homepage of each service will be accessed and collected every Monday from a web browser on a simulated 13-inch computer. Although it is possible to simulate real user activity by having automated profiles follow a viewing schedule, we choose to examine only so-called "default" homepages, meaning that a new profile will be created every week and deleted right after its homepage has been collected, so that no personalisation will have been applied.

Our analysis will be threefold: first, we aim to draw comparisons between the content hierarchies and choice architectures that are presented to the user on each VOD service's interface; second, we will identify the mechanisms that underpin content prominence, such as the degrees of "stickiness" and recurrence on the homepage; and finally, we will examine the types of content that benefit from visibility — or suffer from invisibility — and try to understand what they reveal about each service's content strategy. Our research will reveal the degree to which these services either converge or diverge when it comes to content prominence.

Applying statistical analysis to prominence on a webpage poses a methodological challenge as the data is inherently visual and therefore poorly summarised by traditional descriptive statistics. To make our analysis possible, we will assign a visibility score to all thumbnails that appear on the homepages of the services that we have chosen to include. This score takes into account the position of the thumbnail on the page, based on the distance separating it from the top and left edges of the page, as well as its size, expressed in pixels in relation to the size of the user's screen.

This paper will, in addition to comparing the interfaces of three major SVOD services, serve to introduce a new technical and methodological framework for the study of content prominence on VOD, a framework that can also be applied to other territories, devices (smart TVs, smartphones, tablets) and types of services (BVOD, AVOD).

Comparing homepages

The homepages of all three services follow a similar design philosophy, and thus present the user with more or less the same choice architecture. One title is featured above the fold, taking up the full width of the page, either on its own (Netflix) or as part of a sliding carousel (Prime Video, Disney+). The title is promoted either with the use of a still image (Prime Video, Disney+) or – unless the feature is turned off – a trailer or video extract (Netflix). Below this "billboard" section, to adopt Netflix' terminology, the rest of the page is made up of horizontal sections that also span the full width of the screen, and which we call "rows". Most rows contain a title and below it a series of rectangular "thumbnails". If the number of thumbnails is higher than the width of the row allows for, then the row acts like a carousel, and features an arrow indicating that horizontal scrolling is possible. Some rows differ from this typical design, such as those presenting top-viewed rankings or banner spots that break the monotony of the grid (Prime Video and Disney+ only).

FIG. 1 – COMPOSITION OF HOMEPAGES

	Nb of thumbnails	Nb of unique titles	Avg nb of appearances per title	Max nb of appearances for a single title
Netflix	1458	727	2	9
Prime Video	27958	14185	2	12
Disney+	808	626	1	5

Apart from the brand-specific visual style (typography, logos, colour scheme), the main difference in the overall aspect of the three services' homepages lies in their respective sizes. As a metric to express the size of a homepage, we favour the use of the total number of thumbnails present on the page over the more abstract height and width dimensions in pixels. We base our comparison solely on the homepages collected on the 3rd of June (Fig. 1), as no significant evolution was observed over the following weeks.

Disney+ has the smallest homepage, comprising a little over 800 thumbnails. The size of Netflix' homepage is almost double that of Disney's, with 1458 thumbnails in total. Prime Video's homepage is magnitudes larger than that of its competitors, with nearly 28000 thumbnails. It is important to note that, on all three services, a single title can and often does appear multiple times at different positions on the same page, which explains the lower count of unique titles on each homepage. On average, a title appears twice on a Netflix or Prime Video homepage, and as much as 12 times on Prime Video. The degree of recurrence is lower on Disney+, where on average a title appears 1.29 times on the homepage.

FIG. 2 – COMPOSITION OF ROWS

		Number of thumbnails per row			
	Number of rows	Minimum	Average	Maximum	Standard deviation
Netflix	38	10	38	75	11
Prime Video	144	1	194	499	175
Disney+	27	6	30	149	24

The size of a homepage can also be expressed using its total number of rows and the number of thumbnails those rows contain (Fig. 2). Here, we see that Prime Video's homepage is both the one with the most rows and the one whose rows tend to contain the most thumbnails. The standard deviation in the number of thumbnails per row indicates the extent of each service's adherence to a strict row length formula. The rows on Prime Video's homepage show the greatest variations in length, while Netflix and Disney+ aim to present a more horizontally uniform homepage, even going as far matching the number of rows with the average number of thumbnails per row.

Introducing the visibility score

A score from 0 to 100 is automatically assigned to each thumbnail on the homepage. It takes into account the position of the thumbnail in relation to the top and the left edges

of the page, as well as its size on the screen, expressed in pixels. A score of 100 means that the thumbnail appeared at the very top of the page and filled the user's whole screen. The lower the score, the less visible the thumbnail was on the page. Titles often appear multiple times on the same homepage, so the total visibility score for a single title can be above 100. This simple operation makes it possible to establish rankings of the most visible titles on one or multiple homepages. If metadata is available for all titles, the visibility score can also serve to produce rankings of the most prominent genres, languages, countries of production etc.

It is important to note however that the visibility score is not absolute, as it is relative to the overall size of the service's homepage. This means that for example a score of 80 on Netflix does not correspond, with regard to the thumbnail's absolute position on the page, to a score of 80 on Prime Video. The relative nature of the score is a necessity considering the differences in size of each homepage. Had the score been absolute and calibrated to Prime Video's homepage size for example, the vast majority of the thumbnails on Netflix and Disney+ would have been assigned a score close to 100.

Measuring the amplitude of change on a homepage

Before diving into the prominence of specific content types and analysing the more "cultural" make-up of each homepage, we'll look at the degree of change that homepages undergo from one week to the other. Put more simply, we analyse the extent to which titles disappear and others appear and how much positions change from one homepage to the next. Note that this does not reveal anything about the effects of recommender systems, as the homepages that are collected are all "default" homepages, meaning that they are shown to a newly-created "blank" user profile each week.

FIG. 3 – RECURRENCE OF TITLES OVER THE PERIOD

				Titles that have appeared...			
	Nb of unique titles (4 weeks combined)	Average share of recurring titles from previous week	Average share of newly-suggested titles per week	1 week	2 weeks	3 weeks	4 weeks
Netflix	1 081	76%	24%	26%	22%	12%	40%
Prime Video	15 695	95%	5%	13%	8%	6%	72%
Disney+	965	78%	22%	32%	12%	23%	34%

Prime Video stands out again with a relatively limited turnover of titles on its homepage (Fig. 3). On average, 95% of titles featured on Prime Video's homepage were

already present on the homepage the week before, in contrast to Netflix's 76% and Disney's 78%. This may be due in part to the sheer size of Prime Video's homepage. With more than 14000 titles appearing on the homepage, the pool of titles that could take their place must surely be quite small.[1] What's more, new releases that are shown on the homepage inevitably get drowned out by titles that were there the week before.
On all three services, a title is more likely to appear for one week only than for two or three weeks.

FIG. 4 – AVERAGE DEGREE OF WEEKLY CHANGE IN THE COMPOSITION OF THE HOMEPAGE

	Degree of change in composition
Netflix	45
Prime Video	25
Disney+	37

The simple "present or absent" binary for titles on the homepage is however too limited to provide a full account of the degree of change that a homepage undergoes over a period of 4 weeks, as it does not factor in the movements and repetitions of those titles on the homepage. For this purpose, we use the aforementioned visibility score, which already takes into account the position of each thumbnail on the page. Thus we express the degree of change in composition of a homepage as the average amplitude of weekly change for each title's visibility score (Fig. 4). Using this new formula, Netflix' homepage appears to be the one with the highest degree of weekly change in its composition, followed by Disney+ and Prime Video. In other words, Netflix seems to present the most dynamic default homepage for new users, compared to Disney+ and Prime Video.

The prominence of various types of content

Using available metadata on titles in conjunction with our visibility score allows us to establish rankings of the most visible content types, countries of production, languages, or even directors and actors.

[1] More data, and especially the full catalogue of titles available via Prime Video, would be needed to confirm this hypothesis.

FIG. 5 – VISIBILITY OF FILMS AND SERIES ON THE HOMEPAGE

	Content type	Total visibility score	Avg visibility score
Netflix	series	192 347	54
	movie	89 262	42
Prime Video	series	749 681	59
	movie	2 989 379	47
Disney+	series	79 856	55
	movie	78 532	52

Firstly, looking at the prominence of different formats on the homepage reveals a higher visibility for series on all three services, albeit to varying degrees (Fig. 5). On average, thumbnails for series are far more prominently placed than thumbnails for movies on Netflix and Prime Video. Disney+ shows the lowest discrepancy between series and movies, with movies being on average almost as prominent as series on the homepage.

FIG. 6 – MOST VISIBLE COUNTRIES OF PRODUCTION ON THE HOMEPAGE

Netflix

Country	Total visibility score	Avg visibility score	Nb of unique titles
US	147 578	49	570
France	39 826	47	137
UK	32 057	44	129
Japan	25 835	54	88
South Korea	17 117	52	67
Spain	10 239	53	35
Canada	8 126	45	46
Australia	4 790	43	24
China	4 036	37	24
Germany	3 917	41	21

Prime Video

Country	Total visibility score	Avg visibility score	Nb of unique titles
US	2 204 301	50	5 202
France	652 220	43	2 119
UK	496 754	49	1 136
Canada	242 566	51	618
Germany	206 353	49	538
Italy	141 473	44	446
Japan	130 759	49	386
Spain	124 382	52	279
Belgium	92 464	44	316
Australia	73 674	53	173

Disney+

Country	Total visibility score	Avg visibility score	Nb of unique titles
US	137 693	53	702
UK	22 260	55	111
France	8 243	59	51
Canada	4 771	51	35
Australia	3 210	50	13
Japan	2 942	70	26
Germany	2 702	49	18
Spain	978	47	6
India	912	54	6
Ireland	779	56	6

Unsurprisingly, the US is the country whose productions are the most prominent on all three services' homepages (Fig. 6). France, the country the services were accessed from, is second on Netflix and Prime Video, but only third on Disney+. East-Asian productions (Japan and South Korea) appear more prominently on Netflix than on Prime Video and Disney+. This is in line with Netflix' content strategy, which relies heavily on titles from that region. The presence of Canada in all three rankings might be

considered surprising but, on closer inspection, the main reason seems to be the high number of Canadian co-productions with the US. The same goes for Australia on all three services. Belgium possibly owes its status as 9th most visible country of production on Prime Video to its attractive tax shelter.

Conclusion

We have seen that the biggest difference between the homepages of the three services lies in their size. The much larger size of Prime Video's homepage can be interpreted to reflect Prime Video's position on the market as an aggregator, while Netflix and Disney+ have "walled garden" offerings. Prime Video's editorial team does not have full control of their own homepage, as Prime Channels are given the ability to curate their own rows. Prime did trial a much smaller homepage starting in October 2023 (around 4000 thumbnails), but reverted to the previous, much bigger version in January 2024. It is unknown whether this is due to better performance from the bigger homepage or to Prime Video's aggregator model forcing them to flood the homepage with content to satisfy partners' expectations.