

TV's Next Paradigm

UNDERSTANDING GLOBAL DEMAND FOR CONTENT



How popular, really, is *House of Cards* in Germany?

Parrot Analytics knows.

With the rapid proliferation of content distribution platforms and the unprecedented levels of consumer fragmentation, existing television measurement services are rapidly becoming obsolete. Surveys and panel-based measurement are no longer sufficient to provide the global view of consumer demand for content across platforms. 'Big data' finally has to come of age for the television industry.

Demand Rating™, from *Parrot Analytics*, is the way forward to truly understand global audience demand for content and accurately leverage content investments across the globe.



“House of Cards” is on everyone's mind these days, with Emmy and Golden Globe wins, critical accolades and the admission by Netflix that original content is fueling its explosive growth. And yet no one besides Netflix knows exactly how popular “House of Cards” really is – not in the United States, not overseas, not in Germany.

Until now.

A new company called **Parrot Analytics** offers content owners and vendors a single measure comparing the demand for content in all markets across all platforms, even those from proprietary over-the-top providers such as Netflix and Amazon. **Parrot Analytics** captures a significant amount of content consumption and engagement wherever and whenever it occurs, across no fewer than 249 countries. Using the power of artificial intelligence and hundreds of billions of data points, **Parrot Analytics** accurately measures what people are interested in viewing –unlike traditional performance ratings, which merely track what people have already watched. Through carefully monitoring, weighting and analyzing what the company calls "demand expression platforms" – everything from activity on peer-to-peer

networks to Facebook posts, Instagram shares, YouTube video views and Tumblr conversations to micro-blogs, critic and fan ratings, Wikipedia views and Popcorn Times streaming – **Parrot Analytics** is able to measure consumer demand for content on all platforms, in real time, across the globe, in specific regions, territories, and countries.

This means that whether a person in, say, Germany, expresses demand for “House of Cards” by commenting about it on Facebook, reading about it on Wikipedia or downloading an episode on BitTorrent, **Parrot Analytics** is there to measure it and then, through artificial intelligence, turn that measurement into an actionable metric.



Content sellers

around the world are able to assess geographic-specific demand for their content, allowing them to package, market and distribute their movies and TV shows in the most effective and efficient way, negotiating the best prices across markets and maximizing the monetization of their libraries.

For content buyers

the applications are equally powerful. Assessing geographic-specific demand for content can now drive market-specific content acquisition, pricing decisions, marketing and monetization strategies to increase the yield from that content.



"In a rapidly changing world, traditional survey and panel-based measurement is becoming increasingly difficult, due to the emergence of so many new viewing platforms in so many new markets," said **Parrot Analytics** co-founder and CEO Wared Seger. "This is where a 'wisdom of the crowds' approach is needed, harnessing the power of data science to produce, for the very first time, a global demand rating system that covers content on all platforms, in all markets, regardless of whether a show is airing on a broadcast station in Japan or on Netflix in the United States."

Indeed, with continued platform proliferation, consumer fragmentation and the decreasing effectiveness of standard measurement services,

Parrot Analytics offers an innovative solution to the demand conundrum, a perplexing problem that has content providers scratching their heads and saying to themselves, "It used to be so easy." And it once was easy: We watched movies and TV shows on television or home video, and telephone surveys and sales and rental data told us how popular these movies and TV shows were.

Now, with the explosion of distribution platforms and viewing options, assessing demand empirically is virtually impossible for the industry. We rely on the same old methodology, we rely on data that is outdated by the time we get it, and we miss a large chunk of the business – because of proprietary platforms that won't share their consumption numbers.

"In a rapidly changing world, traditional survey and panel-based measurement is becoming increasingly difficult, due to the emergence of so many new viewing platforms in so many new markets."



Wared Seger
Co-founder and CEO
Parrot Analytics



The lack of an accurate assessment of demand renders the industry's entire economic model inefficient and opens the door to poor decision-making processes. Money is lost or wasted on bad deals.

How can a studio accurately charge for a specific film or TV series if it has no idea what the demand is for it in a particular country?

How can a broadcaster or SVOD provider accurately invest in content with little knowledge of how it will perform on a market-specific basis?

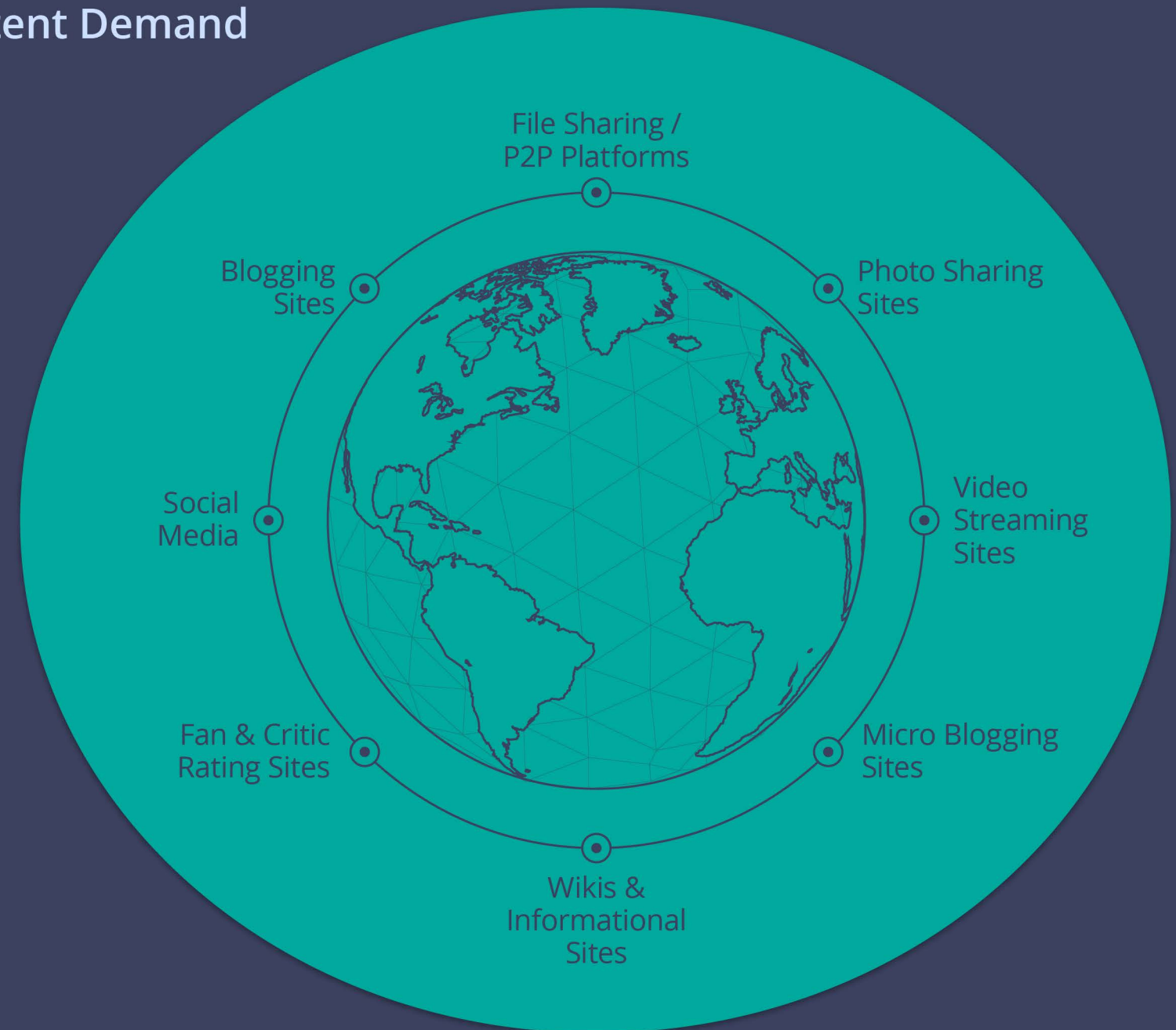
Parrot Analytics solves the demand conundrum in a way no other measurement service can. Beyond collecting and processing billions of data points, Seger says, "the real breakthrough is the artificial intelligence. After three years of fine-tuning the algorithms, our data scientists have built a self-correcting machine learning platform capable of combining a trailer view, a full-episode BitTorrent download, a Facebook 'comment', an online stream and a Wikipedia page edit –on a country-specific basis, and in real time manner– that provides an accurate measurement of the demand for any title, in any country, on any platform, at any time."

Though harnessing advanced data science and sophisticated artificial intelligence, **Parrot Analytics'** demand measurement system is rooted in basic human behavior: We tend to talk about, comment on and research things we like. And with the emergence of so many demand expression platforms on the Internet, what we post or access can be quite revealing. Indeed, a 2013 research report from the University of Cambridge in England found that, in the author's words, "easily accessible digital records of behavior, Facebook Likes, can be used to automatically and accurately predict a range of highly sensitive personal attributes including: sexual orientation, ethnicity, religious and political views, personality traits, intelligence, happiness, use of addictive substances, parental separation, age, and gender."

There are now so many ways for us to express our demand for something. If we like a television show, we search for it, read about it, watch a trailer or a clip, discuss it with our family and friends – all before we even watch it. From there, we can go on to stream it, rate it, express our opinion on it, further discuss it and ultimately decide whether we want to keep watching it or not. All of that activity – from researching the show prior to watching it all the way to streaming it and discussing it post-viewing – **Parrot Analytics** captures in a single rating system expressing our demand for the content.

Global Content Demand

Fig. 1. People express demand for content through various "demand expression platforms" that **Parrot Analytics** captures.



Parrot Analytics' demand measurement system consists of two components:

- ▶ **Demand Rating™** is used to compare the demand for a single title across multiple markets.
- ▶ **Demand Expressions™** are used to compare the demand for multiple titles in the same market.

Neither comparison can be accurately answered through conventional performance-ratings services. Existing linear measurement does not translate well across countries, while OTT measurement is limited, at best – and that's the fastest-growing segment the market. According to DEG: the Digital Entertainment Group, the amount of money consumers spent on subscription streaming services like Netflix in the first half of 2015 shot up 25%, to \$2.38 billion, up from \$1.91 billion in the first half of 2014. And that total doesn't include Amazon, which is making huge strides in the OTT market with Amazon Prime.

Audiences are quickly becoming more fragmented around the globe and the television industry's ability to understand them is just as rapidly diminishing.

Let's go back to our example of "House of Cards" in Germany. As people in Germany download and watch the latest season, stream it on Popcorn Time, like and comment on the "House of Cards" Facebook page, read and discuss it on other social media platforms, blogs, fan and critic rating sites, or read the latest edits on Wikipedia, *Parrot Analytics* analyzes that activity down to each interaction.

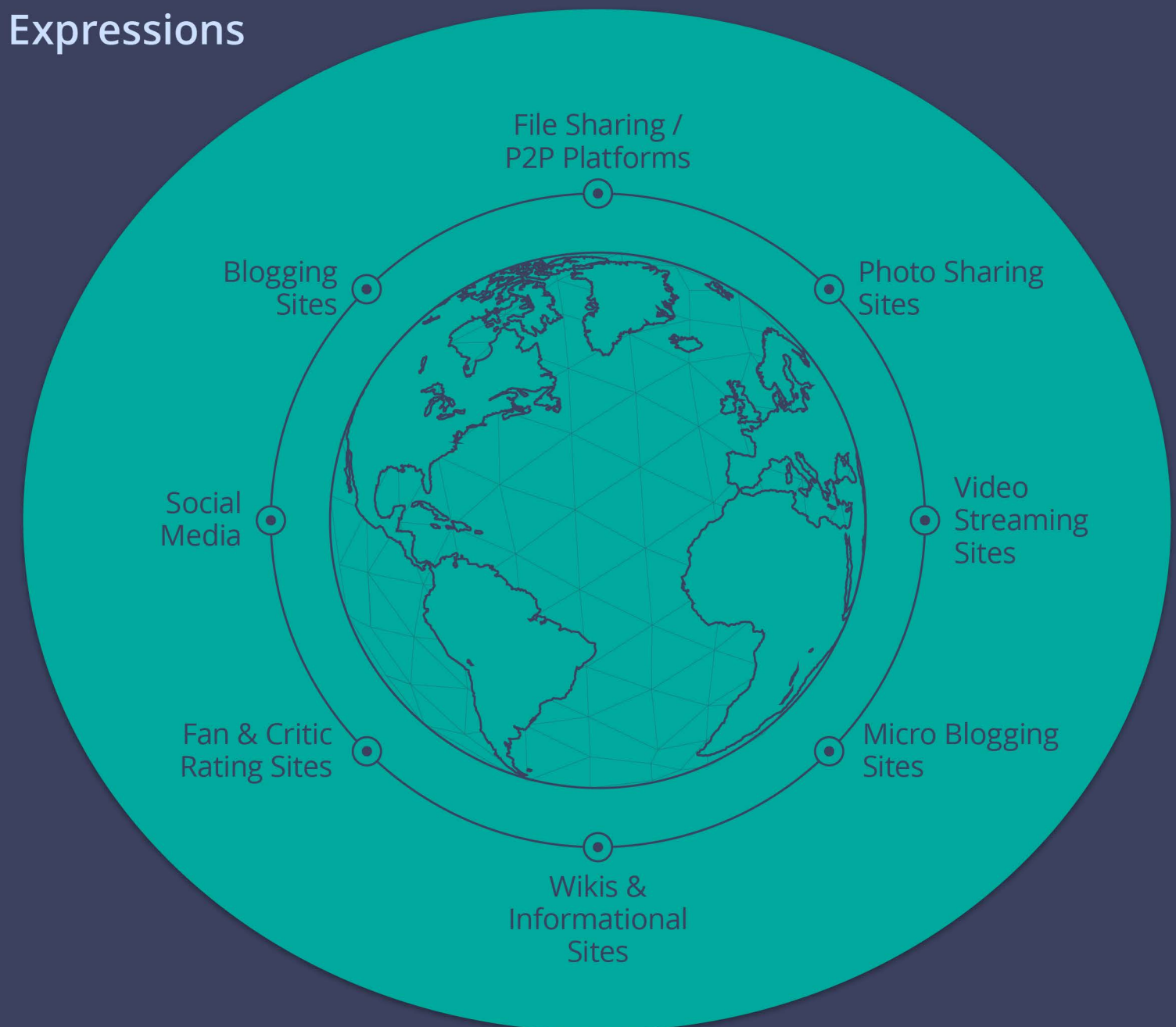
These types of interactions – streams, comments, likes, posts, views, downloads, etc. – are then summed up on regular time intervals, creating totals for "House of Cards" in Germany that are fed into the algorithms for **Demand Rating™** (relative measure of demand across markets) and **Demand Expressions™** (absolute measure of demand within a market). The algorithms are trained on basic human behavior, so the interactions are each analyzed for content and weighted by effort of demand. For example, a viewer in Germany saying that they really want to watch the second episode of House of Cards' third season indicates stronger demand than simply saying they thought the first episode was OK. Similarly, a full-episode stream indicates stronger demand for a show than a simple 'like'. In addition, the past demand for "House of Cards" in Germany is also taken into account to provide the most accurate view of the empirical audience demand for House of Cards in Germany and how it is changing over time.





Weighted Demand Expressions

Fig. 2. People express demand for content in different ways – some more meaningful than others – that *Parrot Analytics* analyzes and combines into a single country-specific measure.



The outputs of the sophisticated demand measurement process above are real-time **Demand Rating™** and **Demand Expressions™** for “House of Cards” in Germany. This process is carried out at scale for thousands of shows in every single country in the world, regardless of what platform the shows air on. This is how the world’s first and only cross-platform, country-specific content demand measurement system is produced. With the most comprehensive global dataset from hundreds of millions of people and an artificial intelligence platform that mimics the human brain, **Parrot Analytics** comes closest to analyzing every episode view, living room discussion and water-cooler conversation on the planet, simultaneously. Through **Demand Rating™** and **Demand Expressions™**, that vast global information flow is converted into actionable metrics with unprecedented benefits for the entire industry value chain, from content investors, producers, distributors and broadcasters to OTT providers, advertisers and consumer product companies.

The global nature of **Parrot Analytics’** demand measurement is key. **Demand Rating™** and **Demand Expressions™** enable stakeholders across the industry’s

value chain to answer different business questions. The snapshot provided in Figure 3 illustrates this. For example, if one wondered which country had the highest demand for “Orange is the New Black” on August 28th 2015, looking at the **Demand Rating™** for the show on that day across different markets would reveal that Australia comes in highest. Similarly, if one wondered what the relative demand between “Orange is the New Black” and “Sense8” was in Germany on August 28th 2015, looking at the **Demand Expressions™** for both shows would reveal that “Orange is the New Black” had 3.5x as much demand as “Sense8” in Germany on that day. The same type of analysis can be carried out for any combination of shows and countries and time periods, something the industry has never been able to do.

The advantages over traditional performance ratings are clear. **Parrot Analytics** measures consumer demand as it happens, instead of taking a post-mortem look at what people have already watched. **Parrot Analytics** also taps into the platforms where people express demand, instead of relying on dated methodology such as focus groups and people’s recollections of what they might have watched three Sundays ago at 7 p.m.



In addition, whereas existing measurement services cannot rate a show that has yet to air in a particular market, *Parrot Analytics* can. Perhaps most importantly however, *Parrot Analytics* can measure the demand for content that is exclusively airing on OTT platforms without relying on those platforms releasing their data.

Recent attempts have been made to measure panels of OTT platform subscribers to estimate the overall consumption on those platforms, however such attempts are cumbersome, statistically unreliable and cannot be feasibly scales to every country around the globe (Netflix, for example, has plans to be present in 200 countries).

DEMAND RATING™

A relative measure of demand across markets.

| Content | Date |
|-------------------------|-----------------|
| Orange is the New Black | August 28, 2015 |
| Australia | 81.48 |
| France | 78.28 |
| United States | 76.60 |
| Germany | 66.63 |
| South Korea | 50.56 |

DEMAND EXPRESSIONS™

An absolute measure of demand within a market.

| Content | Date |
|--------------------------------|-----------------|
| Germany | August 28, 2015 |
| Mr. Robot | 3,205,222 |
| Orange is the New Black | 2,819,342 |
| Sense8 | 807,560 |
| Star Trek: The Next Generation | 620,734 |
| Misfits | 322,486 |

Global Demand Rating System

Fig. 3. *Parrot Analytics* converts global consumer demand into actionable country-specific metrics in **Demand Rating™** and **Demand Expressions™**.

Parrot is changing the paradigm from panel-based measurement so that the industry can understand consumer demand for content on a country-specific basis.

There are a number of other companies that measure social media chatter, but none cover as broad a spectrum of Web conversations, actual content consumption and engagement as **Parrot Analytics**. For example, **Parrot Analytics** has numerous patent-pending technologies to capture different forms of file-sharing and peer-to-peer activities that take place on the Internet. In addition, whereas other companies crudely add up total 'sentiment' leading to non-actionable digital ratings, **Parrot Analytics** has invested years of R&D on understanding the consumer demand spectrum to be able to empirically measure demand for content. The company is developing state-of-the-art text mining algorithms that are able to extract valuable consumer demand information (across the negative-positive spectrum) from the most populous content-centric communities of consumers. Whether you are expressing demand for a television show through social media or by posting on Wikia TV, **Parrot Analytics** has been able to break new grounds in the industry, combining all the different forms of demand expression activities into a single ubiquitous measure of demand for content.

Parrot Analytics also has better science behind it. Instead of simply reporting on all the separate indicators of demand (with non-actionable metrics like "your video has 4,000 new views") or simply adding up all the different demand indicators (into an aggregate digital metric that lacks context), **Parrot Analytics** researched how all these disparate variables contribute to the overall demand for content. This deep understanding of how demand for content is expressed allows them to create intelligent algorithms that combine all these demand indicators into a single, meaningful and actionable measure of overall demand. As David Boyle, EVP Insights at BBC Worldwide has noted, "existing measurement systems are effectively broken and Parrot Analytics is doing something no one else in the market is doing. They are able to turn the vast volumes of consumer demand data out there into actionable insights that greatly aid our ability to identify and understand content opportunities that resonate in various markets around the globe."



The business applications of understanding global demand for content are widespread. For example, *Parrot Analytics* was recently approached to assess the demand for Netflix original series in Japan, Italy, Portugal and Spain ahead of Netflix's launch in these markets; i.e. prior to the series having aired in these markets.

To do this, **Demand Rating™** was used to compare the shows across markets – see Figure 4 (while **Demand Expressions™** would be used to assess the absolute demand for each show in each market). It turns out, the desire to watch original Netflix

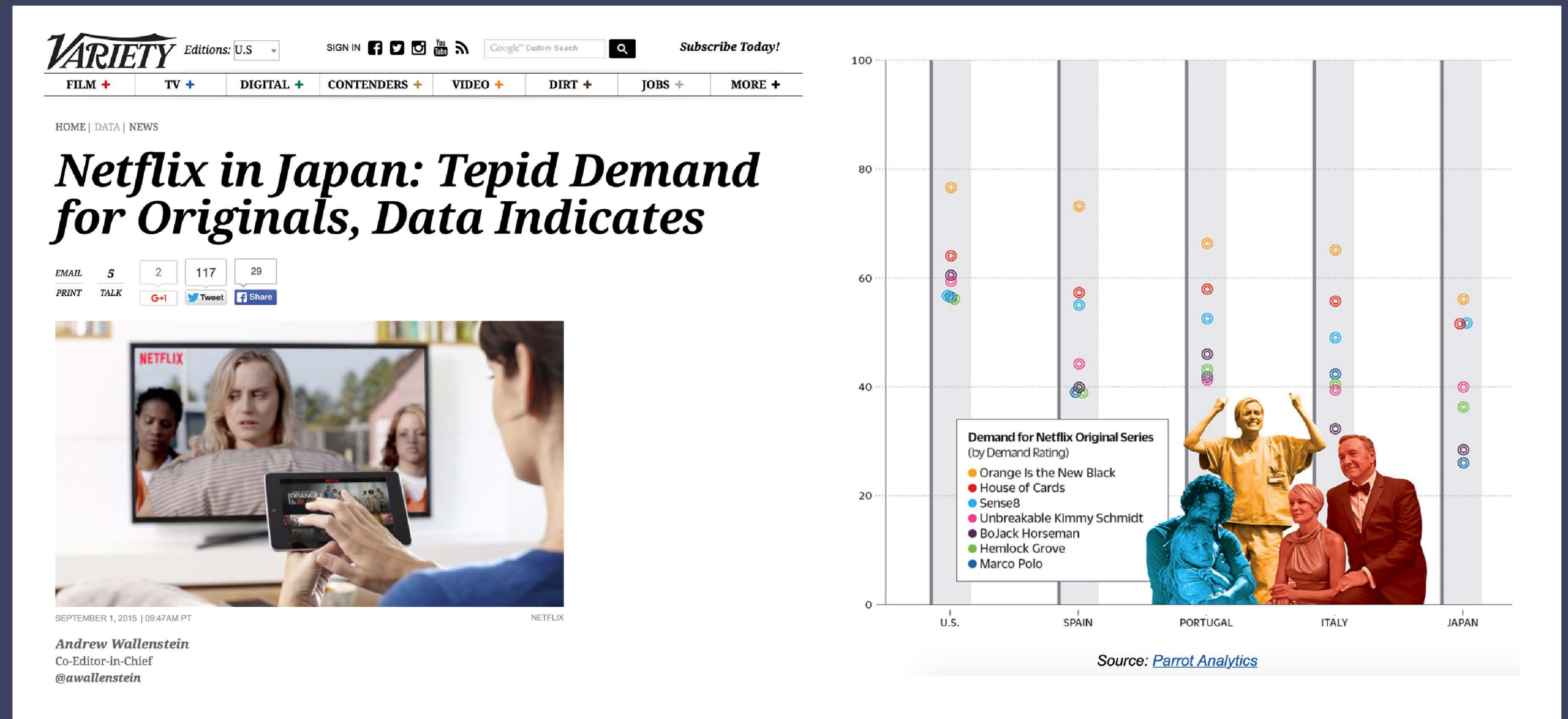
series in Japan isn't nearly as high as it is in other countries Netflix had been planning to expand to.

"Orange is the New Black" generated the most demand for a Netflix original series on a global basis, but while it drew a 73.11 **Demand Rating™** in Spain during the August 3rd-16th period, in Japan it only scored a 56.05. The case was similar for all Netflix original series during that time period. *Parrot Analytics'* demand data also showed that Italy had the second-lowest demand for Netflix's digital original series out of its pre-launch markets at the time.



Was it then a coincidence that, since Variety published *Parrot Analytics'* data, **Netflix** commissioned “Netflix Teams With SoftBank For Japan Launch; Content Partnership Muled” and “Netflix Launches in Italy”.

Parrot Analytics' global demand measurement opens new horizons that match the television industry's rapid advancement. In such a fragmented landscape, comparing viewer demand for six television series on different platforms has, until now, been impossible. How does the viewer demand for “Narcos” compare to the viewer demand for “Mr. Robot” in different parts of the world? With new players betting on original content production like **Amazon** and **Hulu**, it is now more vital than ever to be able to answer what should be a straightforward questions for the industry.



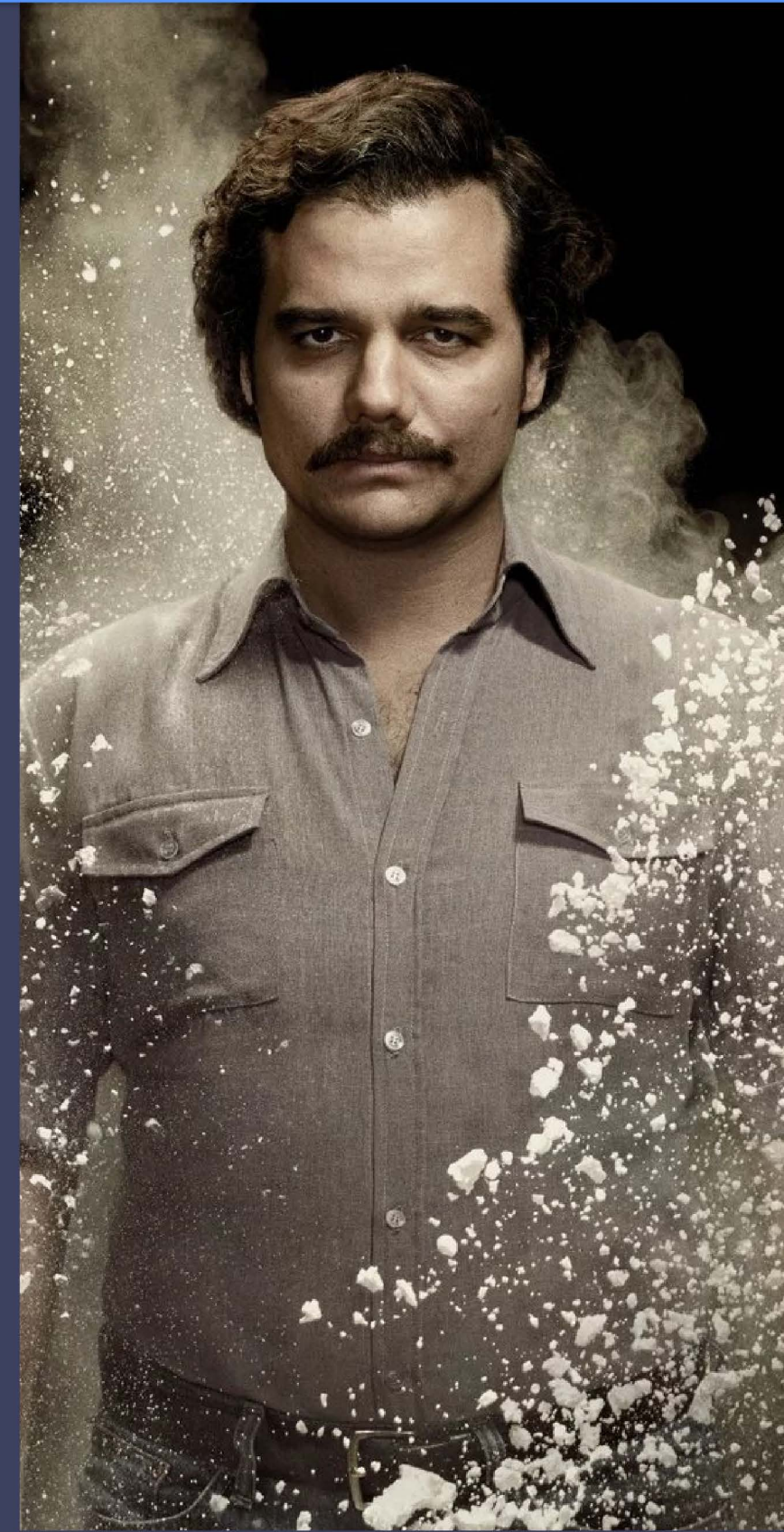
Demand for Netflix Original Series

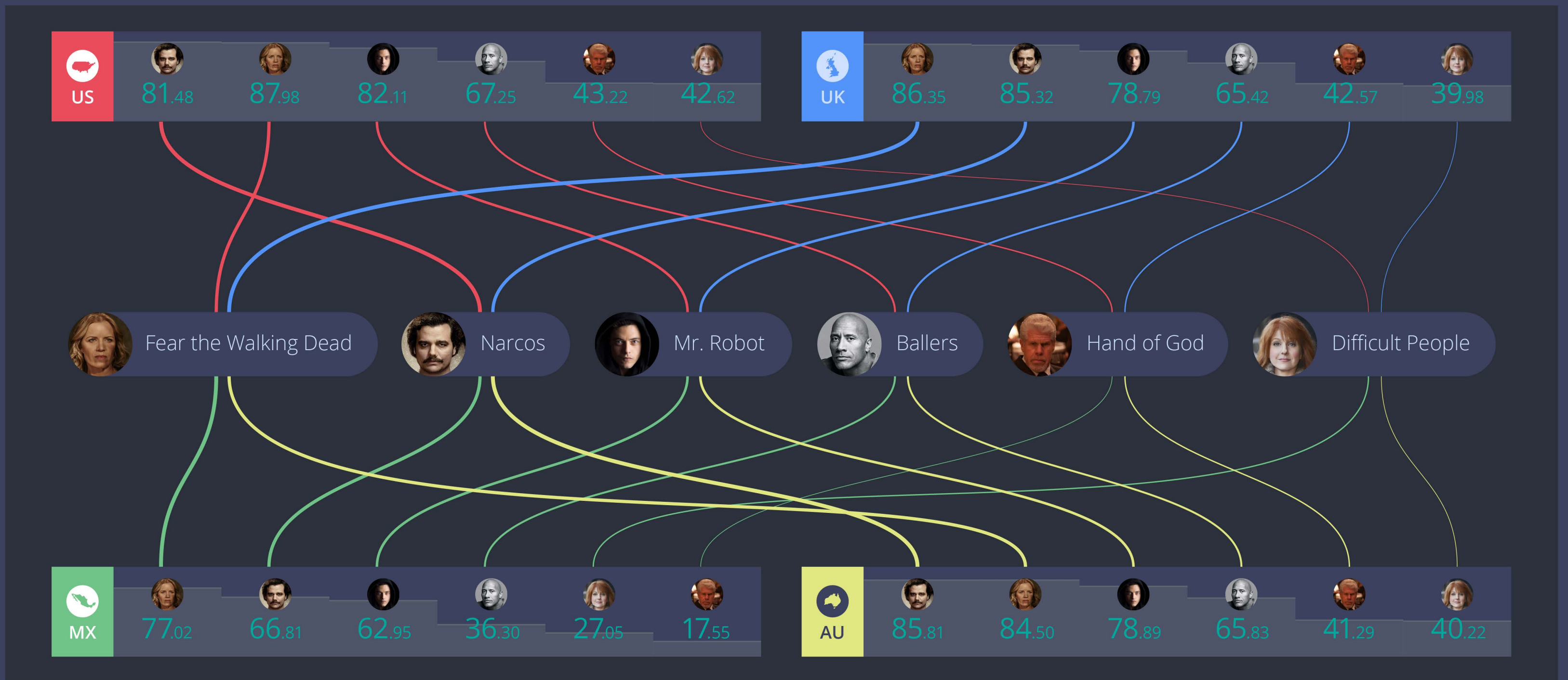
Fig. 4. For the very first time, the industry is now able to assess the demand for digital original series, even in markets where they are yet to air.

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Now we can.

At Variety's 2015 Entertainment and Technology Summit, *Parrot Analytics* revealed the demand for six television series ("*Fear the Walking Dead*", "*Narcos*", "*Mr. Robot*", "*Ballers*", "*Hand of God*" and "*Difficult People*") across four markets over the month of August. It was the very first time that the television industry was able to look at such cross-platform content side-by-side, on a market-by-market basis.





Global Demand for Cross-Platform Content

Fig. 5. Another industry-first; Parrot Analytics presenting the relative demand for content on different platforms in different markets.

The company then showcased the granularity of its demand measurement by presenting the absolute demand for each television series in each of the markets. For example, we can see in Figure 6 that AMC's "Fear the Walking Dead" (with 10.2m **Demand Expressions™**) had over twice the demand as Netflix's "Narcos" (with 4.7m **Demand Expressions™**) in Mexico during August, with HBO's "Ballers" is lagging significantly behind. Comparatively, Hulu's "Difficult People" and Amazon's "Hand of God" (with 44k and 32k **Demand Expressions™**, respectively) were almost unknown in Mexico during the same time period.

| Mexico | | Demand Expressions™ |
|--------|-----------------------|---------------------|
| | Fear the Walking Dead | 10,176,500 ▲ |
| | Narcos | 4,687,929 ▲ |
| | Mr. Robot | 3,450,201 = |
| | Ballers | 242,097 ▼ |
| | Difficult People | 44,244 ▲ |
| | Hand of God | 32,174 ▼ |

Demand for Series Across Platforms in Mexico

Fig. 6. "Fear the Walking Dead" dominates while Hulu and Amazon have significant ground to make up.



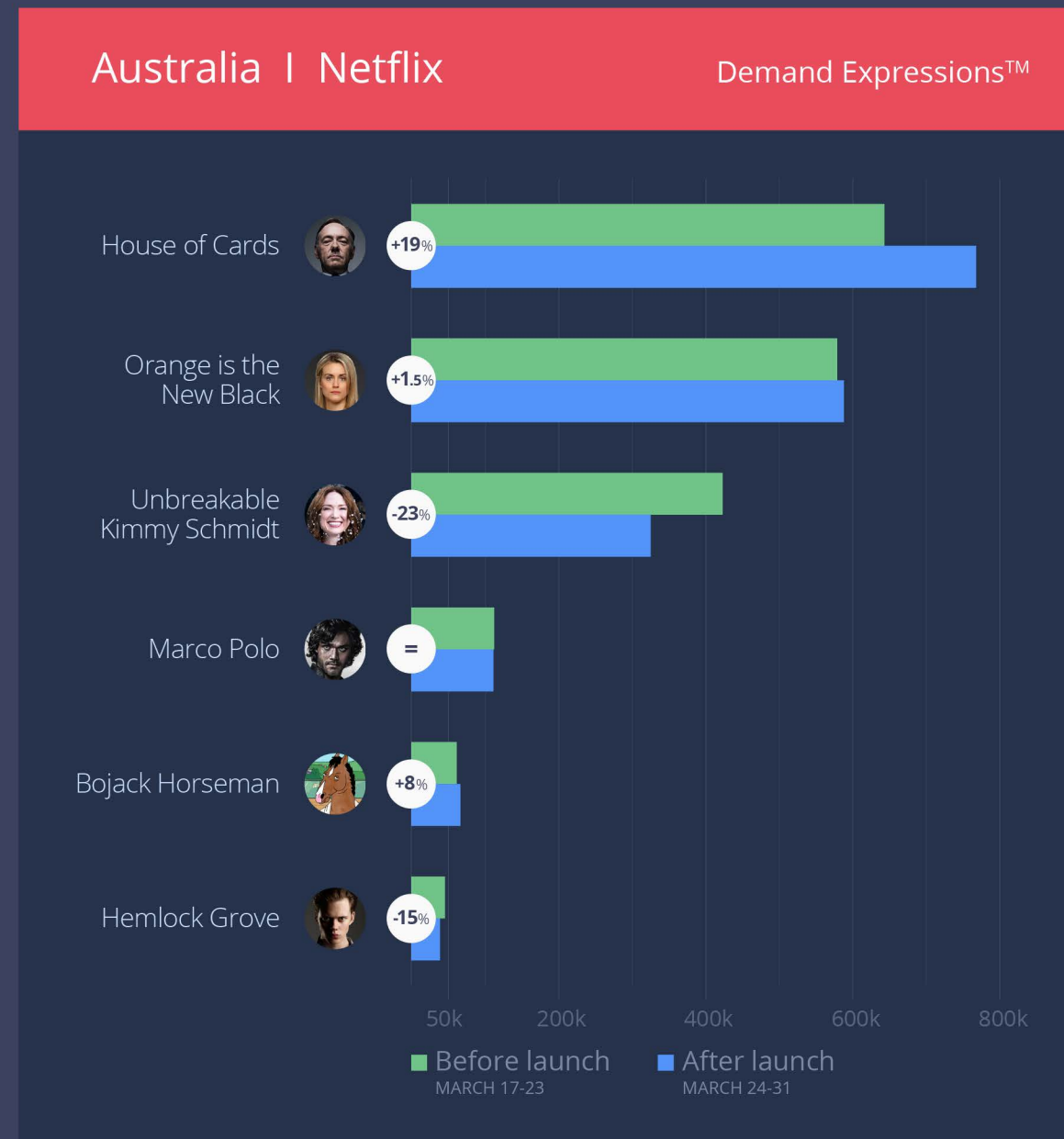
The applications run deeper. Because we can measure the demand for content on different platforms, before the platforms are even available to viewers, we can now also measure the impact of platform launches on the demand for their content. For example, how does Netflix's launch in a new market impact the demand for their original series in that market?

We averaged the **Demand Expressions™** during the weeks before and after Netflix's launch in Australia to observe the launch impact on demand for Netflix's original series in that market.

While one week post-launch is a short time period for any major impact on demand, we can observe an immediate post-launch increase in demand for "House of Cards" and a decrease in demand for "Unbreakable Kimmy Schmidt".

Looking at a longer time period post-launch could shed more light on how Netflix launch impacted the demand for these shows and why.

For example, was the drop in demand for "Unbreakable Kimmy Schmidt" in Australia due to consumers viewing it (post Netflix launch) and realizing they did not like it?



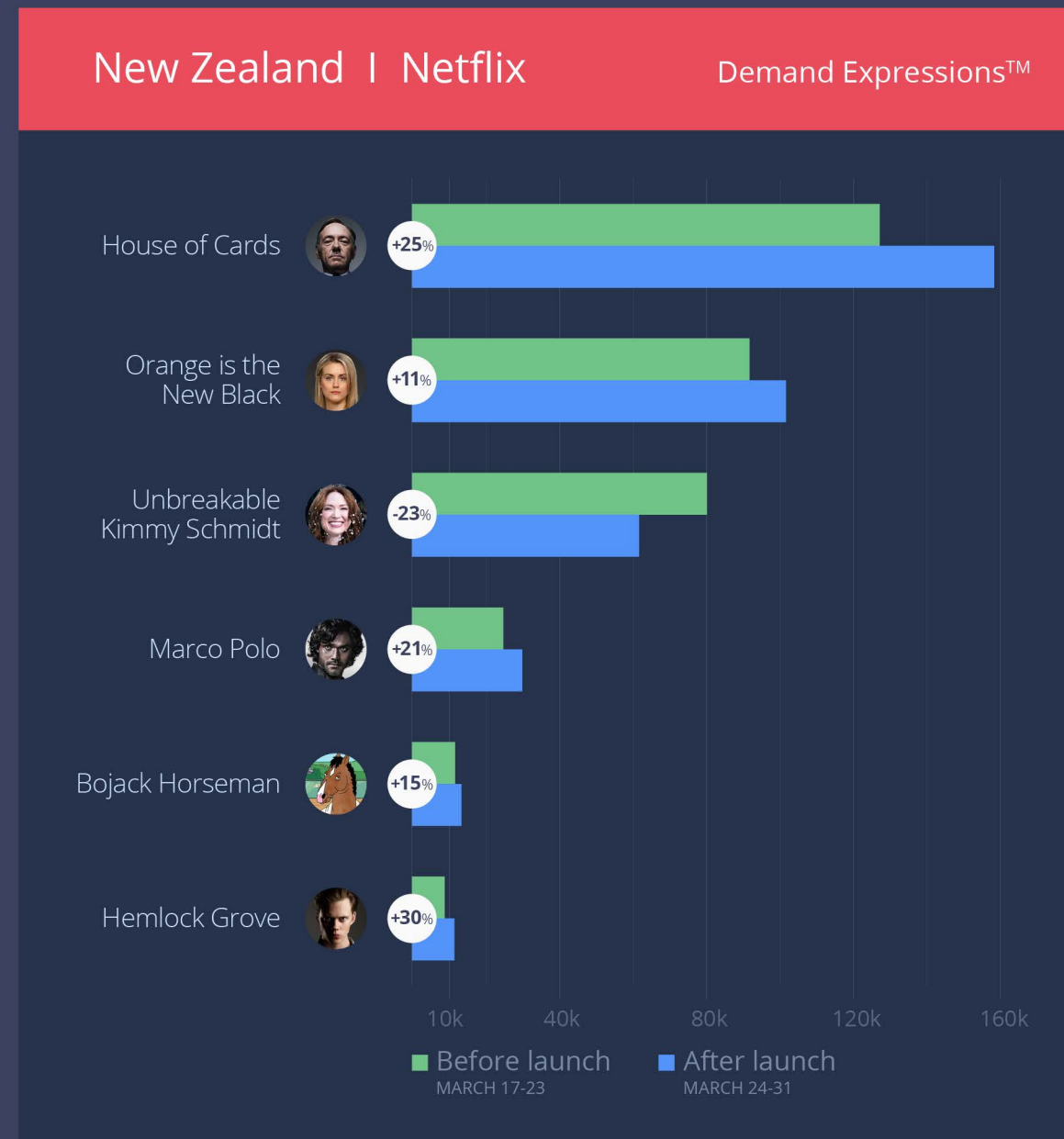
Impact of Netflix Launch in Australia

Fig. 7. Australians seem to enjoy "House of Cards" following Netflix's launch but switch off to "Unbreakable Kimmy Schmidt".



Repeating the analysis with New Zealand, we find predictably similar results: all shows but “Unbreakable Kimmy Schmidt” increased slightly in demand.

A more comprehensive analysis, including many markets and several months of data, would give greater insight into the long-term effects of Netflix launches on the demand for its original series.



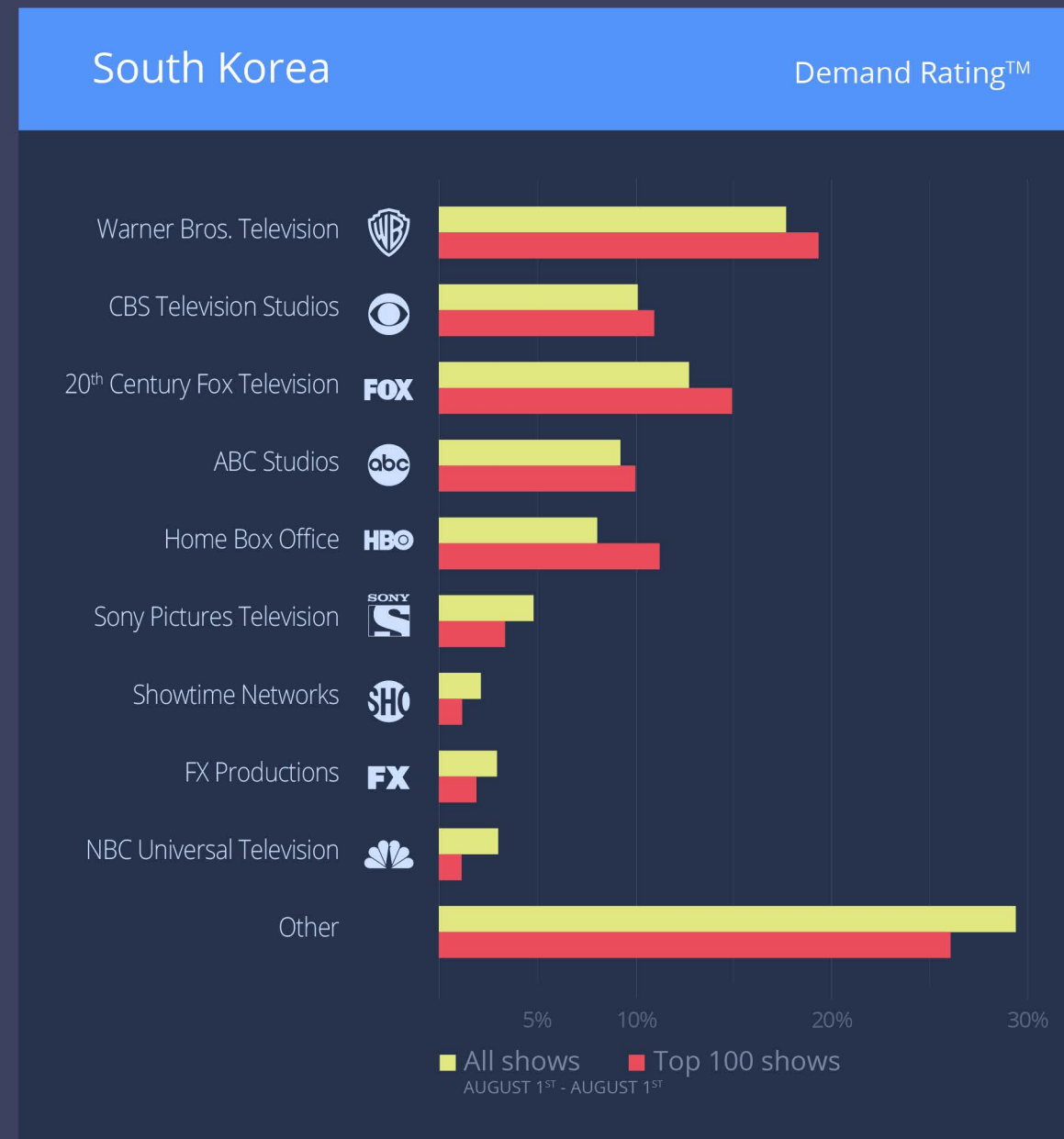
Impact of Netflix Launch in New Zealand

Fig. 8. Netflix’s launch in New Zealand increases the demand for their original series except for “Unbreakable Kimmy Schmidt”.



A ubiquitous demand measurement system allows the industry to get a more granular understanding of consumer demand across the globe than it has ever been able to.

As companies like HBO plan to roll out their OTT services globally, how do they go about assessing which markets to enter first and why? Looking at the country-specific demand for their content is one of the most empirical methods they can deploy to drive these strategic decisions. It can also provide the ultimate competitive intelligence tool, reporting on the demand for competing content, on all competitive platforms in all markets, in real time.

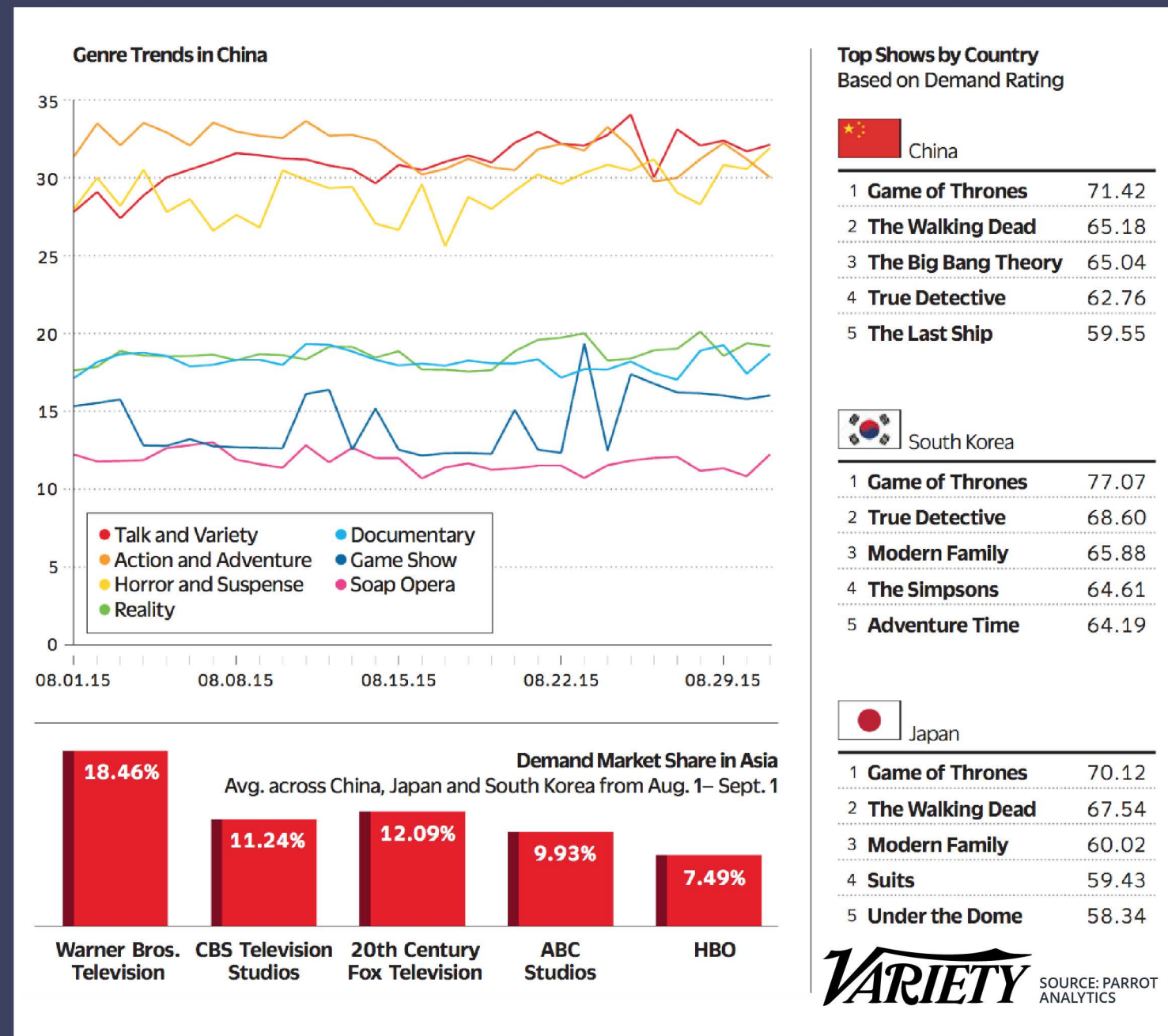


HBO Punches Above its Weight in South Korea

Fig. 9. HBO has a disproportionately larger share in the most-in-demand content in South Korea than most other content producers.



More granularly, which studio's content resonates the most with audiences in a particular market? Both at an individual title level, genre and studio level? Figure 10 shows a snapshot of content demand trends in China, Japan and South Korea, published in Variety's October 13th issue.



Content Demand Trends in Asia

Fig. 10. Despite being off-air, Game of Thrones continues to dominate in Asia, while 'talk and variety' shows see a surge in China.

As Variety, the respected entertainment industry trade, noted in September 2015, "Parrot's ratings are intended to help programming buyers and sellers make informed decisions about valuing programming in markets they are considering entry. It could also prove a useful proxy for actual consumption data, given big digital platforms are less than forthcoming about how many people are watching their content." Variety further praised Parrot for "monitoring an unprecedented range of digital indicators" and even used the company's findings in a story on the relative popularity of Netflix original series in different countries around the world.

Accurate assessment of demand helps content owners/producers determine fair pricing for their movies and TV shows. When studios license or sell a film, they have a far better idea of its value, going in – and when it comes time to renew a deal, they know current demand and are thus in a far

better negotiating position. **Parrot Analytics'** demand measurement also can help studio executives make a much better decision in greenlighting productions, and also provides an early insight into consumer trends.

Parrot Analytics also presents content owners and sellers with the unprecedented opportunity to gauge future demand in, say, a country where a certain television show is not yet on the air. As Seger explains, "When a television show has aired in the United States, for example, and is yet to air in other international markets, there are no existing measures of demand for that content in these markets. In contrast, **Demand Rating™** provides an empirical measure of demand for that show on a country-specific basis, before the show has even aired in these markets". That's because Parrot's approach to demand measurement captures multiple online forms of demand expression, not just current viewership.

"Parrot's ratings are intended to help programming buyers and sellers make informed decisions about valuing programming in markets they are considering entry."



Andrew Wallenstein
Co-Editor-in-Chief
Variety

The company's **Demand Rating™** system is also seeing rapid uptake from stakeholders across different parts of the industry's value chain. Linear broadcasters and SVOD providers around the world are now using **Parrot Analytics'** demand measurement to make more informed decisions to increase return on content investment. From assessing what content to buy for certain markets and what output deals provide the highest ROI to working out precisely how much they should pay per hour for a TV show based on its local market demand, content buyers are also finding cross-platform and country-specific demand measurement to be a strong competitive advantage in their business. In a marketplace where competition for eyeballs and subscribers is fiercer than ever, Parrot's country-specific demand measurement provides local content buyers and programmers the ability to stand out.

Then there are those that invest in content. Content investment funds are leveraging Parrot's demand measurement to assess global content demand trends to drive their strategy and investments. Advertisers, often on the other end of the content development life cycle, are increasingly using demand measurement to drive in-market sponsorships and ad buying. **Demand Rating™** and

Demand Expressions™ also provide a new holistic measure of advertising spend ROI by measuring the impact on demand on a market-by-market basis.

No wonder, then, that **Parrot Analytics** was hailed as one of the five hottest TV startups in the world in 2014 at MIPTV, the industry's most respected TV and digital content market – or that a year later they are named as '2015's Most Powerful Big Data Vendors in the World' by CIO Story.

Among the company's fast-growing client roster is BBC Worldwide, the commercial subsidiary of the BBC that monetizes BBC content in more than 100 markets, globally.

"The success of today's television companies is heavily dependent on increasingly sophisticated business models that provide data-driven intelligence about consumer viewing interests and behaviors," says David Boyle, EVP of Insight at BBC Worldwide. "**Parrot Analytics** is able to turn the vast volumes of consumer demand data out there into actionable insights that greatly aid our ability to identify and understand content opportunities that resonate in various markets around the globe. The ability to measure empirical demand for content enables BBC Worldwide to increase the yield on content."

"Parrot Analytics is able to turn the vast volumes of consumer demand data out there into actionable insights that greatly aid our ability to identify and understand content opportunities that resonate in various markets around the globe."



David Boyle
EVP Insight
BBC Worldwide

Having put together the world's most comprehensive global consumer demand for content, a world-class data science team and shareholders that include the founding Professor of MIT Media Lab and Pukeko Pictures, very few are better positioned than **Parrot Analytics** to leverage science to improve art.



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