PODTRAC

THE STANDARD FOR PODCAST ANALYTICS

PODTRAC'S PODCAST MEASUREMENT SERVICE

METHODOLOGY SUMMARY

INTRODUCTION

Podcasts are increasingly becoming part of mainstream media with breakout shows like Serial. In 2016, 21% of Americans listen to at least one podcast per month according to Edison Research. With growing audience comes increased interest from advertisers in the medium, and increased attention to measuring it.

When it comes to podcast measurement, questions important to podcast publishers and advertisers include:
- How are podcast audiences measured?
- How are podcast episodes measured?
- How are ads in podcasts measured?
- Which podcast publishers are attracting the largest audiences?

Podtrac introduced its innovative podcast measurement service at the first podcasting conference in 2005, along with the first white paper on podcast measurement. Podtrac Analytics have since become the industry standard used by more than 10,000 podcasts, including a majority of the top shows. Podtrac Analytics provides intelligence and consistency in measuring podcast audiences and ad delivery, and it is a system trusted by leading advertising brands and publishers.

Over the past ten years, publishers, networks and ad serving companies have entered the podcast space, some with little understanding of the technology behind podcast listening methods and how to accurately count and measure audience and ad delivery. This has created pockets of confusion in the podcast space among advertisers, publishers, talent, and ad serving companies relating to accurate audience counts, ad counts, and pricing.

To further advance clarity in podcast audience and ad metrics, in 2016 Podtrac:
- Separated its measurement services from its advertising services:
  - Podtrac for podcast analytics, http://podtrac.com
  - Authentic for advertising in top podcasts, http://www.authenticshows.com
- Published the first Podcast Industry Rankings
- Developed this update to its measurement white paper
- Continued to participate in the Interactive Advertising Bureau (IAB) as active members of the podcast committee's technical and business working groups

This document provides an updated technical summary of the technology and methods used by Podtrac for its podcast measurement services of the top podcast publishers. It also discusses its limitations as well as the inaccuracies and limitations of other analysis methods.

TABLE OF CONTENTS

1 - METHODOLOGY OVERVIEW

Podcasts Defined

Podtrac defines a podcast as a series of recorded audio or video files made available to Internet users through a distribution protocol known as Really Simple Syndication (RSS). Podcasts are cohesive, hosted shows, distinguishing them from other serialized online content like news feeds, music playlists, or video clips. The individual files, editions, or releases within a show are referred to as episodes.

How Listeners / Viewers Access Podcasts

Podcasts are accessed primarily through software applications called "podcatchers" that consume RSS feeds, alert listeners / viewers when new episodes are published, and facilitate (to varying degrees) the playback of those episodes.

The single most popular such podcatcher -- accounting for over half of all podcast consumption -- is the Apple Podcast App available on iPhones and iPads. This is a mobile device spin-off of Apple's desktop iTunes software, which runs on MacOS and Windows. As of 2016, Apple software together accounts for 65% of all podcast consumption. This is down from a high of almost 85% in 2010, but it still represents the lion's share of all podcast delivery.

In addition, there are several other non-Apple podcatchers in the space that each account for less than 5% of total traffic. Podcast episodes can also be accessed directly through publishers' websites and social media outlets.

How Podcasts Are Identified

Podtrac maintains a database of top podcasts and additional podcasts registered directly by publishers. These shows are identified by their RSS feeds, which include key descriptive information about the shows.
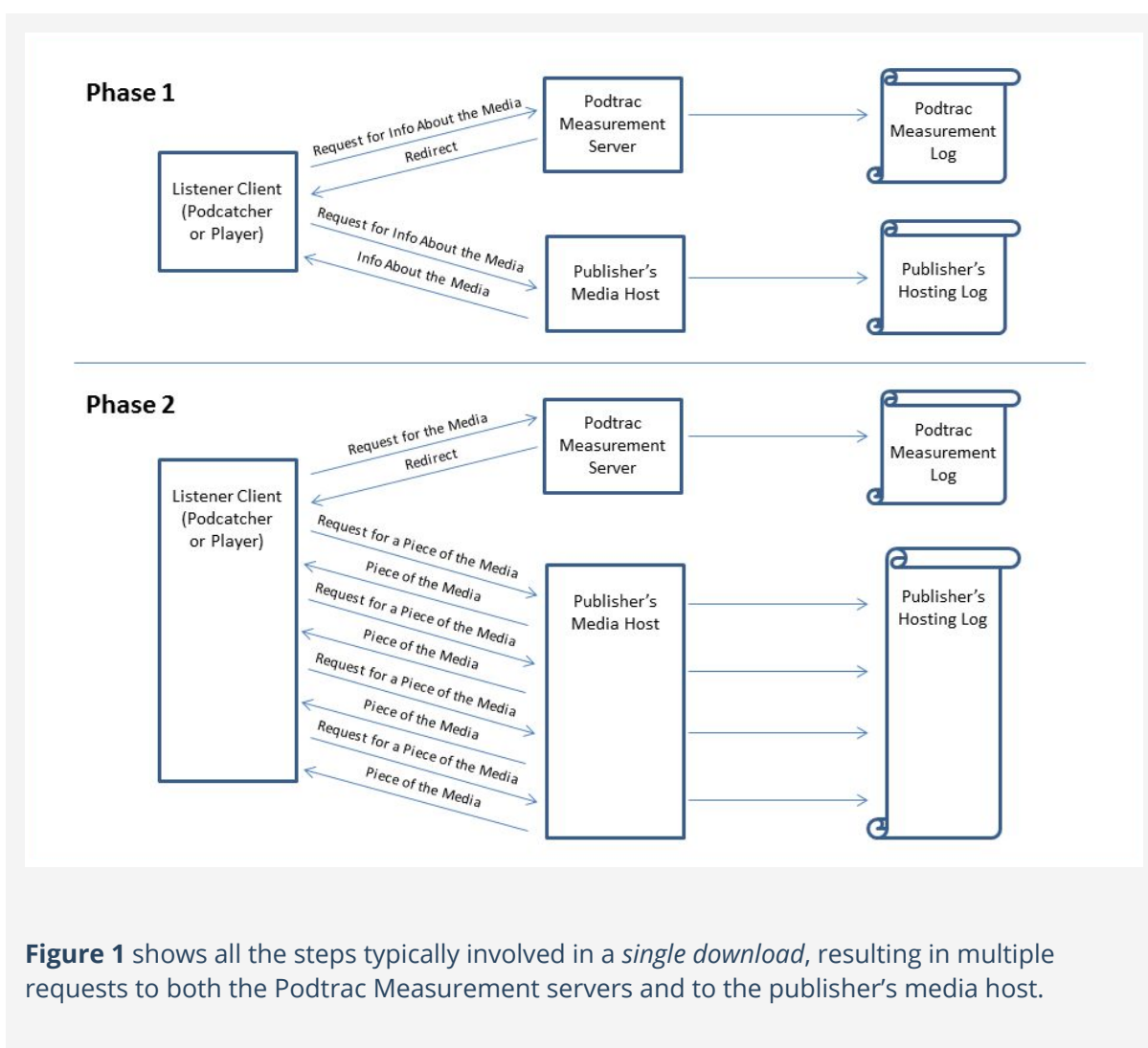
These RSS feeds also include information about each episode published by the show. Podtrac's system scans registered feeds daily (or in some cases, even more frequently) to maintain a current database of all episodes produced by all registered shows.

Measurement Process

To be measured by Podtrac, the episode "enclosure" URLs in a podcast's feed must be modified to include Podtrac's measurement prefix. This prefix acts as a redirect, allowing Podtrac to log a request to the media file before redirecting the client to the media itself. This redirect is instantaneous and transparent to the end user.

Episodes on the publishers' websites and social media outlets can also be prefixed and tracked, as long as those media URLs match the URLs in their shows' feeds.

Once Podtrac collects this raw data at the media file level, it analyzes the data using proprietary algorithms to eliminate redundant requests, bots, and fraudulent traffic to arrive at a consistent measure of actual listener / viewer activity. This provides advertisers and publishers with the most reliable data set for better understanding podcast user activity.

Figure 1 shows all the steps typically involved in a *single download*, resulting in multiple requests to both the Podtrac Measurement servers and to the publisher's media host.

In addition, Podtrac pulls in extra counts from certain third-party hosting services that cache podcast content for delivery directly to captive audiences, and that adhere to best practices in the tallying of their delivery counts.

Data Collected by Podtrac

Podtrac gathers the following information about each hit to a Podtrac-prefixed episode:

- the date and time of the request
- the IP address of the client making the request
- the URL of the target media file
- the source of the request (software and device)
- various other parameters in the HTTP request headers

Podtrac uses these data points in conjunction with episode data to filter and aggregate counts.

2 - PODCAST EPISODE MEASUREMENT

Measurement Output

Podtrac produces the following data on a Daily, Weekly, Monthly, and Quarterly basis for each measured podcast:

- **Unique Downloads -** This count represents the number of unique listeners who access a specific episode during the given time period. Podtrac identifies unique listeners through a proprietary algorithm that takes into account scenarios where multiple listeners can share a single IP address (when behind a business, university, or home firewall), while a single listener may utilize multiple IP addresses (e.g. - for mobile listening). Podtrac maintains the confidentiality of its algorithm to discourage audience count fraud.

- **Unique US Downloads -** This is a count of Unique Downloads from clients using IP addresses assigned to the United States. This statistic is maintained separately for the purposes of US-only analyses.
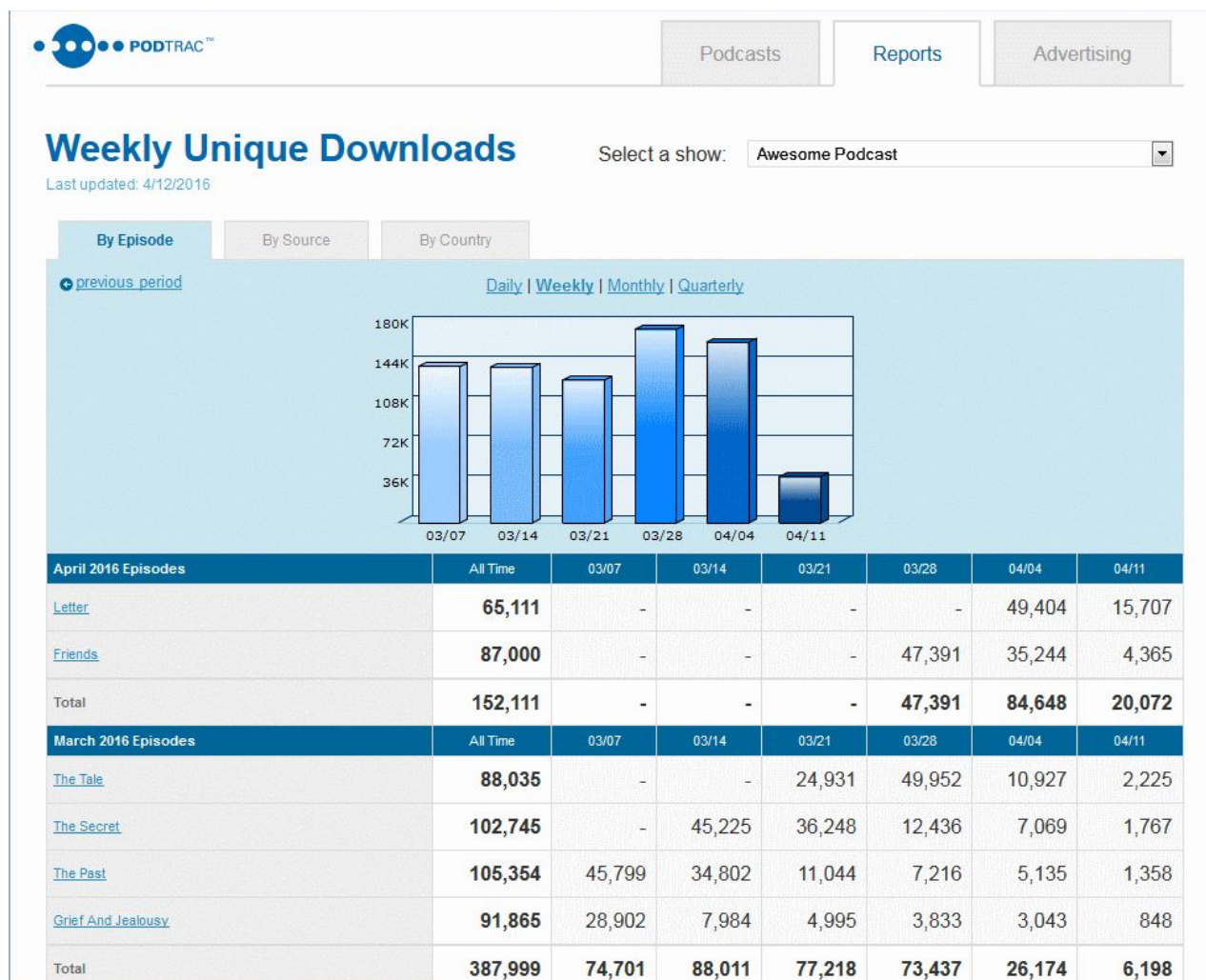
Weekly Unique Downloads
Last updated: 4/12/2016

April 2016 Episodes	All Time	03/07	03/14	03/21	03/28	04/04	04/11
Letter	65,111	-	-	-	-	49,404	15,707
Friends	87,000	-	-	-	47,391	35,244	4,365
Total	152,111	-	-	-	47,391	84,648	20,072
March 2016 Episodes	**All Time**	**03/07**	**03/14**	**03/21**	**03/28**	**04/04**	**04/11**
The Tale	88,035		-	24,931	49,952	10,927	2,225
The Secret	102,745	-	45,225	36,248	12,436	7,069	1,767
The Past	105,354	45,799	34,802	11,044	7,216	5,135	1,358
Grief And Jealousy	91,865	28,902	7,984	4,995	3,833	3,043	848
Total	387,999	74,701	88,011	77,218	73,437	26,174	6,198

Figure 2 shows an example Podtrac Measurement Report by Episode. Stats can be reported on a Daily, Weekly, Monthly, or Quarterly basis.

Limitations of the Podtrac Episode Measurement System

The Podtrac measurement system has the following limitations:

Data Collection

- Podtrac is only able to count requests that pass through its Measurement servers. Unprefixed media links "out in the wild" bypass the Podtrac servers, leading to undercounting of raw downloads. This can happen in one of two ways:

    - an implementation error on the part of the publisher (e.g. - forgetting to prefix website links, or only prefixing the episodes in one of several feeds for a show)

    - when a media file is cached on a third-party server for delivery directly to a captive audience, typically through a proprietary app or website

        (Notwithstanding the above, Podtrac does accept counts from certain prominent third-party media hosts that adhere to best practices for measurement tallies.)

- Podtrac associates data with podcasts via the URLs in that podcast's RSS feed(s). This association can fail in one of two ways:

    - alternate URLs for the episode (e.g. - alternate media formats or outlet designations) that aren't referenced in the feed(s) registered with Podtrac

    - software that mangles the media URLs (e.g. - by appending additional parameters for tracking or other purposes).

        (As of 2016, the latter is particularly problematic for media hosted on WordPress and SquareSpace when certain tracking features in those packages are engaged.)

Uniqueness Algorithm

- Podtrac uses a proprietary algorithm involving IP address, user agent, and other factors to aggregate multiple requests into a single Unique Download. This algorithm is constantly evolving with the industry. While this algorithm provides an accurate portrayal of user behavior on a large scale, it can provide odd results in small-scale, contrived tests.

- While Podtrac's algorithm aims to capture the activity of unique *people*, it is necessarily limited to interpreting the actions of unique *clients*. When multiple

people share the same computer or device and listen to the same media, this "Unique Download" metric will understate the number of Unique Listeners who accessed the episode. Fortunately, the proliferation of personal handheld devices has significantly reduced the likelihood and frequency of these scenarios.

Geocoding

- IP addresses are assigned by Internet Service Providers (ISPs). For some ISPs, IP addresses don't relate to the actual location of the end user, though this is becoming less of a problem with the growing prevalence of always-on, high-speed internet connections.

- Corporations with field-based personnel often provide remote connectivity through in-house proxies or VPNs, so the IP address belongs to the corporate headquarters while the actual user could live and work somewhere else.

Inaccurate and/or Misleading Episode Metrics

- **"Raw" Counts** - Many podcast clients issue multiple range requests to download a single media file for a single listener. This ratio is determined by the software developers, and has nothing to do with user behavior. The resulting raw counts are analogous to "hits" in the website space, and can overstate delivery by a **factor of 4x to 20x or more**. Raw counts are thus no measure of actual podcast episode delivery. Unfortunately, raw stats are the most easily produced by simple and ubiquitous website analysis programs. And unfortunately, these raw counts are often reported erroneously as "downloads", "impressions", or even "plays". Caveat emptor.

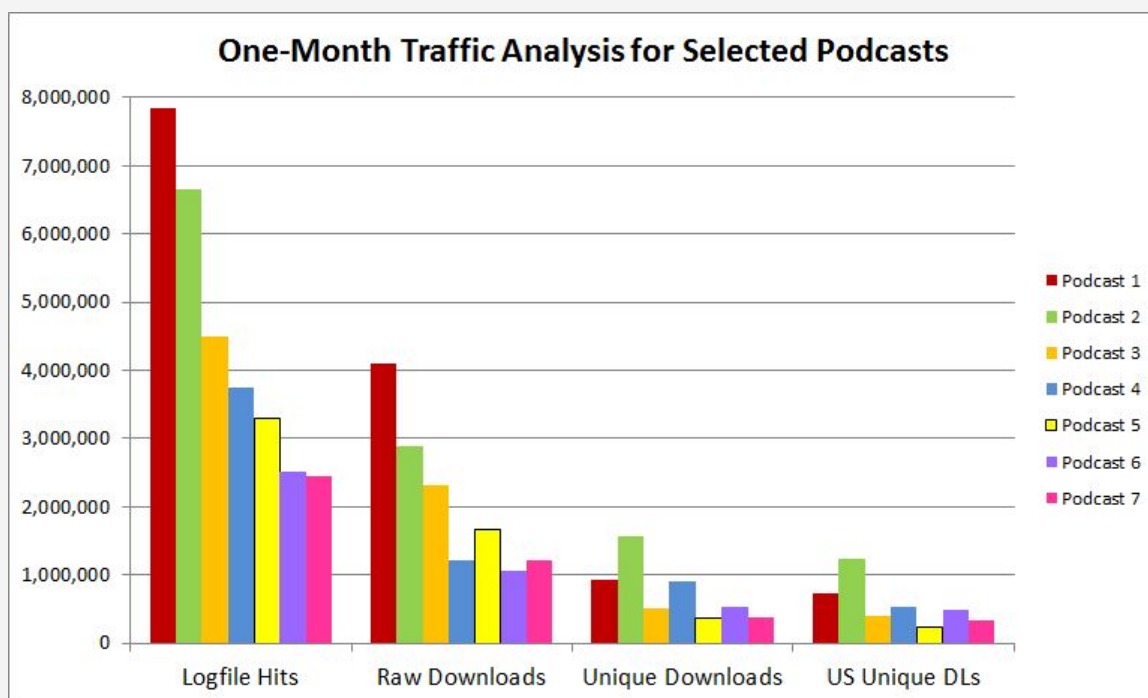**One-Month Traffic Analysis for Selected Podcasts**

Figure 4 shows the traffic analysis for some example podcasts for a single month. Totals are filtered from Logfile Hits to Raw Downloads to Unique Downloads to US-Only Unique Downloads. Logfile Hits grossly overstate user consumption, and the ratio of overcounting is highly variable.
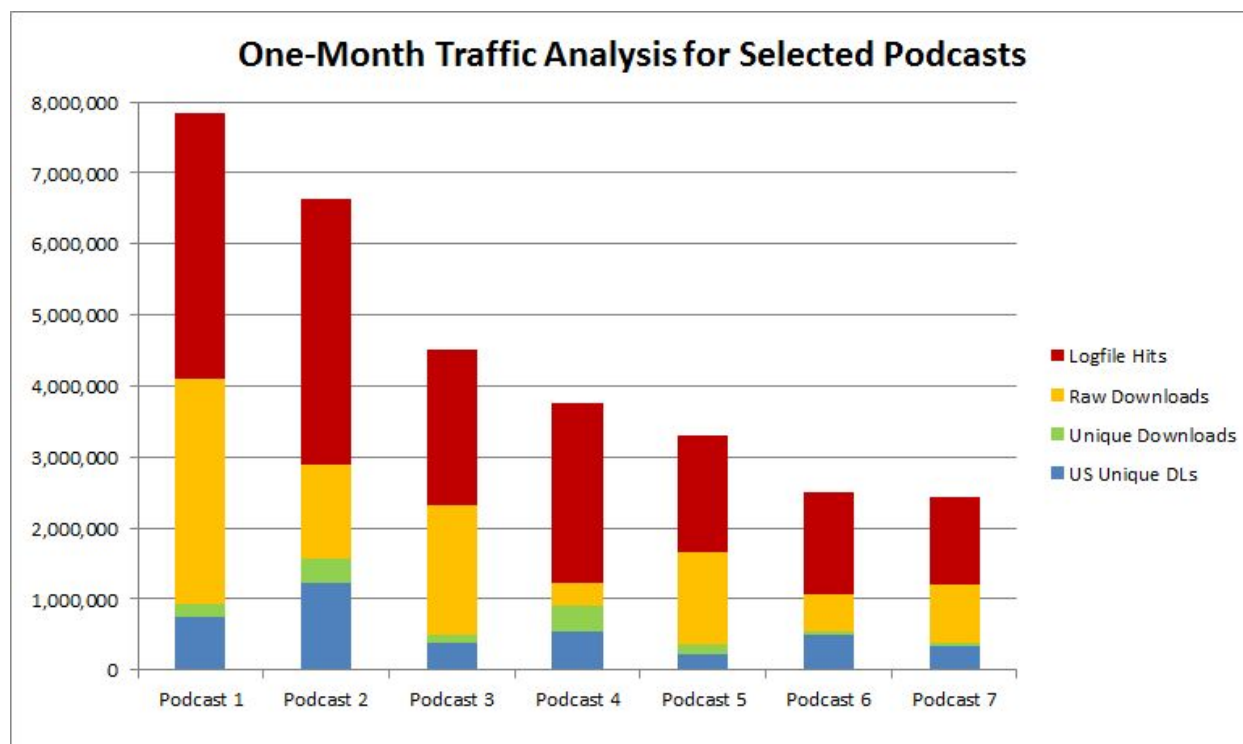
One-Month Traffic Analysis for Selected Podcasts

Figure 5 shows the incremental filtering of Logfile Hits down to US Unique Downloads for the same seven podcasts shown in Figure 4. There is little correlation between raw traffic (Logfile Hits) and actual consumption (Unique Downloads).

Plays - A Largely Unavailable Metric

Podtrac does not currently provide data on podcast plays, for several reasons:

○ Podcasts are either played in real time or downloaded for future listening. Due to privacy concerns, most podcatchers (and the Apple podcatchers in particular) do not provide any playback reporting.

○ Some downloaded episodes go unplayed, some are "binged" by listeners at a future time, and some are played multiple times. The ratios of these behaviors vary by device, software, show, day of the week, and other factors, so they are for the most part unknown outside of user focus groups. It is however notable that most podcatchers (and the Apple podcatchers in particular) automatically unsubscribe from feeds after a certain number of episodes go unplayed.

○ Certain proprietary players DO provide playback information, but these handle such a tiny fraction of total podcast delivery (less than 10%) that their data is anecdotal at best.

User playback behavior in one podcatcher or for one show can not be generalized to others.

Podtrac continues to monitor the evolution of the industry, and will provide data on podcast plays if and when it can be produced reliably for a significant portion of the industry.

3 - PODCAST AUDIENCE MEASUREMENT & PUBLISHER RANKINGS

Show-Level Statistics

In addition to its episode-level statistics described in Section #2 above, Podtrac also produces the following aggregate statistics on a Monthly basis for each measured podcast:

- **Downloads by Country -** This is a count of Unique Downloads by country of origin, i.e. - the number of downloads initiated by listeners / viewers with IP addresses assigned to each country. Podtrac utilizes best of breed databases to identify country of origin from client IP addresses.

- **Downloads by Source -** This is a count of the Unique Downloads by source, where "source" represents prominent hardware and software platforms. As of 2016, Podtrac reports delivery separately for over 100 different podcatchers, media players, and podcast aggregation websites on all desktop and mobile operating systems.

- **Global Unique Audience by Show -** This is a count of the unique clients that access *any* of the show's media during the specified time period. It differs from the sum of Unique Downloads for the various episodes in that downloads of multiple episodes by the same client are only counted once. This gives the most accurate measure of a show's overall reach.

- **US Unique Audience by Show -** This is a count of unique clients that access *any* of the show's media using IP addresses assigned to the United States.
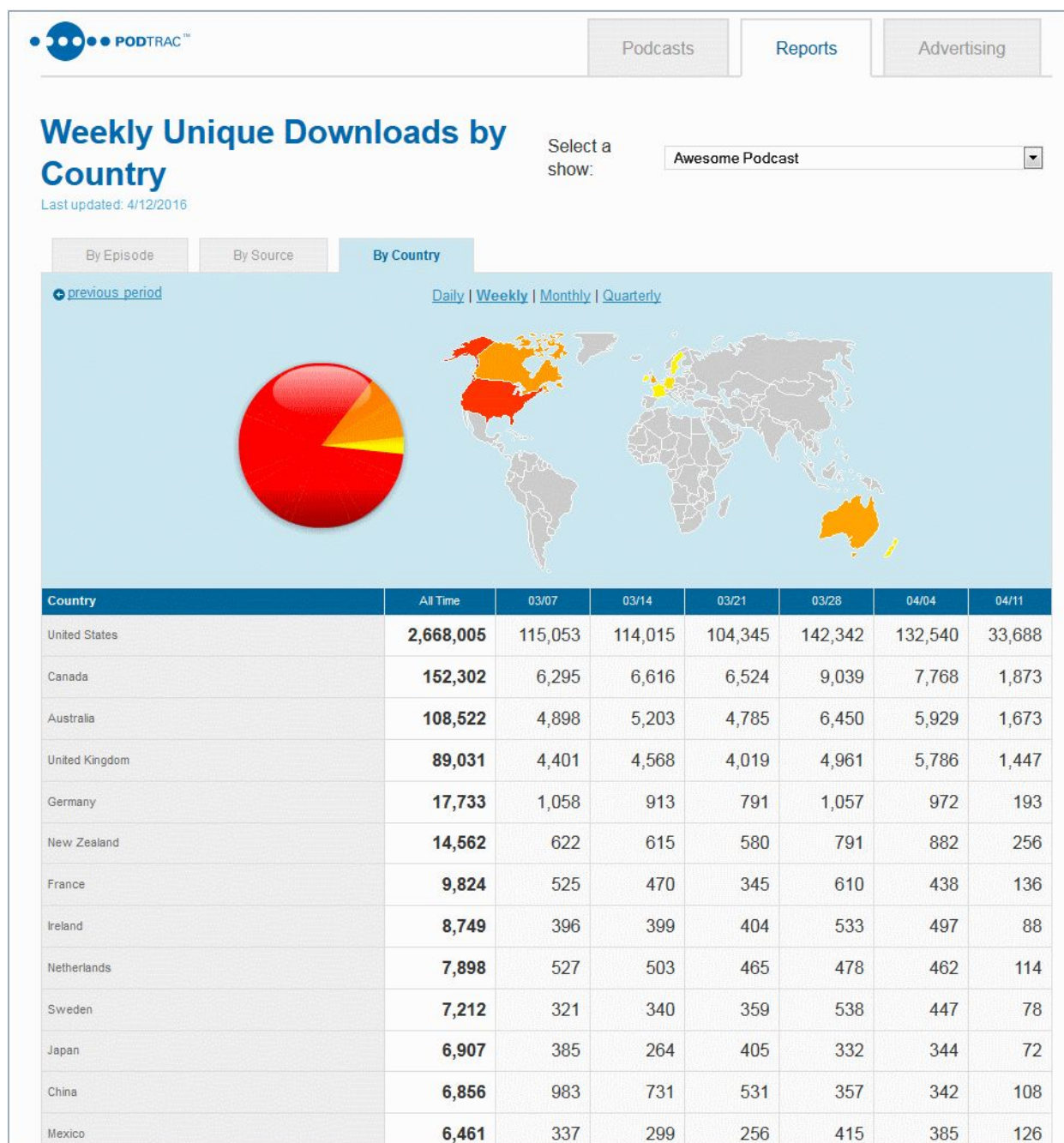
Figure 6 shows an example Podtrac Measurement Report by Country. Most traffic to US podcasts originates in the United States, and to a lesser extent, Canada and Australia.
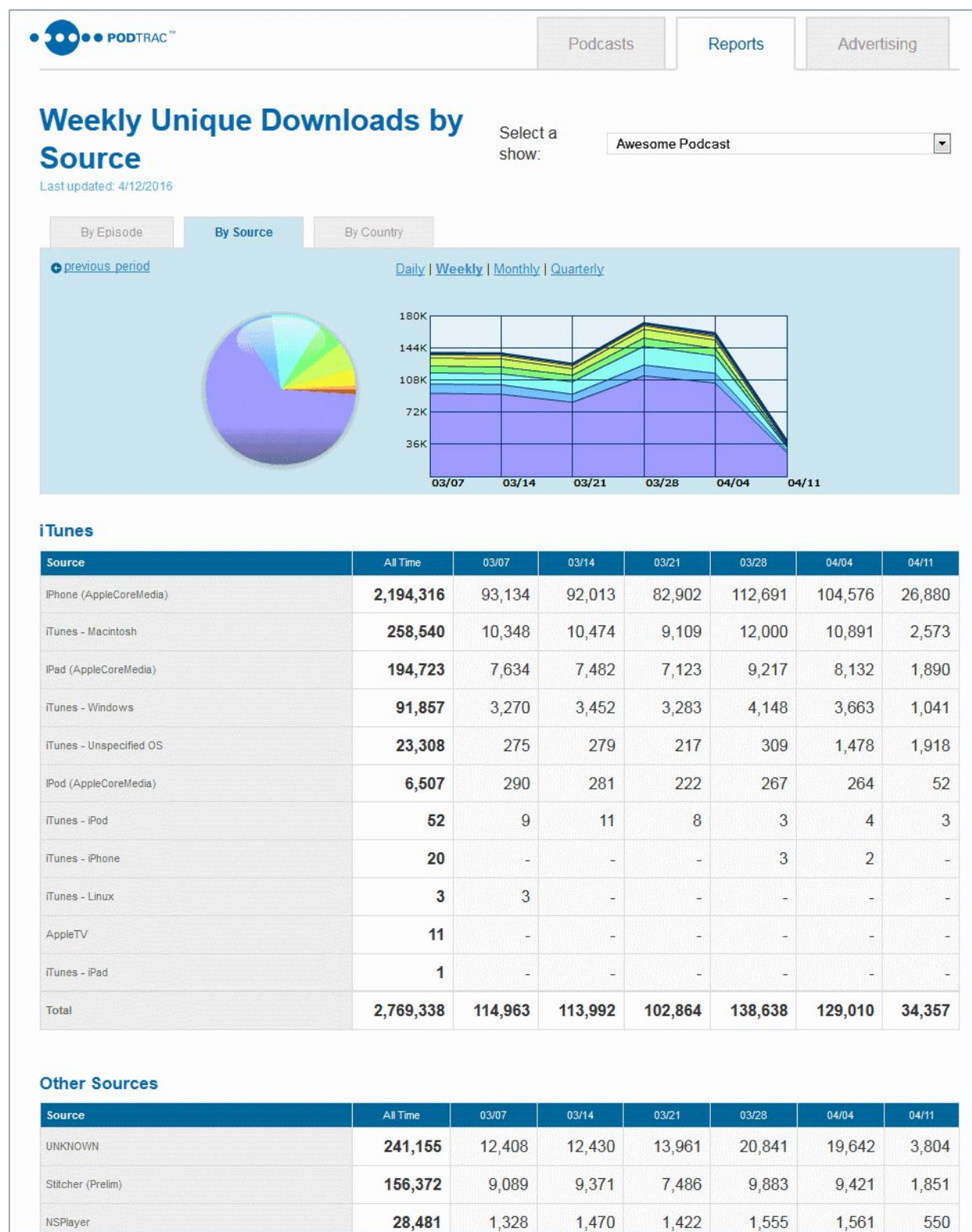
Figure 7 shows an example Podtrac Measurement Report by Source. The top section shows Apple sources, while secondary traffic sources are shown in the section below.

Publisher-Level Statistics

Podtrac produces the following data on a Monthly basis for each publisher with one or more measured podcasts:

- **Global Unique Audience by Publisher -** This is a count of the unique clients that access any of the publisher's media during the specified time period. It differs from the sum of Unique Downloads for the various shows in that downloads of multiple episodes by the same client -- even across multiple shows -- are only counted once. This gives an accurate measure of the publisher's overall reach.

- **US Unique Audience by Publisher -** This is a count of unique clients that access any of the publisher's media using IP addresses assigned to the United States.

Publisher Rankings

Utilizing the US Unique Audience by Publisher metric described above, Podtrac produces a monthly Ranking Report showing the top publishers in the industry by US audience. Podtrac produces this report as a way to showcase the podcast industry and grow interest in the podcasting space, much as the comScore or Nielsen rankings have done for websites and videos.

(Podtrac is in a unique position to produce this report, because it has established long-term measurement relationships with a substantial number of top publishers in the industry.)

The Podtrac Podcast Industry Ranking of the top 10 podcast publishers is based on unique monthly audience. This gives an accurate measure of the publisher's U.S. and global podcast audience reach, in other words, how many listeners a publish has across all its shows.

You can access the latest Podcast Industry Ranking Reports at Podtrac.com

Limitations of the Podtrac Audience Measurement System

- **Downloads by Country -** IP addresses are assigned by Internet Service Providers (ISPs). For some ISPs, IP addresses don't relate to the actual location of the end user. Corporations with field-based personnel often provide remote connectivity through in-house proxies or VPNs, so the IP address belongs to the corporate headquarters while the actual user could live and work somewhere else.

- **Downloads by Source -** Certain client software packages do not provide user agent information, in which case the client software cannot be identified. These are reported by Podtrac as "Unknown".

- **Unique Audience Metrics -** Podtrac uses a simplified algorithm for determining Unique Audience over multiple media files and large timescales. This algorithm closely approximates the results from Podtrac's more sophisticated episode measurement system, but it doesn't match exactly.

- **Publisher Rankings -** Publishers must actively include the Podtrac prefix in their media URLs to be measured and thereby included in the Publisher Rankings. As noted above, Podtrac has established measurement relationships with a substantial number of top publishers in the industry, but there are a few exceptions. Podtrac's measurement system is free and open for use by any podcast regardless of size or affiliation.

Inaccurate and/or Misleading Audience Metrics

Historically, advertisers have not had a metric that sizes audience members by show or by publisher. Advertisers have had to rely on sub-optimal ways of estimating these figures to assess the relative popularity of shows and publishers. These techniques include:

- **"Raw" Counts** - Many podcast clients issue multiple range requests to download a single media file for a single listener. This ratio is determined by the software developers, and has nothing to do with user behavior. The resulting raw counts are analogous to "hits" in the website space, and can overstate delivery by a **factor of 4x to 20x or more**. Raw counts are thus no measure of actual podcast episode delivery. Unfortunately, raw stats are the most easily produced by simple and ubiquitous website analysis programs. And unfortunately, these raw counts are

often reported erroneously as "downloads", "impressions", or even "plays". Caveat emptor.

- **Subscribers.** In the early days of podcasting, it was fashionable to track the number of times listeners / viewers clicked the "Subscribe" button in iTunes to follow the feed for a given show. It soon became apparent that this had little durable relevance due to churn (i.e. - people unsubscribing either intentionally or automatically). More recent approaches count the number of unique listeners / viewers who access the feed during a given period of time, but even this is a bit misleading, because it doesn't reveal anything about consumption of the actual episodes. Besides, some shows generate substantial traffic through external channels, like their own websites and social media.

- **ITunes Rank.** iTunes provides continuous rankings of top podcasts overall and in over a dozen different categories. These rankings are based on recent podcast subscriptions rather than audience size, so new podcasts with smaller audiences are frequently ranked higher in iTunes than those with larger, established audiences.

- **Unique IP Addresses.** Some older measurement systems attempted to de-dupe traffic simply by aggregating requests by IP address, but in the era of growing wireless delivery, this significantly undercounts delivery. (See Figure 8 above.)

- **Unique IP + Port Number.** Some measurement companies have suggested that port number can be used to identify unique listeners, but most clients actually issue requests under multiple port numbers during a single session, so this grossly overcounts actual listeners.

- **Total Monthly Unique Downloads.** While this is a valid measure of a show's or publisher's overall inventory, it doesn't provide any visibility into redundancy. For example, a show that produces episodes daily will deliver 7x as many downloads as a weekly show with the same number of subscribers.

- **Unique Downloads per Episode.** This is perhaps the best approximation of a show's audience size, but it undercounts due to audience churn. Not every listener downloads every episode of a show, so the listeners for one episode aren't the same as the listeners for another. The degree of overlap is highly variable and depends on a myriad of outside factors. Together, the unique listeners across multiple episodes form a greater total audience size than even the highest count of Unique Downloads per Episode.

4 - PODCAST AD MEASUREMENT

Techniques for Measuring Podcast Ad Delivery

Numerous advertisers in podcasts over the last ten years can attest to the effectiveness of podcast advertising. How though is ad delivery measured? There are three techniques:

1. For "live read" ads which are integrated into an episode, the tally of Unique Downloads for that episode equates to ad delivery.

2. For auto-inserted ads stitched server-side, ad delivery is a tally of Unique Downloads for specific versions of that episode containing the ad.

3. For auto-inserted ads stitched client-side during playback, ad delivery is a tally of ads actually played through the player.

Auto-insertion systems (both server and client side) are gaining popularity -- particularly for big shows and shows with "durable" long-tail delivery -- since they allow multiple advertisers to share the same piece of content.

While #3 is obviously preferable from an advertiser's perspective because ad delivery is most closely associated with actual playback, this technique is impossible to implement for the vast majority of podcast delivery. This is because podcasts are usually (90% of the time) delivered through podcatchers and online players that don't report playback data due to user privacy concerns. Foremost among these are the Apple podcatchers and players, which account for over 65% of all podcast delivery.

As of 2016, a few non-Apple podcatchers DO provide playback data, but they account for such a miniscule portion of all podcast delivery as to be effectively irrelevant. This leaves the two server-side ad insertion systems (#1 and #2) dominating the podcasting space.

Inaccurate and/or Misleading Ad Delivery Metrics

The podcast industry is awash in a host of technology providers and podcast networks using various techniques for ad delivery tracking. Unfortunately, most of these techniques provide little benefit over established techniques, and some are downright misleading. Ranked from least to most accurate, they include:

- **"Raw" Counts** - Many podcast clients issue multiple range requests to download a single media file for a single listener. This ratio is determined by the software developers, and has nothing to do with user behavior. The resulting raw counts are analogous to "hits" in the website space, and can overstate delivery by a **factor of 4x**

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THE STANDARD FOR PODCAST ANALYTICS

to 20x or more. Raw counts are thus no measure of actual podcast episode delivery. Unfortunately, raw stats are the most easily produced by simple and ubiquitous website analysis programs. And unfortunately, these raw counts are often reported erroneously as "downloads", "impressions", or even "plays". Caveat emptor.

- **Client-Side Ad Play Pings** - As noted above, the vast majority of podcast listeners come through Apple sources, and Apple clients do not provide pingbacks for ad plays. Web or app players that do support ad play pingbacks constitute less than 10% of traffic in the podcast industry. Client-side systems thus have no way whatsoever of quantifying the majority of ad delivery.

- **Server-Side Ad Play Stream Counts** - Streaming servers are able to track playback timestamps and duration, but only a very tiny fraction of podcast content (less than 5% in 2016) is hosted on streaming servers. This is because the majority of podcast listening occurs offline -- after the entire file has been downloaded -- so there's no sense in hosting the media on a streaming server. (Podcasts are not listened to in the same way as online radio streams, so many online radio technologies don't apply to podcasts.)

- **Server-Side Packet Delivery Tracking** - Some podcast technology providers track delivery of the actual byte ranges containing the ads, on the premise that this gives a more accurate measure of ad delivery. This provides no advantage for full file downloads, of course, which account for the majority of podcast delivery. Even for "live" playback though, most players buffer the file ahead of playback, downloading the entire file in the first few seconds of playback. Thus, packet range delivery analysis provides no more accurate measure of ad delivery than traditional download-tracking techniques.

ABOUT PODTRAC INC.

Launched at the first podcasting conference in 2005, Podtrac Inc is the leading podcast measurement and advertising services company. With the tremendous growth of podcasting, in 2016 Podtrac separated its offerings into two services to better serve the podcast industry.

Podcast Analytics - Podtrac

100% focused on podcast industry metrics and analytics. Podtrac provides analytics to thousands of podcasts including virtually all of the top podcasts and publishers. It's "unique monthly audience" metrics and monthly rankings of podcasts are industry firsts for podcasting.

CONTACT PODTRAC
AT PODTRAC.COM

Podcast Advertising Services - Authentic

Authentic is the new name of Podtrac's advertising services, providing advertising representation for 200 top podcasts including *This American Life*, *Serial*, *This Week in Tech*, and more. Authentic works with leading brand and direct response advertisers and agencies to reach their targets in the top podcasts we represent, managing some of the most successful and longest-running advertising efforts in podcasting.

CONTACT AUTHENTIC
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Let us know if you have any questions or ideas for ways we can help. Email us at measurement@podtrac.com. Thanks for your interest in podcasting.

- The Podtrac Analytics Team

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