

# IP Geolocation Myths and Facts: Setting the Record Straight

Though IP geolocation technology has been around for nearly two decades and is widely used across the globe in a variety of applications, there is still a certain aura of mystery around exactly what this technology is and what it can do.

Here we look to dispel some of the common misconceptions surrounding the use of geolocation data, and show that not all IP data vendors are created equal.



**Myth 1:** IP-based geolocation data isn't accurate enough in my country.

Many IP providers rely to a large extent on publically available (free) registration data (i.e. Whois), which is notoriously inaccurate at a city level (less than 50 percent) or even at a country level—and has gaps in coverage upward of 20 to 30 percent where no results are returned. Reasons for this are: 1) Whois IP registration is voluntary for ISPs; and 2) Nearly all ISPs register their entire allocated IP block to their corporate headquarters address, rather than the end user to whom the IP is assigned.

## Truth

Digital Element utilizes patented web-spidering technology and 20+ proprietary methods to triangulate the location, connection speed, and many other characteristics associated with an IP address. By combining this “inside-out” infrastructure analysis with “outside-in” user location feedback gleaned from a network of commercial partners to improve and validate its response at a hyperlocal level (city/postcode/ZIP+4), Digital Element can identify where the user actually accesses the Internet down to the ISP's end-point equipment.

Digital Element's IP geolocation solutions provide coverage for 99.9999 percent of the Internet and collects more than 60-70 million points of view daily. The company has received accreditation from the Media Rating Council (MRC) for the geographic location identifications reported by its NetAcuity platform. NetAcuity solutions have the most accurate data in the industry: Global accuracy is more than 99.9 percent at the country level and is up to 97+ percent accurate at a city level.



**Myth 2:** You must rely on ISPs to get IP geolocation data.

ISPs are notoriously inaccurate in keeping the location information of IP addresses updated in their registries. In fact, most either don't report location information in the Whois registries or only report the address of their corporate headquarters. And, with 2 to 5 percent of IP addresses changing on a monthly basis as IP addresses are re-allocated, ISPs simply have no commercial reason to maintain a consolidated, up-to-date database.

## Truth

Digital Element's proprietary technology traces how traffic is actually routed over the Internet; how routers are connected; and the speed between routers, then uses this information to triangulate where end-point equipment is located. The company's technology does not rely solely on data-sharing relationships with ISPs.



**Myth 3:** Because IP addresses are dynamic, it's impossible to provide accurate geolocation information.

Since most IP addresses are dynamically allocated to some extent, this creates a problem for IP data providers that are solely reliant upon ISP/Whois registration information, as noted above.

## Truth

Digital Element bases its mapping on where known pools of dynamic IPs are located. ISP dynamic re-allocations tend to be within those known pools of IP addresses, and the geographic allocation of pools actually remains fairly constant at the ISP end-point equipment level. With such an extensive customer network performing more than 10 trillion IP lookups per month, the company is able to pick up IP address reallocations the instant they occur, ensuring that data remains highly current and accurate.



### Myth 4: IP-based information is not as comprehensive as other forms of geolocation data.

Alternative, non-IP based geolocation technologies exist that may provide more granular location information—on small slices of the Internet. They often involve data-gathering techniques that rely on user-provided registration data, cookies, GPS-obtained latitude/longitude coordinates, or HTML5. However, these techniques are far from comprehensive.

- **User-supplied location information** is only helpful to the extent that a user agrees to provide it. And let’s face it, even when they do, it is not always accurate.
- **Cookies** logged on a user’s machine may allow sites to store previously entered location information. However, this is subject to a user providing location information, and the cookie not being deleted by the user. Not to mention, cookies have come under fire for being invasive as the technology actually deploys on the user’s machine.
- **GPS-obtained lat/long information** can be accurate within a few feet but it is application based (not browser based) and requires users’ permission to retrieve and deploy on a smart GPS-enabled device. Additionally, on their own, GPS coordinates mean little to companies.
- **HTML5** derives location information from some of these sources, but it is opt-in per session, requiring the web visitor to provide permission for each web session to access this level of personally identifiable detail. As such, HTML5 is very limited in terms of reaching an addressable audience.

#### ☑ Truth

Digital Element’s IP Intelligence and geolocation solutions can provide a comprehensive, non-personally identifiable view of a user’s location within a 3- to 5-mile radius for virtually the entire Internet. IP addresses are particularly accurate in reaching audiences based on their place and context of access to the Internet. With NetAcuity, companies can perfect audience segmentation capabilities and targeting based on 59+ parameters in addition to location, including connection type/speed, mobile carrier, proxy type, ISP, Wi-Fi intelligence, and demographics. Digital Element also offers GeoMprint, which takes GPS-obtained lat/long coordinates and converts that data into more useful geographic information such as ZIP/postcodes, cities, regions, etc. for businesses.



### Myth 5: IP addresses are considered personally identifiable information (PII).

The U.S. and EU data privacy laws have consistently held that an IP address, in and of itself, is not personal data, but that an IP address can become personal data when combined with other information or when used to build a profile of an individual. In fact, if IP addresses were considered PII, there couldn’t be routers or Whois registries such as ARIN/APNIC/RIPE. It’s only the collection and/or sharing of IPs that have been on a website that implicates PII.

#### ☑ Truth

Digital Element’s technology is based solely upon network infrastructure analysis of ISP nodes and is not derived from user interactions—no PII is ever collected or stored. The location of these ISP nodes are used as a “proxy” for actual IP address locations and are generally able to isolate location to a 3- to 5-mile radius of end-users, or approximately 1,000 to 2,000 households.

With core technology purely based on analyzing network infrastructure, Digital Element does not ever monitor individuals’ web behavior; install cookies on users’ machines; or collect or store PII such as name or address.



### Myth 6: IP-based geolocation has no role in the mobile space.

With more than 6.5 billion mobile subscribers today—almost triple the amount of Internet users—mobile has become the dominant, or first, screen for consumers. And, mobile users are increasingly taking advantage of the ever-growing population of rate- and speed-friendly Wi-Fi networks. Eighty to 90 percent of mobile traffic now comes via some type of Wi-Fi connection. However, in order for companies to leverage location-based services (LBS) to reach these consumers, mobile users must opt in. But, many users refuse, citing reasons such as privacy or battery-life concerns. And, once they turn LBS services off, it’s hard to get them to turn them back on.

#### ☑ Truth

Digital Element’s technology leverages a “living network” of IP-location information derived from mobile devices and billions of on-device location transactions to deliver precise—yet privacy-sensitive—global targeting down to ZIP+4 and postcode levels. With the majority of mobile traffic coming via some type of Wi-Fi connection (meaning there is a locatable IP address associated with it), more precise targeting can occur based on where a user is located and connected at a specific point in time, regardless of device type.



In addition to a user's point-in-time geographic location, Digital Element's mobile IP location information can include whether the user is in fact coming through a Wi-Fi connection point and whether someone is on a home or business hotspot (which may call for traffic to be handled differently). The ability to report carrier data provides further information on the context of the user, as well as accurate information about the device. Furthermore, the ability to distinguish between Wi-Fi and a cellular network is useful for delivering optimized content based on a user's connection type.



### Myth 7: Premium IP Intelligence and geolocation solutions are too expensive.

Most IP geolocation vendors simply repackage publically available (free) Whois registration data and some supplement with user-supplied data, allowing them to offer discounted IP solutions. However, these are not reliable methods for accurate geolocation when used in isolation.

#### Truth

If coverage, accuracy, granularity and accreditation are important, then Digital Element's technology— that integrates multiple methodologies including network infrastructure analysis and user-validated location feedback, as well as has a team of data analysts that double checks automated data collection methods and runs quality-assurance checks—is the right solution for your business.

Digital Element's pricing scales based on the volume of data requests desired and thus is quite affordable for even the smallest of start-ups. As an example, customers have achieved the following ROI on their investments:

- **30-300% increases** in response rates to geo-targeted content
- Web visitors are **six to seven times more likely** to convert when content is localized
- Geo-targeted impressions sell for a **30-50% premium** over untargeted

## Sample Clients



US Headquarters:  
+1 678.258.6300

UK Headquarters:  
+44 (0) 2035 142 663

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## About



Since 1999, Digital Element has been providing global geolocation data and services that bring anytime, anywhere relevance and context to online initiatives—from desktops to mobile devices. The company's patented technology has been certified and accredited to deliver real-time access to accurate and reliable location intelligence without invading Internet users' privacy. For nearly two decades, many of the world's largest websites, brands, security companies, ad networks, social media platforms and mobile publishers have trusted Digital Element's technology to target advertising, localize content, enhance analytics, and manage content rights as well as detect and prevent fraud.

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