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IP Geolocation Myths and Facts: Setting the Record Straight

Though IP geolocation technology has been around for over 13 years 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. Further, many companies have had experience dealing with an IP data provider whose data just did not live up to its promise and have therefore become disillusioned with the technology's potential for their business.

This document looks to dispel some of the common misconceptions surrounding the use of geolocation data and the way the data is derived, and aims to help the reader understand the value of this technology and its role in an increasingly location-based digital world. It also outlines some of the major differences between providers and highlights that not all IP data providers are created equal!

Myth #1: IP-based targeting just 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 (<50%) or even country-level, and has gaps in coverage upwards of 20-30% where no results are returned at all. The reasons for this are that 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.

Digital Element pioneered the IP Intelligence industry in 1999 with the purpose of developing a technical solution to the problem of IP address location in order to provide a much more accurate result that could be used commercially around the world. Our methodologies differ significantly from follow-on competitors in the space. We utilize patented web spidering technology and 20+ proprietary methods to triangulate the geolocation, connection speed, and many other characteristics associated with an IP address. Further, we combine this "inside-out" infrastructure analysis with "outside-in" user location feedback gleaned from a network of commercial partners to improve and validate our response at a hyperlocal level (city/postcode). This enables us to target where the user actually accesses the Internet down to the ISP's end-point equipment (DSLAMs, CMTS, POP Servers), not where the ISP itself is headquartered.

These sophisticated techniques allow us to see beyond the traditional limitations faced by follow-on competitors. We have been independently audited by Keynote Systems (the Internet's leading performance testing service) at over 99.99% accurate at a country-level and 97% accurate at a city-level worldwide. We return results for 99.9999% of all IP addresses that you will see, allowing you to maximize the traffic you can geo-target.

Myth #2: IP-based targeting is not as accurate as other forms of targeting.

There certainly are alternative, non-IP based geolocation technologies that may provide more granular location information on small slices of the Internet using techniques such as user-provided registration data, cookies, GPS lat/long information, or HTML5. However, these techniques are far from comprehensive.

In isolation, 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 – and cookies are also increasingly coming under fire for being invasive as the technology deploys on the user's machine. GPS location information can be accurate within a few feet but it is application-based (not browser-based) and requires user permission to retrieve and deploy on a smart GPS-enabled device. 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.

Digital Element's IP Intelligence, on the other hand, provides a comprehensive, non-personally identifiable view of a user's location within a 3-5 mile radius for virtually the entire Internet. Targeting by IP addresses is ideal for reaching broad audiences without the need to track individuals and their behaviors on the Internet. IP addresses are particularly accurate in reaching audiences based on their place and context

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of access to the Internet – such as postcode geography, home/business, company name, and connection type. IP targeting can be universally applied to a wide spectrum of marketing efforts such as display, search, mobile, behavioral, retargeting and email marketing.

Myth #3: You must rely on ISPs to get IP geolocation data.

Actually, ISPs are notoriously inaccurate in keeping the location information of IP addresses up-to-date 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 2-5% of IP addresses changing on a monthly basis as IP addresses are re-allocated, users re-boot their modems, etc., ISPs simply have no commercial reason to maintain a consolidated, up-to-date database of the location of their IP addresses.

That's where Digital Element comes in. Our proprietary web spidering technology traces how traffic is actually routed over the Internet, how routers are connected, the speed between routers, and uses this information to triangulate where end point equipment is located. This enables us to target where the user accesses the Internet down to the ISP's end-point equipment (Corporate routers, DSLAMs, CMTS, POP Servers), not where the ISP itself is headquartered. Our technology does not rely on data sharing relationships with ISPs, though some ISPs do voluntarily send us location data due to our position as the gold standard in the industry.

Myth #4: Because IP addresses are dynamic, it's impossible to provide accurate geolocation information.

While most IP addresses are dynamically allocated to some extent, 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. Further, due to Digital Element's extensive customer network, we are able to pick up IP address reallocations across pools the instant they occur and can be sure that our data remains highly current and accurate. As such, dynamic reallocations do not affect our accuracy.

By contrast, dynamic IP allocation is very much a problem for competitors who are reliant upon ISP/Whois registration information to a much greater extent.

Myth #5: IP-based geolocation has no role in the mobile space.

Generally, Internet traffic can be broken down by connectivity type into 1) wired PC-based traffic, 2) WiFi-based mobile device and PC traffic, and 3) celltower-based mobile device traffic. IP geolocation data will enable you to accurately target the first two connectivity types – fixed and WiFi – as these are fixed points-of-presence on the publically-routable Internet. As WiFi connections represent well over 80% of mobile Internet device traffic in terms of page views (due to data speed issues with mobile networks and data plan limitations), most mobile device traffic can be accurately targeted using IP geolocation. In short, IP geotargeting can target virtually 100% of traditional wired traffic and well over 80% of mobile device traffic.

Pure celltower-based IP connections, on the other hand, traverse wireless carriers' private celltower networks and are not traceable until the wireless signal is connected and converted to the publically routable wired Internet, generally at regionalized POP locations. There is in fact much variability in the distribution of POP locations across wireless providers, and for this reason, we would suggest targeting mobile IPs differently (e.g. at a country-level only) from the vast remainder of the IP space, which is location-targetable at a city/postcode level.

Myth #6: Aren't IP addresses considered personally-identifiable information (PII)?

US 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 in and of themselves were considered PII, you couldn't have routers, or Whois registries such as ARIN/APNIC/RIPE. It's only collecting/sharing IPs that have been on your site that implicates PII.

Digital Element's technology is based solely upon network infrastructure analysis of ISP nodes and is not derived from user interactions – no personally-identifiable information is ever collected or stored. We use the location of these ISP nodes as a 'proxy' for actual IP address location and are generally able to isolate location to a 3-5 mile radius of end-users, or approximately 1,000-2,000 households.

As the technology is based purely on analyzing network infrastructure, Digital Element does not ever monitor individuals' web behavior; no cookies are ever installed on users' machines; and no personally-identifiable information such as name or address is ever collected or stored.

Myth #7: Premium IP Intelligence solutions are too expensive for my business.

Digital Element's pricing scales based on the volume of data requests desired and thus is quite affordable by even the smallest of start-ups. In general, customers derive far greater value from our data and are able to achieve significant ROI on their investment due to:

- 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

Contact Digital Element

Contact us to learn more about how we can help give your online initiatives the competitive edge.

+1 678.258.6327 | www.digitalelement.com