



WHITEPAPER

Targeting *and* trust? A way forward for digital marketing...

Consumers want personalisation without intrusion. Brands want better response rates. IP-based location targeting can deliver both...

digital **element** 

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It's been more than two decades since the first internet banner went live. Yet the online advertising market continues to grow.

According to eMarketer, UK brands spent \$19bn on digital ads in 2019. That was a 16 percent rise on 2018. Globally, online advertising is now worth \$333bn says Statista. The total could hit \$517bn by 2023.

Online activity is booming. Streaming media companies are booming. E-commerce keeps growing.

Yet, for all the good news, digital marketing has come to a crossroads.

Adtech is facing challenges on multiple fronts: privacy scandals, falling response rates, click fraud, regulation, the power of the tech duopoly and more.

The industry needs to find ways to send targeted messages that give customers real value, while respecting their privacy.

Location-based advertising offers some compelling solutions to the impasse. Geolocation presents a powerful kind of targeting. It lets a brand know *where its customer is now*, and allows for the delivery of more contextually relevant advertising and content.

Many believe location-based advertising is only possible when a (mobile) user turns on GPS and gives consent to a brand to access it. But there are other options. This is a relief given how few people choose to opt in to GPS.

The main alternative is **IP geolocation**. It uses the IP address as the basis for determining its location. With the help of additional techniques, IP geolocation is good for targeting users at scale, down to postcode level.

IP geolocation is also entirely anonymous. The IP address reveals nothing personal about the user. This preserves trust and makes the method regulation-proof.

Even better, an IP address can say more about an internet connection than its location. It can also identify characteristics such as connection speed and type (mobile or wifi), the identity of the ISP and the mobile carrier. Brands can use these additional attributes to build even better targeting profiles.

IP geolocation is 20 years old. It's well-established. But now, with conventional targeting techniques under pressure, it feels like the start of a new era for the methodology.

In this white paper, we will dive into what IP geolocation is, and the many benefits it unlocks for brands, advertisers and publishers.

We will show how IP geotargeting...

- Supports targeting that respects privacy
- Doesn't require an opt-in, so it's regulation-friendly
- Is immune from the cookie showdown
- Links physical and digital activity
- Generates high response rates
- Commands higher inventory prices
- Combats click fraud
- Unlocks unexpected customer insights
- Has other applications beyond marketing such as managing geographic film and TV rights.



What are the options if you want to go local?

To display location-based advertising and content you need to know where a user is. There are many ways to do this. Here are the main geotargeting options.

User supplied

Sometimes you can just ask users for their location information. They can fill in a form to declare their whereabouts. But this is the real world. Most consumers lack the time or the will to do it. And even if they do, the information is not always accurate – and can go out of date quickly.

Cookies

A cookie on a user's browser can store previously-entered location details. But this is only true when the user actually supplies this information (see above). He or she might also clear the cookie cache at any point. Finally, of course, the cookie's days are numbered. Browser companies are phasing it out.

GPS

Every smartphone supports GPS. The tech can be accurate to within a few feet. Sounds great. But again, GPS data is only available when a user agrees to share it. Most don't – because of privacy or battery-life concerns. GPS is also application (not browser) based. Together, these two factors drastically limit how many users a brand can expect to target using GPS.

HTML5

HTML5-based mobile sites can collect some location information from visitors. However, users have to agree to this. And their permission expires after one session. As such, HTML5 is very limited in terms of reaching an addressable audience.

IP geolocation

IP geolocation uses the IP address to determine where the user is located. Everyone and everything connecting to a web site is assigned an IP address. There is no connectivity without one. Even a smart fridge has its own IP address.

An IP address is made up of a series of numbers. It can be used to identify location and connection attributes such as the device itself and the network it is connected to. The number includes:

- The ISP's name
- The ISP's host name
- Country/region/state/city

But that's not all. An IP address can flag other properties that support even better targeting,

These include whether a user is on 4G, 5G or wi-fi, or on a corporate or home network. An IP address can reveal connection speed and device type. All of these extra attributes can help brands to personalise goods and services.

Finally, here is what an IP address **does not** reveal.

- A person's name
- The exact street address
- A phone number
- Their email address

As stated earlier, the absence of this PII (personally identifiable information) protects privacy.



Case study: How Everflow used IP geolocation to improve campaign targeting

Everflow helps brands and agencies understand how their digital campaigns are performing. It tracks activity so its clients can see which channels conversions are coming from. Since many brands target users by region, Everflow has to deliver back accurate results by geography too.

In 2017, the company grew dissatisfied with the geolocation data it was seeing. The data didn't always match those of its clients.

Everflow surveyed the market for an alternative partner. It chose Digital Element's NetAcuity Edge to track 11 billion clicks and impressions a month. The system delivers geolocation to ZIP/postcode levels. By scrutinising the results, marketers can gauge a campaign's performance in a given city and tweak strategy accordingly.



How does IP-based geolocation overcome the problems facing digital marketers?

In the introduction, we referenced a series of challenges to brands in the digital marketing space. Let's look in more detail at each – and explore how IP-based geolocation offers a way out.

Privacy

For years, digital marketers rarely factored privacy into their thinking. It wasn't an issue. That's changed. Consumers have woken up to the intrusion. Result? The rise of tools such as ad blockers and VPNs. Today, respect for privacy is a hot enough consumer button for Apple to base campaigns around it.

Consumers might reject creepy tracking, but they still respond best to personalised offers. Geotargeting offers marketers a solution since IP geolocation cannot identify an individual.

Moreover, premium IP data can detect proxy, VPN and Tor traffic. This helps brands to restrict suspicious traffic.

Cookies

Placing a cookie on a user's browser lets a brand follow that user around the web. Abuse of the cookie is the original 'creepy' adtech innovation. And it is the big casualty of the new era of data privacy. Even Google is phasing it out.

Brands and advertisers need an alternative that supports personalisation, but avoids creepiness. Many are experimenting with fingerprinting. However, some believe this technique to be as intrusive as the cookie.

The removal of cookies should breathe new life into the IP address, which is ubiquitous and instant. An IP address can locate almost any user in real time – without yielding any personal information.

Low response rates

It's open knowledge that click rates (CTRs) are low – and getting lower. The first internet banner had a 10 per cent CTR. Today, the rate is around 0.05 per cent. Geo-targeting reverses this trend by offering relevant content, which generates a much better response. Real use cases show CTRs up by as much as 3x.

Falling inventory prices

As CTRs have fallen, so have inventory prices. Again, geotargeted ads buck the trend. Typically, they command a 30 per cent to 40 per cent premium over non-targeted ads.

Click fraud

Where there is traffic, there is fraud. The key to detecting it is to know more about who (or what) the 'clicker' is. Why? Because the fraudster is usually trying to assume the identity of a legitimate customer. Obviously, fraudsters use all manner of techniques to hide their identities – and to steal others.

IP-based geolocation gives brands a tool for spotting these scams. It can...

- Reveal traffic surges from areas outside a campaign's target zone
- Filter out clicks from regions where services aren't available
- Flag account access from unusual or high-fraud areas
- Show where traffic is coming from proxies, which might indicate fraud

Companies can then use this insight to reduce click fraud.



Case study – how ShopRunner applied geolocation to high fashion online shopping

ShopRunner is an online service that matches high-value customers with retailers. It also gives retailers useful shopping tools such as seamless checkout, recommendations based on previous purchase, free returns, expedited shipping and more.

Obviously, data science is hugely important to ShopRunner. It helps the company understand what's driving transactions. In 2018, ShopRunner decided to do more with location data.

Ali Vanderveld, director of data science at ShopRunner, explains why: "Fashion trends can vary widely based on geography. What is trending in Chicago in May is very different than what is trending in Miami at that time. Our retailers need us to decipher trending data accurately so they can make recommendations for shoppers' specific areas."

ShopRunner chose Digital Element's NetAcuity Pulse Plus to power its geolocation services. It now uses IP geo data to localise the shopping experience. It also crunches the data to do forecasting by geography and is even using it to pilot same-day delivery.

What are the limits of IP geolocation?

Is the targeting precise enough? Is IP geolocation always reliable? Let's dig in to the realities of IP geolocation.

Accuracy 'only' to post code level

The most cited limitation of location by IP address is accuracy – certainly when compared to GPS. Advanced IP geolocation systems can identify a user to post/zip code level. By contrast, GPS is accurate to a few feet.

But is post/zip code level really a limitation? In practice how many services need GPS-level accuracy? For most purposes, pinpointing a user within a range of a few miles is sufficient. It certainly works for marketing a regional service or retail offer and it allows the target of users at scale, which is what most brands and marketers need to do.

IP geolocation tracks wifi users better than cellular users

The second 'problem' concerns the tracking of mobile users on 3G/4G. IP geolocation companies can easily detect users on wifi. And with additional analysis, they can pinpoint a wifi connected device to within a mile or two. Cellular users connect to masts, which generally serve a much wider area.

Is this a drawback? Well, research says 80 per cent of mobile traffic at any one time is on wifi. This makes the vast majority of IP targeting feasible to a local level. Meanwhile plenty of companies require targeting by country or city only, which brings cellular IP geolocation into play.

ISP registries are frequently inaccurate

A third possible weakness of IP geotargeting is the accuracy of the registries in which ISPs log their location information. This is important because an IP number only becomes visible to a geolocation company when the device connects to the publicly routable internet.

Today, many IP geolocation companies get their results by scraping these registries. But how can they successfully locate an IP address if the ISP's network data is flawed?

The truth is, they can't. Many ISPs don't disclose geographical data at all. Or they only report the address of their corporate headquarters (which could be hundreds of miles away from the network connection).

What's more, registries go out of date fast. It's estimated that two to five per cent of IP addresses change every month. Indeed, most registries are believed to be 50 per cent inaccurate at a city-level. And in 20 to 30 per cent of queries, no results are returned at all.

Ultimately, ISPs have no commercial reason to maintain an up-to-date database of the location of their IP addresses. This means that effective IP-based geolocation cannot be done by scraping existing registries.

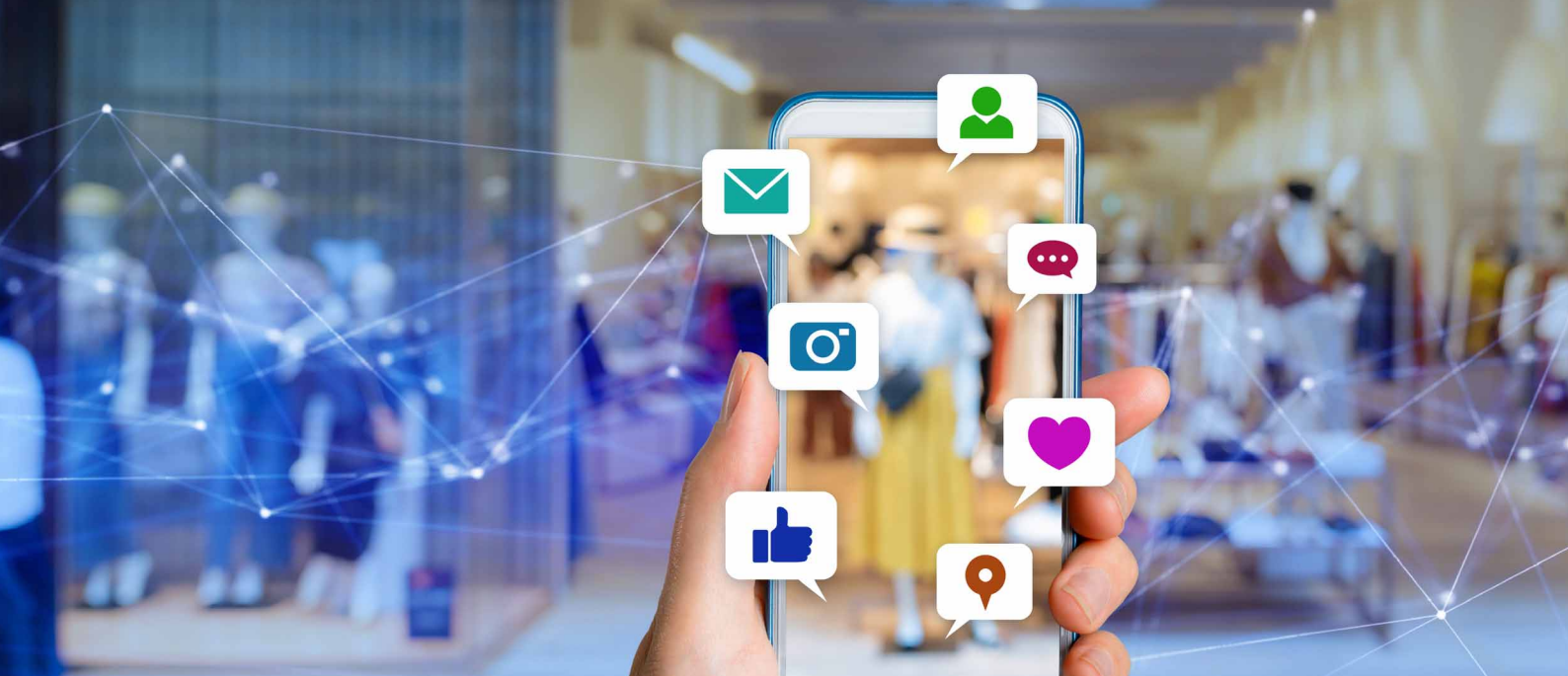
The take away is simple: don't rely on registries or IP vendors that base their databases on this approach.

Happily, technology can help. A number of specialists now use analytical techniques to bypass the need for registry data.

Companies such as Digital Element inspect how traffic moves around the Internet, how routers are connected, the speed between nodes and so on. In so doing, they can assess where the end-point equipment is located.

Digital Element pioneered the concept of IP geolocation in 1999. Over time it developed an advanced approach that combines IP routing infrastructure analysis with anonymous location insight gleaned from a network of global commercial partners.

And, as previously stated, this analysis never reveals any personally-identifiable information. The ISP nodes are simply a 'proxy' for actual IP address location. They are generally accurate to three to five miles – or around 1000 to 2000 households.



IP geolocation in action

Targeting customers by location isn't new. But as the years go by, and the tech improves, brands are finding many unexpected new applications. Here are some examples.

Find 'clusters of similarity'

You have a group of users in mind. For example, you might want to target smokers for a public health campaign. To do this, you can find out the regions with the highest population of smokers, then geofence by IP address to direct your campaigns towards them.

Combine IP geolocation with 'real world' events

When an event is local in nature, brands can factor it in to make a campaign more successful. For example, a clothes retailer could use local weather data to change its front page offers in different regions – bikinis in a heatwave; coats during a cold snap.

Run time-sensitive campaigns

When a brand is running an event that travels across multiple regions, it can phase a staggered campaign. For example, a music label could geotarget around a band's touring schedule.

Look at buying patterns by location to make budgets go further

This is geolocation 'after the fact'. Often, after a campaign has run, the metrics will reveal strong local differences in uptake. Brands can scrutinise this data to make the next round of promotion more effective.

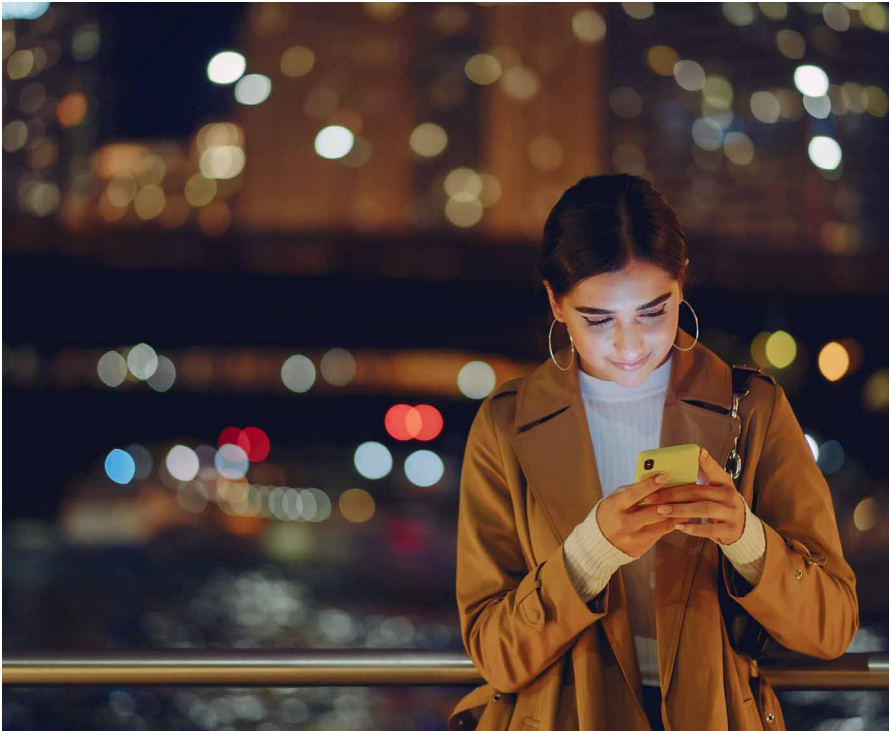
These insights can be unexpected. For instance, a company might find it sells more sunscreen in places that get less sun because residents are more likely to travel to hot countries.

Link the real and digital worlds

Often, brands run campaigns to make people do things in physical locations. IP geolocation presents the chance to connect the dots. So, a retailer might send discount codes to customers and then use IP addresses to see how many recipients responded by visiting local stores.

Target mobile users on wifi

It's estimated that 80 per cent of mobile users connect via wifi networks, which are generally faster and often cheaper. But these users are invisible to most mobile ad networks. Adding IP geolocation to the stack brings them back. Ad providers can offer targeting by location, without relying on software downloads or user opt-in.



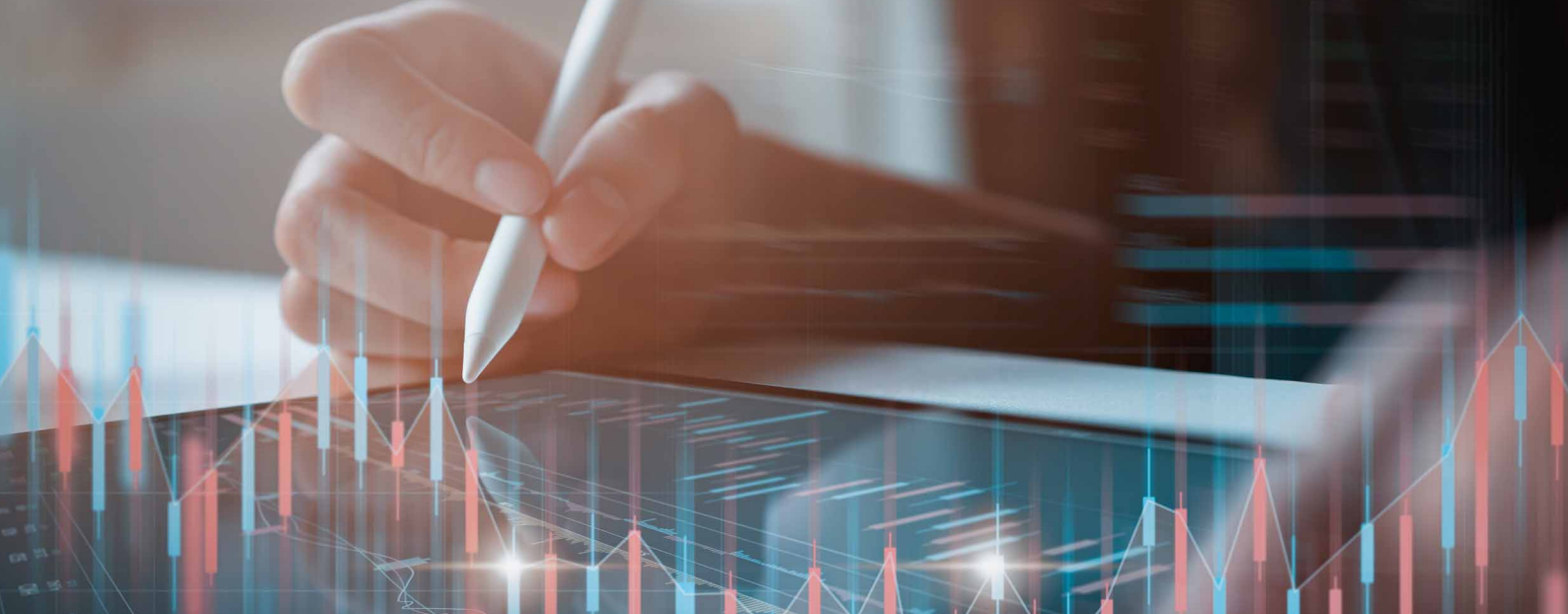
Tying location data to real-world points of interest

On its own location data is extremely useful. But it's even more compelling when you know which points of interest are nearby. Armed with this information, a marketer can understand much more about the consumer's status and options at any moment in time.

This is why Digital Element has built the industry's largest IP-to-Point-of-Interest (POI) database (for the US and Canada). It maps everything from shops to hospitals to clown equipment suppliers (seriously). There are more than 16 million POIs in over 11,000 categories.

POI data enables all manner of creative marketing activity. It's great for loyalty and attribution (brands can know '*this device saw this ad, and now it's in this shop...*'). Marketers can build anonymous maps of consumer routines and target ads accordingly. They could, for example, offer discount codes for a customer's favourite shop even when that person is at home.

But POI data can also be employed for creative new ideas like 'geo-conquesting'. Here, a brand can run guerrilla campaigns that target a customer when he/she is in a competitor's location.



Reach vs accuracy. The freedom to choose what's suitable right now.

Sometimes you want scale. Sometimes you want to micro-target. It depends on your campaign goals...

As we've discussed, different geolocation approaches deliver different levels of accuracy. GPS and other 'lat-long' techniques can pinpoint consumers to a few feet. However, they are limited by the need to have users opt in. This is accuracy at the expense of reach.

Meanwhile, IP geolocation is almost universally available. And it provides the ability for hyperlocal targeting down to postcode level, globally.

However, some brands have the luxury of choosing from both options. Here's how it often works. They use IP geolocation to make broadly targeted offers. This builds trust and customer satisfaction. Having established this trust, they ask users to opt in for micro-targeting via GPS.

With both IP and GPS available, companies can then run campaigns that favour reach over accuracy or vice versa. They can move the customer down the 'purchasing funnel' as required.

And they can make their campaigns even more effective by using IP-based geotargeting to understand more about a user's data speed, connection type and device type.

Digital rights, cybersecurity... IP geolocation is not just for marketers

IP geolocation is making a big impact in digital marketing. Now other sectors are starting to discover its potential too...

Many verticals besides advertising are reaping the benefits of IP-based geolocation. They include TV and film. Broadcasters and streaming companies use IP geolocation to protect their digital rights. They employ the tech to detect (anonymously and without the need for opt in) where a user is located. They can then permit or restrict access depending on distribution rights. In addition they can deploy proxy data to help prevent circumvention and password sharing.

Fintech companies are also finding good uses for IP geolocation. These include matching a bill to its location, and identifying/restricting suspicious traffic that emanates from proxies or hosting centres.

IP geolocation TV rights case study: VUBIQUITY

VUBIQUITY is one of a growing number of content providers that uses IP geolocation to find out when users are watching in non-approved regions.

The company supplies third parties (such as mobile networks) with digital entertainment packages. It licenses its content from nearly 650 film and TV companies. These studios often mandate that licensees use IP geolocation technology to protect their rights.

So in 2015, VUBIQUITY began the search for a partner. It was particularly interested in a system that covered Africa and Latin America.

Ultimately, VUBIQUITY chose Digital Element's tools to analyse incoming requests. It uses them to detect proxy and VPN datasets, which helps it to authenticate users and enforce local rights.

Ready to try IP geolocation? 20 minutes is all it takes...

In this white paper, you have read how IP geolocation gives marketers the ability to target effectively by geography – without intruding on privacy. This type of targeting frequently delivers much higher click through rates. Inventory rates go up too.

Meanwhile IP geolocation specialists such as Digital Element layer on more targeting attributes besides location. Digital Element's NetAcuity suite can give insight into connection characteristics such as

connection speed, ISP and more. It has also developed an advanced proxy database.

IP geolocation systems are easy to plug in. NetAcuity can be deployed on an internal server in less than 20 minutes. It can handle up to 30,000 requests per second, and response time is around 0.03 milliseconds.

To find out more about adding IP-based geolocation to your digital marketing services, please contact...



The Global Leader in IP Geolocation Technology.
Independently verified as the most accurate IP dataset available.

Digital Element is the global leader and industry pioneer of IP geolocation technology. Our IP Intelligence solution is deployed by the world's leading ad networks, broadcasters, publishers, e-commerce sites, analytics providers, cybersecurity companies, fintech organisations, banks, payment providers, government & military departments and more.

What can our NetAcuity® IP location data do for your company?

IP geotargeting allows companies to:

- Deliver relevant advertising and content in a simple, cost effective and privacy sensitive manner - tailored to users' locations at the moment when it's most relevant.
- Identify and act on suspicious internet connections in real time.

Example applications include:

Target Online Advertising

Deliver hyperlocal offers and charge up to 50% more for advertising inventory.

Localise Content

Increase online engagement and improve response rates by up to 300%.

Enhance Analytics

Better predict user behaviour based on geo/demographic segments.

Simplify Mobile Targeting

Provide location-relevant content with no user opt in required.

Manage Digital Rights

Control distribution of digital media based on user location.

Enhance Cybersecurity

Validate user location for mission-critical security applications.

Digital Elements clients include

Teads.tv, BBC, MediaMath, LinkedIn, Hubspot, Webtrends, TikTok, Facebook, Interpol, Advertising.com, Mobvista, TapAd, TapTap Networks, Kargo Global, Sparkasse Finanz Informatik, Swedbank, JP Morgan & Chase to name a few.

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