The Impact of Invalid Traffic on Marketing
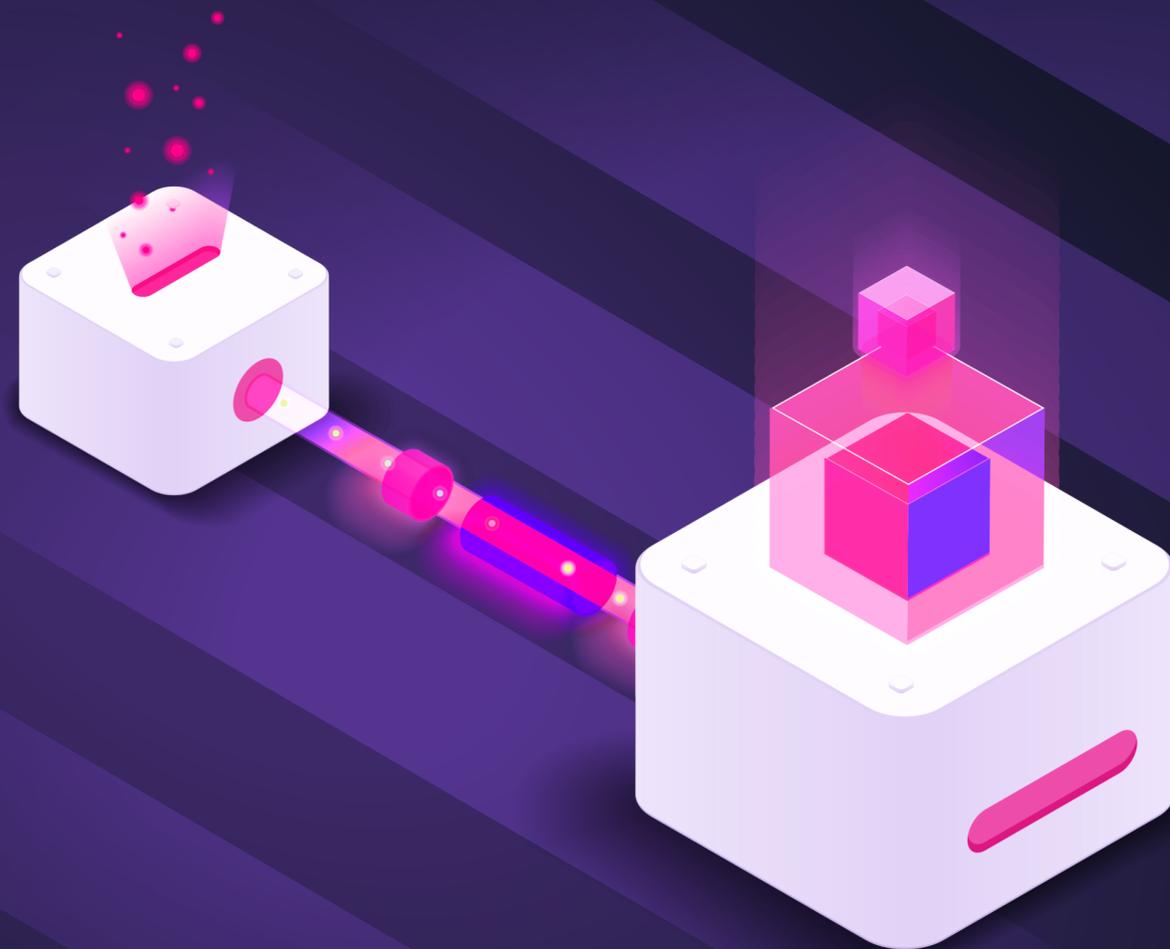
How bots and fake users poison your entire marketing operation.
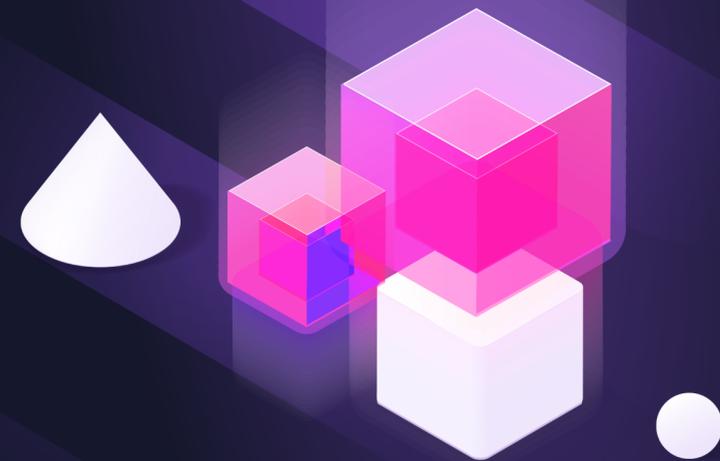
CHEQ

Israeli Cyber Companies Forum

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Introduction

Lior Frenkel, Chairman, the Israel Cyber Forum

Recent years have seen advanced cyberattacks become the norm. Attack techniques, tools and technologies, traditionally solely accessible to governments, have leaked out. Today, they are readily available to serve criminal agents and support the rapidly growing cybercrime sector.

This trend, which will not end in the foreseeable future, is clearly demonstrated by the proliferation of ransomware attacks, advanced attacks by non-state actors, a focus on national critical infrastructures, and the growing sophistication of attacks with criminal motivations. Within digital marketing and ecommerce, it is evident that this rise in adversaries' cyber capabilities is resulting in direct, and evident revenue loss to businesses across the globe. The impact is stark: producing higher customer acquisition costs, which end up reducing the bottom-line performance.

Furthermore, fake user accounts and bots, blur the view of organizations, skewing forecasts, revenues and pipeline. This represents a growing cyber security concern. This is a challenge that must be dealt with, sooner, rather than later.

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Within digital marketing and ecommerce, the rise in adversaries' cyber capabilities is resulting in direct revenue loss

Foreward

Invalid traffic (IVT) has historically been a major concern for information technology and security teams reporting directly to the CISO. However, as today's CMOs have realized, IVT is also a prevalent problem for marketers and go-to-market teams.

IVT consists of bots, fake users, and otherwise invalid users and is becoming increasingly problematic for anyone looking to acquire customers online.

Today, IVT makes up 40% of all web traffic. Because of the prevalence of IVT, nearly every marketing funnel, campaign, and operation is impacted to some degree, oftentimes in very harmful ways.

When it comes to paid marketing, when IVT is present, audiences, CDP segments, and CRMs become polluted, campaigns are optimized toward fake users, and revenue opportunities are missed. Analytics and BI systems also are affected by skewed data and a lack of actionable insights. Additionally, website and conversion funnels are disrupted by invalid leads and visitors. Because of the increasing demand for marketing security solutions, we decided to release a study on IVT and the impact that it has on marketing.

40% Global Invalid Traffic

Methodology

This study was conducted over the course of 10 months, across campaigns, funnels, websites, and data from 10,000+ CHEQ customers. The goal of this study was to break down Invalid Traffic activity across the marketing operation.

Invalid Traffic includes the following:

Bot Traffic: Botnets, scrapers, crawlers, and automation tools.

Malicious Traffic: Click farms, hackers, fraudsters, and fake accounts.

Suspicious Traffic: Proxies (VPN), data centers, and excessive rate limits.

To determine the traffic's validity, we performed over 2,000 real-time cybersecurity challenges to every site visitor's browser. Each visit was analyzed by our Intelligence Engine, through our bot detection, user validation, and behavioral analysis modules, categorized visitors into valid and invalid, and segmented the invalid visitors into different threat types.

After categorizing the traffic, we broke down the Invalid Traffic rates by traffic source (direct, organic, paid), industry, geolocation, device, and threat type.

We then used these invalid rates, combined with external metrics, to calculate the impact Invalid Traffic has on marketing generated revenue, sales operations, and BI driven decision making.
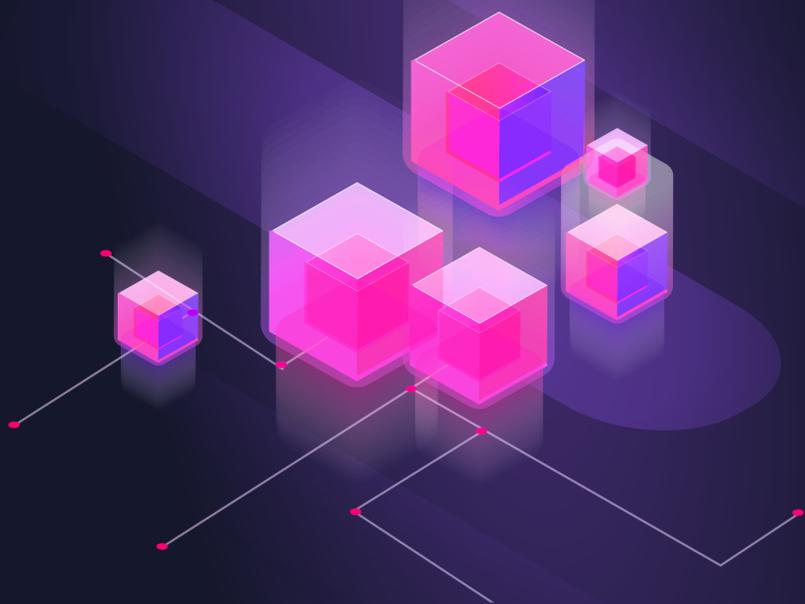
Findings

Executive summary

Invalid Traffic is an increasingly troubling issue that organizations of all sizes are dealing with. This summary provides an overview of some of the key findings that stood out, and that are also highly relevant to marketers and go-to-market teams. The implications of these findings are billions of dollars in lost revenue, skewed analytics, and sales labor cost.

27% of organic and direct traffic is invalid

$697B is wasted globally on skewed data each year

32% of organic and direct traffic from mobile is invalid

$42B is the amount of lost revenue due to IVT each year

32% of organic and direct traffic in the retail sector is invalid

$115B in sales labor costs is wasted on invalid leads

Findings

IVT rates for organic & direct traffic

27%

of organic & direct traffic is invalid

While looking at organic and direct traffic, 27% was made up of bots and fake users. This means that nearly a third of traffic found in non-paid internet channels is invalid and cannot convert into real paying customers.

Additionally, there are many factors such as industry, device used, and threat type that can affect how IVT impacts a given business. Throughout these findings, we dive deeper and break down organic and direct IVT.
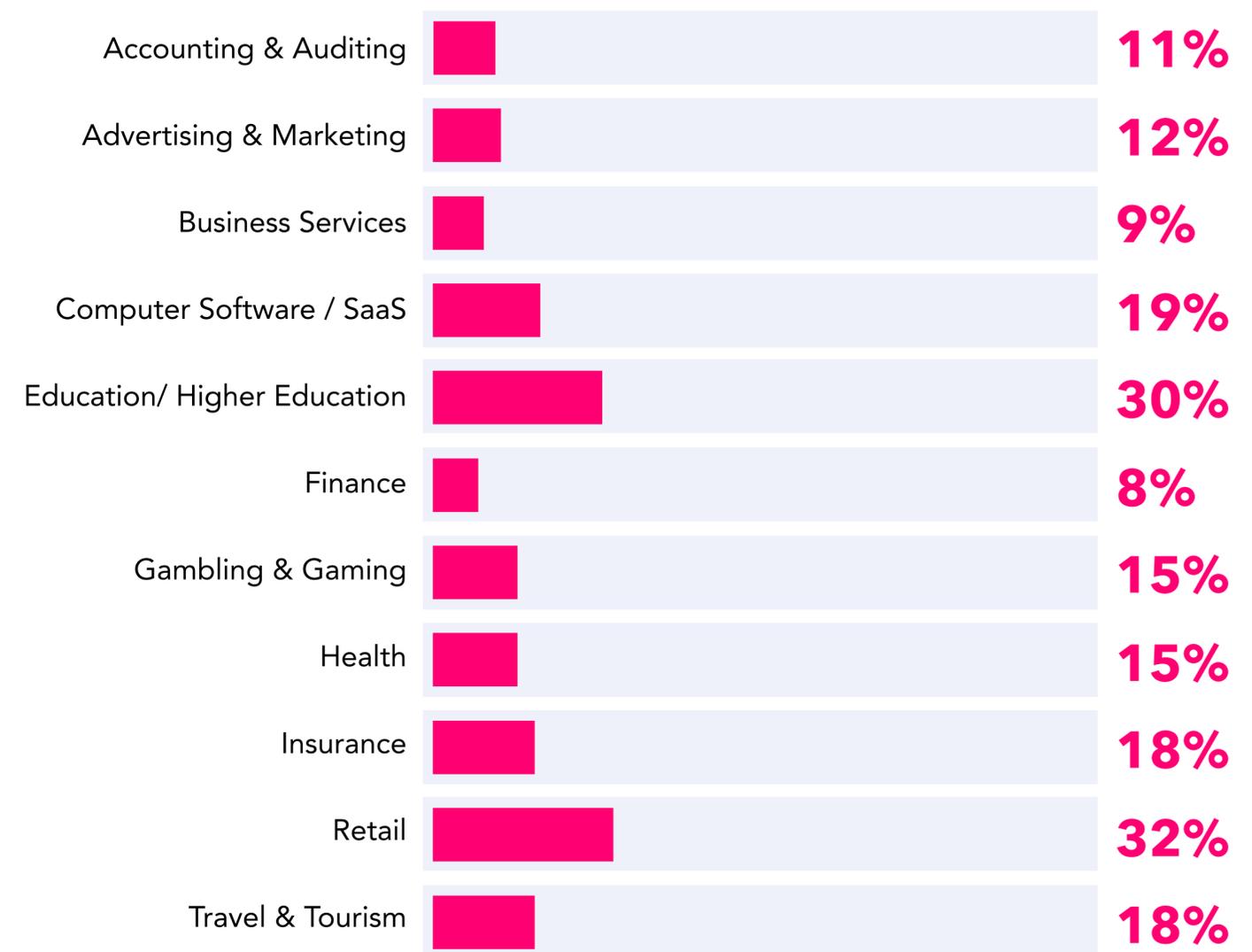
IVT rates for organic & direct traffic

IVT rates by industry

In this section, we looked at Invalid Traffic rates by industry. While overall Invalid Traffic from organic and direct sources is 27%, this can vary by sector.

The industries we analyzed had IVT rates ranging from 8% to 30%+. Online purchase heavy sectors like retail, travel & tourism, and insurance have displayed generally higher rates of Invalid Traffic. Additionally, industries with a high customer acquisition cost, like higher education and SaaS, also saw relatively higher IVT rates.

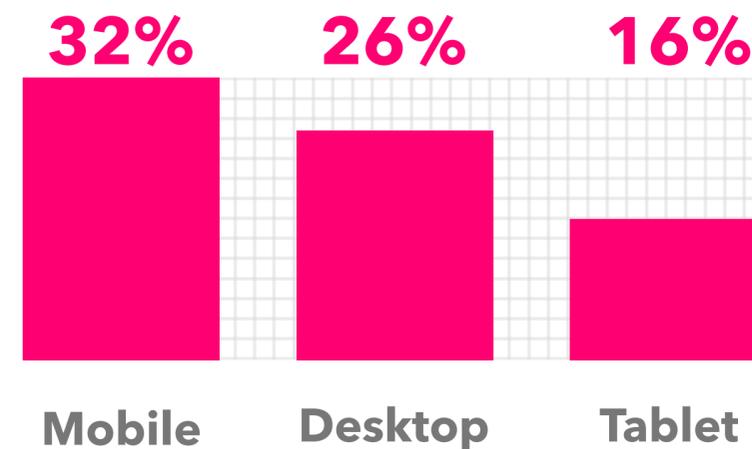| Industry	IVT Rate
Accounting & Auditing	11%
Advertising & Marketing	12%
Business Services	9%
Computer Software / SaaS	19%
Education/ Higher Education	30%
Finance	8%
Gambling & Gaming	15%
Health	15%
Insurance	18%
Retail	32%
Travel & Tourism	18%

IVT rates for organic & direct traffic

IVT rates by geography

We analyzed three key geolocations: NA, APAC, and EMEA. North America displayed the highest IVT rates, possibly suggesting that digitally advanced markets tend to attract more invalid, malicious, and fraudulent activity.

25% **21%** **12%**

NA   APAC   EMEA

IVT rates by device

32% **26%** **16%**
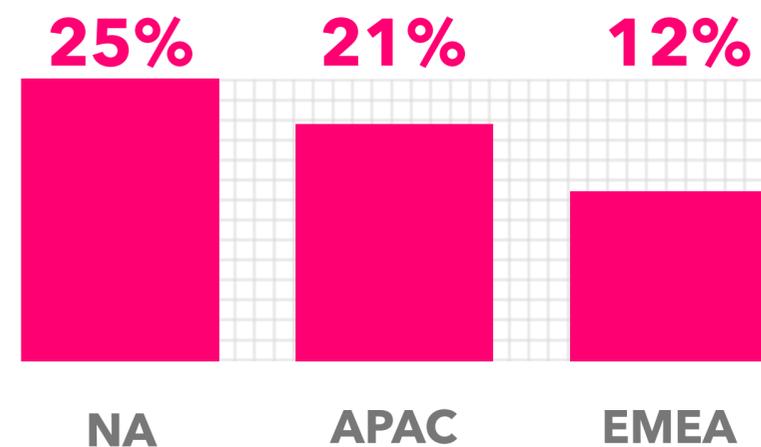
Mobile   Desktop   Tablet

We analyzed IVT rates across mobile, desktop, and tablet. The lowest IVT rates were found across tablets, suggesting devices that are less in use attract less invalid activity. On the flip side, the ubiquity of mobile devices and the prevalence of their usage has attracted the highest rates of invalid or fraudulent activity.

IVT rates for organic & direct traffic

IVT rates by threat type

In this section, we analyzed IVT by threat type. This helps uncover specifically what types of invalid traffic and bots are most prevalent within organic and direct traffic. The highest percentage came from General IVT (GIVT), which refers to the most common forms of bots such as web crawlers, scrapers, spambots, and spiders. Combined with the prevalence of Automation Tools (browser testing software and headless browsers), over 60% of IVT comes from non-human automated bot traffic.

General IVT*	**43%**
Automation Tools	**19%**
Disabled JS	**16%**
Data Centers	**4.7%**
Click Hijacking	**3.9%**

3.5%
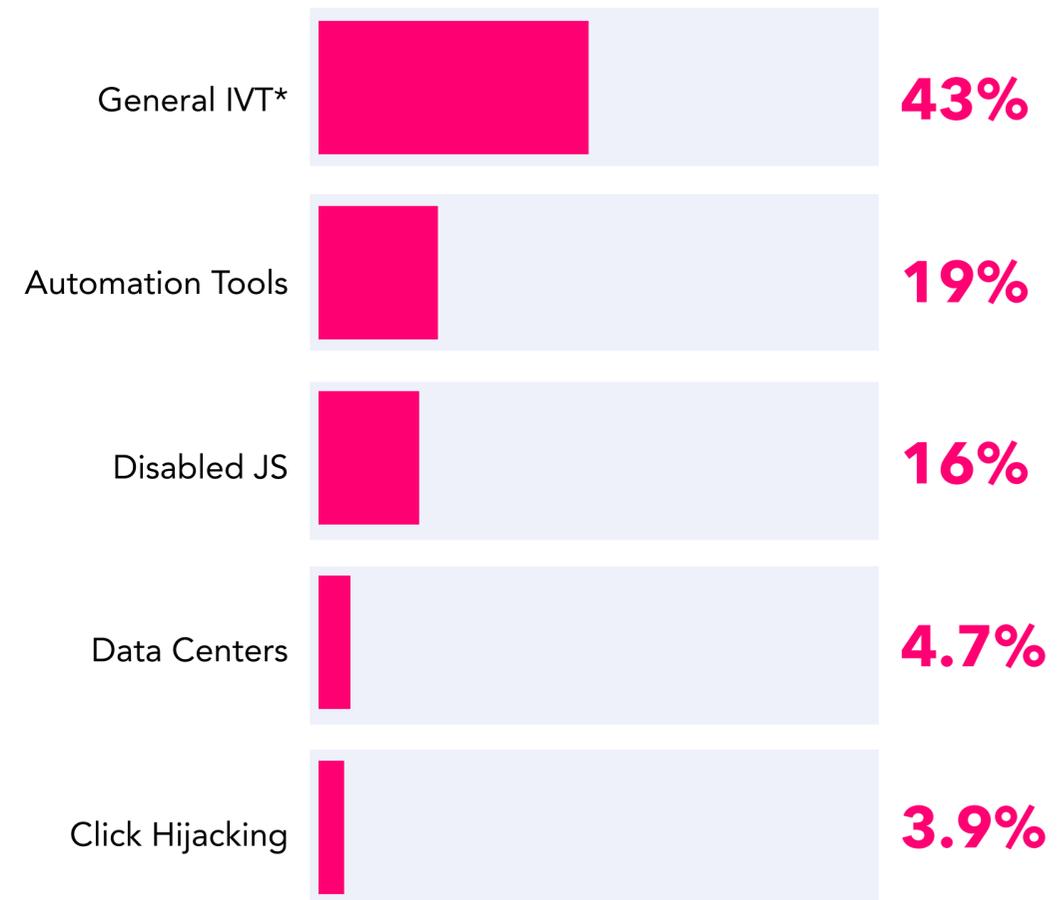
of paid traffic is invalid

Findings

IVT rates for paid traffic

This portion of the report looks specifically at paid marketing channels. This spans all major advertising platforms including the major search engines (like Google, Bing, Yahoo), social platforms (like Facebook, Instagram, Twitter, LinkedIn), and additional paid channels like affiliate and partner marketing.

We looked at the same break downs as we did with organic and direct traffic, but this time we analyzed only traffic that arrived by paid campaigns.

IVT rates for paid traffic

IVT rates by industry

Here, we looked at how different industries are impacted by paid Invalid Traffic. The highest levels of IVT were found in a few key industries including Finance which had 10%, Gambling & Gaming which had 9%, and Computer Software/ SaaS which had 8%.

The study found many disparities in IVT rates depending on campaigns, CPA, platform, time of day, and season, making Invalid Traffic in paid marketing a more volatile threat that is harder to predict.

| Industry	Rate
Accounting & Auditing	6%
Advertising & Marketing	3%
Travel & Tourism	1%
Business Services	2%
Computer Software / SaaS	8%
Education/ Higher Education	6%
Finance	10%
Gambling & Gaming	9%
Health	4%
Insurance	2%
Retail	2%

IVT rates for paid traffic

IVT rates by geography

Again, we are looking at IVT rates within NA, APAC, and EMEA. When analyzing paid traffic, we saw that APAC had the highest levels of IVT, marking a shift in regional IVT rates as compared with non-paid.

3%   **5%**   **3%**

NA   **APAC**   **EMEA**

IVT rates by device

2%   **7%**   **4%**

Mobile   **Desktop**   **Tablet**
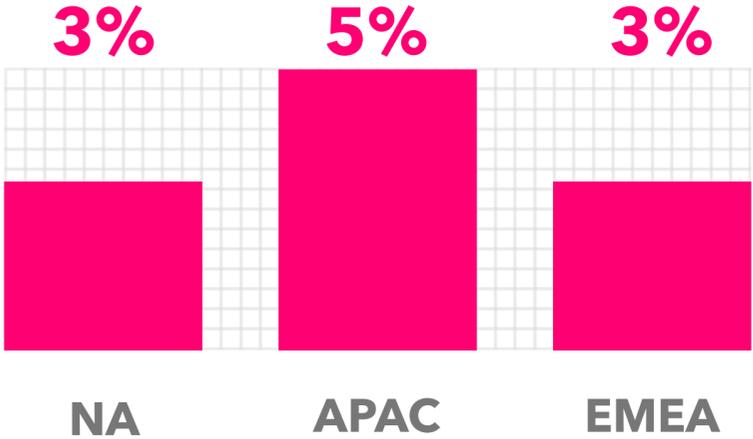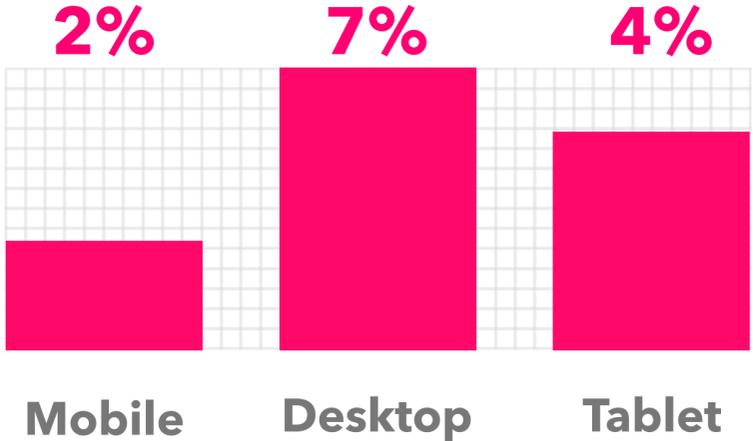
While analyzing IVT rates by device, we discovered that desktop devices had the highest levels of Invalid Traffic at 7%. This indicates that malicious users who seek to attack paid campaigns, typically do so from a computer rather than a mobile device or tablet.
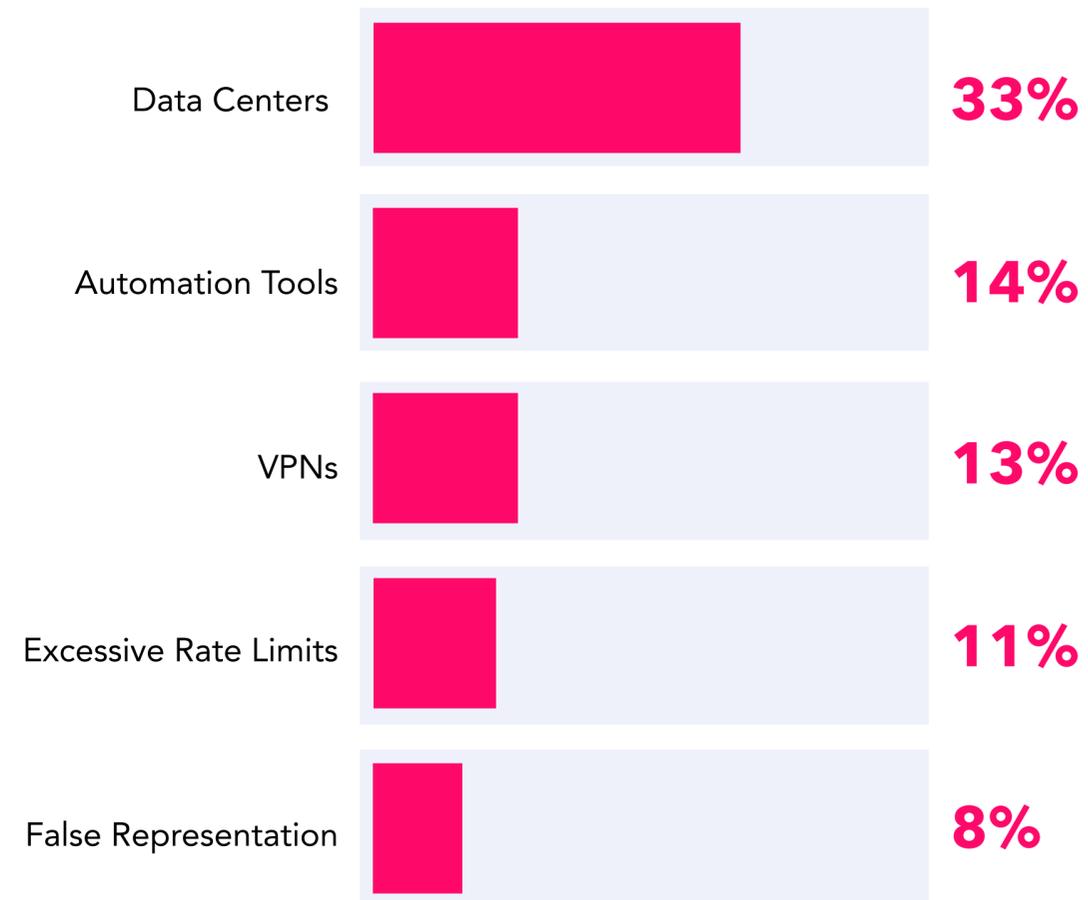
IVT rates for paid traffic

IVT rates by threat type

When we looked at paid traffic, we saw that malicious Data Centers accounted for 1/3 of the Invalid Traffic in paid channels. VPN's accounted for 13% and False Representation accounted for 8%.

This indicates that users hiding behind proxy tools and servers or attempting to mask / manipulate their identity in various other ways, are an increasingly serious challenge for paid marketers.

Threat Type	Rate
Data Centers	**33%**
Automation Tools	**14%**
VPNs	**13%**
Excessive Rate Limits	**11%**
False Representation	**8%**

Chapter 3
Implications & insights

The findings point to the rise of IVT as a threat to the continuous sustainability of online business.

With up to 27% of traffic coming from invalid sources, IVT is no longer a threat organizations can ignore.

We looked at three key areas that are essential to the go-to-market operation, and further analyzed the affect IVT is having on these components of business. The areas we cover are:

- The affect of IVT on Revenue
- The affect of IVT on Data
- The affect of IVT on Resources

IVT costs businesses $42 billion in lost revenue opportunities.

A key issue with IVT is that it takes up advertising budget intended to be spent on driving revenue from potential customers. Marketers are constantly looking for an effective CAC (Customer Acquisition Cost) to LTV (Life Time Value) ratio, so that every dollar they spend, yields back a good return. But when ads are served to bots and fake users, that portion of the budget is not generating returns, therefore costing the business revenue opportunities.

To gauge the cost of lost revenue opportunities caused by IVT, we first caluculated CAC:LTV ratios across all verticals to understand how much revenue is being generated from every marketing dollar. We then looked at average IVT rates in each vertical, and derived from that how much marketing spend was being wasted.

Based on the percentage of invalid traffic we uncovered, it was revealed that $42 billion in revenue is lost globally each year due to Invalid Traffic on an additional $2.5 billion in customer transactions.

The findings suggest that marketing dollars lost on IVT are much more than just wasted advertising budget, but actually lead to substantial revenue losses. If a marketer generates $5 of revenue for every $1 they spend, then every wasted dollar is $5 in revenue lost.

It should be noted that these lost revenue opportunites do not account for additional damages caused to the paid marekting apparatus, including polution of remarketing efforts and lookalike audiences, and skewing of automated optimization algorithms, which can cause even more revenue loss down the funnel.

Data skewed by IVT costs businesses $697 billion annually.

Virtually all meaningful business decisions are made based on data. This is why leading organizations spend tens of millions of dollars each month on getting their data, analytics, and business intelligence right. Business leaders seek to gain insights on how their organization is currently performing so they can project revenue, analyze the effectiveness of their go-to-market strategies, evaluate growth opportunities, and forecast their business.

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According to Harvard Business Review & IBM, bad data costs the United States about $3 trillion per year

For this reason, skewed data has become a strategic threat to the sustainability and well-being of data-driven organizations.

But according to Harvard Business Review & IBM, bad data is extremely prevalent, costing the US over $3 trillion per year. Our analysis suggests that 10% of that bad data is a direct or indirect result of IVT. Considering the U.S. accounts for 43% of the Big Data market, we can quantify the global cost of data skewed by IVT is $697 billion annually.

$115 billion in sales labor costs are wasted on invalid leads.

As our findings revealed, IVT is especially prevalent in organic and direct channels with a 27% invalid rate across locations and industries. That is a significant amount of users that will not convert into real paying customers, yet they flood inbound pipelines and CRMs, wasting the sales team's precious time and energy.

Today, it is estimated that 13 million people work in sales, and according to ZipRecruiter the average global Account Executive salary is about $109,000. That totals $1.4 trillion spent on sales headcount each year. It is also estimated that about 30% of an Account Executive's time is spent on actively selling to new prospects.

Based on the global spend on sales headcount, as well as CHEQ's own IVT data, our analysis revealed that a total of $425 billion in workforce resources spent on active selling. Furthermore, since 27% of non-paid traffic is invalid, that means that $115 billion in sales labor costs are wasted on prospecting and nurturing invalid leads that will never convert into paying customers.
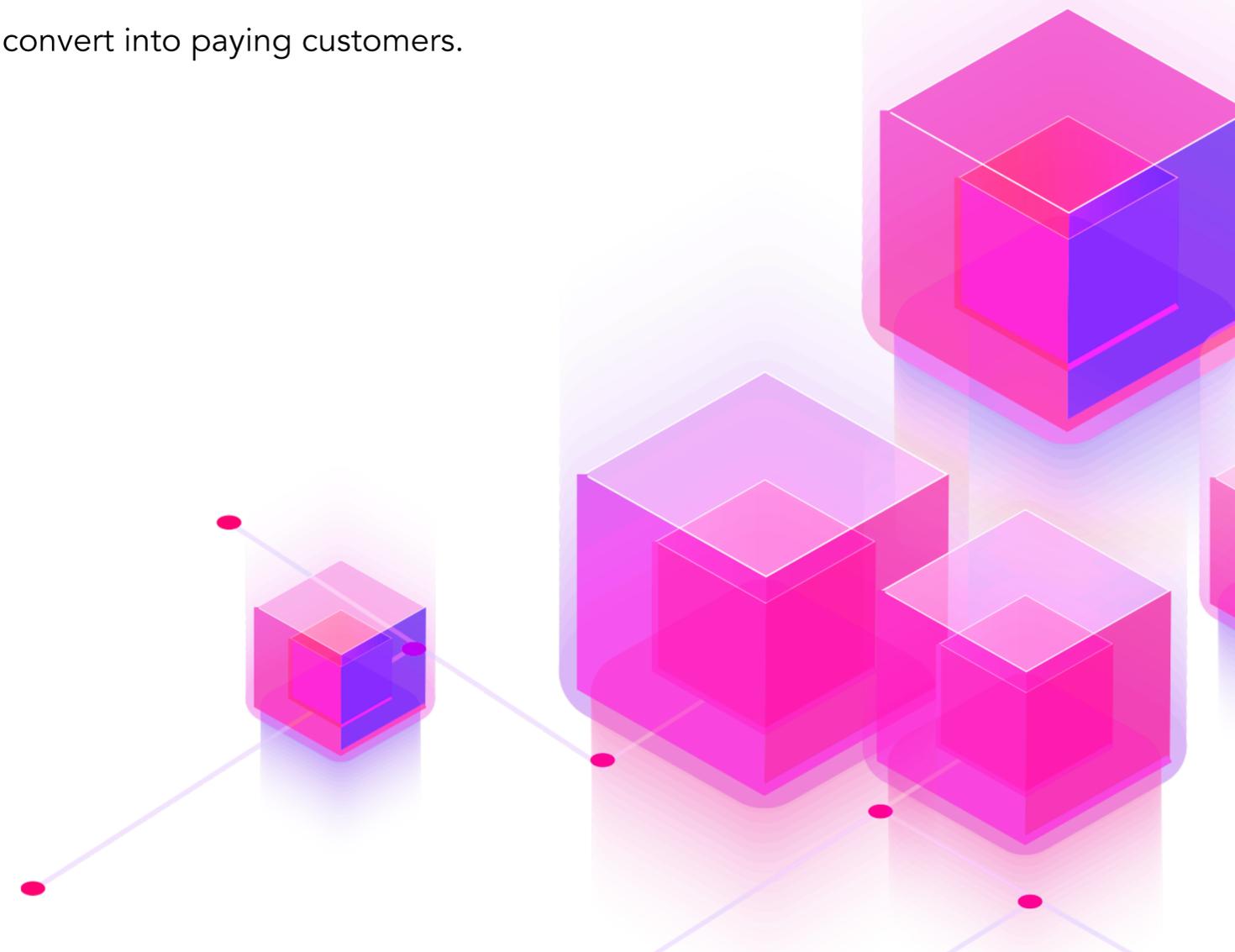
Summary

The report uncovers the magnitude and scale of IVT, and how it is becoming a strategic issue impacting the sustainability and well-being of online business.

The report uncovered that 27% of all organic and direct traffic is invalid, consisting of a wide array on non-human, automated, malicious and suspicious users. Within certain industries like Retail, the IVT rate can go as high as 32%, but even the 'cleanest' industry (Finance) still suffered from an 8% Invalid Traffic rate.

The large scale and growing prevalence of IVT, is leading to substantial harm from online business & marketing performance, including: $42 Billion in lost revenue opportunities, due to misplaced marketing budget. An additional $115 Billion, in sales labor costs, wasted on prospecting and nurturing invalid pipeline and leads. A further $697 Billion are lost due to decisions, forecasting and planning made based on skewed data.