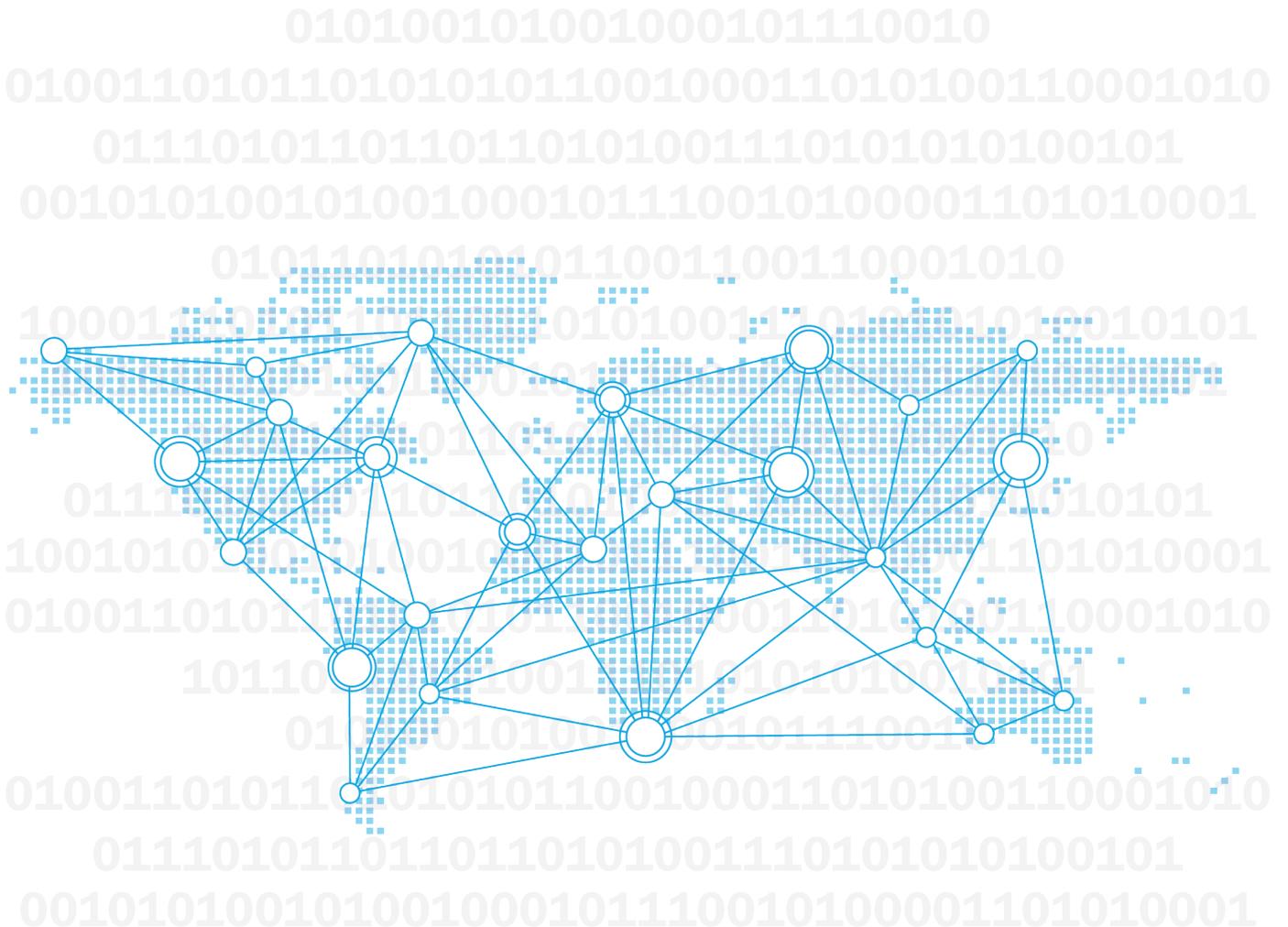


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Combating the Risk of Fraud, Piracy, and Abuse with FiveBy

FiveBy Solutions, Inc.



Who is FiveBy?

FiveBy is a specialized risk intelligence services firm that provides clients with the insights they need to transform risks confidently and effectively into opportunities. Whether it's responding to an ongoing incident or implementing preventive measures, FiveBy develops unique, flexible, data-driven solutions that are specifically tailored to its client's needs.

The Heightened Risk of Fraud, Piracy, and Abuse

Whether from a coordinated or opportunistic attack, the risk of falling prey to fraud, piracy, or abuse is increasingly common in an all but fully digitized world. This threat is no longer a unique concern for security and logistics professionals, as the risks for lost revenue now exist at nearly every level of business. Even those firms who previously prioritized the development of a broad anti-piracy or anti-fraud strategy find themselves subject to complex challenges that impact their bottom line. Without significant expertise and an ability to dig deep to understand all possible vulnerabilities and challenges, many industry leaders are at risk of encountering a major problem as fraud, piracy, and abuse continue to evolve.

FiveBy's Approach and Solutions

The world's most recognizable brands trust FiveBy when they encounter an issue that threatens their reputation, their ability to support customers, their intellectual property, or their bottom line. FiveBy's unique point of view brings together expertise in the fields of security, technology, data science, and operations to provide solutions for firms with issues related to fraud, abuse, sanctions, money laundering, corporate governance, and information security. This diverse knowledge base allows FiveBy to customize its approach to best fit the needs of its clients, whether there is a requirement for root-cause analysis, an end-to-end process, or a managed service.

FiveBy's Experience Combatting Fraud, Piracy, and Abuse

With more than a decade of experience in combatting piracy and fraud, FiveBy has proven itself an agile and adaptive partner who can rapidly identify and resolve its clients' issues. Whether it's responding to an attack or developing a broader strategy to address issues related to fraud, piracy, or abuse, FiveBy is uniquely positioned to provide custom and lasting responses that help firms better understand their challenges and customers.

Some of the best examples of these efforts can be seen in the following case studies detailing work FiveBy has completed with industry leading software, social networking, and online subscription-based services companies. This work provides evidence of FiveBy's ability to provide a wide range of services, including implementation of process improvements to address software piracy, supply chain security, and halting fraud. Furthermore, they demonstrate FiveBy's unique ability to use its diverse experience and expertise to work within an organization efficiently to identify and develop business-critical opportunities out of potentially hazardous risks.

SECTION 1: Addressing Software Piracy Through Product & Process Improvements

The below case studies demonstrate FiveBy's ability to identify, understand, and ultimately improve clients' abilities to efficiently connect customers with product value. Using techniques such as data driven forensic analysis, business policy analysis (such as licensing & terms of use), and customer segmentation, FiveBy helps its partners reduce and prevent undesirable behavior with an enhanced understanding of user behavior.

Case Study 1.1 – Identified and converted non-genuine users in partnership with a leading software publisher

Client's Challenge:

One of the world's leading software manufacturers was losing enough revenue to non-genuine users that it considered non-monetized consumption to be its greatest competitor. They needed to better understand how and why its products were pirated and to develop a broadly applicable solution at a company-wide level to remediate and reduce high piracy rates.

FiveBy's Approach:

FiveBy began the engagement by building a model to measure usage and monetization. This investigation dug deep to develop a clearer picture of the firm's non-genuine user activity by comparing product sales to their actual use. This information was then mapped and compared against locations where licenses were utilized repeatedly, which highlighted non-compliance issues within the firm's distribution channels. Once FiveBy was able to map and identify the company's vulnerabilities, it was able to move toward recommendations for how to transform these risks into opportunities.

FiveBy's Solution:

After creating a solution that could validate whether a product was used legitimately, FiveBy aimed to transform the client's problem into an opportunity for improved engagement with its clients. Through customer research on why consumers use non-genuine products, FiveBy segmented users into categories where those who were more likely to convert to genuine software, such as the unknowing or ambivalent non-genuine users, were separated from those who were intentionally pirating software.

- FiveBy created internal and external messaging framework that appealed to the unknowing and ambivalent and educated them on the benefits of converting to genuine software.
- FiveBy also identified and tracked those who were unlikely to convert and targeted them for shutdown.

In addition to the above, FiveBy's identification of distribution channels with high non-compliance rates outlined structural issues within the organization that required closer attention from disparate stakeholders.

Results:

Through these efforts, FiveBy was able to help the client improve its understanding of non-genuine users and why they opted to obtain their products illegally. This provided the client with an avenue to convert previously lost revenue into new revenue and positive customer relationships. It also helped them demonstrate industry leadership in both revenue and customer success.

Case Study 1.2 – Partnered with an industry leader to improve understanding of themes and trends in piracy prevention

Client's Challenge:

A global software leader wanted to merge and subsequently expand its anti-piracy and digital crimes prevention efforts. They needed subject matter expertise that could help support the development and execution of a scalable, enterprise-wide program.

FiveBy's Approach:

FiveBy's initial engagement centered on the provision of telemetry data that mapped where and how piracy was occurring.

- This represented a significant upgrade from the client's previous identification system, which relied on end user reports received via email or hotlines.

With data now more available and visual, FiveBy began to conduct primary research in areas where license compliance was low.

- By studying the behaviors of non-genuine users, FiveBy and its client were able to identify and segment the motivations of individuals and entities who engaged with pirated products.
- More importantly, this research identified specific areas that exposed individuals and entities to risk, such as downloading copies of the client's potentially tampered software off the internet.

FiveBy's Solution:

With data in hand, FiveBy created a model to identify high risk behaviors and applied this tool in potential risk areas to produce risk profiles. These efforts helped display clearly the potential issues associated with using unlicensed products and encouraged rapid and substantial remediation among non-compliant users.

Results:

Upon seeing success in areas of low compliance, the strategy was successfully scaled up for an enterprise-wide audience and other Fortune 500 companies.

- With FiveBy support, the client was able to merge its anti-piracy and digital crimes prevention efforts and turn this work into a showcase for positive public relations and substantial new revenue opportunity.

SECTION 2: Addressing Fraud and Security Risks in the Supply Chain

If a company is to maintain control over its products and brand experience, that company must fully understand how customers obtain and engage with their devices. If that company does not hold complete ownership of its supply chain, they need to know where vulnerabilities exist and how to identify them. For example, not only are products subject to theft in the supply chain, but criminals have been known to tamper with products to disrupt or modify some key functionality, and to learn valuable trade secrets which can then be monetized outside of legitimate channels.

Case Study 2.1 – Helped to secure a company's supply chain and proprietary information for its gaming consoles

Client's Challenge:

A multinational gaming company's developer kits and consoles were being used to openly pirate proprietary products and information. Game developers were accessing competitors' creations and the company's devices were being hacked to avoid additional purchases. The multinational firm needed to better understand its supply chain infrastructure to ensure its products were used properly

FiveBy's Approach:

FiveBy conducted in-depth interviews across the organization to develop a clear map of the company's affected stakeholders. This enabled FiveBy to identify how piracy impacted each of the company's teams and provided recommendations for how these departments could work better together.

FiveBy also developed and deployed a tool that measured whether a key link in the supply chain was compromised. Once the weak link was identified, FiveBy sized the problem and provided recommendations for a layered response.

FiveBy's Solution:

To comprehensively address the primary concerns related to the client's consoles, developer kits, and developer access, FiveBy's targeted its solution to minimize the most impactful threats.

- FiveBy mapped where violations were occurring and traced them throughout the company's supply chain to help halt the modification of the client's consoles. Once a pattern was identified, FiveBy was able to map this data and provide audit reports on how non-genuine products were being trafficked in the consumer market.
- FiveBy created a *natural telemetry system* that displayed where devices were being used and included a system of alarms to alert security teams if there was unexplained or non-genuine activity to better protect developer kits.
- FiveBy created a Whitelist that catalogued individual access.
- FiveBy developed a monitoring system that identified rogue IPs and developers who accessed information externally. These systems were also tested with individual vulnerability assessments to further identify potential exposure risks.

Results:

The geolocation and mapping of devices allowed the client to track and maintain connectivity to its products more efficiently and effectively. The client deemed these efforts to be so impactful and important, that it quickly expanded the engagement's scope to include other devices that were not strictly for gaming, such as smartphones, desktops, tablets, and wearables.

Game developers were provided with more peace of mind, as FiveBy's solutions stopped unauthorized access to their games and better protected their creative content.

Case Study 2.2 – Helping a VR headset developer improve security and growth potential

Client's Challenge:

Security concerns limited the growth potential for a leading developer and supplier of Virtual Reality technology. The client needed to understand the root cause of its security issues and wanted to develop an end-to-end solution that would help protect its products' growth potential.

FiveBy's Approach:

FiveBy examined potential security issues from all phases of device lifecycle to address risks at each link in the company's supply chain.

- These links included development, manufacturing, packaging, transit, retail use, and consumer use – each of which had distinct, siloed data dimensions that presented their own challenges.

FiveBy's Solution:

To minimize losses in revenue and information, FiveBy opted to unify data from the various siloed sources to provide deep and actionable insight into how products were being exploited and exposed to risk.

- FiveBy built a solution that employed materials science and radio frequency fingerprinting technologies to monitor device telemetry, user login, content behaviors, and device usage and tampering.
- FiveBy also completed in-depth research on stolen devices, which included location data on activations, sales, origination points, and the identification of those involved in the theft.

Results:

FiveBy's work provided the client with a fuller understanding of the vulnerabilities and lifecycle of its product and identified methods to better protect the company's overall brand experience. This included:

- Mapping device journeys.
- Device traceability to the component level.
- Integrating analytics and mapping solutions to support investigators' use of device telemetry in investigations and incident response.
- Identifying content theft at various levels, including software title, device type, geography, and usage, to inform the client and their partners' current and future protection efforts.

SECTION 3: Supporting Growth by Reducing Fraud

When systemic fraud is detected, an organization needs to understand quickly what risks they face, how their business is affected, and whether opportunities to implement solutions exist. In cases where a company is building broad-ranging products and/or platforms, this threat is even more severe. If untreated, losses from fraud can quickly multiply and irrevocably damage the long-term growth and brand health of a developing business. This final case study highlights FiveBy's ability to implement crisis responses that can subsequently support and adapt to a growing business' needs. With a deep understanding of how users interact with products and services, FiveBy can develop custom plans that diminish risk and help prevent future issues.

Case Study 3.1 – Responding to systemic fraud and implementing new systems to reduce fraud

Client's Challenge:

A multinational gaming platform provider saw a significant increase in fraudulent activity that corresponded with its own substantial growth. Eager to avoid further losses and maintain their standing with payment processors and a rapidly increasing worldwide customer base, the client needed an end-to-end solution to track, investigate, and remediate fraud across its platform.

FiveBy's Approach:

FiveBy's initial approach to this issue was to provide an end-to-end assessment of the client's systems. This included:

- Conducting a comprehensive fraud assessment, including interviewing key stakeholders to understand the challenges present within the platform's current system of security and across the entire business.
- Enrich the client's existing user behavior model to map ideal, legitimate use.
- Identifying and superimposing evidence of fraud over normal user data for comparison.

This approach allowed FiveBy to map out chokepoints where the client's platform was vulnerable to fraud and utilize them against attackers with minimal intrusion or friction to customer activity. It also provided defined examples of typical fraudulent behavior.

FiveBy's Solution:

Using this data, FiveBy recommended and worked with the client to deploy several anti-fraud solutions, including:

- Tighter security protocols at account creation and login/logout.
- Manual investigation of suspicious activity, with the ability to warn/ban non-compliant usage or reverse suspicious transactions.
- Consolidation of previously siloed data on fraud into a dedicated database.
- The use of machine learning techniques to automatically score and flag accounts for risk-likelihood based on past and present user behavior.

Additionally, these solutions were designed to allow the client to identify and adapt to attackers' changes in tactics as they attempted to work around the newly implemented security controls.

Results:

FiveBy's efforts resulted in significant decreases to chargebacks, fraudulent payouts, and account takeover attacks. The behavioral analysis solution allowed for swift and flexible responses to fraudulent attacks as, or even before they occurred, which has limited disruptions to users' experiences.

These successes also enabled FiveBy to support further anti-fraud efforts with the client, such as:

- Shutting down a dark web operation that automatically created and sold fraudulent platform accounts that could be used to bolster a user's subscriber count.
- Segmenting the client's user populations to halt fraudulent traffic quickly and accurately.
- Implementing rulesets based on fraud indicators to help automate responses.

Combatting the Risk of Fraud, Piracy, and Abuse with FiveBy

As these case studies show, FiveBy is uniquely skilled at responding efficiently and effectively to major fraud, piracy, and abuse concerns. The company strives to use its diverse experience and expertise in these areas to rapidly identify and develop business-critical opportunities from significant challenges and risks.

More About FiveBy Solutions, Inc.

Companies and organizations contact FiveBy when they see risks related to fraud, abuse, sanctions or security which could affect their reputation, their ability to support customers, their intellectual property, or their bottom line. FiveBy provides the insight needed to transform those risks into opportunities. For over a decade the world's most recognizable brands have turned to FiveBy when they encounter an issue. We have the expertise to provide insights into what matters, and then work with you to develop unique, flexible, data-driven solutions. Our unique combination of tech and business savvy, our proven track record, and our commitment to working alongside you, means you can be sure we're addressing the risks while you're focusing on what's more important. And we won't stop there—we stay ahead of the game so as the threat landscape changes, you'll know as soon as we do. Whether helping respond to an ongoing incident or implementing preventive measures, we provide timely, impactful solutions to meet your business needs, and always with a human touch. With FiveBy in your corner, you can feel confident you're prepared for today's and tomorrow's risks.