Confederation of Indian Industry

Combating Counterfeits through Technologies and Global Standards

Report by

The CII National Committee on FMCG 2014-15

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Preface

Counterfeit products have an economy-wide effect on trade, investment, employment, innovation, environment, and most importantly, on the health and safety of consumers. They also has a negative impact on a company's brand image, which ultimately results in loss of revenue for industry and governments.

In 2014, Industry reports estimated the FMCG counterfeit market to be worth Rs. 68,000 crore highlighting the extent of the problem.

Given the emphasis on India's economic development and the much-anticipated growth trajectory - technology and innovation will play a key role in charting out India's growth strategy. However, counterfeits and fakes will hinder progress unless companies take steps to fight this problem.

CII has been at the forefront of addressing this issue and providing guidance to the Industry. This report, developed with the support of GS1 India, provides insights on global standards-based best practices and anti-counterfeiting technologies and solutions that companies can adopt.

This is perhaps the first such report that is available to the Indian FMCG Industry. We are certain companies will find it informative and useful.

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Foreword

It has been more than two decades since India embarked on its economic liberalization program and over the last few years, many of its benefits are clearly visible, especially in organised retailing and omni-channel marketing.

The prime reasons that have fuelled this boom include favourable demographics, rising consumer incomes and development of quality real estate like new shopping malls etc. This has led to changing lifestyles demanding greater variety in merchandise, convenience of shopping and ease of access.

Online retailing in India is expected to grow exponentially from US $6 billion currently, accounting for less than half a percent of the Indian Retail market size to 3 percent by 2020 according to a Price Waterhouse Coopers LLP report.

This is great news for the average Indian consumer who now has the option to shop for a wide range of products across multiple channels, from an ever-growing choice of both national and international brands, which were traditionally unavailable to them. However, with this increase in product choices, one of the major issues confronted by Industry today is of proliferation of counterfeit goods in the marketplace. Online, offline retailers and brand owners alike all struggle with addressing and finding an effective solution to this issue and to maintain consumer confidence in the goods sold by them.

This rapidly growing counterfeit trade which is estimated to reach USD $1.77 trillion by 2015[1], worldwide jeopardizes public safety, undermines legitimate businesses and harms national interests.

While the extent and reach of the problem are well understood, reducing the risks and impact requires a collaborative effort between trading partners and various stakeholders such as brand owners, intermediaries, third-party logistic providers, retailers, and law enforcement agencies etc.

Online retailers are most vulnerable to the counterfeit problem, as shoppers don't have the opportunity to touch and feel a product before purchase. Moreover, the 'marketplace' format followed by many online retailers only facilitates trade between sellers and buyers. In such formats, online retailers may not even be aware of the genuineness of the products being transacted through their websites.

Recent allegations that more than one-third of the products listed on a popular online marketplace are fakes [9], negatively impacts consumer confidence and reputation of online businesses everywhere. To tackle this problem, many online retailers [9] today have to take additional steps to assure shoppers about the genuineness of products sold on their websites.

In light of these emerging threats and need for brand protection against counterfeit products, the CII National Committee on FMCG 2014-15 of the Confederation of Indian Industry (CII) decided to take up this issue to provide guidance to the Indian FMGC & Retail Industry.

The Committee compiled a comprehensive survey of the FMCG & Retail Industry to capture and understand current anti-counterfeiting strategies adopted by them and has published this report based on the findings.

This report titled '*Combating Counterfeit through Technologies, Global Standards and Best Practices*' provides insights on counterfeits, global standards-based best practices and current anti-counterfeiting technologies.

The report also provides recommendations on what an effective anti-counterfeit strategy should look like along with an adoption roadmap for Indian FMCG companies and the Retail Industry.

GS1 India, a member of the CII National Committee on FMCG 2014-15 and a global standards body, affiliated to the global GS1 organization, which works with retailers and brand owners in over 110 countries, was designated to lead and conduct this report.

The Indian Retail sector and FMCG companies are encouraged to take cognizance of this report and implement its various recommendations. This would help them take preventive measures against counterfeiting of their goods proactively and thus enhance their brand protection, supply chain visibility, customer confidence, and consumer safety.

Executive Summary

With the current threat of product counterfeiting increasing at an alarming rate in the country, brand protection and security become crucial elements in the Indian industry's fight against counterfeit goods. A 2012 study mentions the estimated loss to the FMCG sector due to counterfeiting and piracy was almost Rs.35,413 crores (US $ 5.71 billion).

India is not alone in facing this threat. The effects of counterfeiting can be seen on corporations, Governments and consumers worldwide. The magnitude and effects of counterfeiting is of such significance that it compels strong and sustained collective action from them.

Many countries have started addressing vulnerabilities in the supply chain by enacting legislation, vigilance & surveillance against counterfeit products entering the legitimate supply chain. This requires to be complemented with use of anti-counterfeit technologies following global standards and best practices to enhance safety, security and visibility of supply chains. The strategic deployment of such solutions can help secure a brand or product and help build integrity within a supply chain.

To study and evaluate the impact of counterfeits on businesses and provide recommendations to the Indian FMCG & Retail Industry, a detailed survey was undertaken in 2014 by the CII National Committee on FMCG 2014-15. As a member of the Committee, GS1 India was designated to lead and conduct this study.

Survey and its Findings

Leading companies representing the Food & Beverage, Home & Personal Care, and Tobacco sectors participated in the survey. The comprehensive survey was undertaken to gather information in three main areas:

- Perceived threat of counterfeit trade
- Possible sources of counterfeit products and
- Status of anti-counterfeit solutions and strategies deployed or contemplated

Information was requested and gathered by CII through the survey questionnaire. The data supplied by each participant was collated, compiled and analysed. The report includes secondary data that was collated on prevalent and emerging best practices on the use of anti-counterfeit solutions.

Some of the key findings from the industry survey include:

- Popular anti-counterfeit technologies implemented by companies include either overt (visible) or covert (hidden) features. The results show that 60% of the surveyed companies use technologies with overt features, while only 10% of the respondents use technologies with covert features. About 30% of the participants use a mix of both overt and covert technologies.

- Even though majority of the respondents agreed that a multi-layered approach, which will help in maintaining universal and uniform electronic pedigree across all supply chain stakeholders is needed to build an effective anti-counterfeit strategy. Only 37% of the respondents have actually implemented a solution that integrates with their IT

applications for capturing and sharing product flow information to achieve full supply chain visibility in order to build a safe and secure supply chain.

Recommendations

In its recommendation the report urges Indian FMCG Companies & the Retail Industry to adopt a holistic approach to their anti-counterfeit adoption strategies which combines the use of technology and Standards.

In this context, based on various factors like cost and ease of adoption across product categories the need for harmonious linkage between product and information flow in the supply chain across trading partners, emerged as the best possible solution.

Furthermore, this solution facilitates the seamless querying or sharing of information, along with automated data capture using barcodes or RFID for unique and universal product identification. These are key requirements in implementing anti-counterfeit technologies and solutions using global standards, which are interoperable, open, vendor independent and easy to implement making it difficult for counterfeit products to enter into the legitimate supply chain.

The report recommends implementing additional covert or overt technologies if so desired, based on product criticality. There would however be associated additional costs of such implementations, which need to be factored in by organisations.

The report also provides a roadmap for retailers and brand owners on how to implement an effective solution with these foundational components (barcodes/RFID with global identification standards) and enable consumers to spot authenticate goods using simple devices like mobile phones etc.

The Counterfeit Problem

What are Counterfeit Products?

Counterfeit products in general, are fake replicas of the real product. Counterfeit products are often produced with the intent to take advantage of the superior value of the imitated product. These products tend to have fake company logos and brands. In the case of goods, it results in patent or trademark infringement.
Counterfeit consumer products have a reputation for being lower quality (sometimes not working at all) and may even include toxic elements. This has resulted in the deaths of hundreds of thousands of people, due to automobile and aviation accidents, poisoning (e.g. when a person consumes non-working medicines etc.).

Counterfeit consumer goods (knock-offs in colloquial language) are goods that infringe upon the rights of a trademark holder by displaying a trademark which is either identical or by using an identification mark which cannot be distinguished from a protected trademark.

Some of the effects of counterfeit include:

- The World Health Organization views the counterfeit of medical products as a tremendous risk to public health.
- G20 member countries have an estimated 3,000 deaths annually due to counterfeit consumer goods.[1]
- Legitimate businesses must compete with counterfeiters while brand owners and Intellectual Property Rights (IPR) holders face significant business and financial risks. [1]
- G20 member countries lose USD $77.5 billion in tax revenues while incurring an additional USD $25 billion increased cost of crime. An estimated 2.5 million jobs have been lost, increasing the annual cost of welfare.[1]

At a practical level, counterfeit goods are typically of inferior quality, not subject to corporate quality control or safety standards. In many cases, fake consumer goods have proven to be unsafe, if not outright deadly. The counterfeit market has expanded into areas in which a reasonable person would most expect to be able to rely on some standard of quality. Counterfeit cancer drugs, HIV medications, baby formula, cosmetics, consumer electronics, and food products have all resulted in fatalities over the years.

The range of counterfeited consumer goods is immense. Numerous small items such as watches, purses, cigarettes, movies and software etc. are being knocked off. There are several causes for this increase in counterfeit goods, including the growth in Internet e-commerce sales, and the fact that consumers seek out lower-cost items.

The spread of counterfeit goods has become global in recent years. According to the Counterfeiting Intelligence Bureau (CIB) of the International Chamber of Commerce (ICC), counterfeit goods make up 5 to 7% of world trade. [3]

A report by the Organisation for Economic Co-operation and Development (OECD) states that up to $200 billion of international trade could have been for counterfeit and pirated

goods in 2005, [4] and around $250 billion in 2007. [2] Other estimates conclude that a more accurate figure is closer to $600 billion lost, since the OECD estimates do not include online sales or goods counterfeited and sold within the same country. [2]

Usually revenues from the counterfeit market are pumped into a variety of criminal and terrorist organizations. [5] Illicit cigarettes are a vivid example of counterfeiting. Counterfeit cigarettes cost taxpayers in every nation billions in lost revenues.

Largely the public view of counterfeit products is one of ambiguity. Some counterfeit products look so much like the original that it is sometimes hard to tell the difference between the two just based on appearances.

The three major threats from counterfeits are:

Consumer Safety
Consumer safety is jeopardized through counterfeit food, medicines, medical devices, toys, consumer electronics, alcohol, tobacco, automotive parts etc. Typically goods in these categories are subject to high quality control processes during the manufacturing and processing stages and are governed by stringent safety laws which companies have to abide by. Companies invest a great amount of time, resources, infrastructure and technology to vigorously test these products at various points in the manufacturing process before they are made available in the market to ensure safety and quality standards. In comparison counterfeit goods are often of inferior quality and are not manufactured with the same quality assurance processes hence jeopardizing consumer safety.

Economic Threat Impacting Businesses and Governments
The existence of counterfeit goods adversely impact the market share for legitimate business and also reduces revenues for Governments as vat, duties and other taxes are not reported. This in turn increases the cost for enforcement that needs to be undertaken by Governments to identify such practices.

National Security
Counterfeiting harms national interests including public safety and national security. Governments are deprived of revenues and taxes and under constant pressure for allocation of scarce resources to market surveillance and counter-measures to combat illicit trade activities. G20 member countries lose an estimated USD$77.5 billion in tax revenues, have higher welfare spending due to lost jobs, and incur USD$25 billion in increased costs to fight crime due to counterfeiting. [1]
Today, counterfeiting has grown from localised operations into highly profitable global businesses with mass production, global sales and distribution networks. Counterfeit goods can be found in almost every country and in virtually all sectors of the global economy.

Indian Scenario
Economists world over unanimously believe India is poised for tremendous growth with the increase in foreign investments and brands entering the country, the potential for growth is unlimited. The country's estimated $500-billion retail sector has also seen many changes in the last few years. The largely predominant unorganized retail sector is now transforming. As the employment rate and disposable income levels have risen over the

years, consumers in India have begun to turn increasingly towards branded products. This has led to a shift towards the organized brick and mortar and omni-channel retailing. There are multiple retail formats in the country today. From small local kirana stores located in convenient locations offering local produce and merchandise, to the other end of the spectrum, where there are large Hypermarkets and megastores offering a much wider range of products, often at a lower price.

With the recent onset of the e-commerce retail channel, the choices are tremendous. Given India's high infrastructure costs and parking issues, Indian shoppers have embraced and welcomed online shopping due to the convenience of shopping from home.

According to a Google report, increasing Internet penetration and growing preference for shopping online will drive the e-commerce market in India. It is predicted that the e-commerce in India will grow to USD 15 billion by 2016 with 100 million people going online to shop. Compared to 8 million in 2012, about 35 million people are now buying everything from apparel to electronics to cosmetics and furniture from online stores. India is estimated to have 302 million Internet users overtaking the US as the world's second largest online user base.

While the growing retail landscape provides great shopping choices and experiences to Indian shoppers today, there has also been a growth in the availability of counterfeit goods in the marketplace as well. Recently, several leading online marketplaces and e-commerce sites were accused by many consumer brands and channel partners of not only undercutting prices but also encouraging the sale of counterfeit goods by sellers of dubious origins on their sites.

Though these allegations are not supported by proof, they do shed light on the fact that there has been an increase in consumer complaints about the suspect quality of the merchandise recently purchased via e-commerce sites. With fake products looking identical to the original, often one cannot tell the difference by just looking at them.

This growing market for fake or counterfeit products in India also result in losses to legitimate businesses, State Exchequer and pose health risks to consumers. According to a study on *'Socio-economic Impact of Counterfeiting, Smuggling and Tax Evasion'*, the estimated annual tax loss to the Government due to counterfeit products in 2012[6] was Rs. 26,190 crore or almost USD $4.23 billion.

The study, which was conducted in seven key industry, sectors namely auto components, alcohol, computer hardware, FMCG (personal goods), FMCG (packaged goods), mobile phones and tobacco, further estimates an annual sales loss to Industry at Rs. one lakh crore or USD $16.13 billion.

According to the study the highest revenue losing industries were FMCG (packaged goods) at USD $3.28 billion or Rs. 20,378 crore (23.4%), FMCG (personal goods) at USD $2.43 billion or Rs. 15,035 crore (25.9%), auto components at USD $ 1.48 billion or Rs. 9,198 crore (29.6%), mobile phones at USD $1.45 billion or Rs. 9,042 crore (20.8%) and tobacco at USD $ 1.44 billion or Rs 8,965 crore (15.7%).

The increased globalisation of trade coupled with the fact that in many countries, the penalties for trading counterfeit goods are low or non-existent have encouraged the growth of counterfeit activities. In many cases operated by criminal gangs and terrorists groups.

The Study

To guide the FMCG Industry on how to combat counterfeits using technology and global standards, The National Committee on FMCG 2014-15 of the Confederation of Indian Industry (CII) decided to undertake a comprehensive survey and compile a report to guide the Indian FMCG & Retail Industry. The objective of this report was to provide the FMCG & Retail Industry with an understanding of the anti-counterfeit solutions that are available today, and the extent of their deployment by Indian companies.

As a member of the CII National Committee on FMCG 2014-15, GS1 India, which is a standards organization, set up by the Ministry of Commerce and Industry, Govt. of India, along with CII, ASSOCHAM, FICCI, BIS etc., was designated to lead the study.

Scope & Methodology

The scope of the report included a comprehensive survey of Indian companies that are members of the CII National Committee on FMCG 2014-15 to gather information on three primary areas:

- Their views on the perceived threats of counterfeit trade in the country
- Their input on the possible sources of counterfeit products and how they enter the legitimate supply chain in India and
- Status of anti-counterfeit solutions deployed or contemplated to be deployed by them

A detailed questionnaire focused on the above areas was developed and sent to FMCG companies. The companies that responded to the survey questions represent the Food & Beverage, Home & personal Care and Tobacco sectors.

The results of the survey are documented in this report along with the data that was collected from research and secondary sources on some of the prevalent and emerging anti-counterfeit solutions.

Before getting into the findings of the survey conducted, the next section of this report provides information on widely used solutions to detect and prevent counterfeits. The section also contains recommendations on what an effective anti-counterfeit strategy should look like based on global best practices.

Solutions to Fight Counterfeits

Supply chains are not equipped in terms of their ability to protect and detect the penetration of counterfeit goods into legitimate and secure supply chains. With today's complex supply chains and the capability to make counterfeit products in one country and sell them in another, the solutions to counter the growing counterfeit problem needs to be global in nature. Existing supply chains should have the ability to make it difficult for counterfeiters to intrude into the legitimate supply chain.

Essentially a multi-layered approach, which will help in maintaining universal and uniform electronic pedigree across all supply chain stakeholders, is needed.

Multi-Layered Approach Is Needed

The global solution to the counterfeit problem starts with a foundational layer of globally accepted supply chain standards, which act as building blocks. The use of standards-based Automatic Identification and Data Capture (AIDC) i.e. in barcodes or RFID tags, to identify objects and then to capture the information about them at key points in the supply chain and then to share the information seamlessly among stakeholders provide full chain visibility across the extended supply chain.

Proprietary Solutions Are Not the Answer

In recent years, numerous proprietary solutions for object identification and authentication have been developed mainly in isolation from each other. These solutions lack the critical interoperability required to ensure that all supply chain partners can readily deploy them. Proprietary solutions, though somewhat successful in capturing information, do so in silos, which does not support end-to-end visibility and sharing of critical product information. Unless all stakeholders in the supply chain speak the same language of business, seamless sharing of information between them is not easy. In particular, to be effective across the multi-tier supply chains it is vital that all parties can easily link and manage product flow and information flow within their internal systems and with their trading partners. Other shortcomings of a proprietary solution include inflexibility, over dependence on a particular vendor and being expensive to implement and maintain.

Widely Used Anti-Counterfeit Technologies

Advances made in technology have enabled Industry to devise several mechanisms to prevent, detect and deter counterfeiting, piracy and smuggling. The purpose of an anti-counterfeit technology or tool is primarily to enable the authentication of an item, by Government, Industry, Regulators, and Consumers through track and trace and establishing chain of custody and ownership. The second function may be to act as a deterrent against counterfeiting a product, considering the difficulty or cost involved in the likelihood of detection, and therefore prosecution.

There are many anti-counterfeit technologies available to manufacturers and brand owners, ranging from the very simple to the highly sophisticated ones. The majority of these solutions can be implemented on one or more of the packaging levels some can even be applied at the product level but entail substantial costs of implementation. Anti-counterfeit technologies can be broadly classified as:

- Overt (or visible) features
- Covert (or hidden) features

Overt (Visible) Features: Overt features are intended to enable end users to verify the authenticity of a product or package. Such features will normally be prominently visible, and difficult or expensive to reproduce. They are designed to be applied in such a way that they cannot be reused or removed without being defaced or causing damage to the product or packaging. The decision should be based on the product's criticality in terms of consumer safety versus cost and ease of implementation.

Examples of Overt Features

- **Tamper evident packing**: A device or process that makes unauthorized access to the protected object easily detected is called tamper-evident packaging such as markings, film wrappers, shrink seals and bands, breakable caps etc. Some options like the breakable caps, which provide external tamper evidence and can be combined with the internal seals thereby providing double security.

- **Optically variable feature:** Is a security feature more popularly used on bills, bank notes, security papers, credit cards, passports etc. This feature uses a latent image formation usually printed in such a manner as to exhibit various kinds of patterns. The patterns consisting of letters, figures, etc. can be visually recognized only when

- **Holograms:** These images and labels consist of the holographic foil that is an optically variable device. It is largely made using a polyester film base, and the holographic image is viewable by human eye when tilted in light. Many holograms are designed such that besides offering brand authentication they also have tamper evident properties. However, holograms do not facilitate automated data capture and product identification and are prone to duplication.

- **Barcodes & RFID:** With the use of standards-based serialized product identification using barcodes and RFID, brands can enable and leverage a track and trace system to secure their product supply chain and monitor product movement. In itself, the barcode label or RFID tag may not be immune to copying or falsification, but its security is greatly enhanced by the inclusion of unique and random serialization, or non-sequential numbering, following global standards. A track and trace system has the ability to track forward the movement of a product through specified stage(s) of the supply chain and trace backward the history, application or location of the product.

Covert (hidden) features: The purpose of a covert feature is to enable only the brand owner to identify counterfeited product. The public will not be aware of its presence nor have the means to verify it. A covert feature is not easy to detect or copy. If compromised or publicized, most covert features will lose some if not all of their security value. They are technology and vendor specific and require special reading and scanning devices.

Examples of Covert Features

- **Digital Watermarks:** A digital watermark is a kind of marker covertly embedded in a noise-tolerant signal such as audio or image data. "Watermarking" is the process of hiding digital information in a carrier signal. Digital watermarks may be used to verify the authenticity or integrity of the carrier signal or to show the identity of its owners. Digital watermarks are only perceptible under certain conditions, i.e. after using some algorithm, and imperceptible anytime else.

- **Embedded Image:** In this technique, an image or micro text is embedded in the object for authentication purpose. The image is usually viewable with a magnifying glass.

- **Laser Coding:** Is the practice of using lasers to mark or engrave an object. The technique does not involve the use of inks, nor does it involve tool bits, which contact the engraving surface and wear out. These properties distinguish laser engraving from alternative engraving or marking technologies where inks or bit heads have to be replaced regularly.

- **Nano-Particles:** Nano-printing substrate technologies allow microscopic application of UV inks that allow invisible printing onto product surfaces. With this technique, different variations of an image are viewable under light.

The recommended approach globally based on ease of adoption and implementation costs to implement a robust anti-counterfeit strategy lies in enhanced supply chain visibility with improved traceability and transparency along the entire supply chain. More importantly, solutions that are based on open, interoperable global identification standards which facilitate widespread and cost effective deployment are recommended.
Few examples of anti-counterfeiting solutions that has been deployed worldwide:

World Customs Organization (WCO)'s Anti-Counterfeit Solution

As Customs performs, a vital function they are best positioned to monitor the entry and exit of goods at all cross-border points. With an aim to fight counterfeit to protect the health and safety of consumers across the globe, the WCO wanted the best available technology tool for identification of counterfeit goods.

As a result the Interface Public-Members (IPM), a global anti-counterfeit tool, was developed. The IPM is an online and mobile application enabling Rights Holders (i.e. the legitimate brand owner) to provide Customs with real-time data on their products. Customs officers can

access this information anywhere in the world via a simple and secure interface available in their national language.

Global standards for unique and universal product identification were incorporated in the IPM to enable reliable and clear authentication of items. The globally unique product identifier (Global Trade Item Number or GTIN based on GS1 Standards) embedded in the barcode facilitates access to multiple databases providing trusted sources of product information.

The WCO launched IPM Connected, a global network of track & trace and authentication solutions interfaced with IPM. Custom officials scan the barcode and if the product is secured by a track & trace or authentication solution, IPM automatically launches the application, allowing them to instantly verify the authenticity of the product.

Around 3,000 Customs officials in more than 60 countries use this tool to easily verify authenticity of physical products. It also accelerates Customs clearance process. Today the IPM is undoubtedly an essential tool to help Customs officers distinguish between genuine and fake products and has also improved WCO's capacity to detect counterfeit products.

IPM's mobile version integrating barcodes and authentication services, gives brand owners from all sectors the opportunity to work directly with Customs to protect both their brand and consumers alike.

Egypt Keeps Counterfeit Drugs Out of the Supply Chain

Supply chain stakeholders (manufacturers, distributors, hospitals and retail pharmacies) in Egypt face major challenges when trying to ensure the right drug reaches the final point of dispense. The Egyptian Drug Authority in 2010 estimated that the value of counterfeit drugs in Egypt had reached $200 million. The major challenges faced in Egypt include low security systems, supply chain penetrations and developed counterfeit techniques.

A standard-based pharmaceutical traceability solution "Safemed" was piloted in 2013 in Egypt, that enables pharmaceutical stakeholders to capture and share defined product information between trading partners, increasing the security of the extended supply chain.

The principal objective of the Safemed pilot was to implement a comprehensive, standards-based traceability solution across the pharmaceutical supply chain, from manufacturer to pharmacy that strengthened known weak points in the legitimate supply chain making it more difficult for counterfeits to enter.

Manufacturer printed two-dimensional GS1 DataMatrix barcode symbols on products and upload four data elements about the product namely, GTIN, Expiration Date, Batch No. and Serial No. and related information (e.g. active ingredient and/or drug specifications) to the Safemed platform.

When product cartons and/or pallets were dispatched from the manufacturer (to a distributor for example) all related information about that consignment was shared and accessed by trading partners registered to use Safemed. The distributor then accepted the received consignment after checking them on Safemed by scanning the GS1 DataMatrix barcode symbols on the cartons/pallets.

Each participant was able to record, share data and track the movement of the drugs in a timely manner in and out of their custody directly via Safemed. The pilot also demonstrated that such standard-based traceability solutions could enable future recall processes, inventory management and financial reconciliation, which will generate further process efficiencies.

GENUINE Product Authentication Solution in Hong Kong

To address counterfeit concerns the Office of the Government Chief Information Officer (OGCIO) of Hong Kong Government developed a GENUINE Product Authentication Solution. Launched in 2009, the solution offers a "supply chain track and trace" function to capture product movement from plant to store, with two key features:

- Greater supply chain e-pedigree visibility. Stakeholders can track and trace the flow of goods and product information on ezTRACK™, a global standard-based electronic platform.

- Real-time product authentication. Consumers can gain instant access to product information via mobile application or the Internet.

The GENUINE Product Authentication Solution lets brand owners monitor their logistics flows more efficiently. This enables them to track the STATUS of a product item at any given LOCATION and TIME, through the entire supply chain. It also helps them detect grey market diversion swiftly and prepare against such activities.

This solution allows consumers to double-check an item's product information – including sales status, location and whether it is authorized for sale in the local market– prior to purchase. They can do this just by scanning the QR code with a smartphone.

Another scan of the QR code, after the purchase is made, will give them the authentication results. In fact, many brand owners are encouraging such product authentication, through the lure of loyalty programmes, price discounts, warranty extensions and other incentives, in order to connect customers closely with their brands. From an anti-counterfeiting perspective, Hong Kong's GENUINE Product Authentication Solution helps enlists consumers to become a brand's quality inspector and this will discourage them from purchasing counterfeit and parallel imports altogether.

By promoting greater visibility, traceability and transparency in the supply chain, GENUINE Product Authentication Solution is an effective solution against counterfeiting.

Solution Against Illicit Liquor by Delhi State Excise

The Delhi State Excise Department has developed a track and trace system to prevent trade of illicit and counterfeit liquor in the city.

The solution offers a supply chain track and trace function to capture product movement, with two key features:

- Greater supply chain visibility.
- Consumers can instantly verify the authenticity of a product purchased via mobile phones.

Distillers and manufacturer's identify bottles and cases with unique product identification codes (GTINs based on GS1 Standards). The two-dimensional GS1 Data Matrix barcodes encoded with the product GTIN and Serial Number are applied on the bottles and mono-cartons. And the one-dimensional GS1-128 barcodes are on the cases/shipper with GTIN, date of manufacturing, best before date and batch number.

The solution not only helps in the unique identification of the liquor bottles in the supply chain from the bonded warehouses to the retail outlet but they also help with the automation of daily sales, tracking of the liquor bottles, and inventory reporting. This helps authorities to know exactly how many bottles/cases are at which location at any given time.

Citizens of Delhi benefit too. Consumers can use a mobile app *(mLiquorSaleCheck)* to check the genuineness of the purchased liquor bottle using their mobile phones. When the barcode pasted on the liquor bottle cap is scanned the app provides information about the product such as brand name, quantity, price and the shop name from where it has been purchased. Consumers can also submit grievances (https://delhiexcise.gov.in/Portal/liquorsalecheck) using this app in case the liquor was purchased at another source from the one mentioned preventing the entry of unauthorized goods in the supply chain.

Track and Trace System for Indian Drugs and Pharmaceuticals

Another successful implementation has been by the Directorate General of Foreign Trade (DGFT) of India. The DGFT requires all drugs and pharmaceuticals that are exported from India to be identified using serialized unique product identifiers based on global standards to prevent counterfeit drugs entering the legitimate supply chain.

By identifying every product with a globally unique product number (Global Trade Item Number [GTIN]), and by capturing the Expiry Date, Batch/Lot Number, in addition to a unique serial number, where applicable, allows the product's lifecycle to be tracked from production to distribution across borders, all the way to dispensation to patients at the drugstore or hospital.

Supply chain stakeholders' record data about the product including the various packaging hierarchies (primary, secondary and tertiary) along with the hierarchy linkage information directly into a central portal. This helps in the seamless sharing of data and enables tracking the movement of drugs. This information, when available to Customs Authorities helps validate that the consignments leaving the country are genuine. This solution also enables consumers to scan the barcode on the drug to check the authenticity of a drug purchased.

In addition to combating counterfeit, the DGFT solution would also help in effective management of product recalls and ensure patient safety. The solution would help Indian pharma companies meet Regulatory requirements of several importing countries.

Utilizing this approach also allows companies to leverage the anti-counterfeit solution for effective recall management as well.

Recall Management

When a holistic approach is used to design an anti-counterfeit solution then the solution also enables effective management of recalls. Due to the standardized way in which products are uniquely identified, information is captured and then shared in a seamless manner among all stakeholders, it enables the easy management of recall notifications that are accurate, fast, and secure. This significantly reduces response times to recall products as retailers can take informed actions to pull only affected products from shelves that pertain to a particular batch number or lot number. This is a tangible benefit when it comes to safeguarding consumer safety and withdrawing counterfeit or compromised goods from the supply chain.

This also helps in complying with the various Regulatory requirements worldwide, such as the EU Food Law (178/2002 –General Principles and requirements of European Food Law), U.S. Bioterrorism Act (2002), HACCP (ISO 22000:205), US FDA's traceability requirement, BRC (British Retail Consortium), IFS (Int'l Food Std – German/French distribution cos), Can-Trace (Canadian Food Law), Food Sanitation Law (Japan) and HR 2749 – The Food Safety Enhancement Act of 2009 among others.

The Food Safety Authority of India, as well, is expected to announce recall guidelines shortly based on global best practices and identification standards.

Survey Findings

Based on the input provided by the Indian FMCG companies in the areas pertaining to perceived threat, their opinion on possible sources of counterfeit products and the deployment of anti-counterfeit technologies to combat counterfeit products, below is the summary of the findings.

Perceived Threat of Counterfeit Trade

All the survey participants unanimously consider the availability of counterfeit goods in the country as a significant threat and one that should not be taken lightly. Participants indicated the estimated loss due to counterfeit was as much as 1% to 2% of their company's total turnover.
To quote some of the views expressed in the questionnaire in this area:

"It is really a big threat to a Company's business and reputation and leads to erosion in brand value and perception in the minds of the consumer. The Losses cannot be quantifiable in monetary value."

"There have been numerous instances of fake or counterfeit products in both oral care and personal care categories in India. The biggest threat for us is that, the counterfeit products threaten public health, since they are often produced in unsanitary conditions and are made of low quality or dangerous ingredients."

"This is one of the biggest threats our industry is facing. Almost 20% of the cigarette market in India is in the hands of illegal industry and it is growing due to significant price gap vis-a-vis legal cigarettes."

Sources of Counterfeit Products

In order to understand the Industry's views on the possible infiltration points for counterfeit or fake goods to enter the legitimate supply chain, the survey consisted of questions in this area.
The respondents indicate that the points in their supply chain that are most vulnerable to infiltration of counterfeit products are:

- Distribution centres
- Retail outlets
- Third party logistics providers

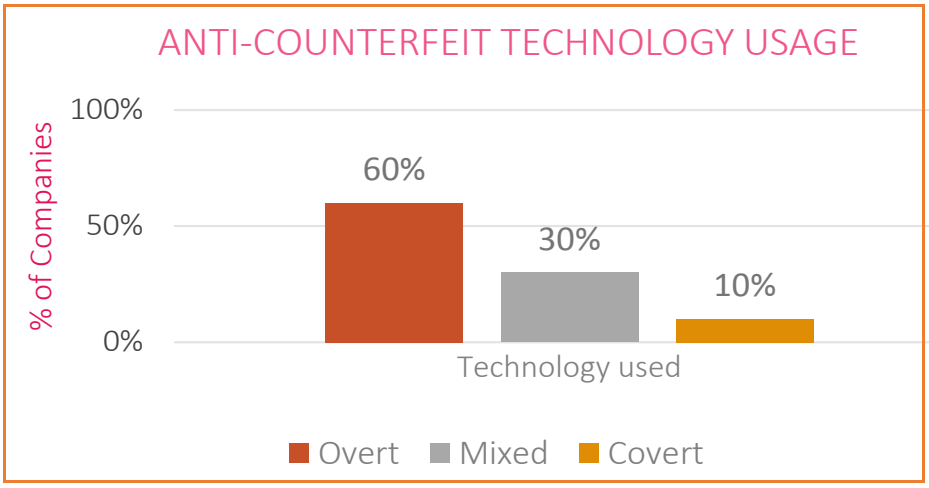
A large number of the survey participants identified retail outlets as possibly the most vulnerable point for infiltration. Some of the other points of infiltration that were identified by the respondents were other stakeholders like third party manufacturing units, and secondary wholesale dealers.

Ninety percent of the respondents also indicated that domestically manufactured products were most likely to be counterfeited. They specified pilferage of original packing material from the printer or manufacturing locations as one of the key reasons for this.

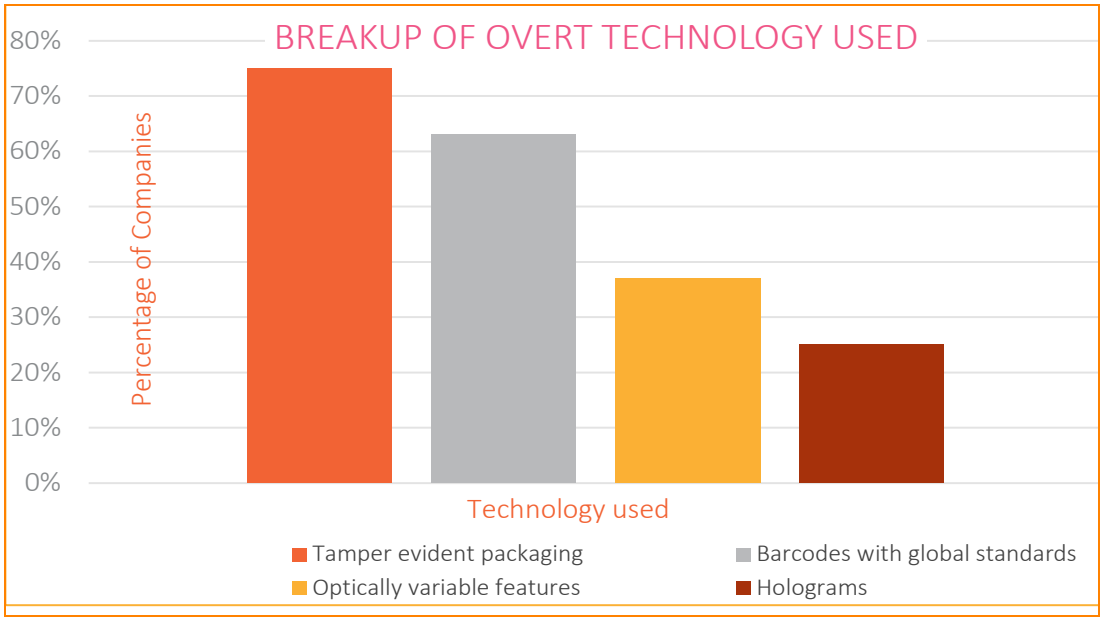
Status of Anti-Counterfeit Technologies Deployed by Indian FMCG Companies

In order to understand the extent and prevalent anti-counterfeit technologies deployed by Indian FMCG companies to combat counterfeits, a portion of the survey questionnaire focused on this area.

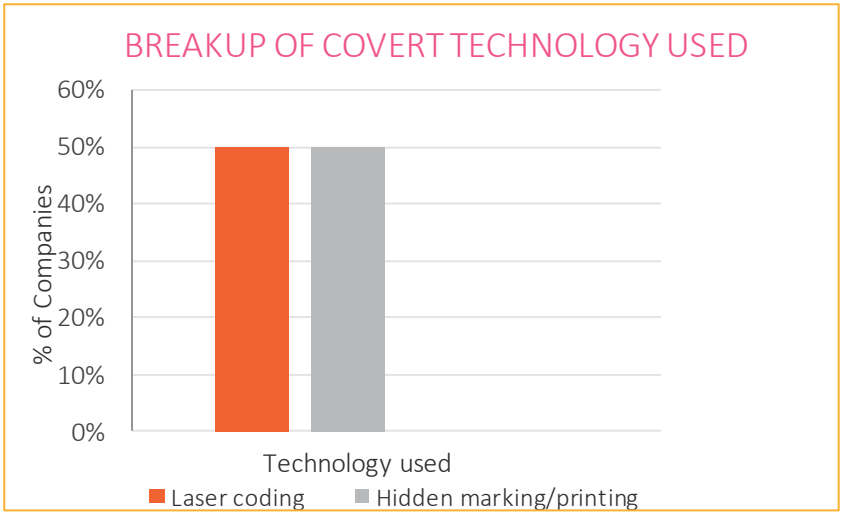
The results show that almost 60% of the participants rely on overt features whereas less than 10% of the participants depend completely on covert features to combat counterfeit. However, 30% of the respondents adopt a combination of the two i.e. overt and covert features in their current implementations.



Looking at the breakup of the overt features that are currently implemented, indicates that tamper evident packaging like film wrappers, shrink seals and bands, breakable caps etc. was at 75%. The use of GTIN (EAN/UPC) barcodes was at 63%. While 37% companies revealed implementing optically, variable features and 25% indicated using holograms.



Off the 10% of the companies that have implemented covert features laser coding and hidden marking/printing were seen as the more popular methods adopted with each encompassing 50% of the total covert technology being used today. The overall low adoption rates of covert features can be attributed to its high cost of implementation.

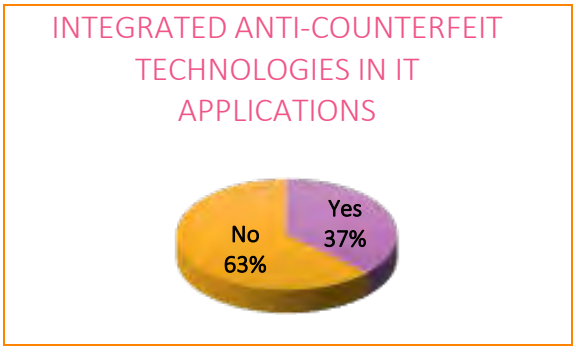


Another key insight that was gained from the survey was on the Industry's views on the key ingredients required to build a robust anti-counterfeiting strategy. The survey participants suggest that a robust anti-counterfeit strategy requires a multi-pronged approach involving:

- A foundational layer of globally accepted supply chain standards to identify products using a unique identification system to secure the supply chain and create full chain visibility.
- The additional use of overt and/or covert features could be considered to supplement authentication if appropriate to the organization and product.

However, when questioned about the current integration of their current anti-counterfeit technologies with IT applications within their own organizations only 37% of the companies have implemented such an integrated solution.

One could infer that the key reasons for such low implementation rates among Indian companies is the lack of knowledge and understanding on the core components necessary to incorporate in an effective anti-counterfeit solution. The importance of having an overall strategy for effectively combating counterfeits could also be lacking.



Recommendations to the Indian FMCG & Retail Industry

Given the ecosystem for FMCG products and their dependency on retail outlets, an integrated approach by the supplier and retail community is needed to establish downstream supply chain visibility. Hence, recommendations made in this report apply to both the Indian FMCG & Retail Industry.

Companies should continue to assess extent and impact of counterfeits in their product categories and take measures to make their supply chains more secure, in order to limit the entry of counterfeit products and ensure timely detection.

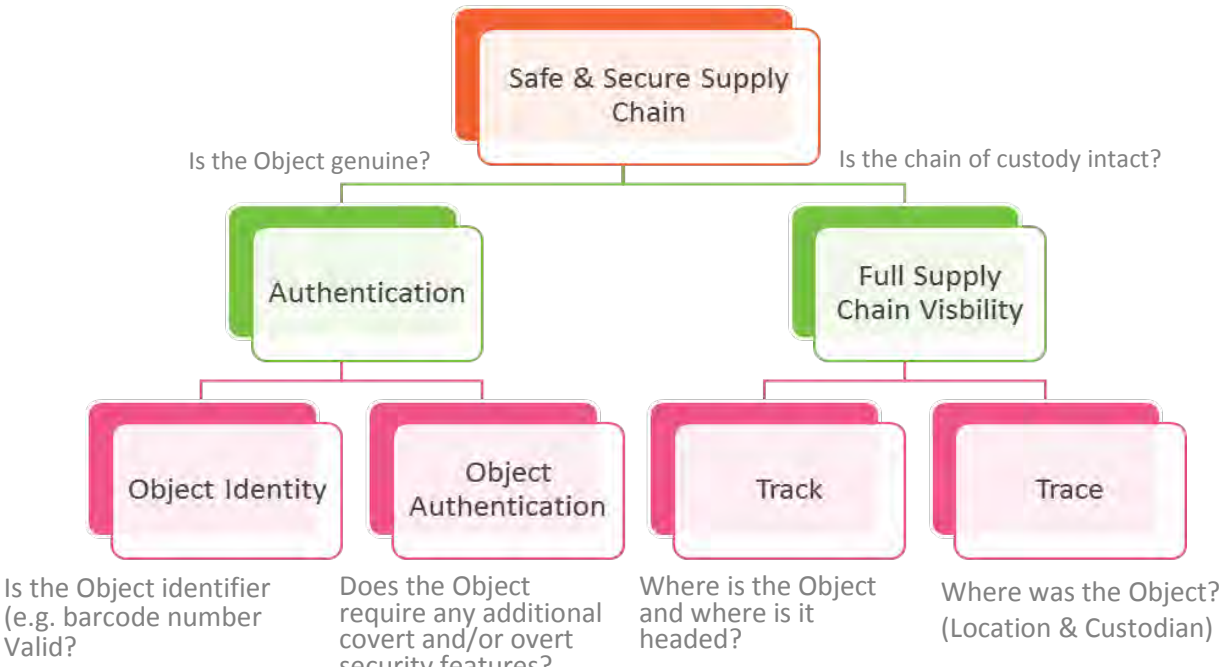
Based on the insights gained from the survey the recommendation to companies would be to implement anti-counterfeit strategies based on some of the prevalent and emerging best practices globally. Implementing ad hoc security devices to prevent counterfeits using overt and covert technologies alone is not sufficient. The foremost activity that companies should undertake is to build an anti-counterfeiting strategy. This would benefit companies in implementing a robust solution, which addresses their needs and provides an effective solution to the counterfeit problem.

Take a Multi-Pronged Approach

This requires the incorporation and use of available anti-counterfeit technologies along with a foundational layer of globally accepted supply chain standards acting as building blocks to identify objects and then to capture the information about them at key points in the supply chain and then to share the information seamlessly among stakeholders.

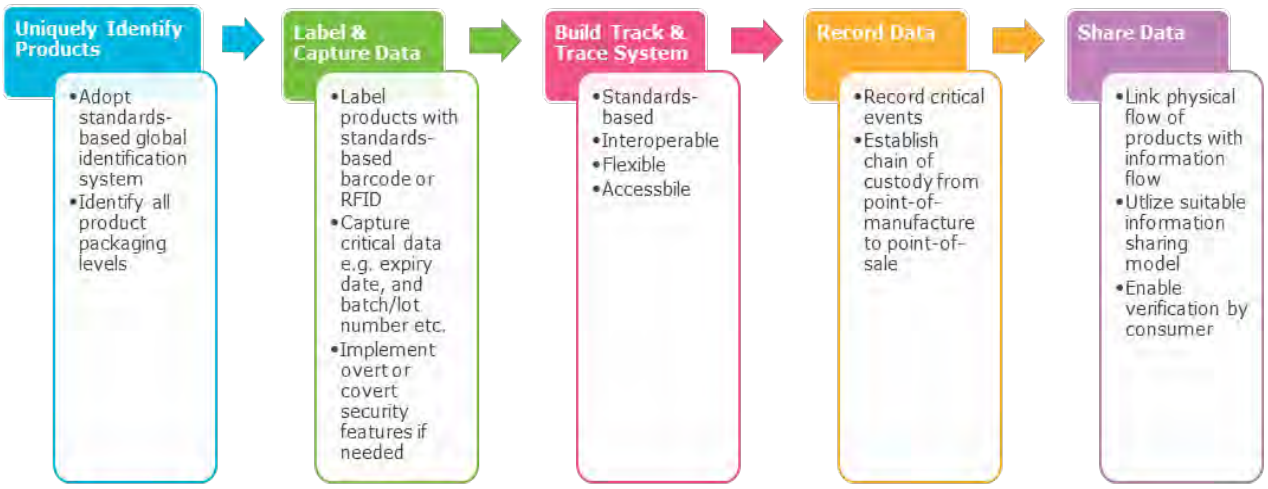
Developing and deploying safe and secure supply chains is critical not only to mitigate the risk of counterfeits, but also to increase trust and transparency into trading partner relationships. The foundation layer for building safe and secure supply chains can be effectively achieved by implementing a comprehensive approach based on all key aspects highlighted in Figure below.

A MULTI-PRONGED APPROACH TO COMBAT COUNTERFEIT



Recommended Roadmap

To help companies rollout and build a safe and secure supply chain to prevent counterfeits below is a recommended roadmap for companies to consider for implementation.

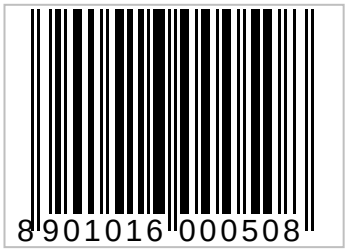


STEP 1: **Identifying Products:** Products should be identified at all packaging levels i.e. at primary, secondary and tertiary levels with unique and universal identification numbers using global identification standards.

For added security, in items like alcohol, high-end luxury, or medicines, serialization in addition to unique product identification (EAN/UPC codes) should be used.

STEP 2: **Label & Capture Data:** Once products are uniquely identified at all packaging levels they should be labelled with standards-based Automatic Identification and Data Capture (AIDC) technologies such as barcodes or RFID.

Important information pertaining to the product such as expiry date, batch/lot number, etc. should be captured at the secondary and tertiary packaging levels and integrated with backend systems.



Point of sale systems should also be integrated with primary level unique product identification numbers (GTIN). Products can also be marked with overt or covert security devices such as

tamper evident packaging, holograms, laser marking etc. for added security measures at this stage.

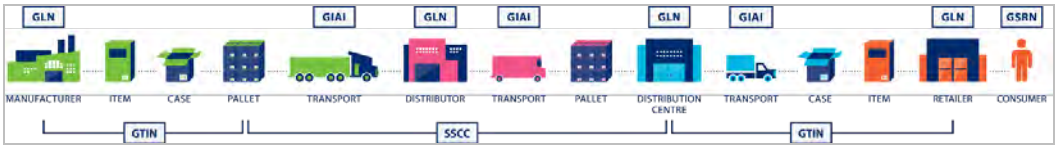
STEP 3: **Build a Track & Trace System:** Utilizing universally accepted global standards organizations should build and implement a track and trace system. Key features of the solution include:

Ensure Interoperability

Usage of global identification standards ensures all stakeholders are using the same language when referencing or exchanging information about a product. This ensures that the solution they put in place is compatible and interoperable with various systems both internally and externally. This facilitates the seamless exchange of critical information. Using globally recognized standards also encourages greater levels of adoption and therefore superior supply chain coverage and helps keep the cost of implementation down, as the solution is vendor-provider agnostic, flexible and easy to implement.

Ensure Flexibility

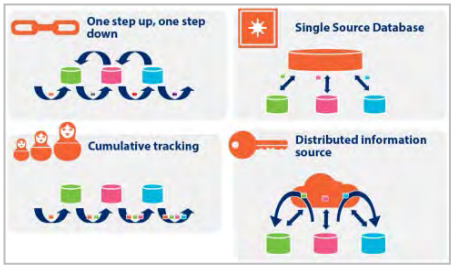
The implemented solution should be flexible to meet any existing and emerging change in scope and compliance and can cope with expected technological changes. The systems should be capable of practical adoption in smaller businesses within the FMCG and Retail supply chains.



STEP 4: **Record Data:** During this step in the roadmap companies should determine **what** is, the critical data needed to know **where** the product is at various stages of its journey from point-of-manufacture to point-of-sale. Recording the **why** and **when** are also important to establish the chain of custody**.** Example when the product leaves the manufacturing facility and arrives at the distribution centre.

The various stakeholders involved in the product's supply chain should be accountable and responsible to record information. The success of the solution is only as strong as its weakest link.

STEP 5: **Sharing Data:** An effective track and trace system facilitates the seamless sharing of relevant data electronically between all stakeholders and this is possible only when the track and trace system is interoperable and open standards-based. This step is also necessary to link the physical flow of



products with the information flow. Data sharing should also be done using standards to ensure all stakeholders have access to the information they need. The solution should utilize a suitable data sharing model based on

Enable Spot Authentication

Due to the mass consumption nature of FMCG products by end consumers, it would be beneficial to enable consumers to perform spot authentication by a simple barcode scan using mobile phones for added awareness and brand protection.

Strengthening Anti-counterfeiting Efforts

In addition to the above solutions, fighting counterfeiting also requires companies to put other proactive measures in place. Organizations should develop a systematic approach to their anti-counterfeiting program. Included in the program should be:

- Regular spot checks and a thorough monitoring system
- Audits of suppliers to assure that security policy and screening and testing procedures are adequate.
- Training and Education. Employees with responsibility to access and accept products and parts from suppliers must be trained to have the tools and abilities to spot counterfeit items. The level of training should cover not just quality assurance, but also security assurance to ensure that deliberate efforts to contaminate the supply chain are discovered and effectively curtailed.
- Ongoing evaluation of organizational and product risk and threats
- Collaboration with local and national law enforcement agencies
- Registration of Intellectual Property Rights (IPR's) by Right holders with any of the Commissioners of Customs at the ports where counterfeit goods are likely to be imported. Such rights can be availed under the IPR (imported goods) Enforcement Rules, 2007 and various other notifications issued by the Customs Department.
- Raised awareness among consumers and government. It is essential to build awareness among consumers, industry and enforcement agencies on available means for stopping counterfeiting, and sensitize them to the implications of this menace for India and industry. Consumers must be educated on the true impact of purchasing counterfeit goods, as well as how to avoid making such purchases.

Conclusion

The counterfeiting issue certainly encompasses many facets of the economy, including intellectual property rights (IPR), security concerns, and global trade. Counterfeiting is a global problem that cannot be handled or resolved by just one agency or group. Shared discussions, best practices, standards, conformity assessment efforts, and initiatives among all stakeholders is needed.

Public and private sector stakeholders throughout and across industries must work together, including national and international law enforcement and Government officials, and private-sector participants from all industry sectors and all points in the supply chain. Manufacturers, suppliers, and end users, as well as those who test, inspect, and defend the authenticity and transparency of the supply chain, must become more actively involved.

Counterfeiting is not a victimless crime but one that can have dire consequences for citizens and industry alike. One of the key underlying causes for the growth of counterfeiting is the inability of current supply chain systems to counter this criminal activity. The answer lies in greater **visibility**, **traceability** and **transparency** across supply chains.

This report concludes by encouraging Indian FMCG companies and the retail industry to work collaboratively to adopt the recommendations provided in this report. This will not only help in building a safe and secure supply chain but in some cases also help meet several national and international regulatory requirements.

References/Bibliography

References

[1] Estimating the global economic and social impacts of counterfeiting and piracy. Business Alliance to Stop Counterfeit and Piracy, February 2011

[2] The spread of counterfeiting: Knock-offs catch on-Economist Magazine, 4.3.2010

[3] ICC Counterfeiting Intelligence Bureau (1997), Countering Counterfeiting: A Guide to Protecting and Enforcing Intellectual Property Rights, United Kingdom.

[4] "The Economic Effect of Counterfeiting and Piracy, Executive Summary" (PDF). OECD, Paris. 2007.

[5] "Don't buy into organized crime". UNODC. 2014.

[6] http://ficci-cascade.com/studies.php

[7] InPhysical objects, in this paper, physical objects are intended to mean all physical objects, including raw materials, components, sub-assemblies, finished products, assets such as pallets and containers. For simplicity, the terms physical objects, products and goods will be used interchangeably.

[8] http://www.nipo.in/ficciniapc.htm

[9] http://www.wsj.com/articles/chinas-saic-criticizes-alibaba-over-fake-goods-1422425378 http://tech.thaivisa.com/alibaba-criticised-study-finds-one-third-products-sold-online-china-fake/3446/ http://www.forbes.com/sites/ywang/2015/01/30/alibaba-de-escalates-tension-with-government-vows-to-fight-fake-products/ http://articles.economictimes.indiatimes.com/2015-01-31/news/58650577_1_alibaba-group-taobao-saic

[10] www.amazon.in/gp/help/customer/display.html/ref=footer_swc?ie=UTF8&nodeId=201083470

Bibliography

- Best Practices in the Fight against Global Counterfeiting, 2011, ANSI Report
- FICCI CASCADE Report, Socio-Economic impact of counterfeiting, smuggling and tax evasion in seven key Indian industry sectors, 2012.
- BASCAP, Confiscation of the Proceeds of IP Crime, a modern tool for deterring counterfeiting and piracy, 2013.
- White paper of pharma anti-counterfeit technologies – Manipal Press - 2011
- Transnational Crime in the Developing World, February 2011, Global Financial Integrity.
- Links between Terrorism and Other Forms of Crime, Foreign Affairs Canada and the United Nations Office on Drugs and Crime, April 2004.
- The relationship between criminal and terrorist organizations and human smuggling, Naval Postgraduate School 2009.
- Report of Anti-Counterfeiting in India 2011, Anti-Counterfeiting Committee Report by Amarjit Singh and Himanshu Kane.
- Counterfeit Goods and Their Potential Financing of International Terrorism, Zachary A. Pollinger1,Harvard University, The Michigan Journal of Business.
- Counterfeiting: links to organised crime and terrorist funding Peter Lowe, ICC Counterfeiting Intelligence Bureau, Barking, UK, Journal of Financial Crime.
- Counterfeiting and Organised Crime, Report by Union des Fabricants.
- GS1 Whitepaper on the Need for Global Standards and Solutions to combat counterfeiting

Appendix

Copy of Survey Questionnaire Used

Confederation of Indian Industry

CII National Committee on FMCG 2014-15 Study on "Global standards and best practices in anti-counterfeit technologies and IT applications in FMCG sector"

The purpose of this questionnaire is to solicit information from Industry on current practices followed and planned strategies in the future to address counterfeiting and brand protection issues through effective management of their supply chains.

(All answers will be kept confidential)

SECTION A

Name:
Designation:
Name of the Company:
Address:
Tel: Mobile: Email:

SECTION B

1. Do you consider counterfeiting as a threat to Indian FMCG industry?
   a) Yes
   b) No

   If yes, how big is this threat to your company/sector? ……..

2. Which of the following points in your supply chain are most vulnerable to infiltration of counterfeit products?
   a) Distribution Centers
   b) Retail outlets
   c) Third party logistics providers
   d) Others (please specify)

3. Which is/are the main source(s) of counterfeits?
   a) Domestically manufactured products
   b) Imported products
   c) Internet sales

4. Are you adopting any one or more of the following technologies to counter this threat?

   Overt – visible features (please tick)

   a) Tamper evident packaging (Film wrappers, Shrink seals and bands, breakable caps etc.)
   b) Optically variable features
   c) Hologram

d) Barcodes using global standards for serialised product identification
e) Radio Frequency Identification tags using global standards for serialised product identification
f) Unique surface marking or topography
g) Any other (please elaborate):

***Covert* – hidden features (please tick)**

a) Embedded image
b) Digital watermarks
c) Hidden marks and printing
d) Laser coding
e) Any other (please elaborate):

5. Anti-counterfeiting strategies require incorporation of overt/covert technologies along with an IT application for capturing/sharing information related to product flow in the supply chain across trading partners. Have you implemented any such application?

a) Yes
b) No

6. If yes for Q 5, have you incorporated the following features/functionalities in your IT application?

a) Unique product identification and serialization using global standards
b) Automated data capture to track physical movement of goods across trading partners
c) Data sharing between trading partners to enable track & trace
d) Any other (please elaborate):

7. If you have not implemented any anti-counterfeit technologies and IT applications, do you plan doing so?

a) Yes in the next few months
b) In next 2 years
c) No plans

8. Would you benefit if Indian Industry is provided with guidance on global standards and best practices in anti-counterfeit technologies and IT applications?

a) Yes
b) No

Thank you for your time and efforts!

About CII

The Confederation of Indian Industry (CII) is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has over 7200 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 100,000 enterprises from around 242 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus building and networking on key issues.

With 64 offices, including 9 Centres of Excellence, in India, and 7 overseas offices in Australia, China, Egypt, France, Singapore, UK, and USA, as well as institutional partnerships with 312 counterpart organizations in 106 countries, CII serves as a reference point for Indian industry and the international business community.

About GS1 India

GS1 India was setup as a Standards body in 1996 by the Ministry of Commerce, Government of India and leading Chambers of Commerce comprising CII, FICCI, ASSOCHAM, IMC, FIEO besides BIS, IIP, Spices Board and APEDA. It develops and promotes awareness on global identification standards and solutions used in supply chain management and supports their implementation.

A neutral, not-for-profit organisation, GS1 facilitates collaboration amongst trading partners and technology providers, in order to solve together business challenges that leverage open, global and interoperable standards that ensure safety, efficiency and visibility along the entire value chain.

GS1 India is affiliated to GS1 Global, headquartered at Brussels. GS1 oversees a global network of more than 100 GS1 organisations serving over 150 countries.

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