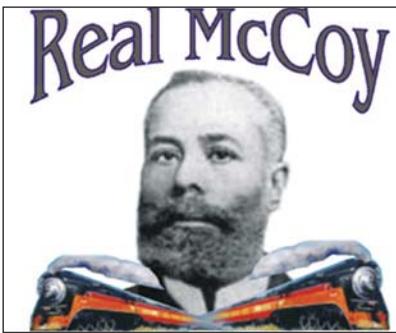


Auto Piracy: A rising business

The automobile sector across the globe is currently under attack from the counterfeit market. According to a survey conducted by the The Motor & Equipment Manufacturers Association (MEMA) the global automotive industry loses US \$12 billion to counterfeiting.



Elijah McCoy, (1843-1929) Inventor of the automatic lubrication system used on trains and cars

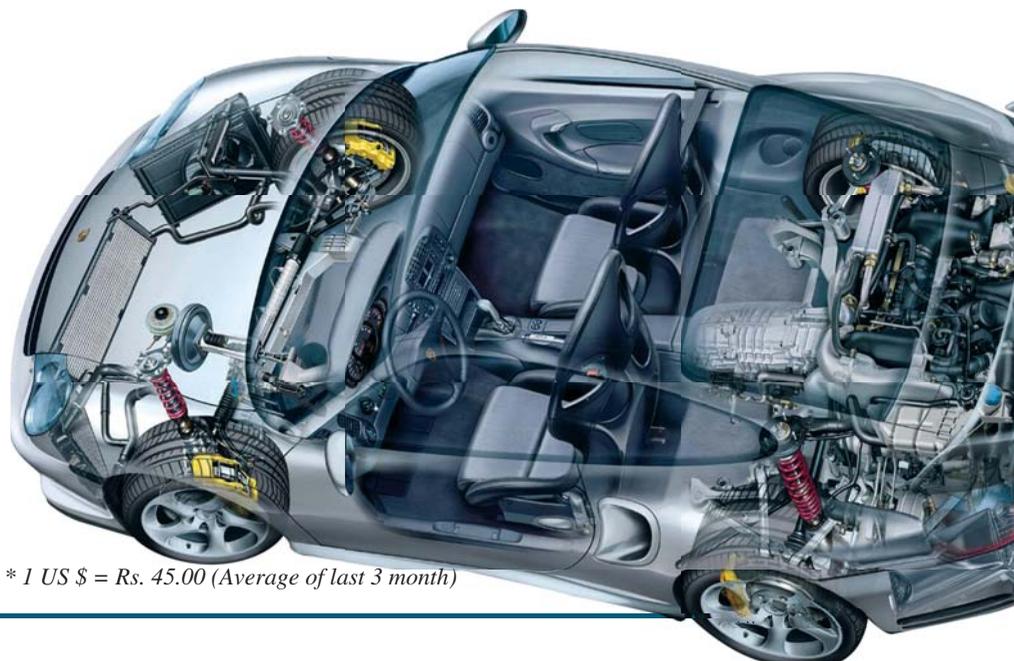
In 1872, inventor Elijah McCoy patented a lubricating system designed to prevent overheating and seizing on steam engines. His lubricants worked extremely well, saving the shipping lines and railroads lots of money. The success and popularity of McCoy's device soon brought many copies, which cost far less but didn't work nearly as well. These fakes created costly problems for purchasers, who believed they were saving the money. Those who wanted to use a genuine product to ensure quality and dependability asked for *McCoy's* product by name. Thus was born the phrase "*the real McCoy.*" The story started in 1872, still exists today, in a much-much bigger form of automotive piracy. Today, counterfeiting in the automobile industry have become a real menace and a threat not only to the profits of automobile manufacturers but also to the lives of millions of vehicle users who end up using sub standard safety and performance parts.

Auto Piracy on Rise

The automobile sector across the globe is currently under attack from the counterfeit market. According to a survey conducted by the The Motor & Equipment Manufacturers Association (MEMA) the global automotive industry loses US \$12 billion to counterfeiting. More specifically, in India as per Automotive Component Manufacturers Association (ACMA) the counterfeit accounts for close to 35 per cent with a market size of Rs 5,300 crore (US \$ 1.17 billion)* in the Rs 16,500 crore (US \$ 3.6 billion)* replacement parts market. Most of the manufacturers have experienced large problems with counterfeit brake pads. Given the huge and immediate problems with low-quality brake pads, the brand owner was understandably worried about the deadly consequences.

Impact of Auto Counterfeiting

Unfortunately, the reliability of automotive systems and components is increasingly being jeopardized by spare parts and after-market components produced by product pirates. The quality of pirated products and gray imports ranges from negligent to perfect, and both high- and low-grade counterfeiting presents a problem: While poor-quality fakes damage the image of the original equipment manufacturer and endanger the lives of vehicle occupants, highly accomplished pirated products deprive manufacturers, who invest a lot of money in research and development, of their legitimate earnings. It is also relevant to note that sales of counterfeit parts clinically affect the reputation and goodwill of manufacturers.



* 1 US \$ = Rs. 45.00 (Average of last 3 month)

Table: Most commonly counterfeit parts and accessories

PARTS			ACCESSORIES	
Maintenance	Collision / Repair	Suspension	Automotive	Collection / Vintage
Oil filter	Bumpers	Steering Arms	Alloy Wheels	Key Rings
Air Filter	Covers	Tie Rods	Body striping	Caps
Brakes	Head Lamps		Decals	Lighters
Brake linings	Tail lamps		Trim	Toys
Seals	Sheet Metal		Plates	Model Cars
Rotors	Oil Pumps		Logos	Clothing
Flex Disks	Water Pumps			
	Mercedes Star			
	Windshields			



Impact of counterfeited auto parts

- Counterfeit oil filters cause sudden engine failure
- Counterfeit brake pads, made of grass clippings and saw dust, have caused fatal accidents
- Counterfeit windshields without safety shatterproof glass, cause injury or death

Impact of counterfeited auto parts

- Counterfeit and piracy undermine consumers confidence in these brands

Source: The Motor & Equipment Manufacturers Association (MEMA)

Solutions

While components originally installed in the vehicle by the manufacturer are not generally exposed to the risk of tampering and counterfeiting, spare parts and aftermarket components are. The manufacturers of auto parts need an effective authentication solution which can solve their problem;

1. Protection against tampering
2. Proof of authenticity
3. Proof of origin

The authenticity of a product must be easily and directly verifiable by laypersons. Covert features, which qualify as forensic proof of authenticity, are required as well. Only overt features are suitable for

authentication by laypersons. That is why overt features are the first to be faked. To raise the hurdles for counterfeiters, various overt features should be combined. Available options range from attractive holograms and color shifting ink to special thermo reactive inks. These high grade solutions enhance the visual perception of the product and help promote sales.

Hologram – providing multi-layers security

Holograms increase protection against counterfeiting while simultaneously creating a high-grade brand image. Complex holograms are impossible to copy¹ as they not only represent a barrier that is virtually impossible for potential counterfeiters to overcome,

but they also present an especially valuable appearance². 2D designs or 2D/3D combinations with perspective effects, physically realistic 3D holograms or 3D/2D versions showing a three-dimensional object in front of a two-dimensional background – the versatility of the product range allows for many custom-tailored and eye-catching solutions. For instance, holograms can be equipped with customer-specific effects³. In addition, dynamic structures and text or artwork elements only discernable under a microscope can be integrated into them. The solutions are variable and can be used in form of holographic security labels, 2D-3D hologram or a customized hologram with track and trace technologies.

(See also news bytes on page no. 7)



Fig.: An Example of a high security holographic label with a KeySecure code for Bosch developed by Scheiner. This KeySecure code enables online authentications to be performed anywhere in the world.



Fig.: An Example of Mercedes-Benz Genuine Parts, hologram on the packaging.

Conclusion

While the trade of counterfeit parts has dramatically increased, tackling counterfeits is not impossible. Counterfeiting is a problem that needs to be addressed quickly and decisively. Ideally, as a first move, more effective partnerships should be built between law enforcement agencies and the private sector with focus on intelligence sharing, awareness and product identification training.

- Manufacturers should create a team that focuses on anti-counterfeiting strategy;
- Selection of right anti-counterfeiting strategy should be employed;
- At least use first level of authentication features ;
- Track supply chain at distributor end ;
- Information to customer.

However, the involvement of all segments of the automotive and heavy-duty industries cannot be undermined. ■

Case study



Hyundai Mobis, one of the largest auto parts manufacturers in the country, learned imitated parts are being made and sold in the market. In case of auto parts, the consequence of forgery not only leads to loss of income but also may lead to loss of life if the consumer bought the imitated item unknowingly. Hyundai Mobis after a long contemplation discovered about hologram and decided apply it to protect its buyers from the counterfeits. The company has been using holograms on the inspection certificates since 1993. Holograms for Hyundai Mobis, if forcefully removed from the product, self-destructs and points up the word MOBIS_i on the product, efficiently demonstrating its level of security. Since the introduction of hologram, Hyundai Mobis was able to expose the organization responsible for the forgery and distribution of fake parts, and even further, was able to earn even higher customer reliance and increased sales.

Footnotes

- 1 *Unique technology (impossible to copy):* With 120,000 lines per inch of resolution, and visible features such as motion, color change and depth that cannot be reproduced with conventional imaging technology. “Uniqueness” is inherent in the very process of holographic recording. If the same holographer but at two different points of time or if two different holographer but at same point of time, were to carry out holographic recording from “the positive” of each layer, minute examination will reveal subtle differences between the two versions of the same hologram created by them. Thus, it is impossible to make an exact replica of the hologram and therefore it is regarded as virtually impossible to copy.
- 2 *Best Publicly Recognized Overt Security:* In a recent survey by Dutch National Bank to measure the public understanding of security features, it was revealed that out of seven selected features, the Hologram came out second with 55 per cent public recognition, beaten only by the watermark (76%). These prove the ability of hologram as the most easily identified overt security technology.
- 3 *Provide three layers of Security:* Holography or Optical variable technology is the only technology which can provide three level of security at one point / product. Hologram Manufacturers can provide additional security features within their hologram at the designing and developing stage such like nano-text, sequential numbering, specialized ink etc.