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FORMING AN EFFECTIVE ANTI-COUNTERFEITING STRATEGY

BY TIM SYKES

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Packaging with strong anti-counterfeit protection can enhance product revenues by tens of percent. However, it is critical to define the right strategy, selection of elements and not underestimate supporting activities such as customer communication - write Libor Šustr and Petr Hampl for Packaging Europe.

MarkMonitor research has recently shown that managers of more than 86% brands believe their business is significantly damaged by counterfeiting. Most of them say they lose between 10 – 50 % of revenues. In addition to revenue decreases, brands are impacted by low quality or even dangerous products circulating in the market.

It is a result of the huge growth of counterfeiting industry, which now is so strong that nobody knows how to cope with it. Historically, counterfeiting was primarily focused on money and documents. Products were imitated only rarely; most counterfeiters focused on antiquities.



"The picture shows a hologram with colorful decorative effects. These look great but can be imitated. However, after lighting with red light, other visual effects (the cube and letters)

emerge. This effect is extremely difficult to imitate."

Key features of today's counterfeiting market

The enormous space for counterfeiting was opened firstly by mass production and then by changes in the second half of 20th century.

1) Most goods are produced in a different region than they are consumed. Up to the 1970s, most Italians drove Italian cars; Germans drove German cars, British drove British cars, etc. It was the case for most of the products. Local markets give only limited space for entering of counterfeiting goods into the distribution chains. Markets with some specialised items, such as exotic food, were truly global. However, it is tough to fake Vietnamese pepper, Havana cigars or a particular brand of Irish whiskey. More sophisticated clients understand the difference and not sophisticated clients don't care. But lately, as one kind of handbag or break pads is used worldwide, huge opportunities open up for counterfeiting.

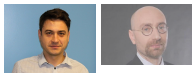
2) Internet shopping. Most clients have never met a manufacturer representative. Many of them have never met even a sales person. Often the product goes through several distributors. Almost nobody can follow the entire lifecycle of a product.

The explosion of counterfeiting is a logical result of such trends. The basic parameters of new trade situations are following:

- Counterfeiters operate entire production plants.
- Their production capacity is comparable to the one of the premium brand manufacturer, sometimes even higher.
- They can buy all machinery used by the premium brand producer.
- In spite of that, often they do not manage correct production procedures. Sometimes they use lowquality materials. The final quality of fakes is thus not comparable to the brand product.
- Mass production of goods is accompanied by the mass production of protection elements, such as buttons with embossed logo. Production facilities tackle even quite sophisticated protection elements such as guilloches drawn with security inks.

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Basic strategic option: do you trust the customer?

No wonder most of the big producers run their anti-counterfeit protection programs. The media often informs us that a giant store or a distribution channel has been revealed. Rich countries pressure poor countries where the counterfeiting factories are situated. However, the statistics mentioned above demonstrate that falsifiers are still a step ahead.

Defensive strategies can be divided into two basic groups.

1) TRACKING (including trace and track systems) means that there is a record or a document connected to each branded item. More sophisticated systems include additional information, which is especially important for technical devices: dates of inspections, their results, number of passed production cycles, etc. Functions of other systems cover monitoring of online shops. If a branded product is found, the system tries to identify it in its database. It can send a question to the store operator or suggest a legal action.

There are many kinds of tracking solutions. However, all of them share the same underlying philosophy. The manufacturer, together with law enforcement units and distribution channels operators, create a secure environment without fakes. The customer is not expected to do anything because he/she should not meet counterfeited goods. Some recommendations and programs try to active customers, but mostly, clients are still seen as a passive element.

2) MARKING is based on elements that are integrated into the product and enable the customer to differentiate between genuine and counterfeited. It is assumed that the client is motivated and that he /she doesn't want to pay for a fake. This motivation is significantly higher between professionals, corporate clients, technical fans and other groups to which technical parameters are critical. In the markets such as fashion, the situation is more difficult because some segments of clients prefer the low price to the certainty of genuineness. Of course, the higher is customer motivation; the higher is effectiveness of anti-counterfeiting measures.

Both strategies can be applied together. Security elements can be used both for tracking and for ensuring clients about genuineness. Bar codes in health care enable tracking and can be checked by hospital employees. The only limitation is that tracking technologies generally have little anti-counterfeit resistance and most of them cannot be inspected without special readers.

Helping customers rather than supervising them

In the remaining part of the article, we focus on marking. It is more relevant for packaging, it provides stronger protection and we firmly believe that any product feature should be add in line with customer needs and demands, rather than against customers. If customers start to use their creativity against the manufacturer, it is challenging and expensive to win. If people want to buy counterfeited goods, they will find them. It makes more sense to concentrate on those items where you can cooperate with your market.

The right marking protection strategy should be based on answers to three critical questions.

- Where will be security elements placed?
- What security elements will be applied?
- What support processes will be performed, especially concerning customer communication and production security.

The security elements can be placed directly on the item, on a sticker or on a packaging, e.g. box.

1) Directly on the item

A security hologram can be printed into the chocolate. It can also be printed into plastic cover of a product. It is also possible to print letters or logos with special security inks on some items. Microparticles are other interesting class of technologies. Microholograms, most advanced of them, look like metallic dust, observed by a naked eye. Detailed look reveals regular shape, and more detailed look shows even complete hologram on each particle of size from 40 micrometers. Microholograms can be added to transparent plastic, transparent lacquer or other cover technology. Due to their high-temperature resistance, they can be applied on engine parts as well. Until now, nobody has been ever successful at imitating microholograms.

2) Anti-counterfeit sticker directly on product

Application of stickers doesn't complicate production process too much. However, it is necessary that the label meets the following requirements.

- Any attempt for sticker removal must result in its irreversible disintegration or visible damaging.
- The label must include an element that can be neither copied nor imitated.
- Even a user without special skills must be able to identify features confirming genuineness.

Some traditional security elements, such as drawing with UV sensitive ink, appear to be questionable on labels. If the counterfeiter invests sufficient effort, he /she can imitate some elements. It is true that such features raise costs for the counterfeiter significantly. However, they also increase costs for original producer, consequently the price, and consequently motivation for the counterfeiter. It is critical that protective elements that are impossible or extremely difficult to counterfeit are included into the sticker.

3) On packaging

There are two basic ways of marking packaging.

a. Sealing of protection elements into the substrate for producing packaging. Special microparticles can be used, such famous 'DNA', small pieces of plastic with product information. Some DNA particles react to UV radiation. Being UV enlightened, they produce special visual effects. However, they can be imitated and do not sustain harsh environmental conditions. Already mentioned microholograms are more expensive but also much more secure. Therefore some packaging producers prefer low density of microholograms over the high density of less secure elements. Currently, there are several companies in the market offering „security paper“ with holograms inside. Machines for integrating microholograms into paper or plastic substrate are available as well.

b. Placing protection elements on the cover. There is a broad range of technologies from watermarks through security printing and metal stripes up to holograms. Holograms are considered the strongest protection tool, but it is important to understand that there are many kinds of holograms with different security levels. Most holograms are still produced with dot matrix technology that is cheap but can be imitated by a student. On the other end of the scale, there is e-beam lithography combining enormous resolution (the best producers work in order of millions DPI) and special mathematic algorithms that cannot be derived back from a hologram. Such security elements have not been successfully imitated yet. However, it is important that the hologram includes some unique visual effects that

cannot be emulated with other technology, and that these effects are so expressive that it is easy to identify them even for a person without special skills.

Microparticles or microholograms, already mentioned, can also be used for identifying and tracking of individual boxes. They can be randomly scattered over a defined area, and their position is saved into a database. Later, a package can be compared against database record.



Microholograms sized 0.05 mm (50 micrometers). In addition to the visible letters, there is a holographic surface on each of them. They are made of nickel with melting temperature around 1400 degrees so they sustain almost everything. These can be sealed into paper, plastics, etc.

What must not be forgotten

A combination of protective elements need to be based on the following factors:

- What attacks can be expected (for example, if the counterfeiters can tamper other packaging or need to produce fakes from the very beginning)
- How the genuineness will be checked. Are users trained? What about their motivation? Can they use electronic readers?
- What is the value of protected branded items?
- Is the protection a priority for the manufacturer?

It also needs to be decided in what production phase the security elements will be added. This decision is unique for each production process. On a very general level, it can be stated that tracking elements should be attached as early as possible (to enable tracking during production) while marking elements should be attached as late as possible (to avoid necessity of security supervision during production).

At the end of the article, two remarks about supporting activities.

Communication programs. Anti-counterfeit protection makes sense only if the customers are motivated to differentiate between genuine and faked and only if they have sufficient skills. It is absolutely critical to communicate details of protection elements. Finding something shiny with logo on packaging cover is not the right base for certainty. The

supervising people need to understand visual effects. It is useful to produce a video with tilting of protection elements, shining from different angles, using red light, etc. and showing all details. There is no risk of security breach. The good element cannot be imitated.

It is also important to keep track of technology development. Protection, which now looks bullet-proof, can become children toy in a few years. Therefore it is necessary to update security features regularly. This statement answers a frequent question: Is it better to apply unified security element across corporation products or develop particular elements for different products? Because unit costs correlate with the batch size, it is better to cover all products with the same element and make frequent changes. The advantage over potential counterfeiters is thus ensured, and customer communication is easier.

In any case, the right packaging is critical not only for transport but also for anti-counterfeit protection. It has been confirmed by experience from different market sectors. Anti-counterfeit protection often raises revenues by tens of percents.

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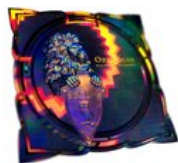
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