

Does the tobacco industry have a tracking and tracing system that governments can use?

Introduction

The illicit trade in tobacco products is a threat both to government finances and to public health. It robs governments of much needed revenues, and it undermines efforts to reduce tobacco consumption, particularly through the imposition of high levels of tobacco taxation.¹

Although by definition the global illicit trade in tobacco products is hard to measure with accuracy, it is known to be very substantial. A 2009 study estimated that 11.6 percent of the global cigarette market was illicit.² This is equivalent to 657 billion cigarettes a year, and means a loss of tax revenues of about US\$40.5 billion.

What is Codentify?

Codentify is a coding system that the tobacco industry wants governments to adopt as a solution to their obligations to fight the illicit tobacco trade, under the WHO Protocol to Eliminate Illicit Trade in Tobacco Products (commonly known as the Illicit Trade Protocol, or ITP) and in the European Union under the revised EU Tobacco Products Directive. Both the Protocol and Directive require a “tracking and tracing” system for tobacco products, which

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should help law enforcement agencies identify illicit products in their countries.

Codentify was first developed by Philip Morris International (PMI). However in November 2010, PMI licensed the system, at no cost, to the other three major tobacco manufacturers: British American Tobacco (BAT), Imperial Tobacco Group and Japan Tobacco International (JTI). These four companies have now formed the Digital Coding and Tracking Association (DCTA), based in Zurich, to promote the system to governments and independent agencies.³

Codentify is a system based on alphanumeric codes, which are visibly printed on tobacco packaging. Each Codentify code is a unique, unpredictable set of 12 letters or numbers. According to PMI, “Codentify avoids the requirement to store the codes by encrypting the information contained within them prior to printing through a patented combination of multiple keys and digital signatures”.⁴

The system is based on machine-generated codes created at factory level and printed on packaging. Factory level “secret keys” are stored on company (or third party) computer servers. Each key allows the production of a specified number of Codentify codes.

¹ Illicit tobacco products fall into four broad categories: **Smuggling**. This covers the unlawful movement of tobacco products from one jurisdiction to another, without applicable tax being paid. Therefore, smuggling may involve the movement of otherwise lawfully manufactured tobacco products. **Counterfeiting**. This covers the illegal manufacturing of an apparently lawful and well-known product, with apparent “trademarks”, but without the owners’ consent. **Bootlegging**. This covers cases where tobacco products are legally bought in one country and then transported to another with a higher tax rate, in amounts beyond those reasonable for personal use. **Illegal Manufacturing**. This covers cases where tobacco products are manufactured without declaration to the relevant authorities. In some cases, they may be manufactured in approved factories, unbooked and/or out of normal hours.

² Joossens L, Merriman D, Ross H, Raw M. *How eliminating the global illicit cigarette trade would increase tax revenue and save lives*. Paris: International Union Against Tuberculosis and Lung Disease; 2009

³ <http://www.dcta-global.com/>

⁴ Philip Morris International. Codentify 2012.

http://www.pmi.com/eng/documents/Codentify_E_Brochure_English.pdf

The codes may contain the following information:

- date and time of manufacture
- machine of manufacture
- brand and brand variant
- pack type
- pack size
- destination market
- price

Anyone who does not have access to secret keys to encrypt the information cannot generate original valid codes. Codes could be checked for validity through call centres, applications on mobile devices and through other means.

Each of the four big tobacco firms also has at least one global database. If a law enforcement officer enters a code through the DCTA portal, it can be checked for validity, and the decrypted code can be referred to the global database of the relevant firm to provide tracking and tracing information.

Possible Security Problems

The Codentify system uses relatively unsecured commercially available equipment on sites where operators may have a vested interest in misusing it.

The system does not appear to prevent valid codes from being used twice. Therefore, counterfeiters and other illicit manufacturers could simply copy codes (sometimes called “code cloning”). Since Codentify codes are visible, it could be easy to collect a large number of such codes. If the same code is scanned twice on different packs it appears to be impossible to tell which is illicit.

Codentify also seems vulnerable to “code recycling”, to print valid codes on illicit products, for example by using codes originally printed on tobacco products that have been rejected and destroyed (which isn’t unusual during the production process). Particularly if these codes are placed on tobacco products sold in the same market as the legitimate products whose codes have been copied,

it may be impossible for enforcement authorities to identify them as illicit.

The system of secret keys may be usable to generate apparently genuine tobacco products in factories “after hours”. For example, factories could use unused codes from a production run to produce additional products that are intended for illicit trade but may appear valid if the code is traced.

There may also be a weakness around “code migration”; where codes printed in one country can be reprinted in another, creating apparently legal products that enforcement agencies could not effectively trace.⁵

Codes produced using inkjet printers may be easily erased or altered, and would therefore not be “securely affixed”, as required by the Protocol and Directive.

Although the industry has marketed Codentify as a tax verification system, this does not appear to be the case for the reasons given above. This is why many countries where it is used also have a tax stamp system, for example in the European Union⁶

Other Issues

When enforcement agencies use Codentify codes in their investigations, the enquiries could be transparent to the industry, allowing it to manipulate replies and hide key data.

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⁵ These problems are in effect admitted by the industry in the Codentify patent documentation, which states that: “[0008] [...] the production codes can easily be imitated or cloned.” (patent EP1719070 (B1) Page 2)

⁶ Including Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Netherlands, Poland, Portugal, Romania, Slovakia, Spain.

Some information required under the Protocol and Directive will not be known at the time of production, when Codentify codes would be printed. This includes shipment routes from manufacturing to first retailer, the identity of all purchasers from manufacturing to first retail outlet, and the invoices, order numbers and payments of all purchasers from manufacturing to first retailers. It is not clear how this information will be associated with Codentify codes.

Key Questions

The tobacco industry has already had some success in marketing its Codentify system to international agencies. In 2011 INTERPOL accepted a donation from Philip Morris International (PMI) of \$23.5 million. Shortly afterwards, in July 2012, INTERPOL announced the creation of the INTERPOL Global Register (IGR) which aims to provide tools to help law enforcement and the public determine a product's authenticity. INTERPOL also stated it would be working with the DCTA to make Codentify accessible via the IGR.

It is unacceptable that any government or international agency should adopt the Codentify system without having set proper standards for its tracking and tracing regime, and having assessed properly whether Codentify meets them. This is particularly dangerous in countries with very limited enforcement resources.

The following questions **must** therefore be asked and answered before any government considers Codentify as a solution to its obligations under the Illicit Trade Protocol and the EU Products Directive.

- a. Can Codentify codes be copied or diverted for use on tobacco products that are not tax paid, in order for them to appear as not illicit when examined by enforcement officers?
- b. Does Codentify provide an adequate guarantee that tobacco products are being sold in their stated target market and are tax

- c. Would the use of Codentify by enforcement agencies, and access to any related database, be transparent to the tobacco industry, making available information about investigations that should be kept confidential?
- d. Is Codentify and the accompanying handling and storage of data by the tobacco industry compliant with Article 8.8 of the Protocol, which requires the establishment of an *independent* "global focal point" through which governments and enforcement agencies can access the information required under Article 5?
- e. Will the industry undertake to make available to governments, the European Commission or their designated agents, information about the source code and algorithms behind Codentify, so that it can be independently assessed?
- f. Do individual Codentify codes include a product description, as required under Article 8.4.1(g) of the Protocol and Article 15.2(e) of the Directive?
- g. Does the information encoded under Codentify include all the information required in Article 15 of the Directive, including "the actual shipment route from manufacturing to the first retail outlet ... the identity of all purchasers from manufacturing to the first retail outlet" ... and the invoice, order number and payment records of all purchasers from manufacturing to the first retail outlet"? It should be noted that some of this information might not be known at the time of manufacture.

There are many competing tracking and tracing systems provided by companies unrelated to the tobacco industry that could be used on tobacco packaging, for example 2d bar codes. **These should certainly be preferred if there are no satisfactory answers to the key questions about Codentify.**