



**Read what others cannot SEE!**

# Invisible Bar Codes

**Covert** Barcodes handle on-the-spot  
Brand and Document Authentication

**John Hattersley, P.E.**

# Invisible Bar Codes

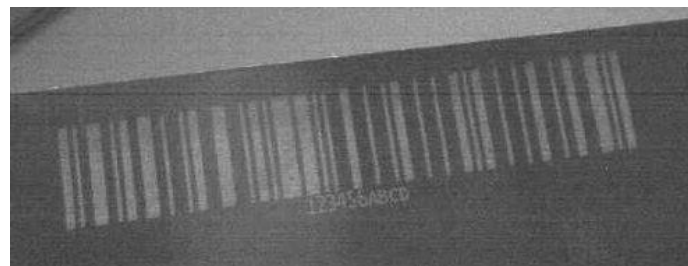
- ▶ **What?**
- ▶ **Why?**
- ▶ **How?**
- ▶ **Technology?**

What are they?

Invisible Bar Codes = **Covert** Bar Codes

## Types of Barcodes

- ▶ **Not Linear – Too sensitive to width of bars**



- ▶ **2D Data Matrix – more error correction  
more data - smaller area!**



What are they?

Invisible Bar Codes = **Covert** Bar Codes

## Types of Data

- ▶ **Product ID – Label Identification**
- ▶ **Serial Number – “License Plate”**
- ▶ **Hashed encoded unique number**

# Why **Covert** Bar Codes?

- ▶ **Multi-Layer Protection**
- ▶ **Unobtrusive Identification**
- ▶ **Track and Trace**
- ▶ **Authentication**
- ▶ **Product Diversion Tracking**
- ▶ **Easy to Print**
- ▶ **Invisible to the Human Eye**
- ▶ **Less expensive than RFID**
- ▶ **NOW – Easy to Read and Store!**

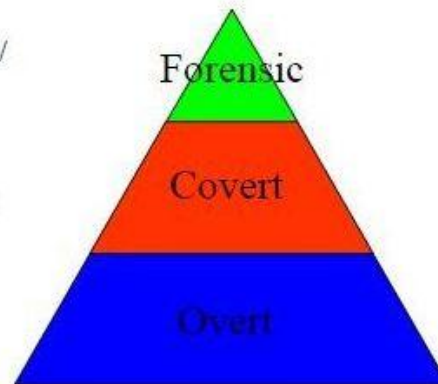
# Why **Covert** Bar Codes?

## Multi-Layer Protection

- ▶ Invisible bar code with Unique Serial Number
- ▶ Holograms, Micro Text, embedded DNA
- ▶ Other Overt/Covert marks

### Authentication Point

Investigators/Lab/  
Customs  
↑  
POS/Customs/  
Channel Partners  
↑  
Consumers



### Security Level

High  
↑  
Medium  
↑  
Low

The *highest* levels of security are achieved by layering multiple methods!



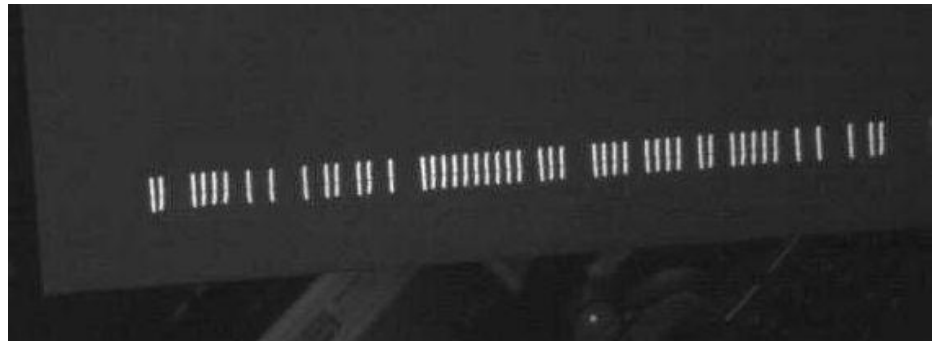
## Why **Covert** Bar Codes?



## Unobtrusive Identification

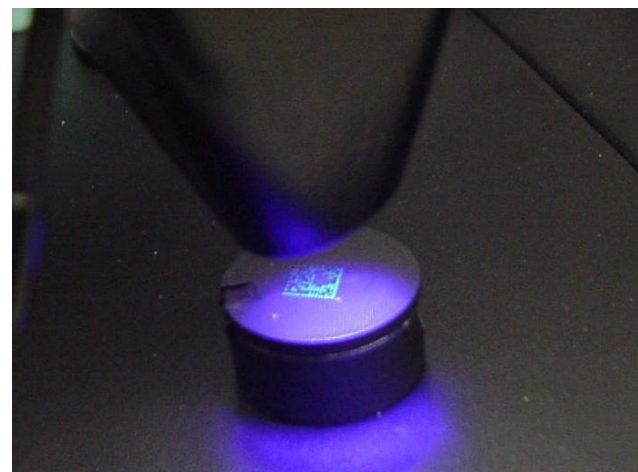
## Why **Covert** Bar Codes?

# Track & Trace – in the FIELD !





## Product Authentication



## Why **Covert** Bar Codes?

# Product Diversion Tracking in the FIELD !



# Why **Covert** Bar Codes?



**EASY TO  
PRINT!**





How does it work?

# **Three Legged Stool of Covert Security Solutions**



**Marking  
+ Scanning  
+ Data System**



# **Covert Security Solutions: Marking**

- **Quality ink or ribbon marking**
- **Suitable to endure the environment**





## **Covert** Security Solutions: Scanning

- **Easy to use scanners: in-line or handheld**
- **Read the marks in the factory and the field**

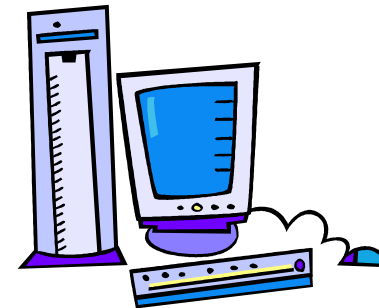






# **Covert Security Solutions: Data System**

- **Data and systems integration**
- **Either in-house or specialty service**





## Technology Update:

***Data systems haven't been a problem... they can use either regular or **covert** bar code data input, or any number of other labeling technologies including sophisticated but expensive RFID.***

***So what about Bar Code vs. RFID...?***

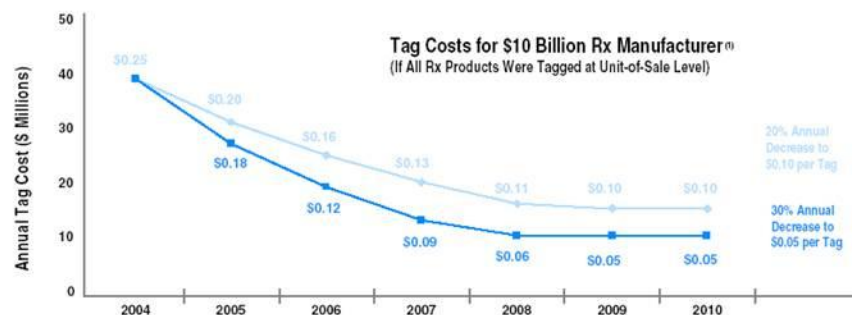


# Technology Update: RFID

**RFID Solutions can be very expensive to implement.**

**FIGURE 1**

RFID costs and benefits for large manufacturer and distributor



Note: (1) Assumes average product cost of \$65 per selling unit, and a constant number of 10 billion / \$65 = 150 million products to tag.  
Source: A.T. Kearney analysis based on business case data inputs

Illustrative

Category	Costs and benefits	
	Large manufacturer <sup>1</sup>	Large distributor <sup>2</sup>
One-time benefits	Not significant	\$2 to \$4 million
Annual benefits	\$20 to \$55 million	\$10 to \$20 million
One-time start-up costs	\$15 to \$20 million	\$9 to \$20 million
Annual ongoing costs	\$20 to \$40 million (initially) \$8 to \$16 million (long term)	\$3 to \$4 million

<sup>1</sup> Manufacturer with US\$10 billion in prescription product sales

<sup>2</sup> Large distributor with US\$40 billion in prescription product sales

Source: A.T. Kearney

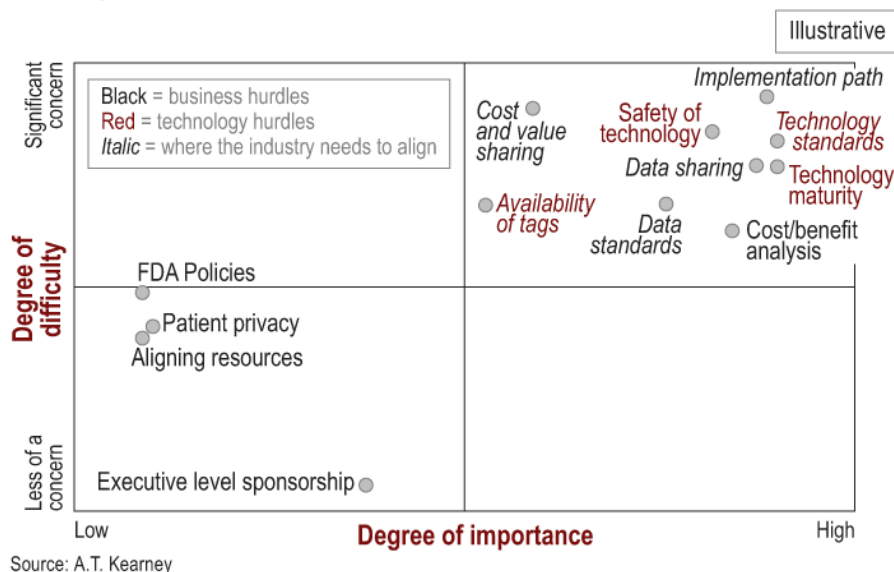
**Covert Bar Codes are Less Expensive.**



# Technology Update: RFID

**RFID Solutions are getting better – but . . .**

**FIGURE 2**  
RFID implementation hurdles



**Covert Bar Codes are still more cost effective to implement.**



## Technology Update:

***Since data systems haven't been a problem  
(they can use any data input)...***

***The only challenge in adopting economical **covert**  
bar codes was reliable marking and scanning...  
however **BOTH are now available!*****



# Technology Update: Marking Systems

**Digital printing**  
**Inkjet printing**  
**Thermal transfer**  
**...all now available**







## Technology Update: Marking Inks

**Different “Ink-Specific” technologies are  
now available across the light spectrum**





# Technology Update: Scanning Systems

**Affordable, durable scanners are **now** **available** for both the factory and the field**





**Read what others cannot SEE!**

# Thanks!

*For further information, contact...*

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