



Enabling a New Paradigm in NFC/Mobile Marketing and Advertising

Kovio

MIT, Cambridge

December 13th, 2010

Kovio Overview

Printed Silicon Electronics

Kovio is a printed electronics company which is focused on delivering a new and game-changing category of semiconductor products and solutions which combine the cost-effectiveness of graphics printing and the performance of silicon



Founded:

MIT Media Labs; Prof. Joe Jacobson

Headquarters:

Milpitas, California

Investors:



Patents:

45 Granted, 140+ Pending

Vision

Mobile



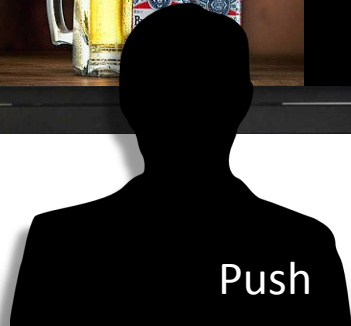
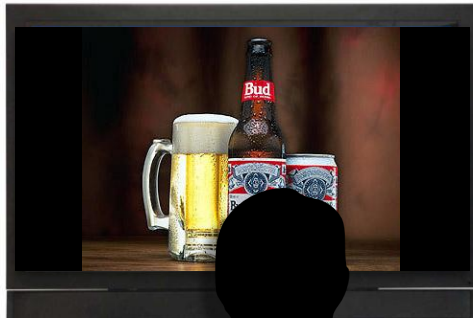
To bring together the
online and
physical worlds by

**Building
intelligence into
everyday things**

Physical



New Paradigm in Consumer Brand Interaction



Push



Search



Need

Mobile Phones/RF Barcodes

Intuitive, Affordable and Smarter Brand-Consumer Interaction

“Impacts Every Moment of Truth”

Context

Anywhere, Anytime

- Retail Store
- At Home
- At Work

Simple Yet Powerful

- “One Tap” launch
- Intuitive phone app
- Fast & easy

Intelligent Products

Consumer

Timely & contextual information

for product discovery, purchase, usage anywhere and anytime

Personalization

- Enhanced Use Experience
- Promotions
- Applications
- Rewards
- Social interaction

Authentication

Brands/Retailer

One to One Relationship with Consumer

Increase Sales/Profits

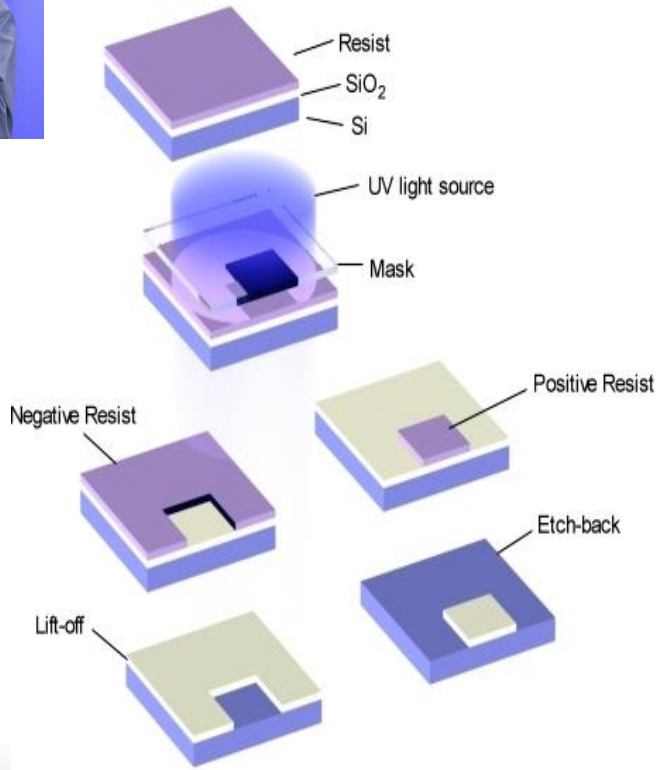
- Enhance FMOT & SMOT
- Reduce Counterfeiting
- High margin reorders
- Sales visibility/market trends
- Improve promotions efficacy/conversion rates
- Cross-sell

Brand Loyalty

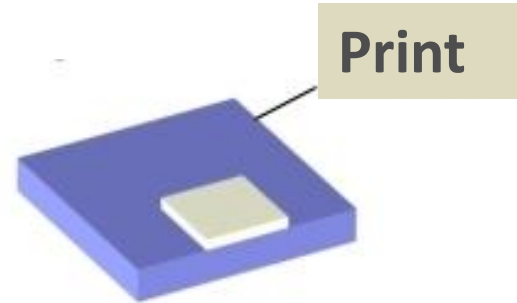
Differentiated In-Store and At-Home Experience

Game Changing Semiconductors

Conventional Silicon



Printed Silicon

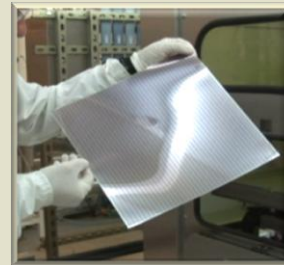


From Silicon Inks to Products

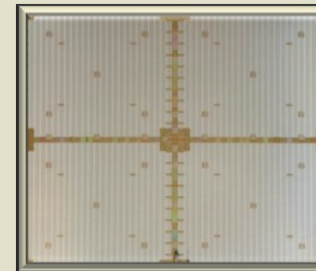
Ink Formulations



Printed Electronics Manufacturing



Products



Affordable RF Tags with Printed Silicon

Kovio's printed silicon based tags address all three areas of RF tag costs including the integrated circuit, the antenna and integration

Printed Silicon



Green Additive Process

Uses fraction of resources of conventional silicon

Higher Return on Capital

Less CAPEX and fast cycle time

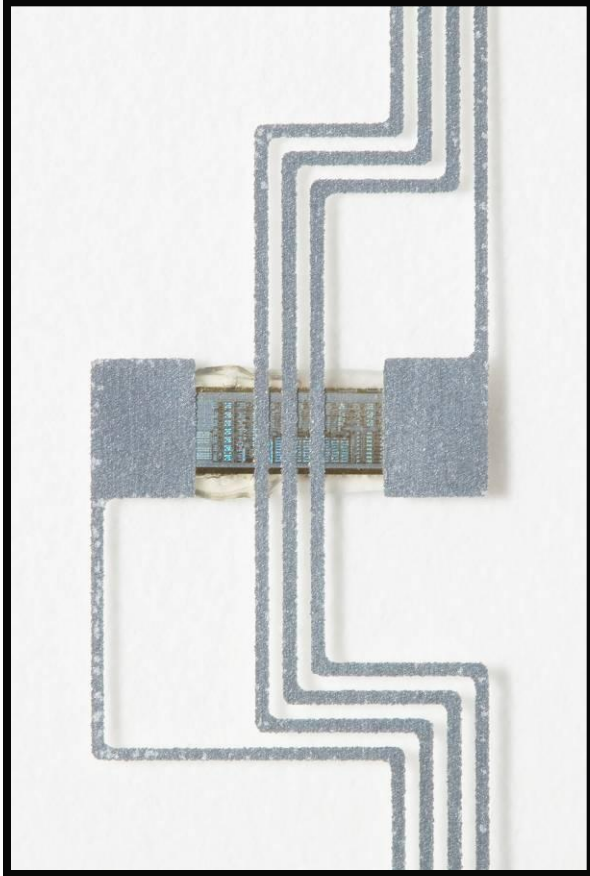
Flexible Substrate

Affordable antenna integration

Item-Level Intelligence

Game changing cost structure enables intelligence at item-level

RF Barcode Inlay



✓ Large Bond Pads

✓ Single Layer Antenna

✓ Direct Chip Attach

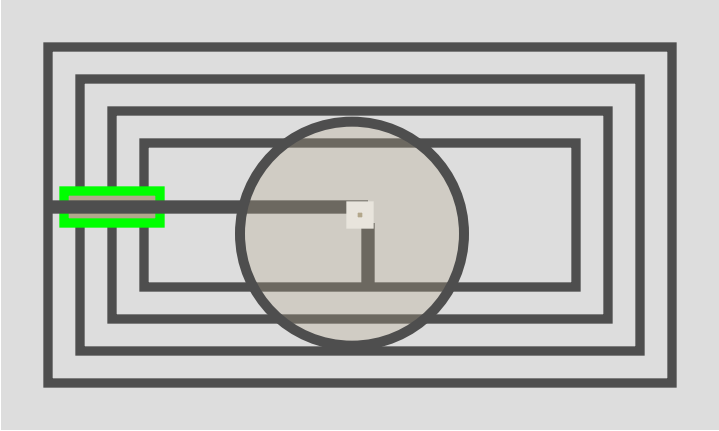
✓ High Throughput

Kovio Value to RFID

IC

Attach

Antenna



Silicon Wafers,
Photolithography,
Vacuum, Plasma & Mega
Fabs

Backgrind, Singulate,
Bump, Flip & Precision
Attach

Multi-Layer or Strap
Attach



Print

Stainless Steel Substrate,
Silicon & Other Inks &
Printers

Singulate & Attach

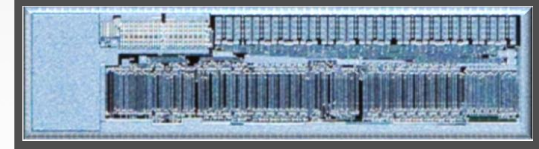
Single-Layer

HF RF Barcode Products



Conventional Silicon

- ISO 14443/NFC Tag Type 2
 - 106Kbps Data Rate
- Memory - 2048bits OTP
- Multiple Inlay Options Available



Printed Silicon

- Compatible with ISO 14443
 - 106Kbps Data Rate
- Memory - 128bits Printed ROM
- Multiple Inlay Options Available
- Print on Demand Service Model

Summary

New Consumer Brand Interaction Platform

- ✓ Smart NFC Phones
- ✓ Enabling Low Cost Tags

Brands

Increase Sales
Consumer Insight
One-to-one marketing
Cross Selling
Brand Loyalty
Awareness

Consumers

Product Information
Authentication & Safety
Value-Added Pricing
Convenience
Entertainment

Mobile Operators

Increase ARPU
New Service Models
Reduce Churn Rate



Handsets

Increase sales
New Service Models
Brand Loyalty

Information Providers

Increase Ad revenue
Increase CTR
New Integrated Services

Retailers

Increase Sales
Consumer Insight
Targeted Marketing
Cross Selling
Loyalty

Government Agencies

Consumer Confidence
Reduce Fraud
Improve Safety
Increase revenue (Taxes)

Advertisers

Increase sales
New Service Models
Brand Loyalty



Building
intelligence into
everyday things

Explosive New Opportunity

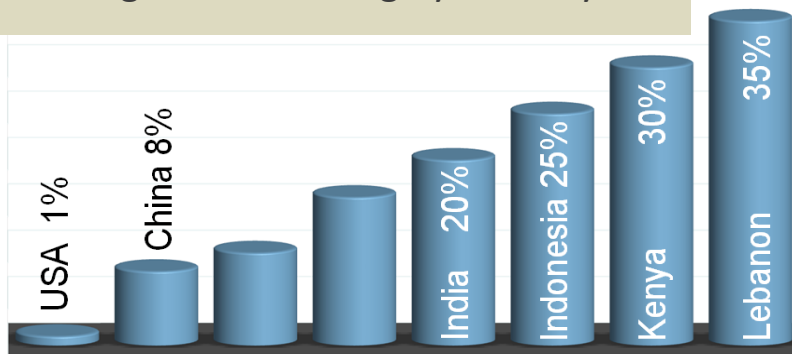
Brand Authentication

- **\$500B** of all goods sold worldwide is counterfeit
- Significant safety concerns for consumers
- Brands suffer significant financial, legal, equity and intellectual property losses
- Government agencies lose significant tax revenues
- Loss in consumer trust and confidence in brands, retailers and government agencies

Brand Marketing and Advertising

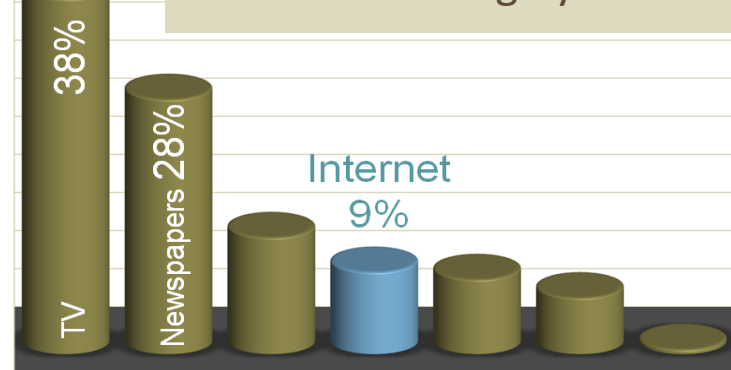
- **\$500B** is spent on advertising each year
- Over 90% of advertising is pushed to the consumer
- 40% of newspaper revenue is generated from advertising sales of Sunday advertising section
- Less than 1% of coupons are redeemed
- The internet has made strides in moving from push advertising to capturing consumer intent

% Drug Counterfeiting by Country



Source: aeI/WHO

% Advertising by Medium



Source: ZenithOptimedia