



The World of NFC Possibilities



Goals of Today

SMART PRODUCTS

Active & Intelligent Packaging

Expose everyone to the mechanics of NFC

What are driving forces

Understanding of NFC opportunities and value

Factory tour to see how it happens

Get you prepped for Hackathon

Near Field Communication (NFC)

Derivative of RFID Technology, but developed for close range, intimate and deliberate act

Phone has 3 Elements:

- NFC Antenna
- NFC Controller – Manages Traffic
- Secure Element-Stores the encrypted data

Each Chip has a UID--unique identifier



Active and Intelligent Packaging and Consumer Engagement

Why does it matter? **CONSUMER PRESSURE**

- **The Need-to-Know** Consumer's are savvier – Info Access
- **Information Response** Here and now! No waiting...
- **Comfort with Technology** We Trust our Mobile Devices
- **Brand Competition** A Digital Strategy is no longer an option
- **E-Commerce/Covid** Has increased opportunity for Counterfeit goods



Food Nutraceutical
Personal Care
Beverage Pharma

Consumer Engagement = Opportunity

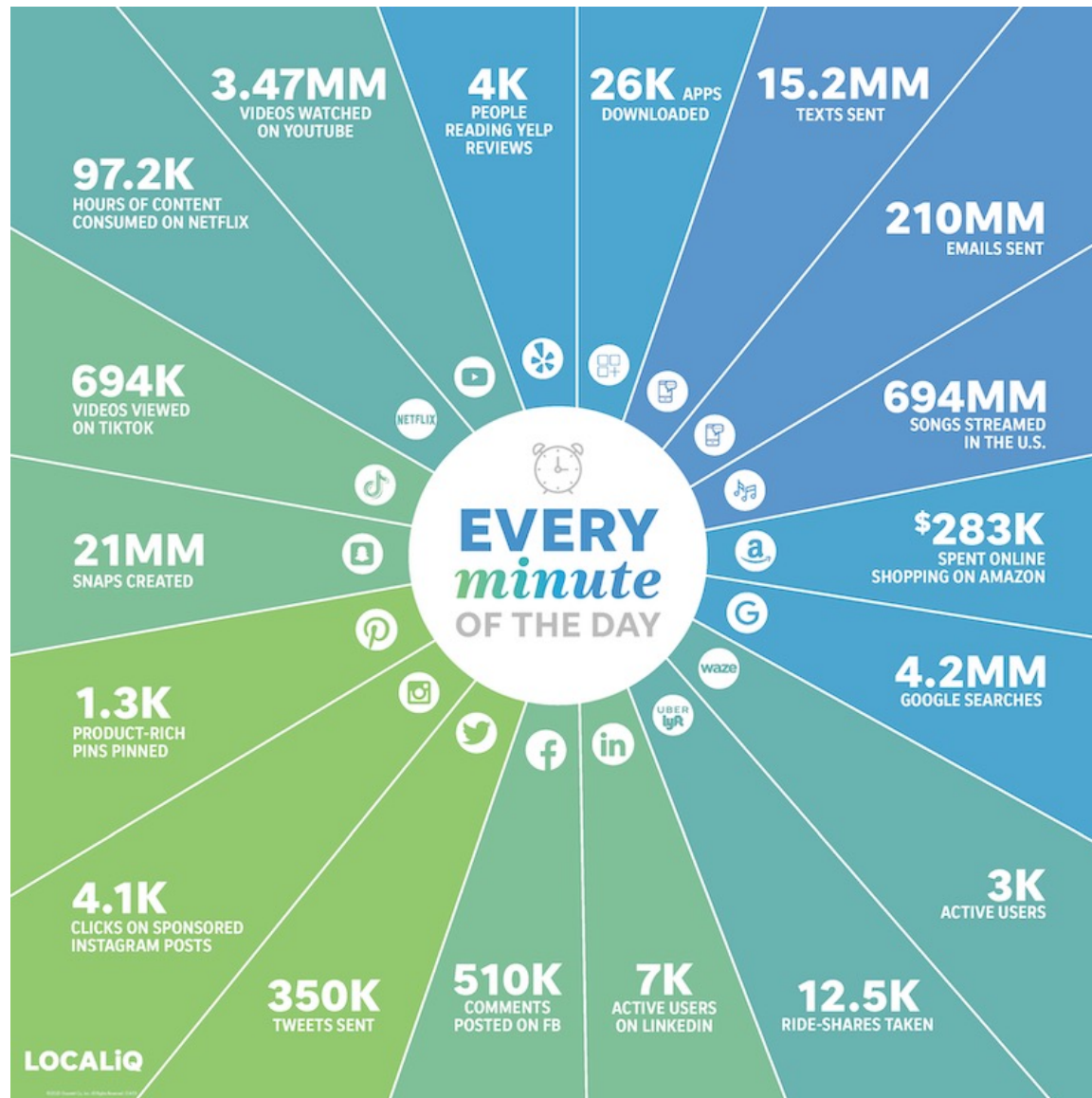
Lack of Information is a Disadvantage

Market Expectation is Increasing

2021 Internet Minute



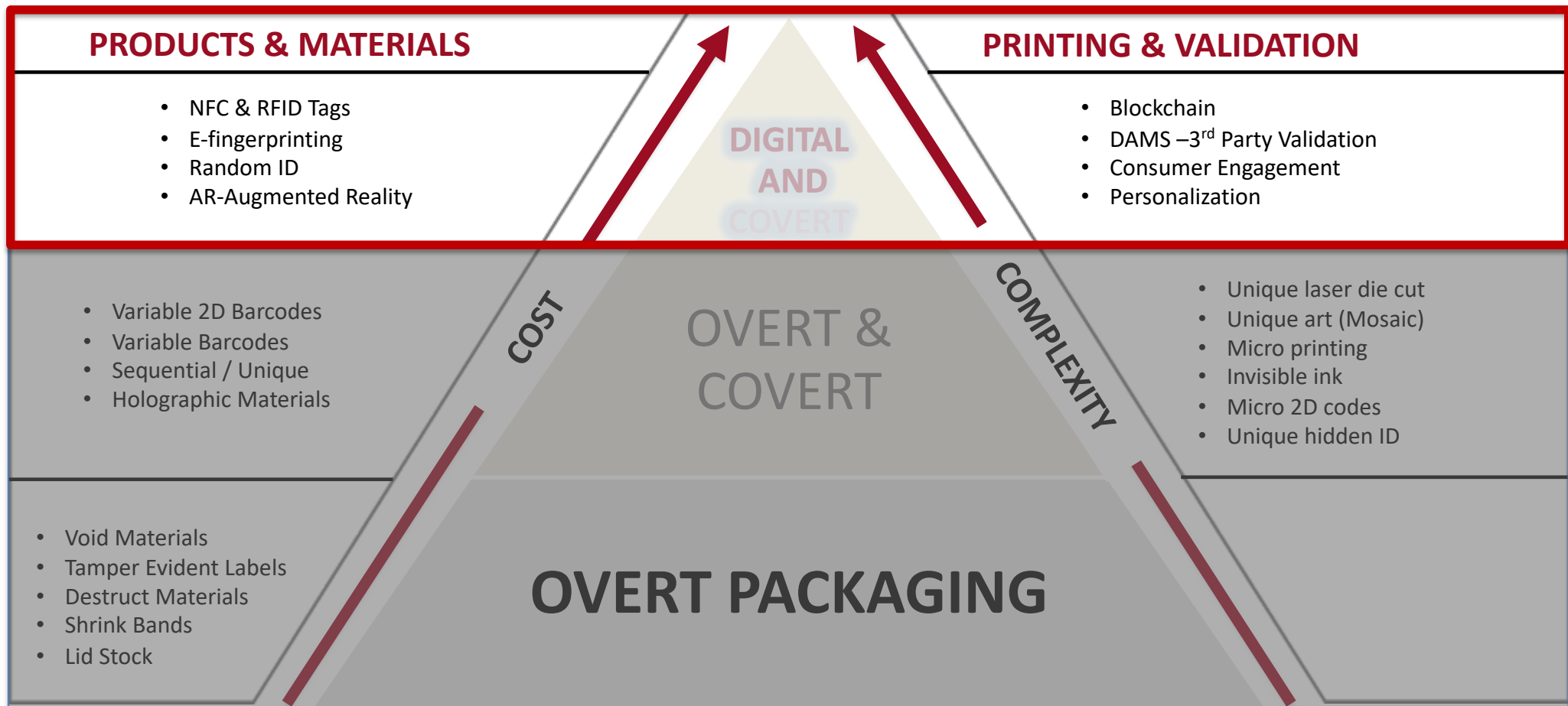
This is what happened every minute.....



Security Discussion



Security Triangle – How Technology Can Be Practiced



NFC vs. QR Code



Why not just use a QR code?

SECURITY

- QR Codes are easily reproduced
- Smudge or scratch can deem a high value product counterfeit
- Contain no UID- UID provides deeper 'Hidden Secure Data'
- FBI recently issued warnings regarding fake QR Codes

DURABILITY – READABILITY

- Print legibility is not an issue for NFC
- Not affected by scratching / smudging
- NFC does not need a “line of sight”



8837737R4@sdkjfgw%SAm333

NFC is Dual Function: User Engagement & Authenticity

Authenticity & Customer Experience

LAYERED APPROACH

NFC Chips

- UID on each chip is a Unique number that cannot be altered
- Blockchain

Tamper Evident Chips NTag213TT and NTag424TT

- Flip Chip Technology—Irreversible Status Change
- 424 Chip offers additional security and validation



Innovation Trends in Packaging—Track and Trace

Everything has a digital identification

- Track from supply of raw materials, to consumption and beyond

Track and Trace Solutions from bar codes, to RFID tags to NFC

- Track Pallets
- Track Bins/date/time/location/individual

Need for more information and feedback

- Supply chain handoffs
- Supply chain environmental information

Cannabis

- NFC can take it from processor to consumer and provide feedback
- Need to know strain, lot, date, people and then get feedback





Healthcare, Pharma and, Cannabis

Healthcare and Pharma

- Provides a unique digital link for product authenticity
- Validate the supply chain
- Consumer communication beyond the written word
- Virtual Health Advisor
- Valuable feedback

Cannabis

- Deliver and Capture valuable information
- Detail DNA of Products
- Authenticate Product

Medical Interactions

- How to Use Videos
- Identify Critical Events
- Enable Trust

Innovation Trends in Medical Devices



Device to Device Communication “Everything has a digital path”

- UDI-Unique Device Identification ties maintenance and ownership information on each and every Medical Device Globally
- Counterfeit medical devices and tools impacting quality of care.
- Communicates Lot, Date of Chemistry
- Track from supply of raw materials, to consumption and beyond



Why use an NFC tag in an ECL application?



NFC can be an alternate or complementary option, depending on application

- Daily activity, and personal behavior revolves around your hand-held personal device
- Brick and mortar retailers are fighting tooth and nail with on-line retailers for consumer attention
- Consumer Goods companies are driving to establish direct links to their customers
- Required or regulated communication of Product information is increasing
- An NFC tag can either replace or complement an existing Extended Content Label



NFC Technology...

- ❖ Provides a direct link to the consumer
- ❖ Delivers information to enhance the buying experience
- ❖ Creates the ability to change information immediately

Transform Your Business



**INNOVATE with
Smart Products**

**COMPLEMENT
traditional
marketing**

**CONNECT
MEANINGFULLY
with customers**

IMAGINE

Dream with:

- NFC
- RFID

Regardless of industry: Food & Beverage, Automotive, Pharmaceutical, Industrial, Promotional, Household Products, Personal Care

BUILD

Enhance with:

- New technologies to compliment all your marketing initiatives

Use in all types of applications: Loyalty programs, coupons, cross-selling initiatives, product manual instructions, security, product authentication or origin

LAUNCH

Enhance with:

- New activities for consumers
- Dynamic customer engagement

Interact on a one-to-one level: Contact is completely bespoke whether it's a video, website, documents, medicine adherence, voice calls etc...



Complete the Circle--Qwasi

Key Role of Third-Party Relationships

- Value comes from all providers
- Relationships are interdependent to create value
 - Consumer engagement
 - Security systems
 - AR



1. RLG
2. Customer
3. QWASI





Thank You