
How GSI Sunrise 2027 Could Transform Brand Protection





OUR FOCUS



A software-based
Brand Protection firm.



Specializing in the removal of
Grey Market inventory from
online marketplaces and websites.



Investigation and data analysis
make up a large portion
of our efforts.

OUR LEADERSHIP

Emmanuel Frost
CEO

Kyle Balcerak
COO

WHAT WE DO



DETECT

We monitor online
marketplaces and
websites to detect
grey market activity.



INVESTIGATE

Our team conducts in-depth
investigations and data
analysis to identify sources
and build cases.



ENFORCE

We take action to remove
grey market listings and
hold bad actors
accountable.



PROTECT

We help brands protect
their reputation, revenue,
and customer trust.



OUR MOTTO

Grey Market is Solved Through the Supply Chain



Part 1 – Case Studies



How Scan Data Works





Geo Activation Analysis



Metadata

Collected from
scan events



Geospatial Activation Analysis

Compares where products are activated
vs. where they were intended to be sold



Territorial Activation Anomaly

Activation occurs outside
of the intended territory



Diversion Indicator

The greater the anomaly,
the greater the indicator



Diversion Indicators



Bottom Line: The greater the Territorial Activation Anomaly, the greater the Diversion Indicator.



Case Study #1

CASE STUDY

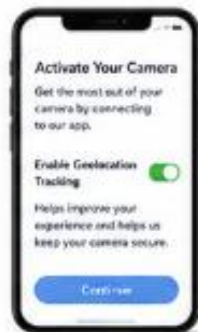
Consumer Electronics Camera Brand

USAGE DATA ANALYSIS



1. Camera Activated

Customer powers on and starts the activation process



2. User Opt-In

User is given the option to enable geolocation tracking at activation



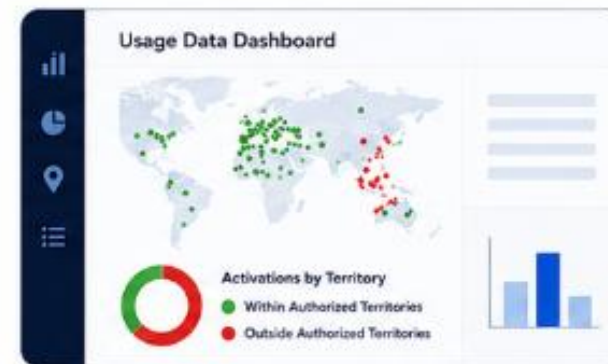
3. Geolocation Captured

When enabled, location data is captured at the time of activation



4. Data Sent to Camera Company's Servers

Activation data (including location) is securely sent to the camera company's servers

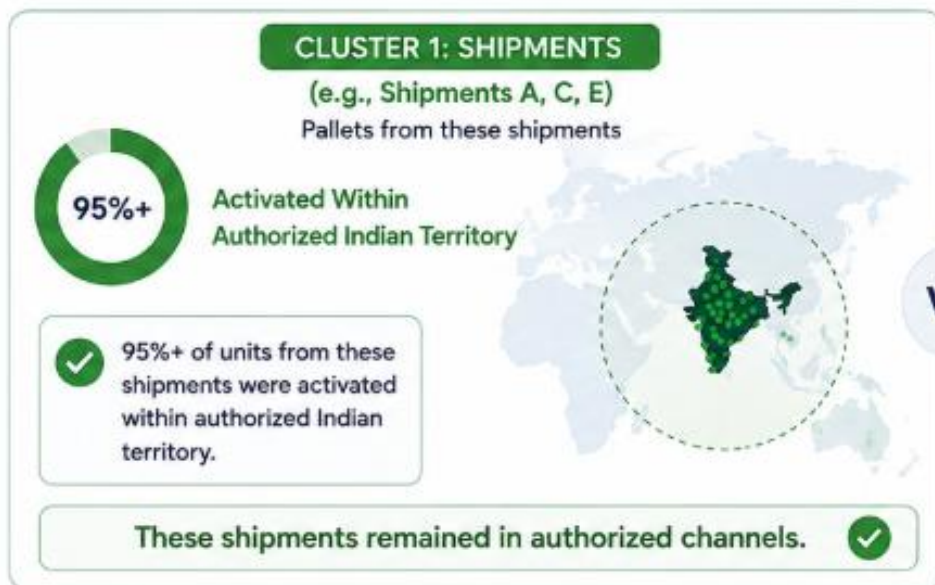
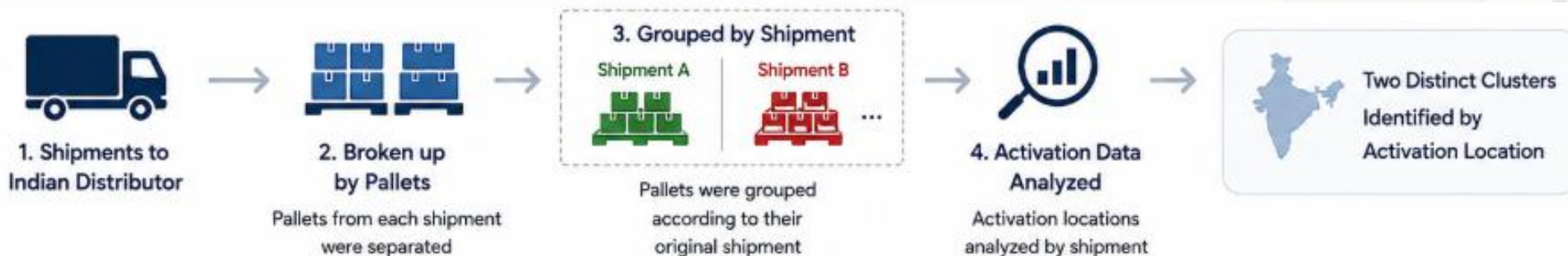


5. Analyzed for Insight

The camera company analyzes the data to understand activation patterns by location



Case Study #1



VS.





Case Study #1





Case Study #2

Scan-Based Telemetry Helps Trace the Flow of Stolen Goods

The same type of scan-based telemetry can be used to identify the downstream flow of stolen goods.



As long as we know the serial numbers of the stolen product, we can identify **where** and **how** the product moves around the world.

1. Stolen Product

A product with a known serial number is stolen.



SERIAL: SN12345678

2. Scan Event Occurs

The stolen product is scanned/activated somewhere in the world.



Location: Berlin, Germany
Time: May 12, 2025 10:32 AM

3. Telemetry Sent to Company Servers

Scan data (including serial number, time, and location) is sent securely.



4. Movement Tracked

Every scan builds a timeline that shows where the product goes next.



- May 12 Berlin, Germany
- May 15 Istanbul, Türkiye
- May 18 Dubai, UAE
- May 22 Nairobi, Kenya
- May 27 Bangkok, Thailand

5. Downstream Flow Identified

You can see the full path and final known location.

DOWNSTREAM FLOW MAP



Actionable insight to support recovery efforts, investigations, and law enforcement.

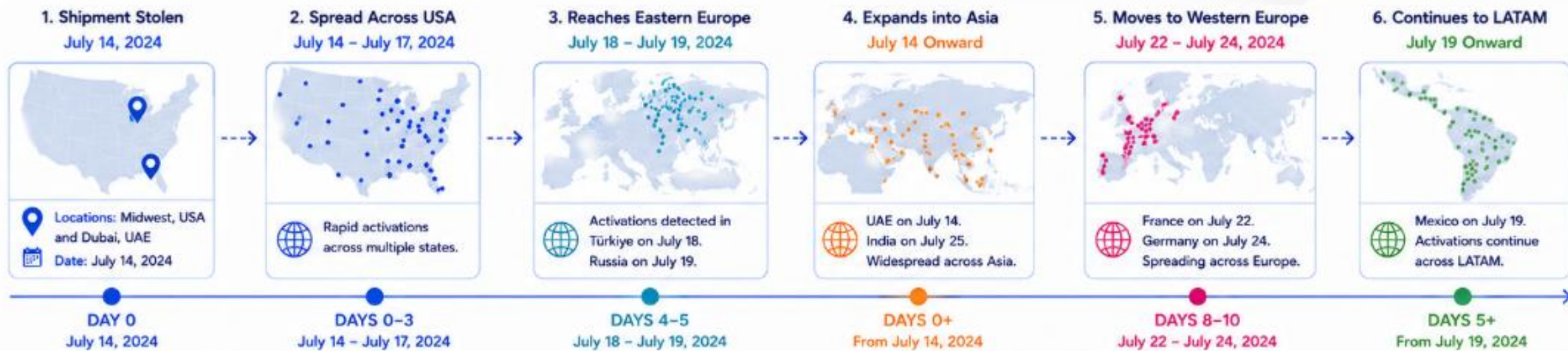


Case Study #2



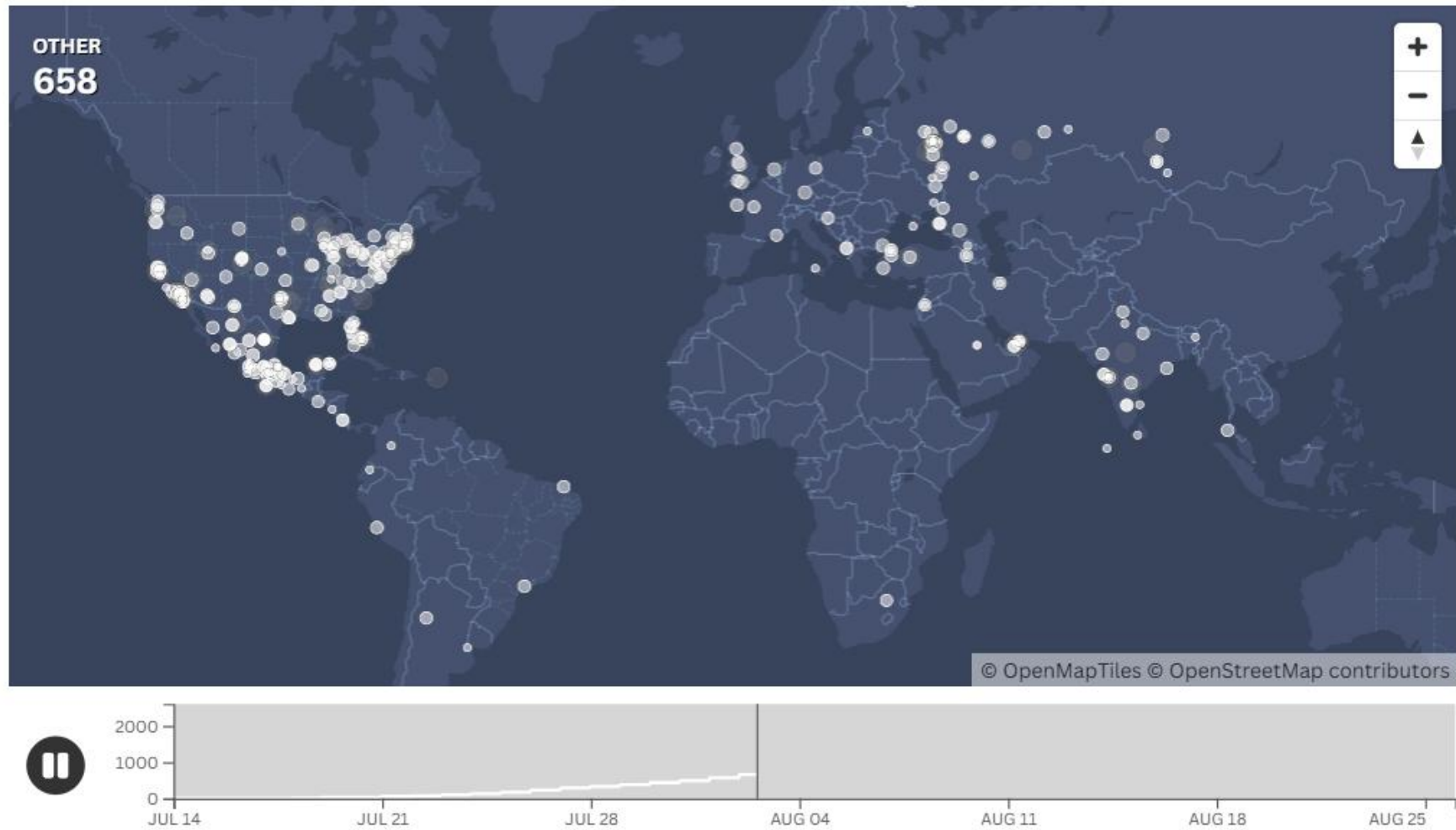


Case Study #2





Case Study #2



Source: [ECDC/OWID](#), [Johns Hopkins University](#).



Common Themes

Scan Telemetry Works Across All Industries

We've seen similar patterns based off scan telemetry in many other industries including footwear and apparel, IT, and health and beauty.



Every industry has their own distinctive elements, but the **common threads** of product diversion flow remains the same.



Scan telemetry works across all industries as long as there are **enough geolocation scans** to the server.



1. Product Activated
A product with a known serial number is scanned.



2. Scan Event Occurs
The product is scanned/activated somewhere in the world.



3. Telemetry Sent
Scan data (including serial number, time, and location) is sent securely to company servers.



4. Movement Tracked
Every scan builds a timeline that shows where the product goes next.



5. Downstream Flow Identified
You can see the full path and final known location.



Common Themes

1 Years of Brainstorming



We have been brainstorming for years how to expand **serializes scan based** telemetry to every industry.



2 Explored Every Option



We have considered all forms of **QR codes**, **activation data**, and **barcodes**.



3 The Reality



All of these are **difficult** and **expensive** for brands to implement, if not already implemented.



4 The Breakthrough



Our breakthrough came when we heard of **GS1 Sunrise 2027**.

Part 2 – GSI Sunrise 2027



What is GS1?

GS1 is a global, not-for-profit organization that develops and maintains the world's most widely used standards for supply chains.



Global, Not-for-Profit

GS1 is a global, independent, not-for-profit organization.
Helped invent the barcode in the 1970s to improve business efficiency worldwide.



Standardized Global Initiative

GS1 develops and maintains global standards for identifying, capturing and sharing information about products, locations and assets.
One standard language used by businesses everywhere.



Trusted Worldwide

Used by millions of organizations in more than 115 countries across virtually every industry.
Enabling efficient, safe and sustainable commerce.

GS1 Identifiers: The Building Blocks of Global Commerce

GS1 identifiers provide unique, globally recognized identities that enable businesses to identify, find and share information.

GTIN

Global Trade Item Number



Identifies products and services.

Example: 09506000134352

GLN

Global Location Number



Identifies locations, companies and functions.

Example: 0614141000005

SSCC

Serial Shipping Container Code



Identifies logistics units such as cases, pallets and shipments.

Example: 006141419876543210

GRAI

Global Returnable Asset Identifier



Identifies returnable assets such as equipment and containers.

Example: 800123456789012345

GIAI

Global Individual Asset Identifier



Identifies individual assets.

Example: 800123456789012346

GSRN

Global Service Relation Number



Identifies relationships between parties.

Example: 1000123456789



GS1 Drives Global Supply Chain Transformation

Every few years, GS1 introduces a new initiative that becomes the foundation for global supply chain efficiency and data transparency.

A History of Global Initiatives



The Next Global Initiative



Announced with a clear goal:

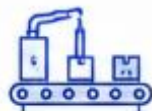
By the **end of December 2027**, retail point of sale systems worldwide will support scanning **2D barcodes alongside traditional 1D barcodes**.



A global commitment to modernize how products are identified, captured and connected at every point in the supply chain.

Bringing the Vision to Life Across the Supply Chain

Achieving this goal requires coordinated adoption across the entire supply chain ecosystem.



Production Line Hardware

Upgrading printers, cameras and line equipment to generate and verify 2D barcodes.



2D Barcode Readers

Deploying scanners capable of reading both 1D and 2D barcodes at speed and scale.



Artwork & Packaging Redesign

Redesigning packaging and labels to accommodate 2D barcodes and new data needs.



Warehouse Scanners

Equipping facilities with 2D capable scanners for receiving, picking, packing and shipping.



Point of Sale Upgrades

Upgrading POS systems to scan 2D barcodes seamlessly with existing 1D barcodes.



Systems & Software Updates

Updating software, databases and integrations to capture and leverage richer data.



Training & Change Management

Training teams and driving adoption to ensure a smooth transition to the future of scanning.



Sunrise 2027 and Ambition 2027 set the foundation for a more connected, efficient and data-rich global supply chain.

The goal: ready by the end of December 2027.



Two Main Types of 2D Barcodes Being Introduced by GS1

Both barcode types carry the same GS1 Digital Link data, enabling global interoperability and supply chain visibility.

1

GS1 DataMatrix

The GS1 DataMatrix is a 2D barcode specifically designed and standardized by GS1.



Built to GS1 standards



Optimized for global supply chains



High data capacity in a small footprint

Ideal for:



Manufacturing and production



Logistics and shipping



Healthcare and regulated industries

2

Standard QR Code

Configured with a GS1 DataMatrix Syntax

A standard QR Code that carries GS1 data using the GS1 DataMatrix syntax.



Uses the widely adopted QR Code technology



Interoperable across existing QR Code ecosystems



Encodes GS1 data using GS1 DataMatrix syntax for consistency

Ideal for:



Retail and eCommerce



Mobile applications and consumer engagement



Marketing and digital campaigns



The Gamechanger: GS1 Digital Link URI

A single, open standard that connects physical products to digital information—anywhere, anytime.



What is a GS1 Digital Link URI?

A web address (URI) that uses GS1 identifiers to create a persistent link to data about a product, location, or asset.



Why It's a Gamechanger

- ✓ Open and global standard
- ✓ Works across industries and use cases
- ✓ Future-proof and extensible
- ✓ Enables rich, trusted, real-time data connections



One Data.
Two Symbols.
Infinite Possibilities.

GS1 Digital Link URI Format

Your domain name



Global Trade Item Number (GTIN)



Batch / Lot



Serial number



Expiry date



<https://id.brand.com/01/05060336506022/10/ABCD/21/123?17=241225>

Your Domain

Your branded domain you control (e.g., id.brand.com)

01 = GTIN

Global Trade Item Number that identifies the product

10 = Batch / Lot

Identifies the lot or batch number

21 = Serial Number

Identifies the unique serial number of the item

17 = Expiry Date

Expiration date in YYMMDD format

Two Ways to Scan: Offline vs Online

1

Offline Scanning (Air-Gapped)

Captures the data in the URI only. No internet connection required.



What you get:
The URI data only



Example URI Data Captured

<https://id.brand.com/01/05060336506022/10/ABCD/21/123?17=241225>

- ✓ Fast
- ✓ Works anywhere
- ✓ Ideal for basic identification and inventory

2

Online Scanning (Connected)

Uses the URI to connect to a resolver. Returns dynamic, real-time data.



What you get:
Dynamic data from the resolver



GS1 Digital Link Resolver

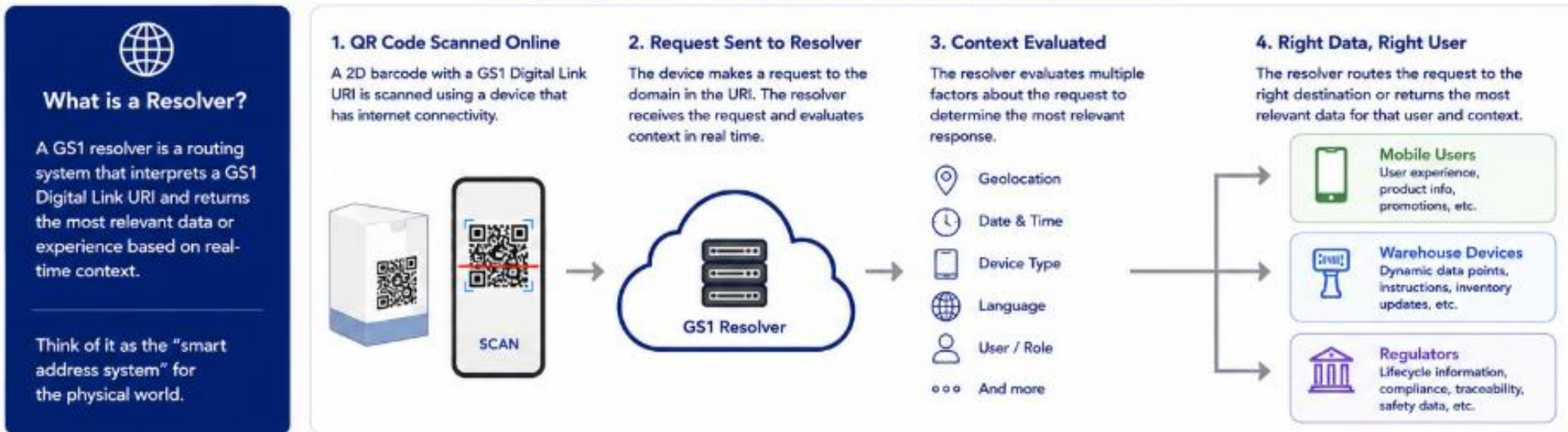
Examples of Dynamic Data

- Product information
- Authentication & traceability
- Expiry & batch details
- Sustainability data
- Recalls & alerts
- Marketing content

- ✓ Real-time
- ✓ Always up to date
- ✓ Supports rich use cases and engagement

How GS1 Resolvers Work

Resolvers are a routing system that deliver the right data to the right user at the right time—every time a QR code is scanned online.





A Gamechanger for Serialization

GS1 Digital Link makes serialization affordable for every product—bringing real-time data and trust to the entire supply chain.

BEFORE: Traditional Serialization

Expensive to implement and manage.
Mostly used for higher priced goods.



- ✗ High implementation cost
- ✗ Complex IT integration
- ✗ Limited to high-value products
- ✗ Slow or batch data updates

NOW: GS1 Digital Link Serialization

Affordable, scalable, and built for every product.
Even the lowest priced consumer items can be serialized.



- ✓ Low cost to implement
- ✓ Cloud-native and easy to integrate
- ✓ Scalable to every product, every SKU
- ✓ Dynamic, real-time data

Serialization for Every Product, Not Just High-End Goods

\$0.50



\$1.29



\$1.99



\$2.49



\$4.99



\$499.00+



One Standard. One Scan. Infinite Possibilities.

From the lowest to the highest priced products—serialization is now practical, powerful, and universal.



Consumers: Real-Time Information at Their Fingertips

Consumers can scan the code with their smartphone to instantly access dynamic, real-time information.



- ✓ Authenticity verification
- ✓ Ingredients & nutrition
- ✓ Usage instructions
- ✓ Sustainability & certifications
- ✓ Promotions & offers
- ✓ Recalls & safety alerts
- ✓ And more...



Distributors: Dynamic, Real-Time Intelligence

Distributors and logistics partners get the data they need, when they need it—instantly.



- ✓ Real-time shipment tracking
- ✓ Inventory visibility
- ✓ Exception management
- ✓ Temperature & condition data
- ✓ Proof of delivery
- ✓ Automation & integrations
- ✓ And more...



Lower Cost. Higher Impact.

GS1 Digital Link dramatically reduces the cost and complexity of serialization—unlocking massive value across the entire supply chain.

- ✓ No proprietary infrastructure
- ✓ Leverages open standards
- ✓ Cloud-based and scalable
- ✓ Minimal hardware changes
- ✓ Lower TCO, faster ROI

Serialization
for Every
Product.
At Minimal
Added Cost.



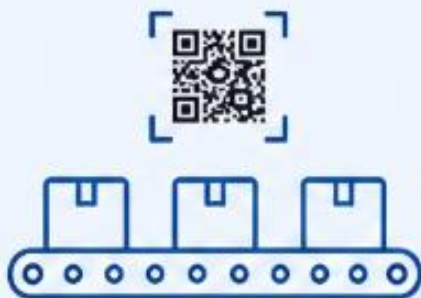
The Current Industry Focus is on Implementation

Organizations are focused on solving today's key questions and getting set up for success.

1

How to Serialize Mass Produced Consumer Goods?

Apply unique serial numbers to every item—at scale and at speed.



2

How to Integrate with Existing ERP and WMS Software?

Connect serialization data with your existing systems for seamless operations.



3

Can We Integrate with RFID?

Use GS1 standards with RFID to enable automated capture and real-time visibility.



4

How Do We Get This Done?

Take a structured approach to implement, test, and go live successfully.





Some Aspects Will Be Quick to Change, Others Will Be Slow to Change

Adoption will happen in phases—different areas, different speeds.





Before We Unlock the Future of Brand Protection with GS1 Sunrise 2027...

There are pre-requisites we must move past to realize the full potential.

Key Pre-Requisites to Move Forward

1



The Real Gamechanger: Online Scan for Dynamic Information

Beyond serialization, the true value comes from online scans that return dynamic, real-time, and variable information based on context (who, where, when, device, and more).

2



Security Concerns Are Real and Must Be Addressed

Secure warehouses may hesitate to scan online codes due to risks like phishing URLs or accidental exposure of proprietary metadata. Trust, control, and data protection must come first.

3



Incentives Must Be Clear to Maximize Scans

The more scans, the more data—and the more value for everyone. Consumers and warehouses must be incentivized to scan consistently to ensure large, meaningful sample sizes.

Part 3 - Future Possibilities



First Major Brand Protection Change: Stolen Goods

Turn every scan into a real-time protection. Make stolen goods instantly visible—anywhere.



Where the Alert Shows Up



Discount Retailers & Warehouse Clubs

Immediately see the goods are stolen at the point of intake.



E-commerce Customers

Scan at delivery or anytime to verify the product.



Brick & Mortar / Outdoor Locations

Scan in-store or outdoors to check authenticity before purchase.



Consumers

Scan anywhere, anytime to see if the goods are stolen.



The Equivalent of Ink on Stolen Money

May not prevent goods from being stolen, but it will reduce resale value.





Second Major Brand Protection Change: Grey Market

Use scan data and dynamic routing to detect out-of-territory products and reduce their resale value.



Works Everywhere. For Everyone.



The Goal: Reduce Resale Value

When a product is recognized as out of territory, the resolver reduces its perceived value—making unauthorized resale far less attractive.



In-Territory
(Authorized)



Out-of-Territory
(Detected)



Lower Value
(Resale Impact)



Third Major Brand Protection Change: Counterfeit Goods

Dynamic data, smart detection, and real-time alerts make counterfeit goods easier to spot—and harder to sell.

1

Authorized Serial Number Bank

Brands create a secure bank of serial numbers for each SKU.

If numbers are non-sequential, counterfeiters can't guess valid serial numbers.



Authorized Serials
(Example)

184276593012
509872341765
732198654309
918265704821
...

2

Reuse of Same URI Gets Detected

If counterfeiters reuse the same GS1 URI, the resolver detects unusually high scans on the same few URIs.

User is alerted it is likely fake.



Same URI



Unusual Scan
Activity Detected



3

Non-Existent URI Raises Suspicion

If counterfeiters use made-up or unregistered URIs, the user won't receive any data.

No data = suspicious.



Unknown URI



4

Dynamic Pages Stay One Step Ahead

If counterfeiters copy pages, brands update content on random cadences.

Outdated pages are easy for scanners to spot.



Brand Updates
(Random Cadence)



How It Protects Across the Ecosystem



Consumers

Get real-time alerts when something looks suspicious.



Retailers & Warehouses

Identify risks before accepting or stocking products.



Law Enforcement & Brands

Gain intelligence on counterfeit activity and networks.



Everyone

Less counterfeit in the market.
More trust in the brand.





What Is a Digital Twin?

A digital twin is a dynamic, virtual representation of a physical product. When a QR code is scanned, it connects you to the product's digital twin—a living record of its **identity, history, status, and journey**.

1. PHYSICAL PRODUCT

A physical item with a unique QR code.



2. QR CODE SCAN

The QR code is scanned with a phone or device.



3. DIGITAL TWIN

The scan connects to the product's digital twin in the cloud.



A real-time, always-updated record that reflects the true state and history of the physical product.

4. ACTIONABLE INSIGHTS

The digital twin enables trust, transparency, and action.



AUTHENTICITY

Verify the product is real and legitimate.



TRACEABILITY

See where it's been, from origin to now.



STATUS & ALERTS

Get notified of recalls, diversions, or issues.



DATA & ANALYTICS

Gain insights to optimize supply chain and demand.



The Future of Counterfeiting: It's No Longer Just Physical

Counterfeiters must now fake the digital identity behind every product.

IN THE PAST

Fake the Product

Counterfeiters only had to replicate the physical product.



THE FUTURE

Fake the Product AND the Digital Presence

Counterfeiters will need IT teams to replicate a brand's digital GS1 resolver and all connected services—on top of the physical product.



Every Product Has a Digital Twin



The Bar Keeps Rising

- More digital layers to replicate
- More detection points
- More consumer awareness
- More trust in scanning



We're Just Getting Started



Early Ideas

These are just early ideas
of what's possible.



Many Possibilities

There are many different
things we can do with this.



Big Impact Ahead

The potential to protect brands,
consumers, and supply chains
is just beginning.



Questions?

Let's discuss how we can build
the future together.