E2E Visibility & Traceability Enabled by Global Data Standards

USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM

Procurement and Supply Management

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MIS Deep Dive

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USAID FROM THE AMERICAN PEOPLE

PEPFAR U.S. President's Emergency Plan for AIDS Relief

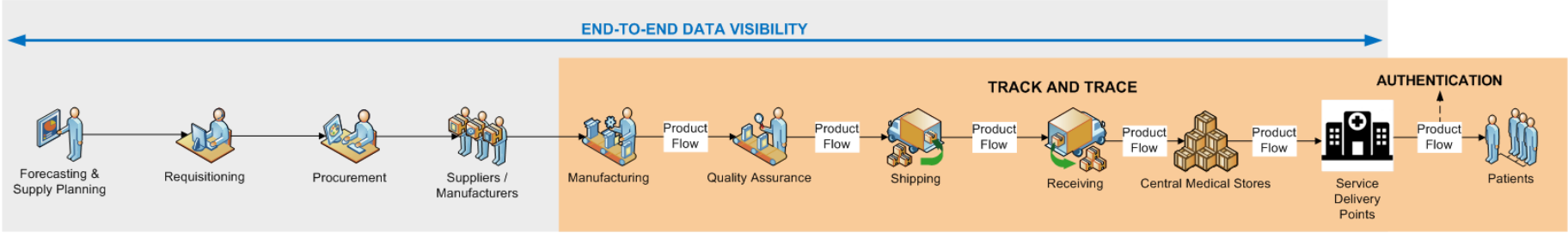
USAID FROM THE AMERICAN PEOPLE CDC U.S. President's Malaria Initiative

Challenges

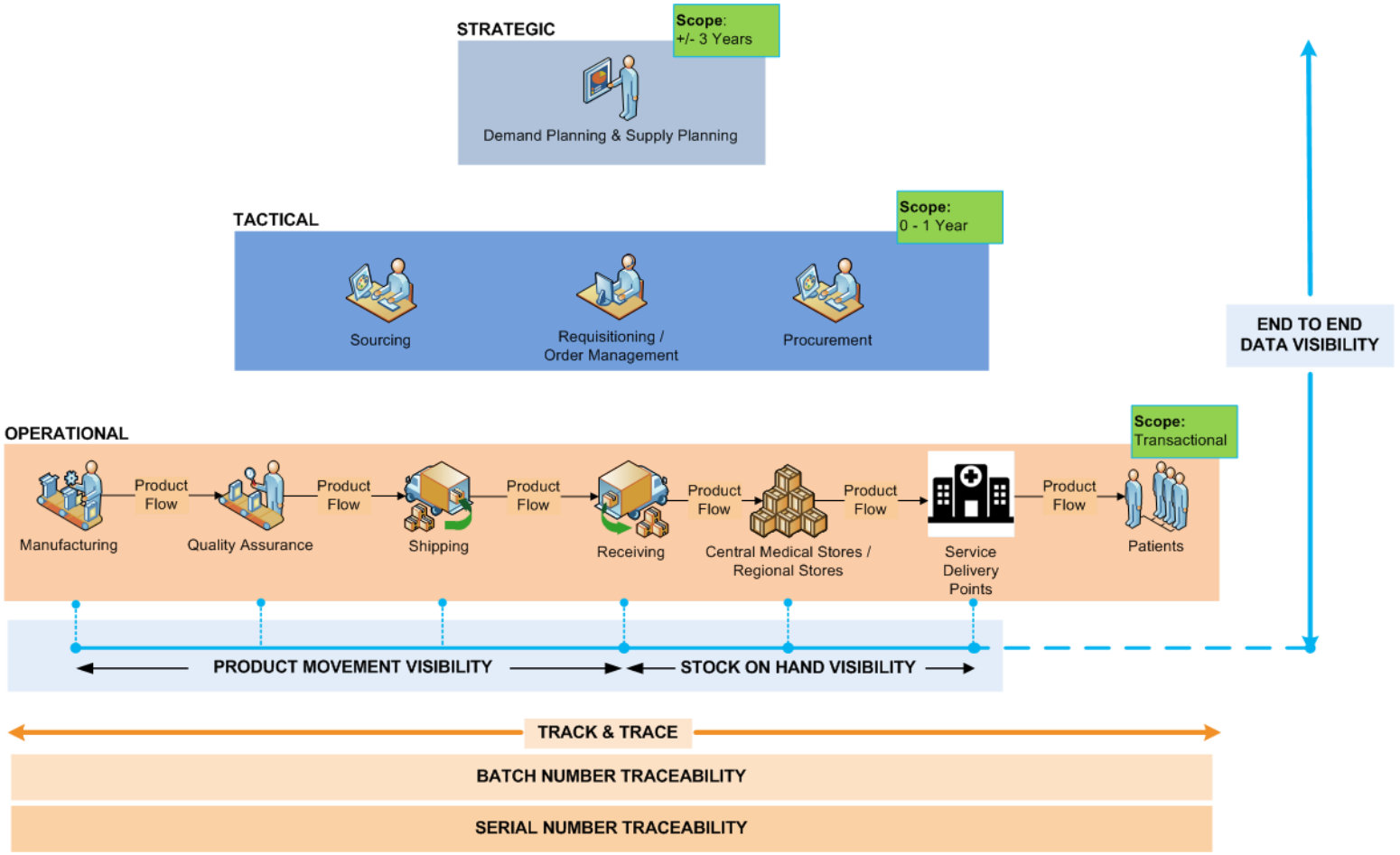
Major challenges are facing the current country supply chain information systems implementation:

- Master Data Management
- Data Quality
- Interoperability

There is a need for a new foundation to achieve end-to-end data visibility or track and trace.



	End to End Data Visibility	Track and Trace
Objective	• Visibility of data from planning till delivery of products/commodities ✓ to enhance decision making • Monitor execution ✓ to guide every task and manage supply chain exceptions	• Tracking movement of products across supply chain ✓ to improve supply chain efficiency. • Tracing where products came from and where they went to ✓ to facilitate product recalls & patient safety • Authentication of products ✓ to remove counterfeit & improve patient safety
Scope	• Strategic, Tactical & Operational • Processes & data related to supply chain planning, order management as well as physical product movements	• Operational/Transactional • Processes & data related to physical product movements
Level of Detail	• Data aggregated at product level	• Data at Trade item level, batch level & serial number level
Benefits	• Manage supply chain exceptions such as delays, stock outs & demand fluctuations • Facilitate better decision making around supply planning • Better coordination across supply chain enabling efficient allocation of resources	• Ability to locate products accurately through different stages of supply chain • Improved Patient safety • Elimination of counterfeit products • Ability to recall products effectively


STRATEGIC
Scope:
+/- 3 Years
Demand Planning & Supply Planning
TACTICAL
Scope:
0 - 1 Year
Sourcing
Requisitioning /
Order Management
Procurement
END TO END
DATA VISIBILITY
OPERATIONAL
Scope:
Transactional
Manufacturing
Product
Flow
Quality Assurance
Product
Flow
Shipping
Product
Flow
Receiving
Product
Flow
Central Medical Stores /
Regional Stores
Product
Flow
Service
Delivery
Points
Product
Flow
Patients
PRODUCT MOVEMENT VISIBILITY
STOCK ON HAND VISIBILITY
TRACK & TRACE
BATCH NUMBER TRACEABILITY
SERIAL NUMBER TRACEABILITY

How are global standards relevant?

- National identification and classification structures do exist, but to interact with external trading partners (e.g. manufacturers, distributors, procurement agents, donors, export clients) you need to speak a common language
- Within a country, global standards enable interoperability across disparate systems in a given sector by having one reference code to associate items or products across different stakeholder groups.

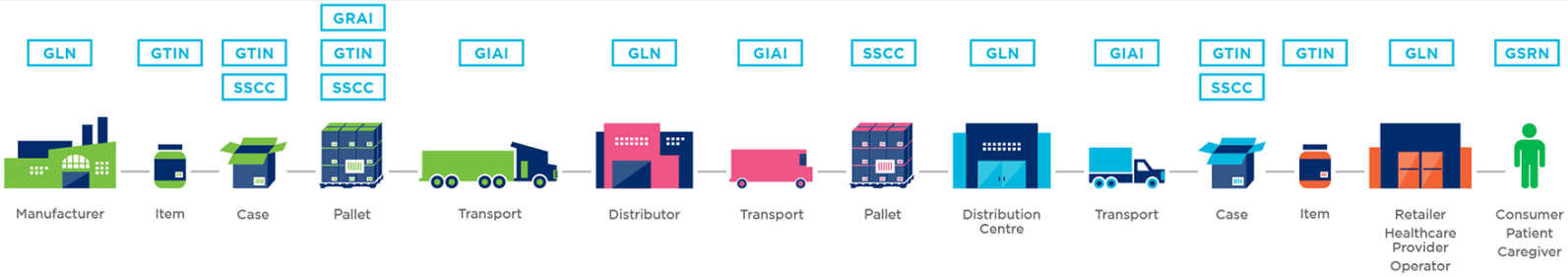
GS1 – an international standards organization

1 million	150 countries	6 billion	112 MOs
over 1 million companies globally use GS1 standards	25 industries served across 150 countries	Barcodes scanned more than 6 billion times per day globally	112 Member Organisations around the world

GS1 is a system of standards that provides a foundation for interoperability

Identify: GS1 Standards for Identification

GLN Global Location Number **GTIN** Global Trade Item Number **SSCC** Serial Shipping Container Code **GRAI** Global Returnable Asset Identifier **GIAI** Global Individual Asset Identifier **GSRN** Global Service Relation Number



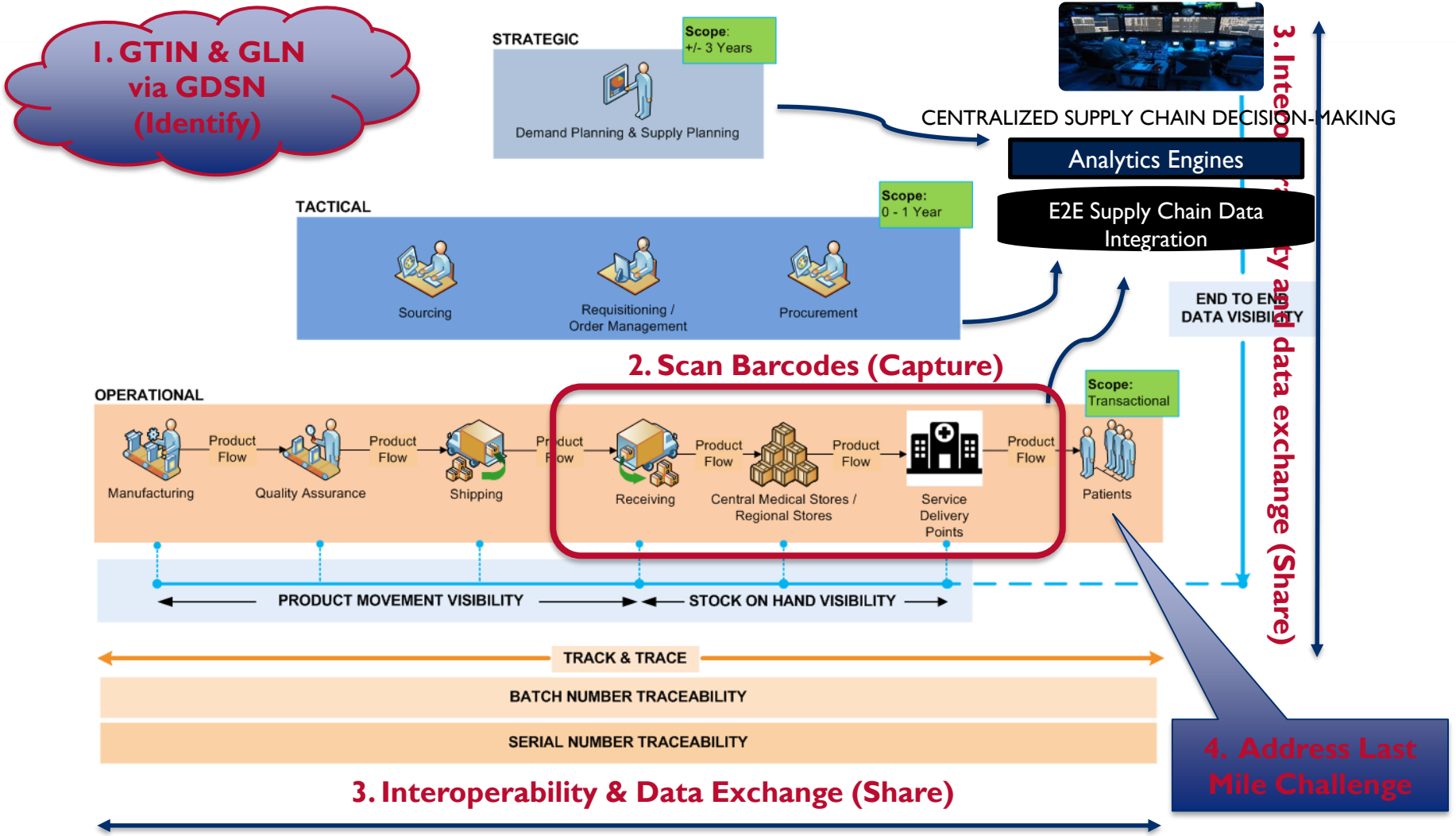
Capture: GS1 Standards for Barcodes & EPC/RFID

GS1 Barcodes

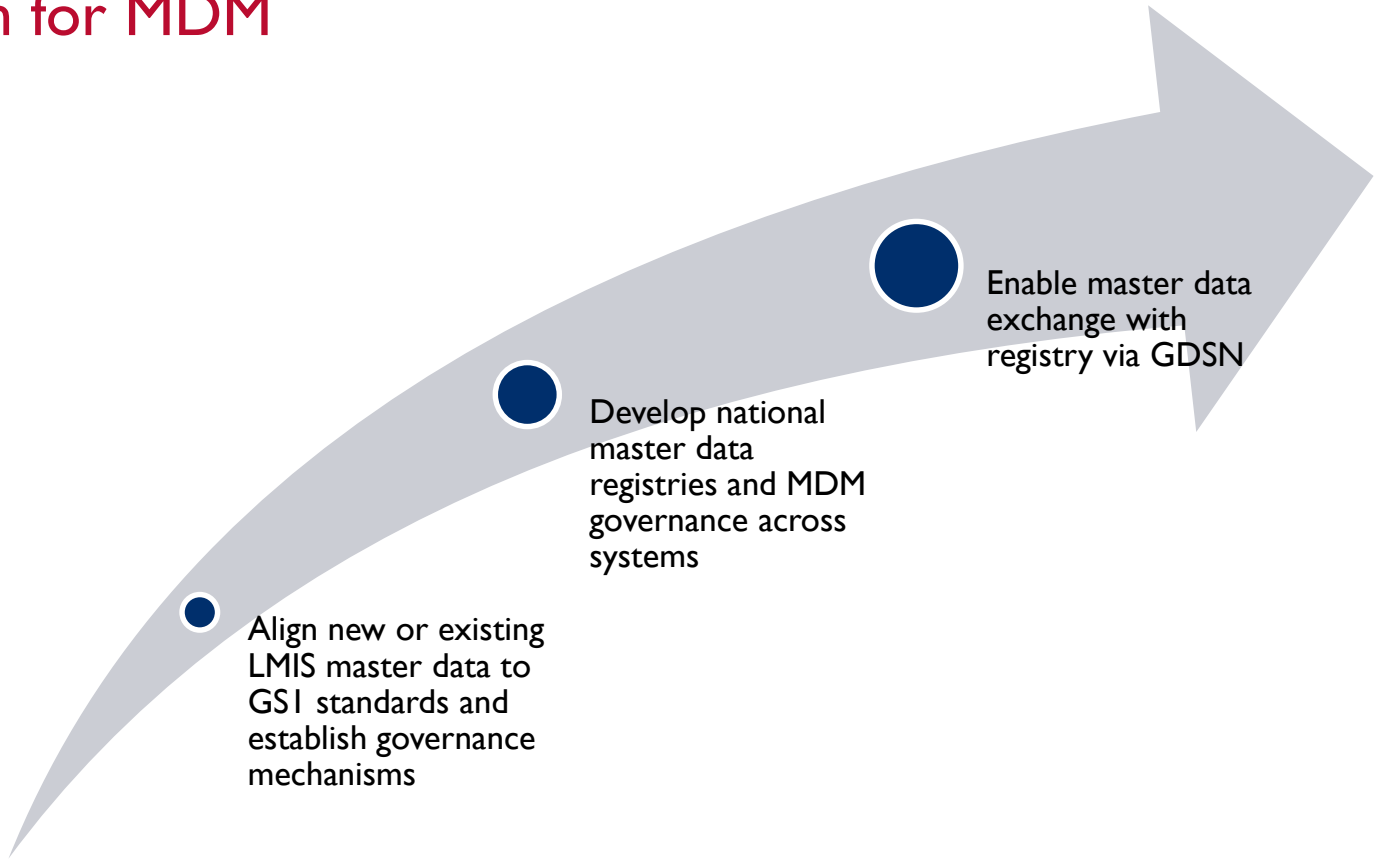
GS1 EPC/RFID

Share: GS1 Standards for Data Exchange

Master Data Global Data Synchronisation Network (GDSN) **Transactional Data** eCom (EDI) **Event Data** EPC Information Services (EPCIS)


1. GTIN & GLN via GDSN (Identify)
STRATEGIC
Scope: +/- 3 Years
Demand Planning & Supply Planning
CENTRALIZED SUPPLY CHAIN DECISION-MAKING
Analytics Engines
E2E Supply Chain Data Integration
3. Interoperability and data exchange (Share)
TACTICAL
Scope: 0 - 1 Year
Sourcing
Requisitioning / Order Management
Procurement
END TO END DATA VISIBILITY
2. Scan Barcodes (Capture)
OPERATIONAL
Scope: Transactional
Manufacturing
Product Flow
Quality Assurance
Shipping
Receiving
Central Medical Stores / Regional Stores
Service Delivery Points
Patients
PRODUCT MOVEMENT VISIBILITY
STOCK ON HAND VISIBILITY
TRACK & TRACE
BATCH NUMBER TRACEABILITY
SERIAL NUMBER TRACEABILITY
3. Interoperability & Data Exchange (Share)
4. Address Last Mile Challenge

Vision for MDM



Country Example – Ghana

- **Activity:** Establish national codification mechanism for One Network LMIS implementation
- **Approach:** Use GS1 standard as basis for master data requirements
  - GTIN for item identification; GLN for location identification
  - Multiple classification hierarchies for different analytics purposes (UNSPSC, GPC, ATC/DDD)
  - Structure master data around GDSN attribute definitions
- **Progress:** Initial consensus on approach by LMIS subcommittee; attributes for master data defined
- **Next Steps:**
  - Develop the full master data model to be used in implementation
  - Map existing data to new model
  - Formalize MDM governance structure

Country Example – Rwanda

- **Activity:** Support MOH to introduce GS1 standards to ensure quality of pharmaceuticals
- **Approach:** Co-host *Rwanda Implementation of the GS1 Standards* national workshop
  - Day 1: Education and Awareness
  - Day 2: Vision, Strategy, and Near-Term Roadmap Development
  - Focus on governance, regulatory, supply chain operations & systems / technology
- **Progress:** Workshop complete; draft strategy complete and under internal review
- **Next Steps:**
  - Strategy consensus among stakeholders
  - Develop governance / ownership models and costed implementation plan; advocate for & secure resources
  - Traceability model design; complete systems landscape assessment & develop requirements for traceability

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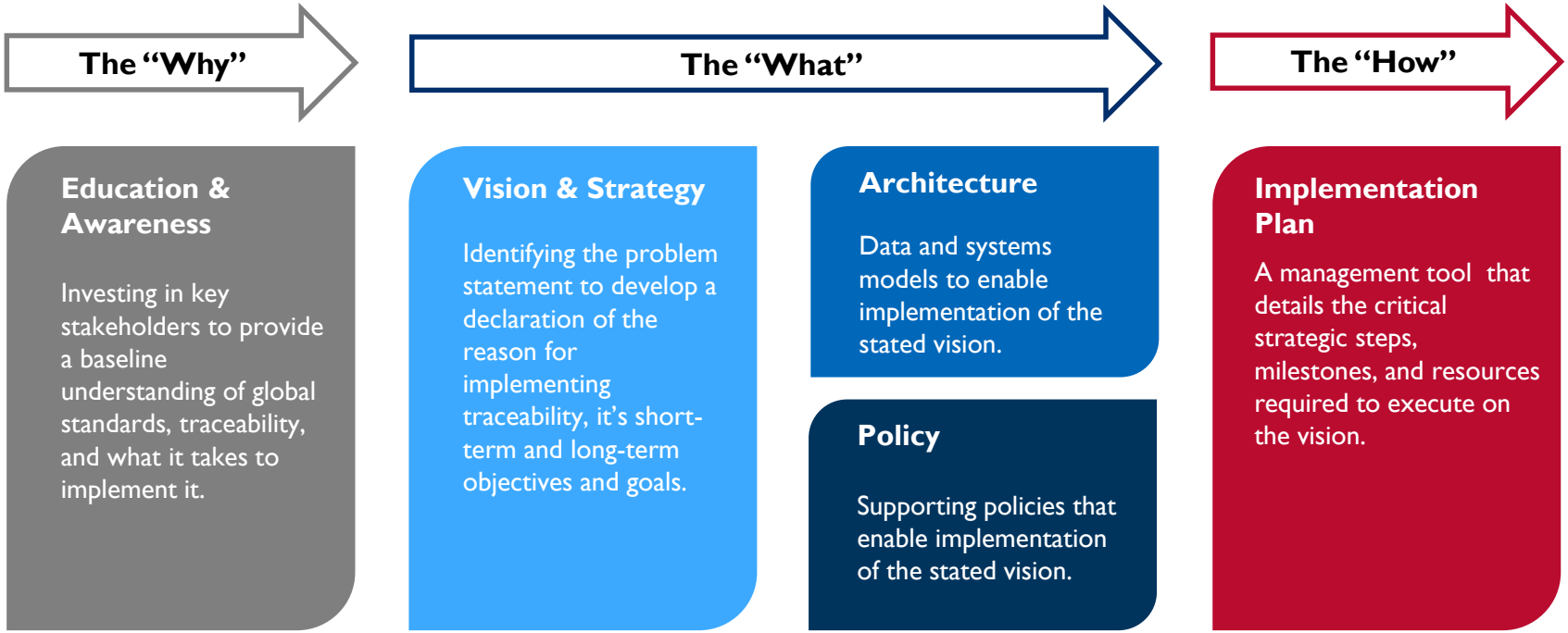
Coming Next – Country Implementation Guidance



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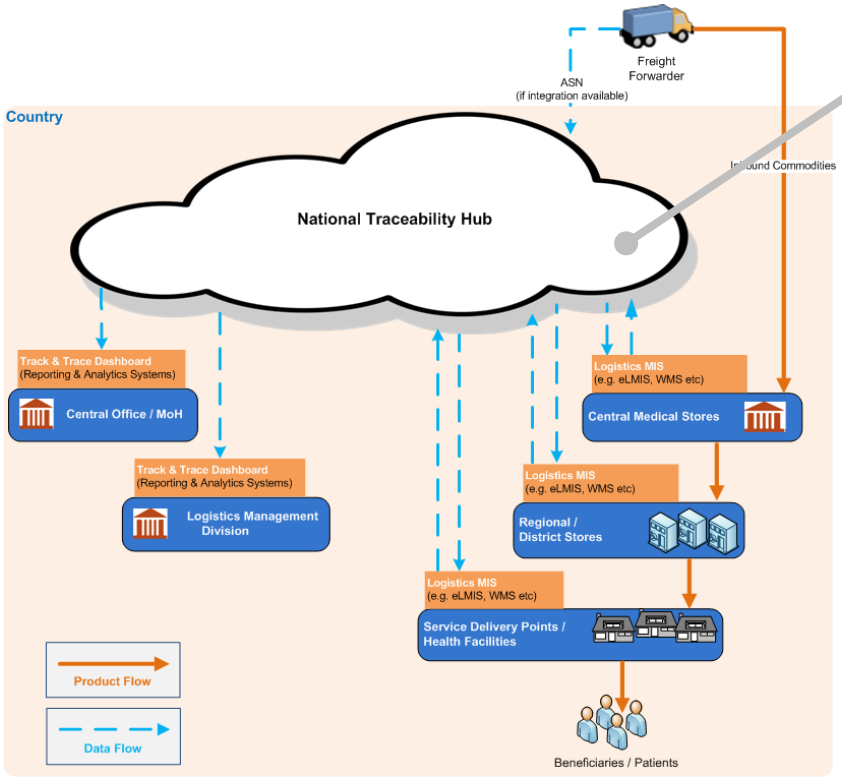
Example: Centralized Model for Existing Tech Landscape



Batch Level Traceability

Current ERP, LMIS or WMS can be leveraged, if following capabilities exist

- Ability to manage product and facility master data
- Ability to capture batch numbers
- Ability to capture batch level events that move products within facilities in-country

Authentication

Current ERP, LMIS or WMS can be leveraged, if following capabilities exist

- Ability to retain inbound event data as commodities enter the country & the traceability hub
- Ability to validate batch/serial #s against the retained event data

Track and Trace

Current ERP, LMIS or WMS can be leveraged, if following capabilities exist

- Ability to manage product and facility master data
- Ability to capture batch numbers & serial numbers
- Ability to capture serial number level events that move products within facilities in-country

Discussion

- What are complimentary activities across systems strengthening?
- What are complimentary activities across organizations?
- What are ideas and suggestions to build on this approach?