YOU SAY DATA, I SAY DATA

STREAMLINED DATA EXCHANGE WITH GHSC-PSM
AGENDA

• Overview and Data Exchange with ARTMIS
• Master Data vs. Transactional Data
• Master Data/Transactional Data Submission to ARTMIS
• Overview of GS1 and GDSN
• Master Data Submission to GDSN Data Pool
INTRODUCTION AND OVERVIEW

SHOW ME
THE DATA

memegenerator.net
GOALS OF GHSC-PSM AUTOMATION

• Extensively automate supply chain processes
• Electronically integrate with key stakeholder and partner systems
• Improve overall supply chain efficiency
• Reduce errors and re-work
• Reduce data quality issues and eliminate data redundancy
• Communicate more effectively with suppliers and other stakeholders
• Implement GS1 standards
• Ensure supply chain security
• Increase patient safety

...LEADING TO MORE MEDICINE FOR MONEY
OVERVIEW OF ARTMIS

A - Automated
R - Requisition
T - Tracking
M - Management
I - Information
S - System
ARTMIS OVERVIEW

End-to-end data visibility of the health commodities supply chain is an overarching objective of the GHSC-PSM program. To achieve the highest level of data visibility, GHSC-PSM has selected an MIS that automates key steps along the supply chain. ARTMIS integrates three best-in-class solutions:

1. IBM’s e-Commerce Suite, ranked No. 1 by Gartner and Forrester Research, is used by some of the world’s top supply chain operators, such as Cardinal Health.

2. K+N’s Logistics Management Information System (LMIS) is used to manage the largest non-asset-based freight forwarding operation in the world.

3. Chemonics’ Financial Management Information System (FMIS) manages hundreds of millions of dollars in turnover annually and ensures adherence to USAID’s reporting requirements.
DATA EXCHANGE WITH ARTMIS

- Production Progress Data
- Order Readiness Data
- Invoice Data

GDSN Data Pool

Organization, Location and Product Data

BI&A Contractor’s Business Intelligence Tools

Core Management Information System
- Project Order Catalog
- Management Reporting
- Data Integration Business
- Order Management

K+N Logistics MIS Portal
- Supplier Portal
- Transportation Management
- Warehouse Management

Chemonics Financial MIS
- Chemonics Finance Team

Contract Management

Demand Forecasting and Supply Chain Optimization

e-Catalog and Ordering

Project Users (Home Office and Field Office)

Cooperating Country Ministries of Health (Future State)

K+N Staff, 3PL Agents, Freight Forwarders, & Suppliers

USAID Users (Washington and Missions)
MASTER DATA VS. TRANSACTIONAL DATA
KEY DATA SETS

• Master Data describes the people, places, and things that are involved in an organization’s business.
  – Organizations
  – Locations
  – Product/catalog

• Transactional Data describes an internal or external event or transaction that takes place as an organization conducts its business.
  – Sourcing events
  – Production progress
  – QC testing
  – Order readiness
  – Invoice
# MASTER DATA - ORGANIZATIONS

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Company Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Telephone and Website</td>
<td>Manufacturer Information</td>
</tr>
<tr>
<td>Organization Name</td>
<td>Contact name</td>
</tr>
<tr>
<td></td>
<td>Phone no.</td>
</tr>
<tr>
<td></td>
<td>Email</td>
</tr>
<tr>
<td>Registered Address (HQ)</td>
<td>Website</td>
</tr>
<tr>
<td>Country of registration</td>
<td>Date of registration</td>
</tr>
</tbody>
</table>

**Supplier Summit**

USAID Global Health Supply Chain Program Supplier Summit
Attributes listed below are illustrative only. Product attributes to be submitted at first via ARTMIS and later via GDSN.

**MASTER DATA - PRODUCT/CATALOG**

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Name of the Manufacturer</th>
<th>Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTIN/Manufacturer ID</td>
<td>Manufacturing Site Address</td>
<td>Registration Expiry Date</td>
</tr>
<tr>
<td>Lot</td>
<td>Pick-up Address (if Applicable)</td>
<td>Estimated Lead time (no. of weeks)</td>
</tr>
<tr>
<td>Description</td>
<td>Currency Code</td>
<td>Lot Size in Number of Units</td>
</tr>
<tr>
<td>Desired Quantity</td>
<td>Remarks</td>
<td>Item Type</td>
</tr>
<tr>
<td>Unit of Measure</td>
<td>Price Per Unit</td>
<td>Quantity On Stock</td>
</tr>
<tr>
<td>What is your Regulatory Approval Status?</td>
<td>Shelf Life (in months)</td>
<td>Maximum Production Capacity Per Month (Number of Units)</td>
</tr>
<tr>
<td>Expiry Date of Regulatory Approval</td>
<td>Minimum Quantity</td>
<td>Product Registration Status for the Country</td>
</tr>
<tr>
<td>Maximum Desired Quantity</td>
<td>Maximum Quantity</td>
<td>Country</td>
</tr>
<tr>
<td><strong>Goods Availability Date</strong></td>
<td>GHSC-PSM Product ID</td>
<td>Action</td>
</tr>
<tr>
<td>Category</td>
<td>Unit Form</td>
<td>Manufacturer Item ID</td>
</tr>
</tbody>
</table>
TRANSACTIONAL DATA – SUPPLY CHAIN

• Production Progress
   – Production start date (within 24 hours after production started)
   – Production complete date (within 24 hours after production completed)
   – Batch Number/Quantity/Expiry Date (within 24 hours after production completed)
   – QC testing request date upon readiness of production goods when QC is required (within 24 hours after sending samples)

• Expected Readiness
   – Expected readiness date for confirmation (within 3 days of receiving email notification)
   – Expected readiness date for change (with a reason code of why date is out of tolerance)

• Booking
   – Booking Request/Packing List/Invoice
MASTER DATA/TRANSACTIONAL DATA SUBMISSION TO ARTMIS
SUPPLIER REGISTRATION AND SOURCING EVENTS

Supplier Registration in ARTMIS (Emptoris)

Responding to RFx in ARTMIS (Emptoris)
TRANSACTIONAL DATA SUBMISSION TO ARTMIS

Supplier Portal in K&N LMIS

Production Progress

Expected Readiness

Booking Request

Invoice
OVERVIEW OF GS1 AND GDSN

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THE MASTER DATA PROBLEM

Every company has a database filled with master data about the products they make, sell, or buy.

But when one company changes any bit of information in their database or adds a new item, another database becomes outdated!
WHAT HAPPENED TO “MASTER DATA”

- Systems have evolved in “silos” over the last 40 years
- The link between “process” and data was broken (remains so in many cases)
- Numerous efforts to “unify” data and process, or views of data – one use at a time
- **So what?** Business success still happened anyway... (and hospitals operated)
- Only when costs increase, profits fall, (or a patient is negatively affected) does the real impact of bad data become known!

Original source: Gartner
DATA ERRORS IN HEALTHCARE

<table>
<thead>
<tr>
<th>% of Total Data Error</th>
<th>Manufacturer</th>
<th>Distributor</th>
<th>GPO</th>
<th>Healthcare provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing Middle Levels of Packaging</td>
<td>15-20%</td>
<td>1-4%</td>
<td>20-25%</td>
<td>15-25%</td>
</tr>
<tr>
<td>Hard “Packaging Quantity” Errors</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td>2-5%</td>
</tr>
<tr>
<td>Unit of Measure Confusion/Misuse</td>
<td>2-6%</td>
<td>1-3%</td>
<td>2-5%</td>
<td>Unknown</td>
</tr>
<tr>
<td>Missing Packaging—not Middle Level</td>
<td>3-8%</td>
<td>3-8%</td>
<td>3-7%</td>
<td>5%</td>
</tr>
<tr>
<td>Manufacturer Name Problems</td>
<td>NA</td>
<td>2-5%</td>
<td>1-4%</td>
<td>30%</td>
</tr>
<tr>
<td>Obsolete Products</td>
<td>1-4%</td>
<td>2-5%</td>
<td>1-8%</td>
<td>5-15%</td>
</tr>
<tr>
<td>Missing Product Brand Names</td>
<td>2-5%</td>
<td>5-10%</td>
<td>5-10%</td>
<td>20-25%</td>
</tr>
<tr>
<td>Incomplete Item Descriptions</td>
<td>5-15%</td>
<td>3-12%</td>
<td>5-15%</td>
<td>10-20%</td>
</tr>
<tr>
<td>Wrong Customer Unit Prices</td>
<td>Unknown</td>
<td>1-2%</td>
<td>NA</td>
<td>1-2%</td>
</tr>
<tr>
<td>Customer Paid More Than Lowest Contract Price</td>
<td>NA</td>
<td>Unknown</td>
<td>NA</td>
<td>3-6%</td>
</tr>
</tbody>
</table>

**DoD Conclusion:**
GDSN is capable of meeting the data needs of US healthcare

THE AUSTRALIAN DATA CRUNCH REPORT PUTS A COST ON THE DATA QUALITY PROBLEM IN HEALTHCARE

Potential cost of manual checking of unit of measure: $8.8 million pa
Potential cost of manual PRC clarification by hospitals: $1.26 million pa
Potential cost associated with independently sourcing product weight and dimensions: $6.98 million pa
Potential cost of urgent deliveries due to undersupply: $4.37 million pa
Potential savings for 5 scenarios studied: $30 million pa
Potential lost revenue from unclaimed joint replacement prostheses: $8.75 million pa

Potential savings from improved data quality: >$100 million per annum (pa)

By conservative estimates, more than $100 million in potential savings can be achieved by addressing product data quality issues by making only minor adjustments to existing processes.

Source: https://www.gs1au.org/resources/publications/
ORDER-TO-CASH BEFORE DATA SYNCHRONISATION

11. Delayed Settlement

5. Adjusted Purchase Order

4. Query Order Errors

3. Purchase Order

Fax/ Mail/File transfer

1. Product Info sent
   Errors in transposition

2. Product Info entered
   Errors in Translation
   Errors in Delivery / Transmission

6. Despatch Advice

7. Goods Delivered

8. Query Delivery Errors / Claim for credit

9. Return Incorrect Goods

10. Adjusted Delivery

Supplier / Broker

Buyer

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DATA QUALITY STARTS AT THE SOURCE
DATA QUALITY STARTS AT THE SOURCE

Data Governance

Roles and Responsibility

Enterprise-wide Data Management

Data Quality

The quality of the data is a direct reflection on the quality of the product
Enterprise-wide definition of roles and responsibilities of everyone involved in the information flow, internal and external.
ENTERPRISE-WIDE DATA MANAGEMENT
Key Concepts – Information Lifecycle Processes

1. Create, Import or Receive
   - Collect, Create, Receive & Capture

2. Enrich/Validate
   - Data Quality

3. Sync/Activate
   - Push to users

4. Audit/Evaluate
   - Routine Monitoring

5. Update/Maintain
   - Maintain, Protect & Preserve

6. Inactivate/Archive
   - Remove from active use

7. Purge
   - Delete from system
WHAT IS THE GDSN AND HOW DOES IT WORK?
GDSN GROWTH AS OF END OF JULY 2016

Overall GDSN

<table>
<thead>
<tr>
<th></th>
<th>Feb 2015</th>
<th>Feb 2016</th>
<th>Feb 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTINs</td>
<td>17,707,316</td>
<td>20,448,154</td>
<td>22,266,243</td>
</tr>
</tbody>
</table>

Healthcare

Registered Healthcare Items (GTINs)

- Q1 2013: 513,215
- Q1 2014: 761,901
- Q1 2015: 1,586,804
- Q1 2016: 1,787,522

Suppliers (GLNs)

- Q1 2013: 1,139
- Q1 2014: 2,204
- Q1 2015: 2,675
- Q1 2016: 3,047
- Q4 2016: 3,431
MANAGING DATA AT GLOBAL LEVEL

1. Find a **standards based** solution which can scale as more countries release identification regulation
2. Find a technology partner that can connect you globally
3. Define ALL regulatory and commercial attributes (Super Spec)
A WORD ABOUT ACRONYMS

• **GTIN**: Global Trade Item Number
  – Product identification

• **GLN**: Global Location Number
  – Identification of legal entities, physical, functions and digital locations

• **GDSN**: Global Data Synchronisation Network
  – Synchronisation of data between the Source (i.e. manufacturer) and the Recipient (e.g. hospital, retailers, etc.)
GDSN IN ACTION

1. Load GTIN Data
2. Register Data
3. Subscription Request
4. Publish Data

Source Data Pool

GS1 Global Registry™

Recipient Data Pool

Manufacturer

Unit Case Pallet

Distributor, wholesaler, GPO

Unit Case Pallet

Healthcare Provider / Retailer

GLN

GTIN

GLN

GTIN

GLN
HOW GDSN WORKS

1. Loading of company data
2. Registering of company data
3. Subscription to seller’s data pool
4. Publishing of company data
5. Confirmation of receipt of company
MASTER DATA SUBMISSION TO GDSN DATA POOL
GHSC-PSM’S PLANS FOR GS1 SUPPORT AND GDSN DATA POOL INTEGRATION

• Engaged GS1 consultants to aid in implementation of GS1 standards

• ARTMIS supports tracking of commodities by global trade item numbers for identification and capture, including all corresponding documents

• GS1 attributes are supported in ARTMIS with a subset selected for GHSC-PSM

• GHSC-PSM is procuring a global data synchronization network (GDSN) data pool subscription and planning to integrate with it to automatically feed GS1 attributes into ARTMIS

• ARTMIS supports track and trace capabilities at the batch level and is preparing to support serialization

• A supplier strategy has been developed to encourage suppliers to register trade items with GS1, ensure proper item barcoding and labeling, and share product data via a GDSN data pool
GHSC-PSM EXPECTATIONS OF SUPPLIERS

1) Supplier registers with GS1 and obtains a prefix
2) Supplier assigns GTINs to its products
3) Supplier registers with a GDSN data pool provider
4) Supplier agrees to provide product attributes based on GHSC-PSM’s requirements
5) Supplier shares its product attribute data with GHSC-PSM via a GDSN data pool provider
6) GHSC-PSM expects all suppliers to submit their product data to a GDSN data pool within 18 months
SAMPLE LIST OF GDSN DATA POOL PROVIDERS

- IWorldSync
- Alkemics
- Attribyte
- Brandbank
- Comarch S.A.
- Commport Communications International, Inc.
- Contentis AG
- Edgenet
- EDICOM
- Equadis SA
- Eway FSE Inc
- GHX
- iTradeNetwork, Inc.
- LOGYCA / SERVICIOS Viagenie
QUESTIONS?
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