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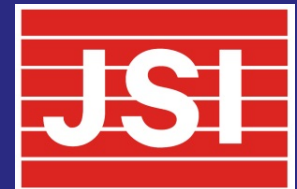


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# Interoperability: The Future of Digital Health and Supply Chain Information Systems

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John Snow, Inc.  
*November 2017*





# Strong Supply Chains Save Lives



**JSI improves health logistics** in Africa, Asia, the Caribbean, Eastern Europe, Eurasia, and Latin America.



**We strengthen supply chains end-to-end** by building systems that connect manufacturers, funders, IT experts, health ministries, pharmacies and communities.



**JSI creates sustainable systems** that draw on >30 years of strong relationships with country governments, commercial sector, civil society, academia, and the donor & multilateral communities.



**JSI manages** more than **30 SCM projects**. We have managed \$3B+ of health procurement experience on 125 SCM projects implemented in >100 countries.



**We are passionate about using our public health and supply chain expertise** to help our partners eradicate malaria, increase access to contraceptives, improve routine immunization.





# Agenda

- Background & definitions; why interoperability
- Country examples from Zambia, Ethiopia, & Tanzania
- Challenges
- Future



# Some Definitions

- **in·ter·op·er·a·bil·i·ty** (*noun*)

The ability of computer systems or software to exchange and make use of information

- **in·te·gra·tion** (*noun*)

...in information technology, the process of linking together different computing systems and software applications physically or functionally, to act as a coordinated whole





# Why Interoperability?

**There is a lot more digitization work.....**

## **Synergies with multiple systems capable of exchanging & interpreting data**

- Improves data quality: “single source of truth”
- Improves decision making (more information)
- Speeds up decision-making
- Saves time (vs. manual data entry)

### **Imagine:**

- A supply chain that can talk to a suppliers ERP? (yes we have that in stock)
- A regulatory system talking to a supply chain (yes that medicine is registered)
- A supply chain talking to a HMIS (here is the number of bed nets distributed in that region where you have a high caseload)
- An EMR talking to an HMIS, so the front-line HCW never has to fill a monthly report again



# Interoperability in Practice: Zambia, Supply Chain

**eLMIS (OpenLMIS):** Central Level and health centers (Facility Edition); Gathers, aggregates data & generate orders

- **Facility Edition** (c. 300 sites) sends data via a web service (includes daily stock status) to the Central System
- **Central System** interoperable with MACS WMS at Medical Stores Ltd
  - Transmits orders through an interface
  - Order fulfillment reports transmitted back via a .csv transfer





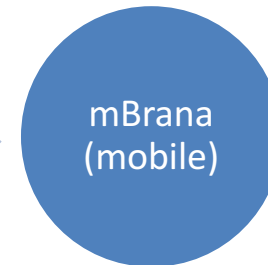
# Interoperability in Practice: Ethiopia, Supply Chain & Regulatory

Vitas cost, price & data sync to SAGE & back

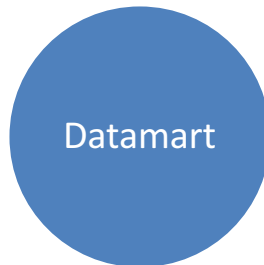


Purchase orders for Ethiopia sync to Vitas

Vaccine orders sent to VITAS from mBrana; order confirmation sent back



Purchase requests from VITAS sync to i-Import/approval back  
i-Import & Vitas share Master Data  
I-Import data also goes to datamart



Data including stock status flows from VITAS and mBrana to a datamart and is presented in the SC Dashboard






# Ethiopia - Supplier Data

**Problem:** No visibility of supplier data including donations, e.g. UNFPA

**Solution:** Automatic data sync with UNFPA ERP so when a PO is generated at UNFPA for Ethiopia it is automatically captured in the Ethiopia LMIS (HCMIS)

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THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA  
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PHARMACEUTICALS FUND AND SUPPLY AGENCY



Fetch

PO No.: 0000031030 Purchase Order Date: 3/10/2016  
Supplier: MSD OSS BV Activity: MOH - Other - Family Health

**Map item names**

UNFPA				HCMIS			
Item	Unit	Manufacturer	Quantity	HCMIS Item	HCMIS Unit	HCMIS Manufactu...	Map
Etonogestrel 68 mg x 1 (single rod 357350nt). ...	Set	MSD B V	25,056	Etonogestrel - 68mg - Implant Capsule (Subde...	Each	MSD OSS BV	<input checked="" type="checkbox"/>
▶ IMPLANON NXT Placebo Applicator Trainer	Set	MSD B V	36,480	Etongestrel-(Implanon) single rodw subderma...	5	MSD OSS BV	<input checked="" type="checkbox"/>

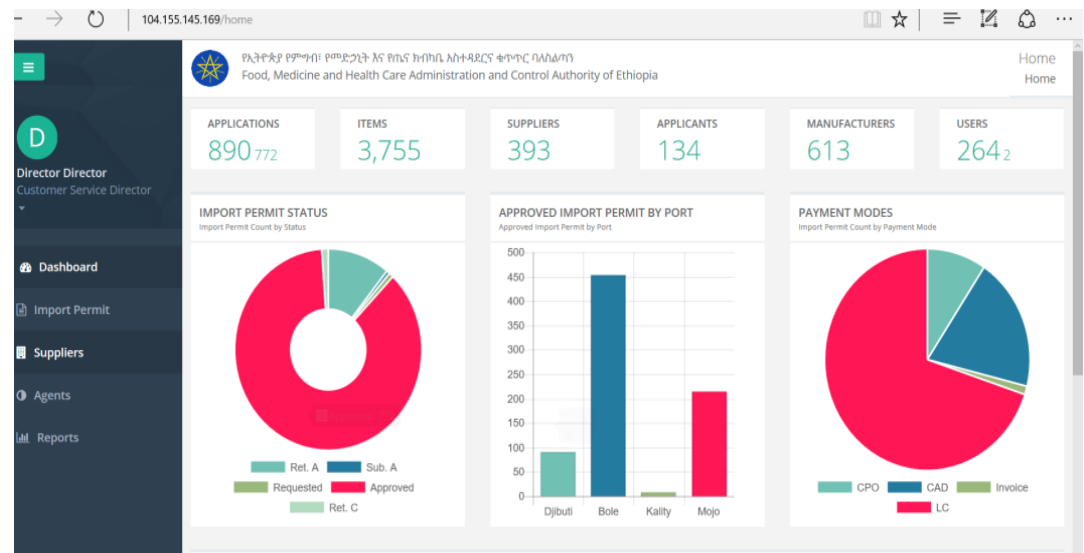


# Ethiopia: Supply Chain & Regulatory

- VITAS – Enterprise Level MIS – LMIS, procurement, WMS, costing, developed in 2010, implemented in PFSA center & 18 regional hubs
- i-Import – Online medicine import approval system for FMHACA, 2017

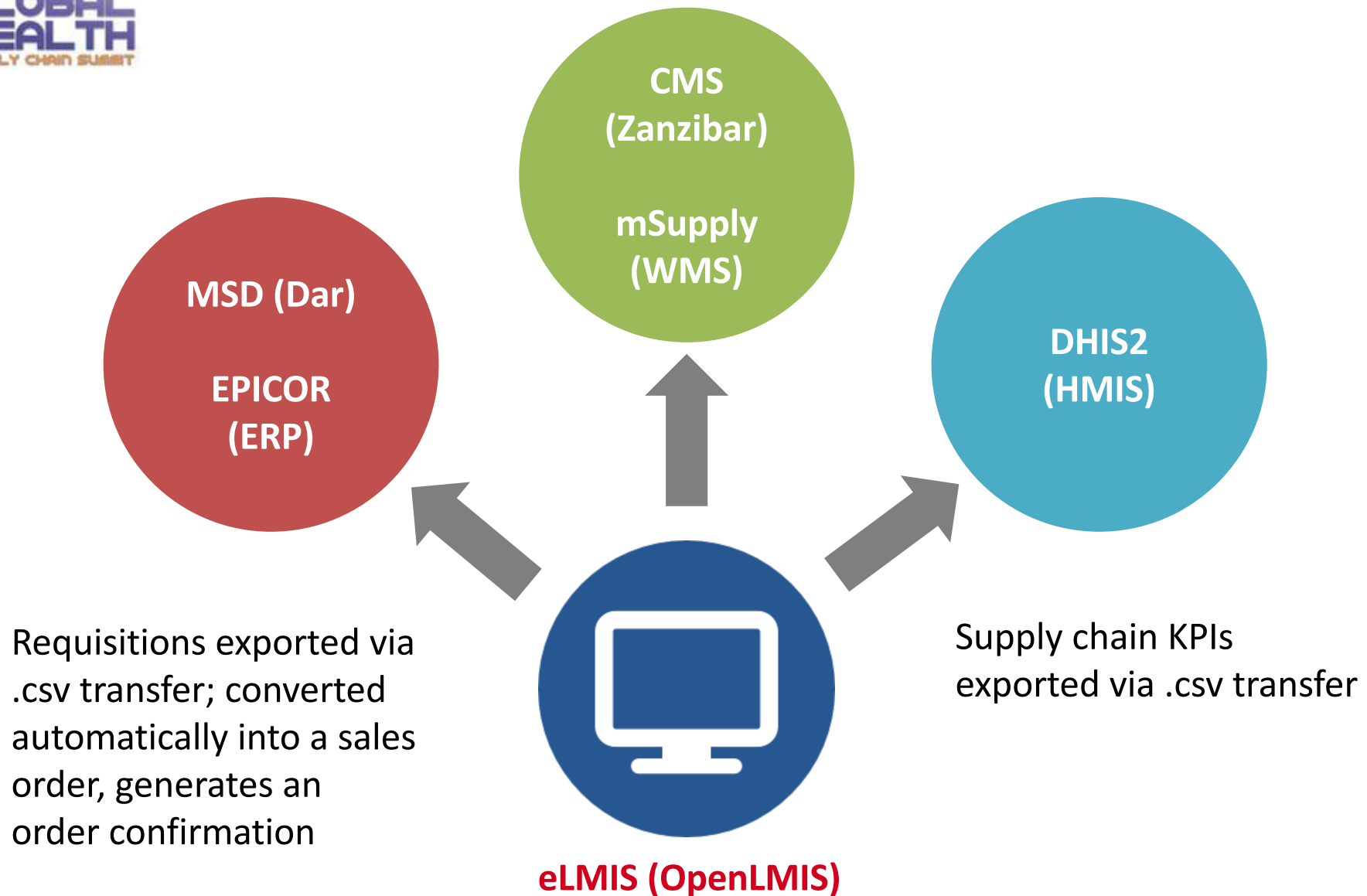
**Problem:** PFSA need approval for medicine imports, paper system lead to delays & lack of transparency

**Solution:** Automatic sync between PFSA import requests in VITAS and i-Import. In addition both systems use same master data





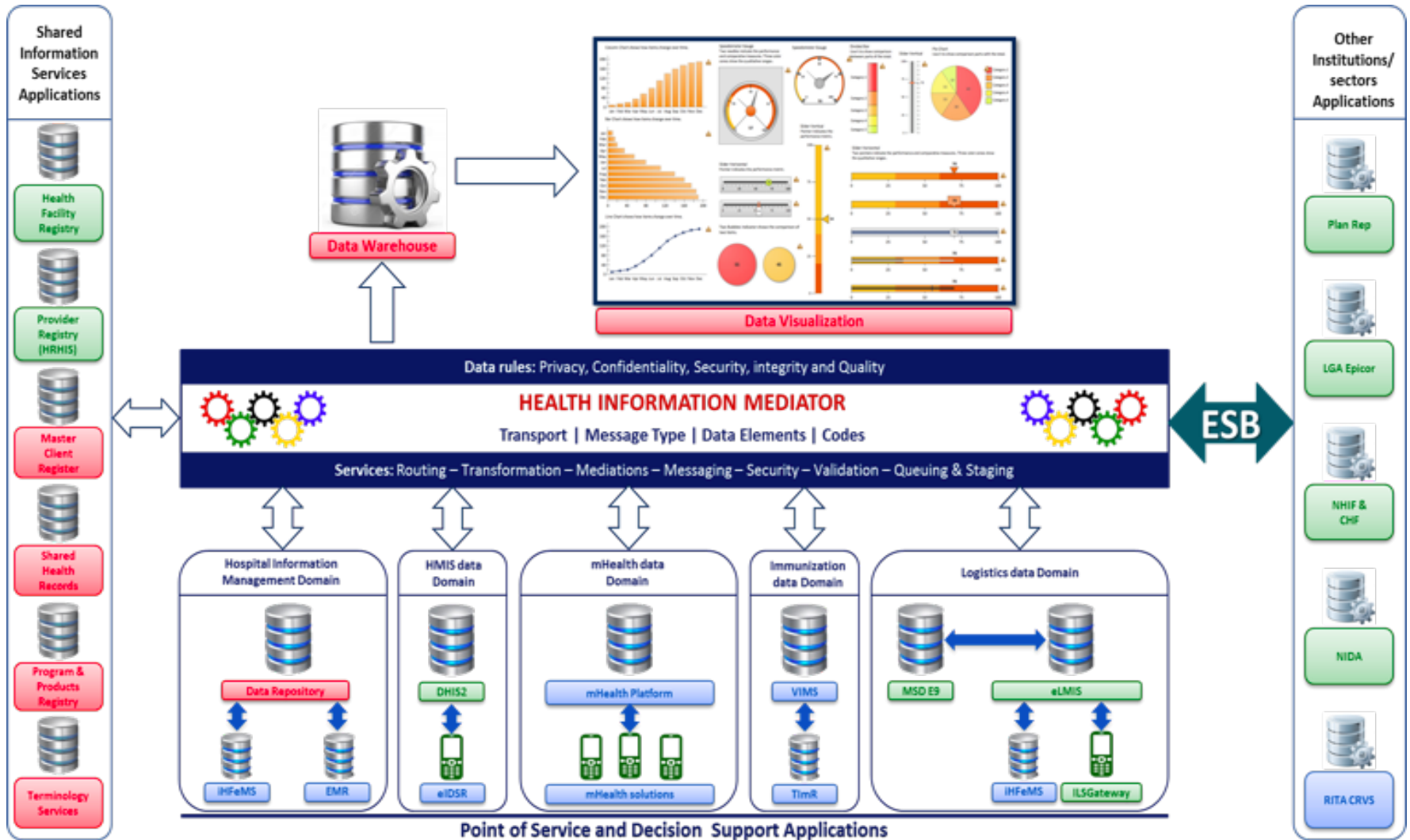
# Interoperability in Practice: Tanzania, LMIS





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# Designing for Interoperability – Tanzania's Vision



# Challenges

- Absence of common master data & data standards
- Data security/privacy (less so for supply chain)
- Cost
- System updates
- Governance
- People – it's the people





# What will the Future Bring?

- More interoperability as digitization expands and systems “meet”
- Less talk, more action
- Expanded scope – not just supply chain & HMIS but also regulatory systems, and
- Sharing data with Suppliers (2-way) –slow but there will be progress
- While in the developed world a lot of attention on patient records (EMR) this will not be the case in developing world (yet)
- Expansion of standardized naming, in particular GS1
- “Integrated” dashboards for decision making
- *“...advance a new generation of software that is interoperable by design, reducing the need for custom development and cumbersome testing & certification.”* Bill Gates Jr

# QUESTIONS?





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