"Achieving the Ghana National Single Window Vision"

Feasibility Study Findings

ICT Working Group Workshop

Plenary Session
3rd March 2016
The Royal Senchi Hotel, Akosombo, Ghana

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- Introduction & approach
- SW Implementation Framework (SWIF)
- Current ICT-environment (As-Is)
- Recommendations and principles
- Future ICT-architecture (To-Be)
- ICT Capacity Building
- Conclusion
- Q/A

Import
&
Export

**Trade
Facilitation**

To have an overview of the current Information Technologies and automation process in GRA and the various Partners agencies

To know the current network architecture

To know the integration architecture and services between agencies

To ascertain the security aspects of the existing trading environment

To ascertain ICT organizational structure (competences, policies, roles, etc.) to support the project

To ascertain the current state and quantities of ICT equipment/infrastructure

To provide Future Architecture (Data, Application, Integration, Infrastructure, Security) based on future business processes

To ascertain the current state and quantities of ICT equipment/infrastructure

# Introduction & approach - Assessment Scope

Around 25 Organizations have been assessed during this phase

- **Ghana Revenue Authority**

- **Food and Drugs Authority**

- **Ghana Standards Authority**

- **Ghana Ports & Harbour Authority**

- **Ministry of Food & Agriculture, Plant**

- **Environmental Protection Agency**

- **National Security Adviser**

- **Narcotics Control Board**

- **Protection And Regulatory Services,**

- **Animal Production Directorate,**

- **Veterinary Services Department**

- **Ministry of Trade and Industry**

- **Ghana Shippers Authority**

- **Ministry of the Interior**

- **Ghana National Chamber of Commerce & Industry**

- **Courier Companies**

- **Bank of Ghana**

- **Ghana Association of Bankers (Barclays, HSC, Ecobank)**

- **Ministry of Finance and Economic Planning**

- **National Information Technology Agency**

The Single Window Implementation Framework (SWIF) based on TOGAF recommends implementing the project by establishing a development cycle, concentrating around the 10 critical components below:

1. Stakeholder Requirements Identification and Management
2. Stakeholder Collaborative Platform Establishment
3. Single Window Vision Articulation
4. Business Process Analysis and Simplification
5. Data Harmonization and Documents Simplification
6. Service Functions Design (or called Application Architecture Design)
7. Technical Architecture Establishment including Standards and Interoperability
8. Legal Infrastructure Institution
9. Business and Governance Models Enforcement including Finance, Implementation and Operation Governance
10. IT Infrastructure and Solutions Execution.
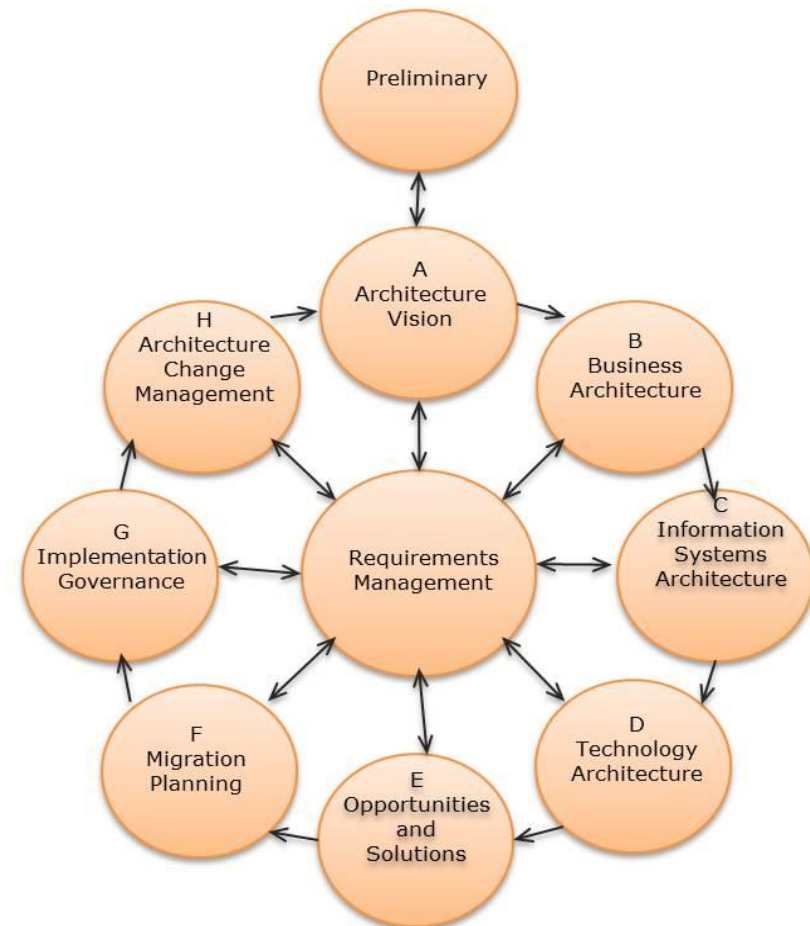
The NSW and Enterprise Architecture- Definitions

The Information/Data Architecture defines the structure of the NSW' logical and physical data assets and address data management considerations. It reflects the domain entities, their relationships and establishes accountability for data integrity.
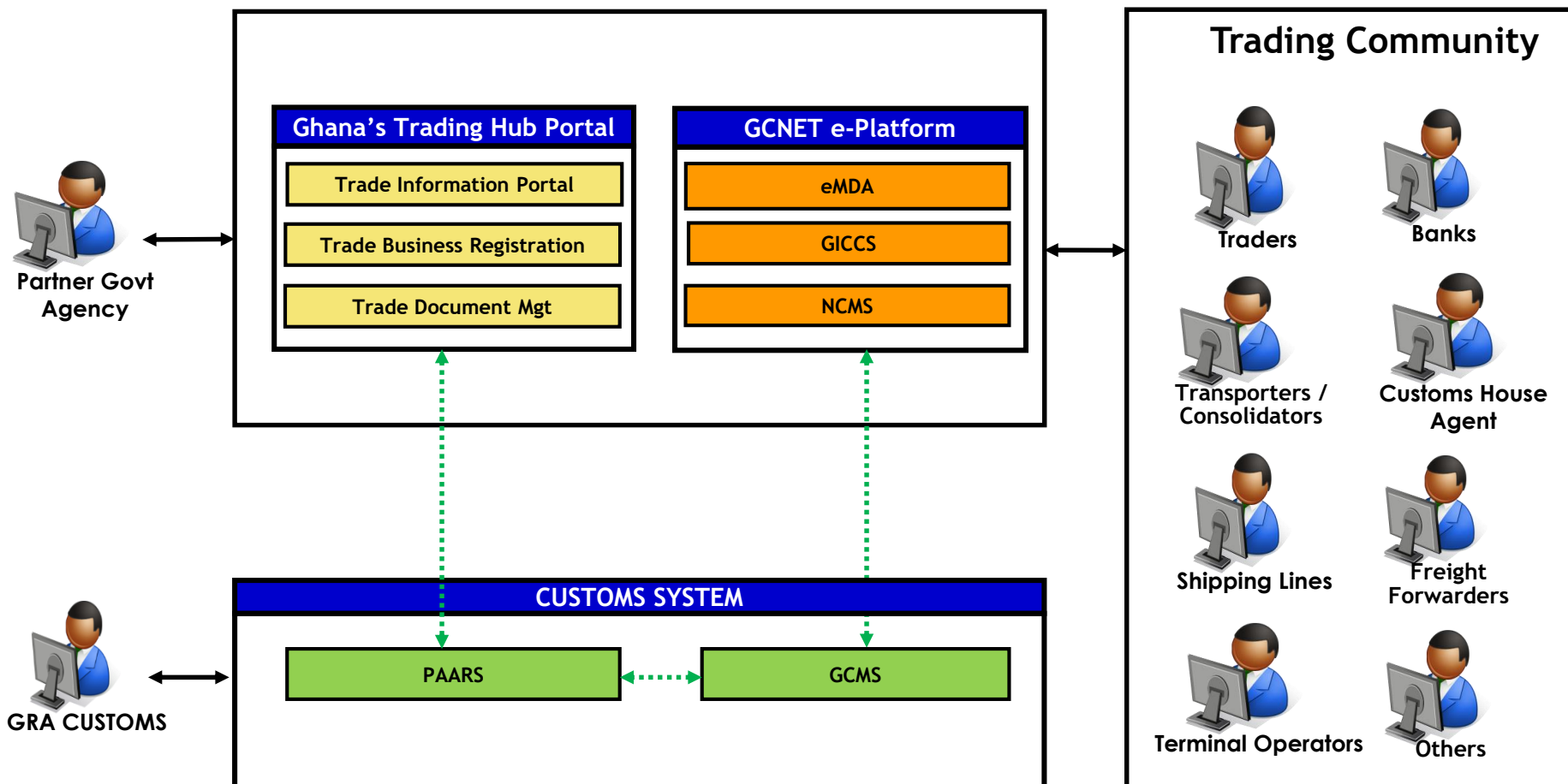
The Application Architecture defines the blueprint for the individual applications / services to be deployed, their interactions, and their relationships to the core business processes of NSW.

The Security Architecture defines how the business processes are securely and economically protected , including public access to appropriate information and resources, while maintaining compliance with the legal requirements established by existing statutes pertaining to confidentiality, privacy, accessibility, availability, and integrity.

The Infrastructure Architecture focuses on server, workstation, storage and network infrastructure, software licensing, ICT BCP/DR, ICT vendor management, manpower and service support aspects of the organisation government.

The Integration Architecture defines the blueprint to integrate applications / services to enable real-time seamless information exchange across GRA and PGAs government wide.

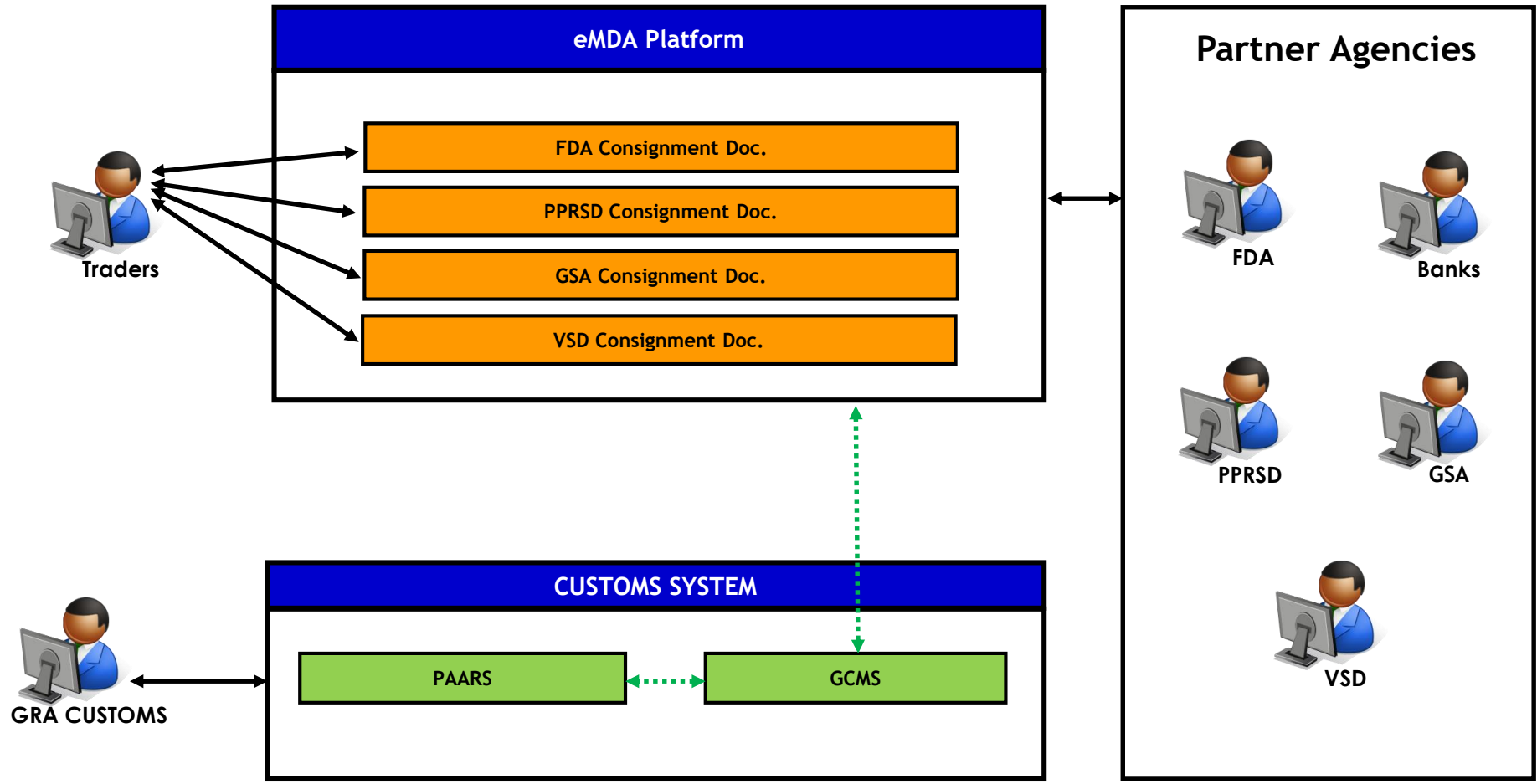# Current ICT Environment – Trade Facilitation e-Services

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Partner Govt Agency

Ghana's Trading Hub Portal
- Trade Information Portal
- Trade Business Registration
- Trade Document Mgt

GCNET e-Platform
- eMDA
- GICCS
- NCMS

CUSTOMS SYSTEM
- PAARS
- GCMS

GRA CUSTOMS

Trading Community
- Traders
- Banks
- Transporters / Consolidators
- Customs House Agent
- Shipping Lines
- Freight Forwarders
- Terminal Operators
- Others

Legend:

← → Human – System Interaction

◄┈┈► System– System Interaction

Online Access Channels:
- Web-based Forms
- Electronic Messaging (XML / EDI)

Current ICT Environment – Point-to-Point LPCO System

eMDA Platform

- FDA Consignment Doc.
- PPRSD Consignment Doc.
- GSA Consignment Doc.
- VSD Consignment Doc.

Traders

Partner Agencies

FDA

Banks

PPRSD

GSA

VSD

CUSTOMS SYSTEM

PAARS

GCMS

GRA CUSTOMS

Legend:

→ Human – System Interaction

⇢ System – System Interaction

Online Access Channels:
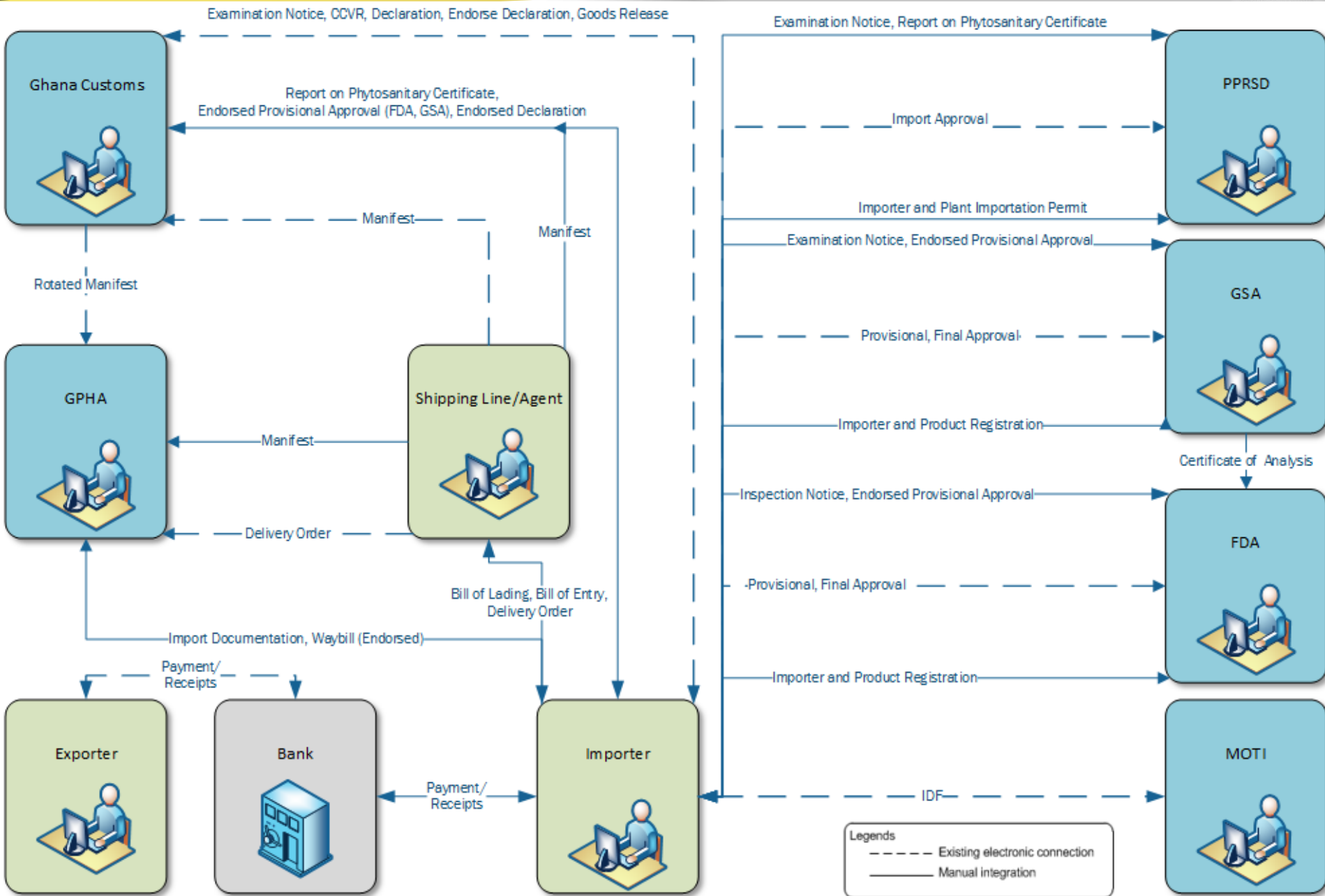- Web-based Forms
- Electronic Messaging (XML / EDI)

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Observations

Multiple Access and Data duplication :
In the current environment each of the portals or systems support specific processes and services. As a consequence some users need to access more than one portal / system for their service request or delivery. Data is not shared across all portals / systems, which leads to instances of data entry duplication.
Currently, many PGAs use the eMDA portal for the government approval process, where they access the data and supporting documents for the requested approvals—permits, certificates, exemptions .
At this stage, the PGA processing depends on manual intervention to complete processing of LPCO applications.

Paper-based processing
The persistence of paper-based processing on Trade facilitation processes leads to duplication of document and data submission.

Trust in verification amongst agencies and inside agencies.
To minimize instances of document or goods control, it is important that agencies trust the verification done by officers of the same agency or other agencies. In the present ICT environment , it is still very difficult to ensure a trustful relationship among agencies .
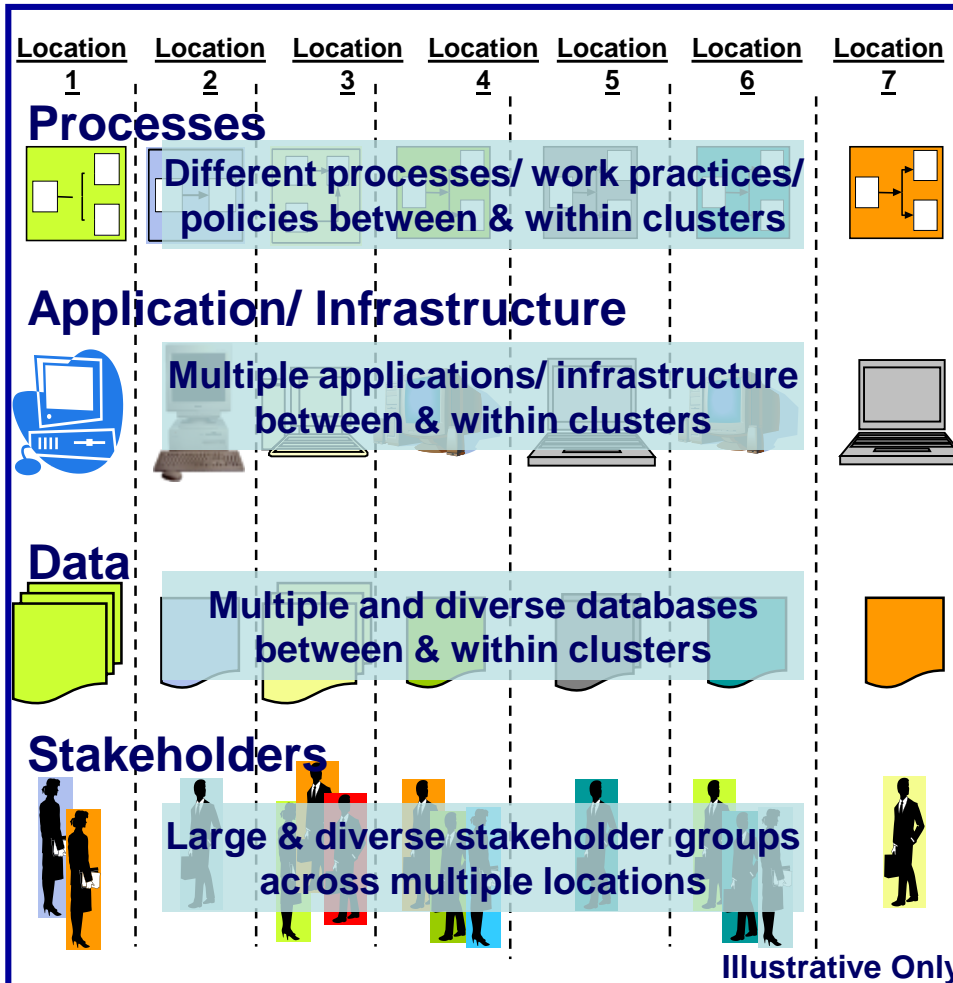
Paperless Customs limitations :
The persistence of paper-based processing on many Customs processes leads to Data submission, availability and integrity issues.

CURRENT STATE → **FUTURE STATE**

Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7

Processes

Different processes/ work practices/ policies between & within clusters

Application/ Infrastructure

Multiple applications/ infrastructure between & within clusters

Data

Multiple and diverse databases between & within clusters

Stakeholders

Large & diverse stakeholder groups across multiple locations

Illustrative Only

Transition & Project Management

- Process Standardisation & Alignment
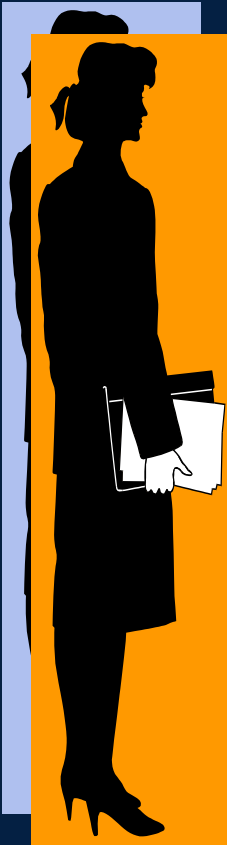- Application and Infrastructure Design, Development & Implementation
- Data Standardization & Integration
- Information Security
- Capacity Building Change Management

Future State

- Automate Processes
- New/ Refined Policies (Governance)
- One Integrated and secured e-NSW with Standardised Data
- Staff Committed to Perform in Roles Using New Processes & e-NSW

Import
&
Export

**Trade
Facilitation**

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RECOMMENDATIONS

- Enable single submission of data and information required for trade and Customs procedures without data repetition;

- Enable time and location independent data entry lodging and processing and download documents;

- Increase transparency over processing by allowing tracking of the status of processing in a remote manner, and centralised notification or messaging;

- Workflow Automation within each participating government agency for efficiently issuing e-registration, e-permits, and e-certificates

- Shorten processing time and improved controls for stakeholders by providing for single and synchronous processing and a better control by data validation.

RECOMMENDATIONS AND PRINCIPLES – GENERAL

RECOMMENDATIONS

- Ensure full paperless Customs Declaration & Approval Online;

- Enable Payment of Customs Duty and Fees electronically

- Enable a robust Electronic Information Risk Assessment, and effectively reducing the percentage of Customs Physical Inspection ;

- Enable automatic information cross checking among the corresponding e-Customs Declaration, e-Permit, e-Certificate & Scanning Info. for effective/efficient inspection and release.

- Ensure Electronic information submission once for each data element, but can be used electronically many times by relevant authorities.

- Re-use existing ICT investments by creating a SW-layer

- Make use of mobile services

- Ensure uniqueness of TIN as a means to uniquely identify traders (individual and businesses);

- Due to varying ICT-situation and the unreliable general infrastructure, design a flexible solution

- Make use of digital signatures

- Integration between eMDA Platform and PAARS for enforcement of controls;

1. Protect information

2. Avoid information duplication

3. Use SOA to increase flexibility and cost efficiency

4. Select technology based on arhitecture fit, capability and vendor support

5. The architecture shall be based on replaceable components, enabling phased implementation

6. User interface shall be uniform and intuitive

7. Use a centralised ICT-infrastructure to facilitate phased integration of stakeholders and services

8. NSW shall provide both message based and web based integrations

9. All involved Stakeholder requirements must be adressed

10. Ensure the use of green ICT;

11. Adopt National Standards and Laws published by NITA ;

12. Develop ICT Policies and a comon ICT Governance framework for the NSW

NSW TO BE BUSINESS ARCHITECTURE

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BUY	SHIP/DELIVER	PAY

Prepare for export	Export	Transport	Prepare for Import	Import

Registration Process	LPCO Application	Logistic Process	Advance Information	Cargo Declaration	Goods Declaration	Ports Process	Temporary Storage	Duties, Fees Collection

Commercial processes		Physical Inspection	Goods Release

Integrated Risk Management

NSW Core Services

Trade Information	Permit Application	eManifest	ePayment Trade Finance	Status Tracking	Tariff Services
Trader Registration	License Application	Goods Declaration	Inspection Planning	Notification Services	Vessel Management
Product Registration	Certificate Registration	Goods Release	Risk Assessment	Trade Statistics	Container Management
Commercial services	Transport services	Financial Services	Insurance Services	Pre-Arrival Services	eGate Management

NSW Supporting Services
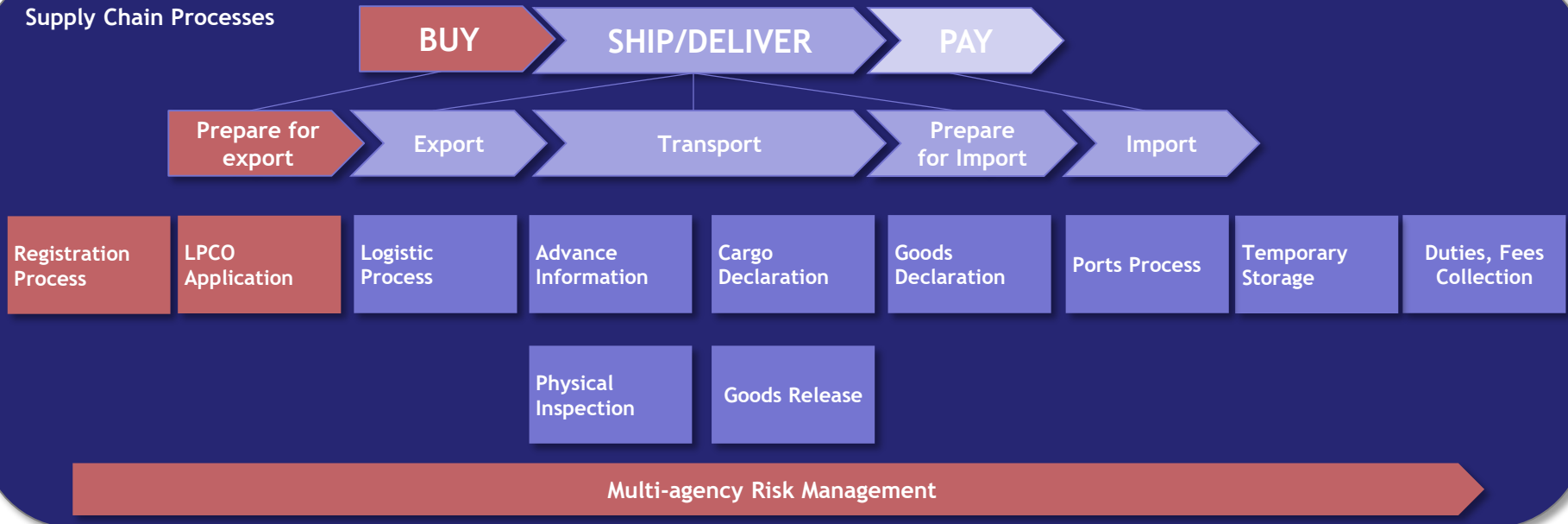
Security Services	Integration Services
Document Services	Workflow Management
Messaging Services	Helpdesk Service

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NSW TO BE Business Architecture

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Supply Chain Processes

BUY → **SHIP/DELIVER** → **PAY**

Prepare for export → Export → Transport → Prepare for Import → Import

Registration Process	LPCO Application	Logistic Process	Advance Information	Cargo Declaration	Goods Declaration	Ports Process	Temporary Storage	Duties, Fees Collection

Physical Inspection	Goods Release

Multi-agency Risk Management

NSW Services

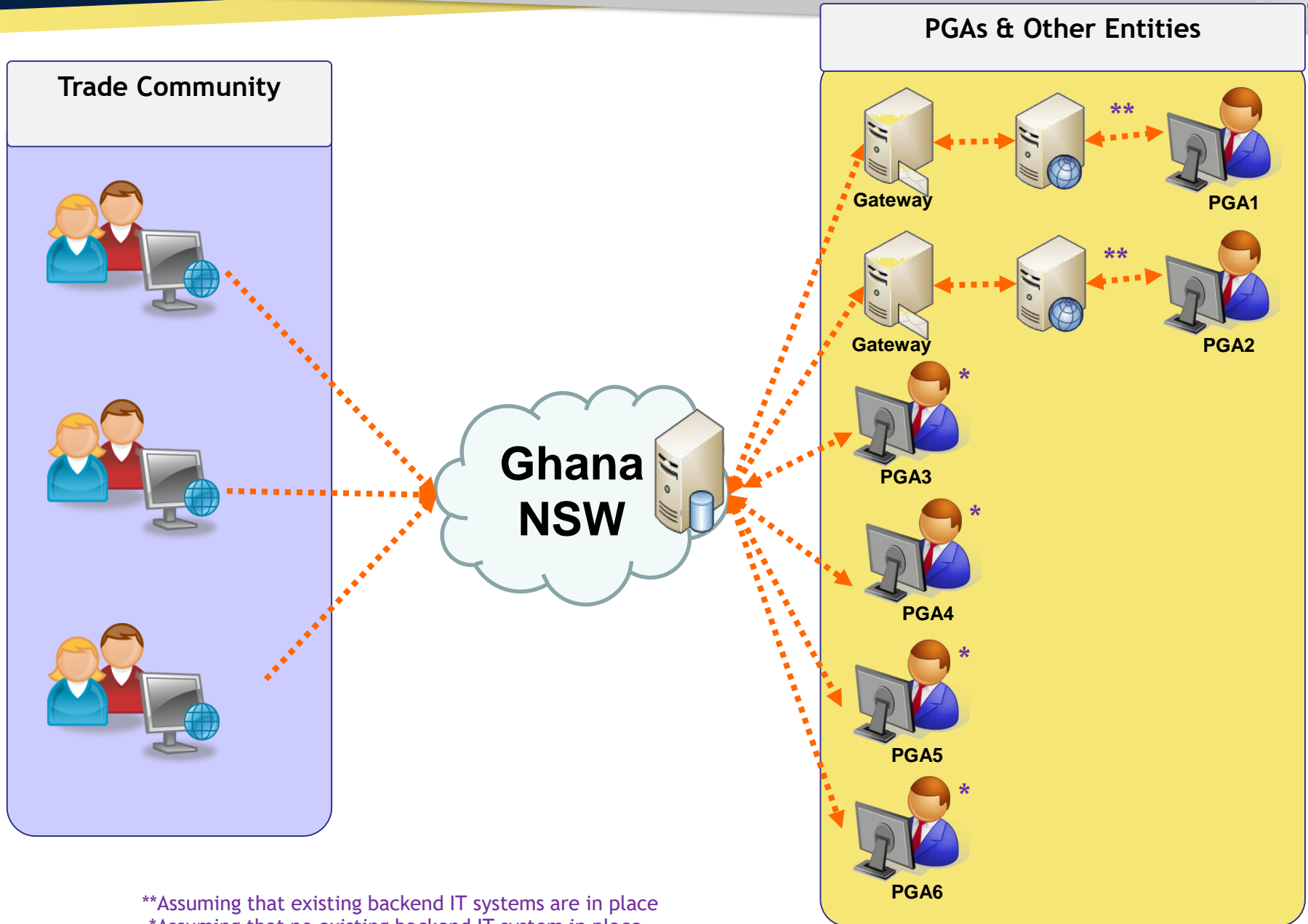| Trade Information	Permit Application	eManifest	ePayment Trade Finance	Status Tracking	Tariff Services
Trader Registration	License Application	Goods Declaration	Inspection Planning	Notification Services	Guarantee Services
Product Registration	Certificate Registration	Risk Assessment	Goods Release	Trade Statistics	Insurance Services
Commercial services	Transport services	Financial services	Vessel Management	Container Management	eGate Management

NSW Supporting Services

Security Services	OGA Integration
Document Services	Workflow Management
Messaging Services	Helpdesk Services

NSW TO BE Business Architecture

NSW TO BE APPLICATION ARCHITECTURE (HIGH LEVEL)

Trading Community

- Importer
- Exporter
- Freight Forwarder
- Customs Brokers
- Ware-house
- Others

National Single Window

Services

Applications

Stakeholder Community

Services

Applications

PGA1

Services

Applications

PGA2

Services

Applications

PGA3
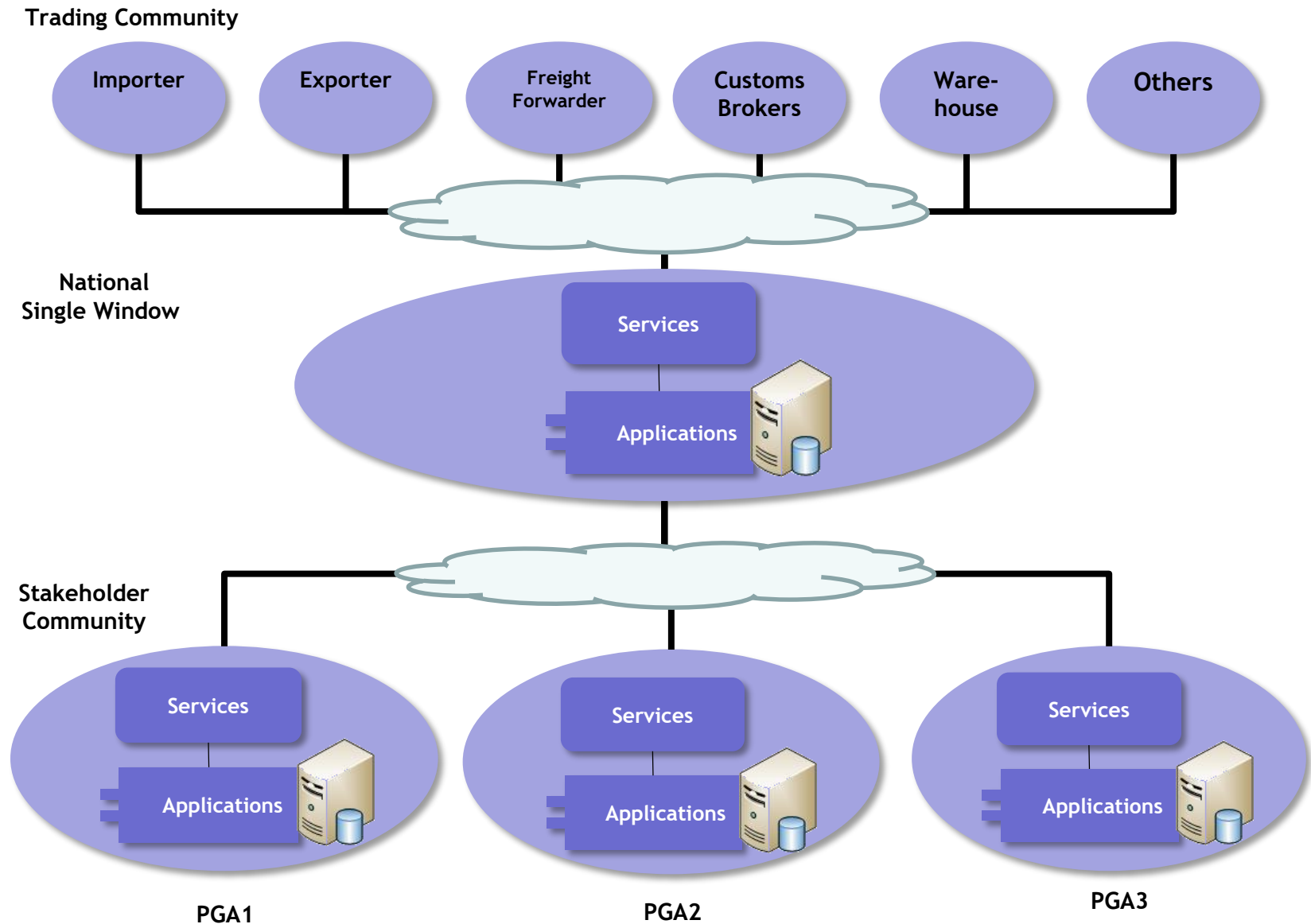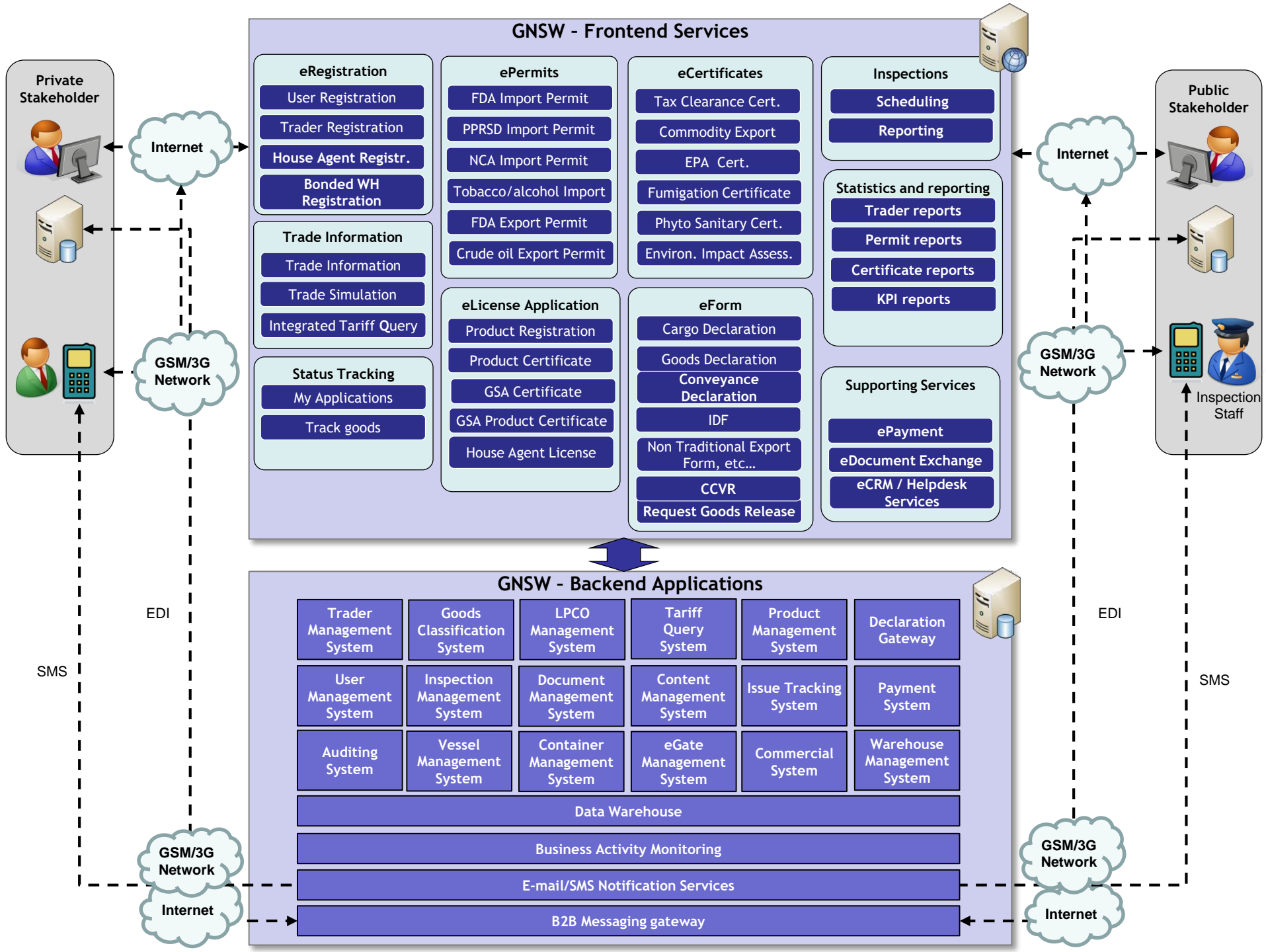
NSW TO BE INTEGRATION ARCHITECTURE

Trade Community

PGAs & Other Entities

Gateway

PGA1

**

Gateway

PGA2

**

Ghana NSW

PGA3 *

PGA4 *

PGA5 *

PGA6 *

**Assuming that existing backend IT systems are in place
*Assuming that no existing backend IT system in place

External zone

internet

PGA's links

Network Gateway (routers)

Presentation zone

presentation Zone Firewall

internal PCs

DMZ

Web Portal Server(s)

VPN server

Application zone

Server Zone Firewall

Application Server(s)

DBMS/DMS Server(s)

Sensitive Zone Firewall

Syslog Server

LDAP Server

Sensitive zone

Policies

- No remote access to sensitive zone (physical access to NOC only)

- Difference firewall brands are recommended

- Disaster Recovery Site (Hot Site)

- Provide ICT training that enable and equip stakeholders to use and mange the GNSW

- Four categories:
  - Traders
  - House Agents
  - PGA staff
  - Customs staff

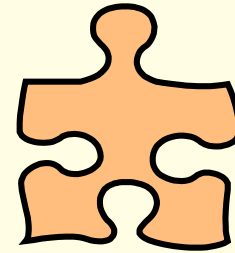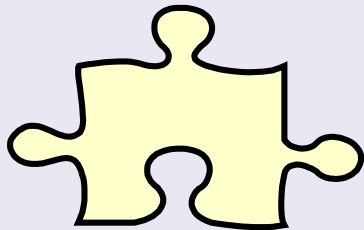| Three methods of training:	
Train-the-Trainer	GRA Staff, PGA Staff
Formal certification	House Agents
eLearning	Traders

Conclusion
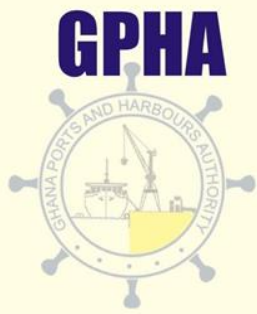
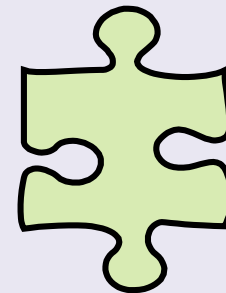**Fitting it all together...**
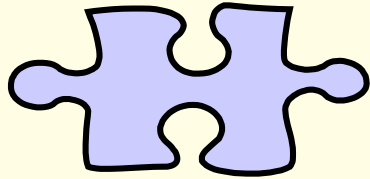
GRA

Trading Community

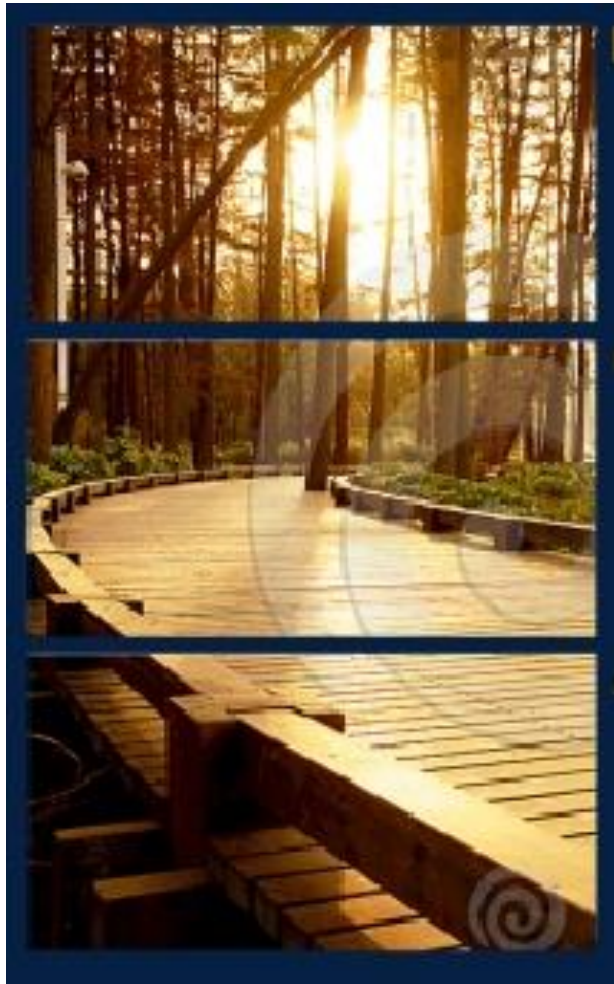**Stakeholder Community**

Service Applications

Conclusion

Champions aren't made in gyms. Champions are made from something they have deep inside them – a desire, a dream, a vision. They have to have the skill and the will. But the will must be stronger than the skill

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Muhammad Ali

EMPOWERMENT

and

CAPACITY BUILDING

Lie at the core of

REALISING THE SW NATIONAL VISION !

...and a good map helps!

THANK YOU!
Q&A

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