



Medicaid Information Technology Architecture (MITA)

Proof of Concept
Demonstration

August 14, 2007





CMS

CENTERS for MEDICARE & MEDICAID SERVICES

The MITA Initiative Today and Tomorrow

Rick Friedman,
CMSO/DSS



We've Come a Long Way !

- **78 Business Processes Validated & Improved by NMEH**
- **Modeling of Business Processes and Information Under Way**
- **Leap from Logical Architecture to Real Implementation**



2 Out of 3 States are Engaged in MITA State Self-Assessment Activity (as of 7/07)



SS-A Work Completed



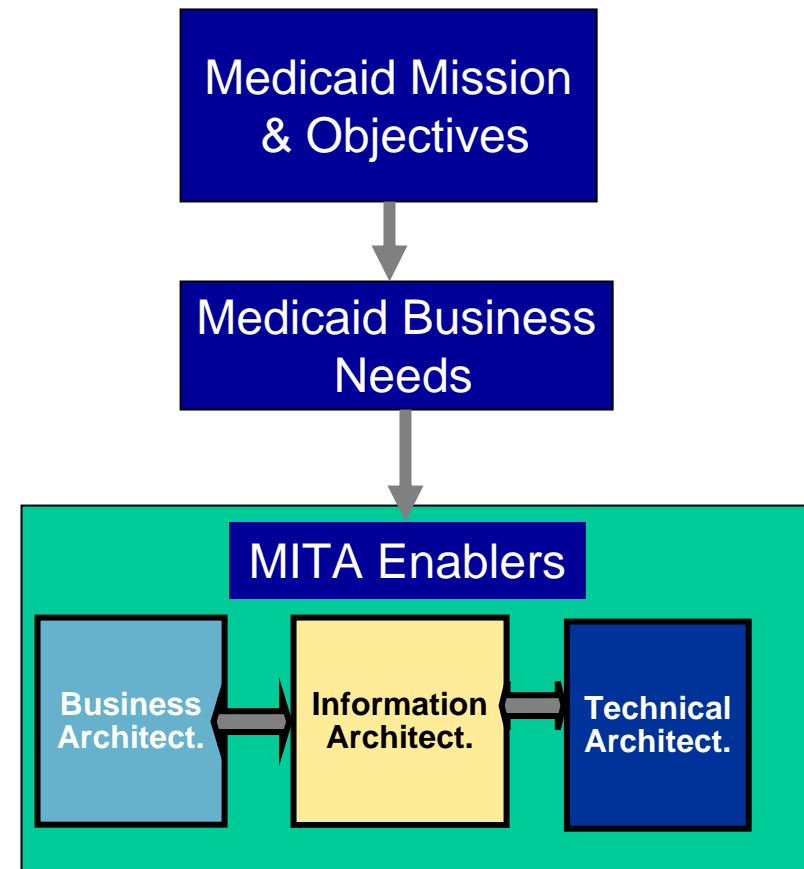
SS-A Work Planned, P-APD/APD Submitted to CMS
Requesting FFP for SS-A, or In-Progress

Key Takeaways of This Demonstration

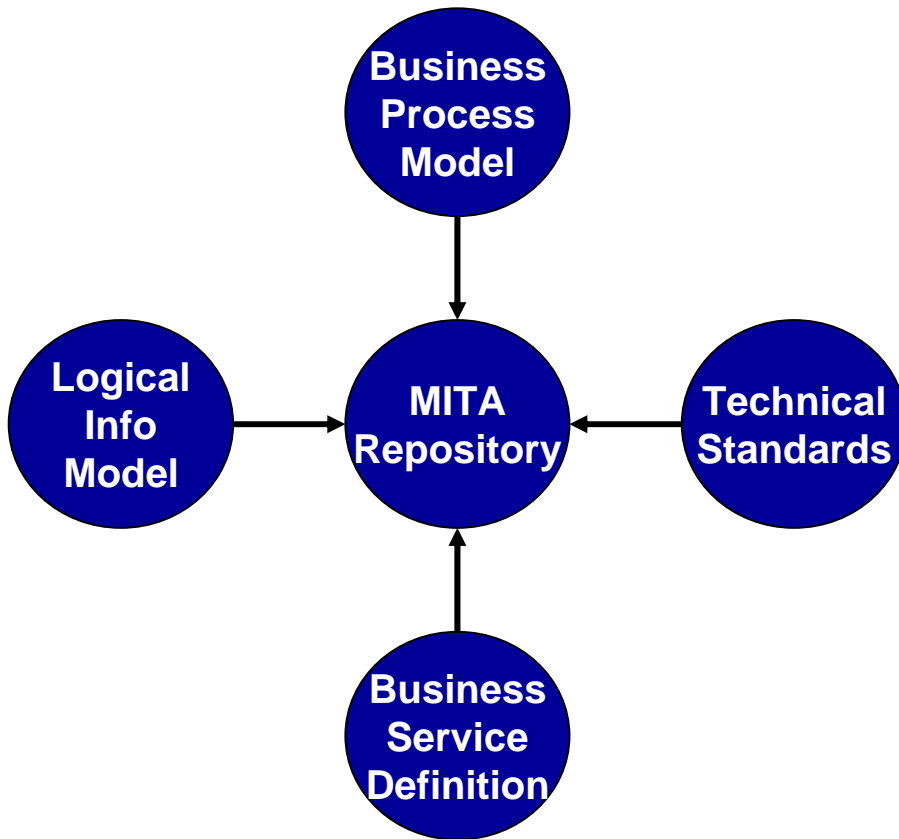
- **Business is DRIVING the enterprise transformation; MITA is the tool that enables this transformation**
- **CMS, in partnership with the States and Vendors are turning the MITA vision into reality.**
- **From concept to reality – from Framework 2.0’s vision to implementable solutions**

MITA Is a Business-driven Architecture

- Vision, mission, objectives come first
- Architecture responds to business needs
- MITA Business, Information, Technical models are Enablers to meet the business needs



MITA Models Can Be Used to Develop Applications



- **CMS provides governance**
- **States and Vendors collaborate; contribute models**
- **CMS maintains approved models in Repository**
- **States and Vendors use MITA models and standard interfaces**

Introductions of Panelists

- **Andrea Danes, NMEH MITA Sub Workgroup Co-Chair** – Role of States and NMEH in Developing MITA Models
- **Bill Branch, MITA Lead Architect** – Overview of Demonstration:
Relationship between Demo and MITA
- **Dave Walsh, Technical Advisory Committee Chair**
– Introduction to the Demonstration: How We Did It; What You Will See
- **Demonstration Teams** – Blue Team, Green Team, and Supporting Cast



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Role of States in Developing MITA Models

**Andrea Danes, Co-Chair,
National Medicaid EDI Healthcare
(NMEH) MITA Subworkgroup**



What is NMEH?

- **National Medicaid EDI Healthcare Workgroup**
- **Created by CMS, NASMD, and the STAG as a vehicle for state collaboration in response to HIPAA**
- **More than 700 enrolled members**
- **CMS and state representatives**
- **Vendor staff by state request only**
- **Sub workgroups include NPI, Local Codes, COB, etc...**
- **Medicaid voice in standards organizations**
- **...AND the MITA Subworkgroup!**

NMEH Role in MITA

- **Facilitate state review of each MITA Business Process through collaborative calls (complete)**
- **Document improvements to the Framework 2.0 Business Process model (complete)**
- **Communicate suggestions to CMS for inclusion in the governance review (complete)**
- **Participate in the governance process as needed, including providing clarification in response to CMS requests (ongoing)**
- **Next steps...**

Next Steps for the NMEH MITA SWG

- **Increase participation in NMEH MITA SWG and interaction with HL7**
- **Review and improve Business Capabilities**
- **Continue converting Business Processes from MS Word documents to standardized models (UML based)**
- **Link UML diagrams to input/output data models**
- **Develop WSDL to standardize Business Process trigger and result interfaces**

Use of the MITA Models

- **States use MITA models to communicate requirements in a more succinct way and standardize application development**
- **Vendors use MITA models to develop and implement applications**
- **Today's demo uses MITA models to evolve MITA from concept to reality**

Now and Then

● Today

- Provider functionality is embedded in MMIS
- Updates are complex and costly
- Isolation of change is rare
- NPI compliance is a good example of the cumbersome nature of current system updates

● MITA

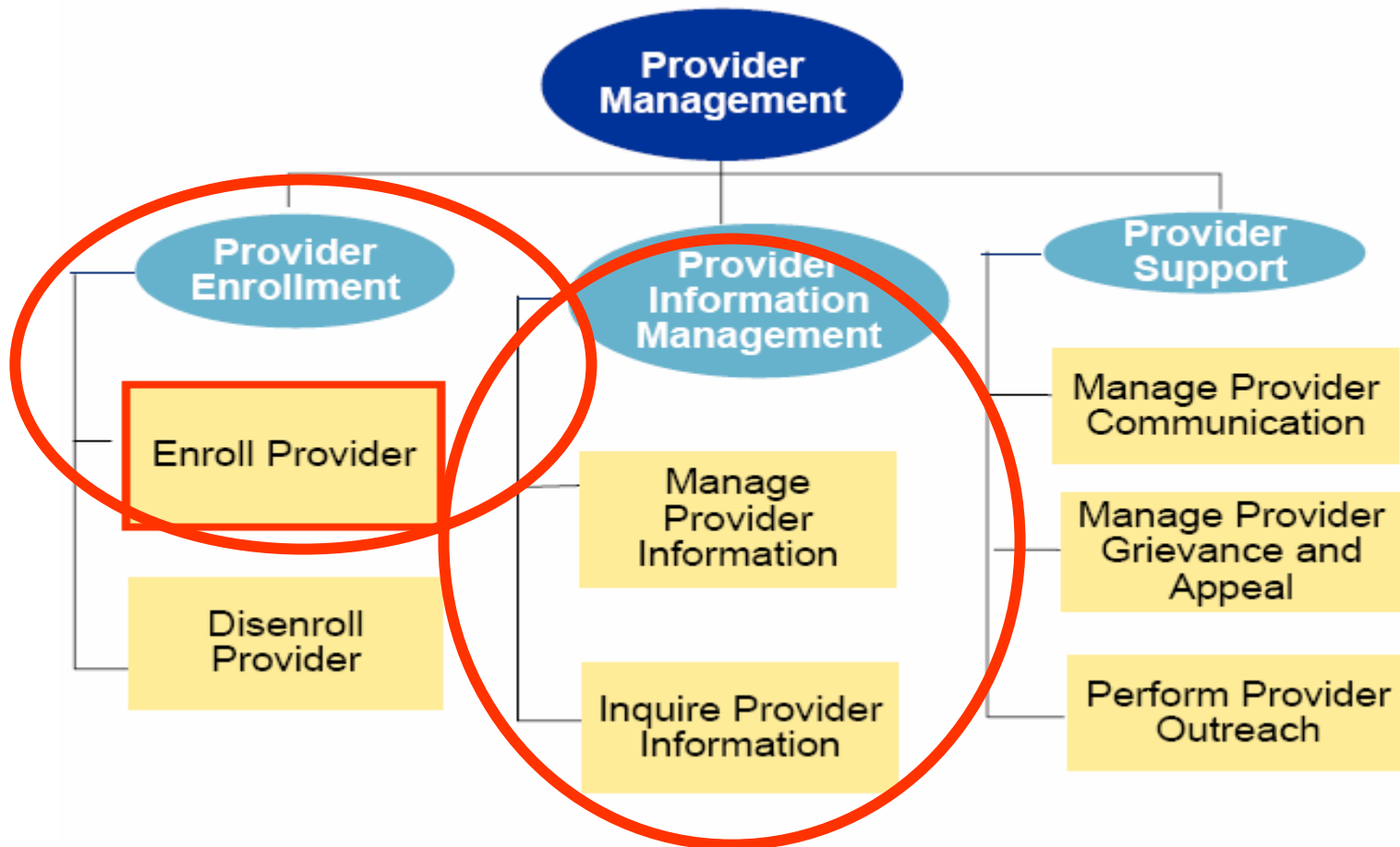
- Provider functionality is standardized
- Interfaces with other parts of the system are well-defined
- Interaction is predictable
- Change can be better isolated
- Reusability increases

● Use MITA to evolve...

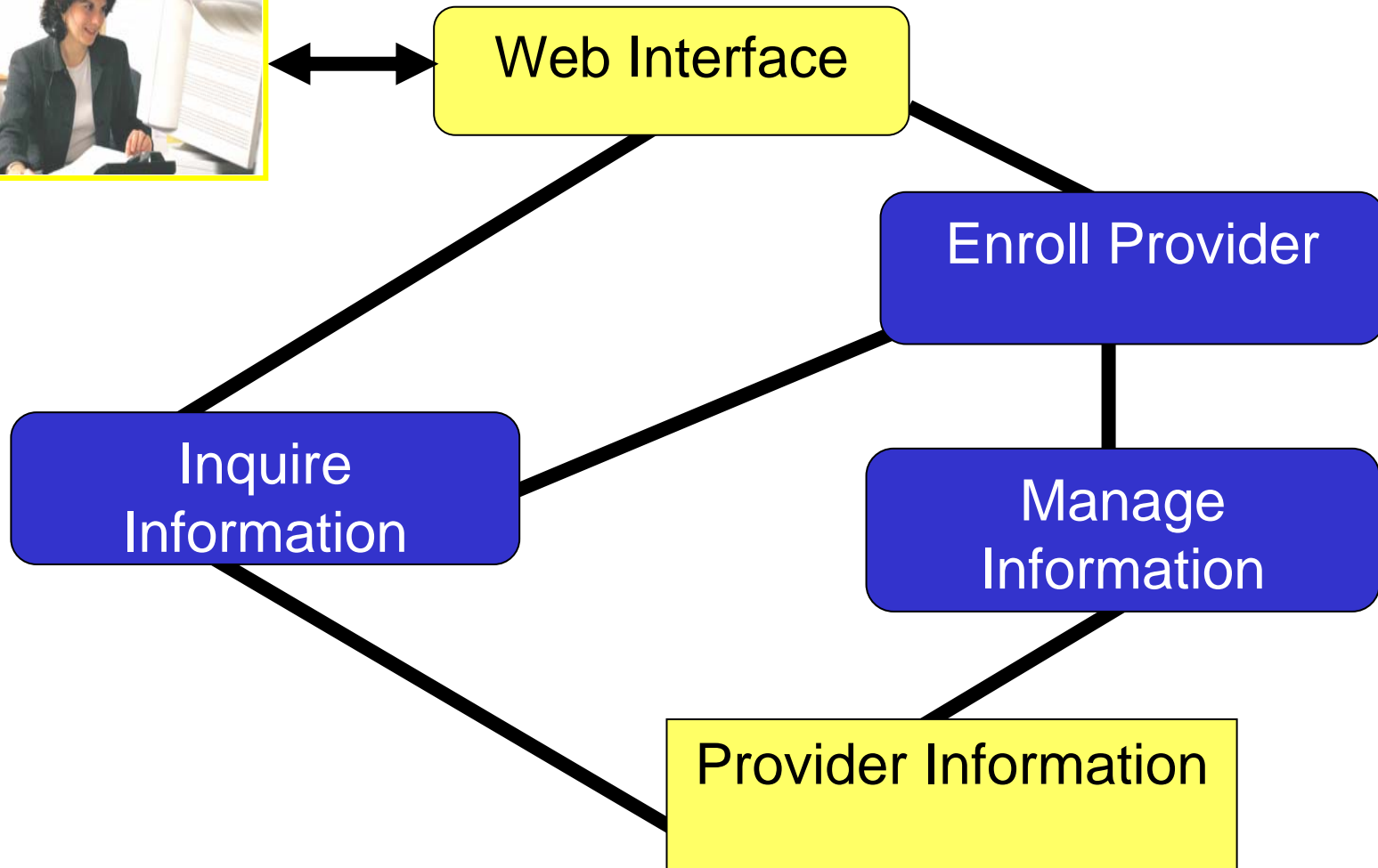
MITA Business Areas



Provider Management



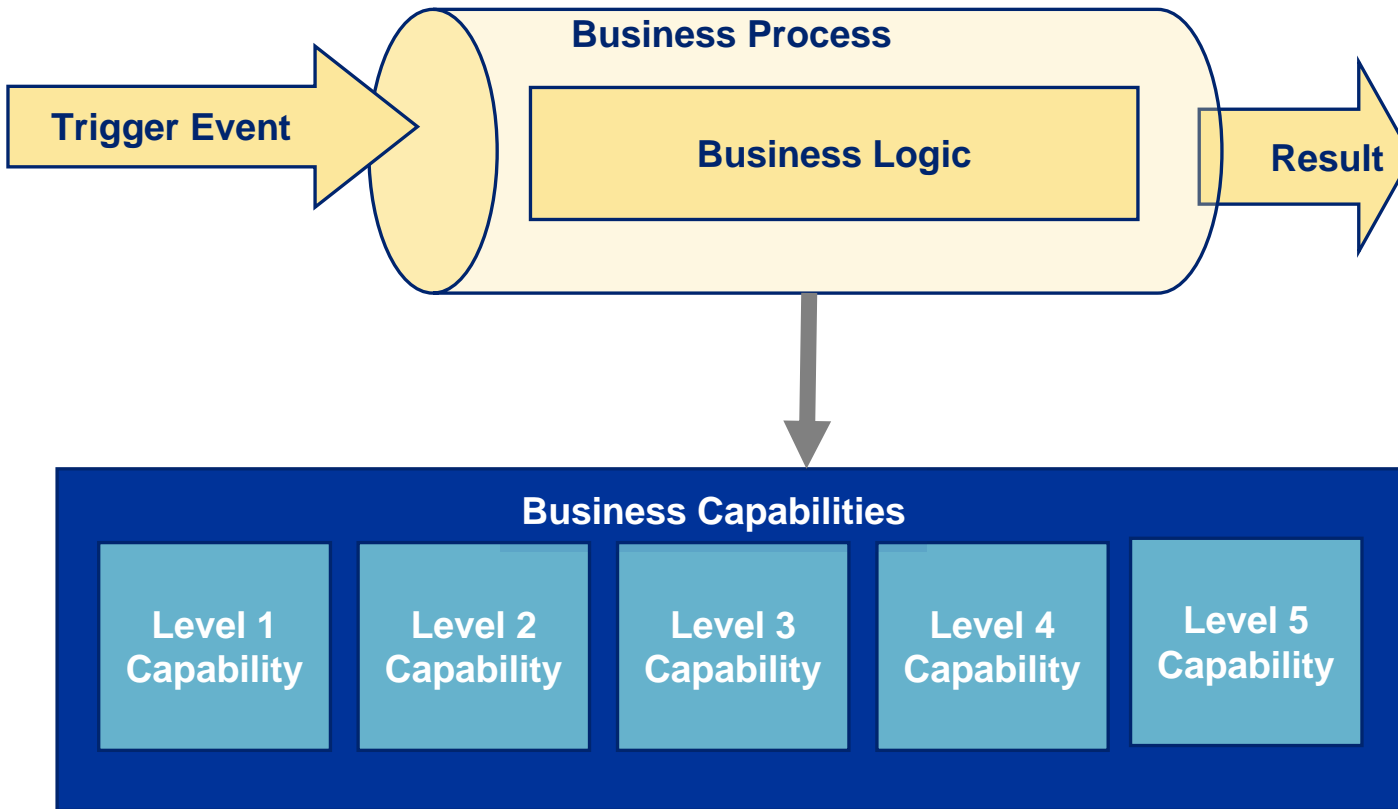
Business Processes Selected for Demo: Inter- Relationships



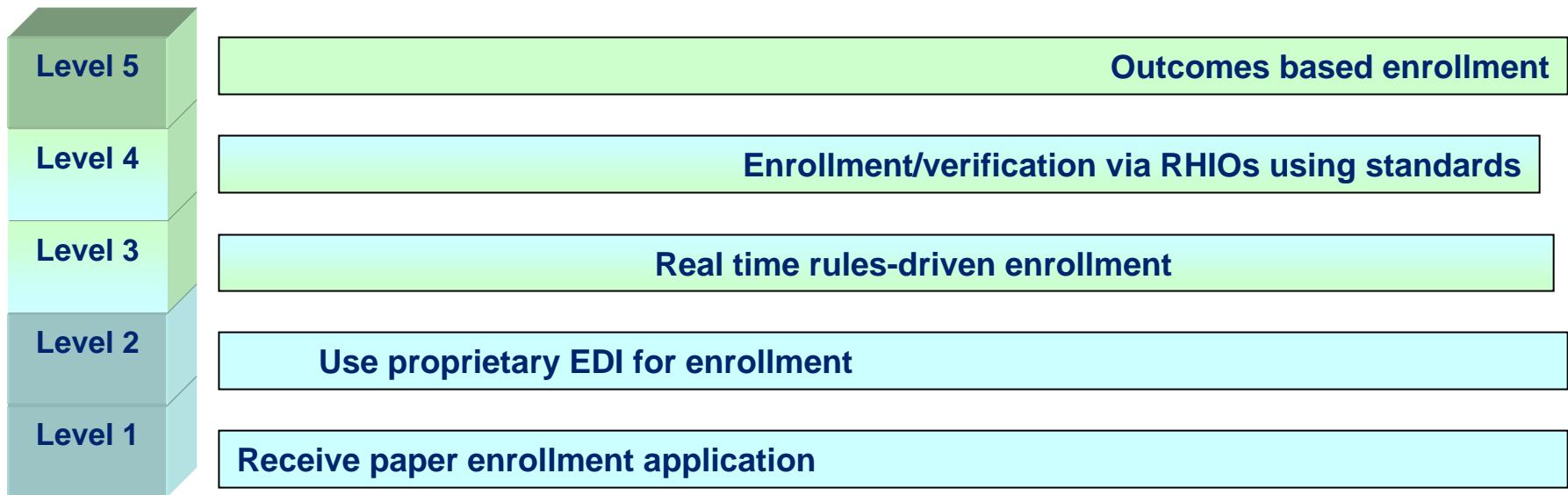
Original Template

Enroll Provider	
Item	Details
Result	<ol style="list-style-type: none"> 1. Provider is either enrolled, re-enrolled, or denied enrollment 2. The Provider Registry is updated, 3. The Provider is notified about enrollment results 4. Operations Management Area processes reflect changes
Business Process Steps	<ol style="list-style-type: none"> 1. Start: Receive enrollment application 2. Validate application syntax/semantic conformance. [If validation fails, process terminates – see Failures.] 3. Determine submission status by querying the Provider Registry.

MITA Business Process and Business Capabilities

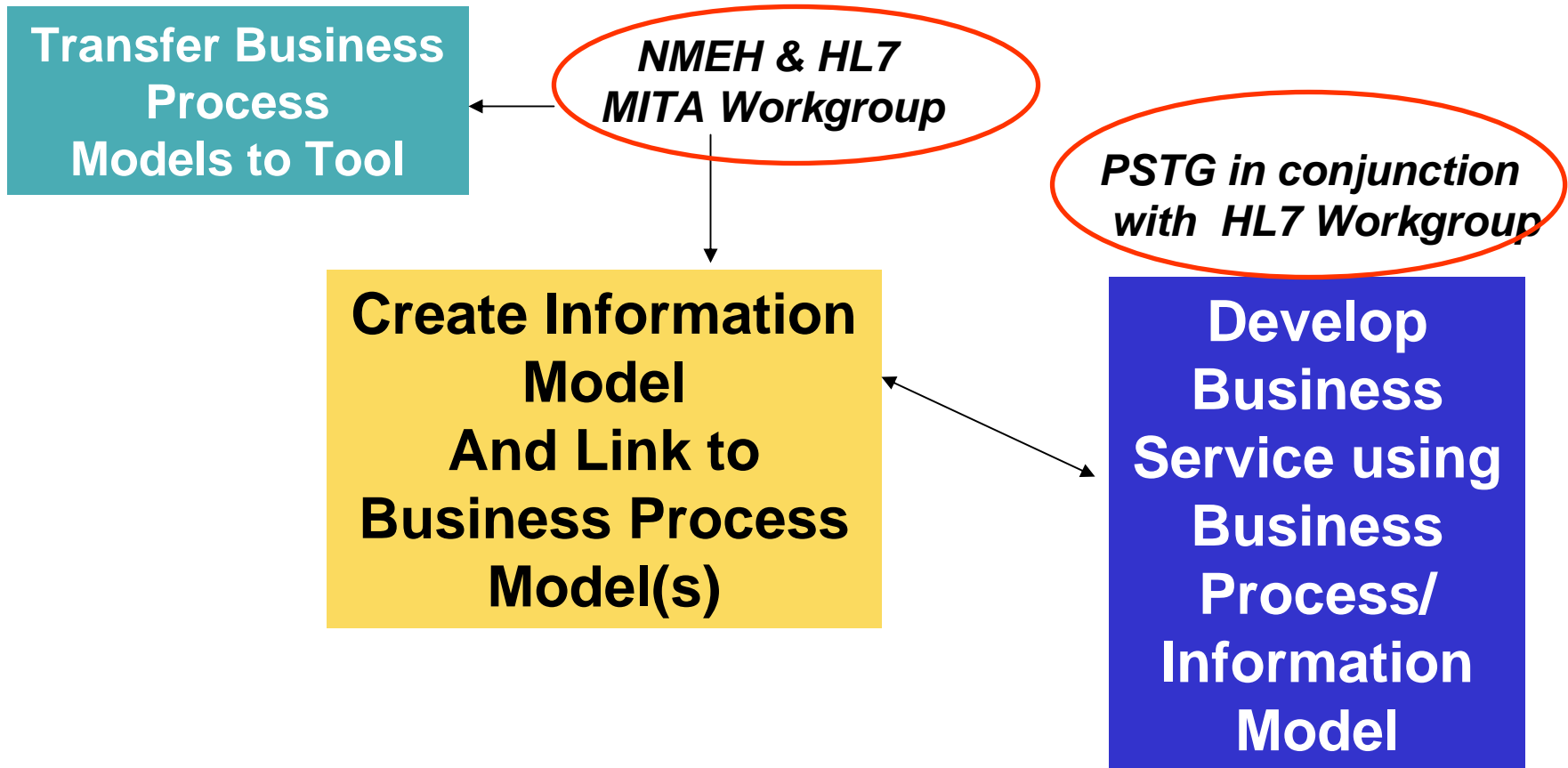


Example of Maturing Business Processes

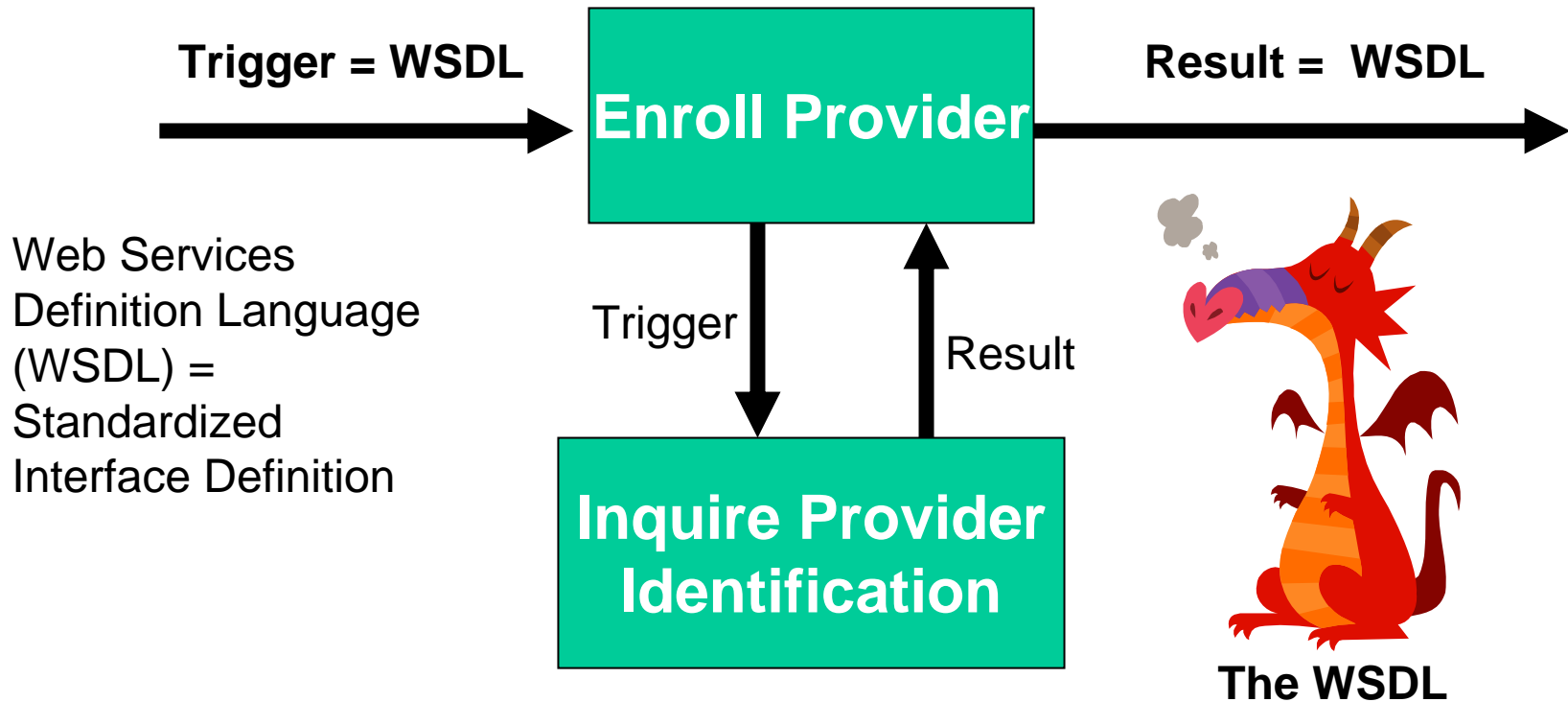


Enroll Provider Business Process

Integration of Business, Information, and Technical Architecture Components



MITA HL7 Validation Project



Enroll Provider Use Cases

1. State A: Plug-and-Play

- A state wants to change the user interface, but leave the “Inquire Provider ID” process and its interface with the Provider Registry intact

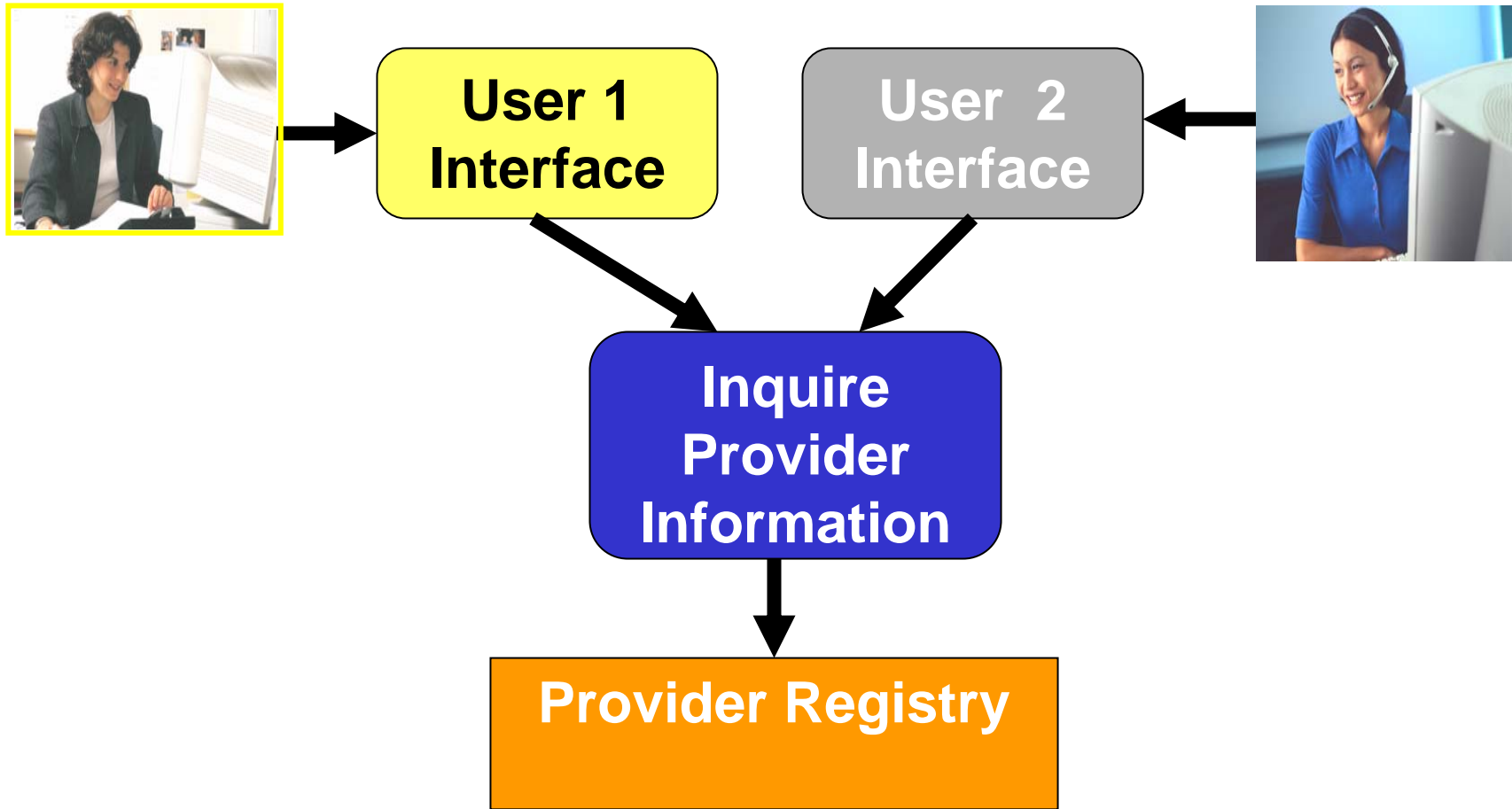
2. State B: Enroll Provider Hub

- A state wants to grant access to their Provider Registry to authorized users with unique interfaces

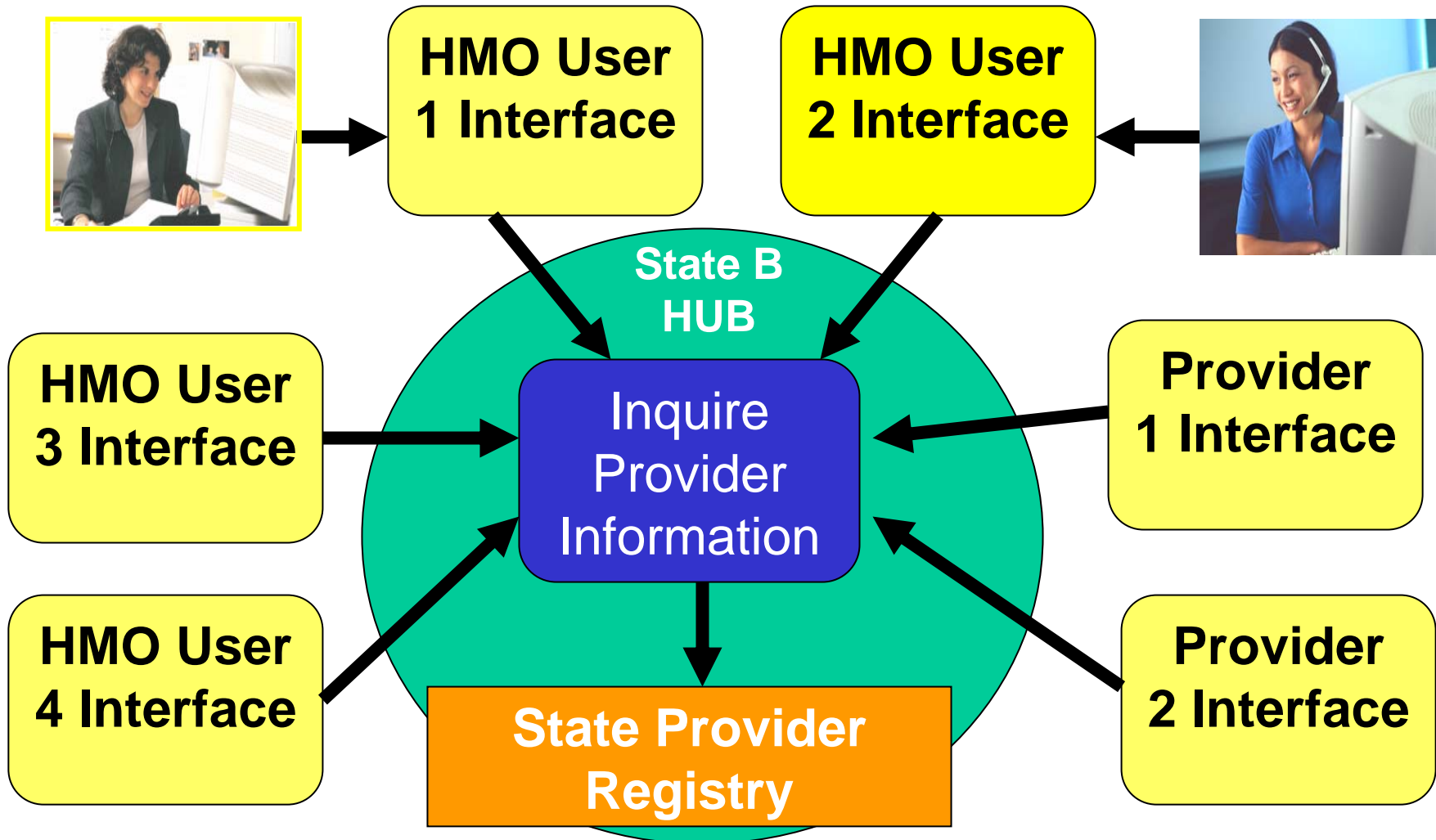
3. Multi-State Hub

- A consortium of states wants to share access to a multi-state Provider Registry, but enable each participant to have their own user interface

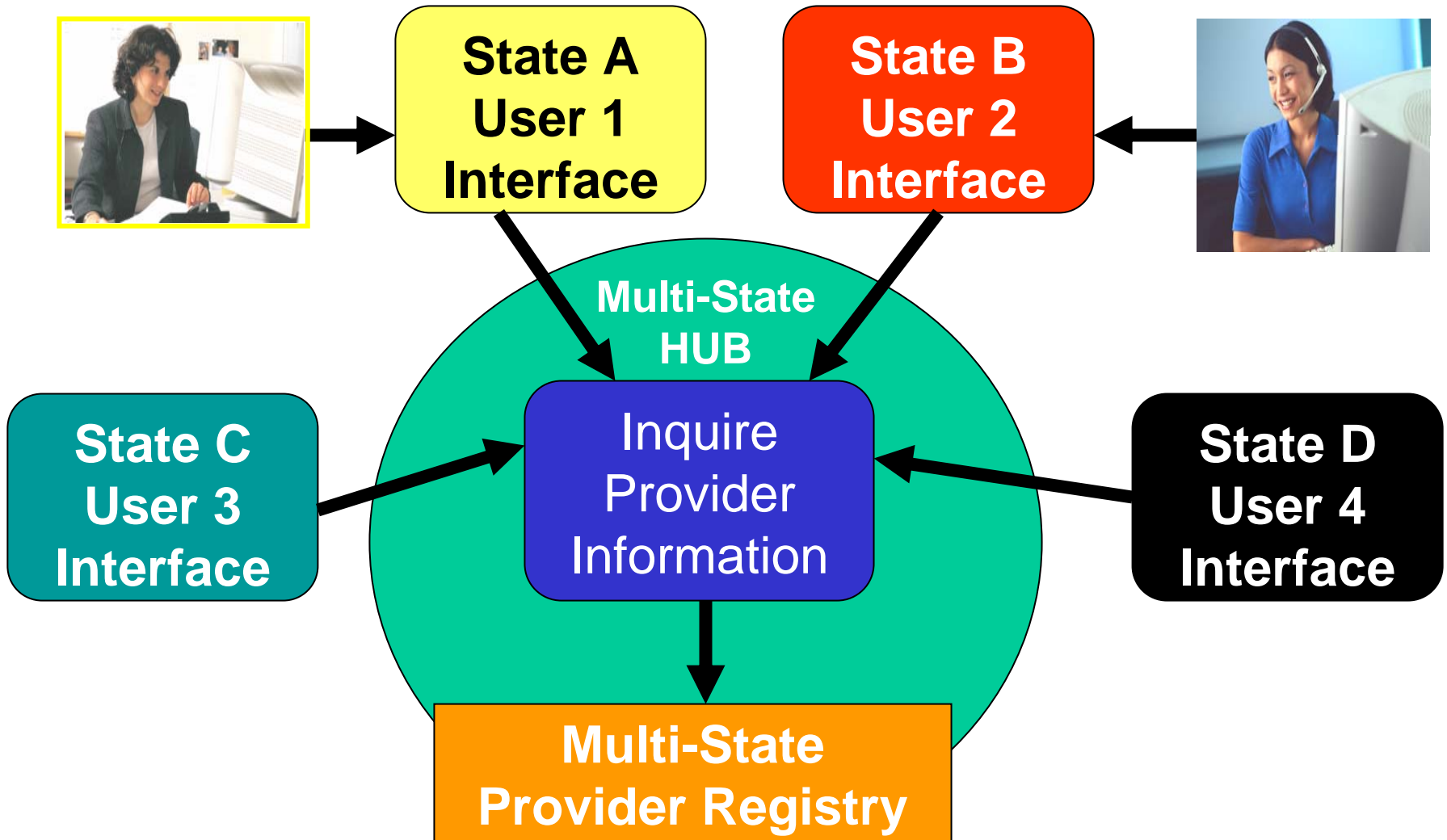
Example 1 State A: Plug-and-Play



Example 2 State B: Enroll Provider Hub



Example 3 Multi-State Hub





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Overview of Demonstration: Relationship between Demo and MITA Initiative

● Bill Branch,
MITA Chief Architect



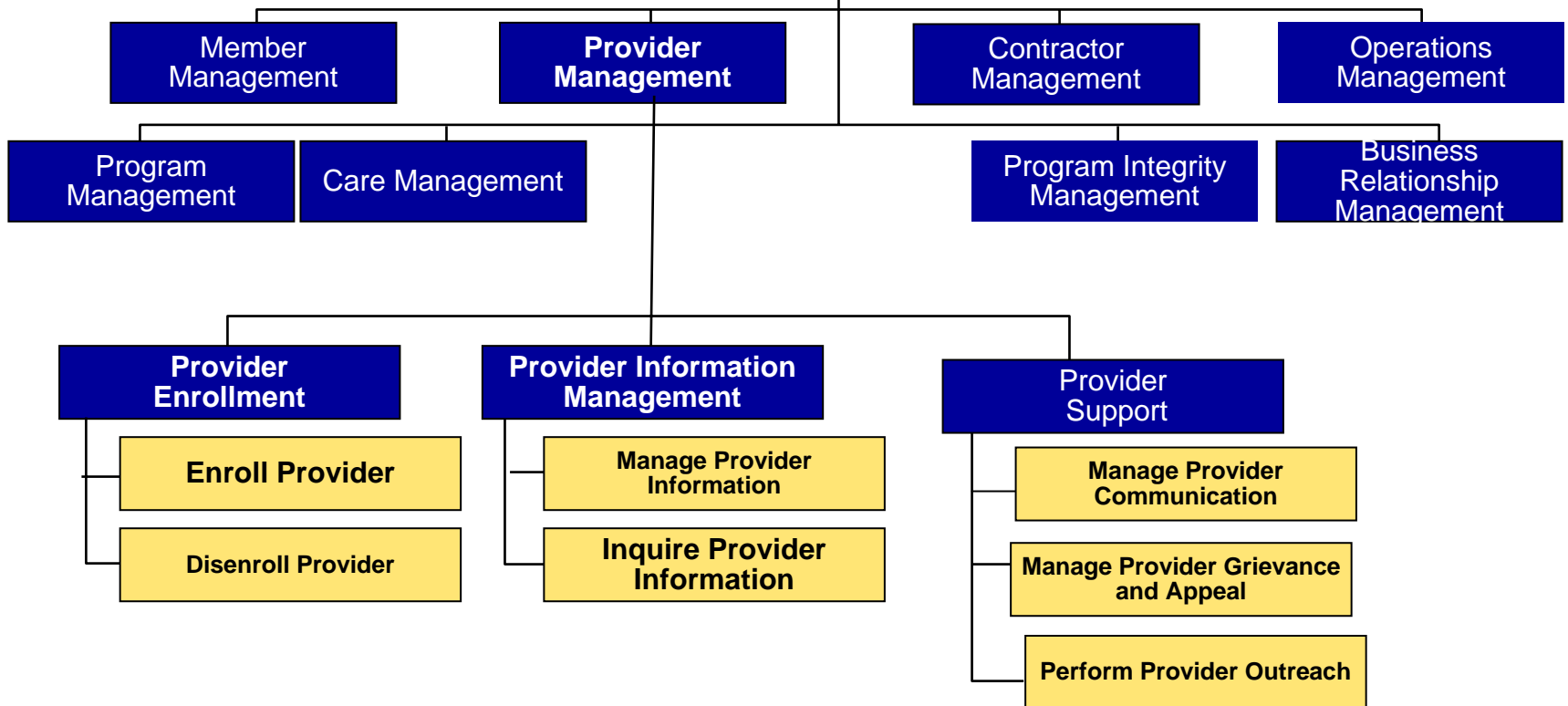
What Did We Set Out to Prove?

**Demonstrate that
the MITA concept of business service
specification and implementation
is workable.**

What You Will See in the Demonstration

- How MITA will change the world of Medicaid systems specification
- Specification of business process and business services instead of the current subsystems
- MITA is technology neutral and provides a plug-n-play capability between business process
- Does not demonstrate the implementation of business logic (focus is on using service approach)

Medicaid Business Process Model



Enroll Provider Used to Demonstrate Basic MITA Principals

- **Enroll Provider is a basic Medicaid business process; serves as a microcosm for the whole enterprise.**
- **MITA provides business process building blocks that allow a State to assemble a complete Medicaid business enterprise.**
- **MITA is business needs driven and provides business capability. Everything else in MITA is an enabler (business /information/technology models)**

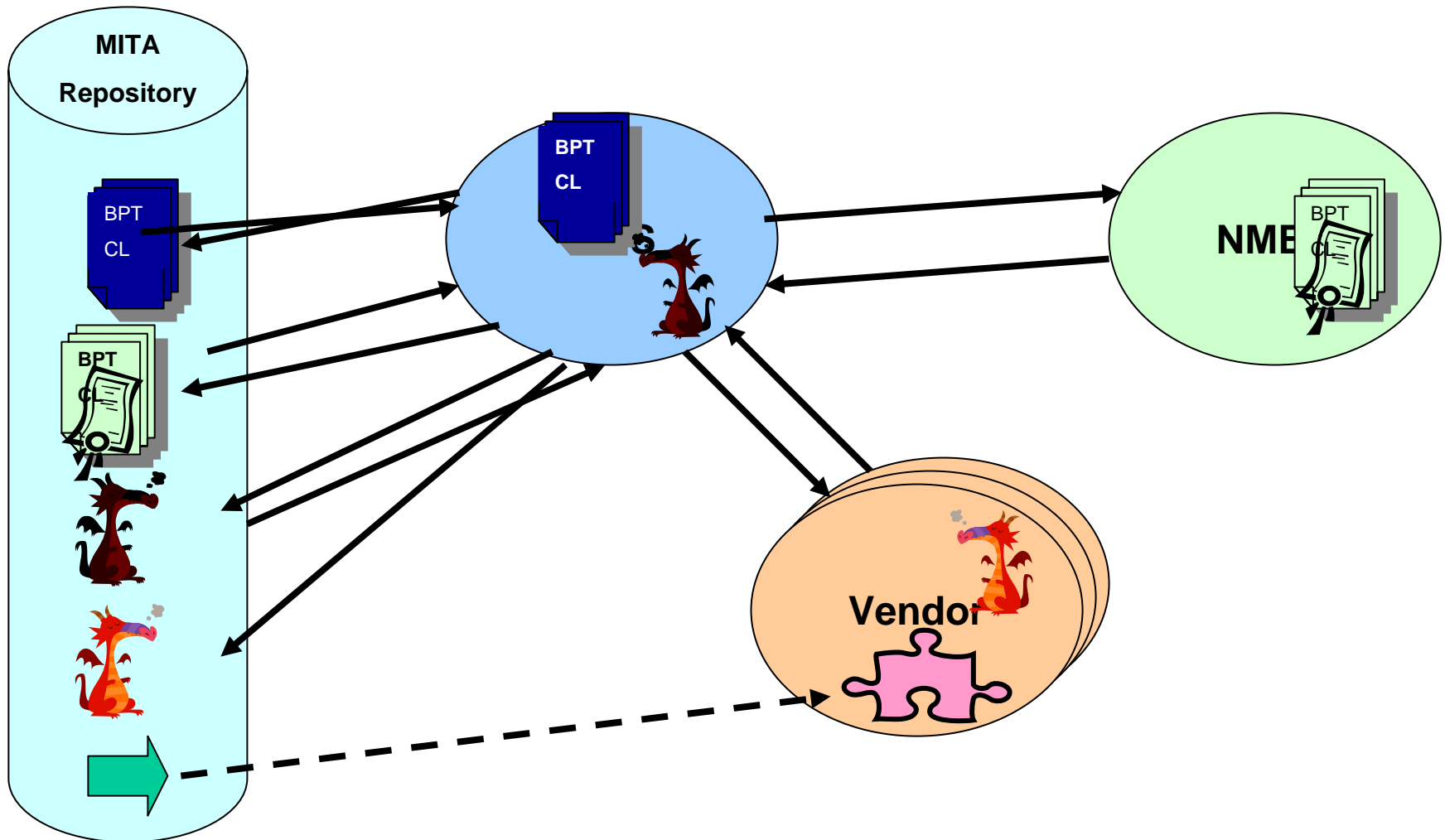
Demonstration Enroll Provider vs. MITA Enroll Provider

- **Demonstration represents how MITA will work; MITA represents the logical view.**
- **A defined service:**
 - **Implements a MITA business process**
 - **Has a defined trigger (s)**
 - **Has a defined result (s)**
 - **Accesses shared data defined in the template**
- **Enroll Provider interface is defined by WSDL based on MITA business process template and HL7 RIM.**
- **WSDL package is a contract.**
- **TAC implementers developed the concrete portions of the WSDL based on their actual implementation.**

Enroll Provider Demonstration Trigger and Result

- **The enroll provider trigger and result are standardized interfaces.**
- **Only data needed for decision making in the demonstration logic was defined in the demo schema.**
- **The final standard will be complete, robust, and based on HL7.**
- **The final MITA Enroll Provider will have the capability of enrolling all provider types; Demonstration uses a subset.**

How It Was Done



Demo Takeaway Concepts

- **Interoperable services can be built using MITA standard specifications**
- **Plug-and-play services implemented using different technologies**
- **Multi-use of a single business service**
- **MITA neutrality re implementation**
- **Independence between services, data stores, and user interface**
- **Key to success: developers agree to use MITA standard specifications; changes are made through governance process**



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Vision into Reality – What You Will See

**Dave Walsh, Chair,
Technical Architecture Committee
PSTG/ HSITAG**



Proof of Concept: What the Demo Shows

**MITA-defined business
processes can be used to
create implementable
business services**

What Demo Shows

- **MITA supplies specifications for interfaces to major business services**
- **Developers free to determine internal processes within the business service**
- **Demo is using example of Enroll Provider to illustrate basic principles**

Value to the Industry

- **Fiscal agents and systems providers will thrive in MITA environment by supplying comprehensive MITA-based backbone and services while embracing innovative plug-ins**
- **Niche innovators will thrive by supplying high value additions to MITA base systems**

INDUSTRY'S ROLE

- **Focused on Technical Architecture**
- **Over 80 individual participants**
- **Responsible for implementing systems that are consistent with MITA business and information architecture**
- **Technology experts**
- **Committed to standards**

Technical Architecture Committee- TAC

- **Open to all Vendors and States**
- **Visit TAC breakout session on Wed @1:30**
- **Please join the TAC**
- **Help us continue the journey**

How We Developed the Demo

- **Creation of Demo Workgroup**
- **What CMS Provided – Business Process Model, Business Capability Definition (Level 3), WSDL, HL7 Data Definitions**
- **What Developers Did with It**
- **Multiple Developer Teams (“Blue”, “Green”)**
- **Used Same MITA Standards; Different Implementations**

Proof of Concept Teams

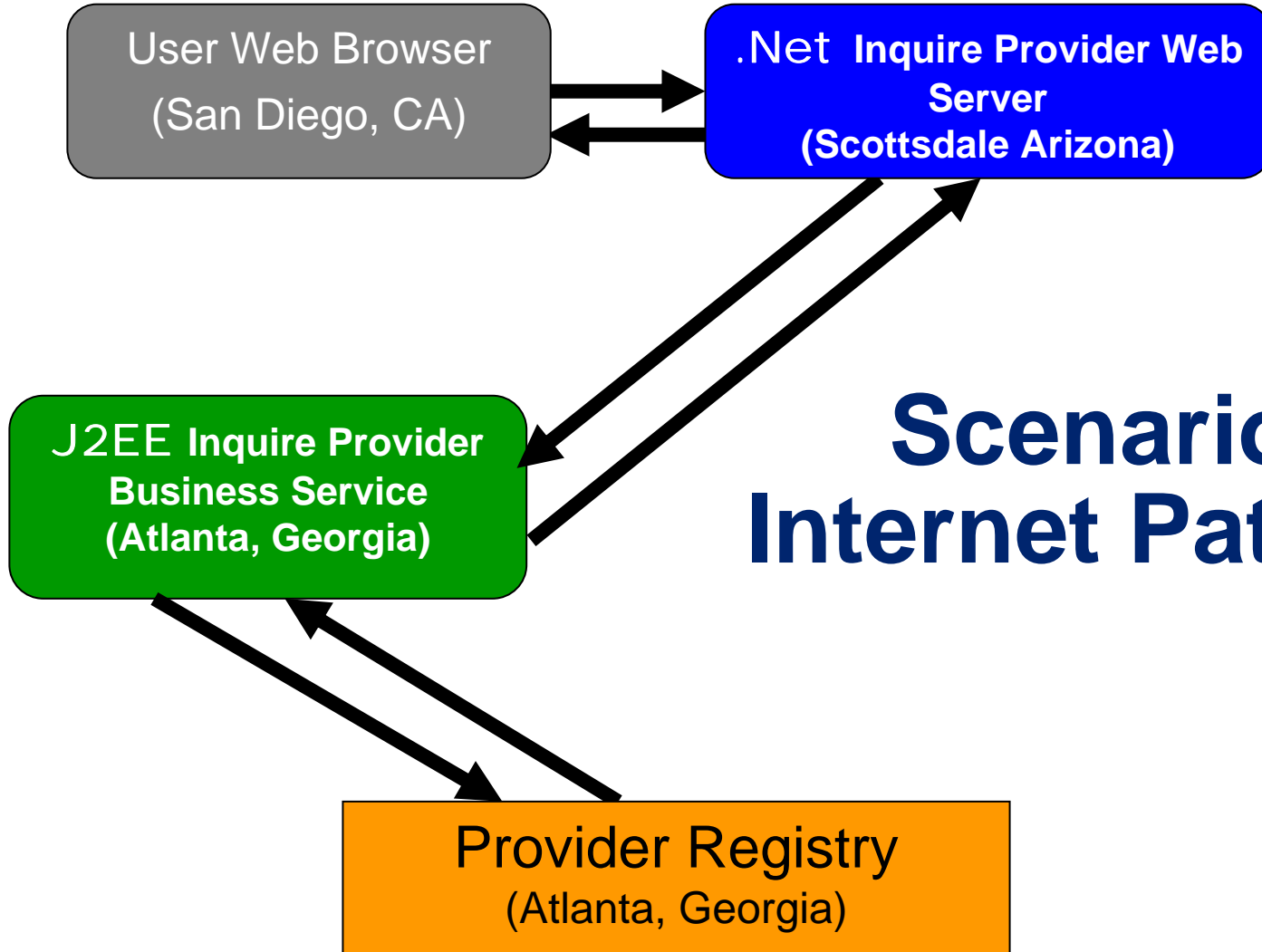
- **Green Team – J2EE (Java) Implementation**
- **Blue Team – .Net Implementation**

What You Will See

- **Left Screen Shows the Workflow for Enroll Provider, Inquire Provider**
- **Right Screen Shows Viewable Aspects of Application**
- **Two Scenarios:**
 - (1) **Blue Team** User Interface; **Green Team** Back End Services
 - (2) **Green Team** User Interface; **Blue Team** Back End Services
- **Step by Step Narration**

And Now the Demo ...





Scenario 1 Internet Pathway

Blue Team = .Net Technology
Green Team = Java Technology

Scenario 1



User Interface 1

Inquire Provider
Information

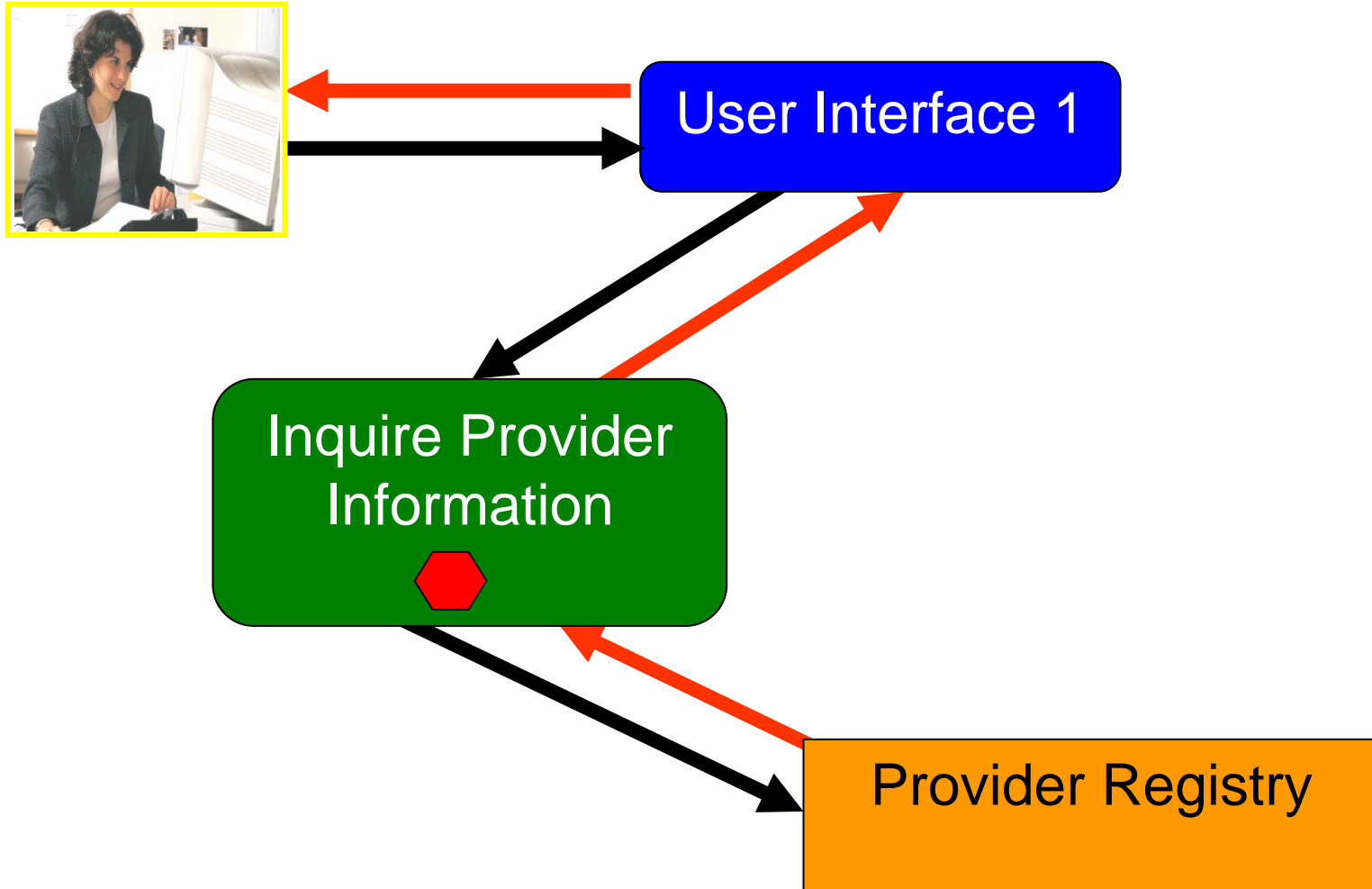
Enroll Provider

Update Provider
Information

Provider Registry

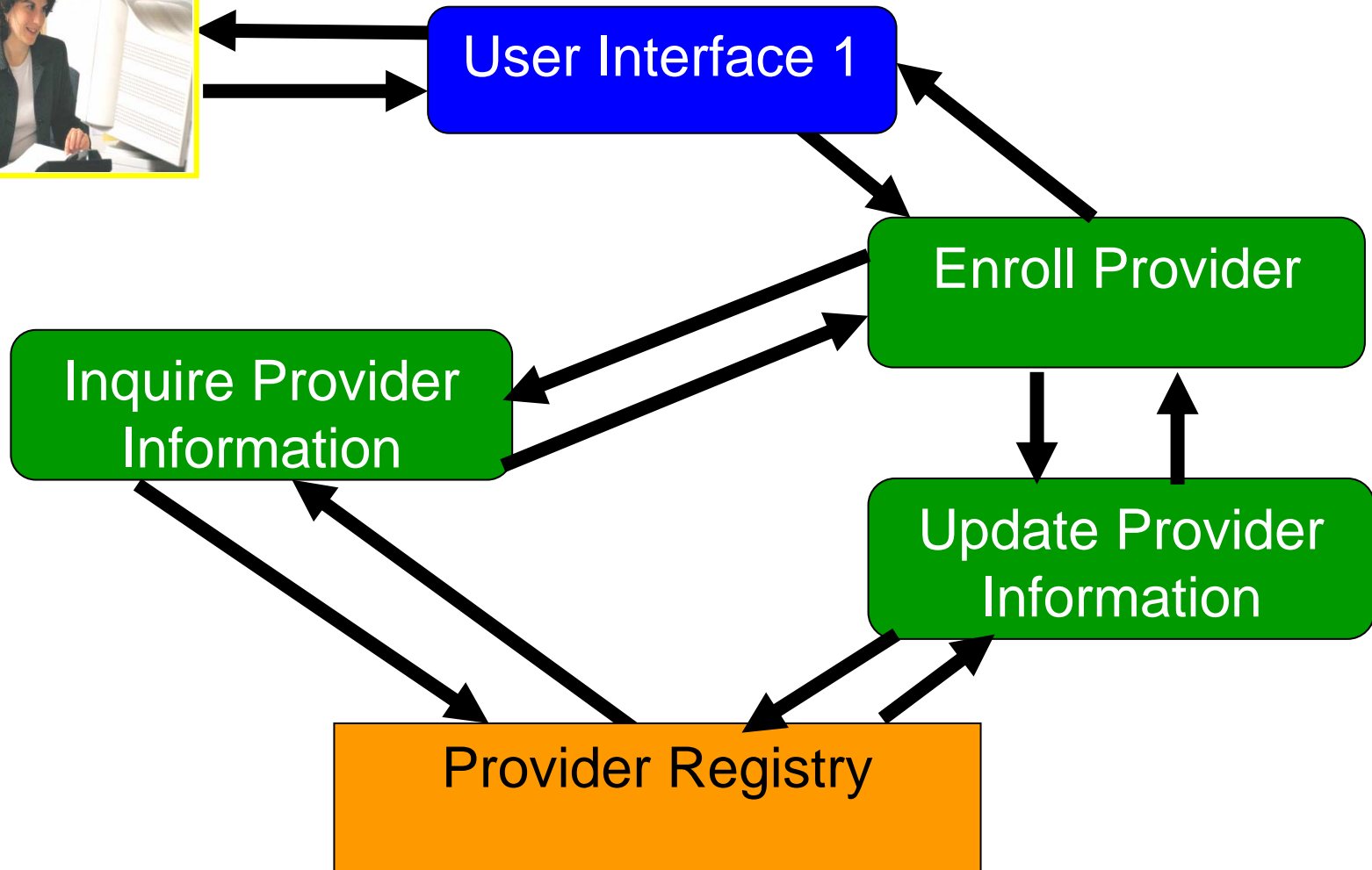
Step 1 Inquire Provider Information

Provider #1 Not Found



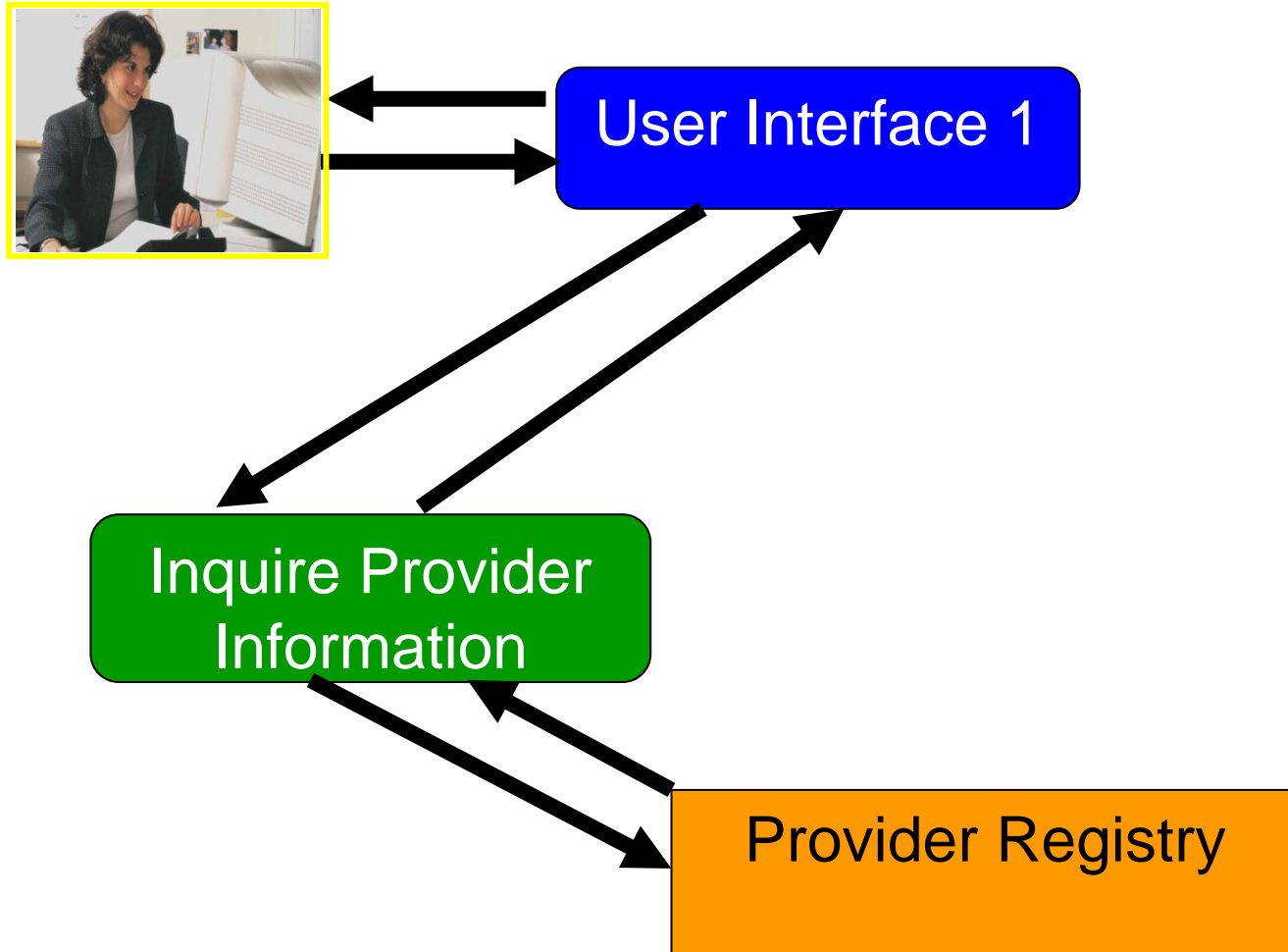
Step 2 Enroll Provider #1

Enrollment #1 – Successful Enrollment of Dr. #1



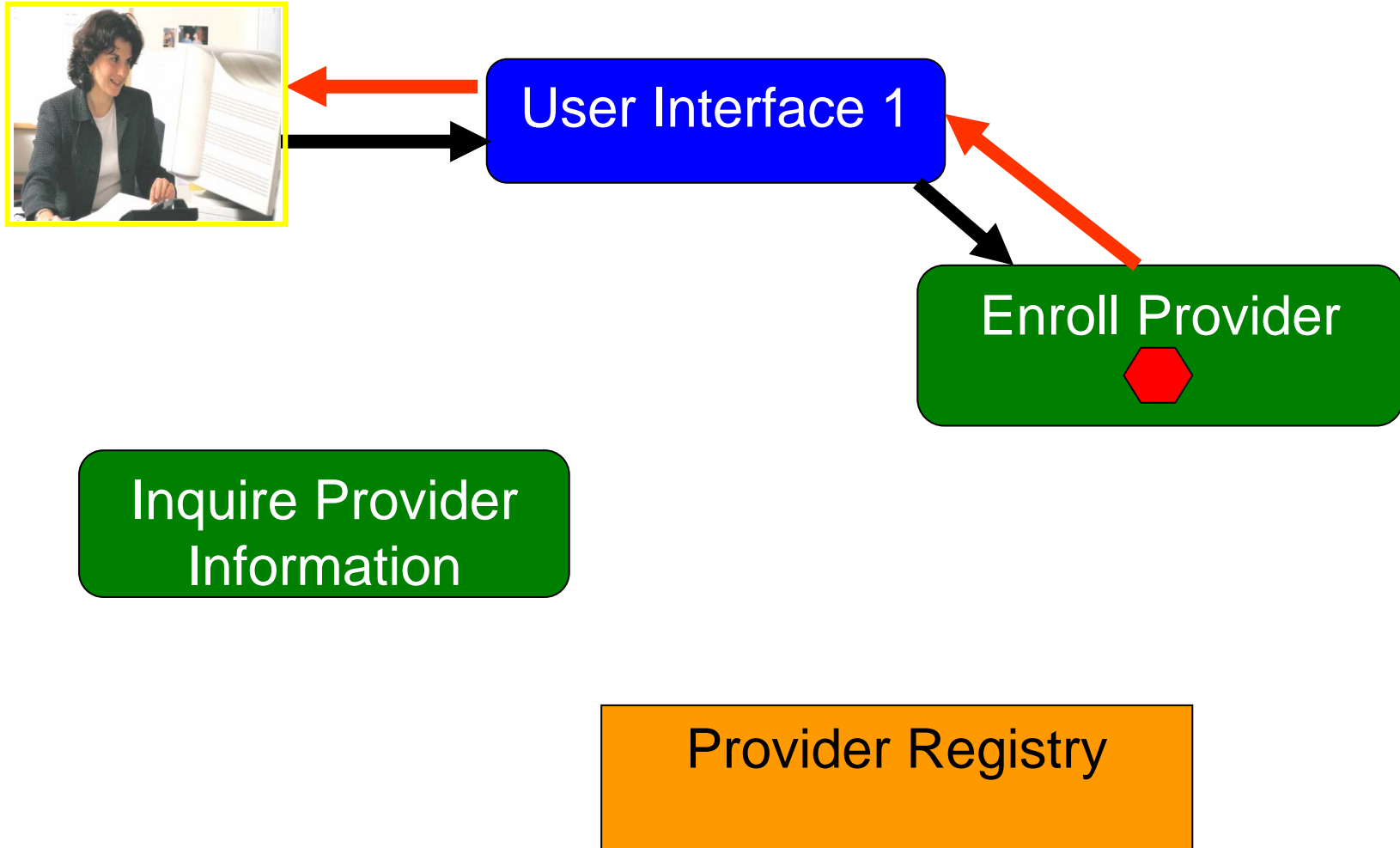
Step 3 Verify Provider Information

Provider #1 = Found



Step 4 Enroll Provider #2

Enrollment #2 – Dr. #2 Fails Edit (Invalid DOB)



Status at End of Scenario 1

- **Provider 1 successfully enrolled**
- **Provider 2 (rejected (DOB “invalid date”))**
- **Blue User Interfaces communicates with Green Enroll Provider and Inquire Provider Information Services**
- **Used one Service (Inquire Provider) two different ways**
- **Demonstrates interoperability (different technologies; interfaces built to same MITA standard)**

Blue Team = .Net Technology
Green Team = Java Technology

Scenario 2



User Interface 1

Inquire Provider
Information

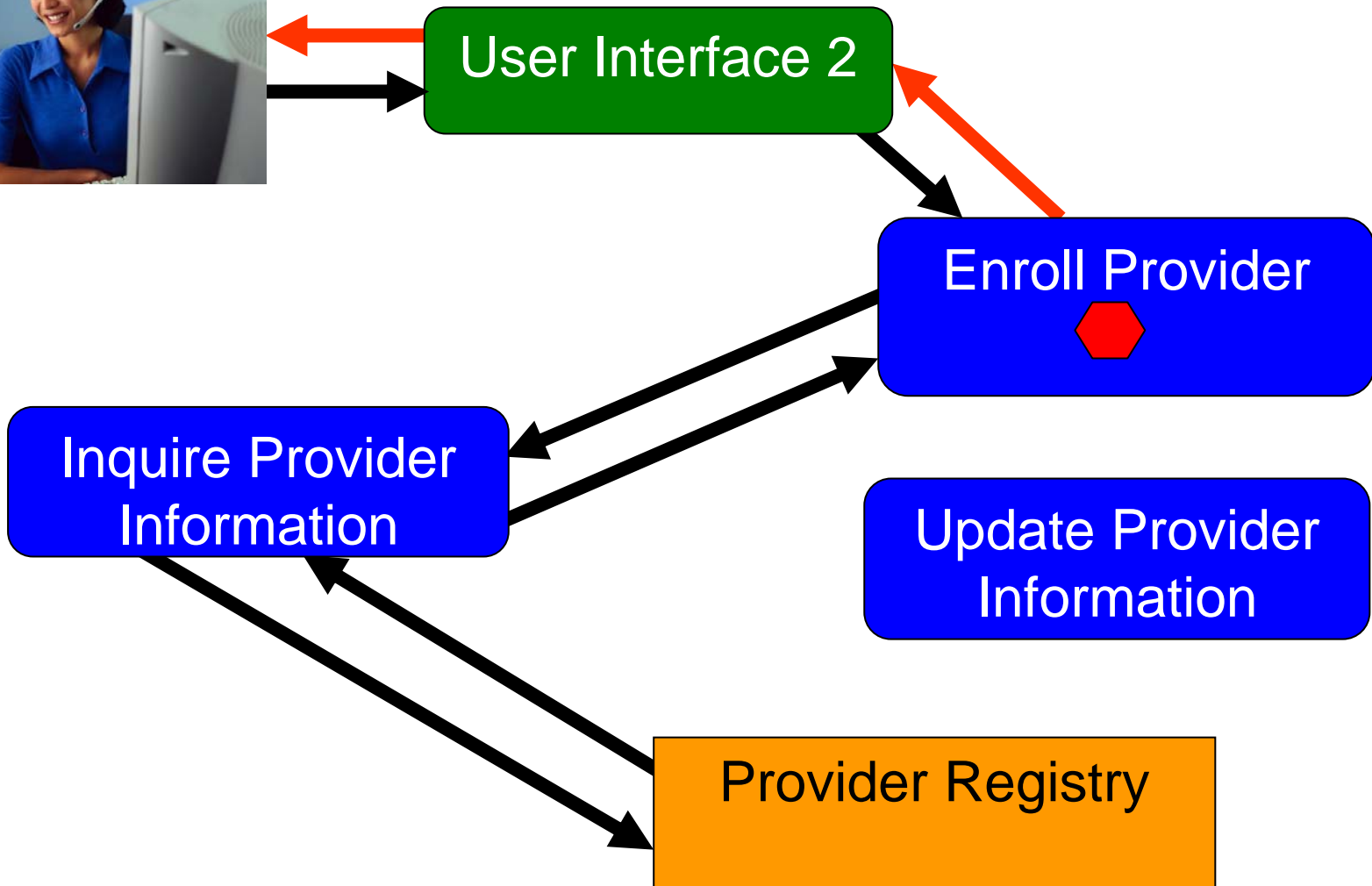
Enroll Provider

Update Provider
Information

Provider Registry

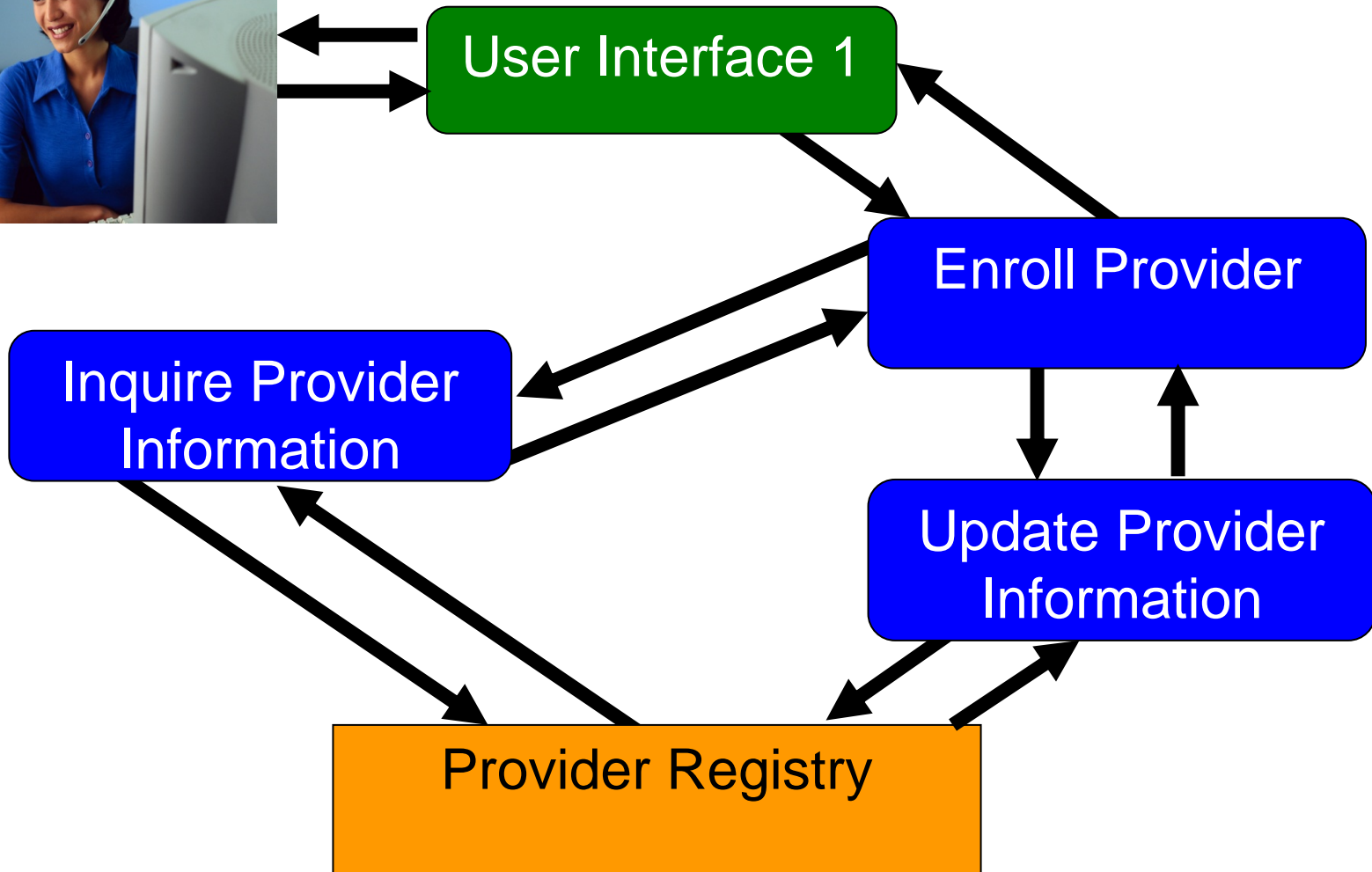
Step 2 Enroll Provider # 3

Dr. #3 Enrollment Fails – Fraudulent Provider



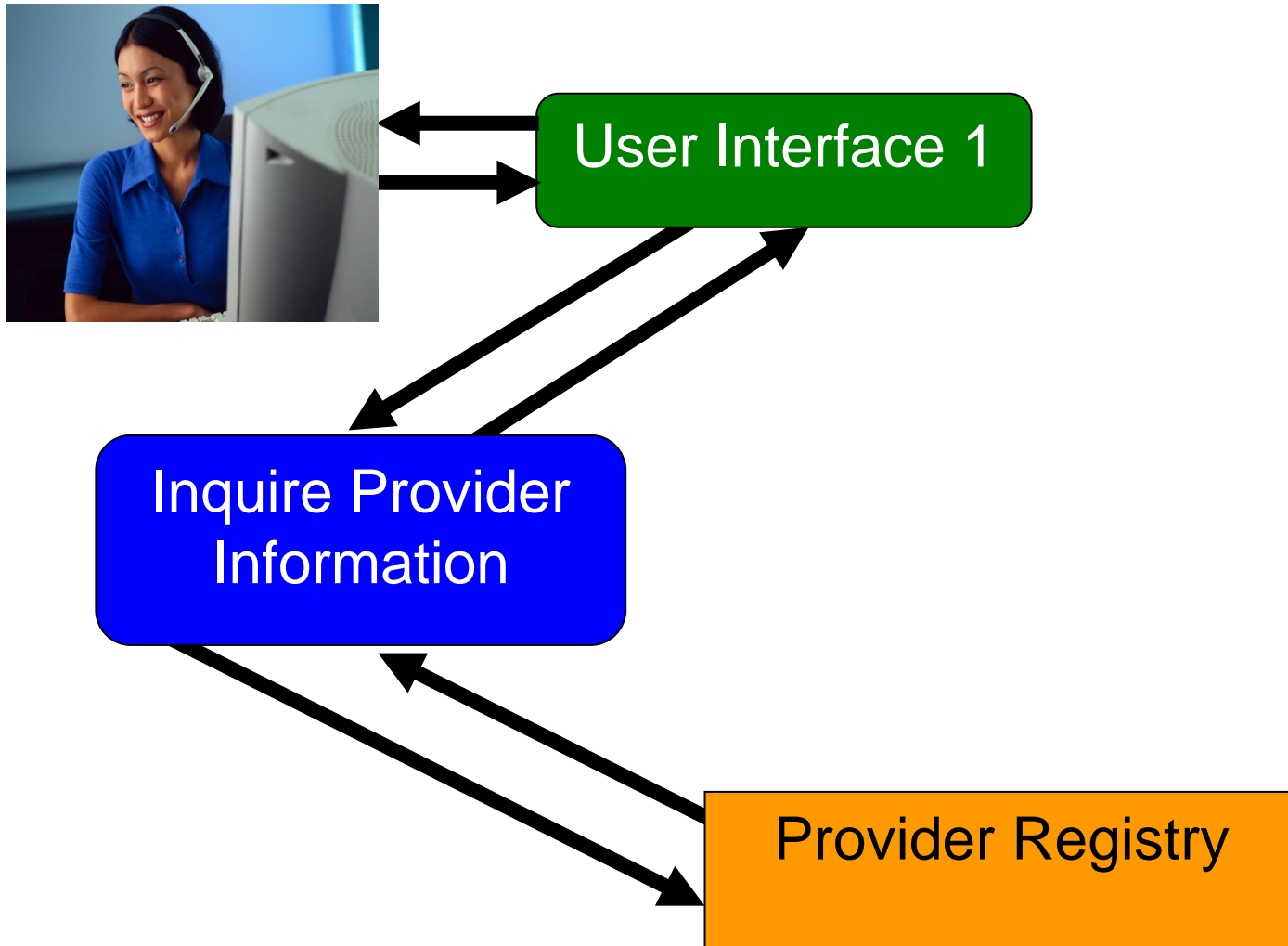
Step 3 Enroll Provider #4

Successful Enrollment of Dr. #4



Step 4 Validate Provider Enrollment

Provider #4 Is Found



Status at End of Demo

- **Provider 1 and 3 successfully added**
- **Provider 2 and 4 rejected**
- **Front End technology interoperable with Back End technology**
- **Technology is interchangeable (plug-n-play)**
- **Implementations used:**
 - **MITA Business, Information, and Technology Artifacts**
 - **Business Process Model, Logical Information Model**
 - **Business Service Definition**
 - **WSDL definitions for interfaces**

Lessons Learned

- **Coordination / Communication biggest challenge**
- **Establishing organizational interfaces (NMEH, MITA team, HL7...) critical**
- **Trust but verify – need for independent validation tools**
- **The only way to “Get It” is to engage and implement**

What's Next

- **CMS continues to develop MITA models, populate MITA Repository**
- **States continue to collaborate with CMS on model development, review of components**
- **States and vendors present Interface and Service definitions to Review Boards**
- **Together, we learn through collaboration**
- **Web site: www.mitahealth.org**
- **Wednesday @ 1:30 TAC Breakout session**
- **Please join us on the journey**
- **Now, a final word from Rick...**

Reminder of Other MITA Conference Sessions

- MITA Business and Information Architecture Updates **WE 8:30**
- MITA Information Architecture Models and Standards **WE 10:30**
- Vendors' Technical Architecture Committee (TAC) Reports on MITA Activities **WE 1:30**
- State/ Medicaid Enterprise Compatibility with MITA **WE 4:00**
- MITA Collaboration with Health Information Initiatives **TH 8:30**