IBM®

Post n Track™

Achieving Healthcare Interoperability in the Cloud with WebSphere ESB

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Agenda

- IBM Healthcare Transaction System
  - Overview
  - Business Context Diagram
  - Process views
  - Architecture

- Post-n-Track Healthcare Services Platform
  - Overview
  - Use Case: Enhanced Real-Time Eligibility Processing
  - Architecture
  - Implementation
  - Deployment and Scalability

Business objectives and design principles

Business Objectives

- Enable providers to receive payments in a timely fashion by accelerating the processes associated with eligibility, claims submission, and claim adjudication and payment.

- Enable providers to receive payments in a cost effective fashion by simplifying and reducing the administrative cost associated with provider's key business processes

- Enable payers to reduce administrative costs by educing the volume of pre and post adjudication inquires

- Enable consumers to understand the healthcare payment options, eliminate confusion at the time of billing and reduce confusion over their liability and responsibility

Design Principles

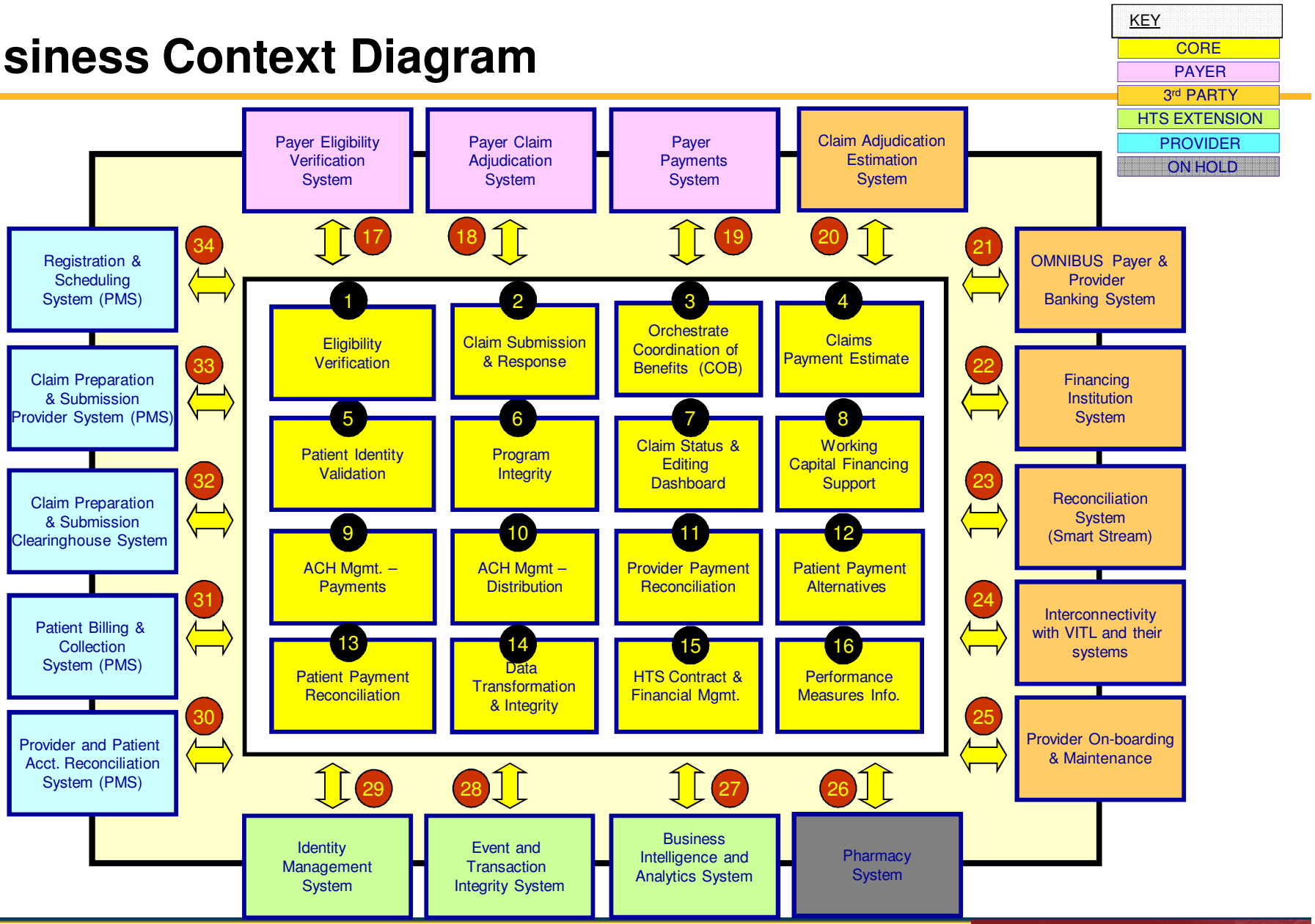
- Leverage existing systems and business functions to minimize the number of changes and their impact on payer / provider systems and applications.

- Build flexibility and agility in the system to adapt new technologies and processes dictated by healthcare transformations

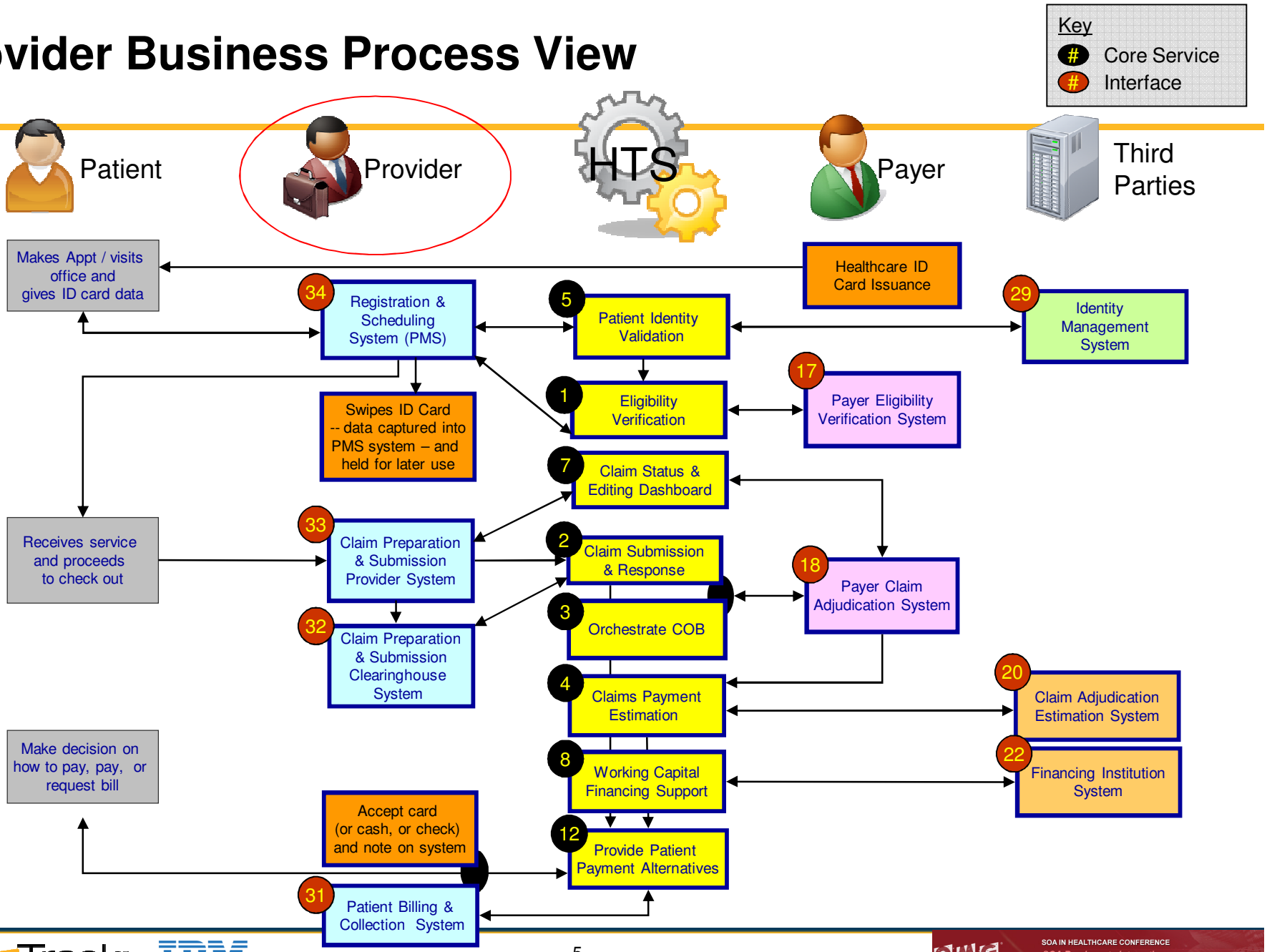
- Preserve existing capabilities of the clearinghouses and route their messages through HTS. Eliminate the direct interaction between clearing houses and payers

- Promote transparency of transactions, standardization of the messages and information sharing among the key stakeholders

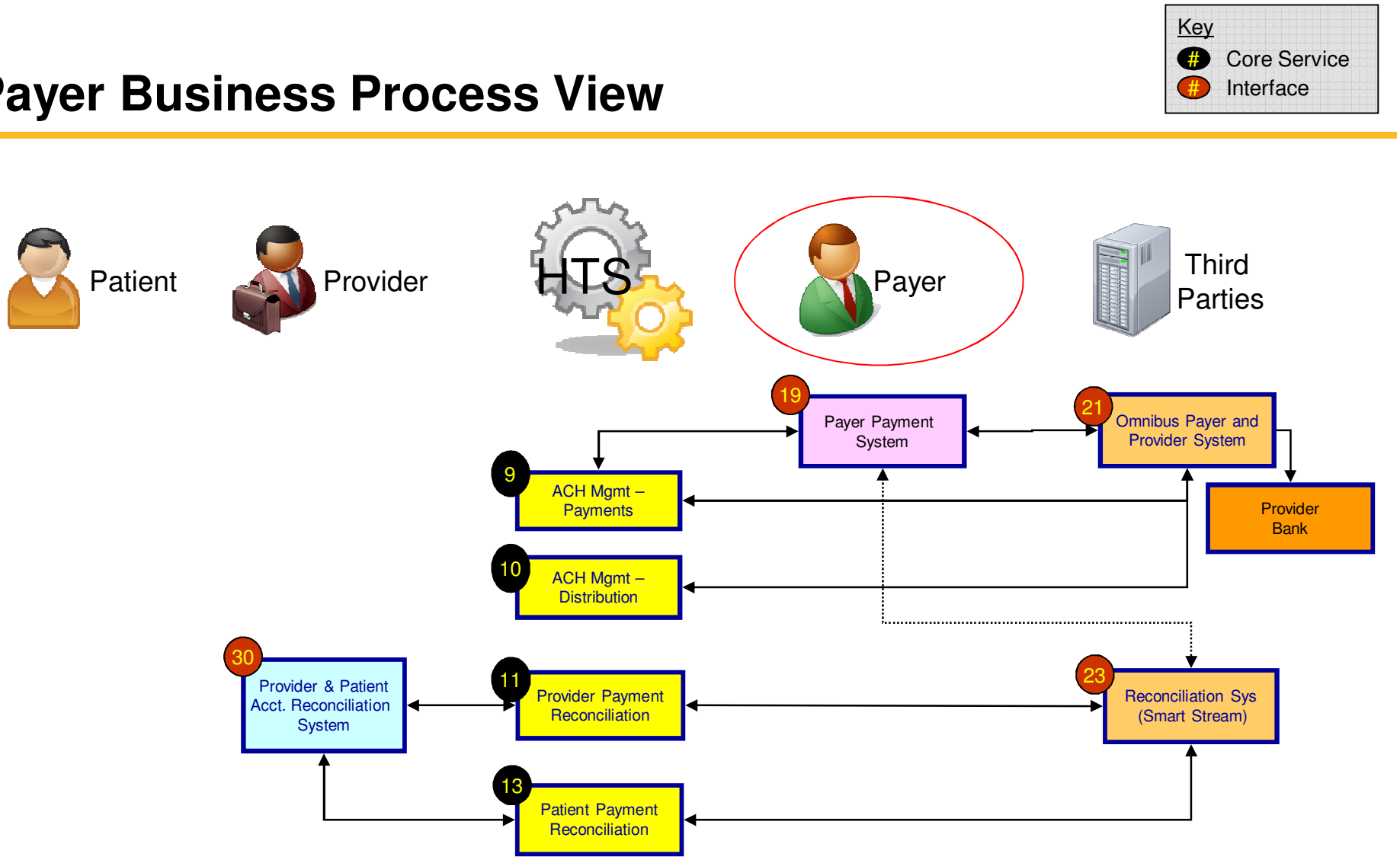
Business Context Diagram



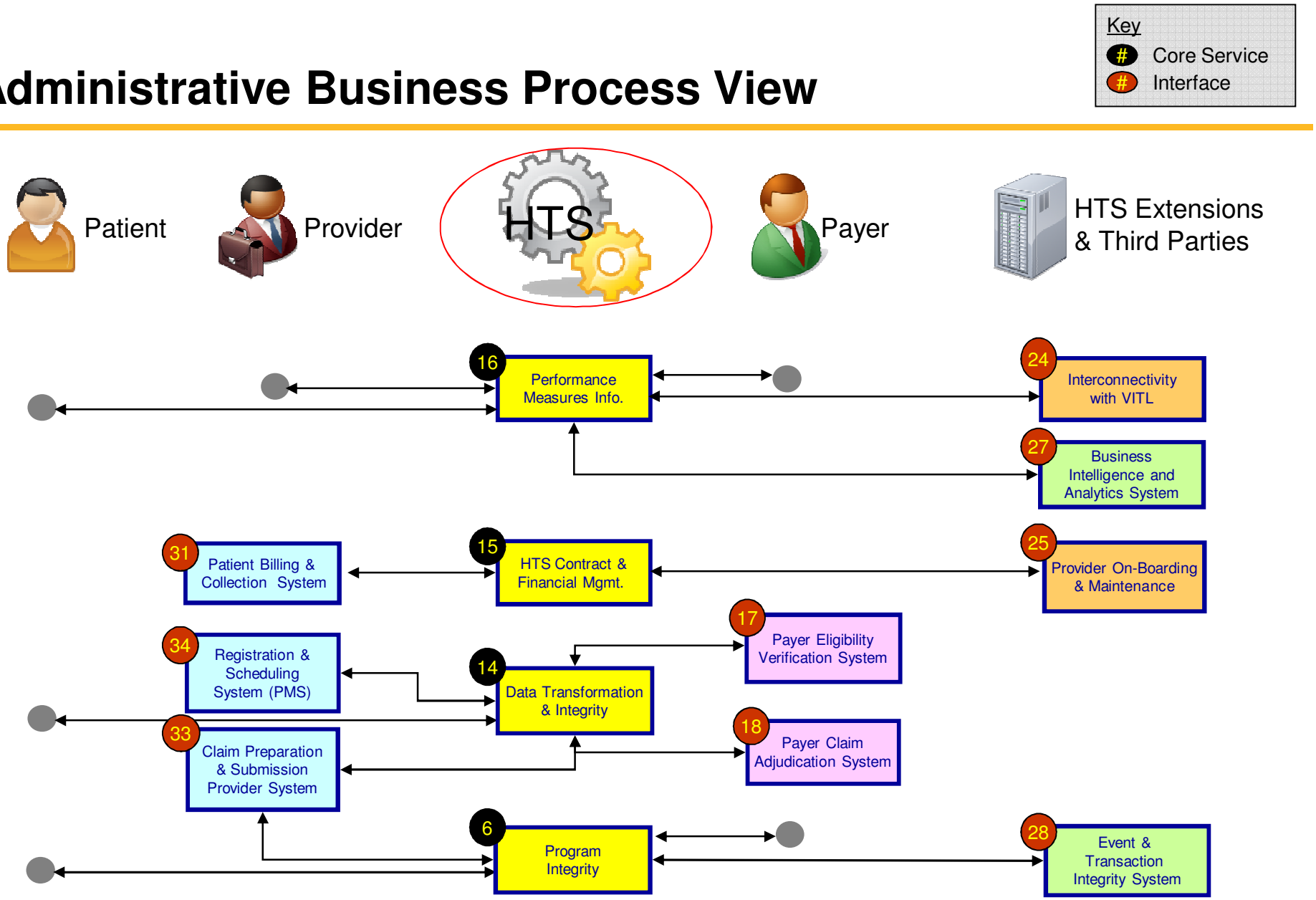
Provider Business Process View



Payer Business Process View



Administrative Business Process View



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Core

Core Service: Eligibility Verification

Scope

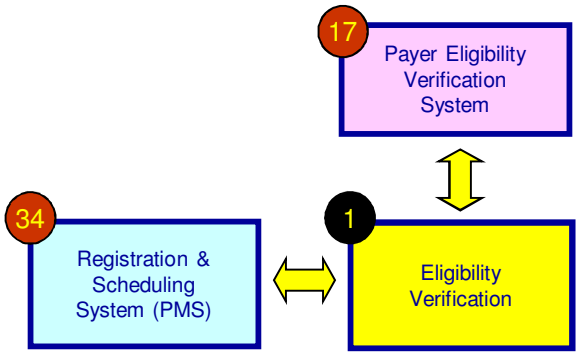
1. To verify that the patient has coverage benefits
2. To verify that the patient has coverage for days of services
3. To validate, transform and apply business rules to enable standard format messages
4. To route eligibility request to proper payer and receive route response to provider

Objectives

1. To document, monitor, track & report eligibility transactions and sources of inquiry
2. To minimize the number of changes and their impact on payer/provider systems and applications
3. To automate contract resolution when the initial request is denied

Methodology

1. Shall: Provide a unique identifier for all transactions supporting end-to-end processing
2. Shall: Enable transaction to be triggered by alternative point of sale mechanisms e.g. card reader, portal, and PMS system
3. Shall: Enable real-time and batch eligibility requests
4. Shall: Receive, validate, transform and forward message 270 to the payer
5. Shall: Receive, validate, transform and forward message 271 to the provider
6. Shall: Support TA1 and 997 transactions



Sample Metrics

1. Elapsed time of transaction process steps
2. Number of card swipes per request

Complexity, Effort & Value

1. Medium complexity
2. Medium effort
3. High value

Issues

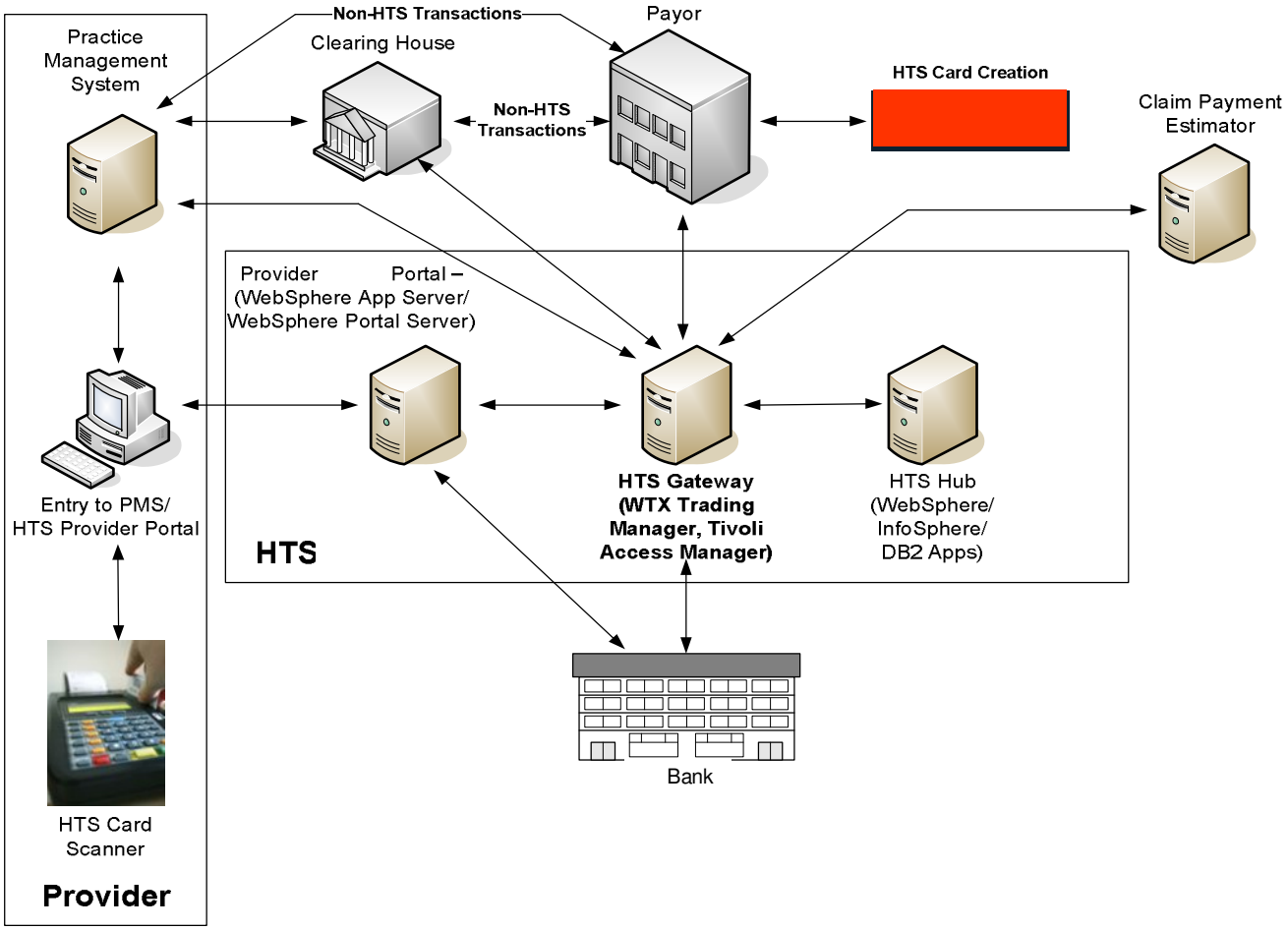
1. Integration of input devices, PMS systems and HTS
2. Methods for resolving incomplete or ambiguous responses
3. Readiness of payers and providers for real-time eligibility checking
4. The ability to automate contract resolution
5. The ability to support conversion of HIPAA 4010 to 5010 transactions

System Architecture

The system architecture diagram includes the system level relationships and exchanges across the:

- HTS Hub domain,
- HTS Provider domain,
- legacy backend systems such as the Payor and Bank, as well as external entities such as Card Systems and the Claim Payment Estimator.

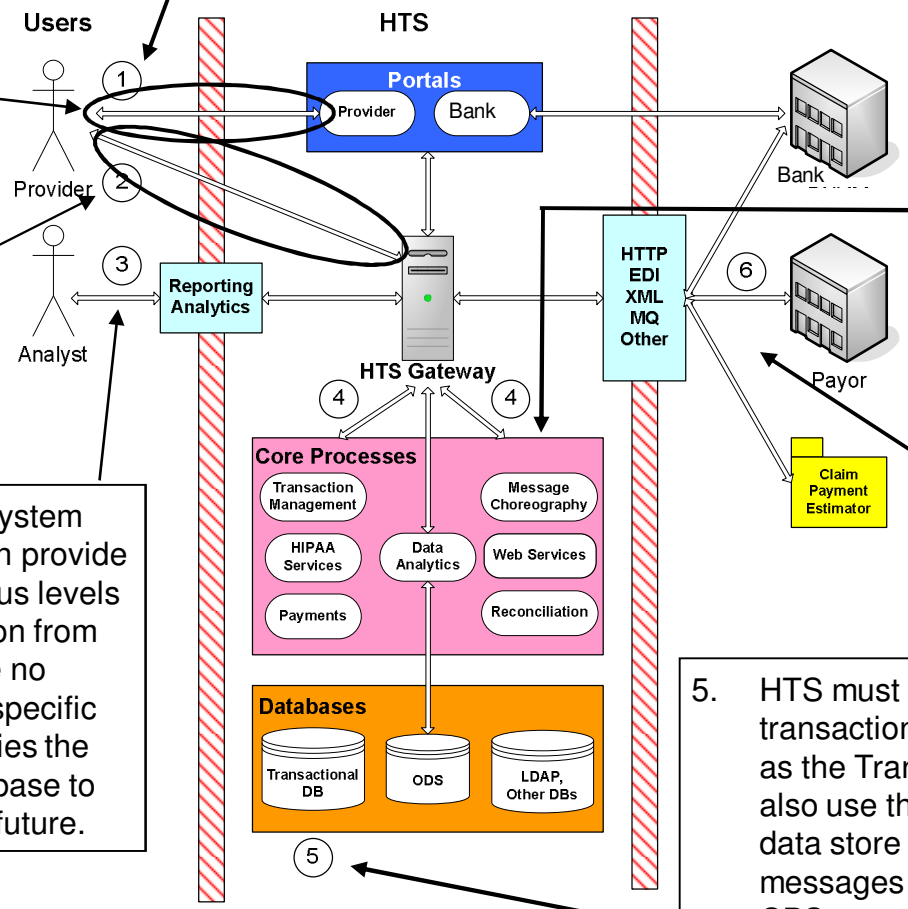
The integration of the HTS functionality delivered in these domains provides the e2e HTS solution.



Systems View of the Processes

1. The Provider check-in and check-out clerks will access the HTS Provider Portal to perform eligibility inquires, view Claim Payment Summary and initiate member payments

2. This represents the standard interface from the Provider domain into the HTS hub. The HTS Gateway is assumed to be the integration point into the Provider PMS system.



3. For business as well as system content analysis, HTS can provide the ability to extract various levels of transactional information from the data store. There are no requirements identifying specific content – this item identifies the ability to access the database to collect information in the future.

4. This represents a choreography element linking together the processes (and services) executed as messages flow through the HTS Hub.

5. HTS must log all inbound/outbound transactions to the local data store (identified as the Trans DB in the diagram). HTS will also use this transactional information in the data store to correlate inbound/outbound messages and as an anchor for collecting ERA CPS content.

6. Represents the EDI AS2 connection with the Payor leveraging the connectivity component.

Challenges in the development of HTS

Payers

- Desire to adjudicate and acknowledge claims in real-time – moving from portal to a transaction environment
- Invest in costly & time consuming retooling of complex claim adjudication systems
- Collaborate with other payers and make COB payments easier
- Provide magnetic swipe cards or other token to provider

Providers

- Modify their claims workflow from a back office to a front office activity
- Invest in technology, process, personal and physical (privacy) space
- Reduce the use of complex and labor intensive process and systems to monitor claims
- Prepare patients for the modified billing and payment approach

Consumers

- Dealing with consumer confusion over billing & their liability for the cost of services rendered
- Dealing with perplexed consumers willing to postpone treatment over the cost of treatment
- Presenting alternatives to patients for choosing & paying from their healthcare options in a easily way
- Preparing consumers to deal with the changes in the healthcare system

HTS

- Provide payer and patient claim payment reconciliation procedures and systems
- Support the conversion from checks to Automated Clearing House (ACH) payments
- Provide a system (dashboard) to promote transparency, standardization and information sharing
- Make using the system affordable to all participants

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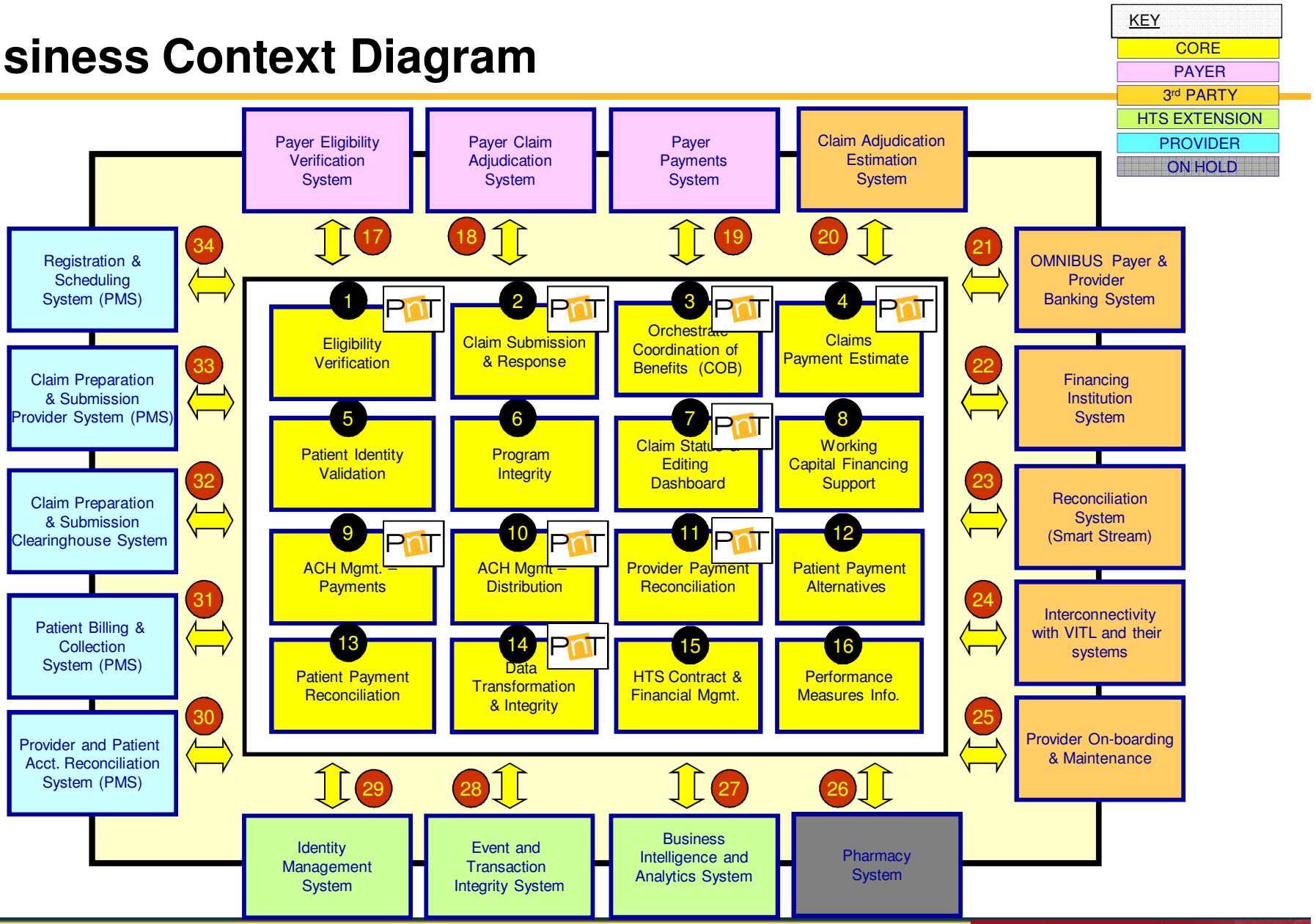
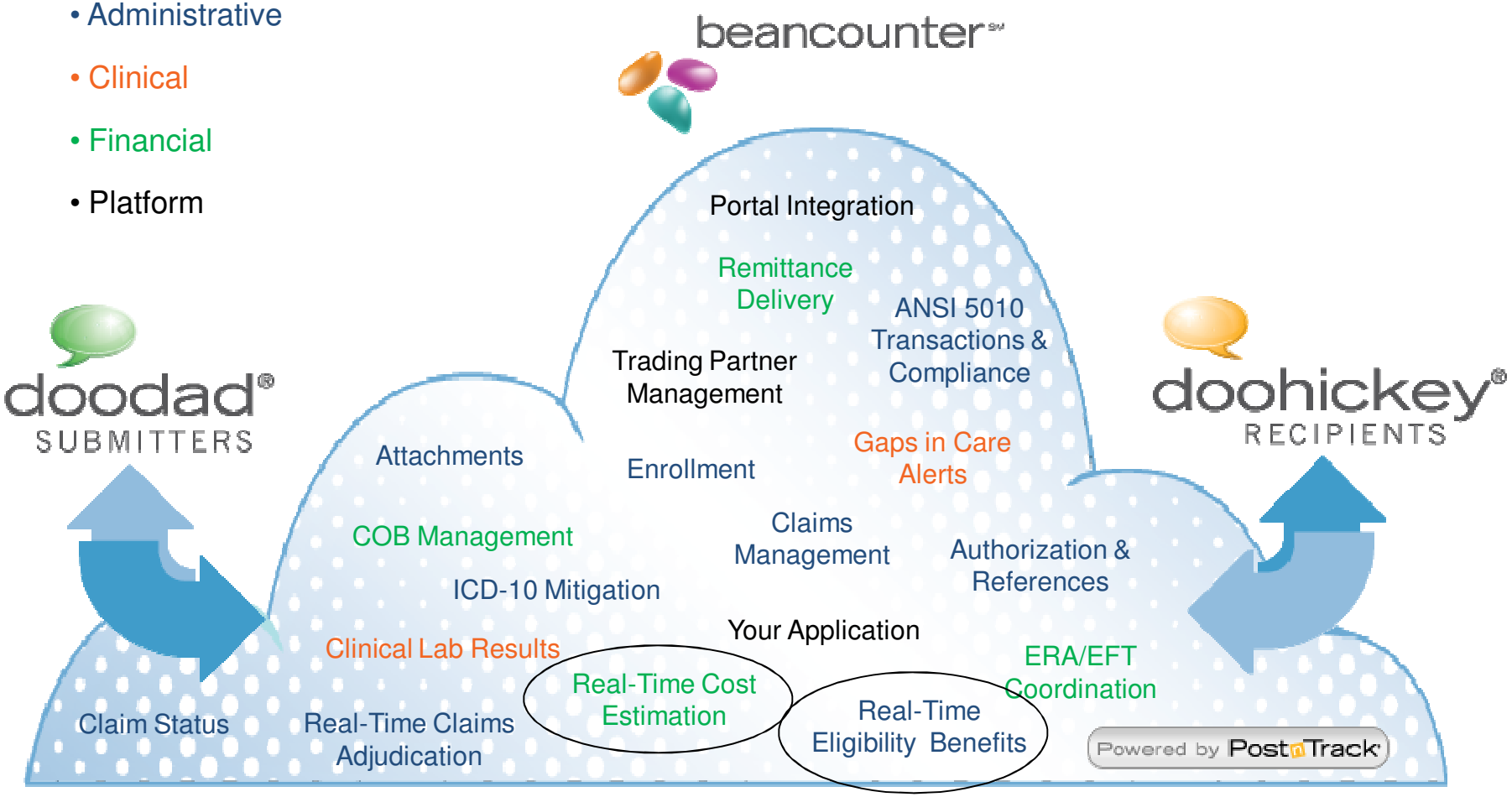
Business Context Diagram



Post-n-Track Healthcare Services Platform

- Administrative
- Clinical
- Financial
- Platform



Real-time cost estimation- Response

Print Patient Advice

Close

John Doe is eligible for the service(s) described below:

Member Name:	DOE, JOHN
Member ID:	123456789
Servicing Provider:	JOHN SMITH (012345)
Service Type:	48 Hospital -Inpatient
Service Date:	12/11/2008
Service Performed:	PANCREAS, LIVER & SHUNT PROCEDURES W/O CC
In Network:	Yes
Plan Type:	CHOICE FUND HSA OPEN ACCESS PLUS

Based on Total Estimated Fee: $8,923.51

	Maximum	Paid-To-Date	Applied
Individual Deductible:	$0.00		
Individual Out-Of-Pocket:	$0.00		
Family Deductible:	$4,000.00	$1,087.34	
Family Out-Of-Pocket:	$8,000.00	$1,087.34	
Coinsurance:	10%		$601.09
Co-Payment:	$0.00		$0.00

Estimated Patient Responsibility is: **$3,513.75**

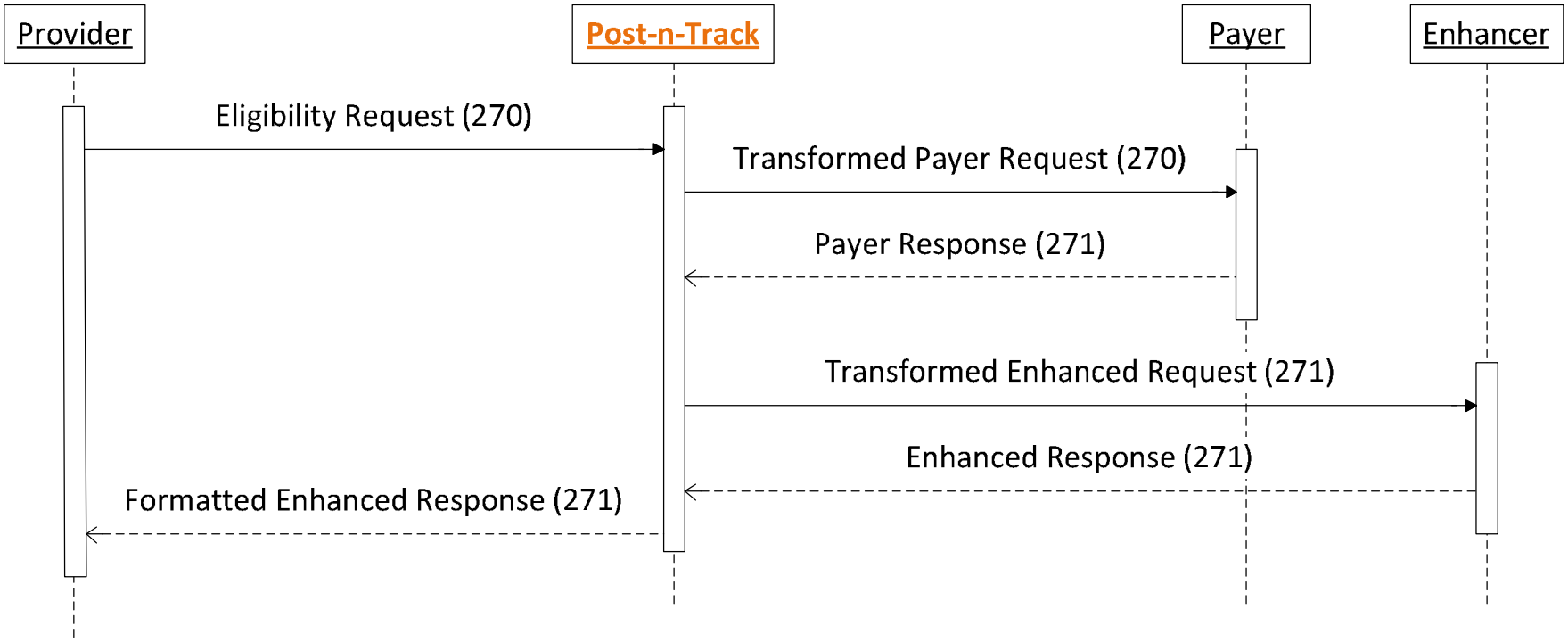
This estimate allows the member and health care provider to better understand how much the member will need to pay for a specific health care service. It does not guarantee payment to the provider, and is based on the member's benefit coverage and eligibility when the estimate is provided. The estimate does not affect payer's actual claim process or payment accuracy. It is simply an estimate of the member's potential responsibility.

Call Member Services at the toll-free number on your Health Plan ID card if you have questions about this estimate.

- Responses returned in under ten (10) sec.
- Broad provider adoption
- EDI vendor interoperability
- Rapid implementation (90 – 120 days)
- Printable advice enables pre-care patient discussions

Enhanced Real-Time Eligibility Processing

- Use Case
  1. Receive an Eligibility Request (270) from a Provider
  2. Transform the Request and route it to a Payer for a Response (271)
  3. Transform the Response and route it to an Enhancer for an Enhanced Response (271)
  4. Format the Enhanced Response and return it to the Provider (271)

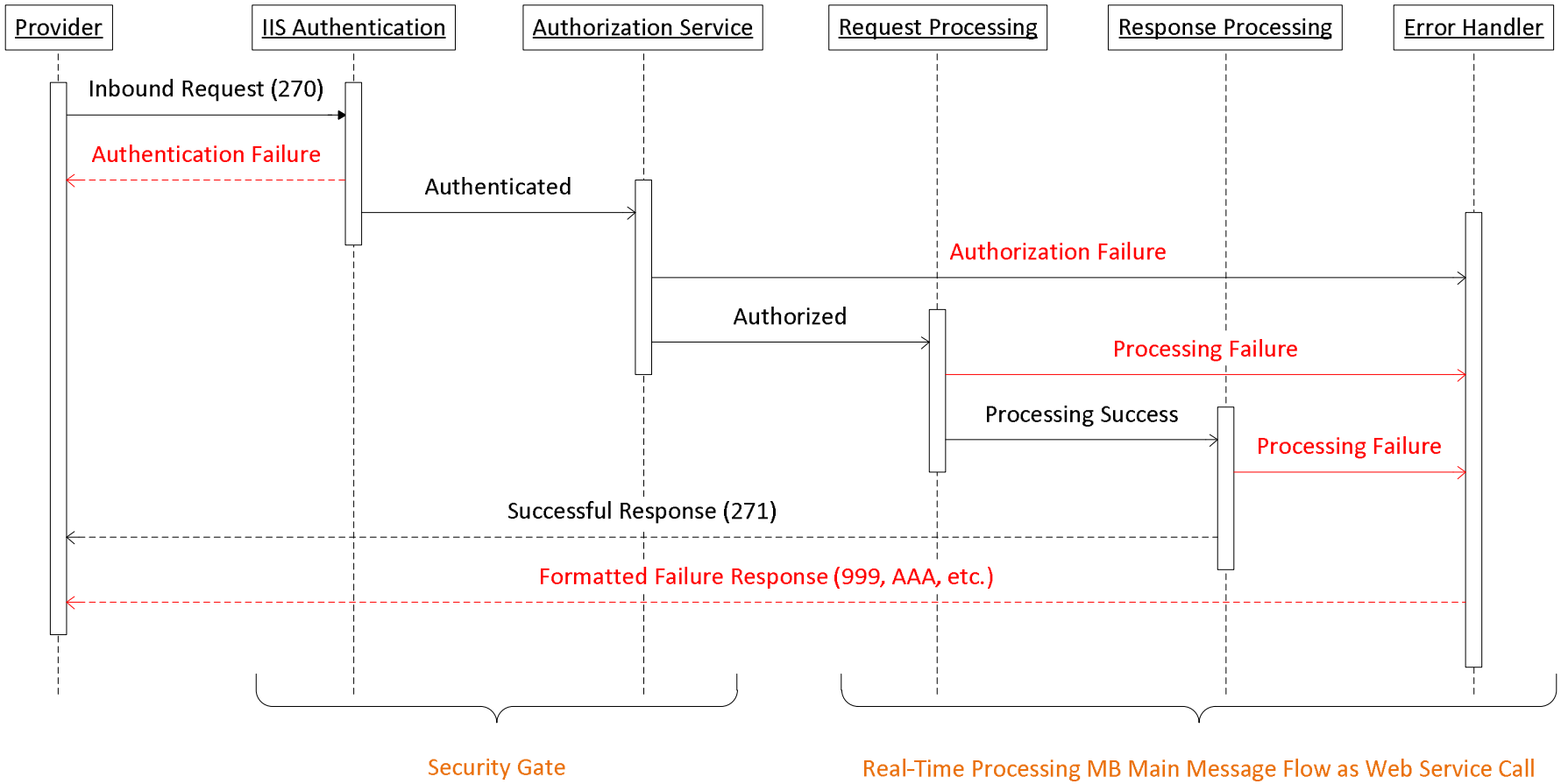


Technologies

- Power-Vendor Best-of-Breed Selection
  - IBM: Service Bus
    - WebSphere Message Broker 7.0
    - WebSphere Message Broker 7.0Toolkit (Eclipse – IDE)
    - WebSphere Message Queue 7.0
    - Tivoli Monitoring
    - DataPower (future)
  - Microsoft: Web Service Layer
    - .NET 4.0 Framework
    - Windows Communication Foundation
    - IIS
    - SQL Server 2008
    - C#
    - Visual Studio 2010 (IDE)
    - Team Foundation Server 2010 (Source Code Control)

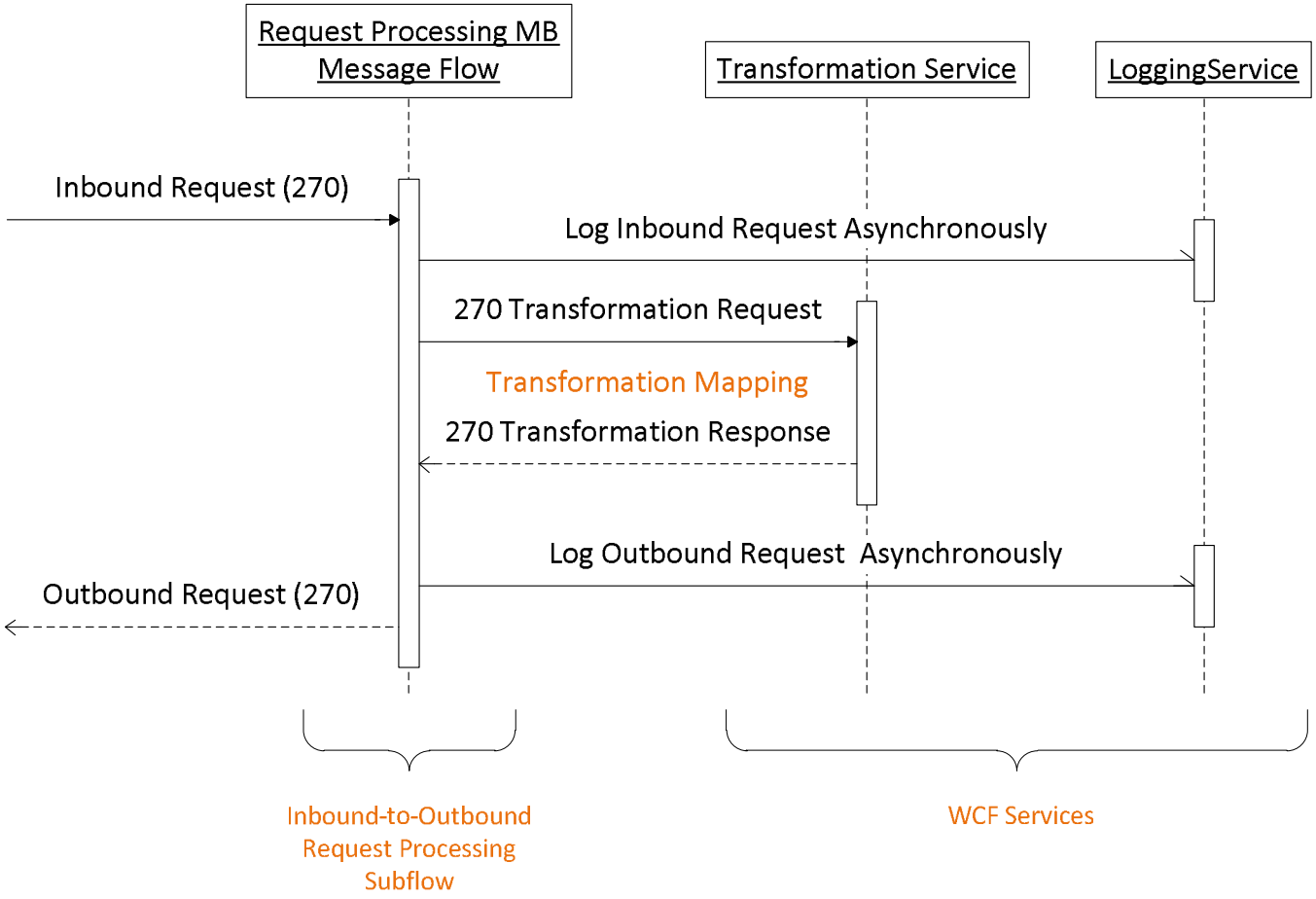
High-Level Design

- Technology Integration with IIS, WCF and WMB



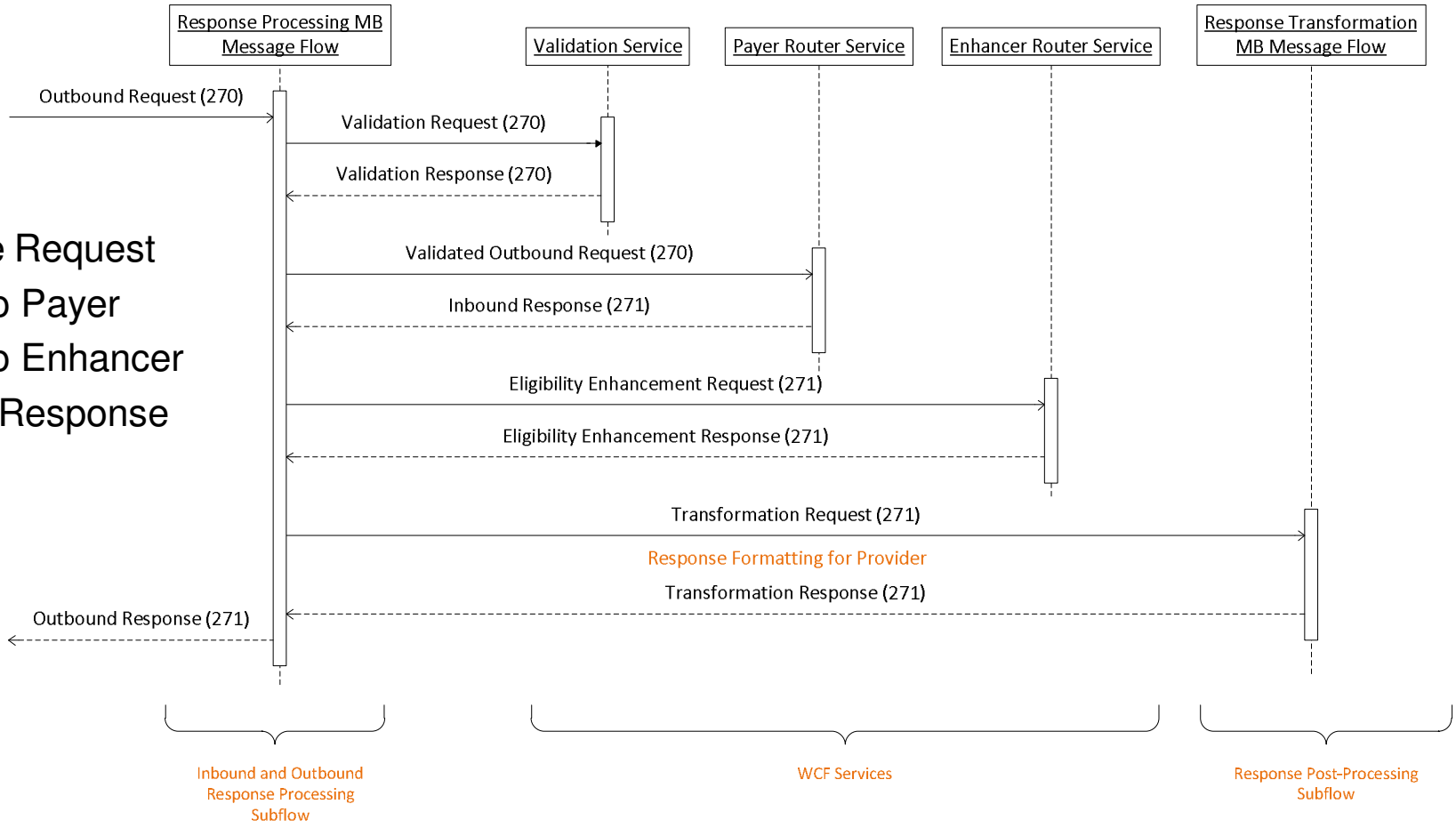
Request Processing

- Transform the Original Request so it can be processed by the Specified Payer



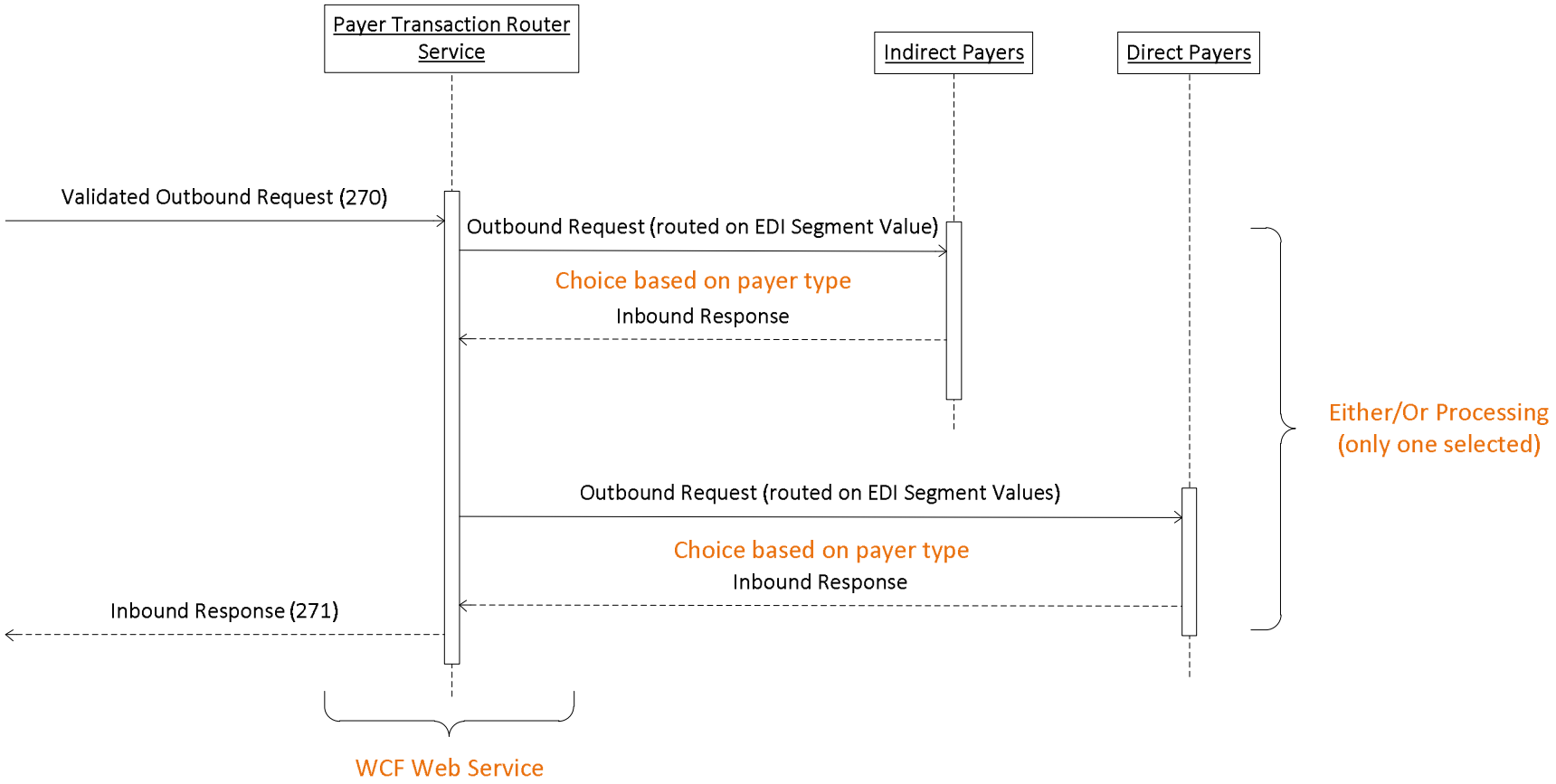
Response Processing

- Validate Request
- Route to Payer
- Route to Enhancer
- Format Response



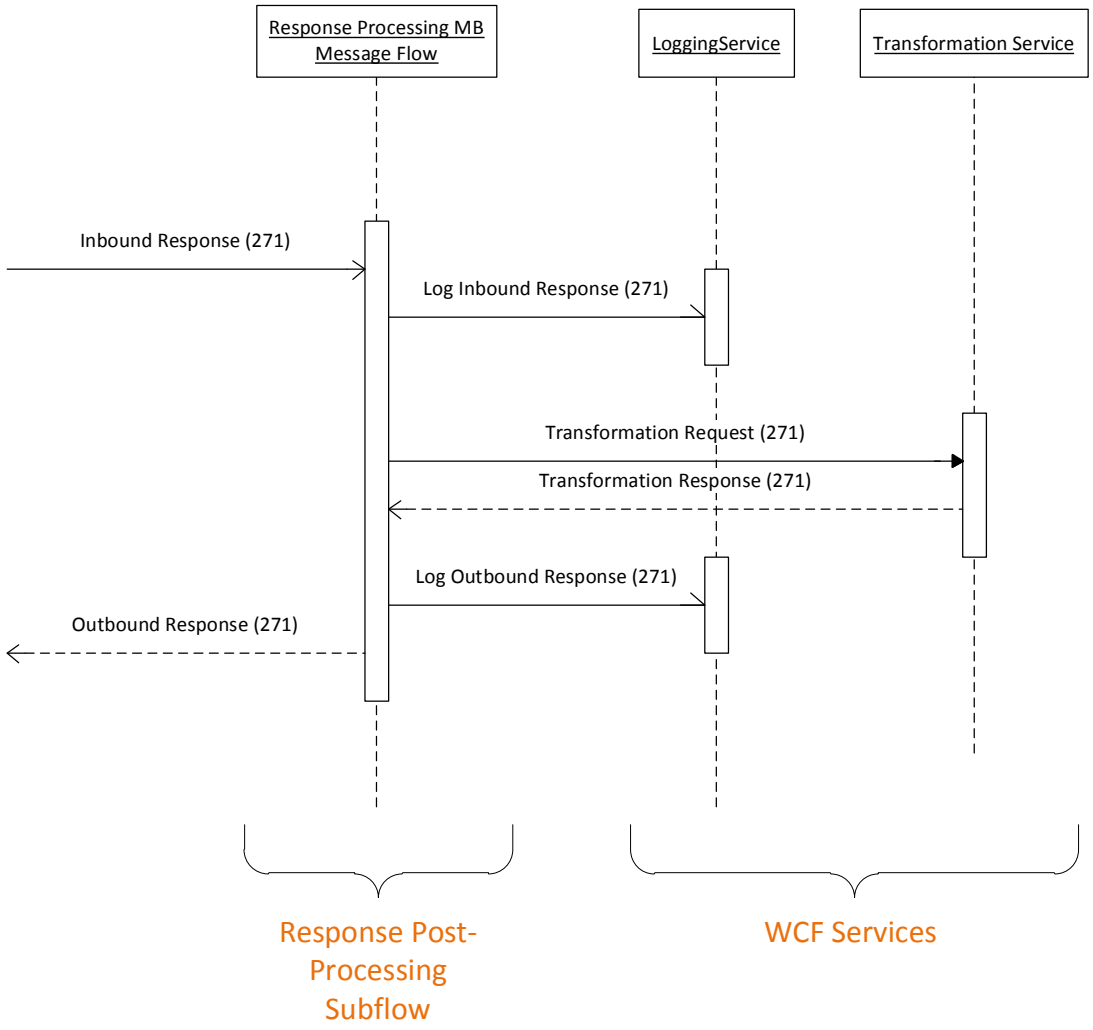
Payer Routing

- 270 request content is used to determine routing method to external payer processing services



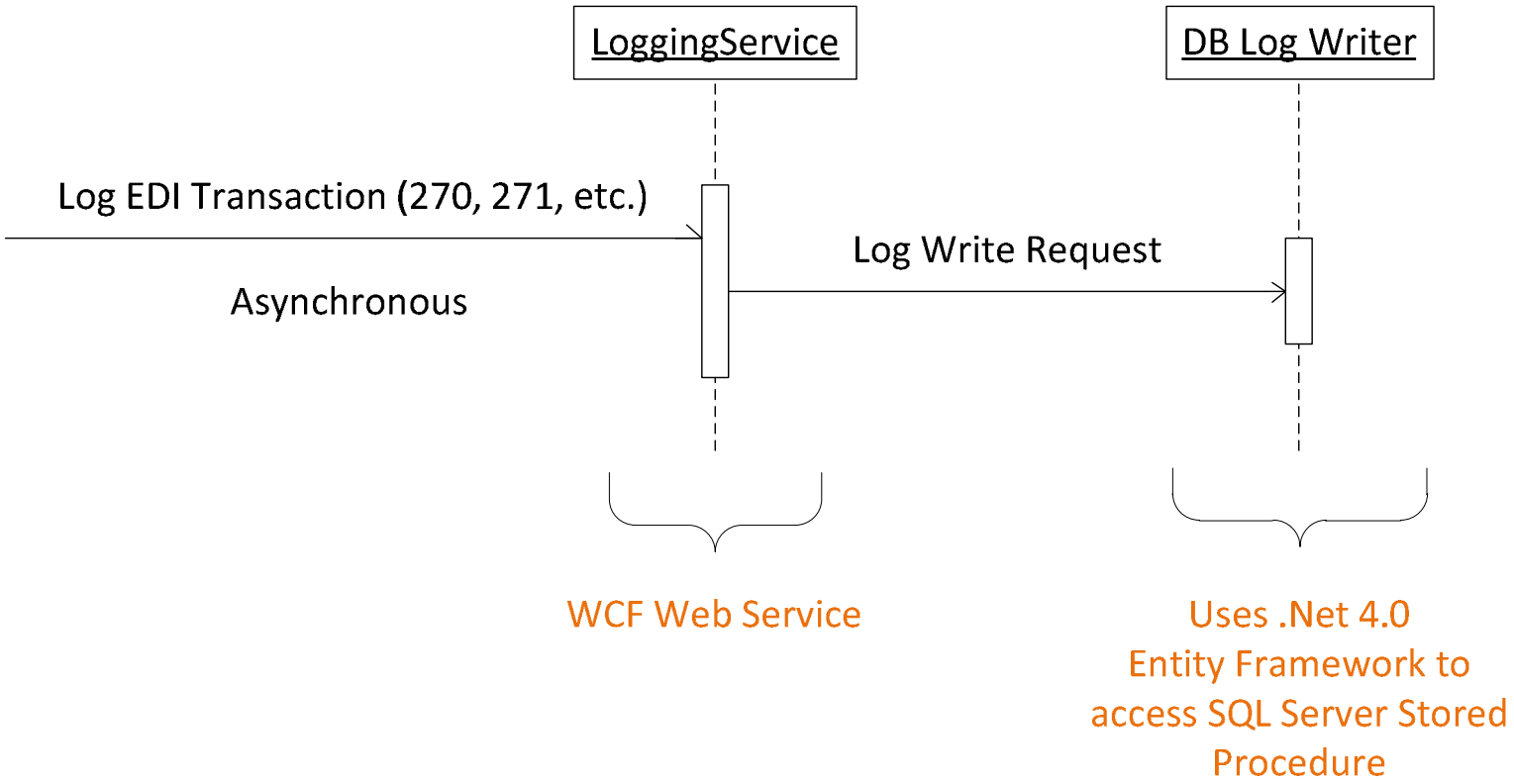
Response Transformation

- Log the Inbound Response
- Transform the Response to match the Submitter's Desired Format
- Log the Outbound Response



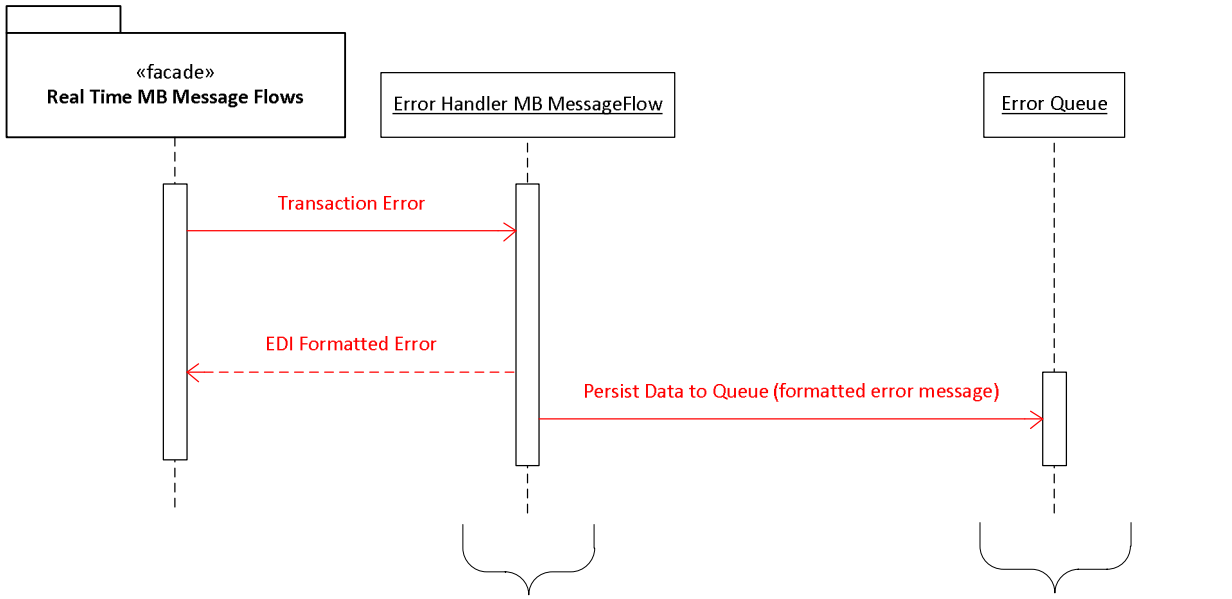
Logging

- Logging in real-time is not mission critical
- Asynchronous logging prevents response time-outs if there are database access problems



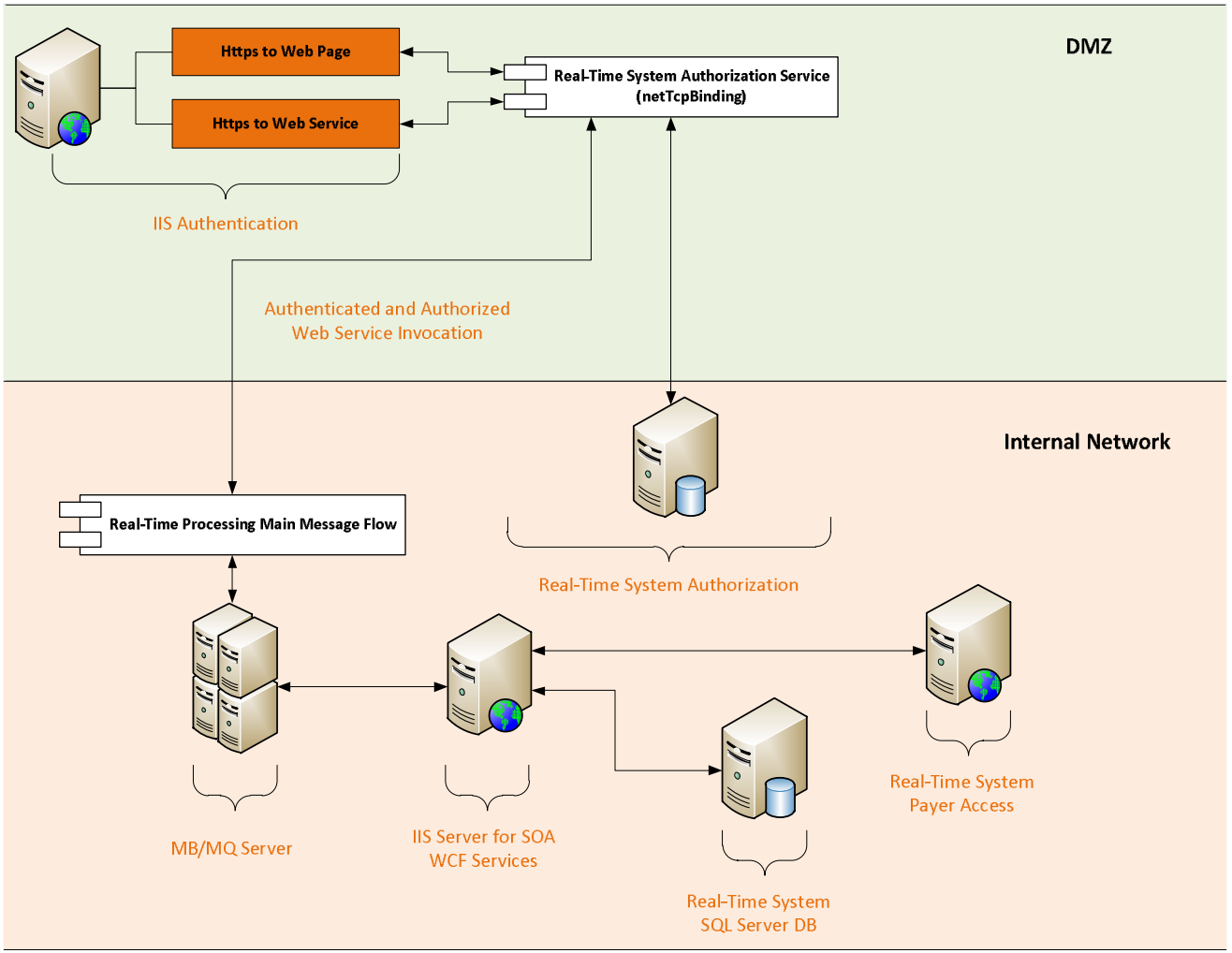
Error Processing

- All flows have only shown the “Happy Path” for process, but each flow must also handle errors
- Once an EDI Transaction has entered into the Real-Time System an EDI Response is expected
- Error Processing provides the EDI Response and also persists a message to a queue so Tivoli Alerts Situations can be triggered.



Deployment and Scalability

- Each of the processing nodes can be scaled up with multiple servers and load balancers as needed.
- Tivoli Monitoring will provide PNT with the metrics needed to determine scaling and use of other technologies such as IBM's DataPower Appliance.



Q&A