



Healthcare Solutions

Using SOA to deliver a Healthcare Interoperability Platform that improves medical outcomes and enables public health surveillance

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**Trusted at the intersection of
life and data™**



Agenda



Health IT Background

CONNECT SOA Framework

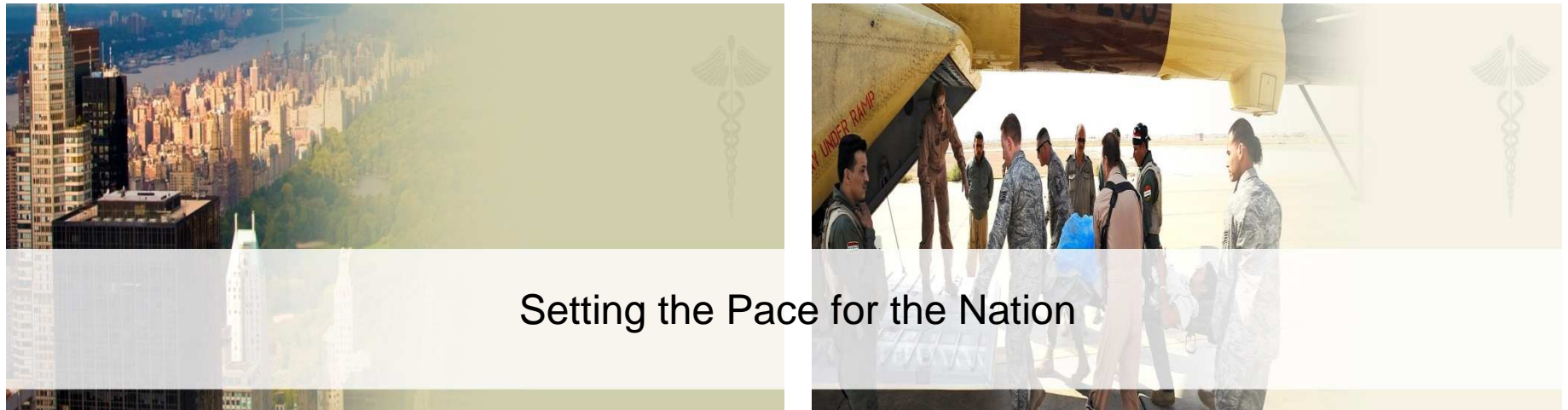
CONNECT SOA Platform and Experiences

CONNECT SOA Implementation Roadmap

Background

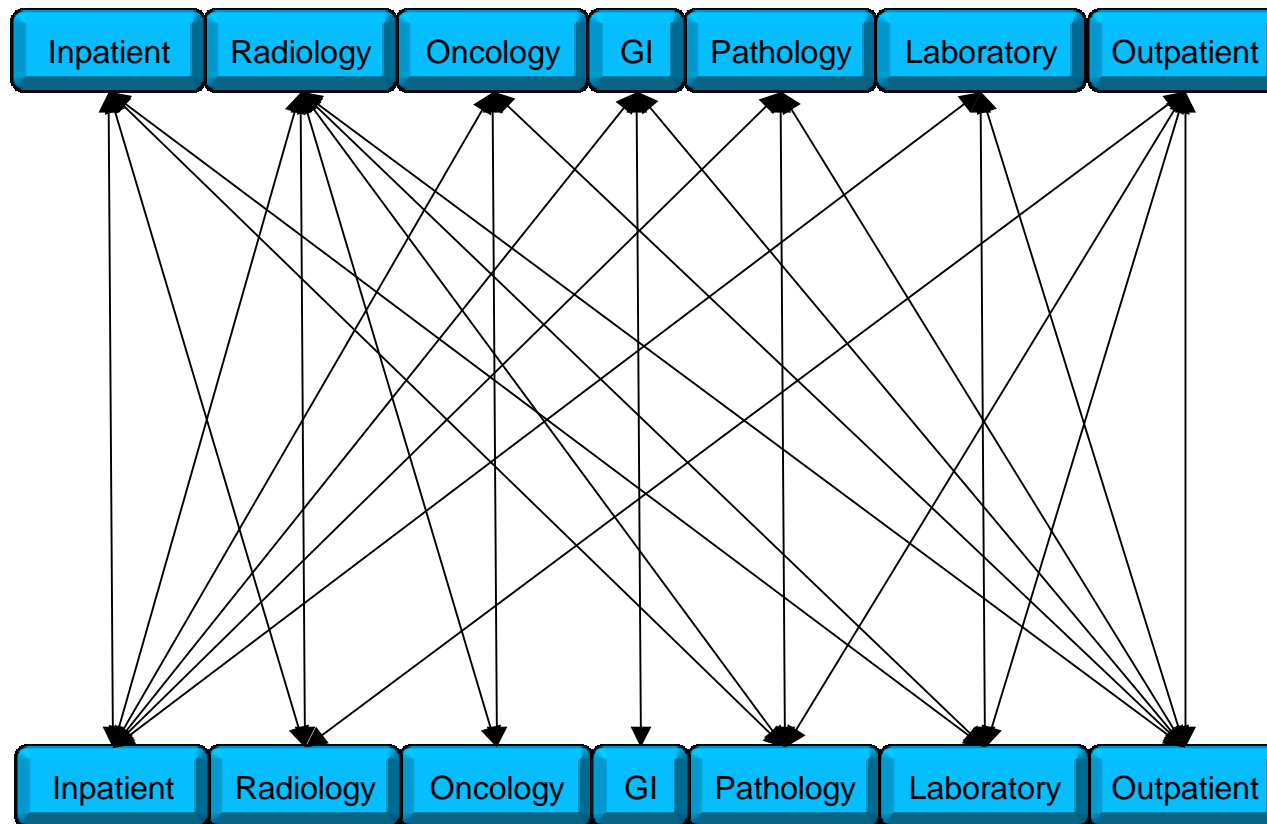


- Health IT Evolution
- Need for Data Sharing
- NHIN Exchange and CONNECT Conception



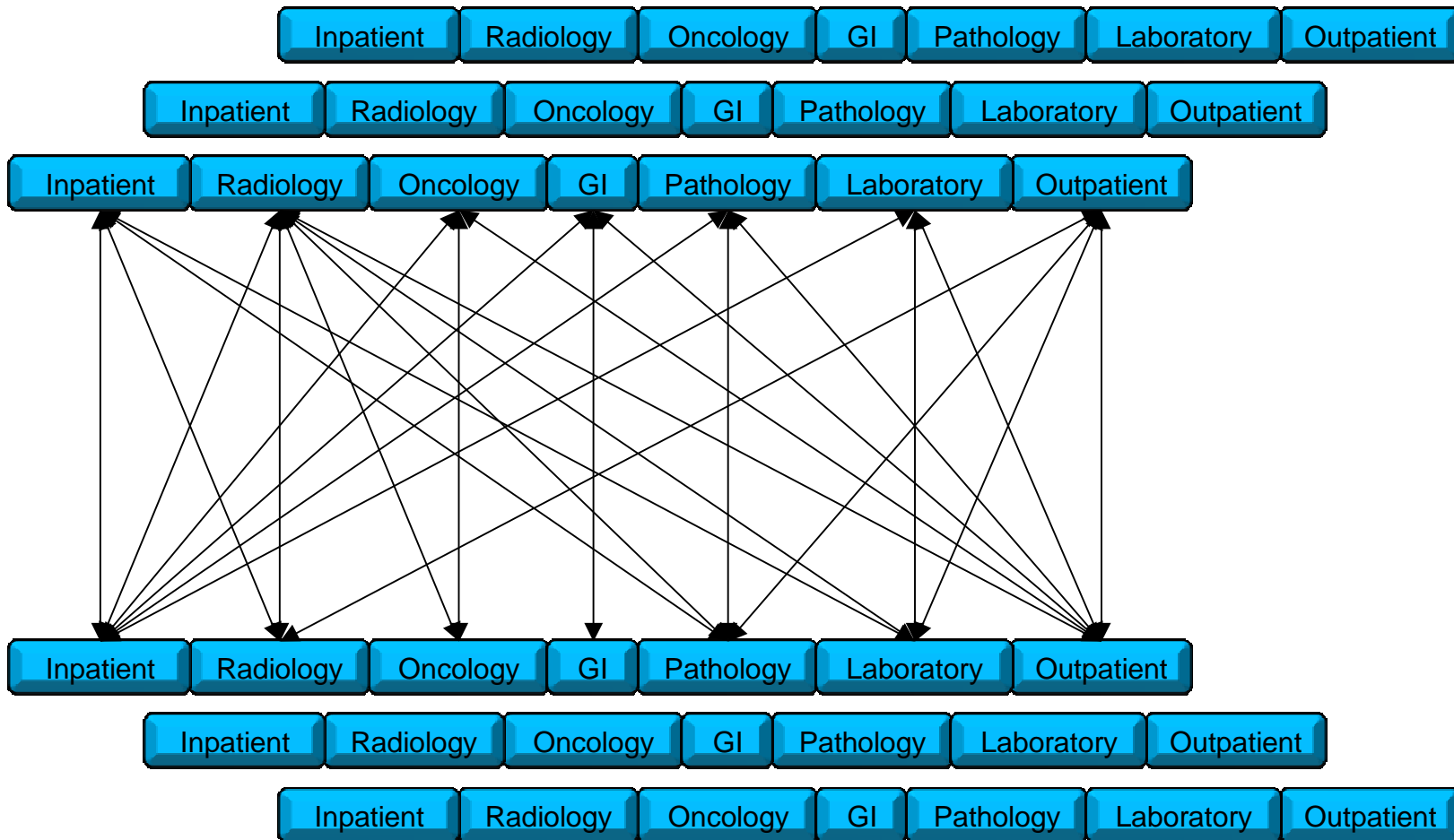
Setting the Pace for the Nation

Background - Traditional Health IT Integration



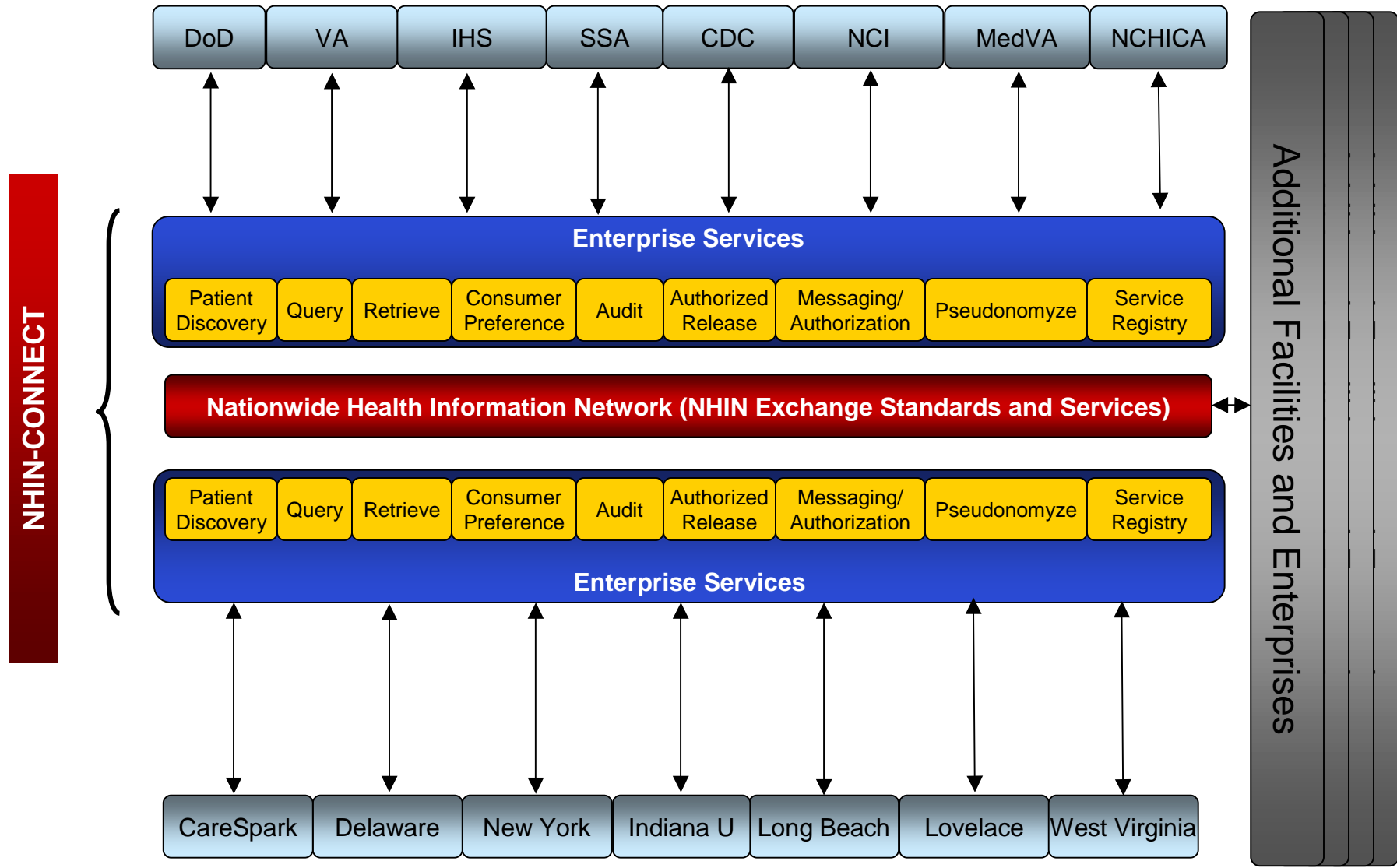
Enterprise Integration with Point to Point Solutions lead to a rigid, complex, non-scalable and costly infrastructure

Background - Traditional Integration Cont'd



Integrating Multiple Enterprises with point to point connections is almost impossible...

NHIN/CONNECT – Inter-Enterprise Services



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- **The Nationwide Health Information Network (NHIN) is a set of standards, services, and policies that enable secure health information exchange over the internet.**
 - NHIN Exchange connects a diverse set of federal agencies and private organizations to securely exchange electronic health information using the NHIN services. (For example: SSA – MedVirginia, DoD, VA and KP)
 - **CONNECT is a federally funded and developed open source reference implementation of the NHIN Exchange standards and services.**
 - CONNECT is using an effective public – private collaboration to create a secure, standard platform for health information exchange
 - NHIN Exchange participants save resources by using CONNECT instead of developing their own implementation of the NHIN Exchange standards and services

CONNECT SOA Framework



SOA Services
(Business Services, Application Services)

} Shared Development and
Non-Shared Deployments

DURSA

} Provides the Data Protection
And Sharing Framework

Specification Factory, CCB, Release
processes

} Shared Governance Structure

NHIN Cooperative
(Federal Agencies, FHA, ONC)

}

CONNECT SOA Services



- Business Services
 - Services that represent the business processes of an organization.
 - For example: Primary Care vs. Cardiology vs. Dermatology.
 - Business processes are implemented differently in different organizations.
- Application Services
 - Services that implement processing logic that is common to multiple business services
 - For example: Retrieving patient's medical history, Drug allergy checking, Sending notifications based on events
 - CONNECT provides application services that can be used across multiple business processes in multiple organizations

CONNECT SOA “Platform for Participation”

- CONNECT provides a SOA based “Platform for Participation” for Health Information Exchange
 - CONNECT provides a basic set of application services to enable secure, standards based information exchange
 - Security, Authorization and Audit
 - Messaging (Request-Response, Push, Deferred) and Discovery
 - Patient Discovery, Document Query/Retrieve, Document Submission
 - CONNECT enables organizations to leverage their existing technologies and systems but add “additional value” by participating in health information exchange.
 - Discover or Integrate new data sources for information.
 - Improve existing business processes by exchanging information in near real time.
 - For example an organization that provides patient care using medical records from a local EHR can now combine that information with medical records from an outside organization and use the more complete picture of the patient’s medical history to provide better care.

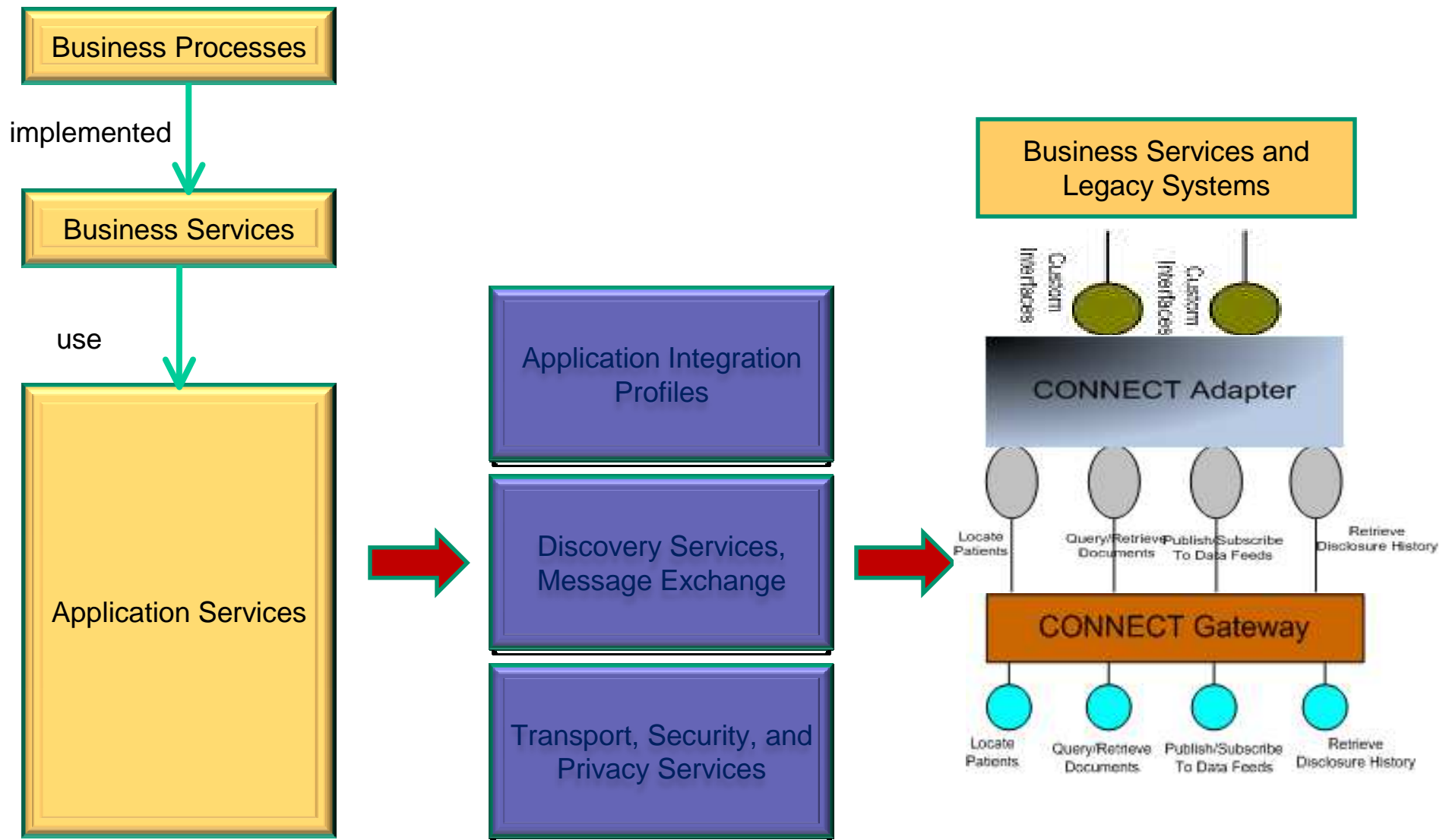
CONNECT SOA “Platform for Innovation” HARRIS

- CONNECT provides a SOA based “Platform for Innovation” for Health Information Exchange
- Vendors can use application services to create new solutions and provide value added services to organizations.

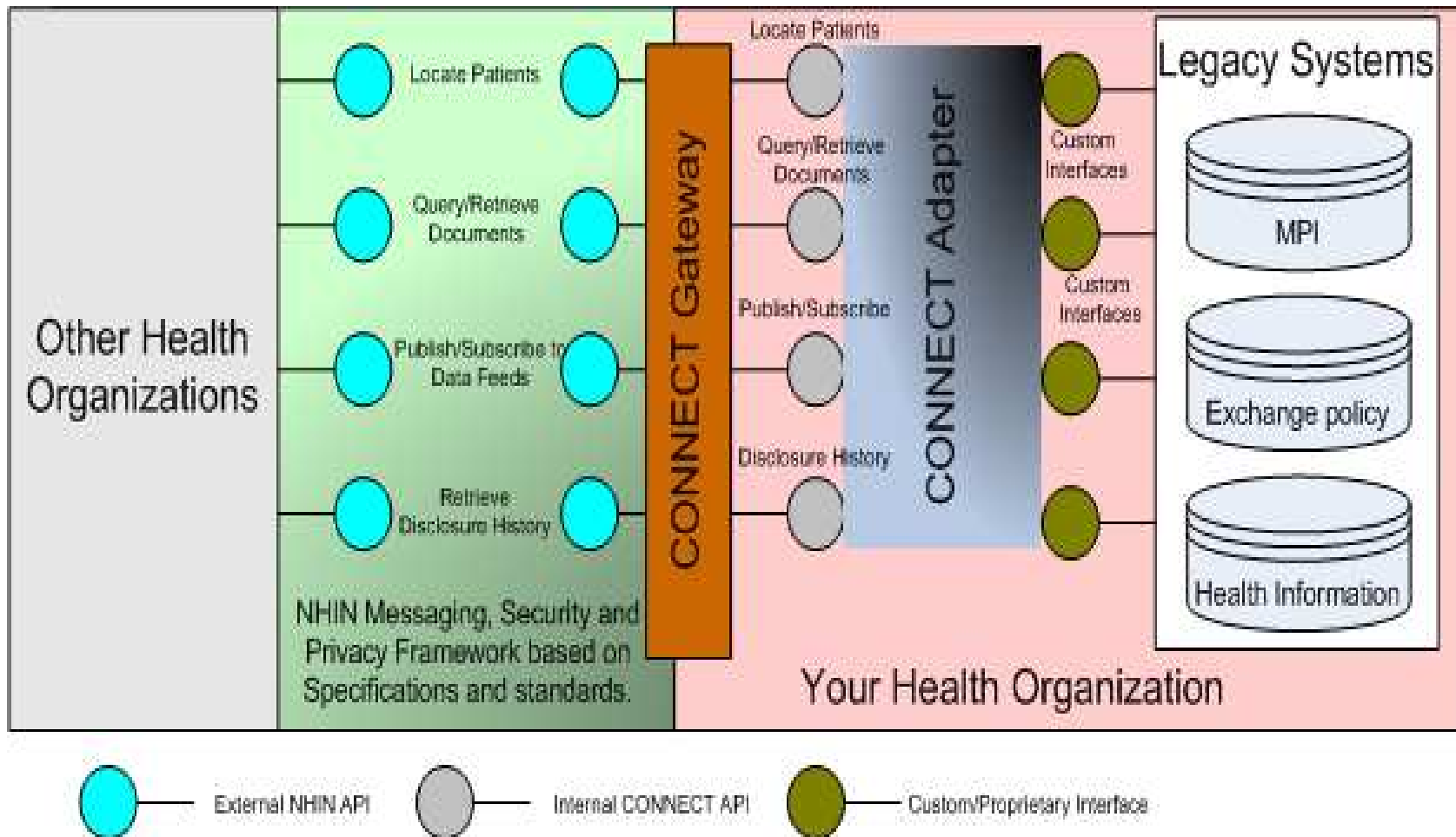


- Organizations can swap out CONNECT service implementations with their own innovative solutions
 - For example the Policy engine, MPI can be swapped out for the next generation policy engine or EMPI etc.

CONNECT SOA Platform Services



CONNECT SOA Platform promoting Technical Interoperability



CONNECT SOA Platform promoting “Semantic Interoperability”



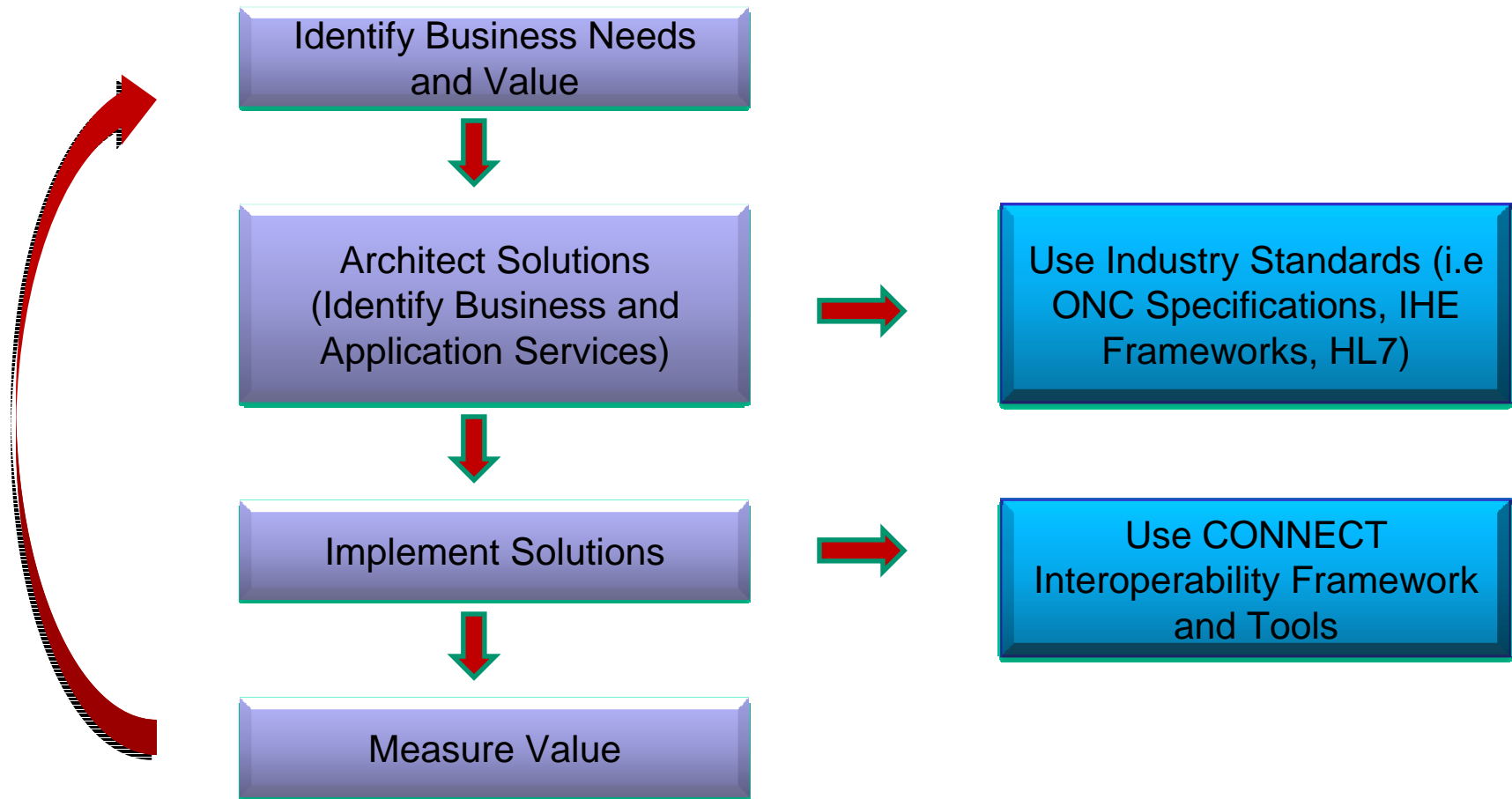
- In order to achieve semantic interoperability, Organizations need to exchange well defined machine interpretable content so that clinical decisions, alerts can be added seamlessly during patient care.
 - CONNECT supports application profiles as a way to define semantic content that can be exchanged consistently following industry standards.
 - Some of the examples include C32, C62
 - CONNECT Services have been built such that any “Patient Specific” document can be exchanged without any changes to the Gateway Services.
 - For example: A C32 can be exchanged as easily as a C62.
- Achieving true semantic interoperability requires additional constraints on the document types and terminology services when coding systems don’t match between organizations.
 - C32’s produced by different organizations may not be interpreted the same across the organizations.
 - Creation of well-defined Implementation Guides when used along with the flexible CONNECT Platform promotes “Semantic Interoperability”.

CONNECT SOA Experiences



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- Creating a vendor neutral SOA platform
 - CONNECT uses open source products to create an implementation that lowers the adoption barrier and can work with the various existing IT systems
 - Improving Performance, Memory foot print and Productivity by removing heavy weight components
 - Products like BPEL, Open ESB and heavy weight EJB's were removed based on the minimum value provided by these components at the cost of heavy overhead (memory , performance, productivity)
 - Supporting Asynchronous or Deferred Services
 - CONNECT supports Synchronous (Request – Response), Publish – Subscribe (Event based), Asynchronous (Push or deferred) messaging patterns to enable health information exchange.
 - Implementing support for Asynchronous or Deferred Services is a key capability that enables organizations to leverage existing infrastructure and business processes.

CONNECT SOA Implementation Roadmap



Q & A

Additional information on CONNECT solution can be found at
<http://www.connectopensource.org/>