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## BFSI testing in a SOA Domain

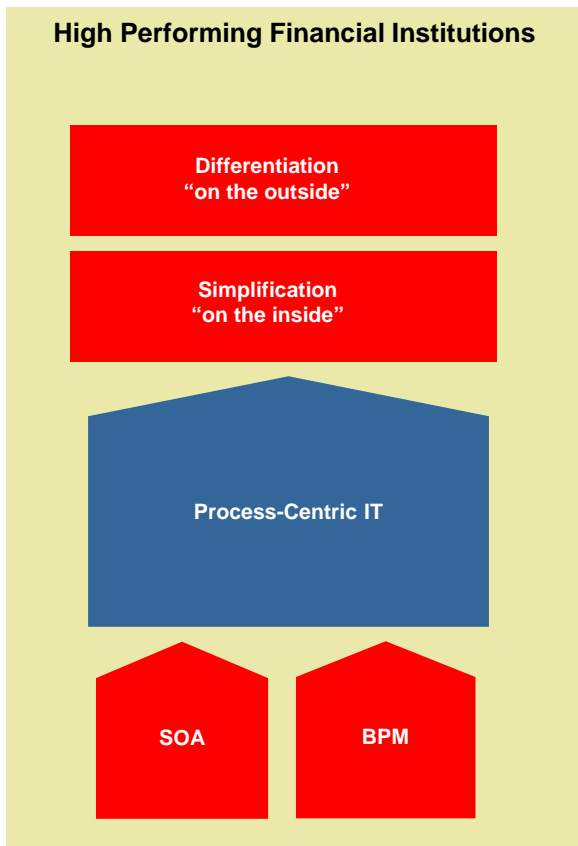
Ravi Variar

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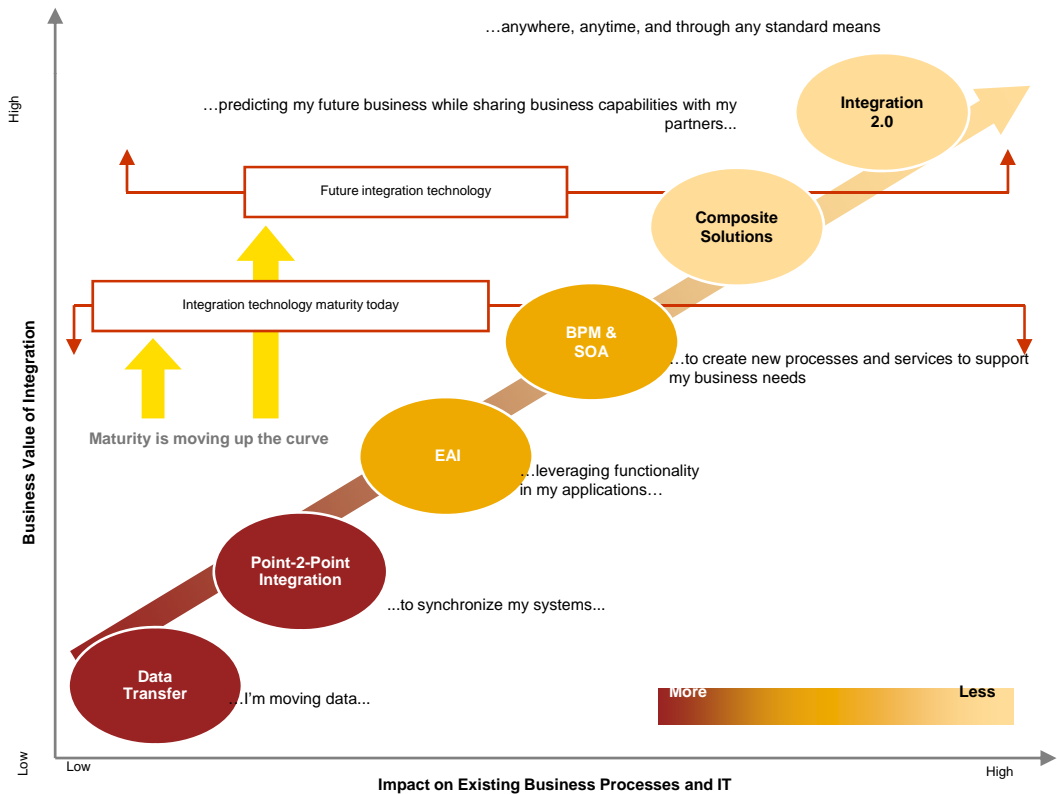


- The SOA Landscape/Architecture
- Impact of SOA on Banking / Financial Services
- Challenges in SOA testing
- Approach to SOA testing
- Vendors in the SOA testing space
- Q/A

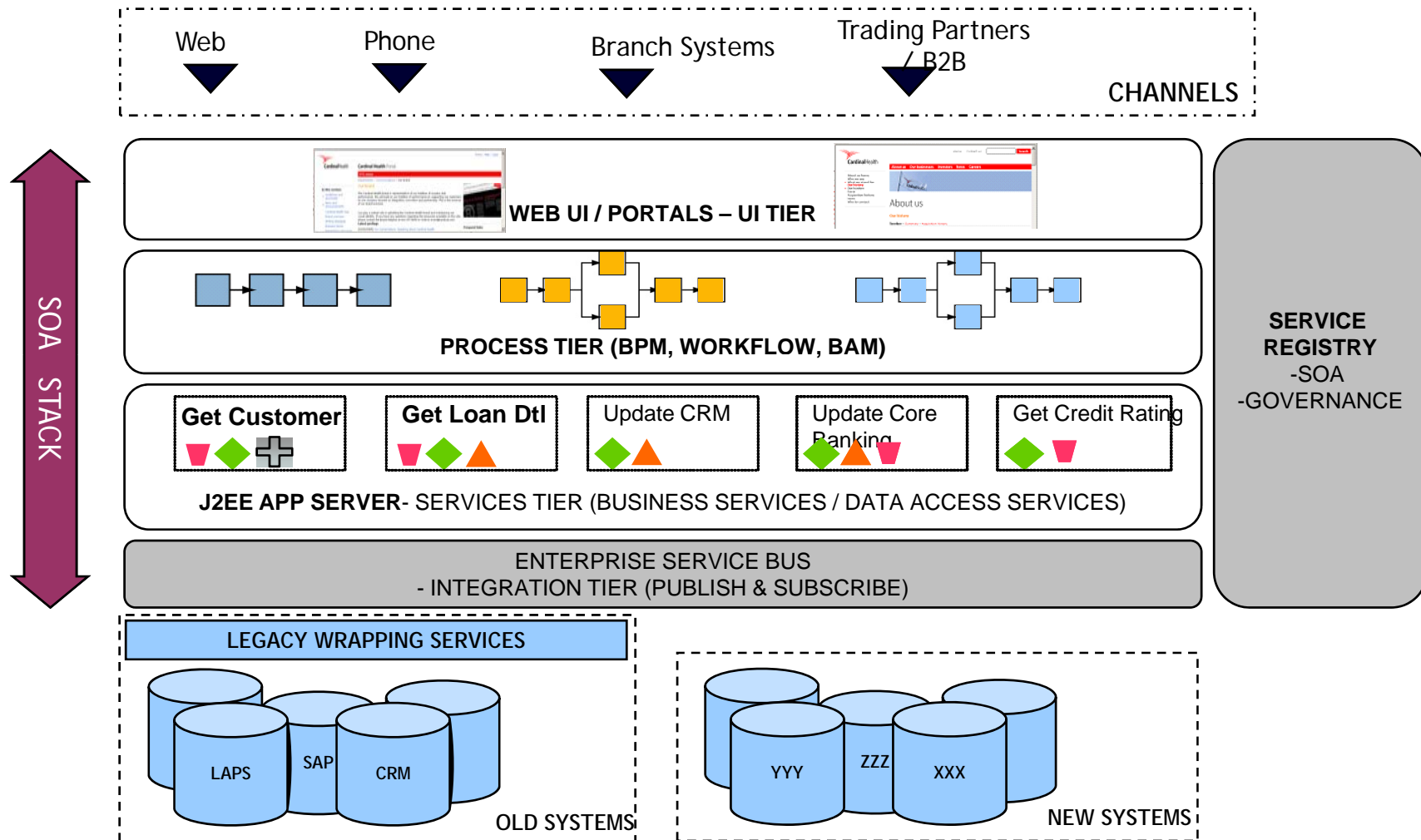
# SOA Landscape



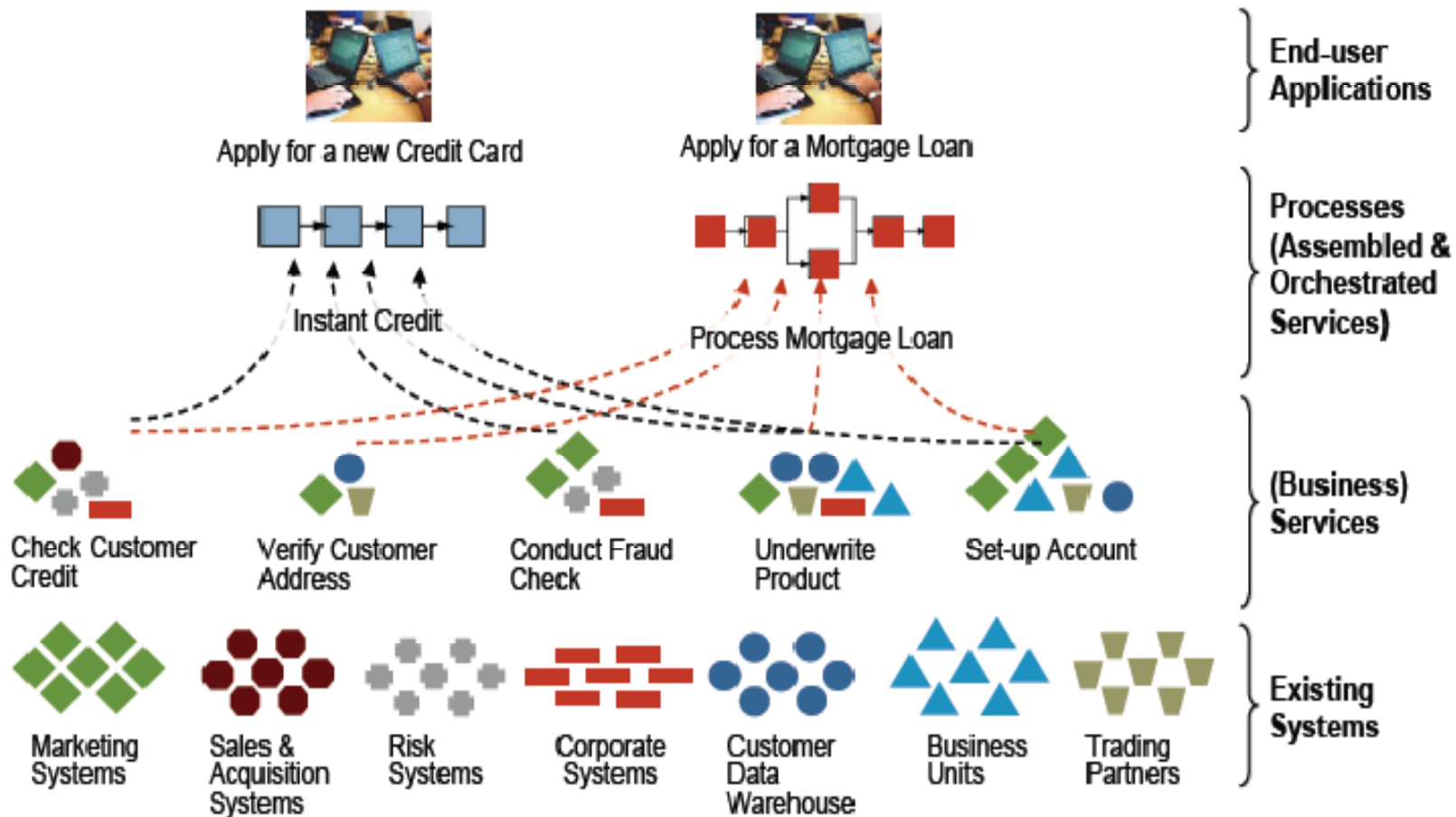
## Evolution of Integration Architectures:



# SOA Architecture



# SOA Impact on Banking



# SOA Impact on testing

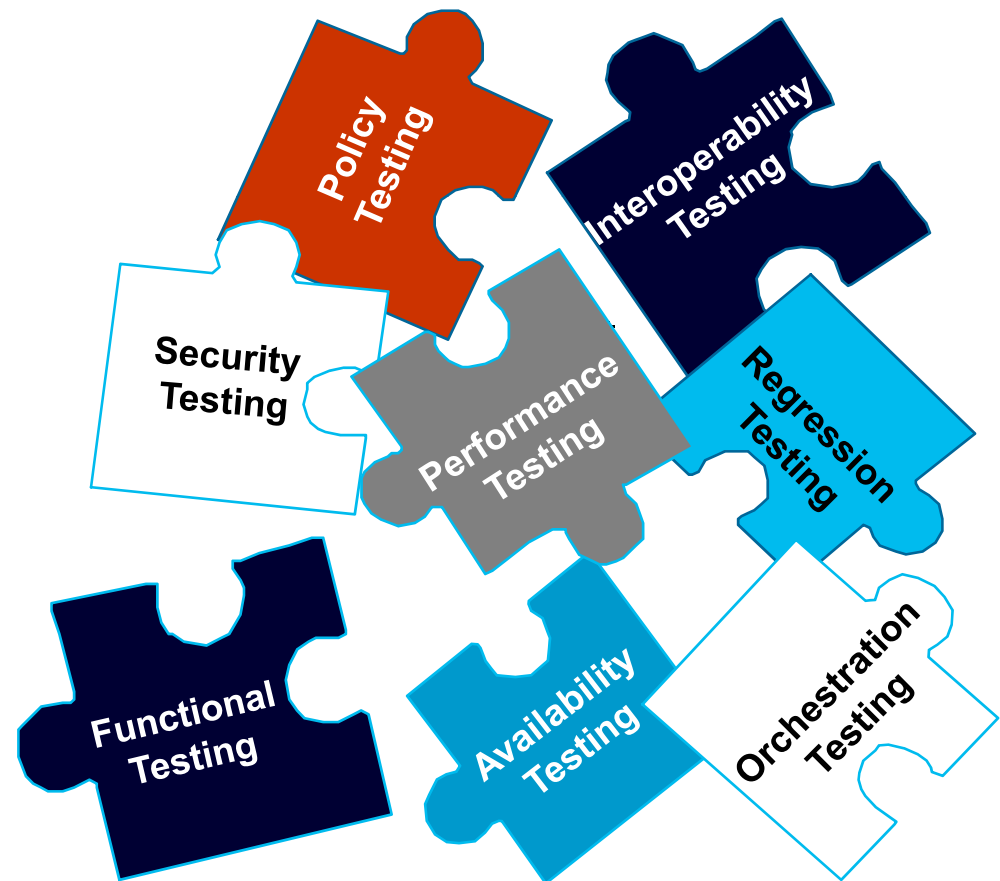


- Composite Applications
- Cross-platform
- Multiple Business Contexts (Loose-coupling)
- Testing Complexity
  - Proportional to the complexity of the system
  - Complexity is ever-increasing
    - Monolithic Application
    - Three-tiered Systems
    - Composite Systems with Middleware
    - SOA
- Web Service Standards
- External Services
  - Outside Domain
  - Outside Organization

# SOA Testing Approach



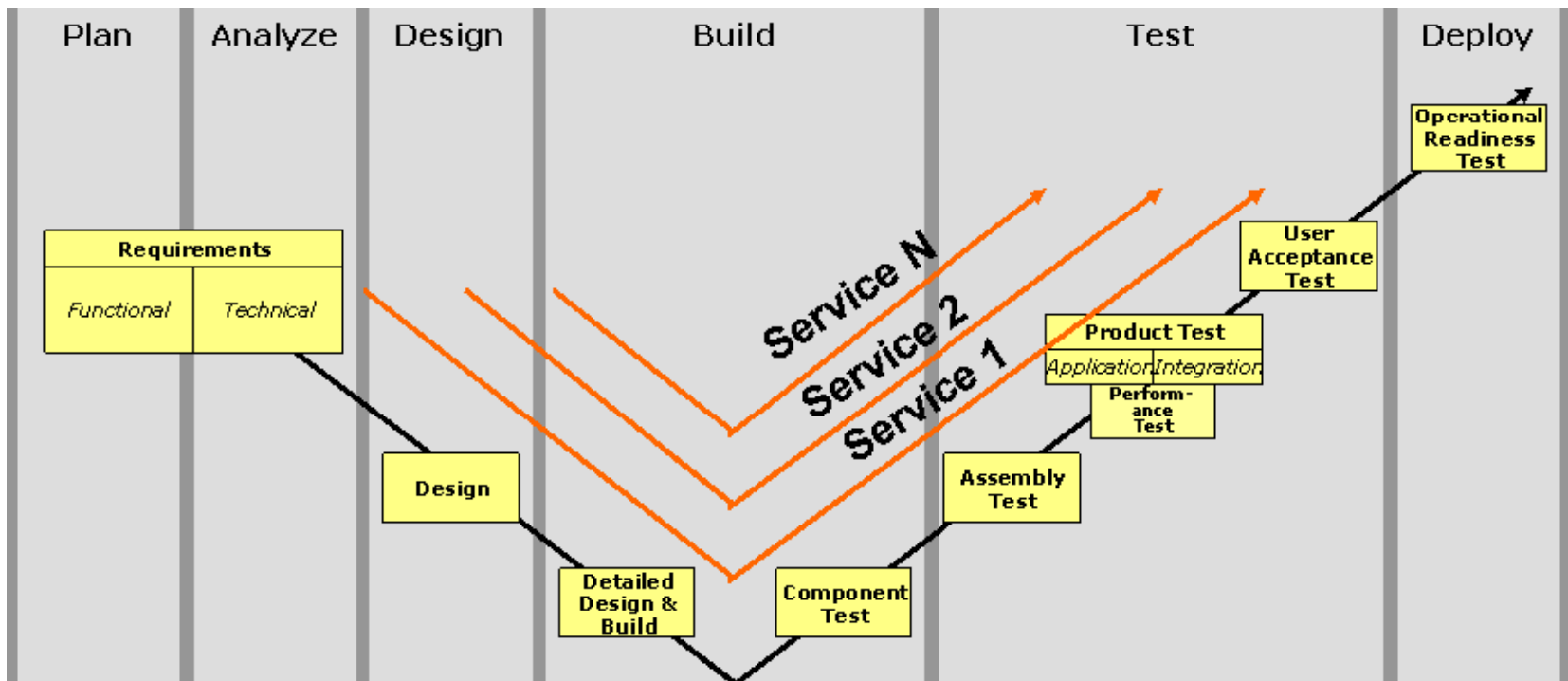
- The V-model still applies.
- But, additional tests must be incorporated into the appropriate phases within the overall test plan.
- Automated regression tests, with massive test coverage, are also critical in a SOA.



# SOA Testing Approach



## The SOA V-Model



# SOA Testing Challenges



- The Little “V”s
  - Tests the individual service.
  - For every big V in the system, there will be one-to-many smaller Vs.
  - Contains many of the same test stages as the Big V.
  - Can be traversed before functional requirements of composite application are determined.
- The Big “V”
  - Tests the overall composite application.
  - Focuses on the business need and requirements to be met by the application.
  - Usually occurs after Little Vs are tested.

# SOA Testing Challenges



- Additional Complexity
  - Big V and Little Vs
    - Individual services tested across V-Model
    - Composite application tested across V-Model
  - Additional layers require more testers pairing with developers, need for more test harnesses, automated tests.
  - Increased Testing Combinations
    - 10 Web Services X 10 Web Service Operations X 10 business contexts calling service = 1000 possible testing combinations.

# SOA Testing Challenges



- Trust is an issue for existing services!
- Testers are usually forced into black-box testing.
  - Services may be pre-built; developer no longer available.
  - Services outside of the enterprise.
  - No access to source code.
  - Harder to pinpoint errors.
- Limited test options for external service forces degree of trust be established.

# SOA Testing Challenges



- Additional testing required for SOA standards
  - WS-
    - W3C and OASIS standards
    - WS-Addressing and WS-ReliableMessaging
  - WS-Interoperability
- Loose Coupling of Services
  - Each business context interaction with the service must be tested.
- Increased Security Testing
- Performance Testing
  - Increased (both services and composite app)
  - Occurs earlier in the SDLC

# SOA Testing Challenges



- Increased Testing Costs
  - Earlier and increased performance testing
  - More interoperability testing between each touchpoint.
  - Reuse of thoroughly-tested services should reduce system development time and maintenance cost.



# SOA Testing Vendors



# Testing Vendors



- Testing Vendor Features
  - SOAP Testing / Request-Response Testing
  - Test Management
  - Testing against WSDL Files
  - Testing the BPM Layer
  - BPM Simulated Runs

# Testing Vendors



- Testing Vendor Features
  - Service Simulations (Stubbing)
  - Performance Testing
  - Security Testing
  - Multiple Test Data Sources
  - Integration with Test Director, Rational
  - Automation

# Q and A

