



*Web Services  
Interoperability*

*Mandar Bhagwat*

*Technology Innovation Leadership Group*



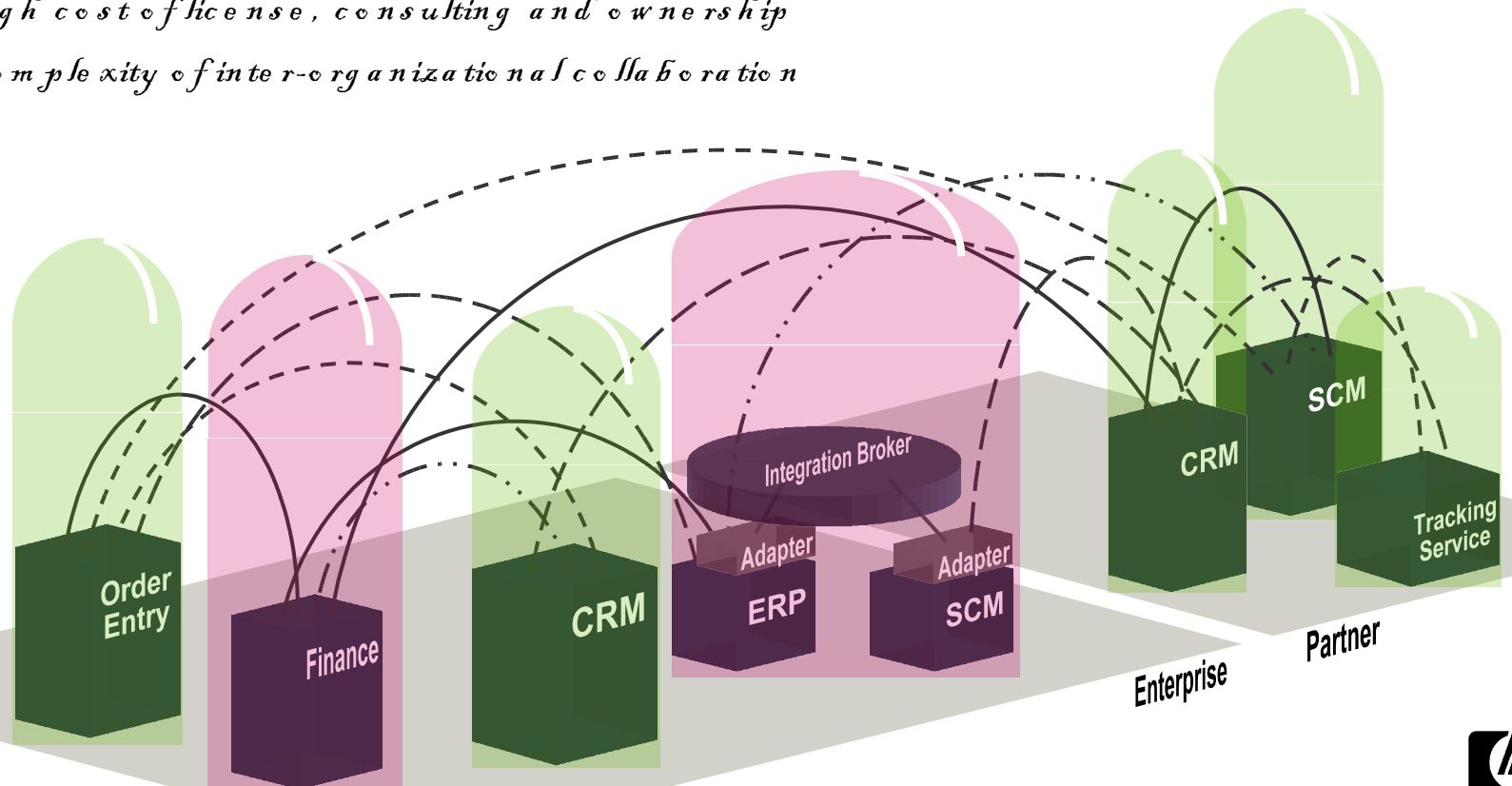
# *Agenda*

- ◇ *WS Interoperability*
- ◇ *Industry Efforts*
- ◇ *Our Experience*
- ◇ *Guidelines*

# *Accidental Architecture*

## Rigid, Costly and Difficult to Operate

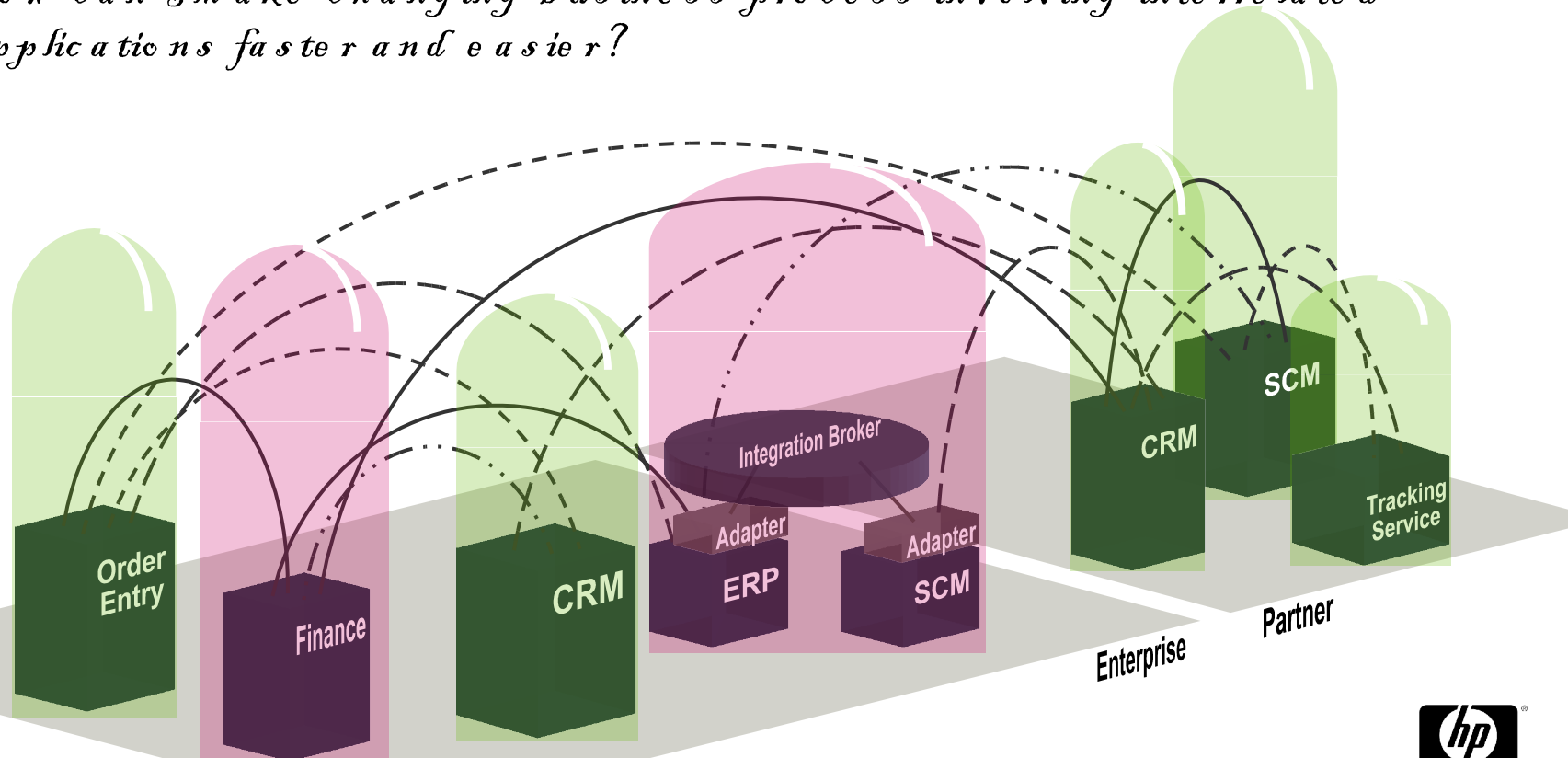
- ◊ *Silos of information and Islands of integration — Done “Once in a Row”*
- ◊ *Proprietary technologies and skill sets*
- ◊ *Multiple communication infrastructures*
- ◊ *High cost of license, consulting and ownership*
- ◊ *Complexity of inter-organizational collaboration*



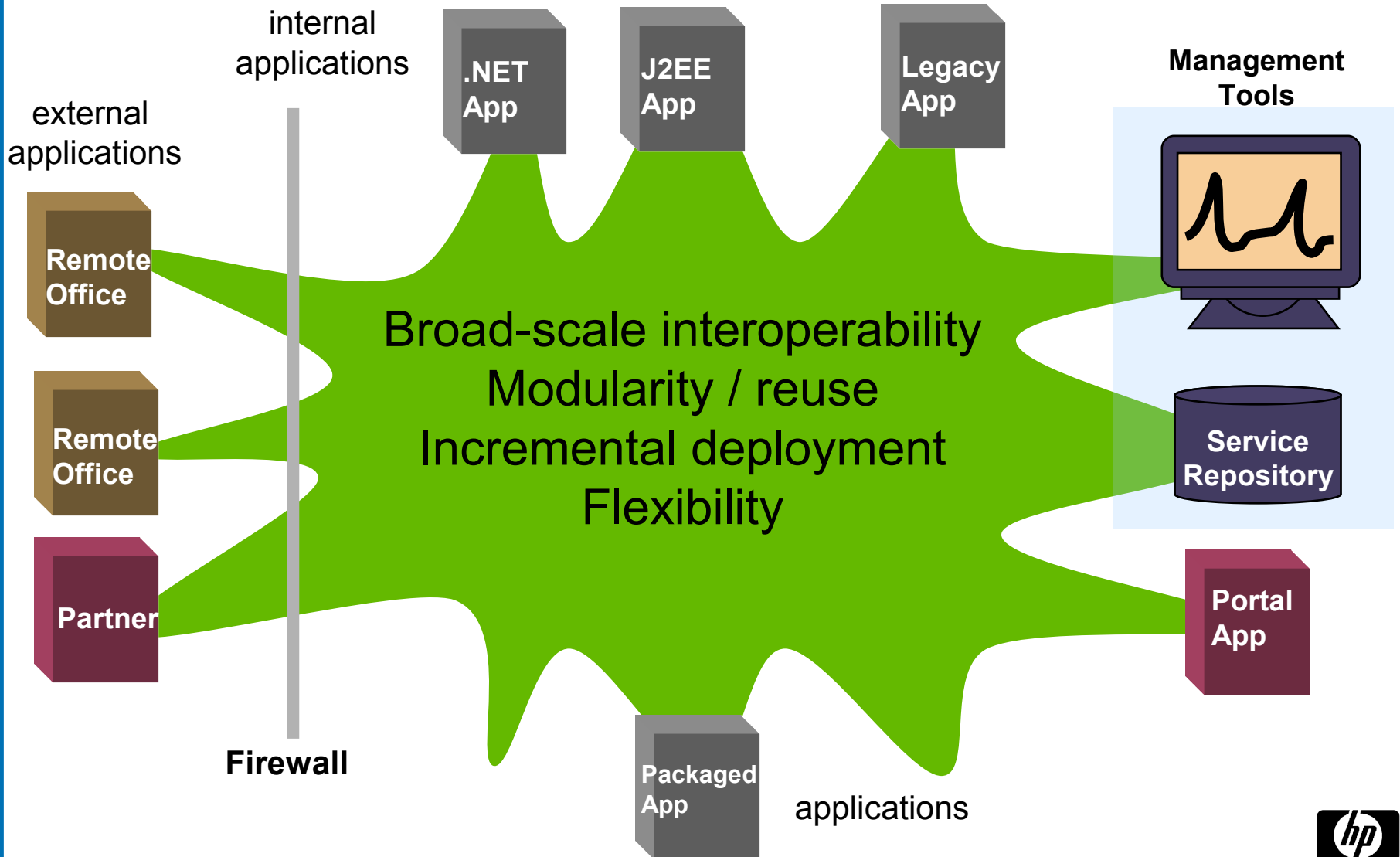
# What can help?

## Overcoming obstacles to business agility

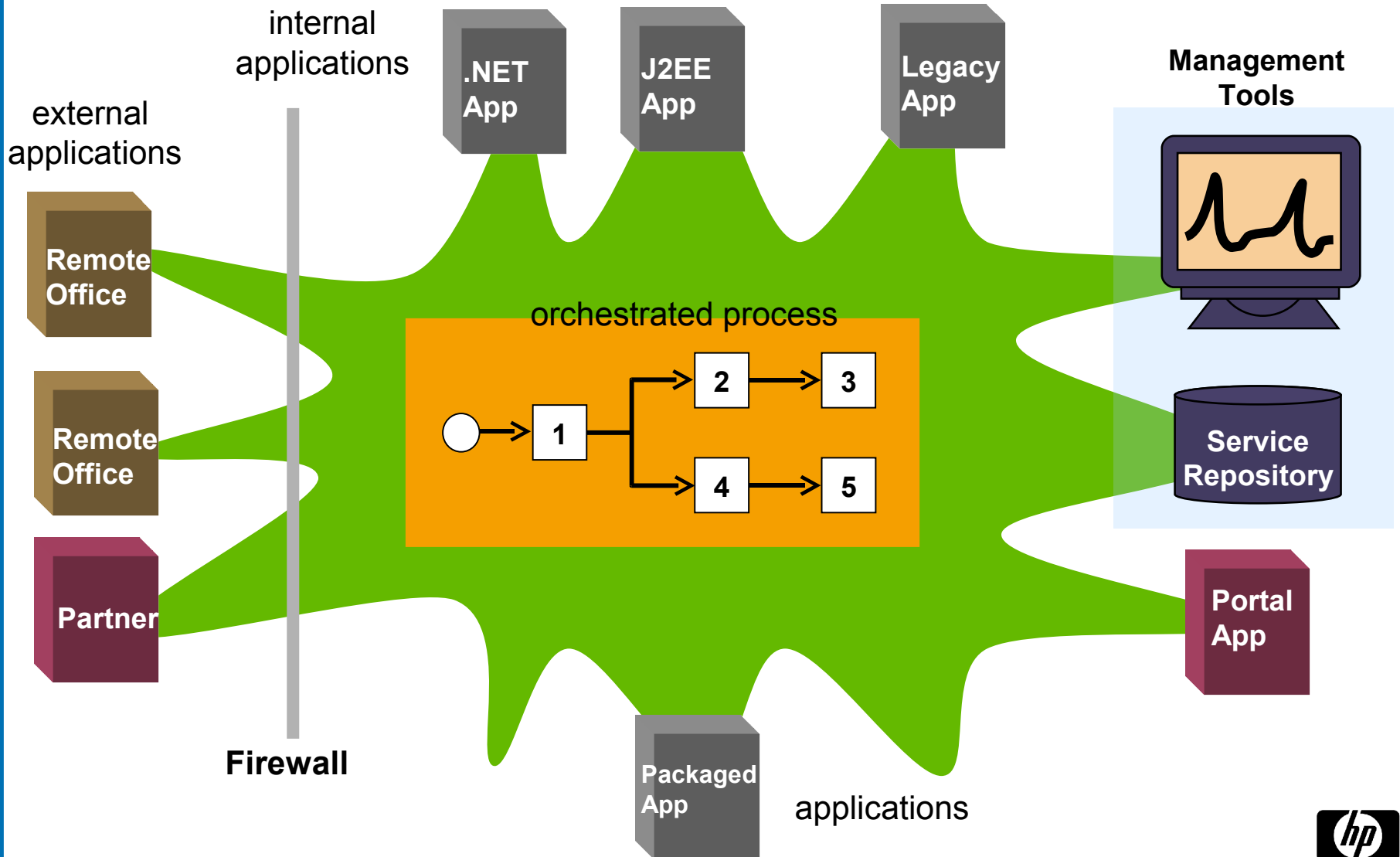
- ◇ How can I speed deployment and reduce cost of new integration projects?
- ◇ How can I make changing business process involving interrelated applications faster and easier?



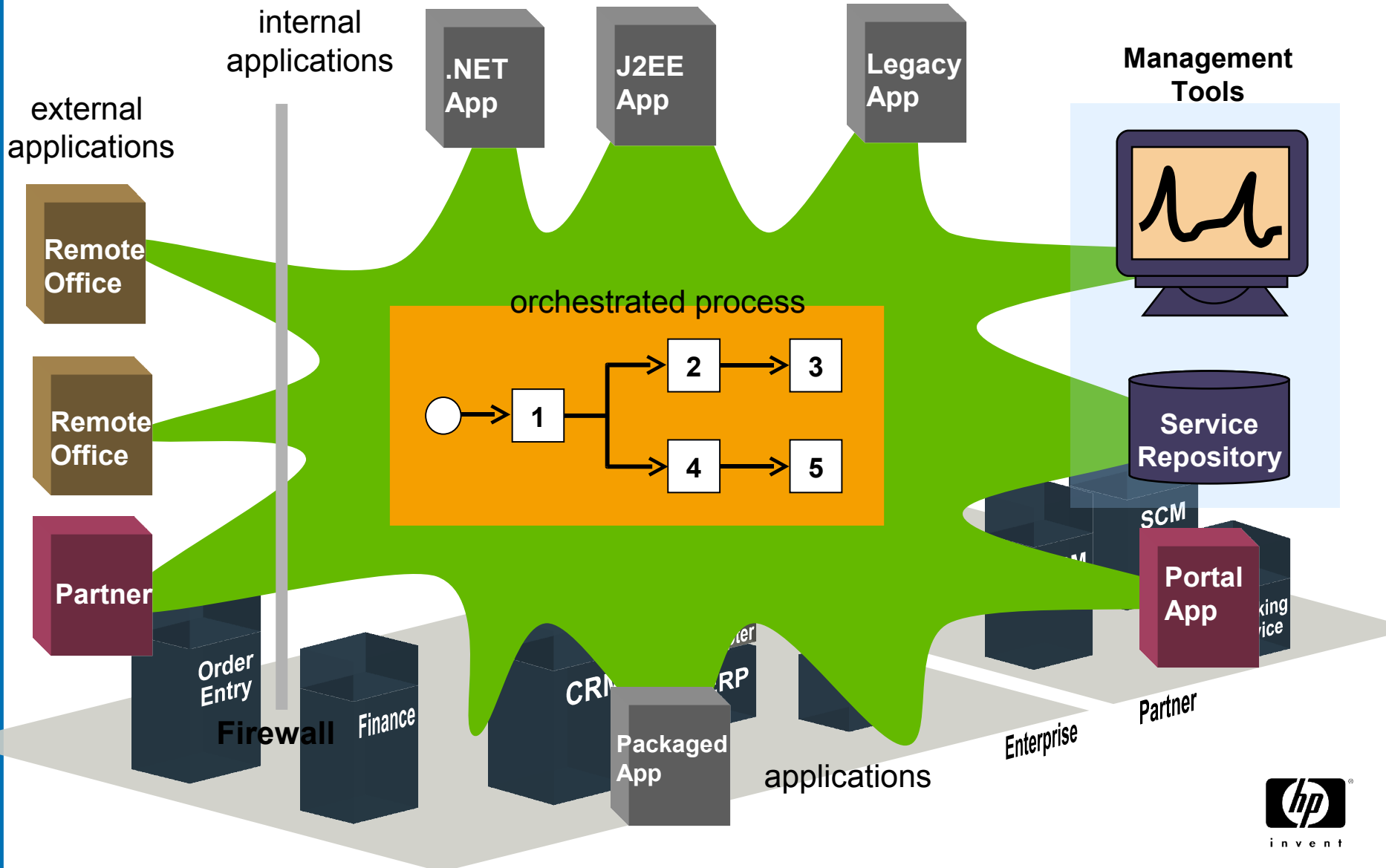
# SOA Vision



# Implement a SOA



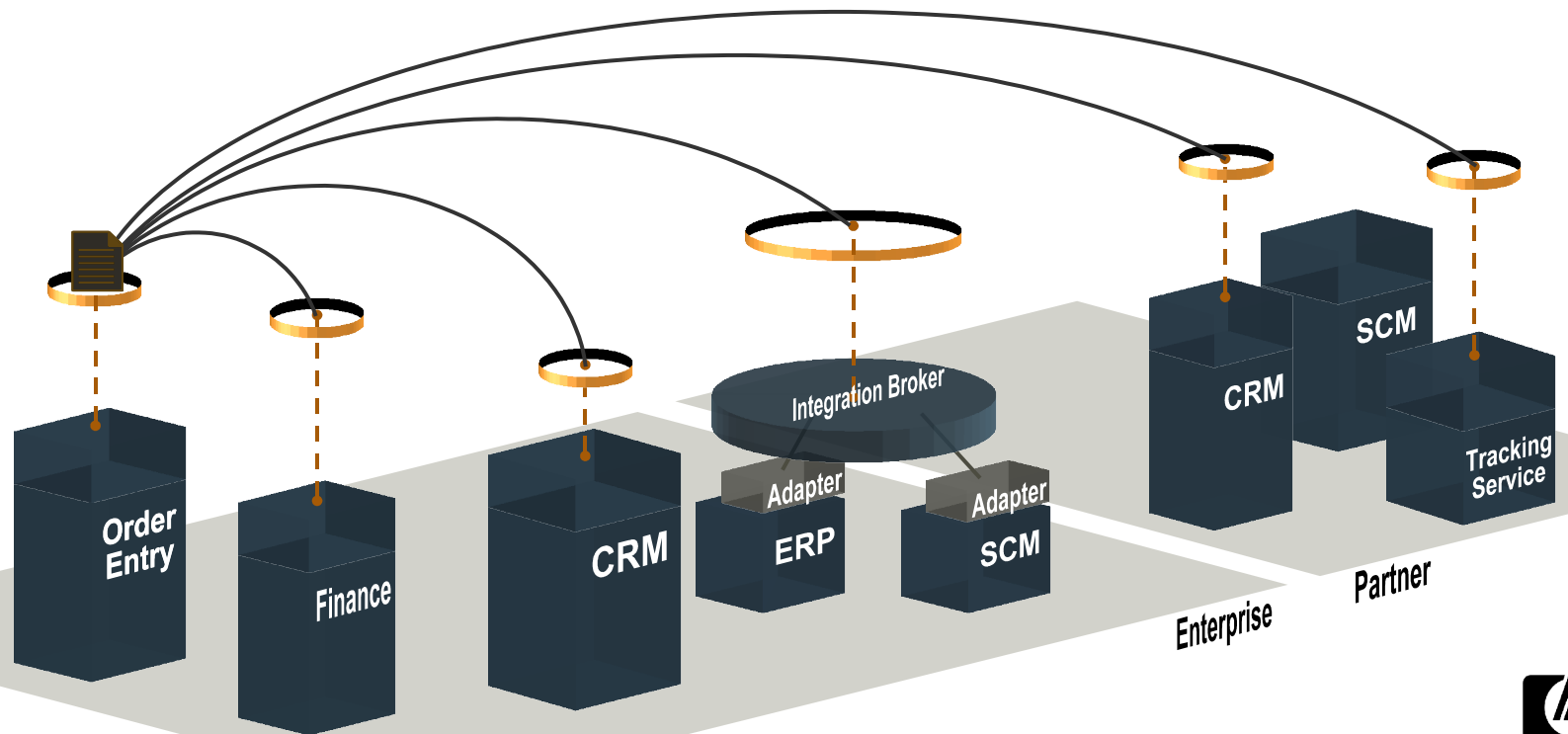
# Implement a SOA



# Web Services

## Standard interfaces are major step forward

- ◇ *Provides standards-based services interface*
- ◇ *Designed for remote access, across heterogeneous platforms*
- ◇ *Hides implementation details and enables reuse*

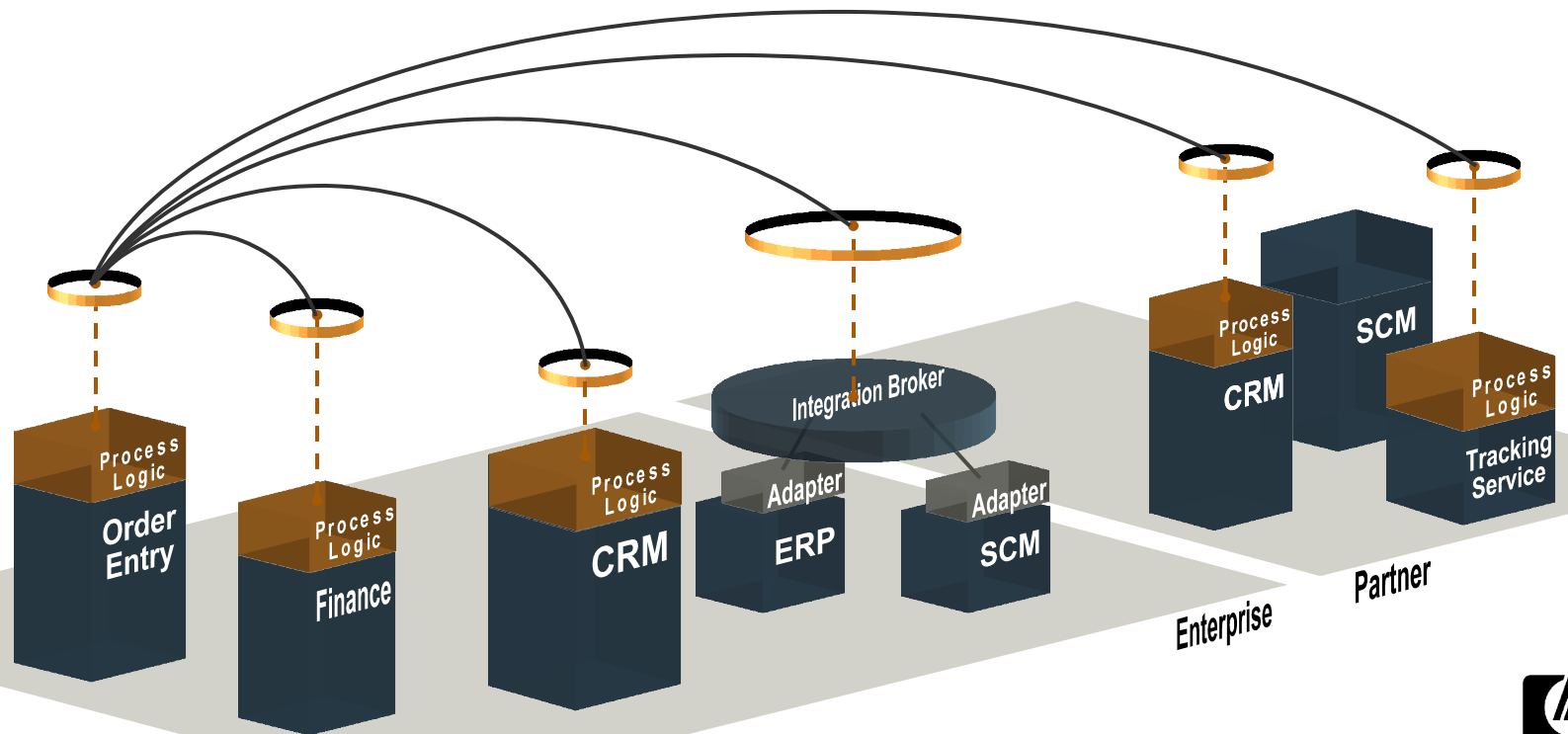




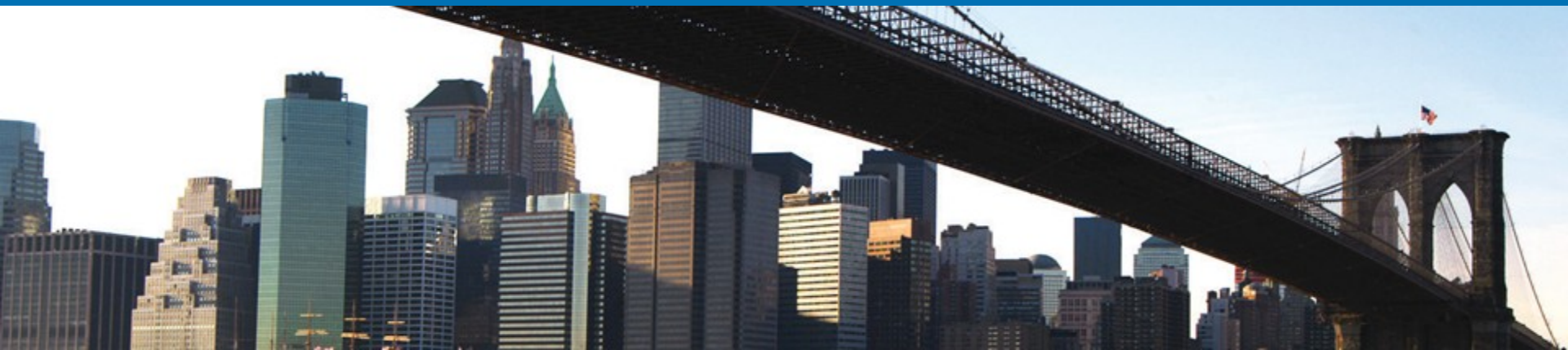
# Web Services

## But have we solved the whole problem?

- ◇ *How do you change business process?*
- ◇ *Is it reliable, scalable and secure?*
- ◇ *How do you manage and monitor distributed services?*
- ◇ *How do you mediate between services?*



*“Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged”*



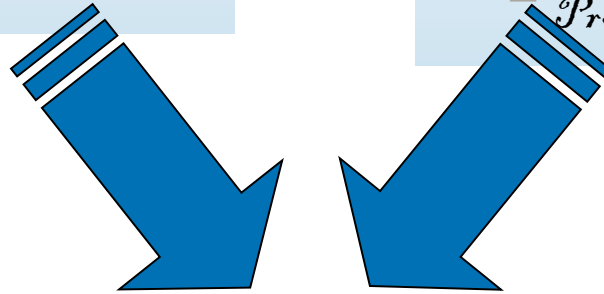
# SOA and Web services

## ◊ SOA

- Service Orientation
- Layered and modular approach for design
- Service Delivery
- Service Governance

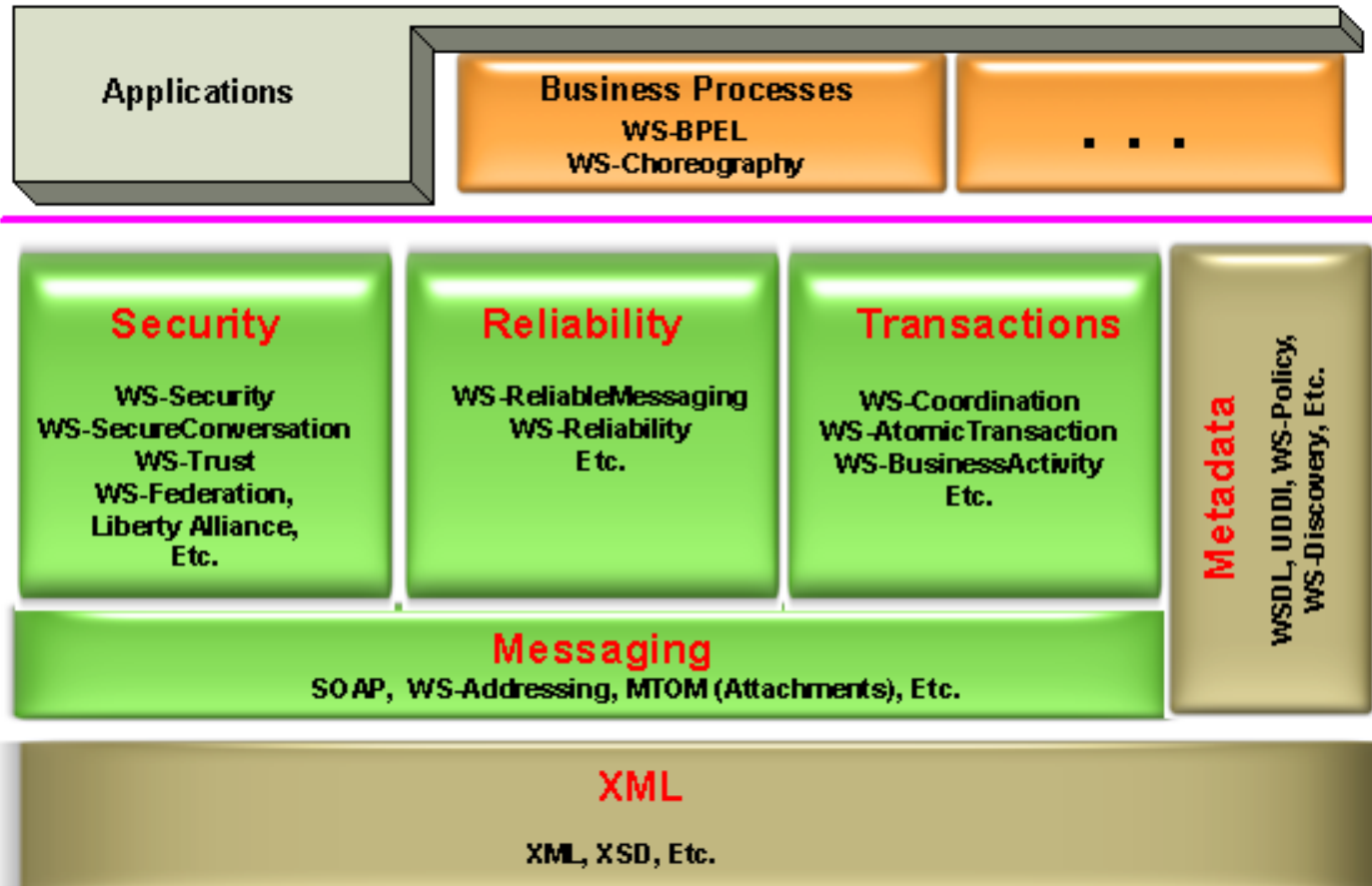
## ◊ Web Services

- Basic standards for core protocols
- Specifications and standards for advanced WS
- WS profiles - logical grouping
- Product Support

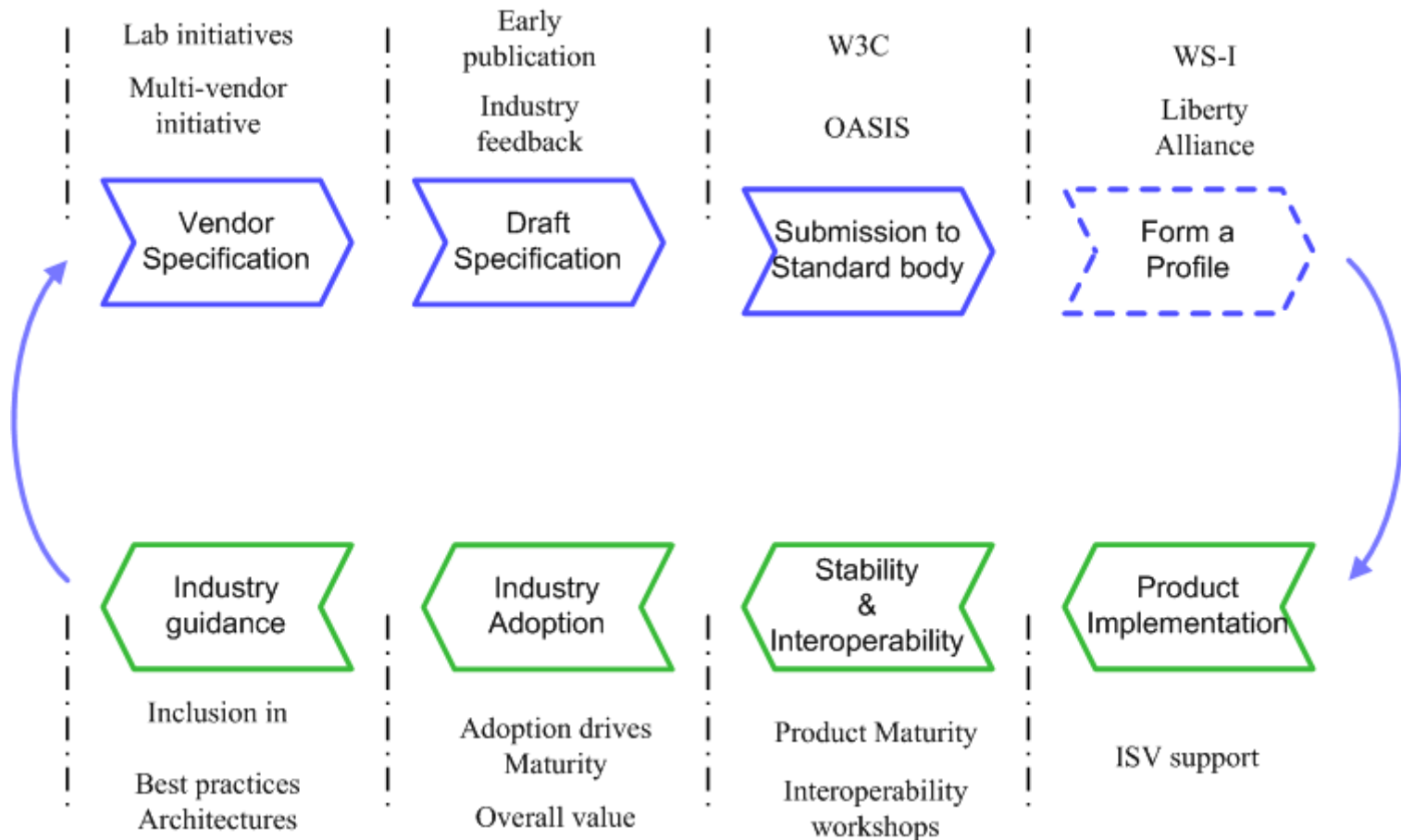


Ability to create interoperable SOA

# WS-<sup>\*</sup> Specifications Stack



# WS Standards' life cycle



# *Interoperability Specifications*

- ◇ *Basic Inter-op: Discovery, Description, Messaging and Security*
  - *Core Specifications: XML SOAP, WSDL UDDI*
  - *WS-I Basic Profile 1.0 (and 1.1)*
    - ◇ *Covers Messaging, Description, Discovery, Security*
    - ◇ *Specifies specifications to be used for different features*
    - ◇ *Guidance on how to use specifications together*
    - ◇ *Usage Scenarios, sample application, testing tools*
  - *Solid Foundation for building interoperable Web Services*
- ◇ *Inter-op across advanced abilities (QoS): Management, transaction, federation, and more.*



*Complexities and Complications*

# *Multiple Statuses*

- ◇ *SOAP Message Security v1.1: OASIS standard*
- ◇ *WS-Addressing v1.0: W3C Candidate Recommendation*
- ◇ *WS-Policy: only a formal submission to W3C*
- ◇ *WS-Atomic Transaction: Not Submitted*

*Author's Note: The statuses of various specifications mentioned above or elsewhere in this presentation are the statuses at the time of writing. But, these statuses keep changing and may be different at the time of reading.*



# Competing Specifications

- ◇ *WS-Choreography Description Language v1.0: W3C TR*
  - Novell, Oracle etc.
- ◇ *WS-Reliability v1.1: OASIS Standard*
  - Sun, Oracle etc.
- ◇ *Liberty Alliance Identity Framework DFF*
- ◇ *WS-BPEL v2.0: OASIS Committe e Draft*
  - BEA HP, IBM Microsoft
- ◇ *WS-Reliable Messaging: Not submitted*
  - BEA IBM Microsoft, TIBCO
- ◇ *WS-Federation*
  - BEA IBM Microsoft

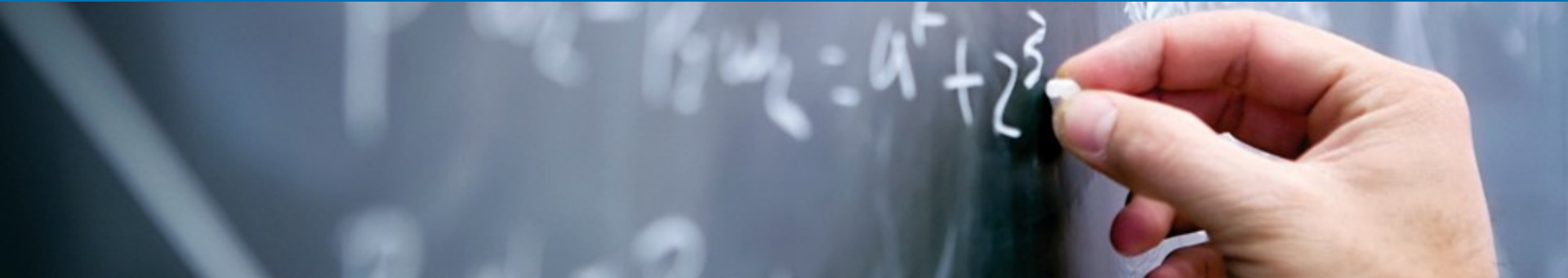
# *Why Interoperability is difficult to achieve*

- ◇ *Tools support and maturity: Standards specifications leave many things to developers*
- ◇ *Competing Standards and specifications*
- ◇ *Standard release statuses and availability of products*

*WS\**

*Interoperability:*

*Guidelines*



# *Guidelines*

- ◇ *Supported specifications and their version*
  - *Product Support for same specifications / standards*
  - *Versions of the Specifications*
    - ◇ *Configuration for older version, if necessary*
  - *Versions of dependent specifications*
  - *Patches and Refresh Packs after careful evaluation*
- ◇ *Differences in schemas, namespaces and WSDLs*
- ◇ *Aware of Partial implementations*
- ◇ *Tools and debugging techniques*

# *Readmap for WS-Adoption*

- ◇ *Start by using WS-Basic profile*
  - *Verify conformance using testing tools*
- ◇ *Implement WS-\* specification one-by-one*
- ◇ *Leverage information available on the Internet*
  - *Other's findings and samples*
  - *Blogs of vendor's key employees*
  - *Verify if the issue can be addressed in current versions*

# Resources

- ◇ Further information about the Basic Profile at its home page:

<http://www.ws-i.org/deliverables/workinggroup.aspx?wg=basicprofile>

- ◇ SOA Web Services Journal:

<http://webservice.sys-con.com/read/314083.htm>

- ◇ Web Services Interoperability (WS-I) Organization

<http://www.ws-i.org/>

- ◇ Liberty Alliance

<http://www.projectliberty.org/>



i n v e n t