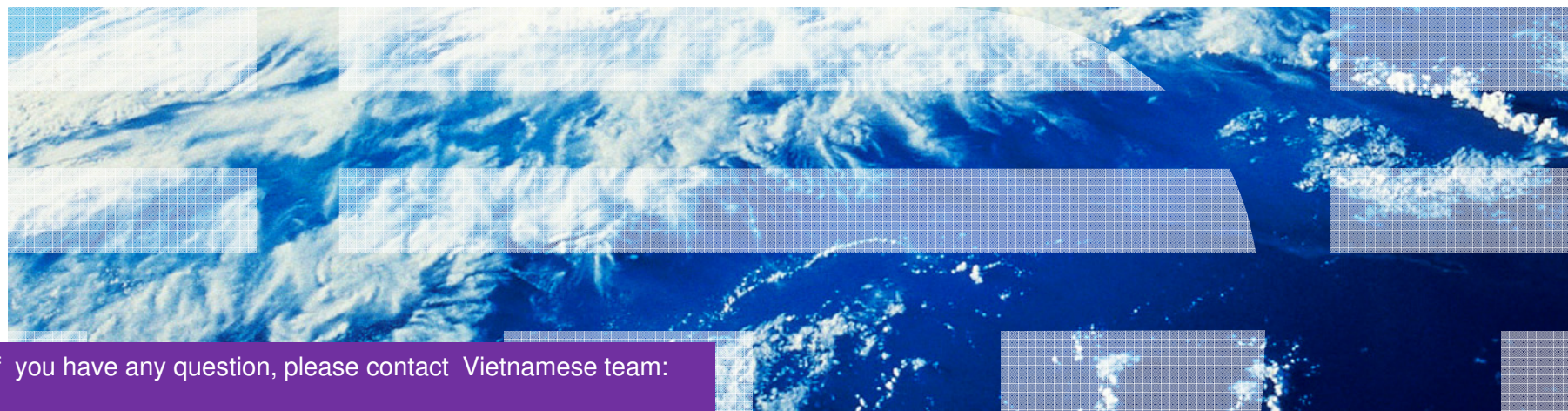


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Filling the Gaps of SAP



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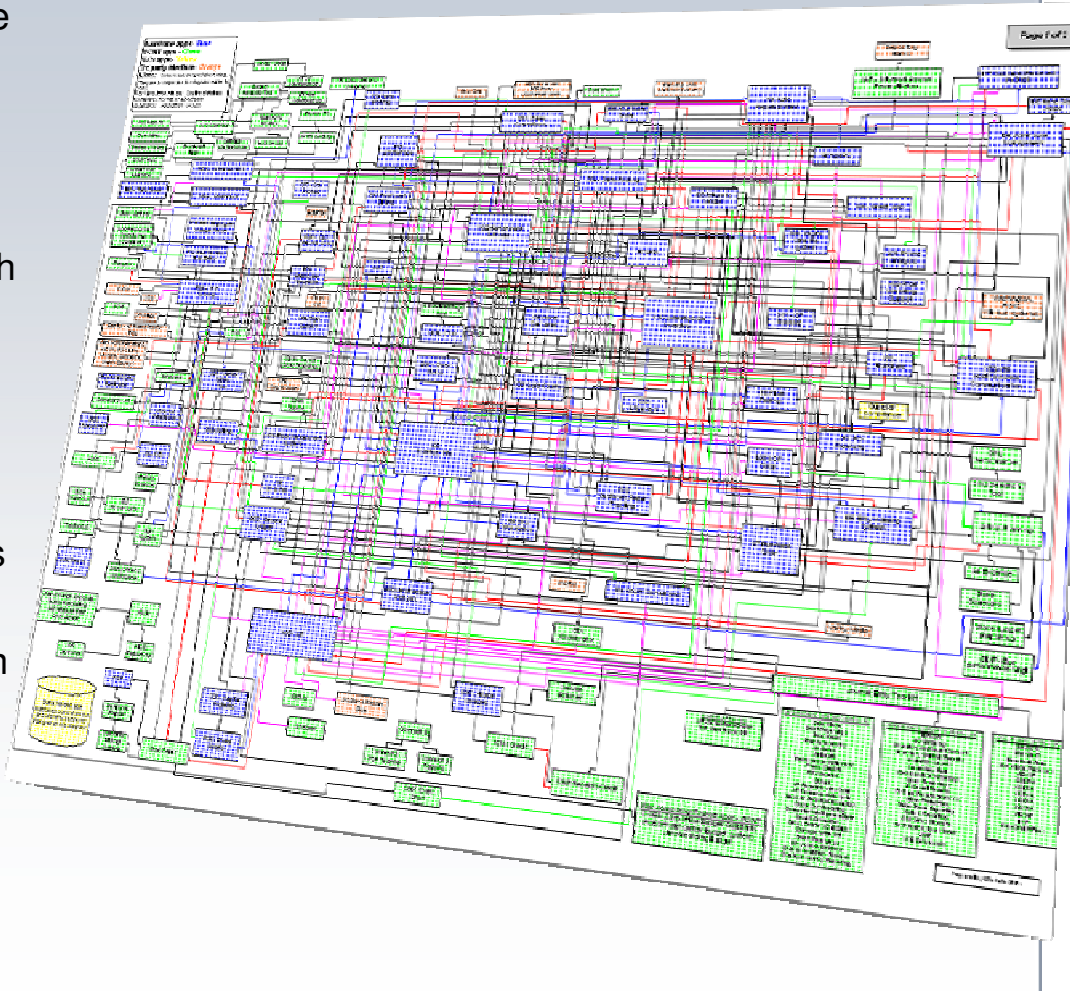
Hochiminh:

Ngo Thanh Hien, hienggo@vn.ibm.com

An Integration Strategy is Necessary

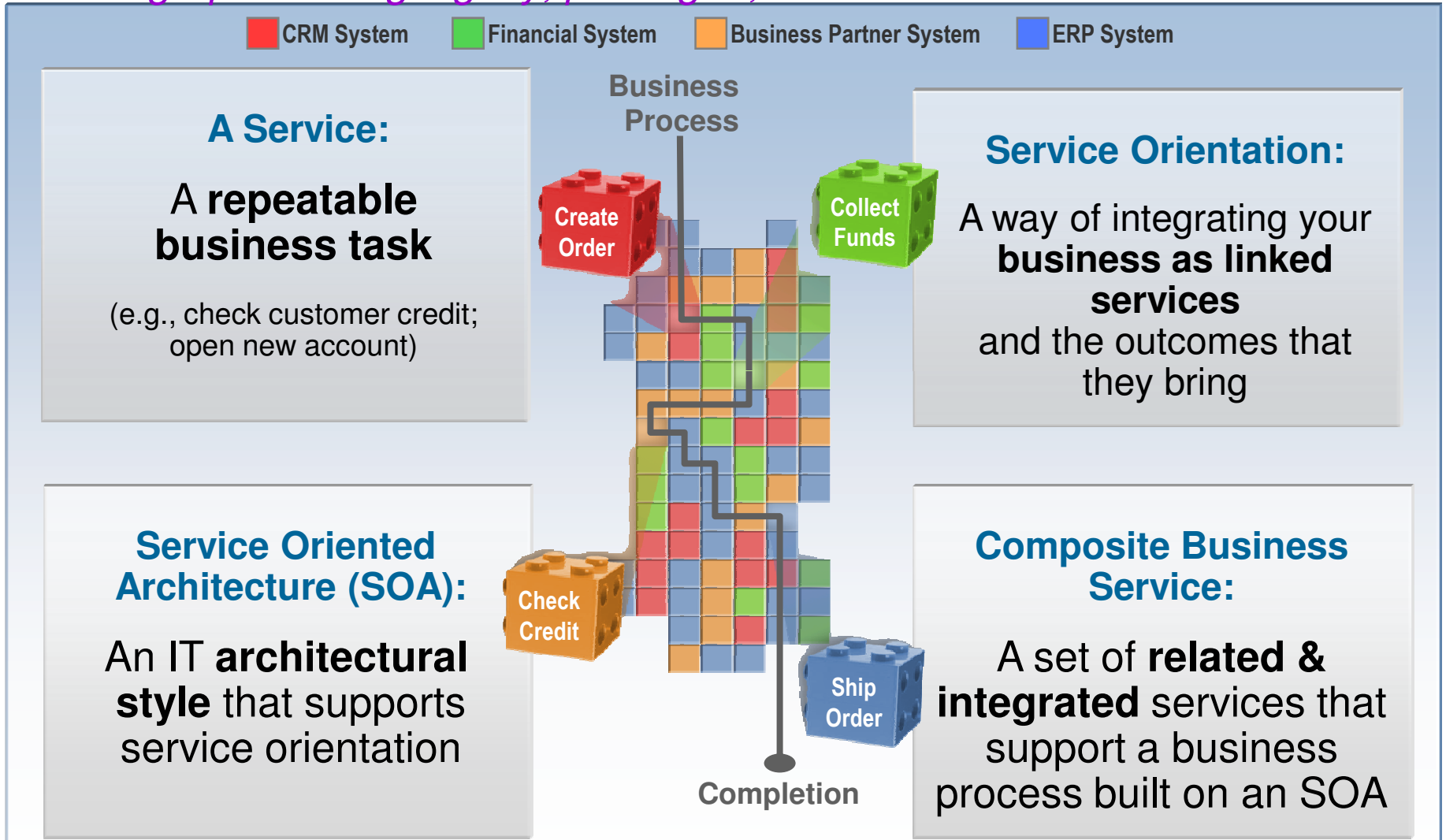
SAP System Needs Information From Files, Apps, Customers, Suppliers

- Point-to-point, FTP, batch interfaces are brittle, expensive to maintain, and unreliable
- I/T can't help the business innovate and compete because all funding allocated to "maintaining the spaghetti bowl"
- Not cost-efficient to optimize existing business process without absorbing the high cost of an application migration
- No mechanism to track long-lived process, or alert business users when a process stalls or fails
- It's the natural result when each application implementation project is allowed to pick it's own integration methodology
- Individual projects will usually take the "path of least resistance" – good for the project short-term, bad for the enterprise long-term
- Infrastructure built with no blueprint or strategic vision results in a "spaghetti bowl" of interfaces and technology over time

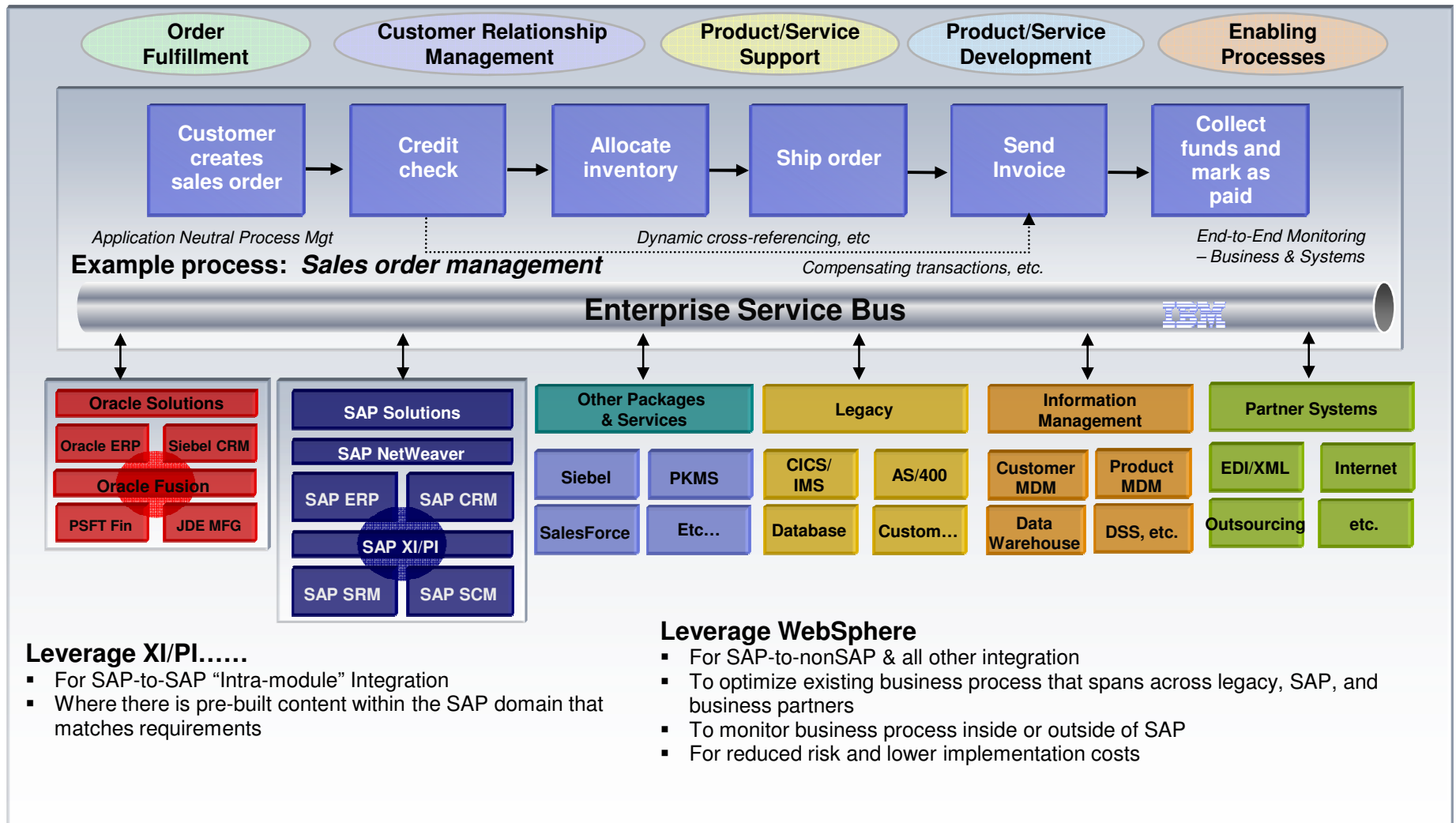


The Neutral Way to Integrate = SOA

Choreograph existing legacy, packaged, and external services



End to End Visibility with IBM Enterprise Integration



Leverage XI/PI.....

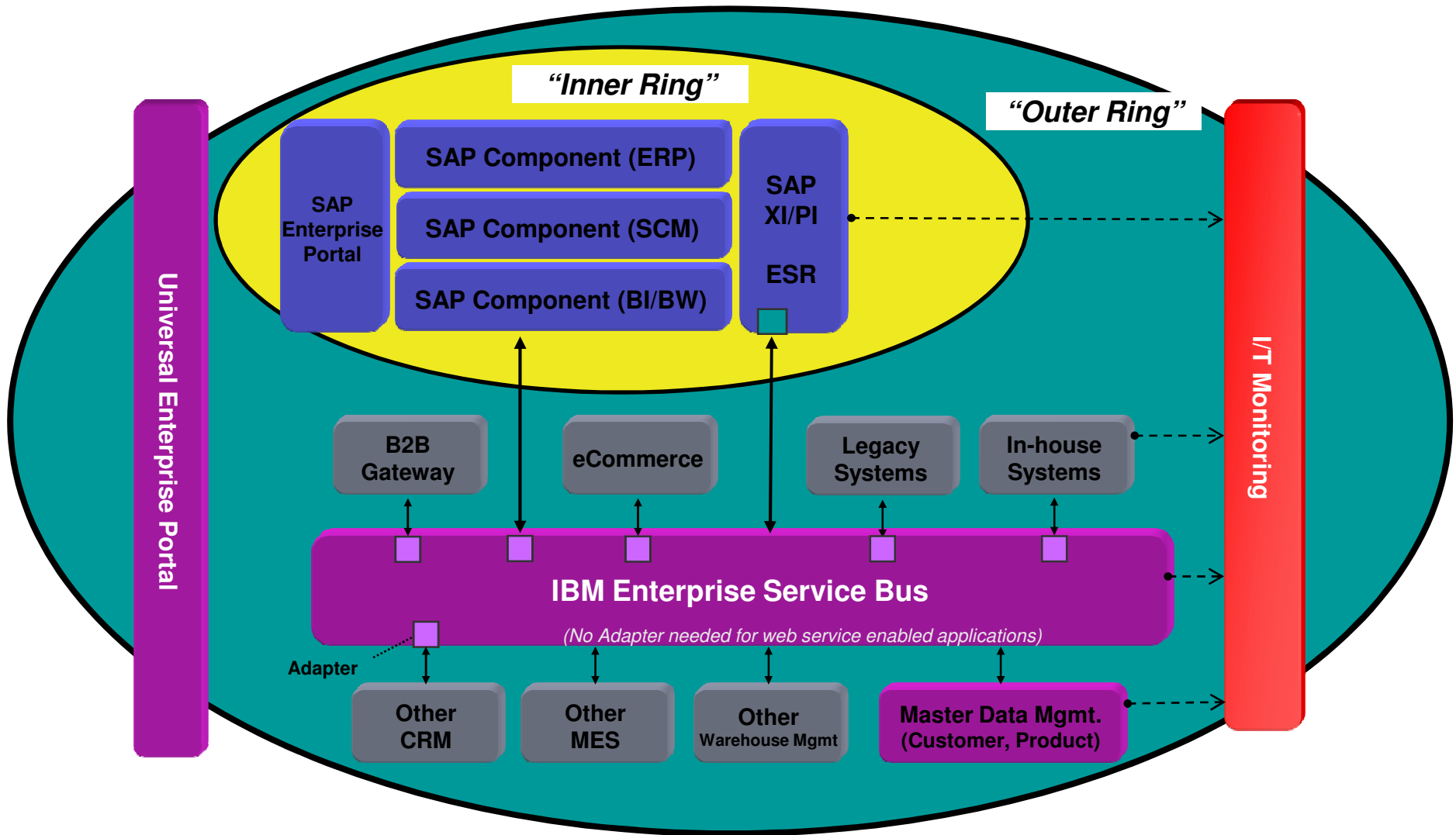
- For SAP-to-SAP "Intra-module" Integration
- Where there is pre-built content within the SAP domain that matches requirements

Leverage WebSphere

- For SAP-to-nonSAP & all other integration
- To optimize existing business process that spans across legacy, SAP, and business partners
- To monitor business process inside or outside of SAP
- For reduced risk and lower implementation costs

IBM Complements SAP

Inner-Ring / Outer-Ring Terminology



SOA Guidelines for SAP Customers



- Evaluate the “as-is” application landscape and the “to-be” application landscape if embarking on a major transformation initiative
 - *Like walking with a blindfold on without this*



- Understand the integration strategy and the integration technology needed before starting the application implementation
 - *One of the biggest mistakes of many SAP implementations*



- Establish I/T infrastructure “blueprints” and consolidate the number of software vendors
 - *Without this, the I/T organization will not be an enabler of the “agile enterprise” or be able to help the business innovate*



- Implement a governance strategy to stay on track and ensure maximum ROI
 - *Near impossible to lower TCO and maximize ROI without governance*



- Choose a set of core partners who can assist and validate your SOA strategy
 - *Different perspectives are healthy for your business*
- Think big, Start small, Execute fast



Understanding the Application & Functional Landscape

Beyond ERP, highlighted strategic areas show SOA sweet spots

	Business Admin	Financial Management	Product/ Process	Production	Supply Chain	Marketing & Sales	Service & Aftersales
Direct	Corporate/LOB Strategy	Financial Planning & Forecasting	Portfolio Strategy & Planning	Production Strategy	Supply Chain Strategy & Planning	Customer Relationship Strategy	Post Vehicle Sale Strategy
	Organization & Process	Capital Appropriation Planning	Research & Development	Master Production Planning	Demand Planning	Sales & Promotion Planning	
	Alliance Strategies		Design Rules & Policies	Production Rules & Policies	Supplier Relationship Planning	Brand Management	
Control	Human Capital Management	Risk Management & Internal Audit	Program Management	Production Scheduling	Supply Chain Performance Monitoring	Relationship Monitoring	Warranty Management
	Legal & Regulatory	Treasury	Configuration Management	Production Monitoring	Supplier Management	Demand Forecast & Analysis	Quality Management
	Business Performance		Design Validation	Quality Management	Logistics Management	Dealer Management	
	Intellectual Property	Tax Management	Change Management				
Execute	Knowledge & Learning	Accounting & General Ledger	Mechanical Design	Plant Operations	Inventory Management	Lease Management	Parts Management
	Building/ Facilities & Equipment	Cost Management	In-vehicle System Design		Transportation Management	Order Management	Vehicle Service
	IT Systems & Operations			Process Design	Maintenance Management	Procurement	Customer Relationship Management
			Tool Design & Build				

Categorize by Differentiation:

Strategic
 Competitive Parity
 Basic / Non-differentiating

2 Evaluate Integration Requirements Before Application Implementation

Routing, Transformation, and BPEL represents the “tip of the ice berg”

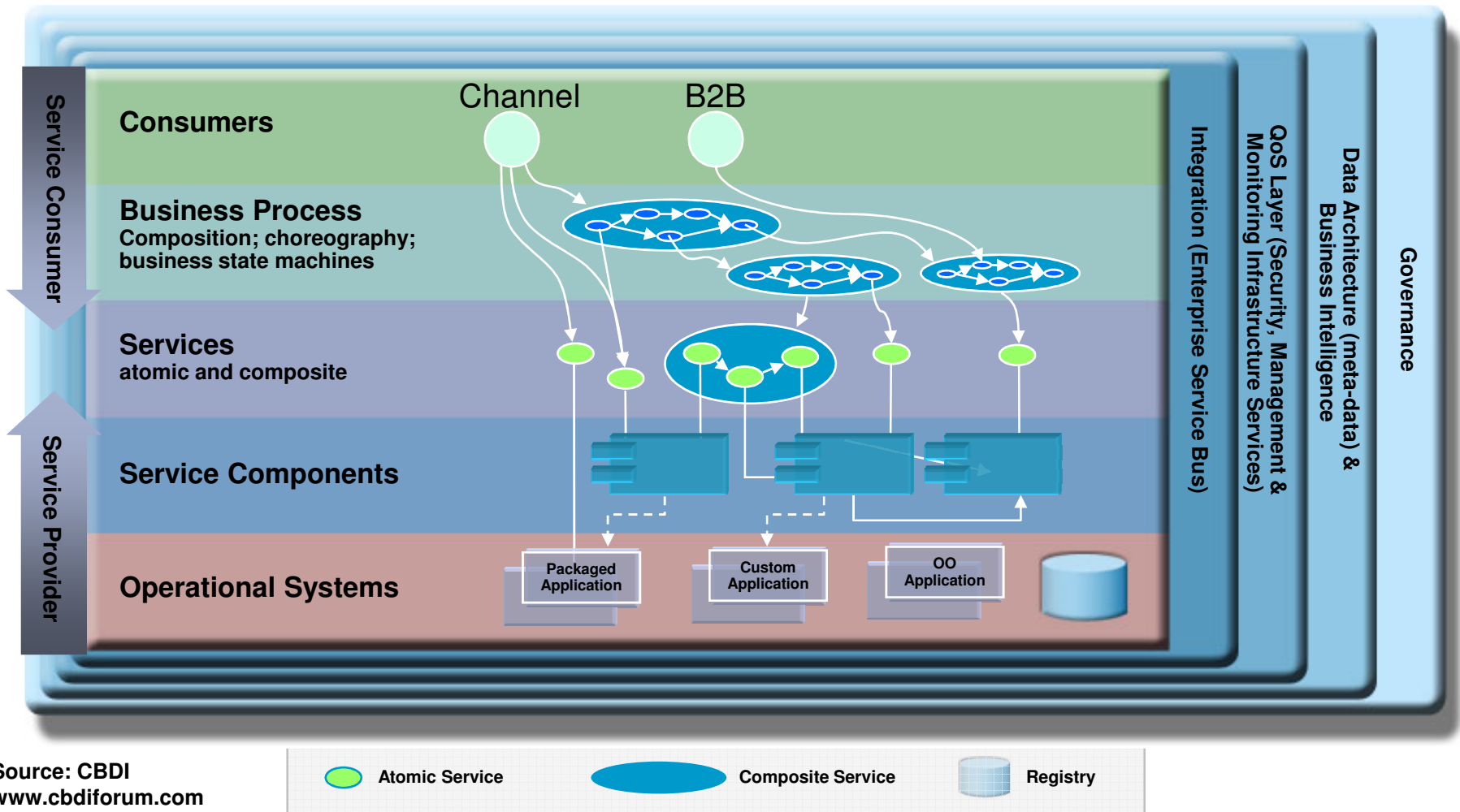
- Beware statements such as:
 - “Our integration server is good enough”
 - “You don’t need the Cadillac...”
 - “Why support two platforms...”
- Choose an integration platform that will meet any integration need for the current project, or any future project
- Size and cost the integration server hardware before making a decision
- Make open standards an important decision point:
 - Connectivity = Web Services
 - Adapters = JCA 1.5
 - Data structure = SDO
 - Service Invocation = SCA
 - BPEL = BPEL 2.0 & BPEL-J



3

Establish IT infrastructure Architecture “Blueprints”

I/T participates in bringing Agility and Flexibility to the enterprise

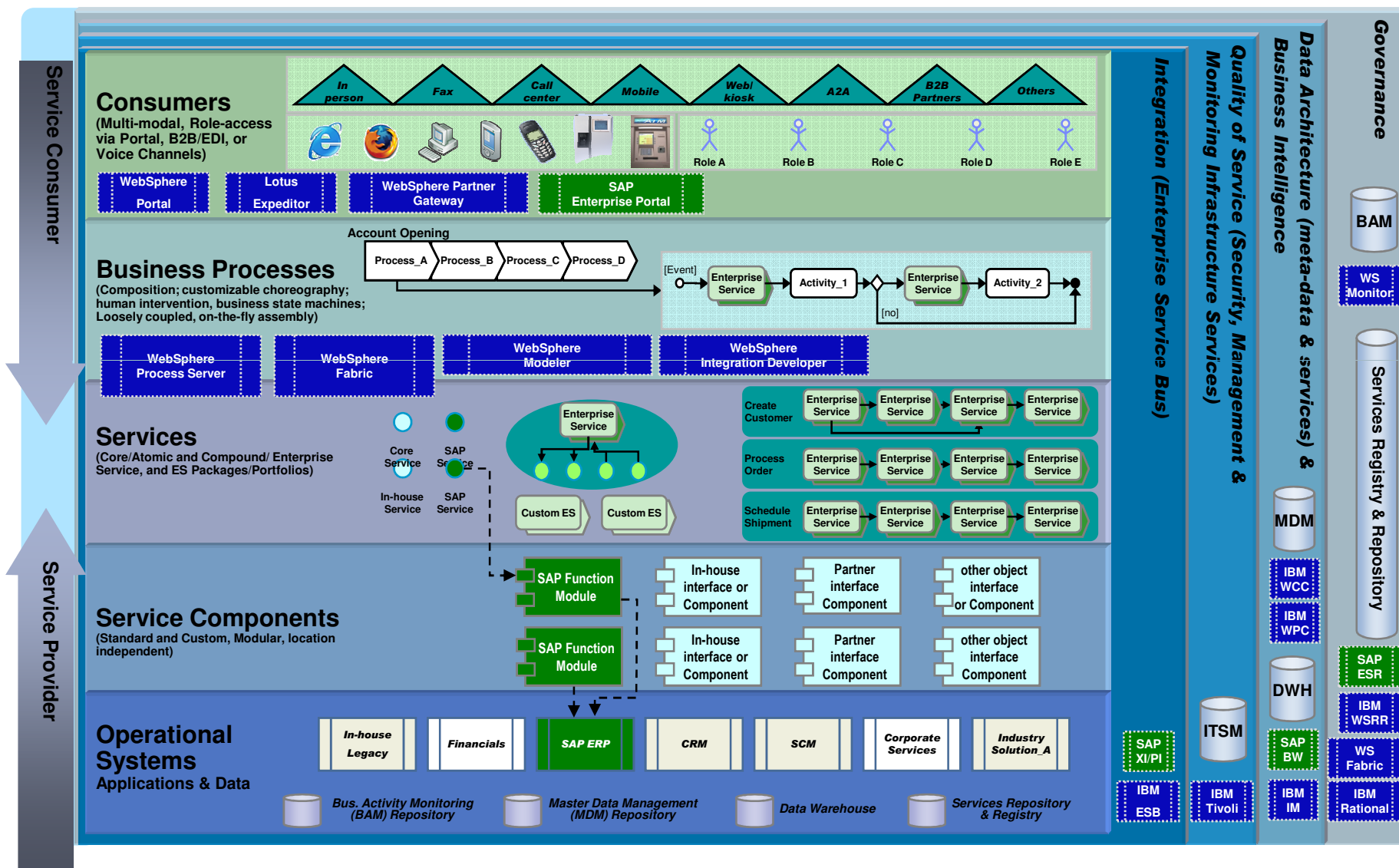


Source: CBDI
www.cbdiforum.com



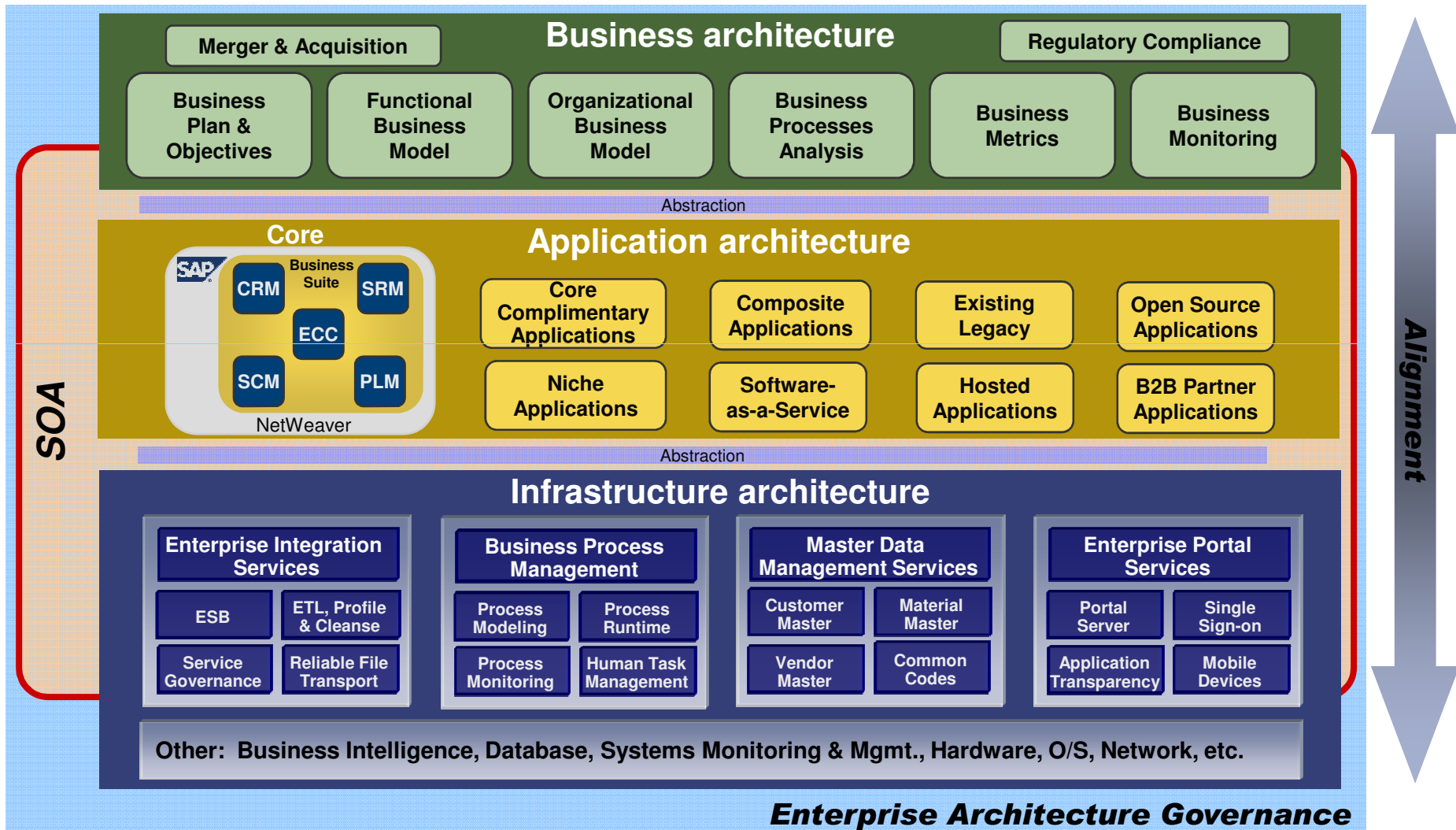
The SOA Methodology Blueprint – Detailed Example for SAP

Choose advisory partners that can help you through the technology options



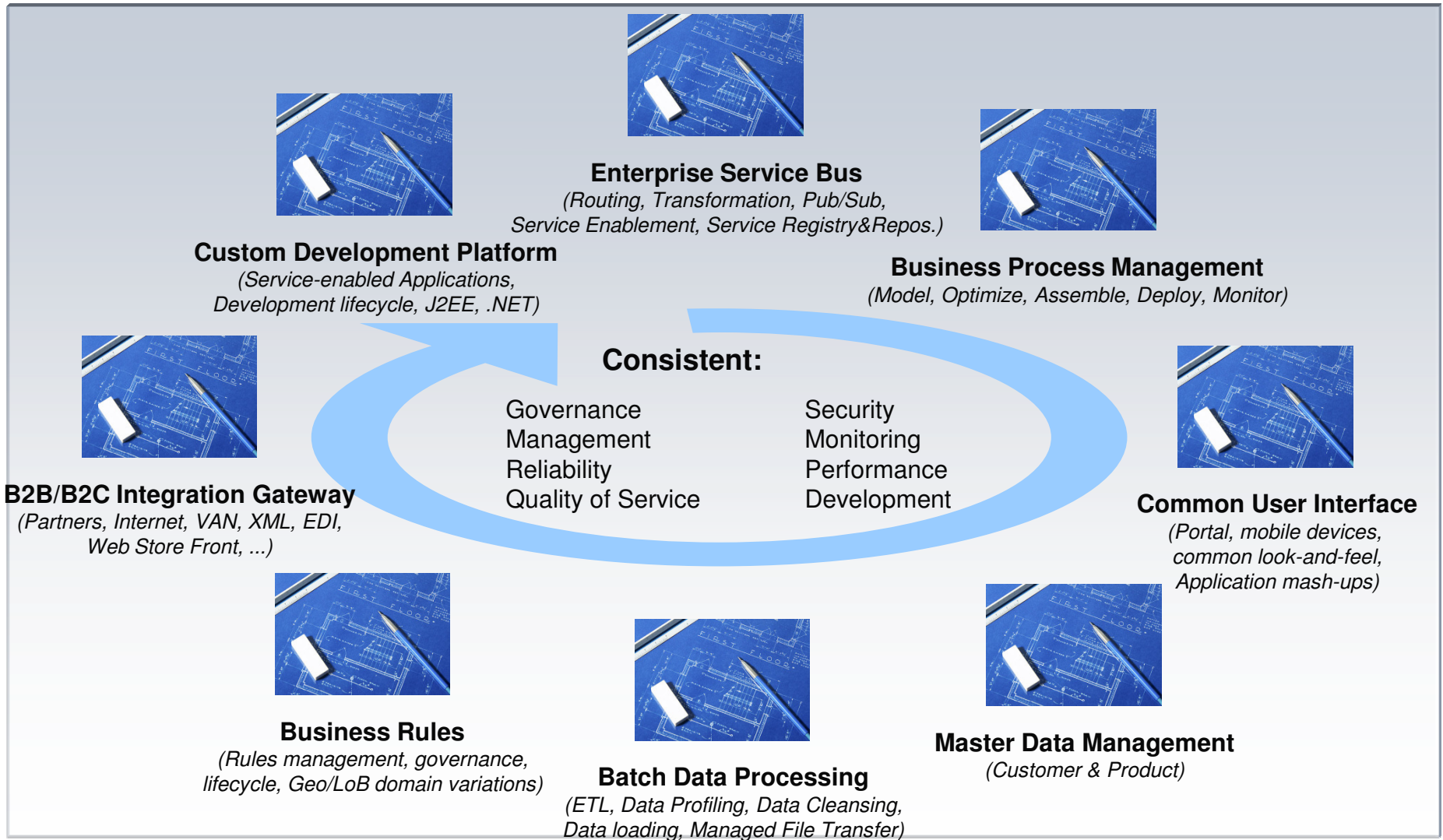
The Primary Components of Enterprise Architecture

This Model is Needed to Enable Balance, Alignment and Risk Mgmt



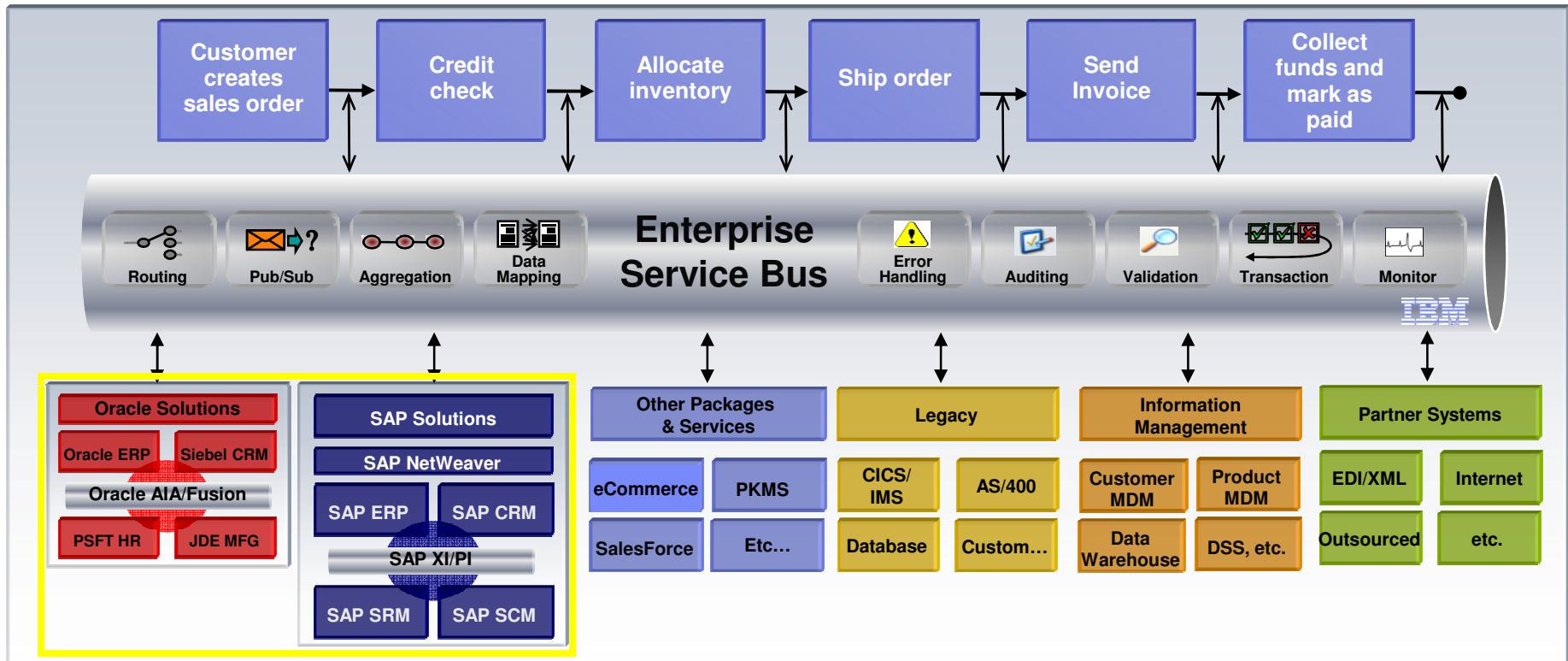
Enterprise Architecture Blueprints for an SOA Discipline

Infrastructure topics requiring a blueprint to enable agility & cut costs



Enterprise Service Bus (ESB)

The integration backbone worthy of large enterprise, mission-critical environments



Leverage XI/PI.....

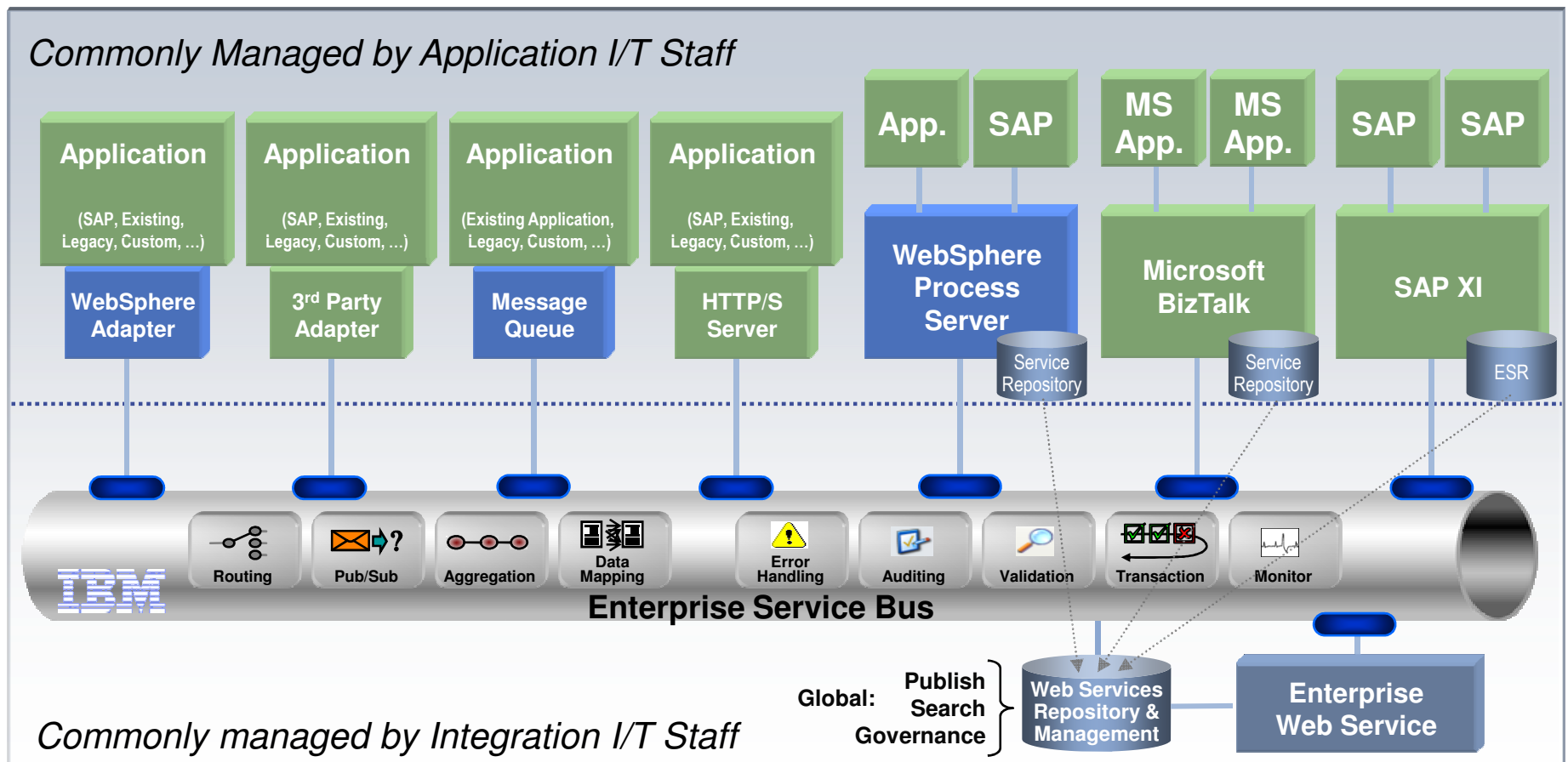
- For SAP-to-SAP "Intra-module" Integration
- Where there is pre-built content within the SAP domain that matches requirements

Leverage WebSphere

- For SAP-to-nonSAP & all other integration
- For high-volume, mission critical requirements
- For consistency across the enterprise
- Where interface and skills reuse is important
- For reduced risk and lower implementation costs
- To enable support for end-to-end business process

Enterprise Service Bus (ESB)

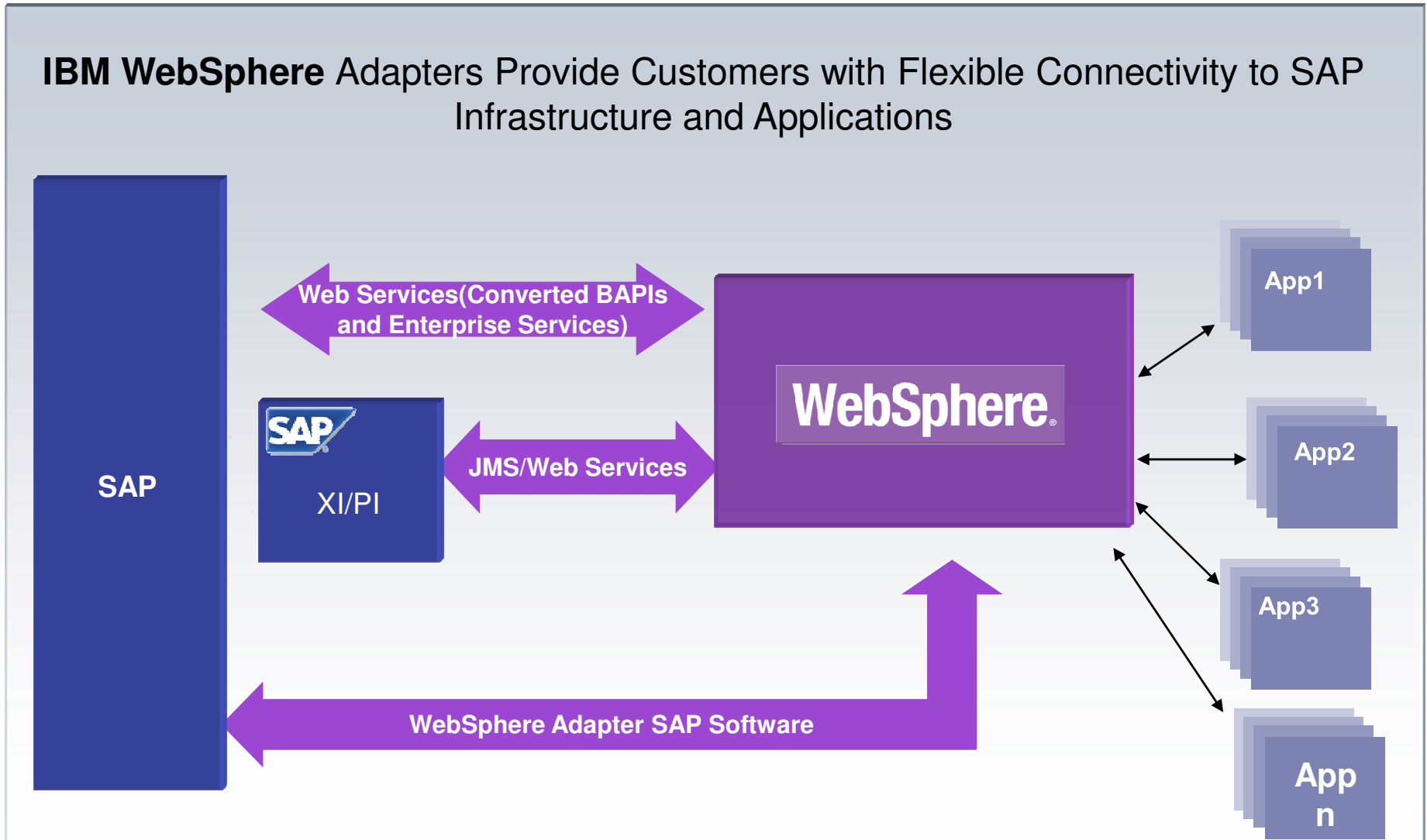
- ESB serves as the “integration highway” between disparate systems / process platforms
- Establishing Enterprise I/T Governance, Governance bodies, and controls is essential
- Enforces “quality of service” as data moves throughout the enterprise
- Provides a common, application independent, backbone





WebSphere Integrates with ANY Version of SAP

IBM WebSphere Adapters Provide Customers with Flexible Connectivity to SAP Infrastructure and Applications

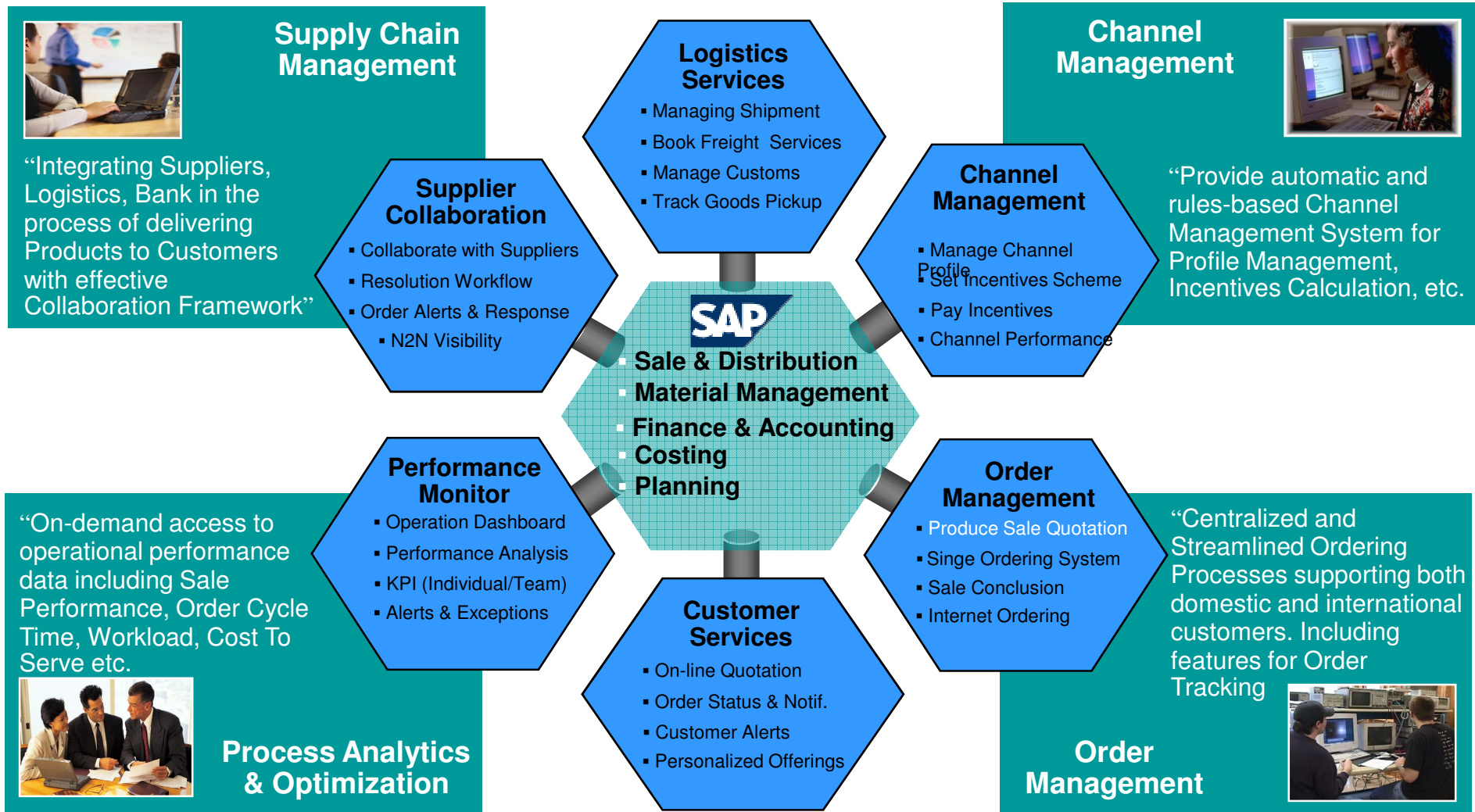


Benefits of Adopting an Enterprise Service Bus (ESB)

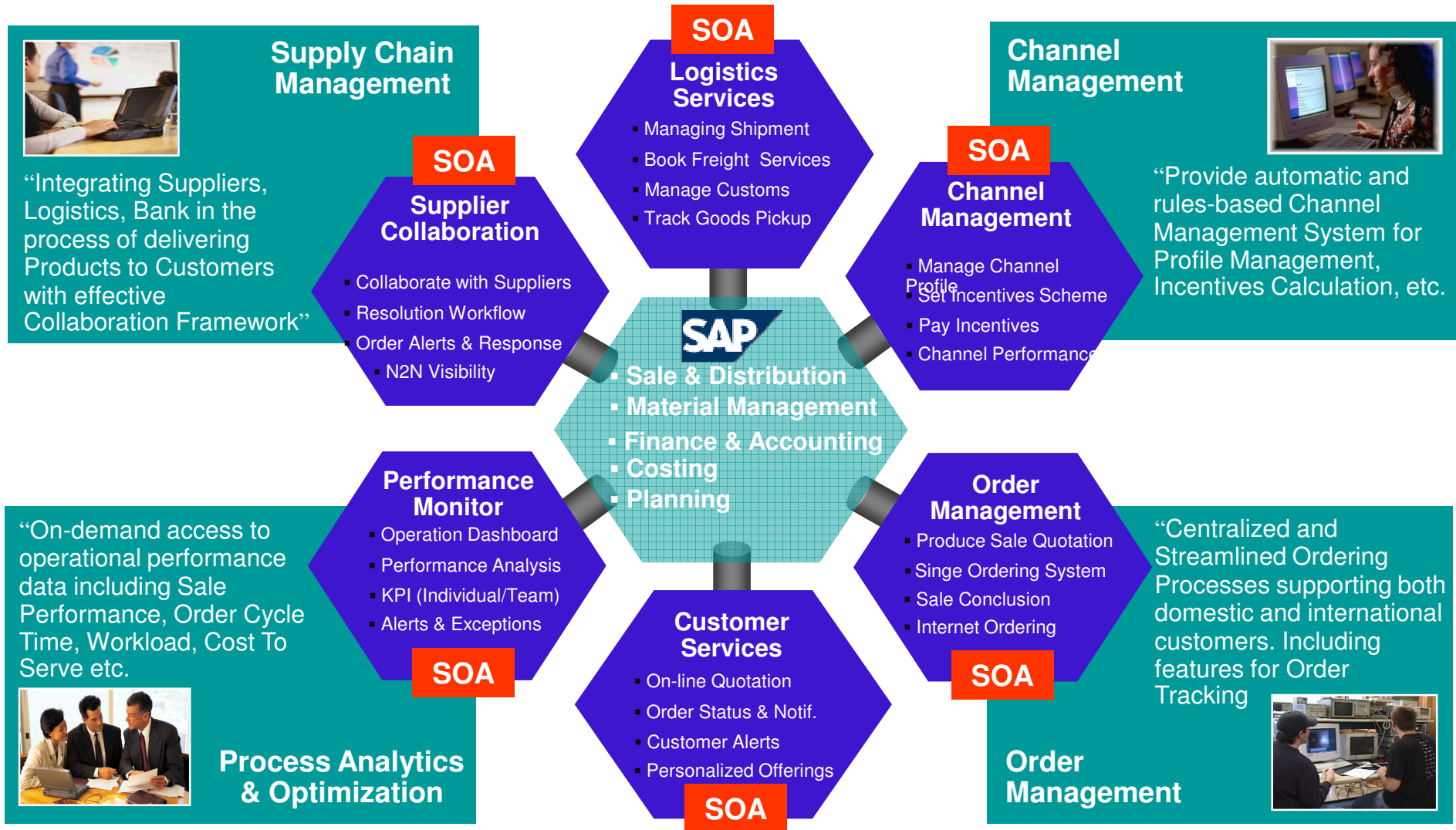
- Reduced development costs and speed of deployment
 - Robust ESB products allow for graphical assembly of interfaces between applications
- Lowers costs to maintain post-production
 - Interfaces are far more flexible to changes in the application landscape
 - Robust management, monitoring, and reporting facilities
 - Graphically oriented integration flows easily understood by someone other than the person who developed it
- Lowers cost of future development
 - All interfaces are inherently reusable and become “corporate assets”
 - Interface descriptions can be stored, searched, and loaded from a universal service repository
 - Service repository can also govern security standards and lifecycle
- Supports Real-time, Near-real-time, and batch oriented interfaces; allowing I/T to move data at an optimal efficiency for the business demands
- Service Oriented Methodology Enables Option for True Business Process Optimization & Monitoring in the Future

Business Requires Solution Beyond ERP

- SAP as core ERP system, but Business Processes Extend Beyond

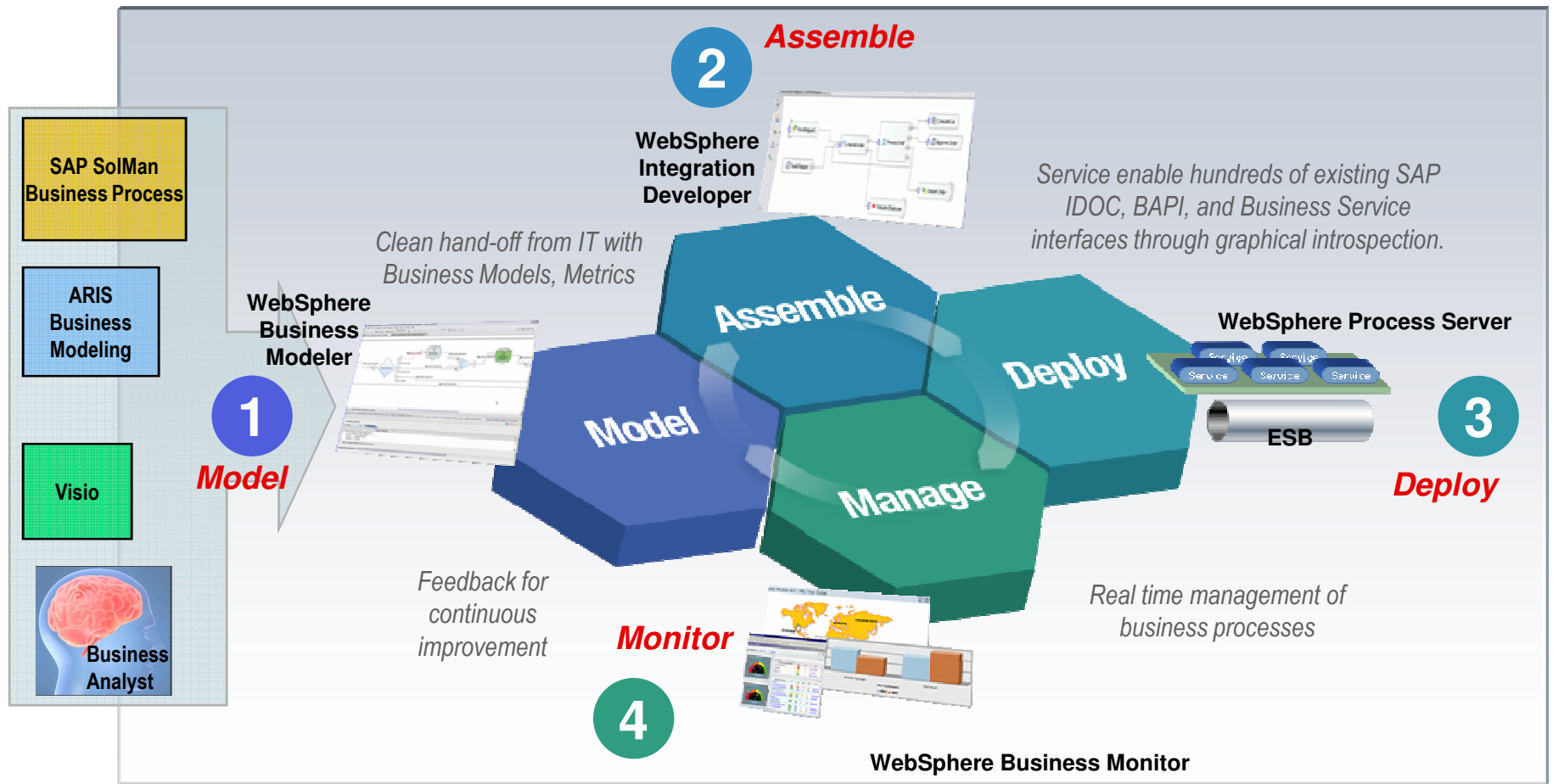
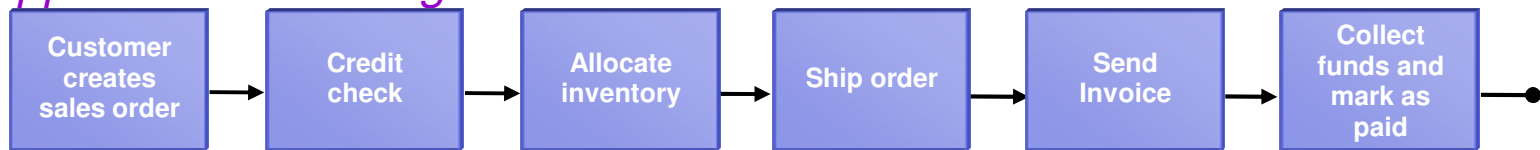


Extend SAP with BPM enabled by SOA



Business Process Management (BPM)

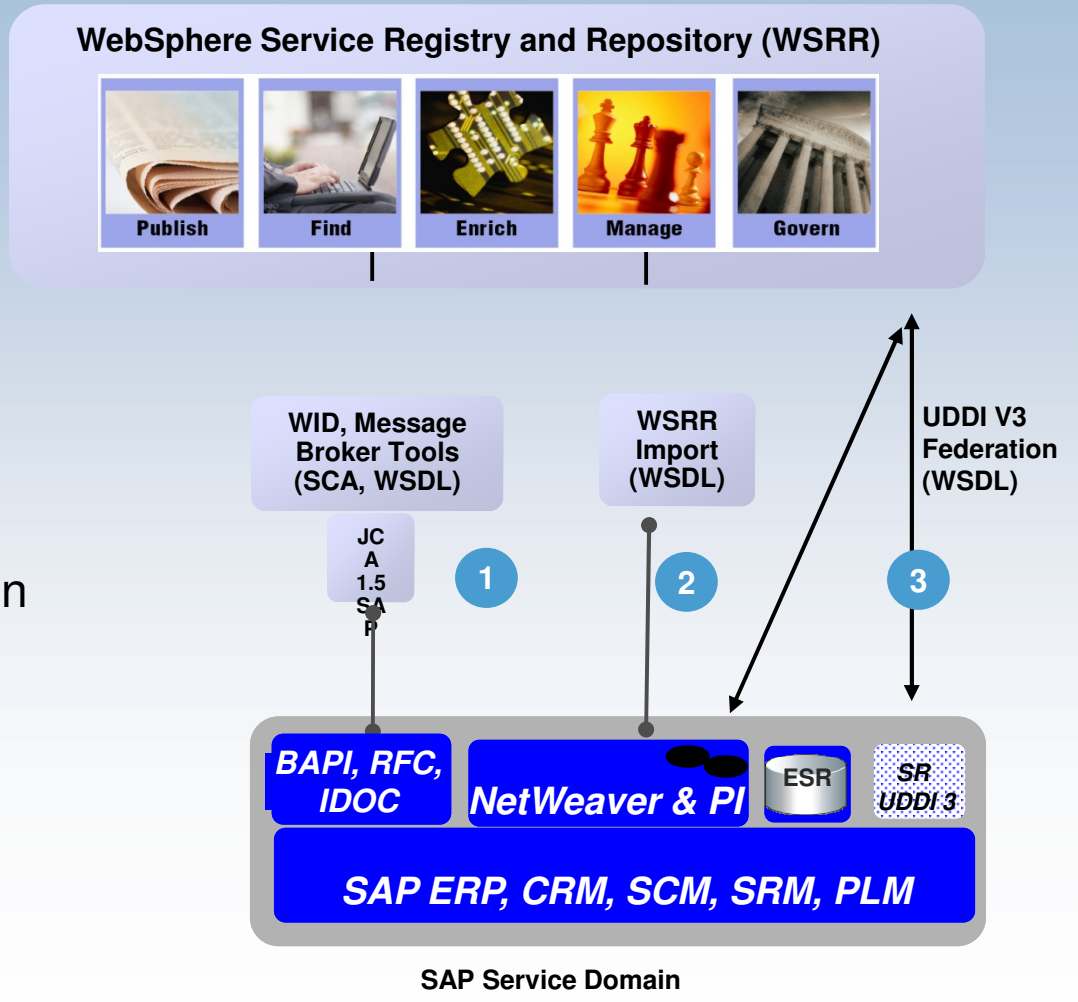
Model, optimize and monitor any existing business process without disruptive application re-hosting efforts



Service Governance

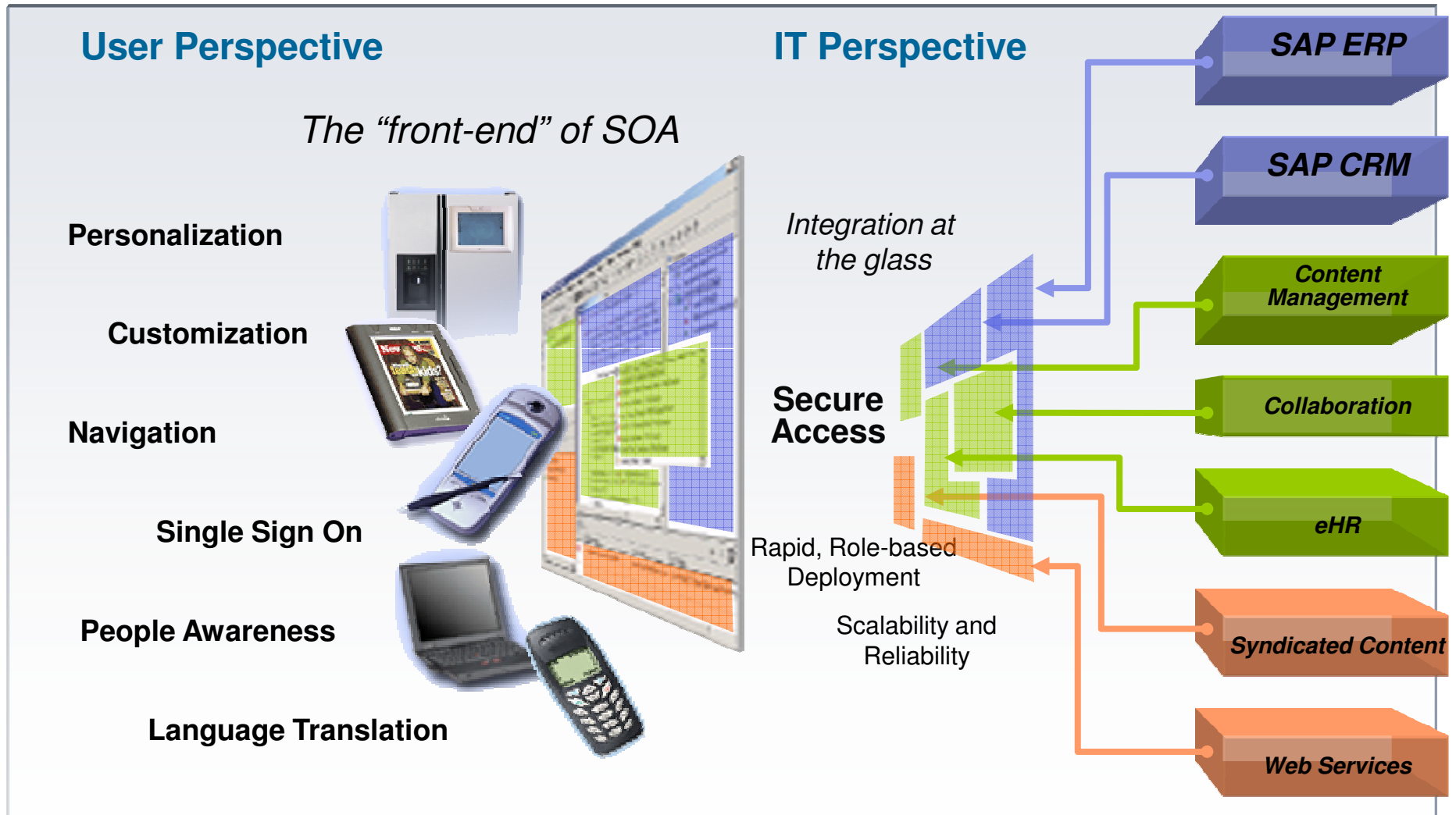
Turn every interface service into a reusable corporate asset

- Ensures service reuse and discovery across the enterprise
- Synchronize SAP Enterprise Services with WSRR with out-of-the-box support
- Common service repository & governance across SAP, legacy, custom, and Microsoft domains
- Robust solution which focuses on service lifecycle, management, security, and scalability
- Support for UDDI v3 federation



Portal

Provide a consistent look-and-feel to both SAP and non-SAP users



4 Implement a Governance Strategy to Stay on Track and Ensure Maximum ROI

- **Governance is a must for success**
- **SOA is a team sport:**
 - **Business Team and IT Team work hand-in-hand**
- **A Universal SOA foundation is critical:**
 - **Establish an enterprise architecture & infrastructure, based upon SOA principles to enable your journey**
- **A Governance team is required:**
 - **This team defines, manages, and provides access to the SOA blueprints; manages reusable SOA artifacts; etc.**
 - **Companies who invest in an Enterprise Architecture organization and establish strategic vision spend 25% less on annual I/T budgets than companies that don't**
- **Think big, Start small, Move fast**
 - **SOA is not a project – it's a methodology "sprinkled" into all projects**



The first step is the most important... so plan ahead

5

Choose a Set of Core Partners Who Can Assist and Validate Your SOA Strategy

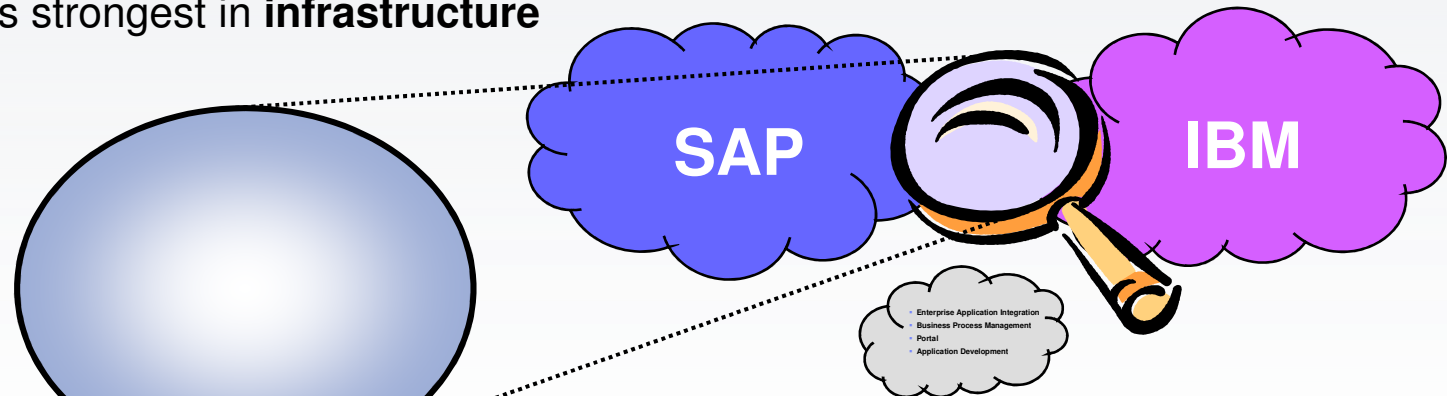
- Getting SOA right is hard to do
 - Too many vendors and each vendor claims to have “everything you need”
- Need a set of core partners you can trust
 - A partner that has visibility to SOA within other large companies around the world
- Avoid being the “early adopter” of new software technology or application modules for core projects
 - Understand and align to the core competencies of software vendors
- Try to limit the number of software vendors
 - Just as it’s possible to cut costs through application vendor consolidation, it’s possible to achieve SOA infrastructure vendor consolidation
- Base your strategy on successful SOA strategies of other companies

Customer Example: SAP & IBM Interoperability

Cost pressures force the adoption of SOA and two vendor strategy

Executive I/T Objectives:

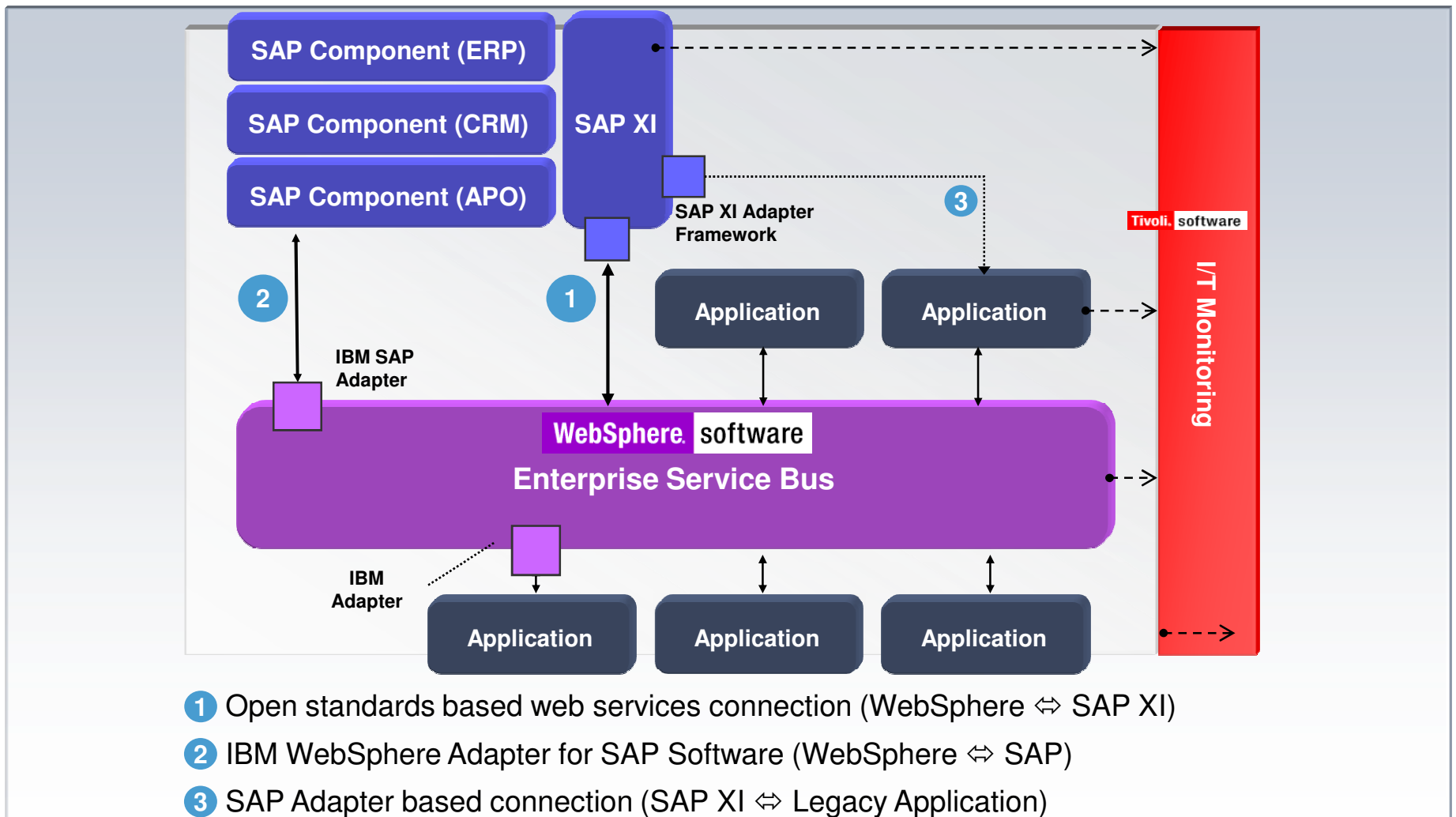
- Maximize the **use of service-oriented architecture, standard components and open IT standards**
- **Standardization in I/T** on lowest number of products/vendors
- **Reducing the number of vendors**
 - From 400 vendors down to 40 vendors
 - A vendor screening/analysis yielded results similar to analyst studies:
 - **SAP** is strongest in **solutions**,
 - **IBM** is strongest in **infrastructure**



- **IBM and SAP** asked to define how their platforms can interoperate today

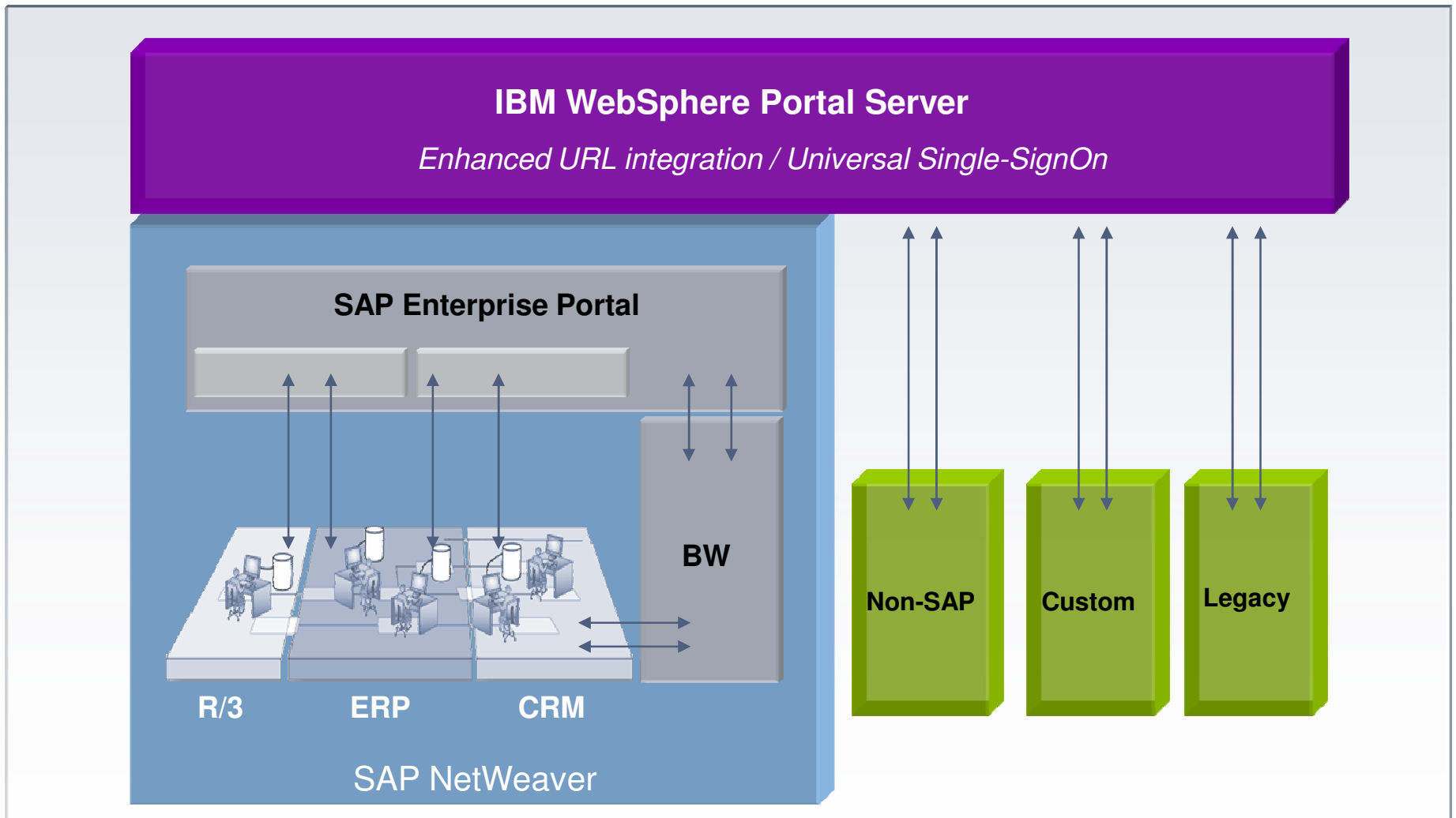
Customer Example: SAP & IBM Interoperability

IBM/SAP EAI Recommendation



Customer Example: SAP & IBM Interoperability

IBM/SAP Portal Recommendation



IBM Observations in Large SAP Transformation Customers

- **Existing SAP implementations have been heavily modified**
 - Prevents upgrading the SAP system beyond a technical upgrade
 - Costly to maintain, effectively rendering SAP into another “legacy” system
 - Creates a barrier to implementing new innovative functionality
 - SOA is the leading vehicle to abstract modifications needed by the business away from the SAP application COTS environment

- **The “integration problem” gets worse before it gets better**
 - Migrating legacy applications to SAP increases integration complexity until all legacy systems can be completely decommissioned
 - As each new business function is migrated to SAP, existing interfaces within legacy are broken, and need to be re-built
 - Consolidating onto a flexible, robust middleware platform suite is vital to any large SAP Transformation project to ensure reuse and flexibility

- **It’s impossible to migrate to SAP quick enough to meet all business demands on I/T**
 - The business can’t wait for all legacy applications to be migrated to a new application environment before it can drive efficiency improvements
 - I/T needs an immediate solution which allows the business to document, optimize, and monitor business process across existing applications

IBM Observations in Large SAP Transformation Customers

- **SAP is a best fit for consolidating “commodity business process” but does not address how companies will differentiate themselves from the competition**
 - If the competitors have also aligned their business process with SAP, how will organizations differentiate and outpace the competition?
 - Differentiation is delivered through other niche packaged applications, taking advantage of the existing legacy and custom-built applications that work well, linkages to partners up and down the supply chain, increased visibility to the business, and the ability to change faster than the competition.
 - Companies need a solid strategy to address business innovation through I/T

- **SAP’s entry into the “middleware plumbing” market has created great divides within internal IT organizations**
 - The traditional “applications team” is suddenly trying to “compete” internally with the traditional “integration team” -- Lines have been blurred.
 - It’s better to make a top-level decision, define the middleware strategy, and gain consensus; than to make no formal decision at all.
 - Establishing an empowered governance organization and setting guidelines (not laws) and decision trees, is critical for success and ROI.
 - Obtaining formal acceptance of the strategy across all levels within the IT organization, and providing formal mechanisms for employees to voice architecture concerns, is critical

Advantage of Teaming IBM with SAP

Lower TCO, mitigate risk, and improve the business

- 1 TCO Reduction**
 - Pricing advantage
 - Time to Deploy
 - Cost to manage and maintain
- 2 Risk Mitigation**
 - Interoperability with SAP and other applications
 - Market-proven platform
- 3 Improve Business Innovation**
 - Process-driven (model, execute, monitor, adapt)
 - Leverage ERP for standardized business processes
 - Leverage SOA for strategic differentiators



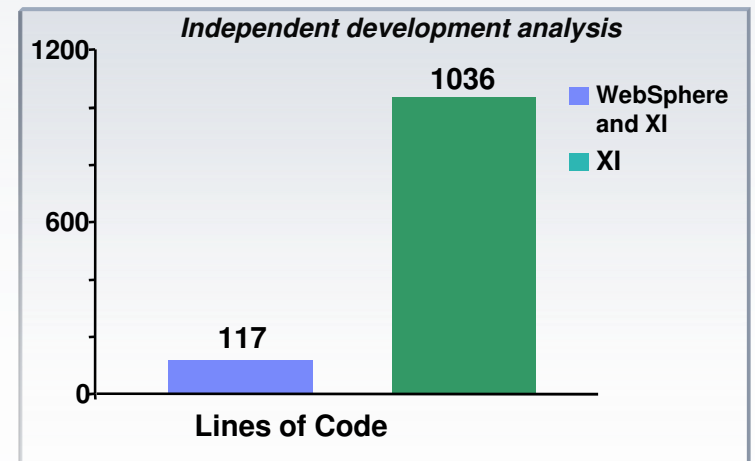
TCO Reduction

Adding WebSphere to your SAP deployment will reduce TCO

IBM WebSphere typically results in lower costs when used together with NetWeaver. Why?

- IBM engineering and lab investment ensures seamless interoperability between WebSphere and SAP technology
- WebSphere provides all the missing integration feature/functions
- WebSphere requires significantly less hardware than other solutions
- WebSphere provides greater reliability offering reduced risk due to system outages or lost transactions
- NetWeaver XI/PI is not free for integrating external applications to SAP
- No need to purchase additional 3rd party components like Adapters, BPM tools, B2B Gateway, initial data load tools, etc.
- Unique abstraction layers significantly reduce costs when upgrading SAP

The IBM ISICC Lab
SAP Campus
Waldorf, Germany



Potential savings in effort – Typical CRM to SAP integration

IBM Technology Accelerators for SAP

BPM, ESB, & ETL example investments by IBM for SAP customers

- Business Process Management (BPM)
 - Import SAP Solution Manager process descriptions into WebSphere
 - Monitor SAP processes through SAP Common Base Events (CBE)
 - Interoperability and co-existence with IDS Scheer ARIS business modeling solutions
 - Pre-Built composite processes to extend and augment OOTB SAP processes
- Enterprise Service Bus (ESB)
 - Native support for SAP interfaces through SAP PI or WebSphere Adapter
 - JCA 1.5 compliant WebSphere Adapter for SAP, also supporting the open SDO data definition and SCA binding standards
 - Interoperability testing between IBM integration servers and SAP exposed web services
 - Synchronization of web services metadata between WebSphere Service Registry & Repository (WSRR) and SAP Enterprise Services Repository (ESR)
 - Common Data Transformation Engine for software ESB, Integration appliance ESB, and ETL tooling for complete integration lifecycle reusability
- Extract, Transform, & Load (ETL) Tools
 - Native support for importing or exporting large data volumes in/out of SAP or SAP Netweaver BI
 - Unique data profiling, cleansing, and quality management functionality ensures the quality of the data used to initially load the SAP system (*“garbage in = garbage out”*)
 - Graphical automation and management of SAP batch interfaces

IBM Technology Accelerators for SAP

MDM & Portal example investments by IBM for SAP customers

- Master Data Management (MDM) Capabilities
 - InfoSphere Data Management designed to provide a centralized view of Customer, Product, Employee information across SAP and heterogeneous systems
 - InfoSphere leverages the IBM ESB for interface reuse & consistency
- Portal Capabilities
 - WebSphere Portal enables customers to have a ubiquitous portal platform across the enterprise regardless of where the underlying data/functionality resides
 - SAP Enterprise Portal (EP) is not efficient outside of the SAP environment
 - White papers and artifacts available to make WebSphere Portal and SAP EP interoperable, and configure compatible single sign-on capabilities

Other “Below the Line” SAP Accelerator Notes

Database, Mgmt & HW example investments by IBM for SAP customers

- DB2 is the preferred database for SAP
 - Specifically optimized for SAP OLTP and BW OLAP environments through a bilateral engineering relationship
 - Price, performance, and reliability advantages
 - Reduce disk storage requirements by at least 30% with DB2 deep compression
 - Significant and immediate performance improvements achieved after database compression (20% +)
 - Hundreds of successful Oracle to DB2 conversions = low cost and no risk for customers
 - Internal SAP operations now run on DB2, not Oracle (“IBM runs SAP, SAP runs IBM”)
 - “DB2 CommonStore for SAP” for SAP data archiving solution
- Tivoli
 - “Network crawler” software to automatically inspect/catalog the SAP and IBM software, configuration, and dependencies across an organization
 - Federated identity management
 - SAP systems monitoring combined with middleware, O/S, hardware, and network monitoring dashboards
 - SAP and composite services testing tools (unit test, system test, performance test, etc.)
- Hardware
 - Specific SAP optimizations for pSeries, iSeries, zSeries, and xSeries
 - Significant energy savings by consolidating multiple SAP and DB2 instances on a single box
 - Virtual partitioning for rules based balancing of CPU, memory, and I/O resources when running multiple instances of SAP and DB2 on a single box
 - Significant HA and disaster recovery advantages by consolidating multiple SAP and DB2 instance on a single box
 - SAN technology for fault tolerance, high availability, disaster recovery
 - *IBM Dynamic Infrastructure* to provision a new SAP system in minutes instead of the typical 160+ days

Questions and Answers

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