Product Lifecycle Management

Supply Chain Innovation

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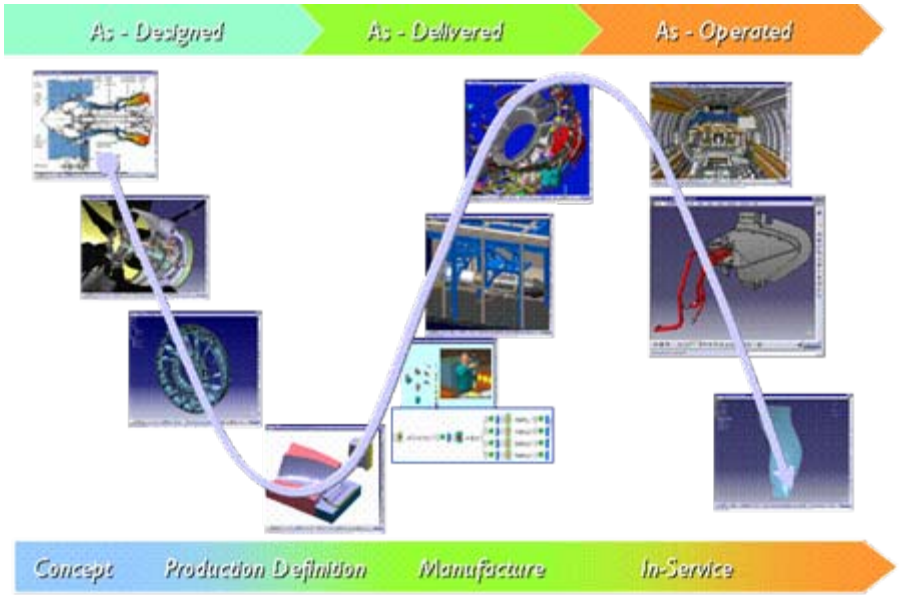
Agenda

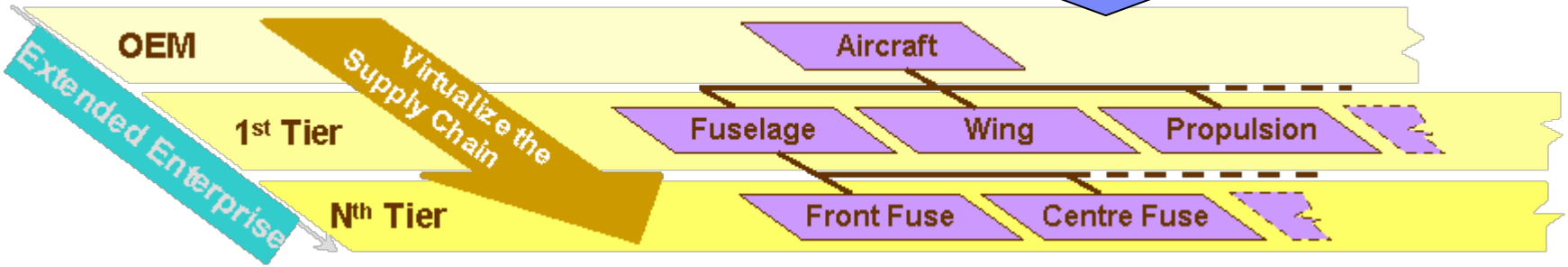
- **Supply Chain Overview**
- **IBM PLM Supply Chain Approach**
- **IBM PLM Supply Chain Collaboration Solutions - example**
- **Enabling Supplier Integration**
- **Questions and Answers**

Supply Chain Overview

All OEM's see Integrated Capability throughout the Product Lifecycle as a strategic imperative

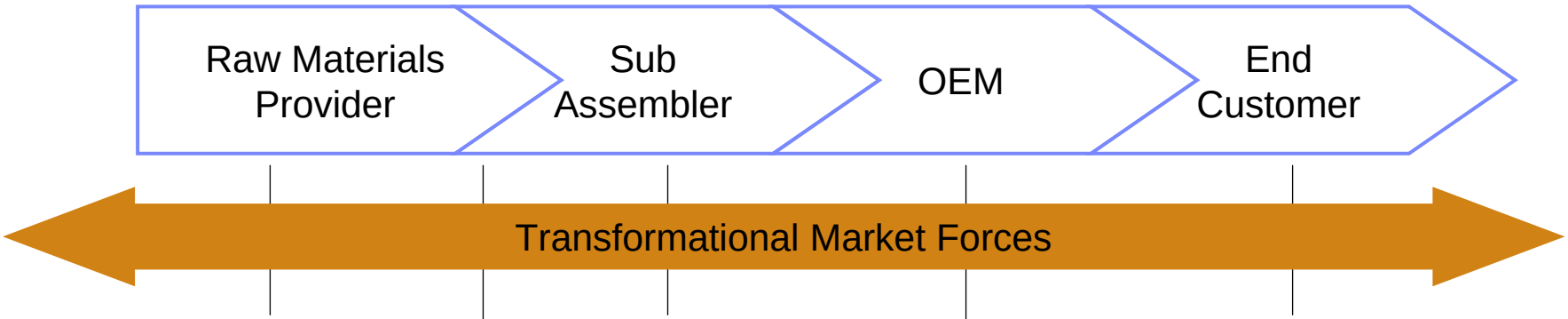


But when 60-80% of the Value creation is in the Global Supply chain…..
…an innovative approach Is required.



A single company cannot innovate in a vacuum - there is a ripple effect throughout the industry value chain

Top Concerns Focus on Responding to the Customer, Collaboration



"How can I respond to the new demands of my customers?"

"How can I improve the effectiveness with which I collaborate with my partners without incurring higher costs?"

"Am I equipped to act as a prime?"

"My suppliers are transforming—what am I doing to help them, and help myself?"

New Sub Assemblers
"Do I have the tools, processes, and operational structure required to assume this new role?"

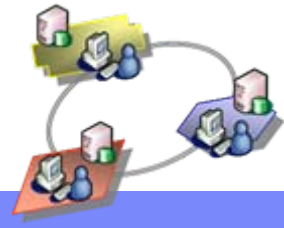
"Will I have to take on the overhead costs that OEMs are shedding?"

"How can I manage my business partners within this new horizontal model to ensure that they meet their production and quality commitments?"

"What data will they need to work efficiently and effectively?"

The supply chain is being stretched to innovate in two directions.

New business models aimed at harnessing those benefits accruing to Global scale/scope



New processes and technology to support business model transformation

- Strategic focus
- Global reach
- Economies of scale
- Best practice leverage
- Consistent delivery

The result is that many supply chains are struggling with processes and technologies designed for legacy business models and are experiencing new unanticipated costs, inhibiting innovation.

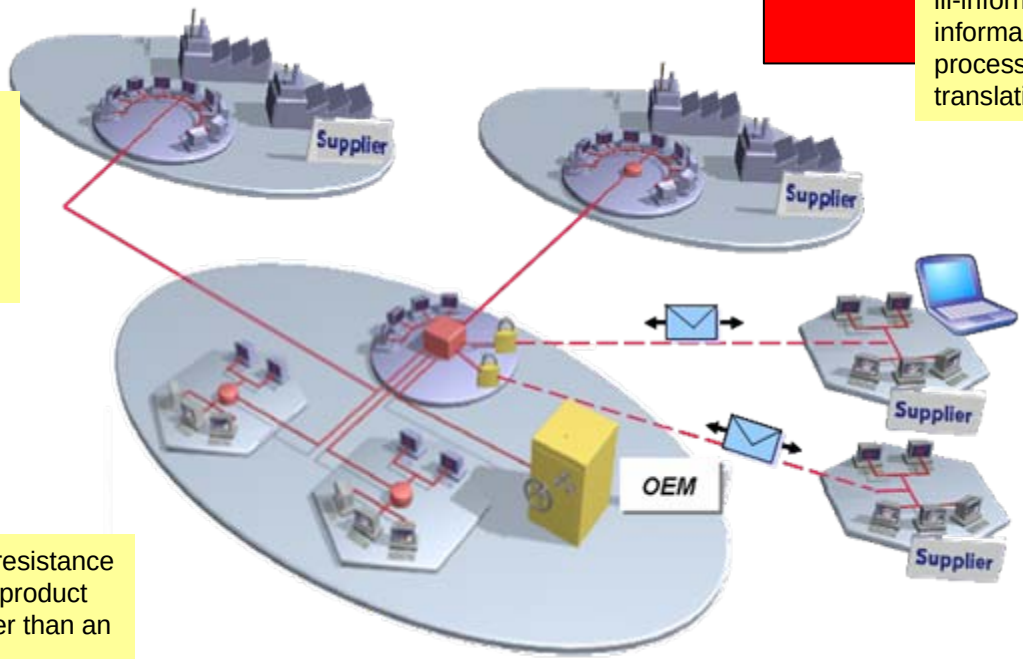
Innovation inhibitors in the supply chain

New Business Model– what to demand of suppliers is not understood

Contractual agreement in advance of understanding of and clarity on new technology and process requirements leads to sub-optimal program execution.

Inability to manage data across the supply chain

ill-informed decisions without real-time information. Delays and errors due to poor processes, manual reformatting and translation.



Supplier push-back - refuses to comply/delays

Low conformity, additional cost/risk to program

Lack of integration of product data, applications and configurations in an end-to-end DISTRIBUTED process

Strong silo cultures and resistance to change make sharing product information a deficit rather than an asset to the business.

Inability to realize full value and benefits of PLM across the EXTENDED enterprise.

Time, Cost, Quality and Risk issues as Supply Chain Owners struggle to define and deploy innovation business processes

Lack of Common methods across global multi-enterprise value chain
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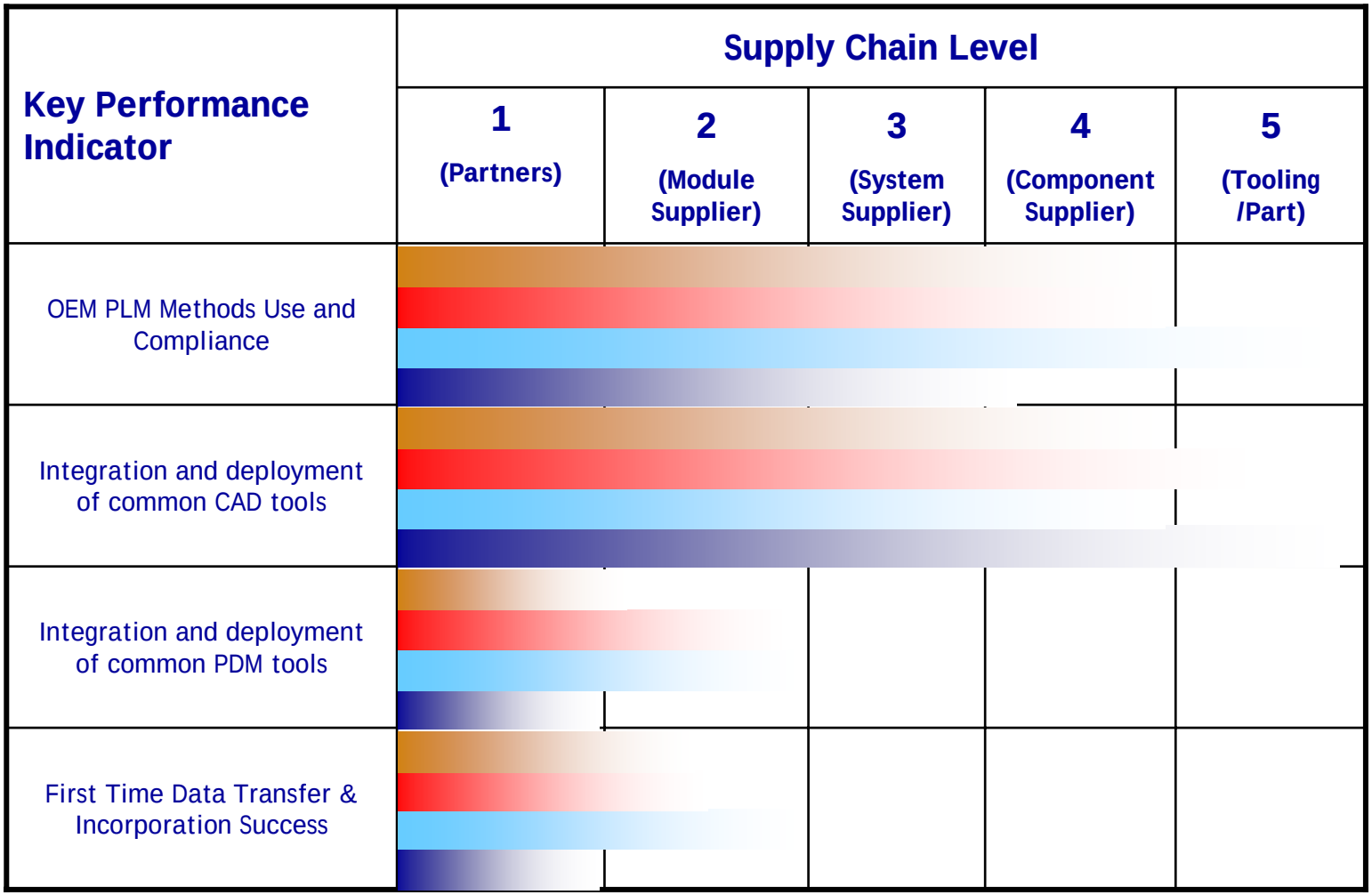
Difficult to transfer work across sites and to readily re-use and explot digital data.

Penetration of key PLM performance indicators through the supply chain

Key Performance Indicator	Supply Chain Level				
	1 (Partners)	2 (Module Supplier)	3 (System Supplier)	4 (Component Supplier)	5 (Tooling /Part)
OEM PLM Methods Use and Compliance					
Integration and deployment of common CAD tools					
Integration and deployment of common PDM tools					
First Time Data Transfer & Incorporation Success					



IBM PLM Supply Chain Approach

The IBM PLM Supply Chain solutions value statement

IBM PLM Supply Chain solutions deliver the processes and technology to support globally distributed product design and development

- **Manage risk**
  - By identifying and targeting the key supply chain collaboration processes and participants
- **Reduce time-to-market**
  - By removing duplication of effort, excessive checking and rework
- **Reduce resources**
  - Through automation of supply chain processes and collaboration
- **Exploit Global Partnering**
  - Enable partners and suppliers in any geography
- **Increase common tools and process - appropriately**
  - Profiling suppliers, tiered solutions

Engaging with our customers around the Supply Chain Collaboration solutions

OBJECTIVE:

Create awareness of the potential value of a harmonised supply chain and risks of inaction.

OBJECTIVE

Develop Outline strategy, roadmap and ROI for specific OEM supply chain.

OBJECTIVE

Study OEM's specific circumstances, create specific recommendation to include:

- **SCC Strategy**
- **SCC Roadmap**
- **SCC ROI**
- **SCC Segmentation**

OBJECTIVE

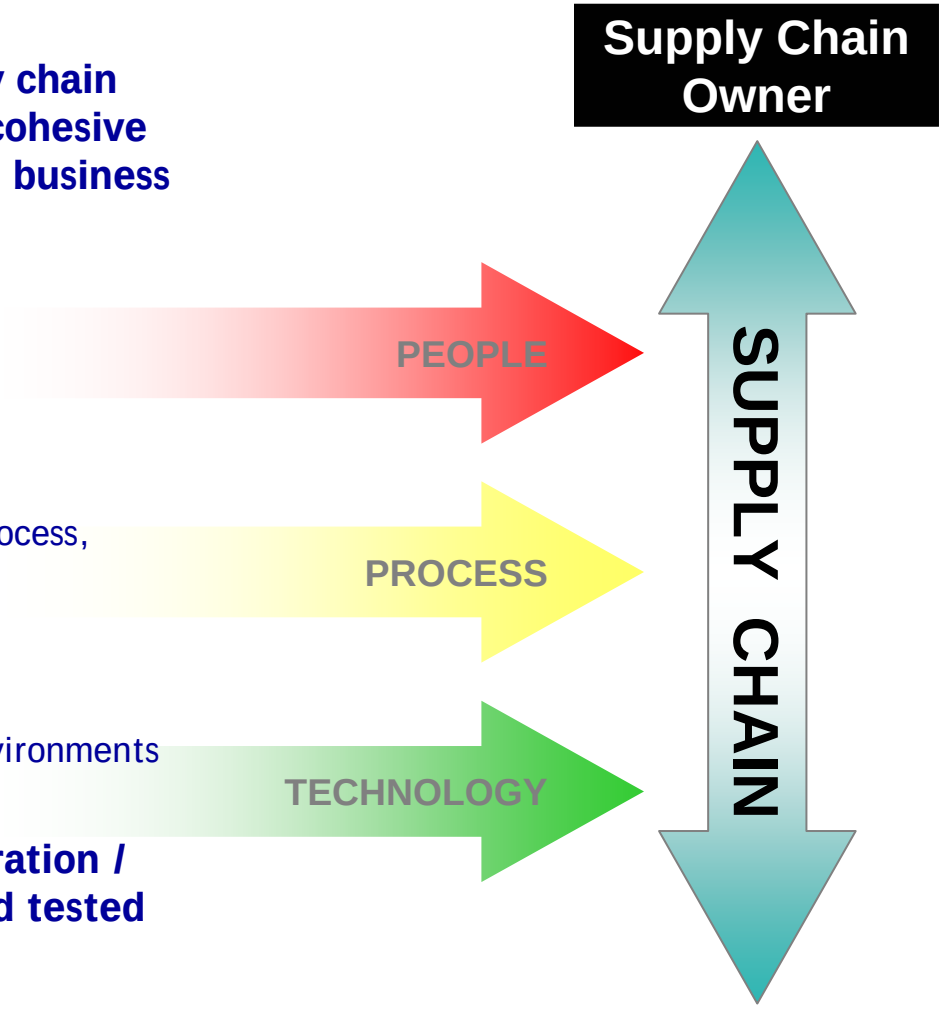
Develop the detailed Supply Chain solution design and delivery plan

OBJECTIVE

Deploy defined solution

Supply chain solution typical engagement approach

- **Approach with IBM working with the supply chain owner as well as the suppliers to define a cohesive supply chain strategy to meet the project / business unit / enterprise needs**
- **Supply chain activity includes:**
  - Supply chain needs assessment
  - Supplier capability review
  - Supply chain strategy
  - Supply chain owner and supplier roadmaps (process, technology and organisation)
  - *Supplier profiling*
  - *Supplier assessment*
  - Provides pre-configured data management environments developed with industrial partners
- **Brings various means of supply chain integration / interaction / interfacing pre-configured and tested**
- **Supply chain solution "bundling"**

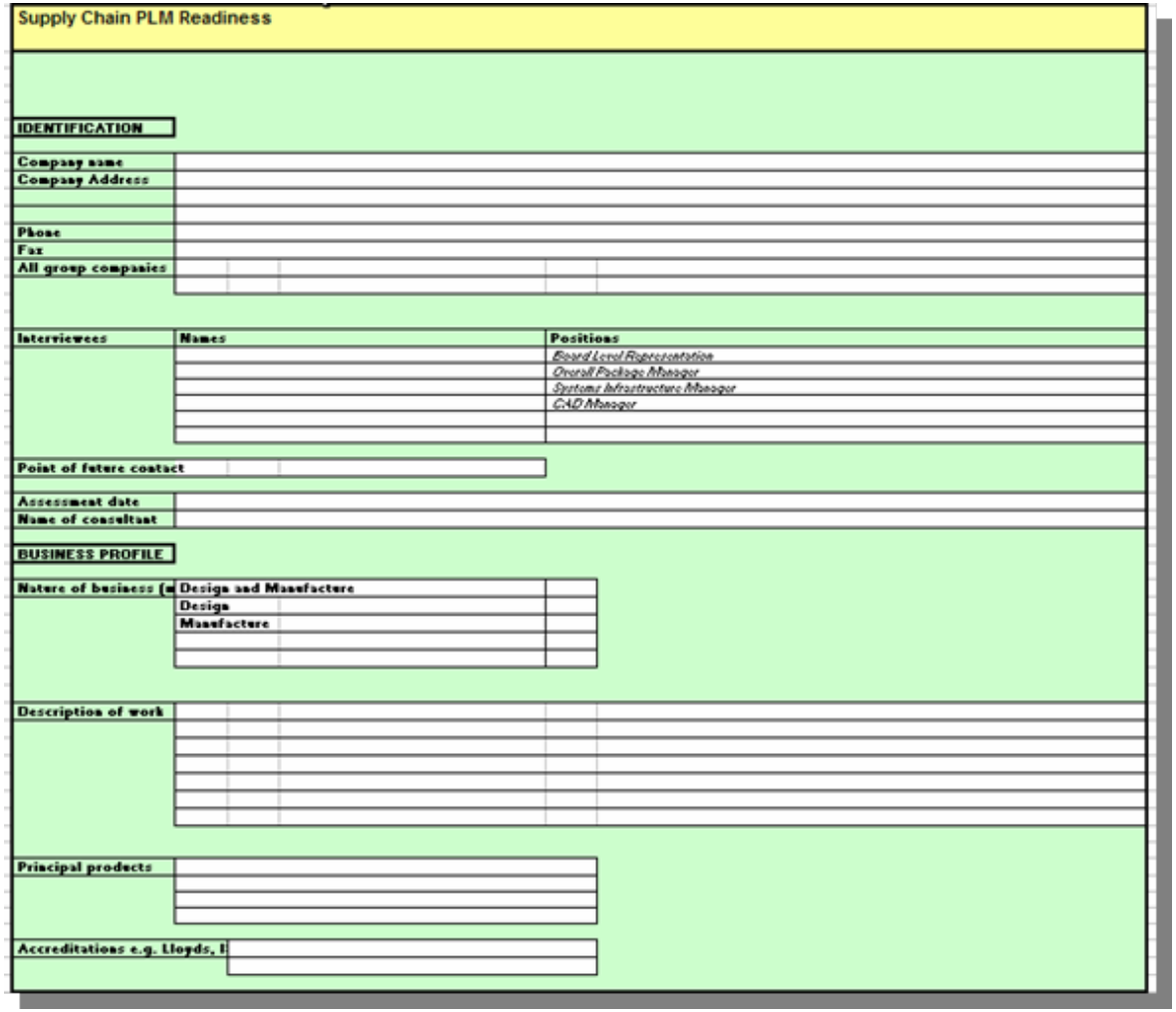


Profiling the supply chain

Profile	Classification	Responsibilities	Software Configuration
1	Full Service Supplier	Profit, and/or Risk sharing partner Responsible for design/build/delivery of large integrated sections / systems Supplier management responsibility for sections of responsibility	ENOVIAV5 CATIA V5 WebSphere
2	Design/Build Suppliers	Responsibility of design and build of an assembly (SOW) Generally confined in nature Typically traditional procurement/contract terms	ENOVIA V5 / SMARTEAM CATIA V5 WebSphere
3	Design Services Suppliers	Offload of design to 3rd Party Required to return designs as specified by profile 2	ENOVIA V5 / SMARTEAM CATIA V5 WebSphere
4	Build to model / print / specification suppliers	Responsible for Build of Part, Assembly or subsystem Require detailed design information for development of tooling/etc. Includes Spec based part suppliers	CATIA V5 SMARTEAM WPE WebSphere Portal
5	Parts based suppliers	Traditional parts based supplier Little/No visibility to designs/intent/etc. Driven by cost and ability to meet volume schedules	CATIA V5 WebSphere Portal

Assessing the supply chain

- **½ Day assessment with your suppliers covering**
  - Company profile
  - CAD tool competency
  - Data exchange
  - Data management
  - Infrastructure
  - PDM Attributes
  - IBM-DS Inventory
  - Non IBM-DS Inventory
  - Hardware & Network
  - Issues



Supply Chain PLM Readiness

IDENTIFICATION

Company name	
Company Address	
Phone	
Fax	
All group companies	

Interviewees	Names	Positions
		Board Level Representative
		Overall Package Manager
		Systems Infrastructure Manager
		CAD Manager

Point of future contact	
Assessment date	
Name of consultant	

BUSINESS PROFILE

Nature of business (m	Design and Manufacture	
	Design	
	Manufacture	

Description of work	

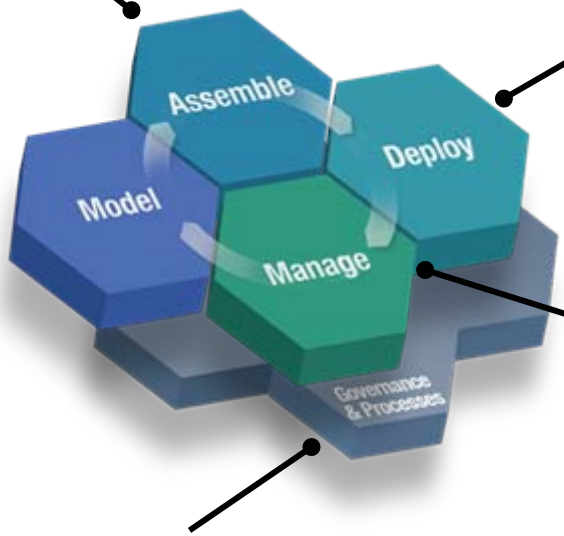
Principal products	

Accreditations e.g. Lloyds, I	

Approach for optimising the supply chain integration process

- Construct executables for middleware to manage the exchange events
- Test and compose

- Integrate OEM-Supply Chain PLM applications using executables
- Integrate processes
- Integrate information

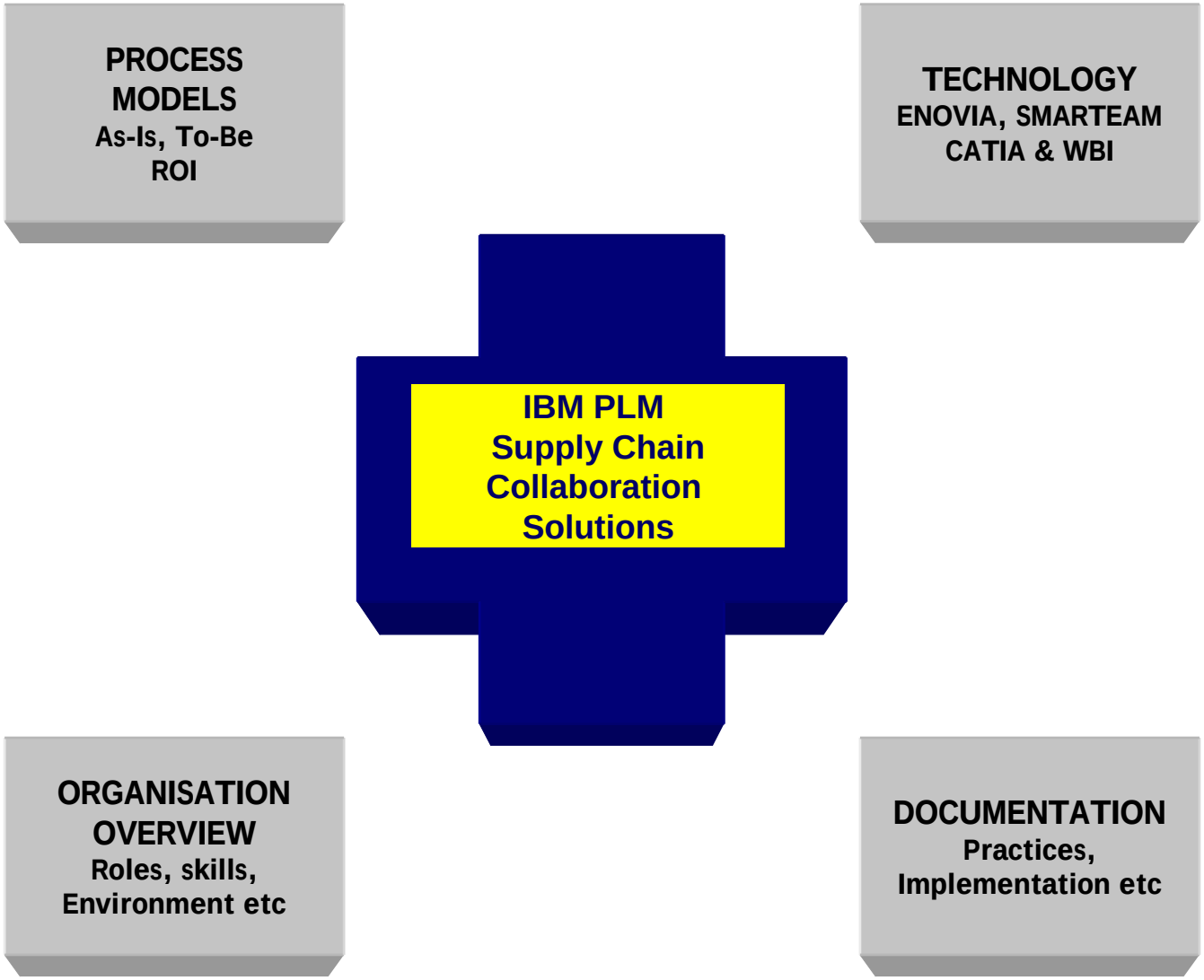


- Model As-Is supply chain integration process
- Model To-Be supply chain integration process
- Simulate time and cost comparisons – create ROI
- Create business measures

- Manage IT resources
- Manage services
- Monitor business metrics

- Sharing and reuse of services
- Establish decision rights
- Policies, measurement and control for SOA oversight

SCC solution content



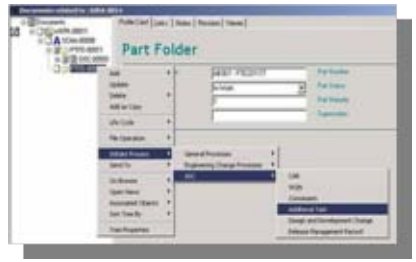
Supply Chain Collaboration Solution Example

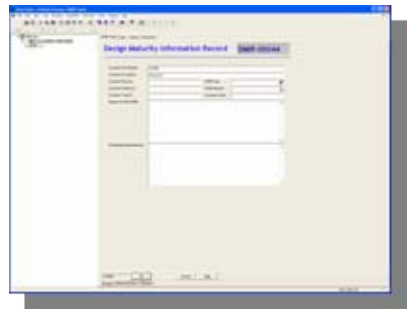
Aerospace Supplier Collaboration

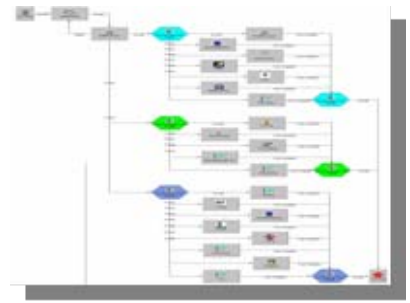
IBM PLM offers solutions for the supply chain that aim to reduce the cost, time and risk of supplier PLM implementation

Aerospace Supplier Collaboration or ASC is one example

- ASC Is a: **Template driven SMARTEAM data management solution**
- That provides:
  - *Automation of business processes through preconfigured templates*
  - *Strengthened internal and external collaboration*
  - *Control product data against programme data structures*
- That aims to:
  - Increase product development efficiency and profit margins
  - Demonstrate compliance to customer processes
  - Reduce ramp up time to productive use
  - Be repeatable across any appropriate supplier in your supply chain
- Unlike: **Other PDM tools that need to be customised to suit the industry**







The Aerospace Supplier Collaboration solution contains a comprehensive suite of components

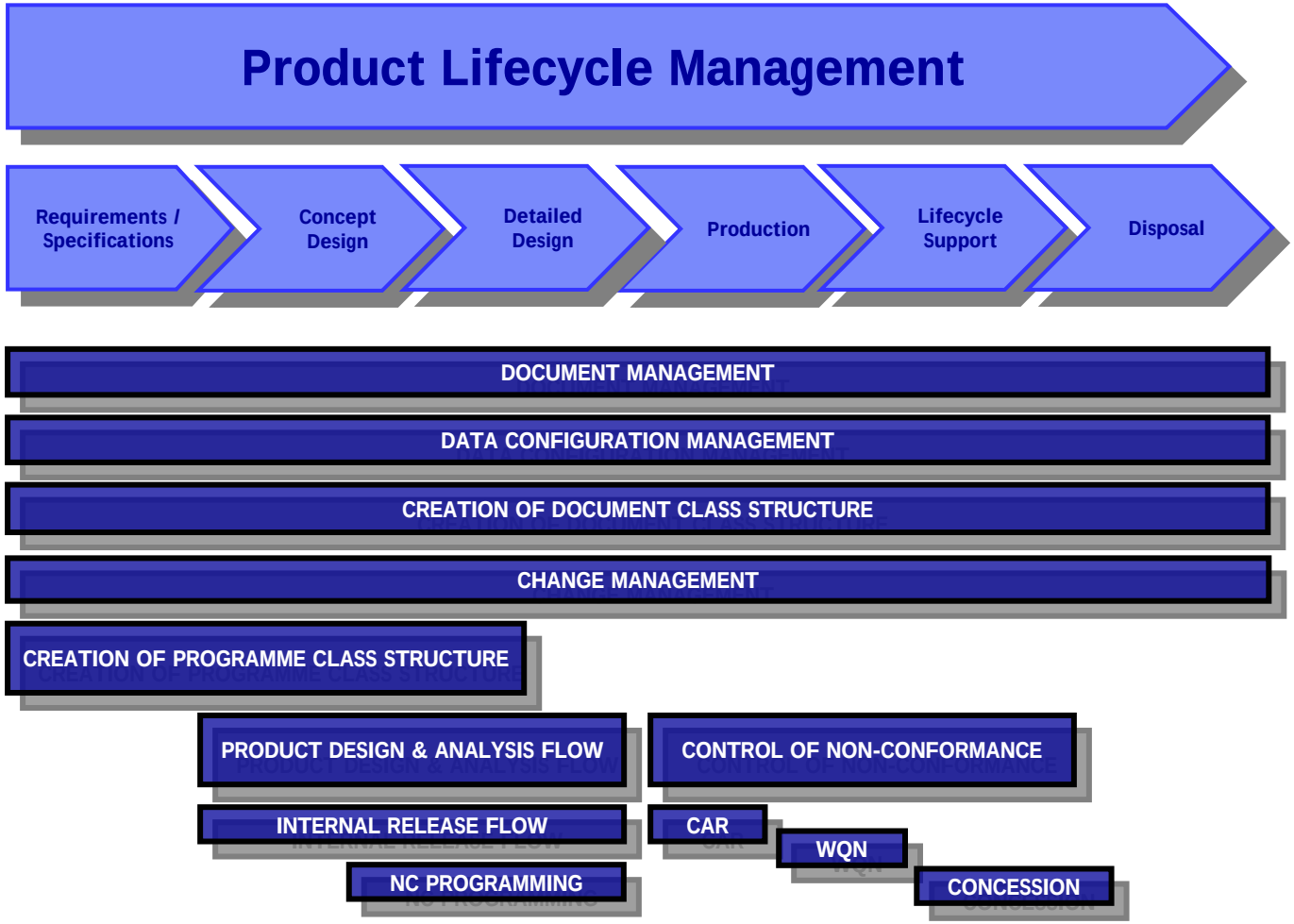
ASC Connectivity
Connectivity to PDM "X" through various methods depending on supplier profile (e.g. practices, middleware, IXF)

ASC "PLM Practices"
Suite of implementation guides and deployment methodologies that can be used to form part of training and education material

ASC "Business Processes"
Repeatable business processes based on how the supply chain works.
Processes are role driven, record tasks, inputs, outputs & decisions and can be simulated for ROI results

ASC "Technology Layer"
Specific SMARTEAM Templates, Classes, Forms, Attributes and scripts for the Aerospace and Defence marketplace

The solution is used to enable a core set of engineering and manufacturing (plus system administration) processes



This type of solution is delivering the following benefits

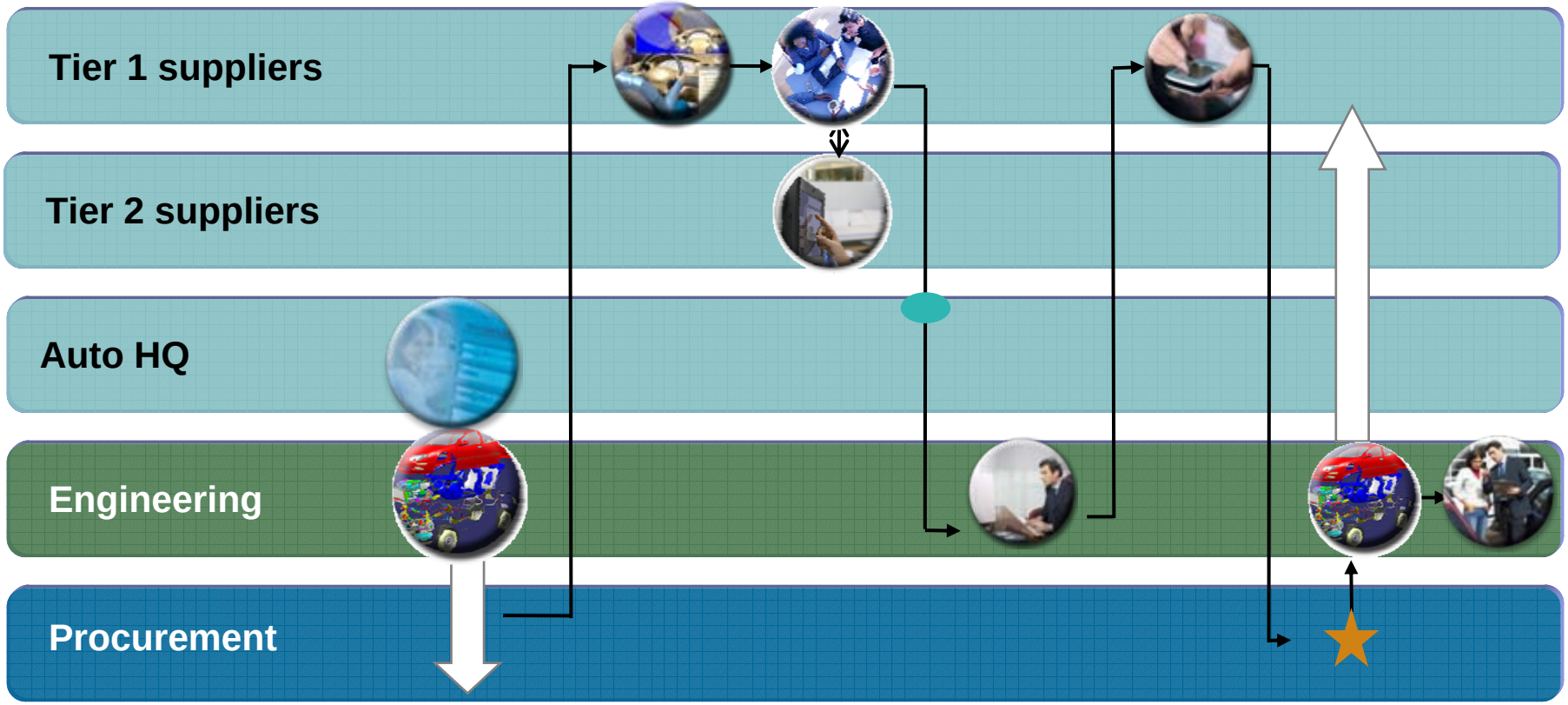
- To the OEM / Supply Chain Owner
  - Improved collaboration / integration with the supply chain
  - Suppliers have data and development processes under control
  - Reduce risk to the programme through common mechanism to deliver what is expected, when it is expected

- To the Supplier
  - Pre-defined PDM with industry specific implementation, speeds up implementation time and time to productivity by up to 30%
  - Delivering 10 – 20% reduction in engineering costs
  - Releasing 30 – 35% reduction in peoples time through development lifecycle
  - Providing overall 15 – 20% Increase in profitability
  - Reduction in programme risk due to:
    - Control of processes
    - Management of data
    - Common understanding of maturity of product information

Enabling Supplier Integration

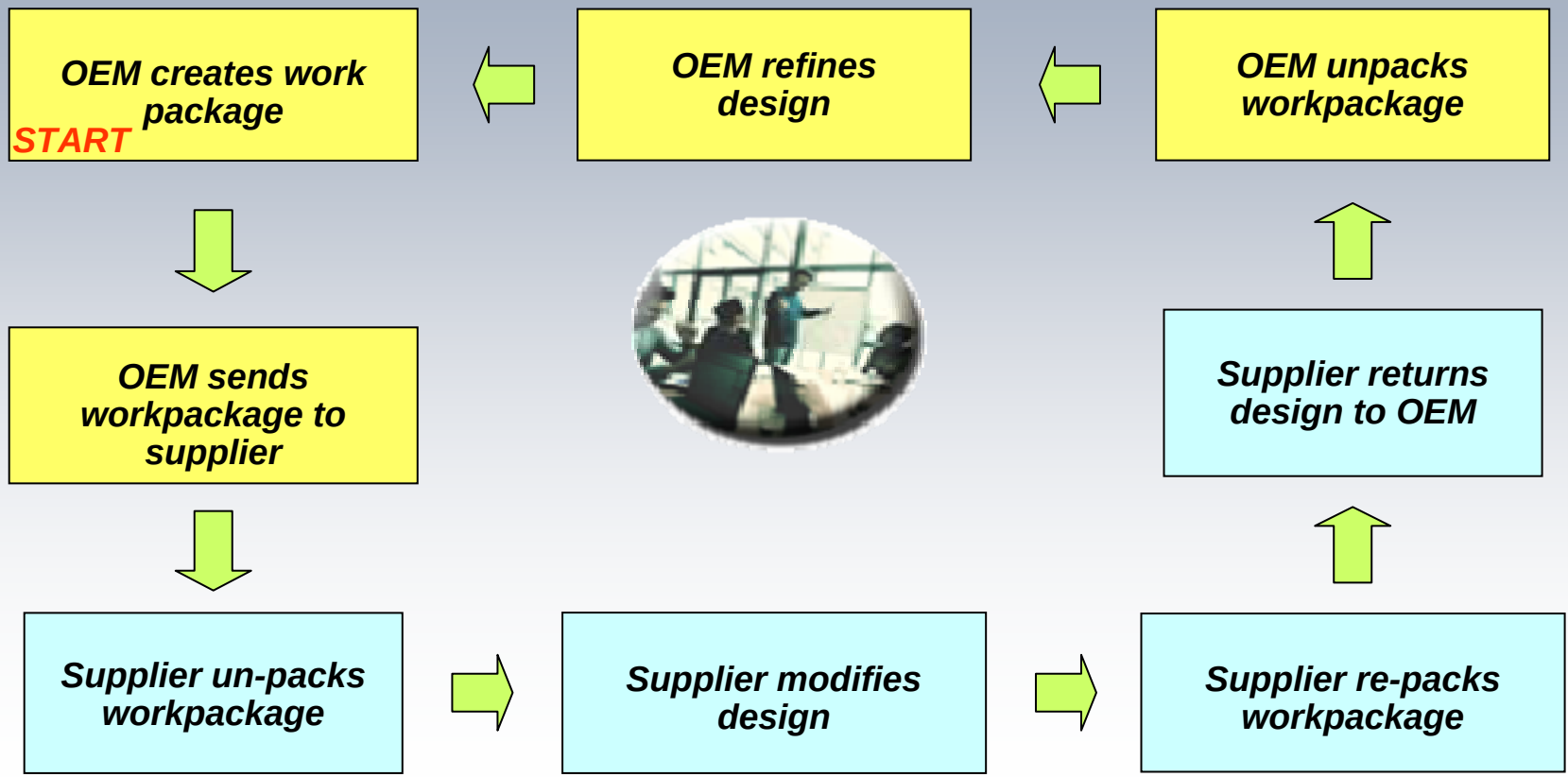
Supplier collaboration

Need for flexibility and integration across multiple groups

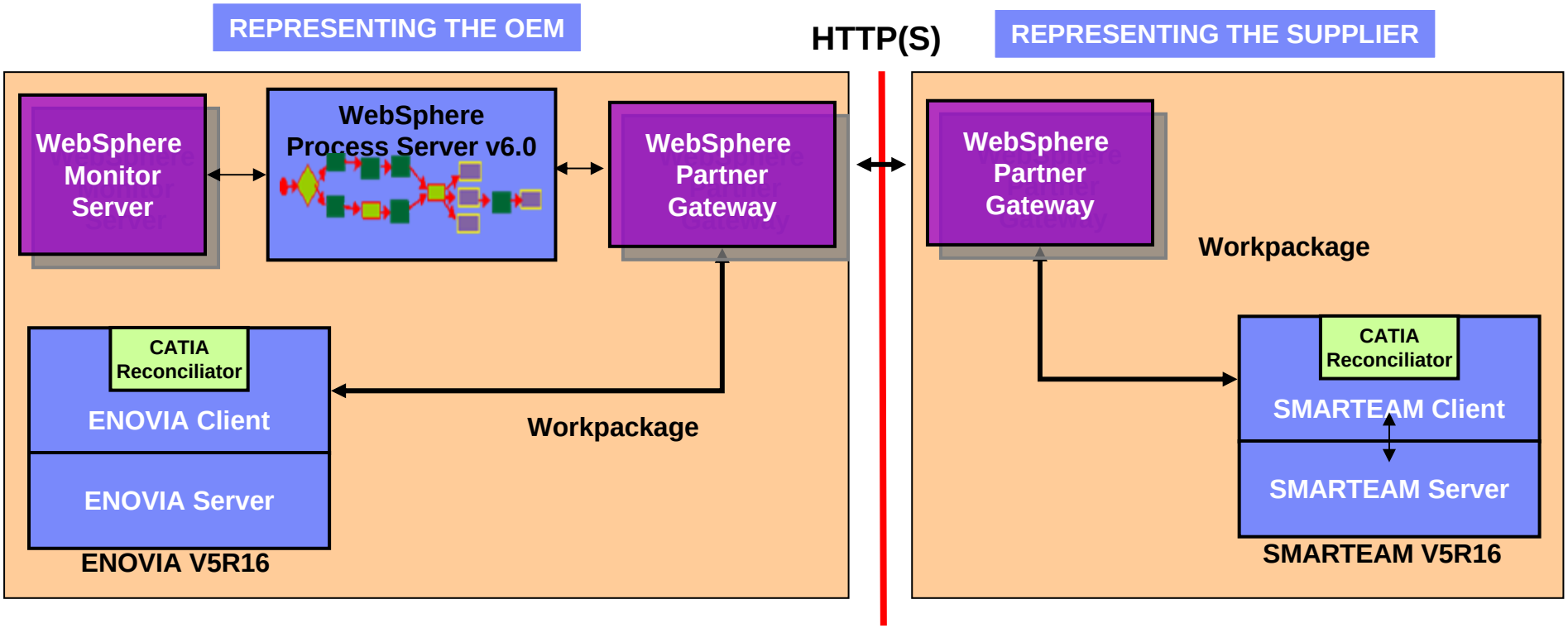


Supply chain integration – what are we automating?

Typically a sequence of long iterative interactions, with 100's of suppliers over many years



SCC Integration Enabler – typical OEM / Supplier architecture



Cost benefits/ROI

- **Benefits:**
  - Identify latent or flawed processes through WebSphere Business Monitor
  - Predict costs and behavior through simulation scenarios with WebSphere Business Modeler
  - Save development time costs by conducting simulations on models before going to development
  - Obtain real world data on running processes depicted graphically via WebSphere Business Monitor
- **Assumptions:**
  - This is a VERY simplistic ROI scenario but also very realistic
  - Development cycles are 18 months long
  - Data exchange between the OEM and the supplier ideally occurs twice per week
  - Engineer costs $30/hour
- **Current State Scenario (from the simulated process model)**
  - Cost per single exchange round trip *$325*
  - Multiplied by 2 (round trip transactions per week) by 72 (weeks in 18 month development cycle) by 100 (suppliers in the target profiles) = **$4.7M**
- **Future State Scenario**
  - Estimated Cost - $190,000
  - Multiplied by 2 (round trip transactions per week) by 72 (weeks in 18 month development cycle) by 100 (suppliers in the target profiles) = *$13 per single round trip exchange*
  - OR, the return on investment is the same as executing the old process for 3 weeks


Thank
You