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IBM Business Integration with MQSeries

PAM and MQ Family Integration

A Technical Overview

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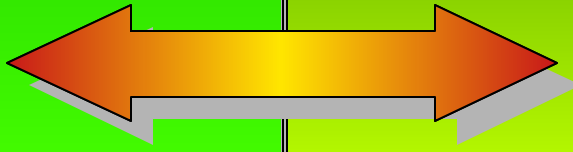
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Extending the environment



EAI

B2B





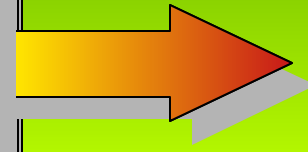
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Extending the environment



MQWF
MQSI
MQSeries

B2B

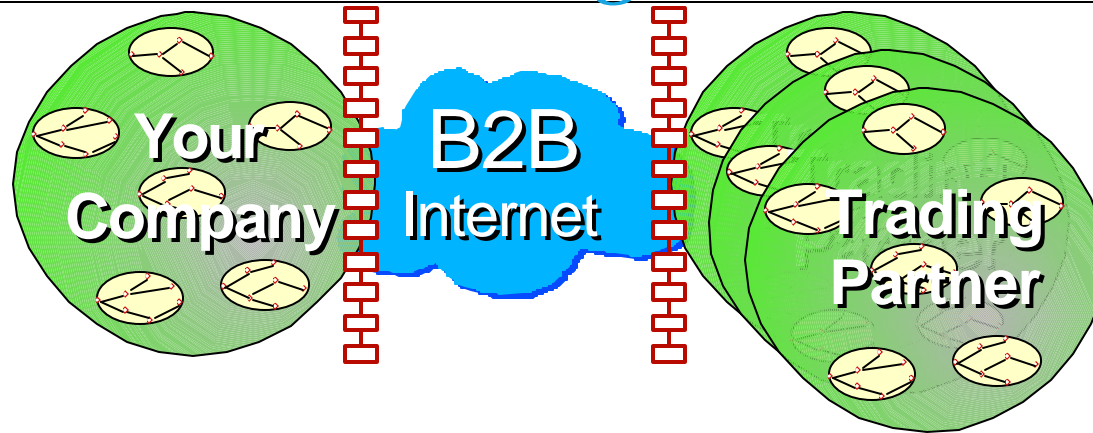


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B2B Solutions - Things to watch out for



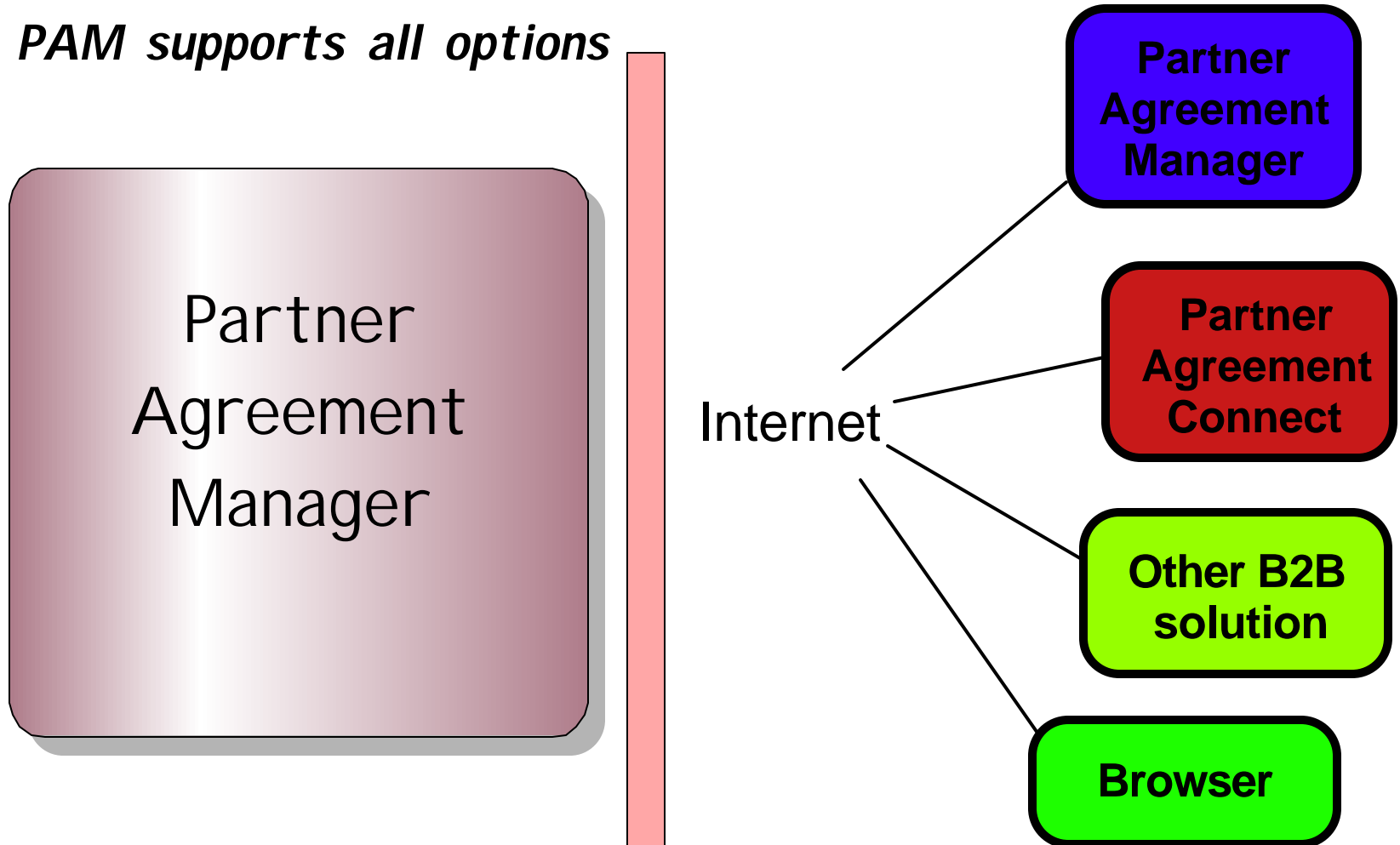
- **Lack of separation in public/private processes**
 - "the number one reason that EAI tooling will fail to be effective in B2B"
 - separation of channels from processes
- **Proprietary solutions**
 - may look ok today, but severely limit long term flexibility
 - open, standards based approaches
- **Lack of full checkpoint-restart**
 - logging to standard databases, not log files
 - left to coder to define/implement ?
 - not just alerting
 - not the same as assured delivery
- **No full life cycle management or versioning**
 - processes, maps, channels - if not...management nightmare looming
- **Partner management was an afterthought**
 - security, communications defined separately from processes
 - easily add, change relationships
- **Integration with EAI infrastructure**



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PAM Solution Options

- *Companies integrated over Internet*
- *Need to support all forms of interaction with partners*
- *PAM supports all options*

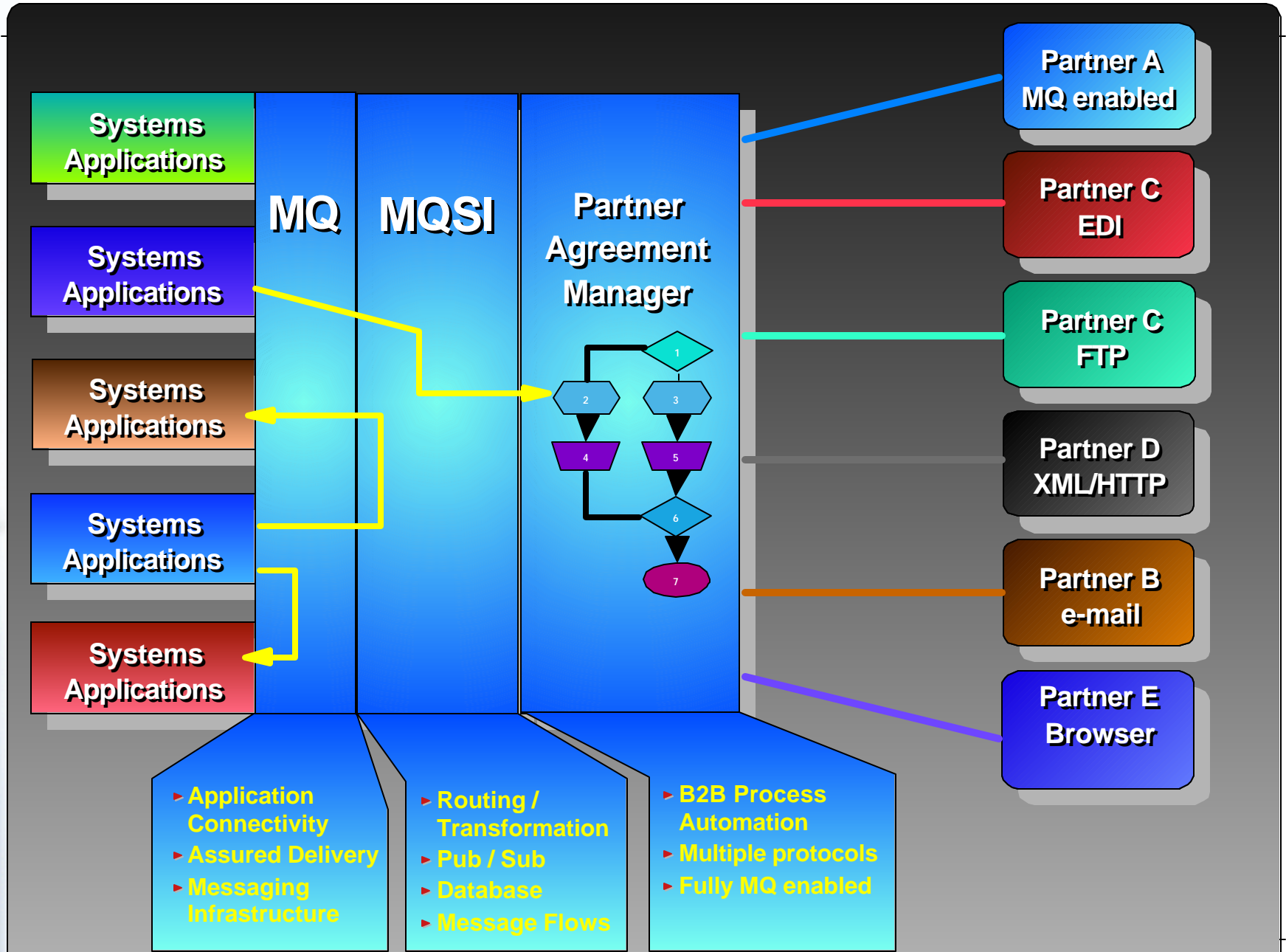


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B2B Using Partner Agreement Manager





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Partner Agreement Manager

Partner Agreement Manager

Build & Configuration Tooling

Channel Manager

PAM channel

PAV

XML

EDI

RosettaNet

WebPartner

WebAgent

Process Manager

Integration Server

MQSeries

Utility

SAP

Oracle

Peoplesoft

BAAN

I2

IBM
OEMs

IBM
OEMs

IBM
Resells

Platforms V2.1

WindowsNT

AIX - coming

Solaris - coming

Database Options :

DB2 V7.1 FP3 or 7.2



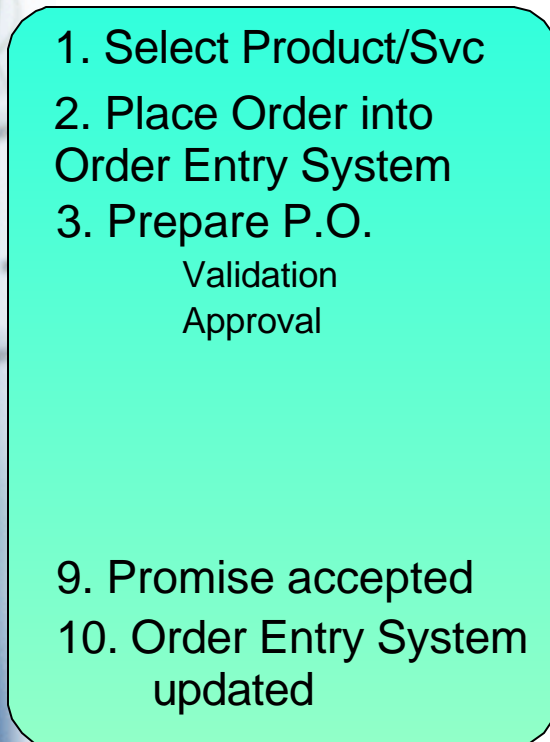


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What is a Business Process ?

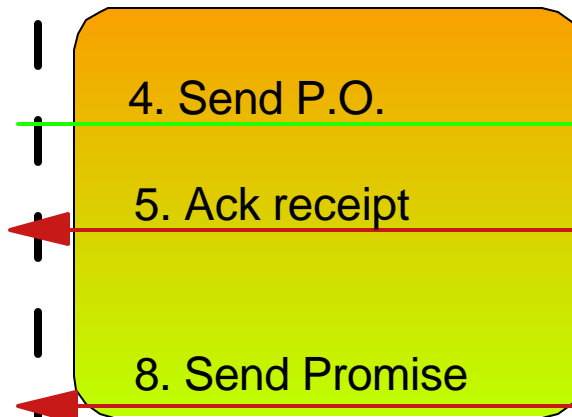
An example: Order Management

Buyer organization

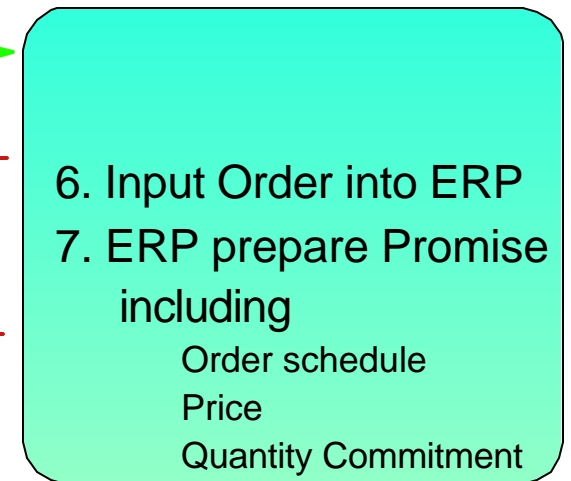


Private Process

Supplier organization



Public Process



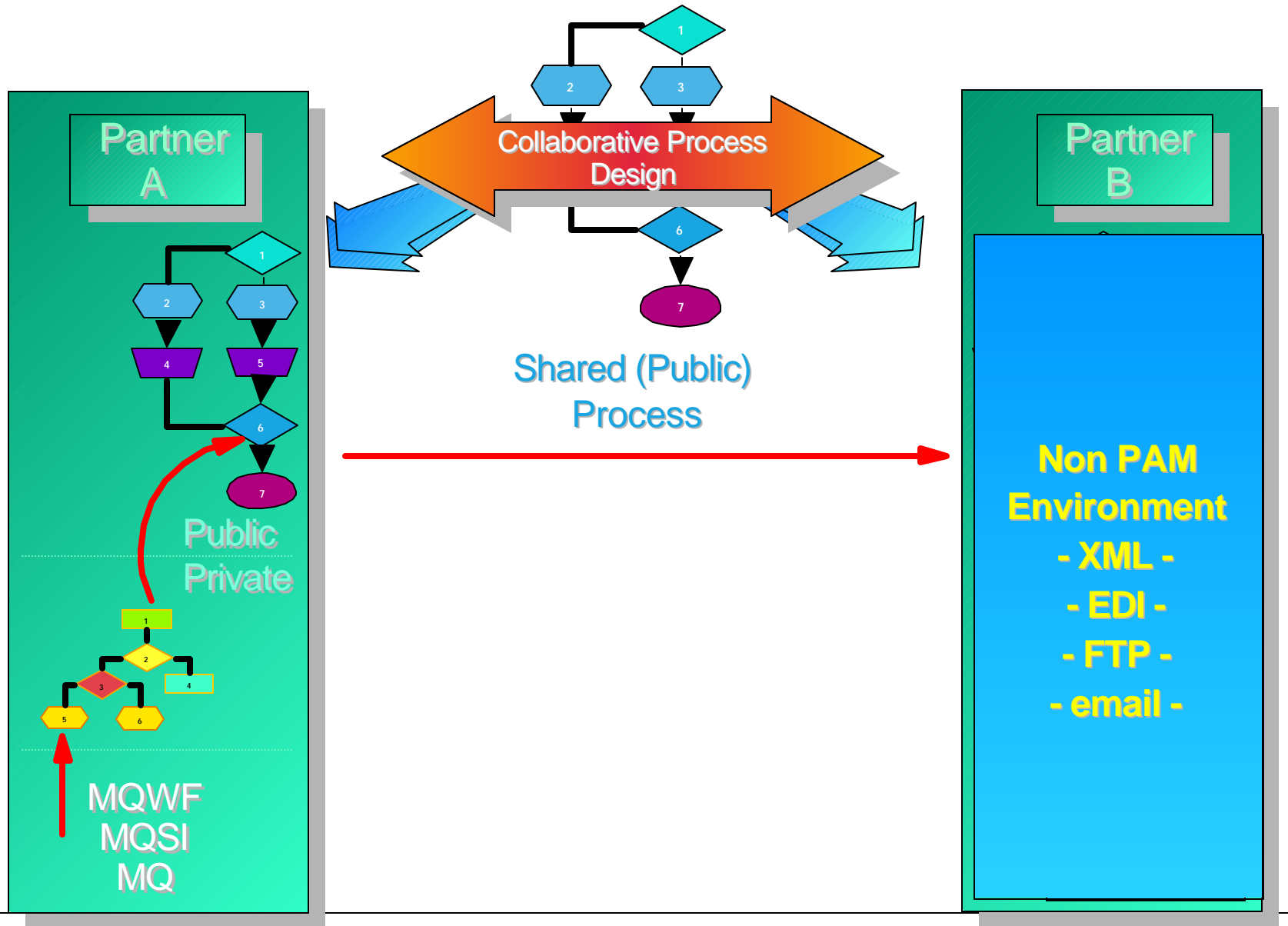
Private Process





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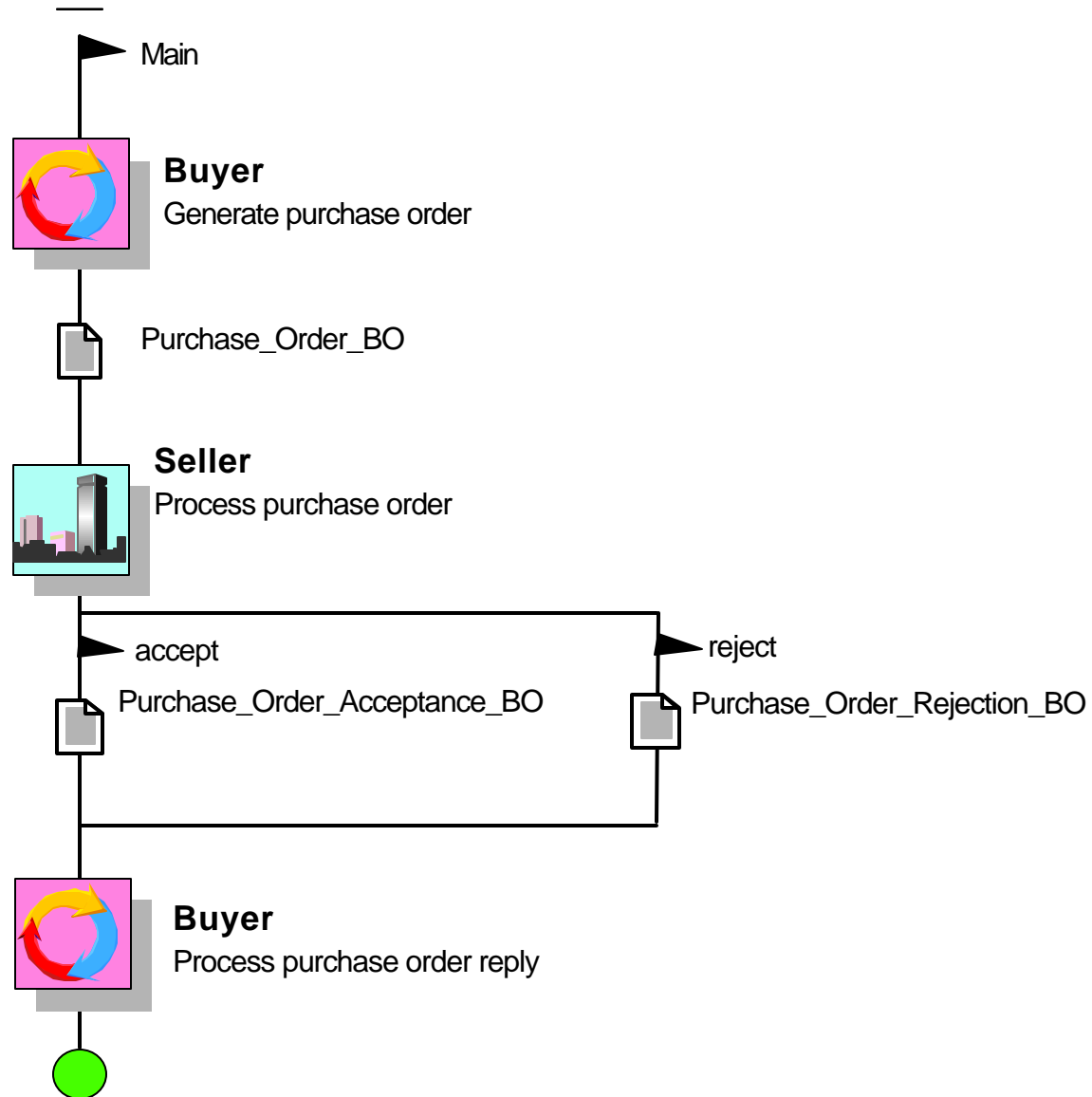
The Ultimate...shared processes





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Public Processes

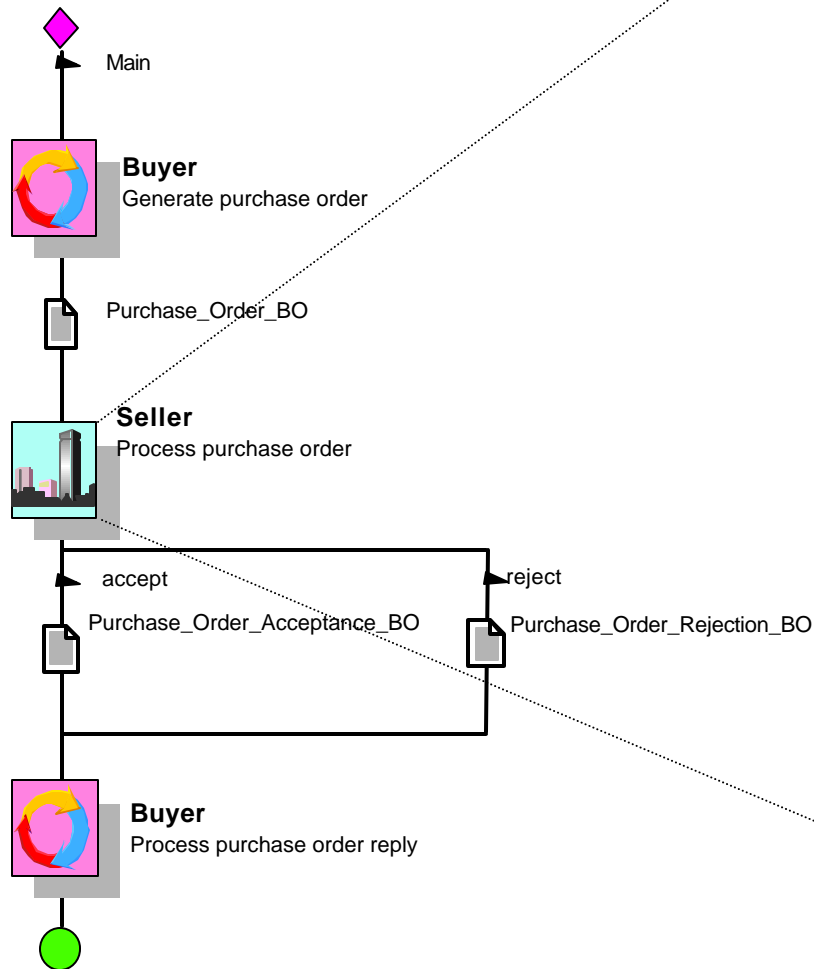




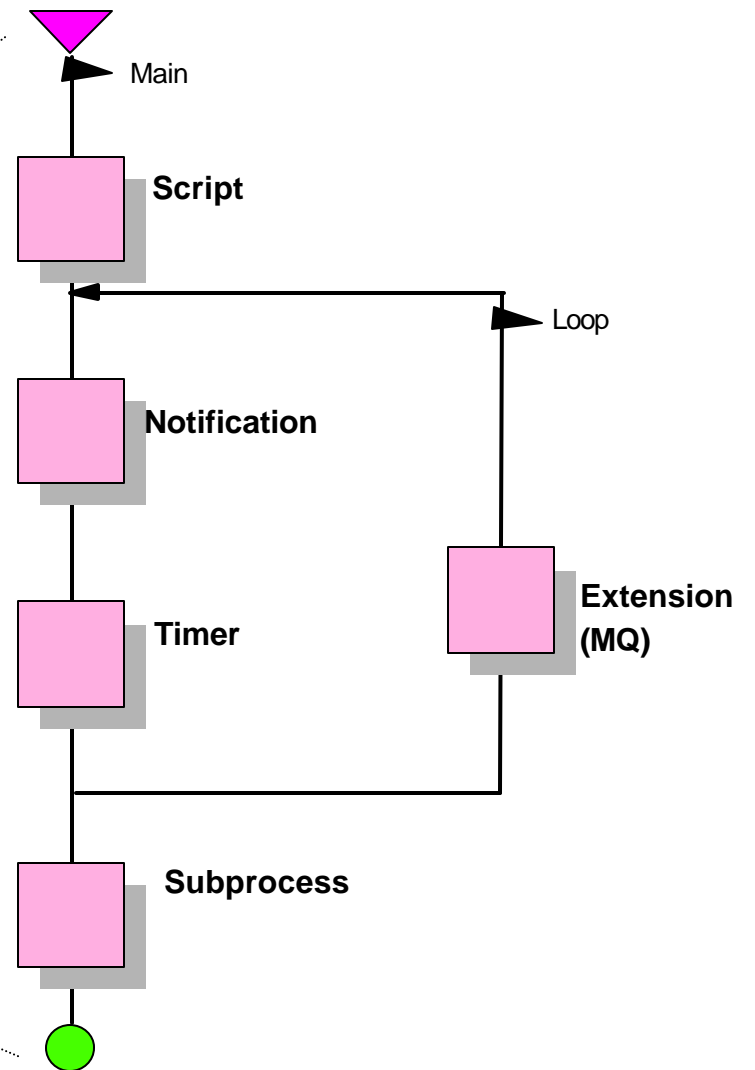
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Public / Private Processes

Public (shared)



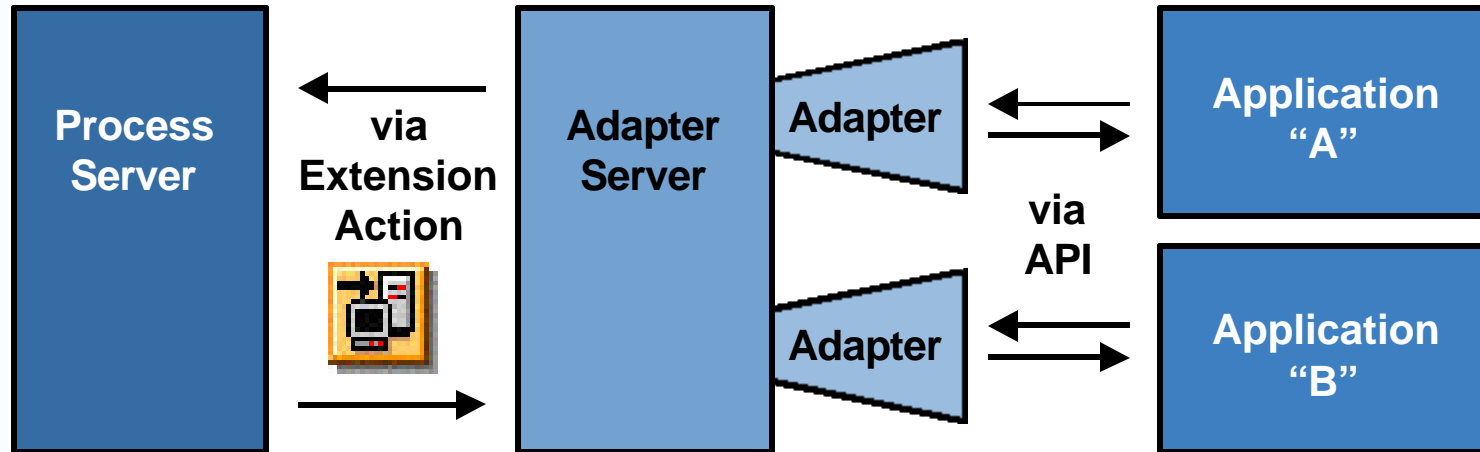
Private





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PAM Adapters



- **Associated with an Extension block**
- **PAM Adapter Server**
 - GUI Development, Admin Tools and Run Time
 - Java 2-based environment
- **Adapters perform operations**
 - operate on data and business object (i.e. get/put message)
 - transform data, build/read message headers
 - handle/report errors

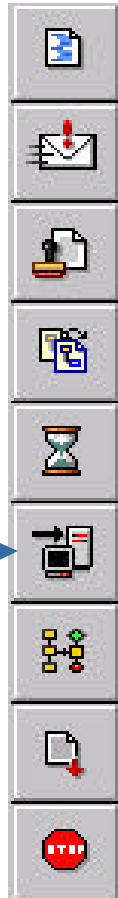
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Extension Action

Extension Action



- Each Adapter can implement one or more Get, Post and/or Advanced operations
 - ▶ Example: `getPurchaseOrder`, `getProductInfo`, `updatePO`, `createNewProduct`
- Each operation can have input(s) and/or output(s). Operations may also return a business object containing information about the status of the operation
- An extension action in a Private Process executes a specific operation of a specific adapter
- You need to bind context variables from the process to the inputs, outputs and status object that the operation expects



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Two Ways to Design an Adapter

■ Custom built adapters

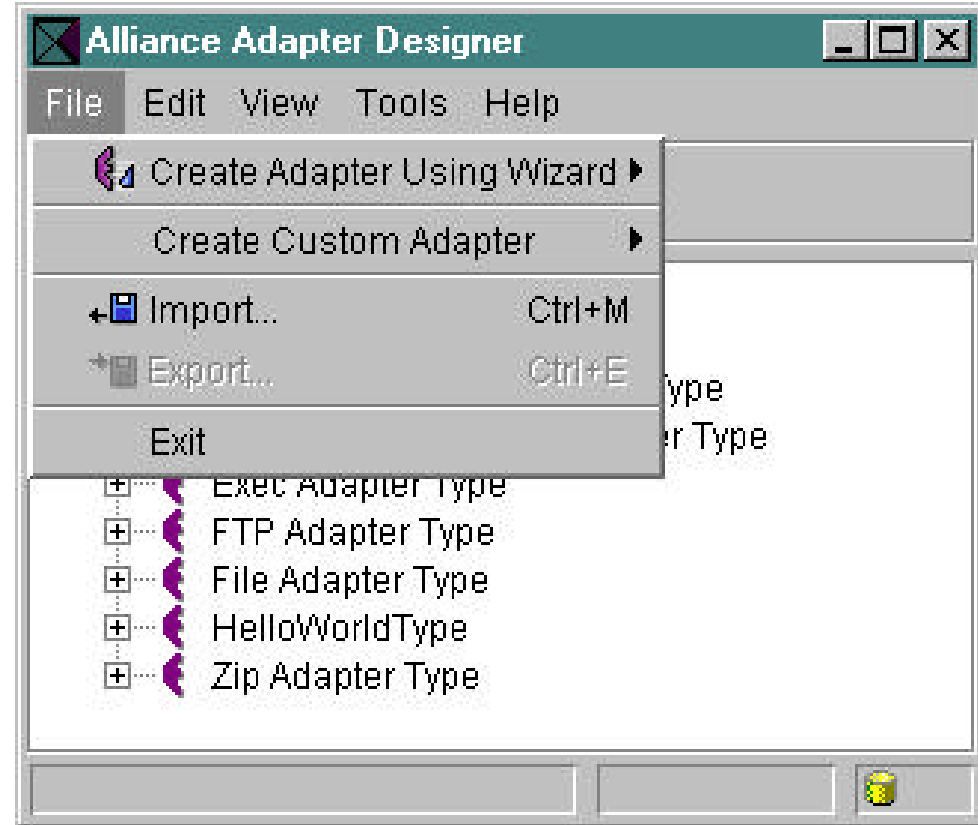
▶ MQ FAMILY Adapters:

- MQ Messaging
- MQSeries Integrator v.1
- MQSeries Integrator v.2
- MQ Workflow
- MQ Publish/Subscribe

■ Wizards

▶ MQ Messaging

- UI to define properties
 - queue name
 - input/output data



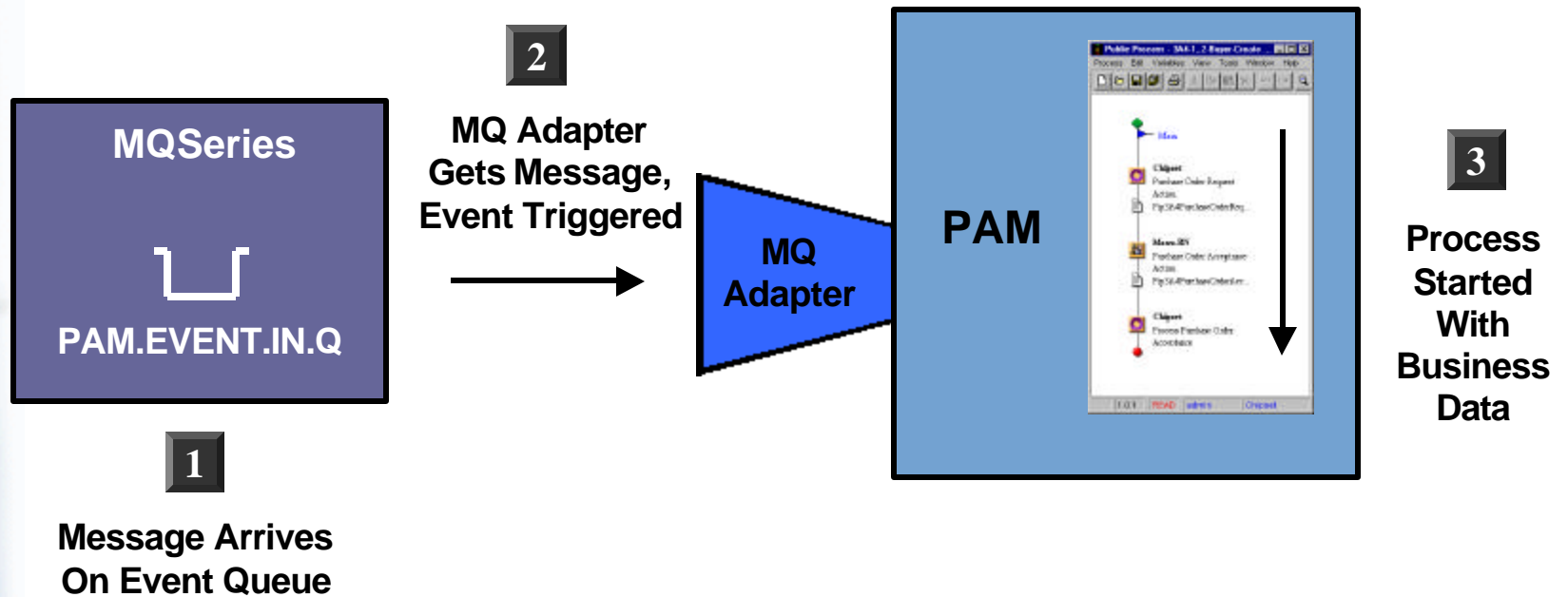


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Thick Event Process Initiation

Thick Event:

Business Data passed as input to Public Process Initiation



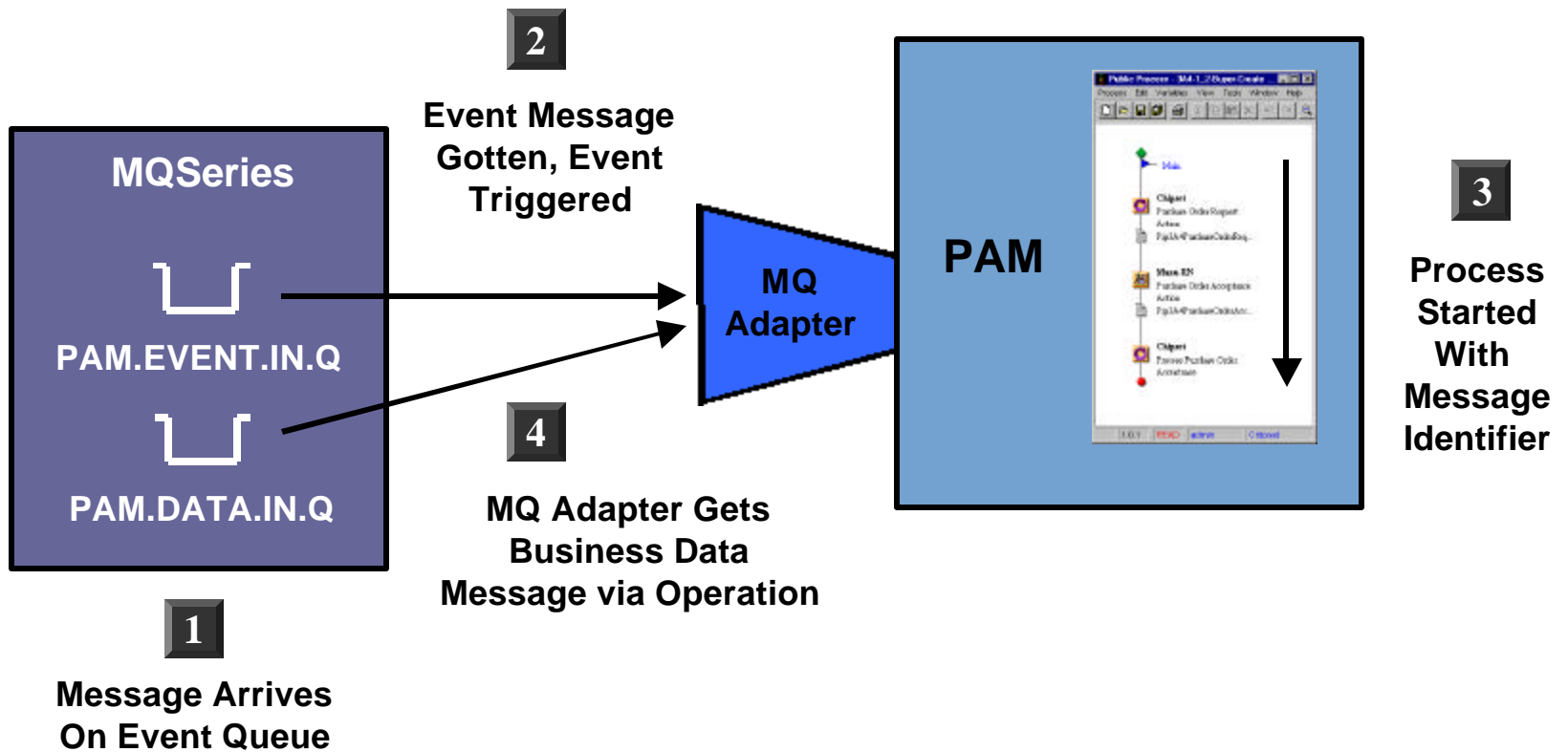


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Thin Event Process Initiation

Thin Event:

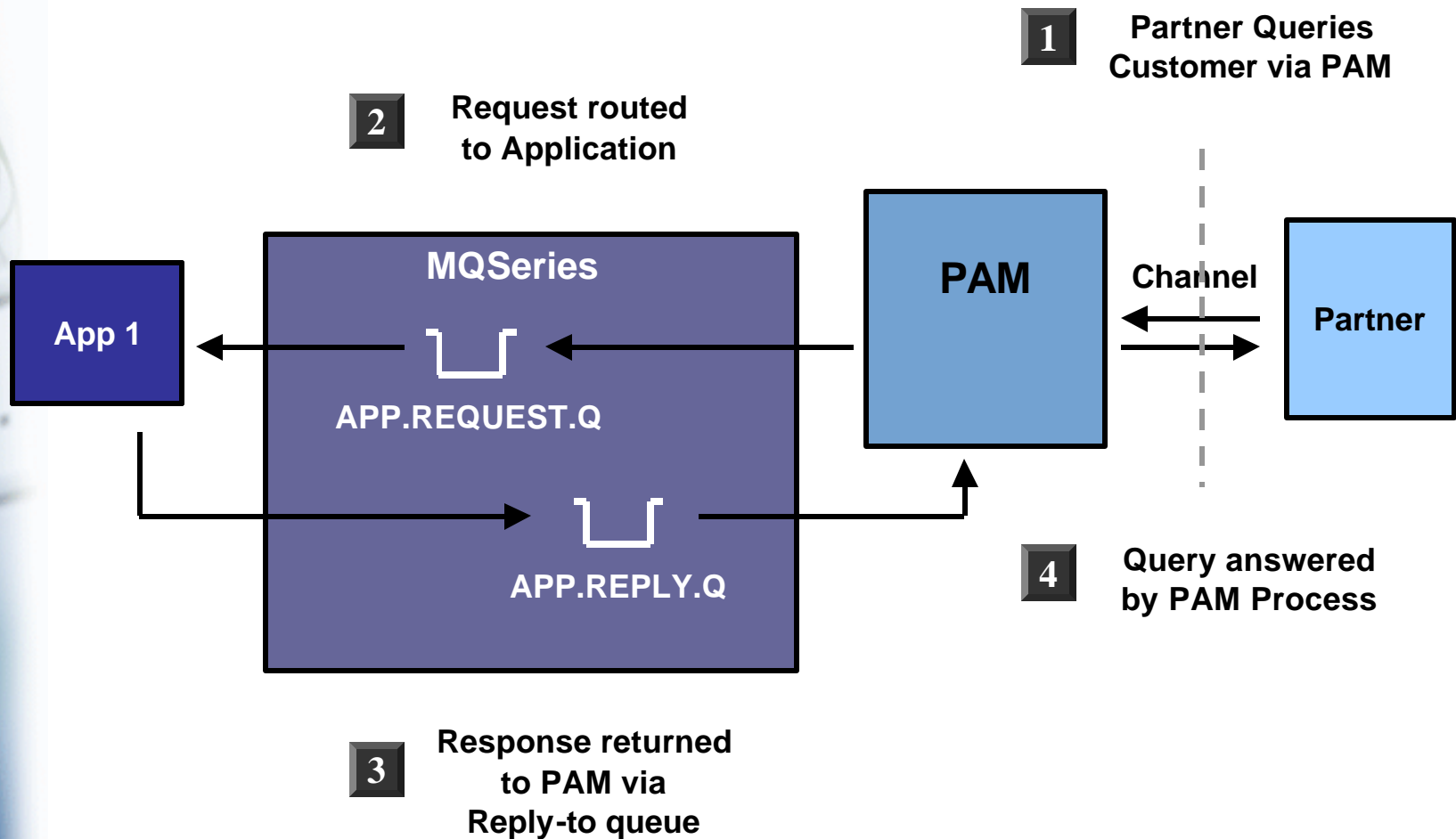
Event Descriptor passed as Input to Public Process Initiation.
Business Data retrieved via Adapter Operation





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Request/Reply using an Adapter





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PAM MQSeries Adapter

- **Request/Reply and Fire/Forget supported**
- **Support data transformation**
 - ▶ **callout to third party tool to do mapping**
 - message content to/from PAM XML Business Object
 - ▶ **custom code (as Java classes) perform mapping**
 - ▶ **no mapping**
 - e.g. message arrives in XML format
 - MQSI can be used to create
- **properties files used to customize adapter instance**
- **low level message generation**
 - ▶ **outside scope of what PAM process needs to know**
- **message header and descriptive fields available**
- **written using MQSeries Java API**
- **Adapter operates with syncpoint control**
- **Queue name and correlid shared with private process**
- **Sample adapter Java classes and templates provided**





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PAM MQSI and Pub/Sub Adapter

■ **MQSI Adapter**

- ▶ Actually two adapters, one for MQSI V1 and another for V2
- ▶ Logically, a subset of MQSeries Adapter
- ▶ Customizable classes allow managing RFH and RFH2 header

■ **Pub/Sub Adapter**

- ▶ Also a subset of MQSeries Adapter
- ▶ Adapter manipulates/uses pub/sub RFH header
- ▶ Adapter provides the ability to construct and send control messages
 - e.g. registration
- ▶ An adapter instance can support multiple subscribers

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PAM MQ Workflow Adapter

- **Workflow instance as PAM subprocess**
 - ▶ MQWF Adapter creates message to start process
 - ▶ Performs data transformation from PAM BO to MQWF data container
 - ▶ Adapter can check status of process instance
 - ▶ Adapter receives process completion message
 - ▶ Adapter uses properties file for WF specifics (server name, user name, etc.)
- **PAM public process as Workflow process node**
 - ▶ Adapter's 'checkForEvents' operation polls for workitems for user
 - ▶ Adapter transforms input container to PAM BO
 - ▶ Adapter closes out MQWF event

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PAM and MQSeries Relationship

- **Enterprise Application Integration**
 - MQSeries widely used to integrate applications
- **B2B**
 - PAM Channels are used between trading partners
 - MQSeries is supported, along with http, as a channel service
- **PAM Public Process**
 - a process may be initiated by sending a message
- **PAM Private Process**
 - Extension blocks used to access enterprise applications
 - Extension blocks use PAM Adapters
 - PAM provides MQSeries adapter
 - PAM can integrate with MQSeries Integrator and MQ Workflow
- **BPM**
 - PAM can initiate an MQWF; MQWF can initiate PAM public process
 - PAM manages B2B subprocesses in WS Business Integrator

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What can you sell

- **WebSphere Partner Agreement Manager V2.1**
- **Extricity Channels and Adapters**
- **WebSphere Business Integrator**
 - uses PAM V2.1 for B2B
- **MQSeries**
 - messaging and pub/sub
- **MQSeries Integrator**
 - message routing, transformation, header creation
- **MQSeries Workflow**
 - PAM initiation of MQ Workflow (via XML message)
 - MQ Workflow initiation of PAM (via XML message)
 - PAM MQWF client access to worklist, process instance
- **MQSeries Adapter Offering**
 - convert to/from PAM XML formats

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