

Using Oracle Workflow

A Case Study

13 March 2003



Agenda

- **Why we need workflow**
- **Case Study: The NPD Group, Inc.**
 - **Project Formulation**
 - **Oracle workflow**
 - **Results**



Drivers for workflow systems

Corporate Objectives

- **More Productive Workforce**
- **Competitive Advantage - making operations more dynamic and responsive across organizations with emphasis on process driven integration and process-based improvement**



Current Market Facts

- **\$2.26B Market in 2001 of which \$1.48B represents professional services**
- **Compound annual growth rate of 29.3% till 2005**
- **Vendor revenue 34.9% growth**
- **36 BPM suppliers – 21 public 15 Private**
- **24 of them market share less than 2%**

Aberdeen Research Oct 2002



WFMC Definitions

Workflow

The automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules

Workflow Management System

A system that defines, creates and manages the execution of workflows through the use of software, running on one or more workflow engines, which is able to interpret the process definition, interact with workflow participants and, where required, invoke the use of IT tools and applications.



Workflow Technology

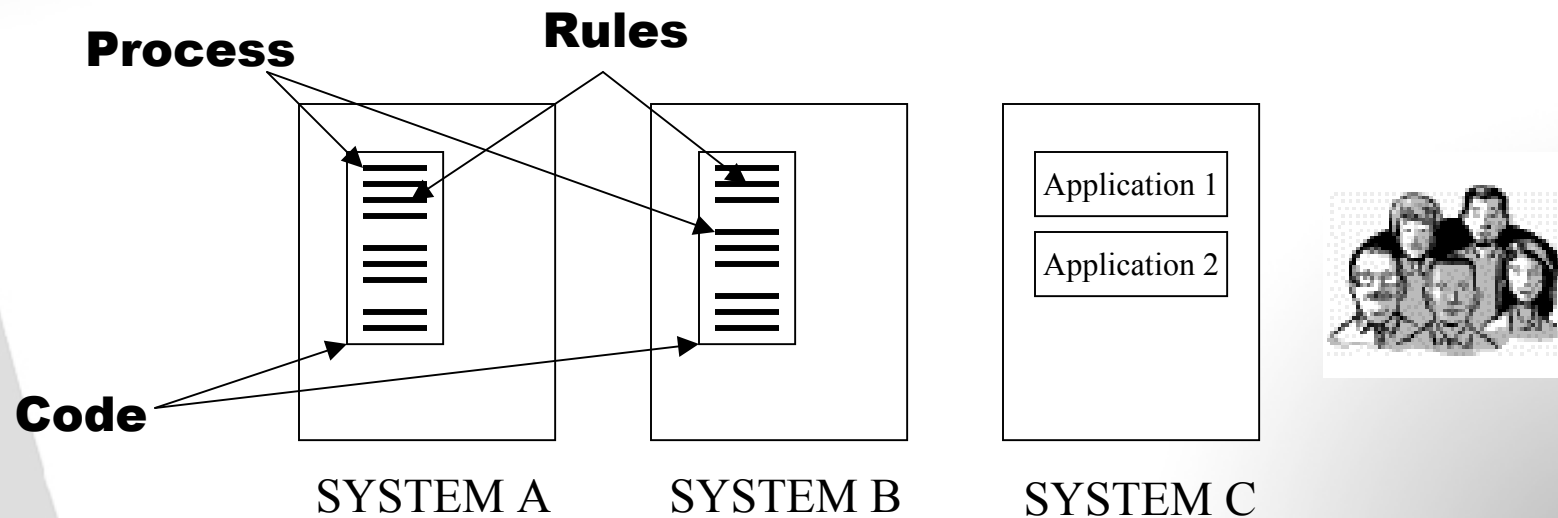
Workflow technology provides a new set of tools to build, manage and monitor the way data gets routed through an organization

Workflow bridges the gap between people, technology and business processes

Traditional Applications

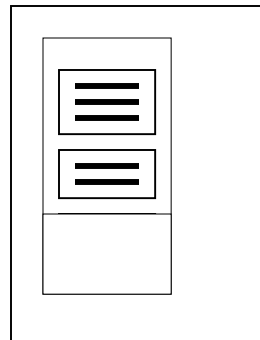
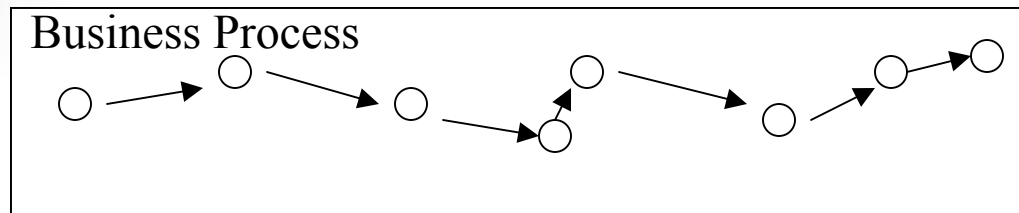
**1. Business Rules and
Business Process is embedded in Code**

**2. Business Process traverse
several systems and interact with people**

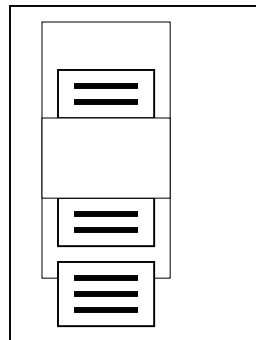


Integrating Business Process

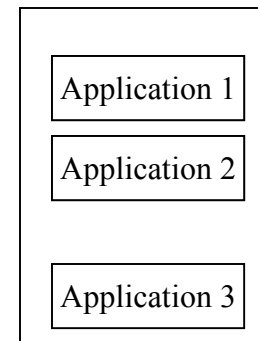
Adding and Removing business objects and applications as business process improve



SYSTEM A



SYSTEM B



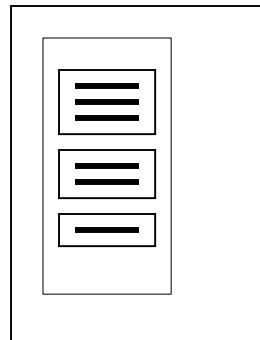
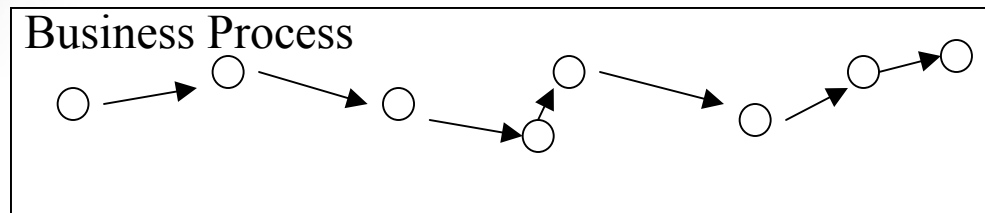
SYSTEM C



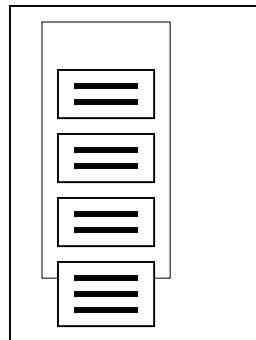
Workflow Process Management

Workflow Systems help execute and optimize cross-functional business processes

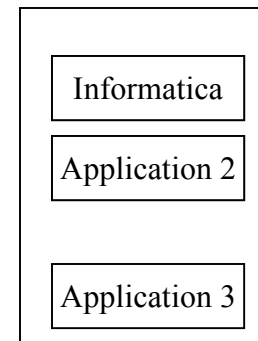
Workflow integrates applications and it involves people for exception handling and decision-making



SYSTEM A



SYSTEM B



SYSTEM C

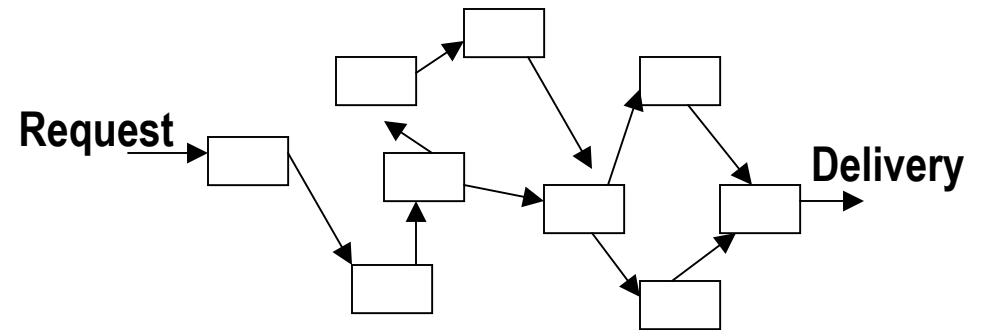


Steps to Improving BP

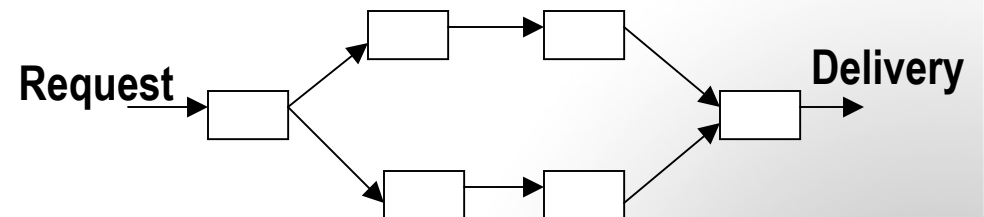
**Understand and Analyze
existing processes**

**Rationalize, modify and
introduce the new
process**

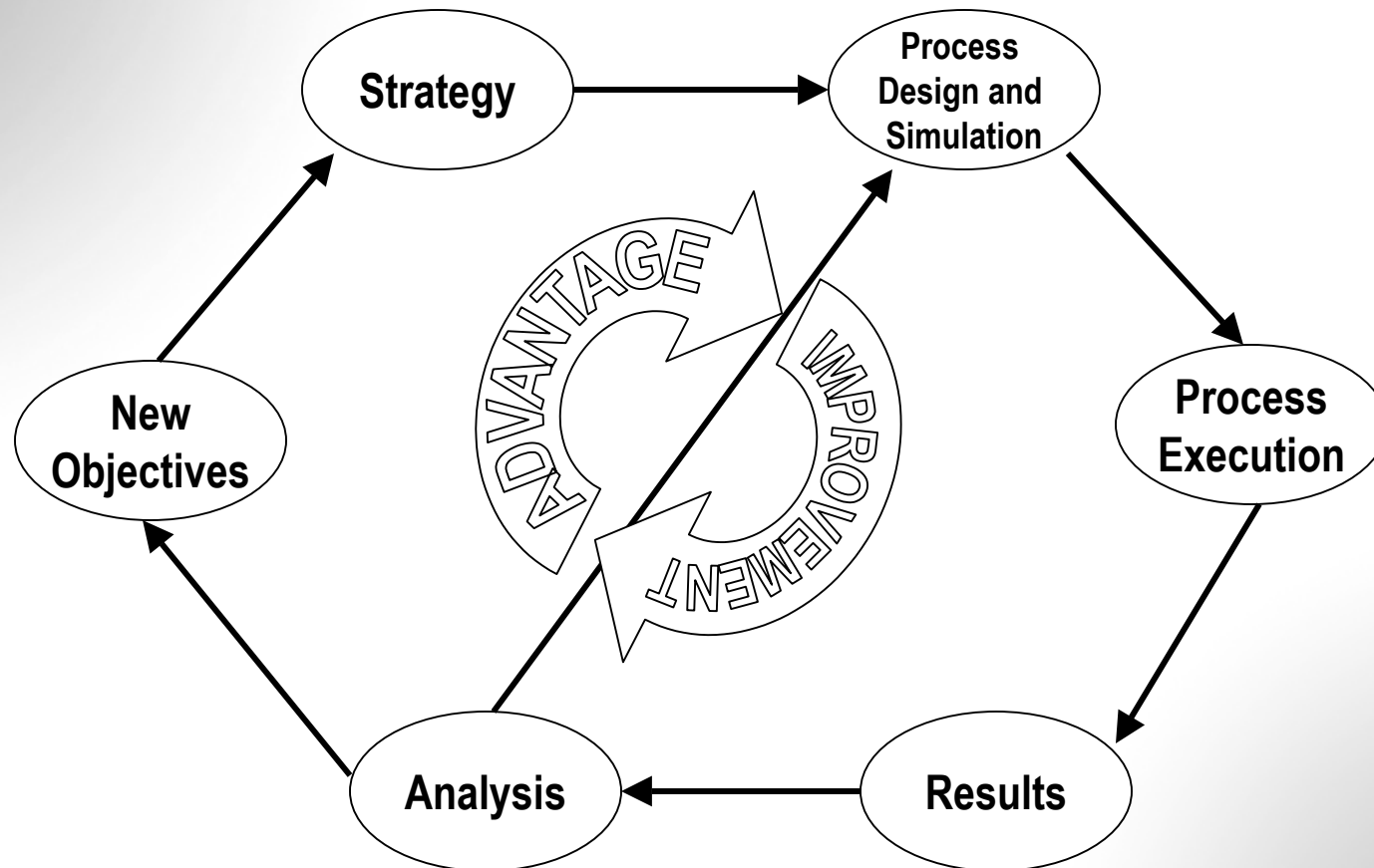
Process before redesign

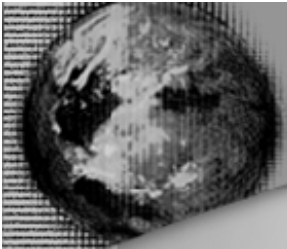


Process after redesign



Business Process Management Lifecycle





The NPD Group Inc.

A Case Study in Deploying Oracle Workflow



Case Study: The NPD Group, Inc.

Market Research Company

- Gathers POS Data in a weekly and monthly basis from retailers (2.6B Transactions/month)
- Sends out surveys in a weekly basis requesting purchasing information and Demographic Data
- Statistically combine POS data with survey demographic data in legacy flat file system
- Store data in ODS
- Transfer data to industry specific datamarts – Fashion, Toy, Household goods, Food, Computers & Electronics,
- Provide the reports and analysis through an internet portal



The NPD Group Challenges

- **Changing business process to load datamarts – new business requirements new processes**
- **Many interactions among various departments to load, QA and publish data**
- **Many Interactions among multiple systems and applications**
- **Needed to publish market data faster**
- **Reduce operational expenses**
- **Find low investment solution**
- **Needed better documentation of process for change management**



Achievable with Workflow?

- **Modeling of Business Process**
 - Documentation of Process
 - Analyze and improve process
- **Automation of Business Process**
 - Reduce Errors
 - Improve Efficiency
- **Automatic Auditing of Process**
 - Capturing metrics real time
 - Maintaining History of activities
 - Finding true deficiencies in process
- **Flexibility in changing Business Process**
 - Improving process incrementally
 - Little modification to existing code



Some Workflow Players

	Complexity	Cost
• IBM MQ Series Workflow	HIGH	170k/cpu
• BEA Workflow	HIGH	62k/cpu
• Staffware Workflow	MEDIUM	122k#
• Ultimus	LOW	31k*
• Oracle Workflow	LOW	20k/cpu

50 Users

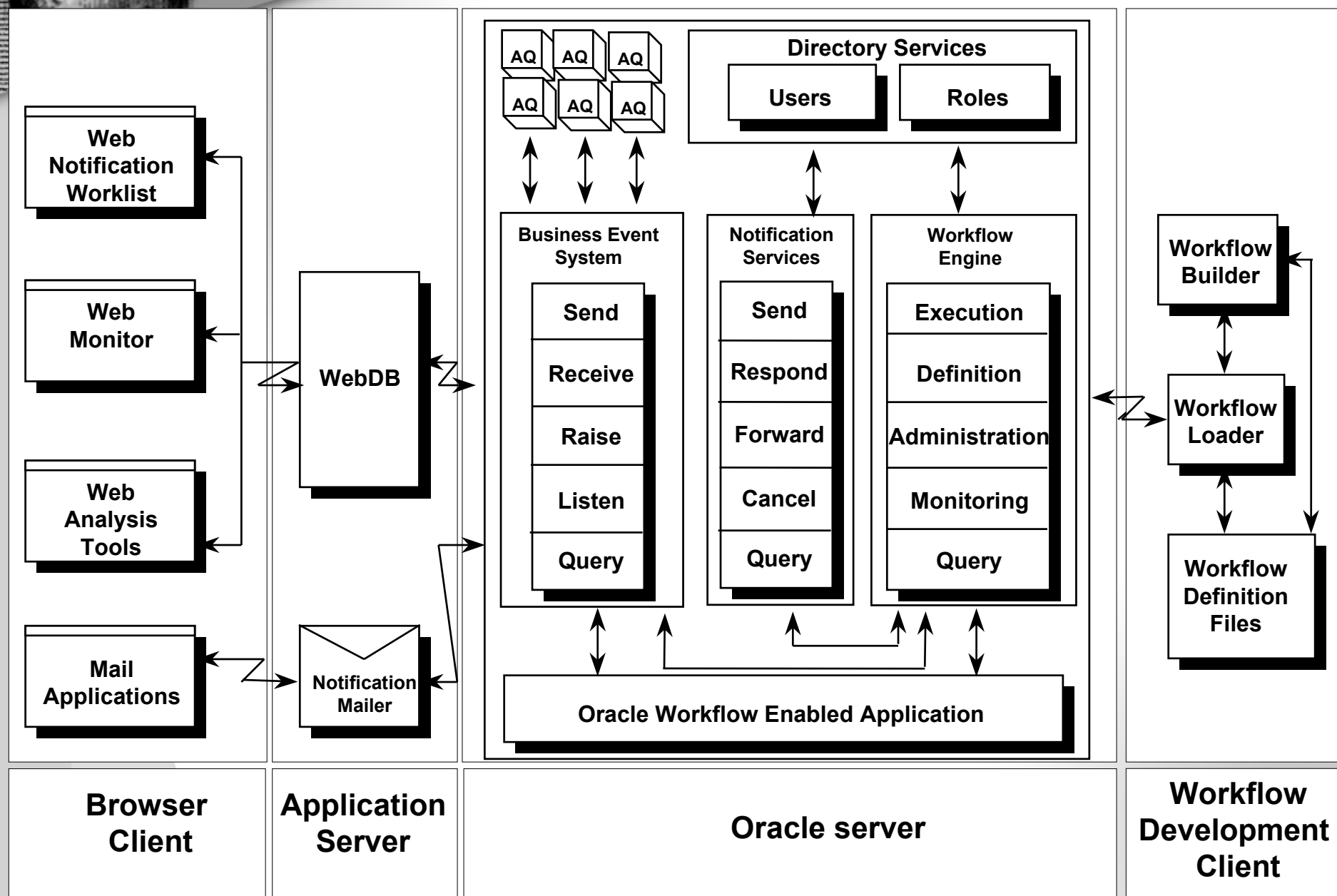
* 15 Users 10k steps per day



Oracle Workflow

- **Part of the core of Oracle E-Business Suite Applications: ERM, ERP, HR**
- **Over 12,000 installations of the suites**
- **Integral part of Oracle DB**
- **Requires application server**
- **High powered workflow engine that is scalable and robust with messaging capabilities**

Oracle Workflow Architecture





Creating the Workflow Project

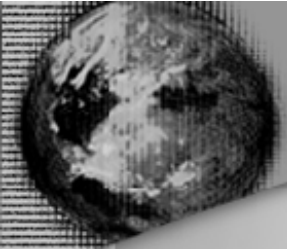
- **Upper Management on workflow:**
 - “Great concept” but skeptical on delivery
- **Structured project as a proof of concept tackling key technological and organizational issues**
- **Created pilot project for POS data loads after POC**
- **Captured metrics of current BP**
- **Modeled the AS-IS business process**
- **Presented operational improvements**
- **Created recommendations for TO-BE process and best practices**



Components of Workflow

Development Environment - Workflow Builder

- Draw the business Process
- Create tasks for
 - E-mail Notifications
 - Shell Scripts
 - PL/SQL
 - Automated Business Rules checks



WORKFLOW BUILDER INTERFACE



PL/SQL wrappers for activities

- **Item Type** - Internal name of the item type as defined in Oracle Workflow
- **Item Key** - a string that represents a primary key generated by workflow engine
- **Actid** - Id number of the activity from which this procedure is called
- **Funcmode** - :RUN, CANCEL, RESPOND, FORWARD, TRANSFER, TIMEOUT
- **Resultout** - COMPLETE, WAITING, DEFERRED, NOTIFIED, ERROR



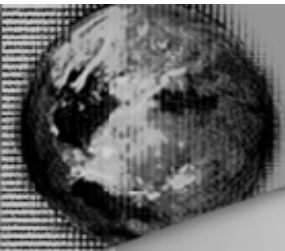
PL/SQL wrappers for activities

```
1 ⇨ procedure <procedure name>                (itemtype in varchar2,  
                                                itemkey in varchar2,  
                                                actid in number,  
                                                funcmode in varchar2,  
                                                resultout out varchar2) is  
  
2 ⇨ <local declarations>  
3 ⇨ begin  
  if ( funcmode = 'RUN' ) then  
    <your RUN executable statements>  
    resultout := 'COMPLETE:<result>';  
    return;  
  end if;  
4 ⇨ if ( funcmode = 'CANCEL' ) then  
  <your CANCEL executable statements>  
  resultout := 'COMPLETE';  
  return;  
  end if;  
5 ⇨ if ( funcmode = 'RESPOND' ) then  
  <your RESPOND executable statements>  
  resultout := 'COMPLETE';return;  
  end if;
```



PL/SQL wrappers for activities

```
6 ⇨ if ( funcmode = 'FORWARD' ) then
    <your FORWARD executable statements>
    resultout := 'COMPLETE';
    return;
end if;
7 ⇨ if ( funcmode = 'TRANSFER' ) then
    <your TRANSFER executable statements>
    resultout := 'COMPLETE';
    return;
end if;
8 ⇨ if ( funcmode = 'TIMEOUT' ) then
    <your TIMEOUT executable statements>
    if (<condition_ok_to_proceed>) then
        resultout := 'COMPLETE';
    else
        resultout := wf_engine.eng_timedout;
    end if;
    return;
end if;
9 ⇨ if ( funcmode = '<other funcmode>' ) then
    resultout := ' ';
    return;
end if;
10 ⇨ exception
when others then
    WF_CORE.CONTEXT ('<package name>', '<procedure name>', <itemtype>,
        <itemkey>, to_char(<actid>), <funcmode>);
    raise;
11 ⇨ end <procedure name>;
```

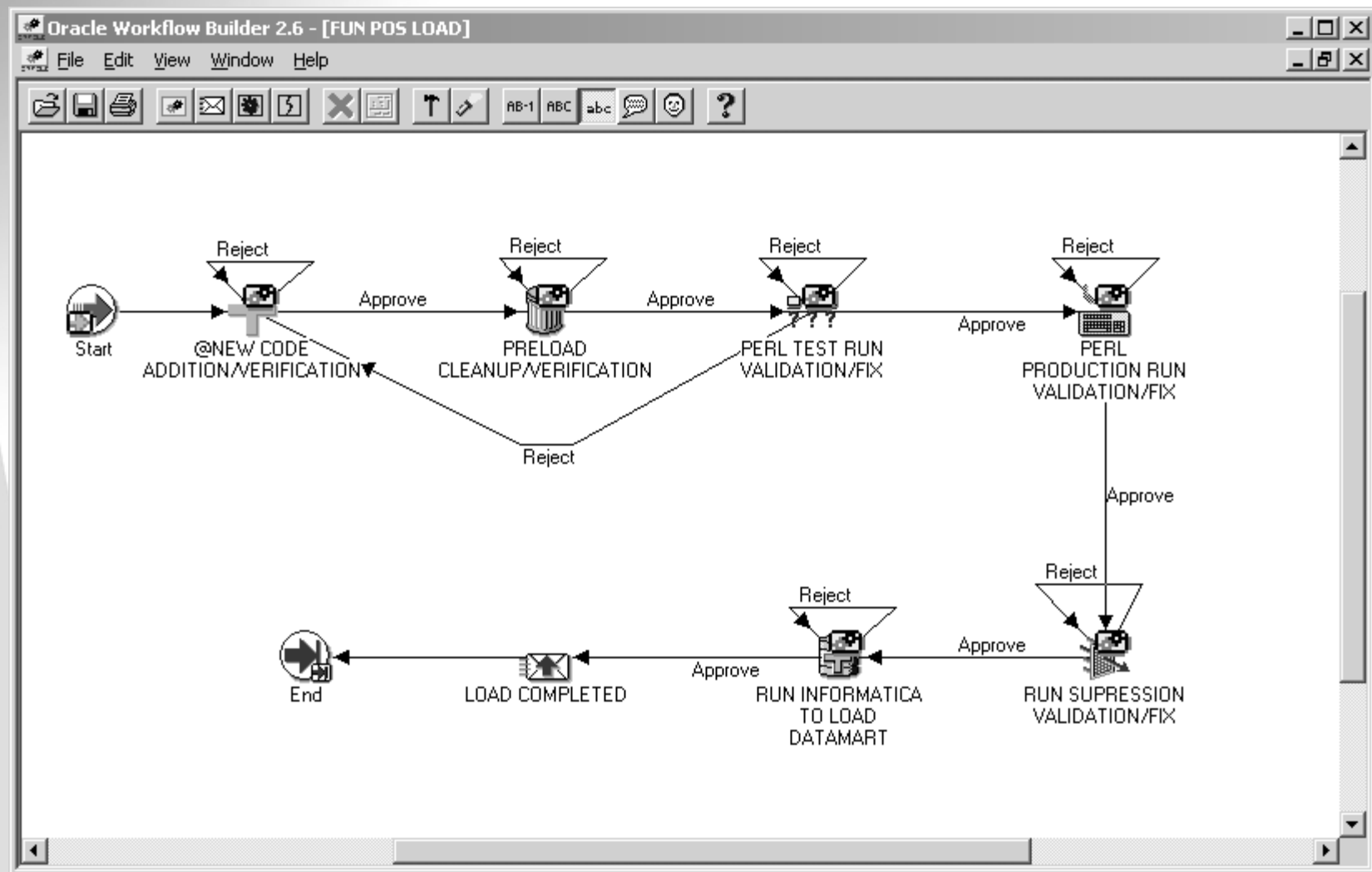
ATTACHING A PL/SQL PROGRAM TO WORKFLOW



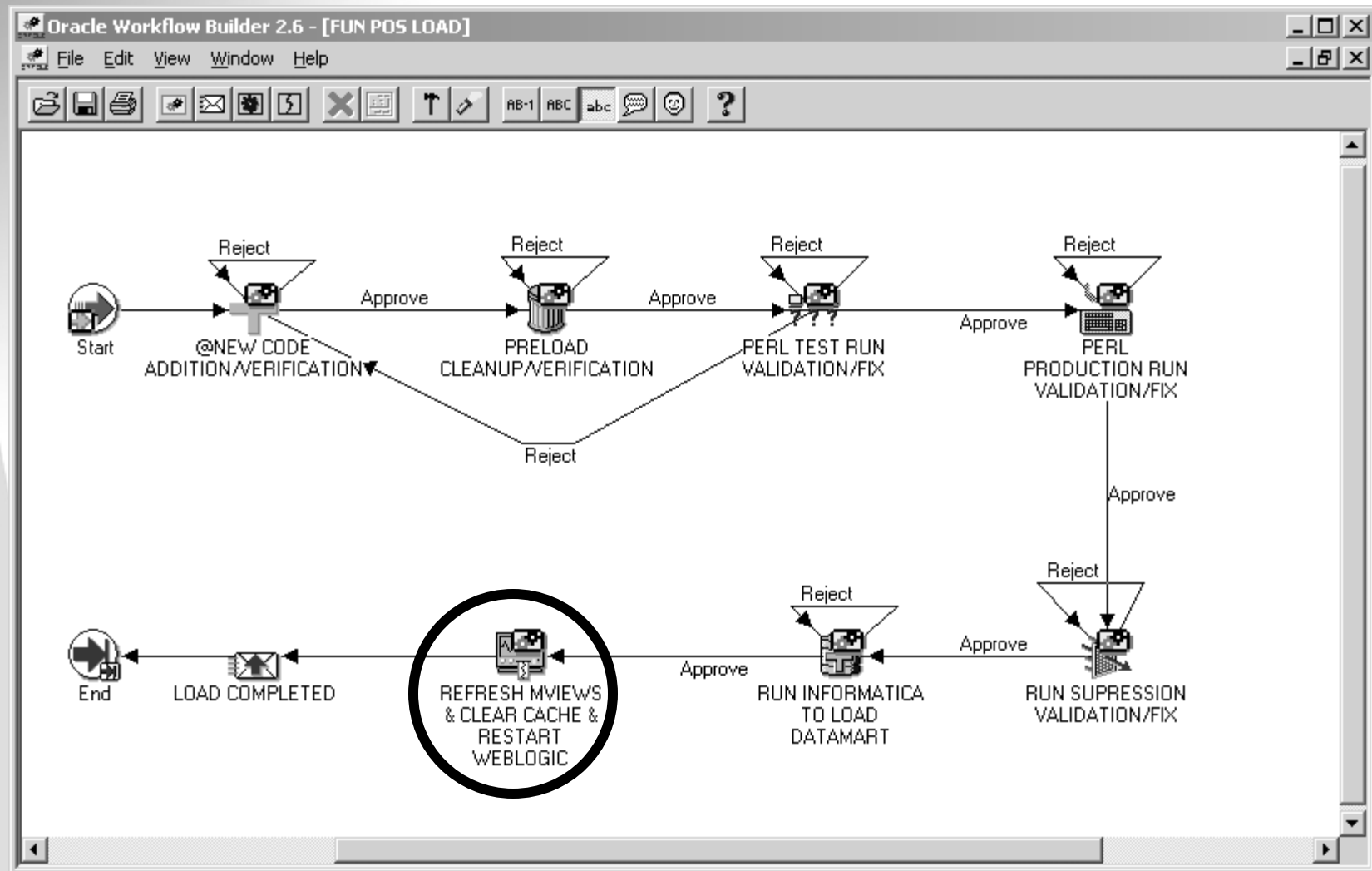
POC and Pilot For POS Data Load

- **Interviewed ETL group, DBAs, Operations group and Business to map out existing process**
- **Reviewed Process Model with Business Process owners and verified with technical team**
- **Wrapped existing code and applications (1 week)**
- **Wrote code to automated many manual steps**

First Version of Main Process



Incremental Process Delivery

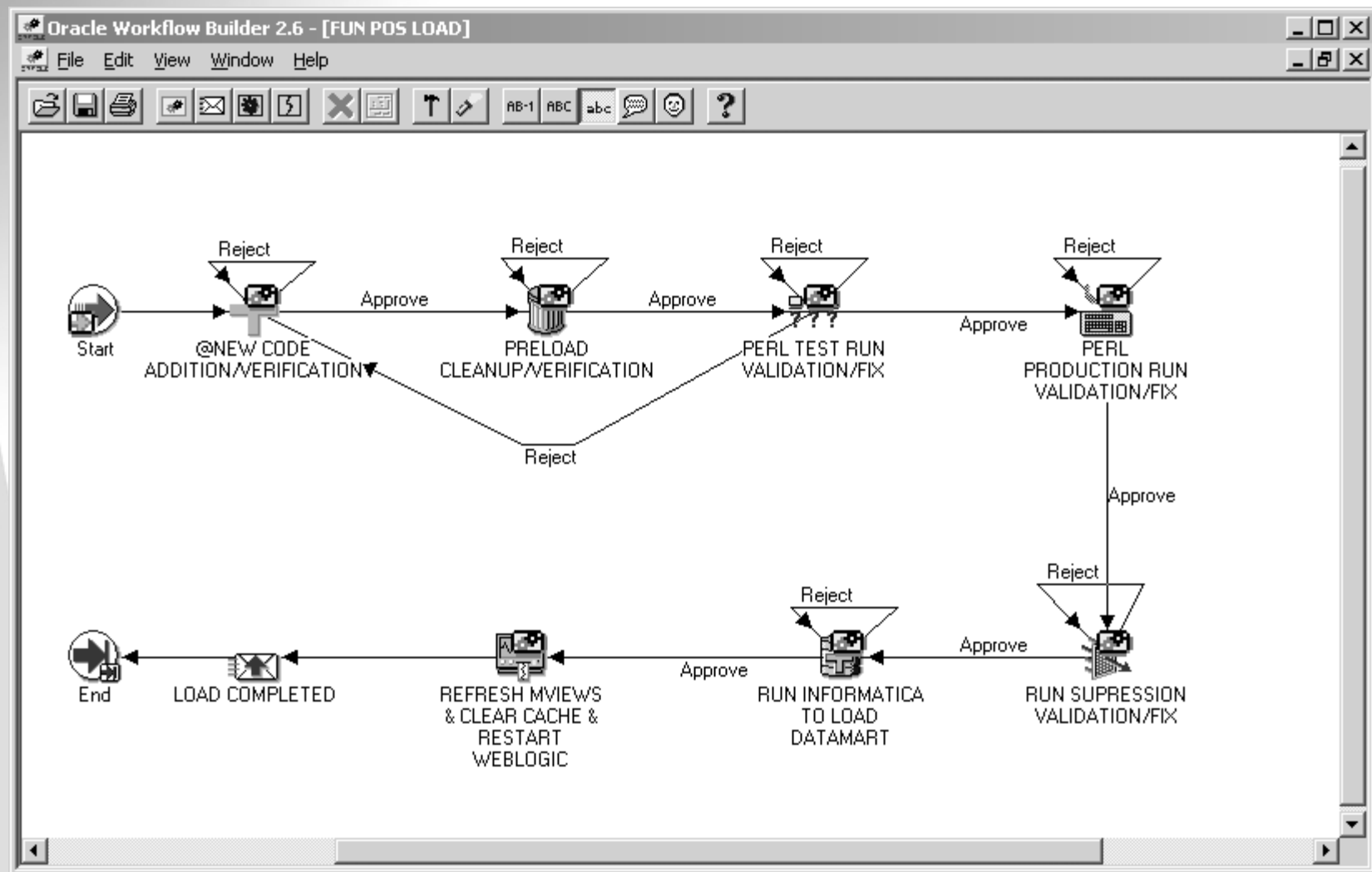




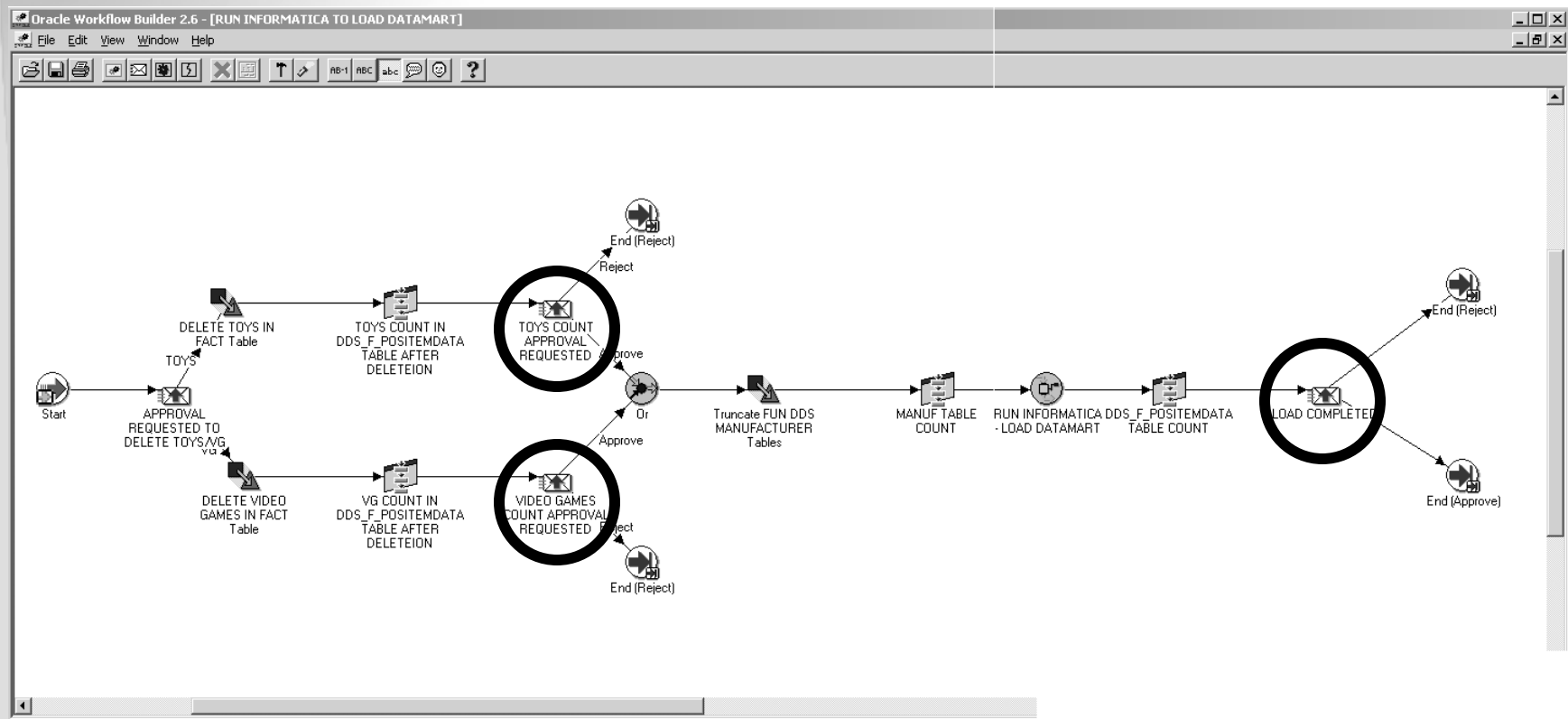
Managing Business Process

- **Managing Complex Processes by creating sub-processes**
- **Example: Informatica datamart load Task is composed of various steps which are defined in its own process**

Main Business Process



Sub Processes



Manual Steps



Automated Error Detection



Starting the workflow Process



- **Launching a workflow process**
 - **EVENT DRIVEN**
 - An Internal or External system or application can start a workflow process
 - **MANUAL START**
 - Item Key
 - Process Name


Initiate Workflow - Microsoft Internet Explorer

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 **Initiate Workflow - FUNPOS** 



Item Key

User Key

Process Name

Process Owner OWF_MGR

Industry Name TOYS

Infile Name toypos.txt

Fun ODS Name PCODS

Fun Datamart Name DCFUNDM

Input File Records Count

Pos Table Records Count

Pre Pos Table Records Count

Toys Count In Fun Datamart

Video Games Count In Fun Datamart

Count On Attribute Table In Fun Datamart

Count On Attributesets Table In Fun Datamart

Dds_D_Manuf Table Records Count

Dds_F_Positemdata Full Table Count

Dds_F_Positemdata Table Transaction Count

After Prepare Table Records Count

[Click to view online documentation](#)

Local intranet



Monitoring a Workflow Process

- **Monitoring the Business Process**
 - **Web Based Activity Monitor**
 - **Web Based Workflow Monitor**

☒ Active ☒ Complete ☒ Error ☒ Suspended☒ Response Notifications ☒ FYI Notifications ☒ Functions ☒ Standard Workflow Items ☐ Event

Filter Activities


Notifications List - Microsoft Internet Explorer









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Activities List



 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>IN FILE COUNT</u>	21-FEB-2003 10:02:18	1 Minutes 33 Seconds	The tot_rows in file4236064
 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>POS TABLE PRE COUNT</u>	21-FEB-2003 10:03:51	11 Seconds	The tot_rows is 6398132
 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>RUN POS PREPARE</u>	21-FEB-2003 10:04:02	48 Minutes 34 Seconds	remsh uxnorcl -l infomat5 . .p
 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>POS TABLE POST COUNT</u>	21-FEB-2003 10:52:36	0 Seconds	The tot_rows is 932597
 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>POST PREPARE COUNT</u>	21-FEB-2003 10:52:37	16 Seconds	After Prepare Query result = 0
 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>PREPARE PREOCESS CHECK</u>	21-FEB-2003 10:52:54	0 Seconds	Equal
 Complete	<u>KEVIN FELICE</u>	<u>RUN POS PREPARE PROCESS</u>	<u>PRELOAD CLEANUP VERIFY COMPLETED</u>	21-FEB-2003 10:52:54	0 Seconds	
 Complete	Workflow Engine	<u>RUN POS PREPARE PROCESS</u>	<u>End</u>	21-FEB-2003 10:52:55	0 Seconds	

Click to view activity details for

Local intranet

Notifications List - Microsoft Internet Explorer

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Favorites

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Activities List

Complete	Workflow Engine	REFRESH MVIEWWS & CLEAR CACHE	Defer Thread	21-FEB-2003 16:20:31	0 Seconds	
Complete	Workflow Engine	REFRESH MVIEWWS & CLEAR CACHE	REFRESH MV	21-FEB-2003 16:20:31	31 Minutes 19 Seconds	remsh uxnorcl -l oracle . wf_p
Complete	KEVIN FELICE	REFRESH MVIEWWS & CLEAR CACHE	MVS HAVE BEEN REFRESHED	21-FEB-2003 16:51:50	0 Seconds	
Complete	Workflow Engine	REFRESH MVIEWWS & CLEAR CACHE	CLEAR CACHE	21-FEB-2003 16:51:50	2 Seconds	remsh uxnorcl -l oracle . wf_p
Complete	Workflow Engine	REFRESH MVIEWWS & CLEAR CACHE	End	21-FEB-2003 16:51:52	0 Seconds	
Complete	KEVIN FELICE	FUN POS LOAD	FUN POS LOAD COMPLETE	21-FEB-2003 16:51:52	0 Seconds	
Complete	Workflow Engine	FUN POS LOAD	End	21-FEB-2003 16:51:52	0 Seconds	

View Diagram

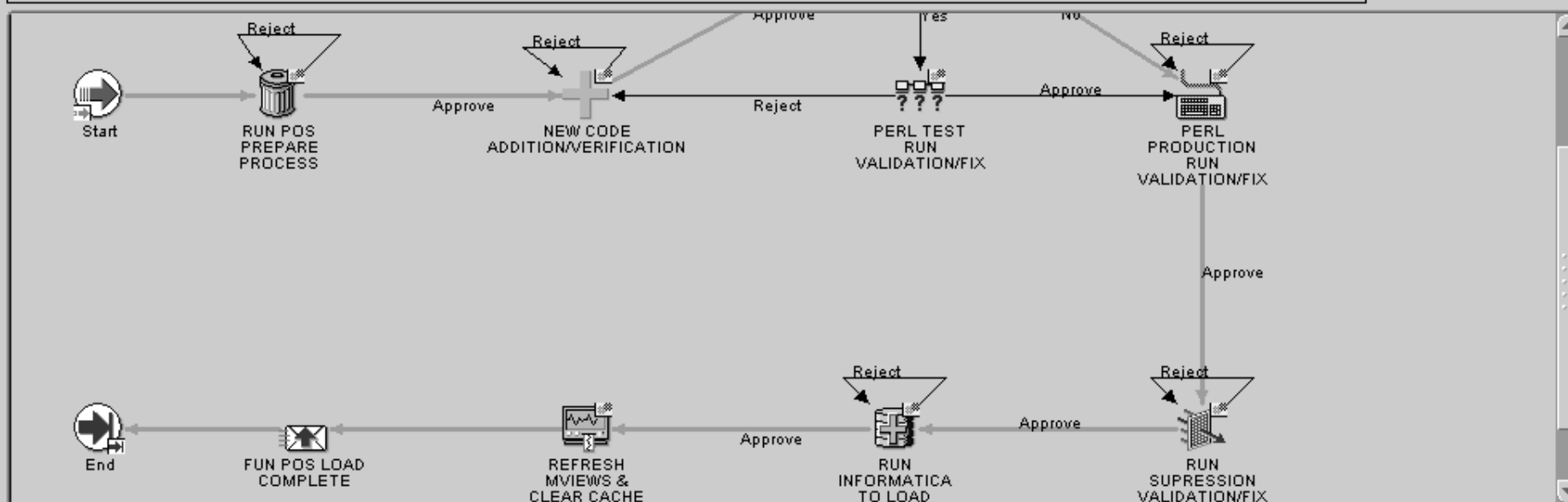
Enter query details

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FUN POS LOAD : FUNPOS, Kevin_Felice

Zoom In Zoom Out

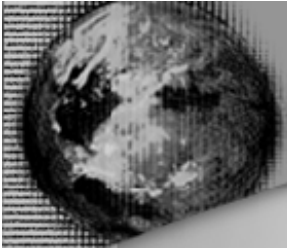


Definition Usage Status Notification Item

Current Location : FUN POS LOAD/FUN POS LOAD

Item Type : FUN POS LOAD (FUNPOS)
 Activity Name : FUN POS LOAD (POS_LOAD)
 Description : FUN POS LOAD
 Activity Type : Process
 Message :
 Function :
 Result Type : (*)

Abort Process Suspend Process Resume Process Reassign Expedite Attribute



Results of Pilot



Reasons for Implementing Workflow

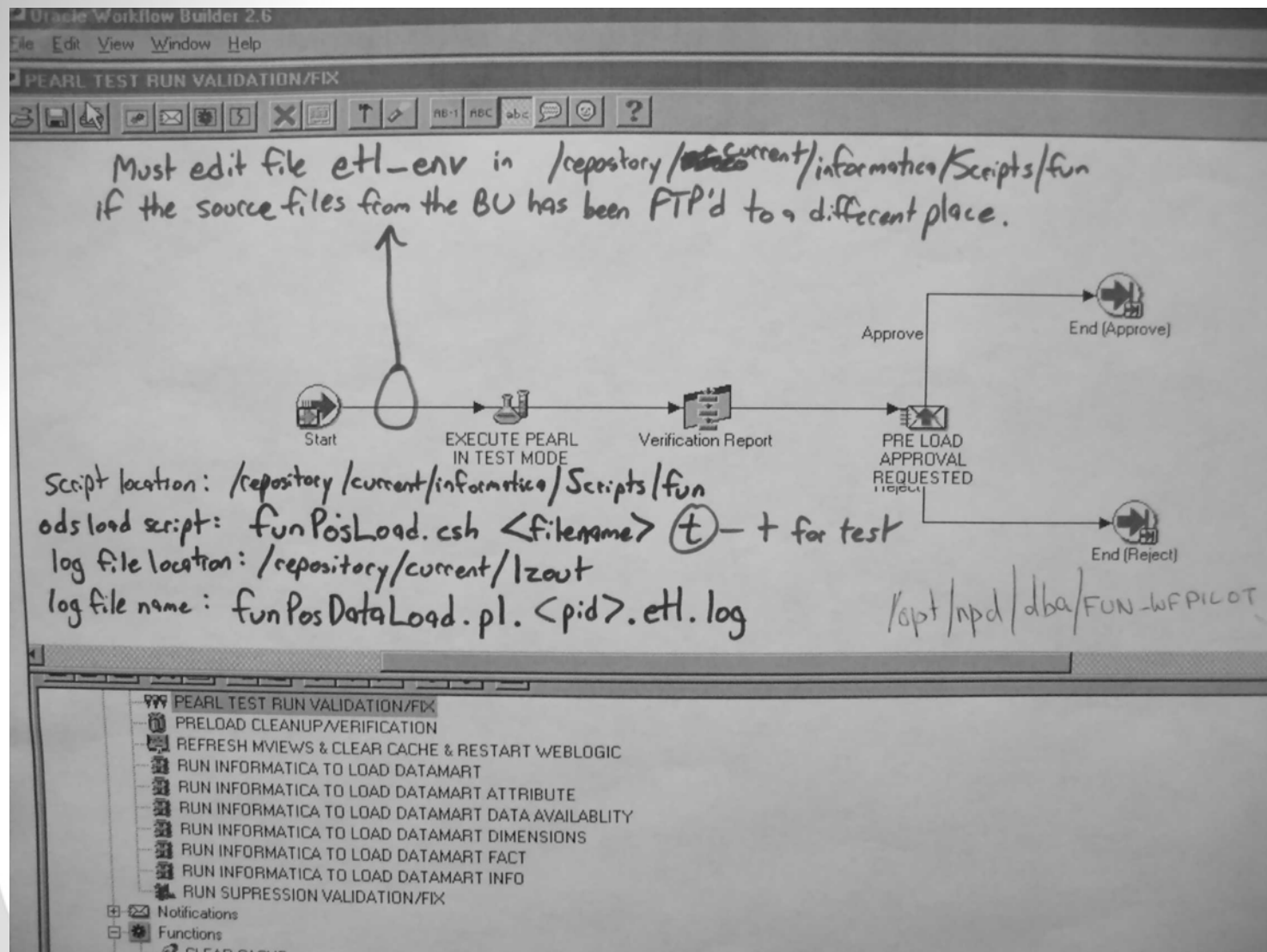
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Results Of Pilot

- **Document and Model BP**
 - Documentation was the primary result of using workflow
 - Process diagrams improved communication between Operations and IS
 - Identified tasks and their dependencies
 - Identified tasks that had to be added or changed
 - The process evolved from a rigid design to one that reflected the realities of the loading process
 - The process was improved and deployed incrementally
 - Identified various QA tasks that were manual and not part of any automation or existing programs
 - Traceability and versioning of Business Process
 - Version History used to analyze how and why the process has changed

Improved Communication and Traceability



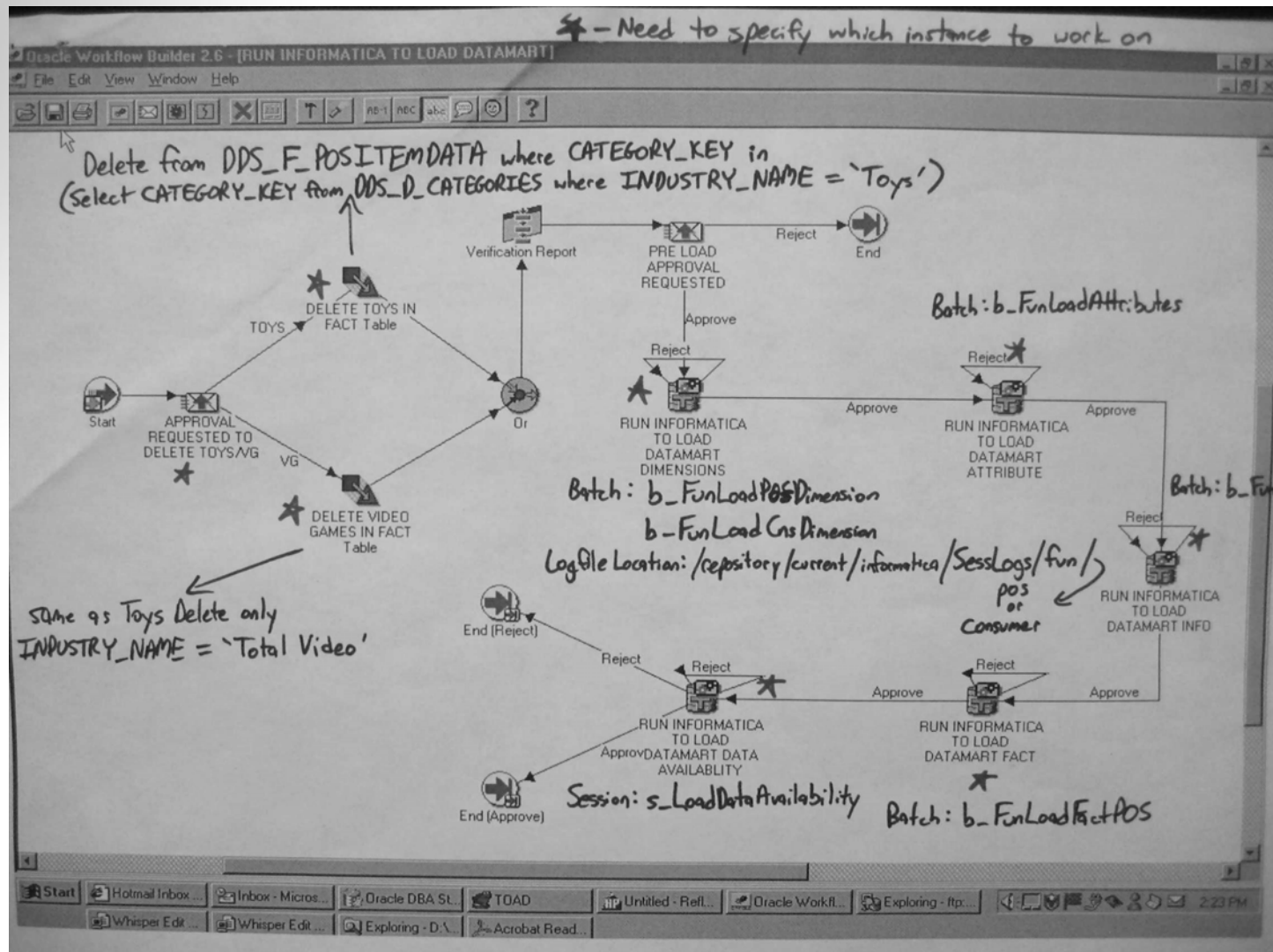


Better Communication

- **Having a graphical representation of workflow made it very clear which activity in the process was at issue**
- **Identified processes that were unnecessary, superfluous or repetitive**
- **Found many undocumented processes that were performed by individuals**
- **Visual information helped breakdown complex processes**
- **The visual diagram became the contract for the business process**

Design Document is Deployment Program

Help breakdown complex BP





Results Of Pilot

Automation of Business Process

- **Reduce Errors**
 - Errors were reduced since the process was systematized
 - Many manual QA and error reporting processes were incorporated into workflow
- **Improve Efficiency**
 - E-mail notification at various steps slowed process - wait for user's response
 - Efficiency improved when business rules for routing were introduced
 - Additional information was placed in the e-mail notifications such as attaching URL's to log files so that the users did not have to search various system for them
 - Users intervened less and monitoring time was reduced
- **Many tasks were identified and automated**

86 ACTIVITIES

CLEANUP_COMPLETE_APPROVAL_REQ	PERL_TEST_RUN_BEGINS
CLEANUP_VERIFY_COMPLETE	POS_LOAD
CLEAR_CACHE	POS_PRE_TABLE_CNT
CONFIRM_SPACE_FOR_TEMP_TABLES	POS_TABLE_CNT
DDS_F_POSITEMDATA_TABLE_FULCNT	PRELOAD_CLEANUP_BEGINS
DDS_F_POSITEMDATA_TABLE_TRNCNT	PRELOAD_CLEANUP_VERIFICATION_NW
DELETE_TOYS_IN_FACT	PREPAREPROCESSCHK
DELETE_VG_IN_FACT	PREPARE_PROCESS_MANUAL_CHK
DMLOADCHK	PREPARE_PROCESS_MANUAL_RUN
DMLOADERRCODECHK	PREPARE_TABLE_CNT
DMLOAD_COMPLETE	PRE_LAUNCH_ACTIVITY
DMLOAD_ERROR	PRE_LOAD_APPROVAL
EXECUTE_PEARL_PROD	PRE_LOAD_APPROVAL_REMINDER
EXECUTE_PEARL_TEST	PRE_LOAD_APPROVAL_REQUESTED
FUNPOSLOAD_COMPLETE	PRE_POS_TABLE_CNT
FUN_ATTR_COUNT_VERIFICATION	PRE_SESSION
FUN_ATTR_LOADED_CONFIRMATION	REFRESHMV
FUN_DATA_AVAILABLE	RUN_INFORMATICA
INFILE_COUNT	RUN_INFORMATICA_ATTR
INFORMATICA_DBSETUP	RUN_INFORMATICA_DATA_AVAILABLE
LOAD APPROVED	RUN_INFORMATICA_DIM
LOAD TERMINATED	RUN_INFORMATICA_FACT
LOAD_COMPLETED	RUN_INFORMATICA_INFO
LOAD_DATAMART	RUN_POS_PREPARE
LOOPCOUNTER	RUN_SUPPRESSION
MANUF_TABLE_COUNT	SUPPRESSIONCHK
MV_REFRESHED	SUPPRESSION_BEGINS
NEW_CODE_ADDTN	SUPPRESSION_COMPLETE1
NEW_CODE_ENRTY	SUPPRESSION_PROCESS_MANUAL_CHK
NEW_CODE_ENRTY_REMINDER	SUPPRESSION_COMPLETE
NEW_CODE_ENRTY_STATUS	SUPPRESSION_SCRIPT_APPROVAL_REQ
NEW_CODE_ENRTY_STATUS_REMINDER	SUPPRESSION_VAL_FIX
NOTI_PERL_TEST_RUN	TABLE_COUNT
PATECDM_OR_PBTECDM	TOYSCOUNTCHK
PEARL_PRODUCTION_RUN_COMPLETE	TOYS_COUNT
PEARL_PRODUCTION_RUN_VAL_FIX	TOYS_COUNT_VERIFICATION
PEARL_TEST_RUN_COMPLETE	TOYS_OR_VG
PEARL_TEST_RUN_VAL_FIX	TRUNCATE_DDS_ATTR_TABLE
PERLPRODCHK	TRUNCATE_DDS_MANUF_TABLE
PERL_LOADED_CNT	TRUNCATE_FUNPOS_TABLE
PERL_PRODRUN_COMPLETE	TRUNCATE_TABLE
PERL_PRODUCTION_RUN_BEGINS	VG_COUNT_VERIFICATION
PERL_TESTRUN_COMPLETE	VID_COUNT



Results Of Pilot

- **Automatic Auditing of Process**
 - Metrics of the process was captured real time
 - History of activities was maintained
 - Helped in focusing on process that needs improvement
 - Automatic version control of tasks or processes



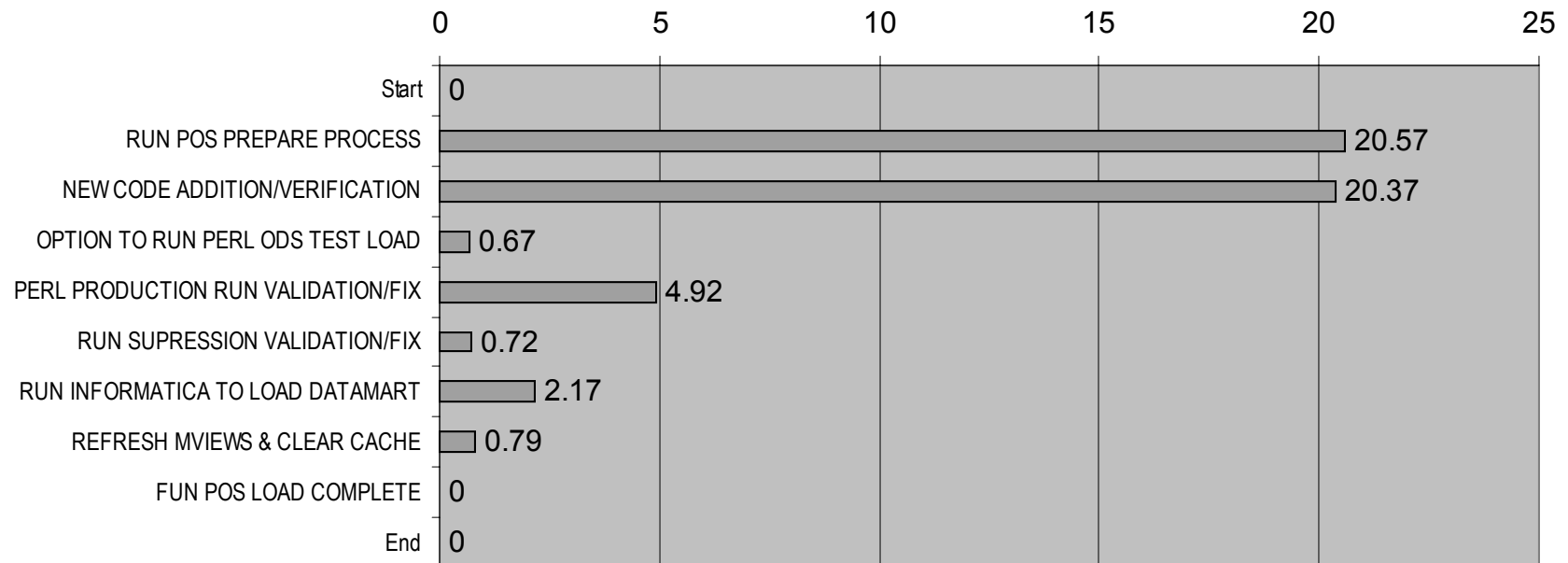
VERSION CONTROL OF TASKS

ITEM_TYPE	NAME	VERSION	TYPE	BEGIN_DATE	END_DATE	FUNCTION
FUNPOS	EXECUTE_PEARL_PROD	4	FUNCTION	8/21/02 11:13	9/20/02 16:48	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	5	FUNCTION	9/20/02 16:48	9/25/02 11:31	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	6	FUNCTION	9/25/02 11:31	9/30/02 14:52	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	7	FUNCTION	9/30/02 14:52	9/30/02 14:57	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	8	FUNCTION	9/30/02 14:57	10/2/02 9:14	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	9	FUNCTION	10/2/02 9:14	10/3/02 13:39	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	10	FUNCTION	10/3/02 13:39	11/7/02 17:42	fun_posload.p_perl
FUNPOS	EXECUTE_PEARL_PROD	11	FUNCTION	11/7/02 17:42		fun_posload.p_perl

REPORT ON MAJOR PROCESSES

ITEM_TYPE	ITEM_KEY	BEGIN_DATE	END_DATE	HOURS	PARENT_DISPLAY_NAME	ACTIVITY_DISPLAY_NAME
FUNPOS	Toys_POS_1118_V1	11/18/02 17:01	11/18/02 17:01	0	FUN POS LOAD	Start
FUNPOS	Toys_POS_1118_V1	11/18/02 17:01	11/19/02 13:35	20.57	FUN POS LOAD	RUN POS PREPARE PROCESS
FUNPOS	Toys_POS_1118_V1	11/19/02 13:35	11/20/02 9:57	20.37	FUN POS LOAD	NEW CODE ADDITION/VERIFICATION
FUNPOS	Toys_POS_1118_V1	11/20/02 9:57	11/20/02 10:37	0.67	FUN POS LOAD	OPTION TO RUN PERL ODS TEST LOAD
FUNPOS	Toys_POS_1118_V1	11/20/02 10:37	11/20/02 15:32	4.92	FUN POS LOAD	PERL PRODUCTION RUN VALIDATION/FIX
FUNPOS	Toys_POS_1118_V1	11/20/02 15:32	11/20/02 16:15	0.72	FUN POS LOAD	RUN SUPRESSION VALIDATION/FIX
FUNPOS	Toys_POS_1118_V1	11/20/02 16:15	11/20/02 18:25	2.17	FUN POS LOAD	RUN INFORMATICA TO LOAD DATAMART
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 19:13	0.79	FUN POS LOAD	REFRESH MIEWS & CLEAR CACHE
FUNPOS	Toys_POS_1118_V1	11/20/02 19:13	11/20/02 19:13	0	FUN POS LOAD	FUN POS LOAD COMPLETE
FUNPOS	Toys_POS_1118_V1	11/20/02 19:13	11/20/02 19:13	0	FUN POS LOAD	End

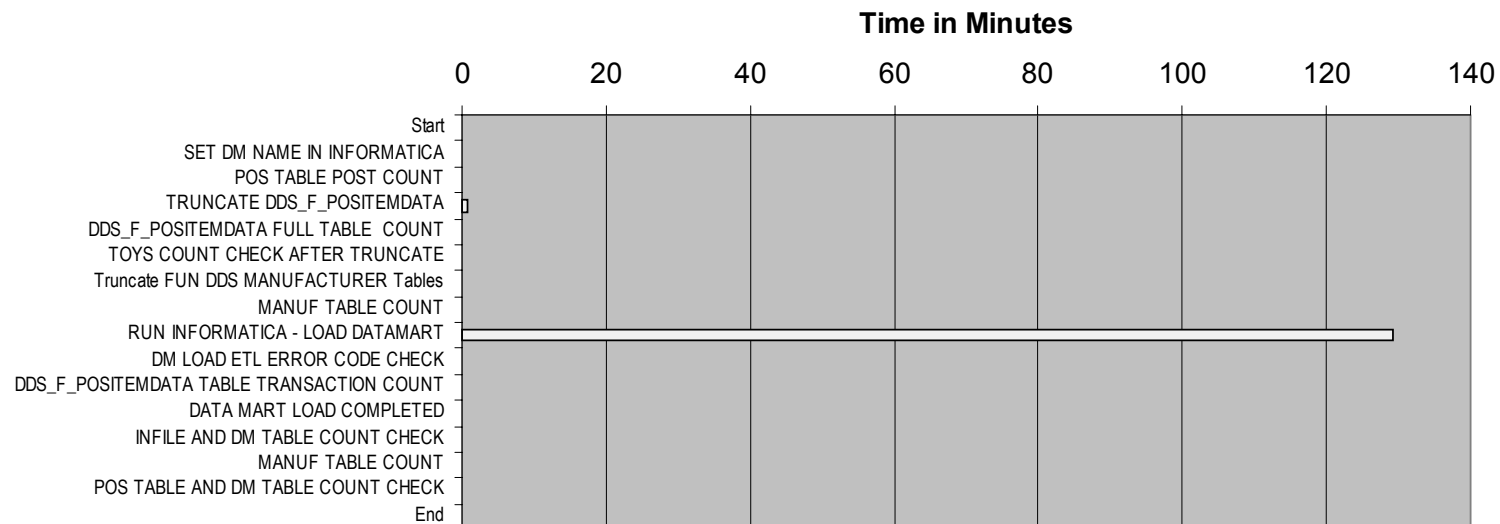
Time for Major Processes



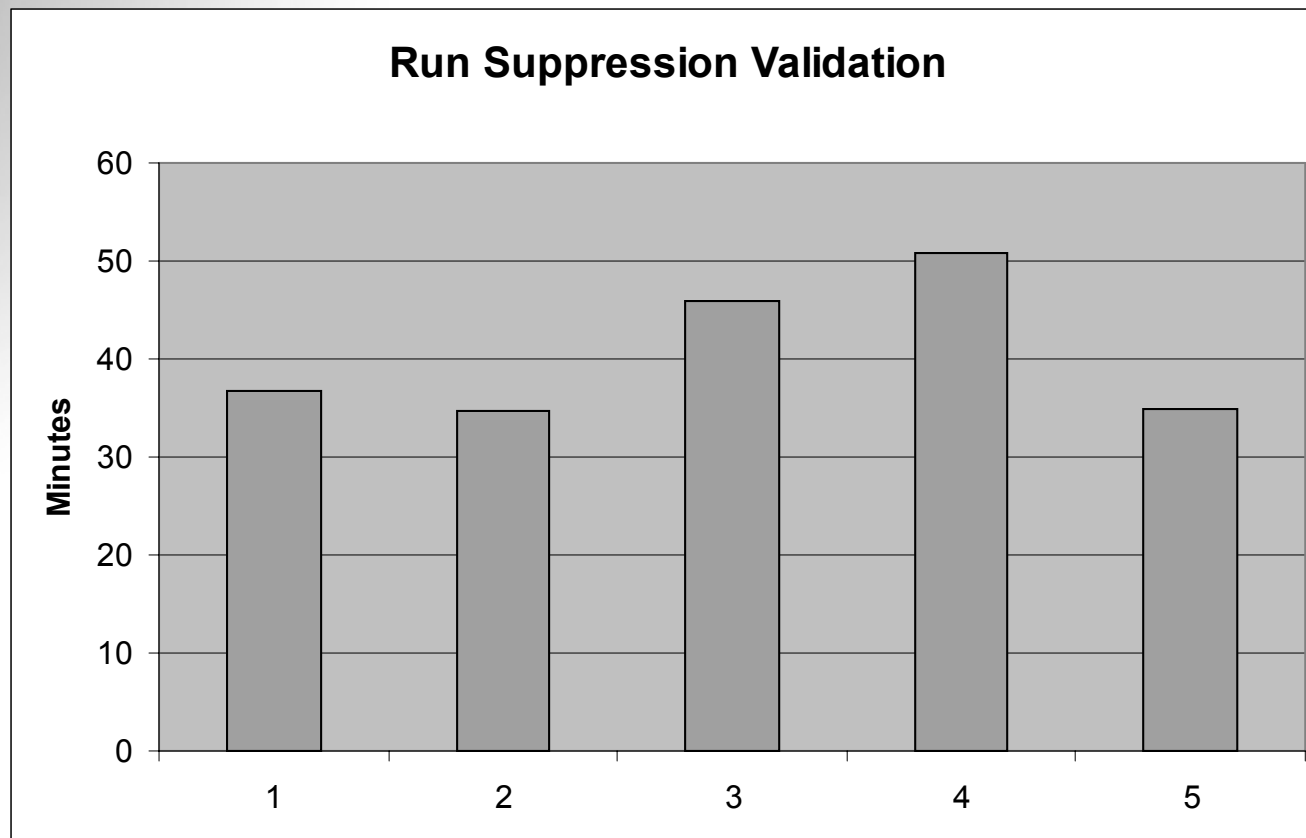
REPORT ON SUB-PROCESS TIMING

ITEM_TYPE	ITEM_KEY	BEGIN_DATE	END_DATE	Minutes	PARENT_DISPLAY_NAME	ACTIVITY_DISPLAY_NAME
FUNPOS	Toys_POS_1118_V1	11/20/02 16:15	11/20/02 16:15	0	RUN INFORMATICA TO LOAD DATAMART	Start
FUNPOS	Toys_POS_1118_V1	11/20/02 16:15	11/20/02 16:15	0	RUN INFORMATICA TO LOAD DATAMART	SET DM NAME IN INFORMATICA
FUNPOS	Toys_POS_1118_V1	11/20/02 16:15	11/20/02 16:15	0.1	RUN INFORMATICA TO LOAD DATAMART	POS TABLE POST COUNT
FUNPOS	Toys_POS_1118_V1	11/20/02 16:15	11/20/02 16:16	0.68	RUN INFORMATICA TO LOAD DATAMART	TRUNCATE DDS_F_POSITEMDATA
FUNPOS	Toys_POS_1118_V1	11/20/02 16:16	11/20/02 16:16	0.03	RUN INFORMATICA TO LOAD DATAMART	DDS_F_POSITEMDATA FULL TABLE COUNT
FUNPOS	Toys_POS_1118_V1	11/20/02 16:16	11/20/02 16:16	0	RUN INFORMATICA TO LOAD DATAMART	TOYS COUNT CHECK AFTER TRUNCATE
FUNPOS	Toys_POS_1118_V1	11/20/02 16:16	11/20/02 16:16	0.07	RUN INFORMATICA TO LOAD DATAMART	Truncate FUN DDS MANUFACTURER Tables
FUNPOS	Toys_POS_1118_V1	11/20/02 16:16	11/20/02 16:16	0.02	RUN INFORMATICA TO LOAD DATAMART	MANUF TABLE COUNT
FUNPOS	Toys_POS_1118_V1	11/20/02 16:16	11/20/02 18:25	129.23	RUN INFORMATICA TO LOAD DATAMART	RUN INFORMATICA - LOAD DATAMART
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0	RUN INFORMATICA TO LOAD DATAMART	DM LOAD ETL ERROR CODE CHECK
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0.35	RUN INFORMATICA TO LOAD DATAMART	DDS_F_POSITEMDATA TABLE TRANSACTION COUNT
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0	RUN INFORMATICA TO LOAD DATAMART	DATA MART LOAD COMPLETED
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0	RUN INFORMATICA TO LOAD DATAMART	INFILE AND DM TABLE COUNT CHECK
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0	RUN INFORMATICA TO LOAD DATAMART	MANUF TABLE COUNT
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0	RUN INFORMATICA TO LOAD DATAMART	POS TABLE AND DM TABLE COUNT CHECK
FUNPOS	Toys_POS_1118_V1	11/20/02 18:25	11/20/02 18:25	0	RUN INFORMATICA TO LOAD DATAMART	End

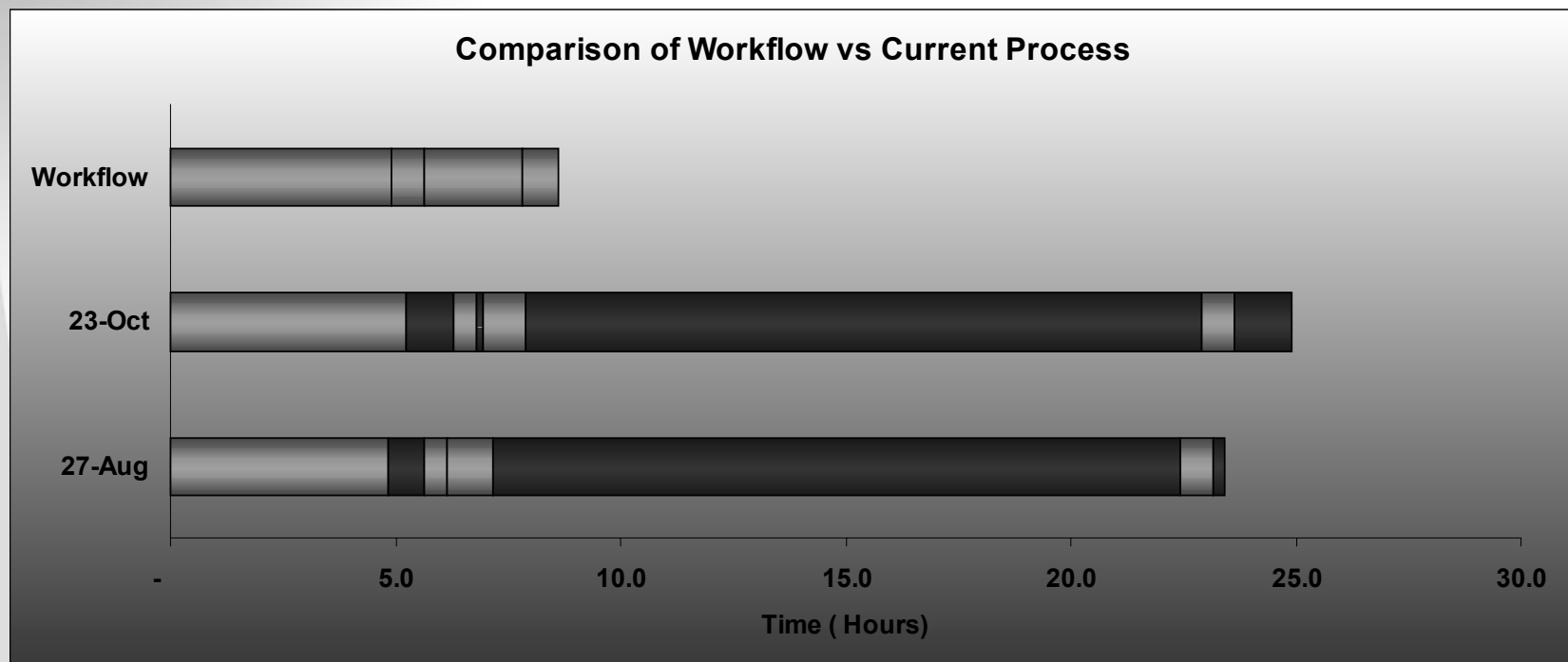
Sub Process Timing



Timing Trends for each task



Removing Latencies





Results Of Pilot

- **Programming complexity for Workflow**
 - **Creating wrappers to existing code was easy after understanding the wrapper structure**
 - **Most existing code could be incorporated into workflow within 30 minutes**
 - **Out of the box wrappers for SQL were used**
 - **Special simple wrappers were created for non-SQL tasks such as the Informatica sessions**
 - **New code and wrappers for QA tasks had to be written and incorporated into workflow**
 - **When improved wrappers were created, it was easy to introduce them to existing processes**



Organizational Structure

- **Roles**
 - **Business Process Owner**
 - **Business Process Designer**
 - **Operations**
 - **Process and Application/Code integrator**
 - **Application Wrapper Programmer**
 - **Application/Code Programmer**

Organizational Distribution of Work

ROLES

Business Process Owner

Business Process Designer

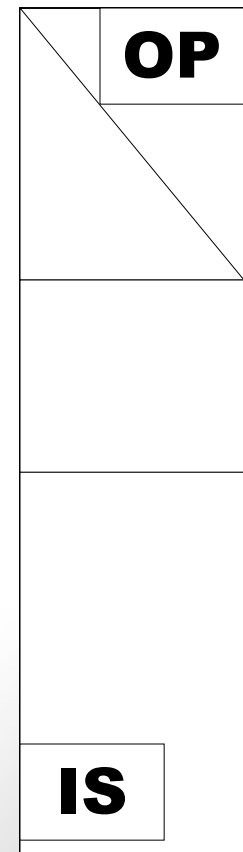
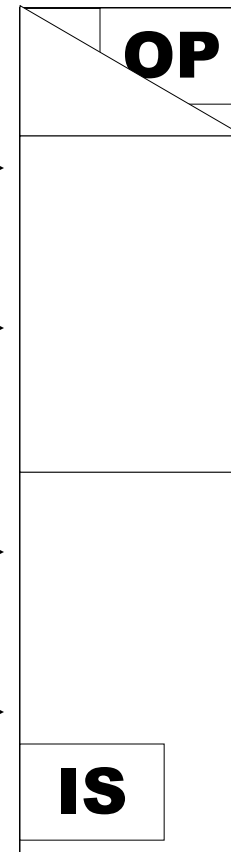
Application Integrator

Application Wrapper Programmer

Application/Code Programmer

PILOT PHASE

FINAL PHASE





Results Of Pilot

Flexibility in changing Business Process

- **Changing process was not very complicated**
- **Sub-processes could be created and tested separately outside the main process**
- **These sub-processes can later be added to the main process**
- **Sub-processes were used individually for production**
- **Incremental improvement and deployment of the business process was achieved**



Did workflow improve Process?

- **Modeling of BP helped identify various manual steps**
- **Workflow allowed users to suspend or if necessary bypass execution of specific processes to fix systems or application issues**
- **One could incrementally add tasks or sub-processes to improve BP**
- **Workflow can consolidate the results of QA and attach pertinent information and e-mail it to make informed decisions**
- **Workflow eliminated latencies between processes**
- **History of BP and its activities was useful for analysis and reviewing purpose of processes**
- **Documented BP design helped identify inefficiencies of the overall process**



Workflow Objectives

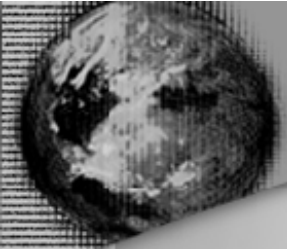
Can Workflow Achieve the following ?

- YES • Document and Model the BP**
- YES • Automate various tasks**
- YES • Audit the tasks**
- YES • Adapt to changes in business process**
- YES • Add little overhead to existing application code**
- YES • Improve existing BP**



Other tangible benefits

- **Reduce headcount**
- **Reduce lifecycle time**
- **Reduce operating costs**
- **Automate routine and repetitive tasks**
- **Faster processing times – parallel tasks**
- **Improve change management**
- **Improve Quality**
- **Decision Support information**
- **Improve inter-organization communications**



Using Oracle Workflow

A Case Study

13 March 2003

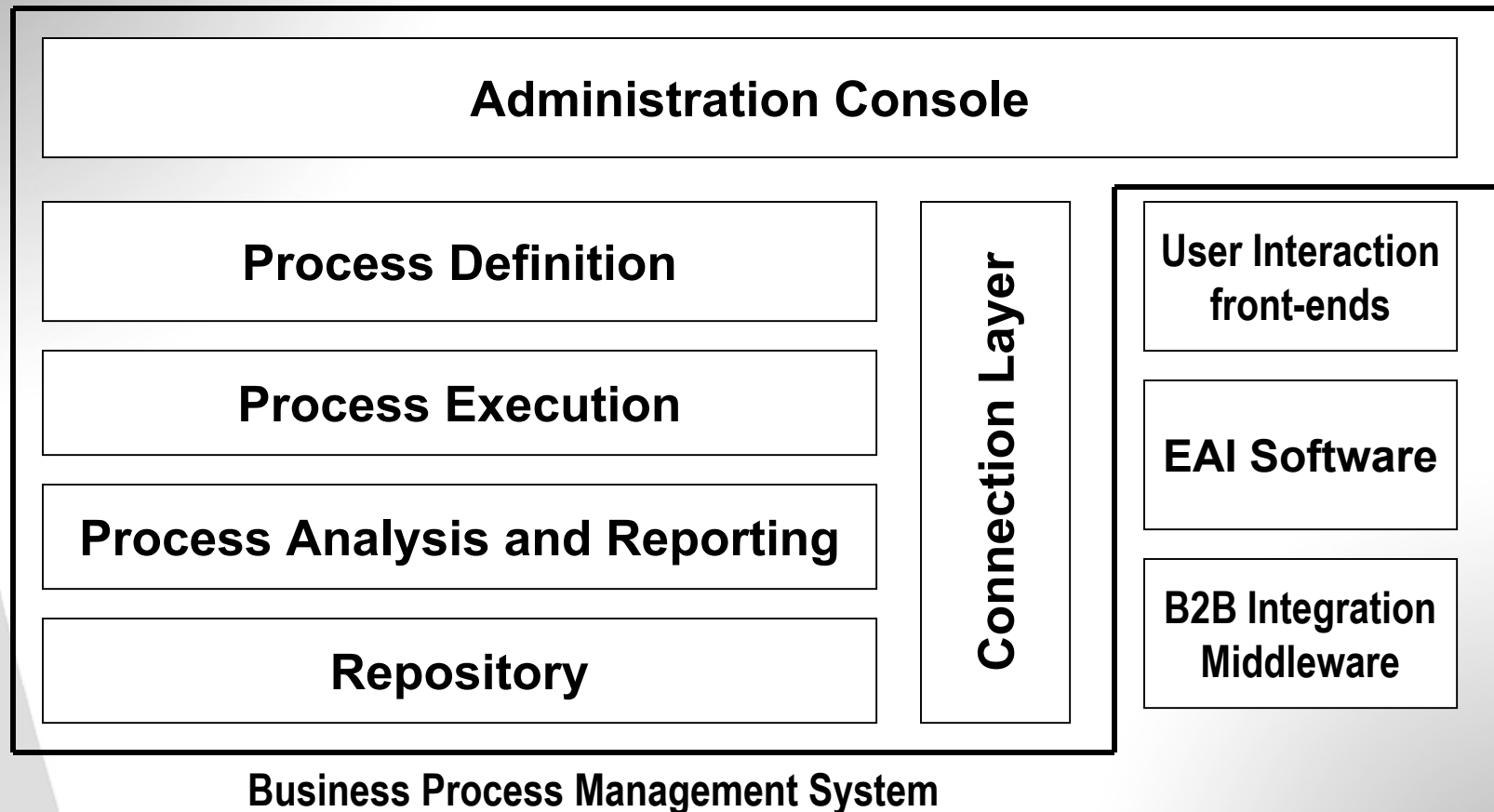


Phases Of Implementation

- **Environment Setup**
- **Establish Process modeling methodology**
- **Create the As-Is business process**
- **Create the To-Be business process**
- **Define business measures**
- **Simulate Business Process**
- **Communicate and Verify Business Process model**
- **Build the object model wrappers**
- **Build the object models**
- **Test**
- **Deploy**



Functional Architecture



Source: Yphise BPM Assesment Report



Workflow Architecture

