



BScaler

White Paper Series

**Mapping Enterprise Resource Management™ (ERM)
Workflow with BScaler™ Implementation to
Workflow Reference Model from the Workflow
Management (WfM) Coalition**

By

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Mapping BScaler[®] Enterprise Resource Management[®] (ERM) to Workflow Reference Model from the Workflow Management (WfM) Coalition

1. INTRODUCTION

Enterprise Resource Management[®] (ERM) is a suite of business processes and workflow management methodologies based on industry best practices and rule-based integrated decisions for organizing, controlling, monitoring, and managing the lifecycles of enterprises. The BScaler Enterprise Resource Manager[™] is a suite of computer-based information systems (secure hardware, software, database, networks, and integration systems), which facilitate the automation of those business processes and workflow management methodologies.

The distinct advantages of the separation between ERM[®] and BScaler[®] ERM[™] are as follows:

1. Through an emphasis on business processes and workflows, the ERM[®] approach eliminates “technology binding,” resulting in open systems approaches to implementation, minimizing dependence on hardware, software, and network vendor products.
2. The BScaler approach, with minimal technology binding, easily and effectively maps onto and supports the standards set forth in the “Workflow Reference Model” of the Workflow Management (WfM) Coalition.
3. The BScaler[®] implementation automates the ERM[®] business processes and workflows and is driven by the ERM[®] model, thus empowering continuous emphasis on business process and workflow improvements as drivers for systems upgrades.
4. The BScaler[®] implementation, derived from and driven by ERM[®], provides a WfM-compliant automated workflow management system that provides procedural automation of business processes by management of the sequence of sales activities and invocation of appropriate human and/or IT resources associated with the various sales activity steps.

This white paper describes how the ERM[®] approaches, implemented with BScaler[®], maps onto and supports the Workflow Reference Model from the Workflow Management (WfM) Coalition.

2. ERM[®] AND BSCALER[®] WORKFLOW REFERENCE MODEL – AN OVERVIEW

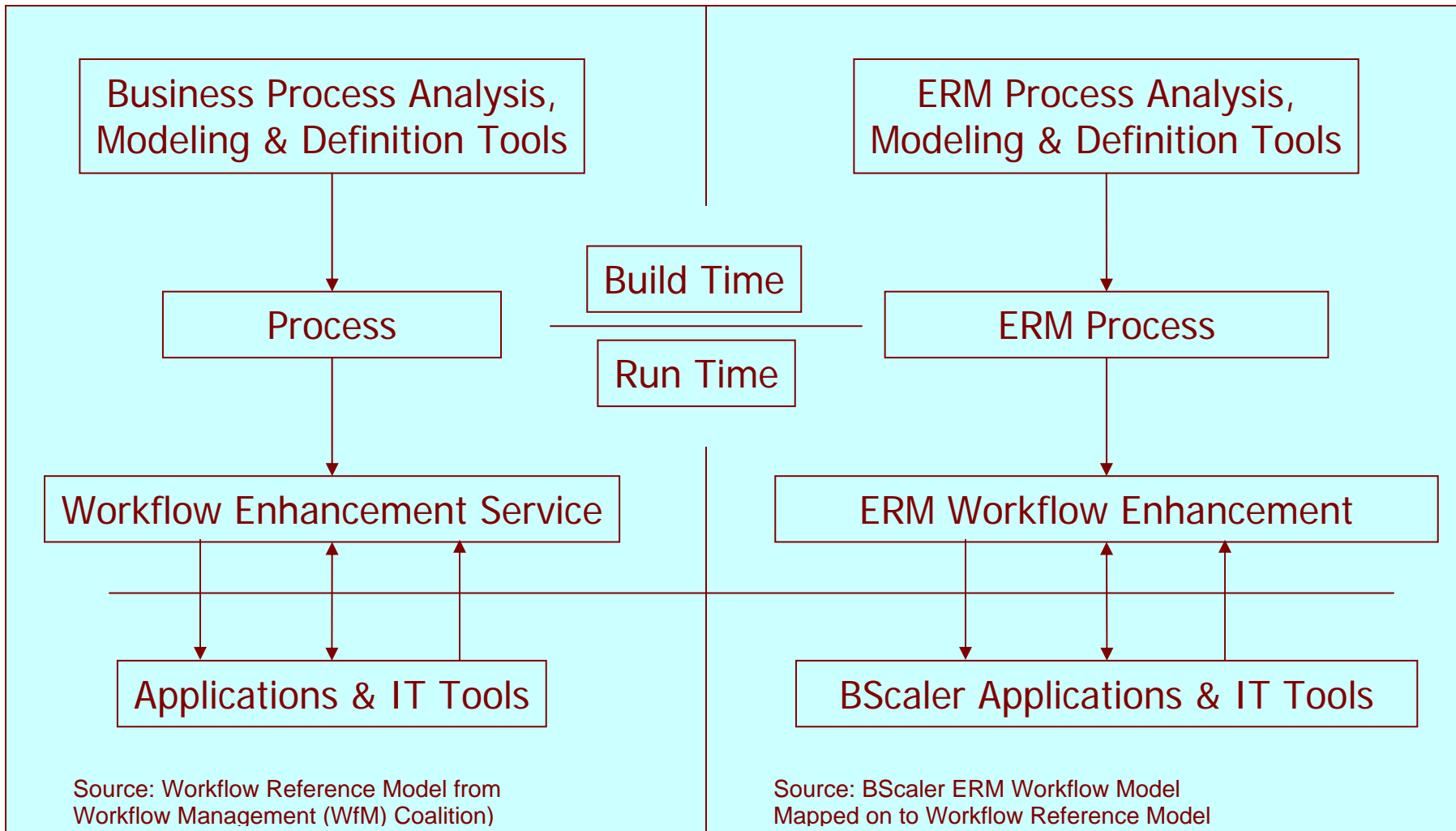
According to WfM, **“workflow is the computerized facilitation or automation of a business process, in whole or part”** and **“workflow management system is a system that completely defines, manages, and executes ‘workflows’ through the execution of software whose order of execution is driven by a computer representation of the workflow logic.”**

WfM further characterizes workflow management systems as providing support in three functional areas:

- Build-time functions, concerned with defining, and possibly modeling, the workflow process and its constituent activities;
- Run-time control functions, concerned with managing the workflow processes in an operational environment and sequencing the various activities to be handled as part of each process; and
- Run-Time interactions with human users and IT application tools for processing the various activity steps in each of the business processes and workflows.

Figure 1 shows these basic characteristics of the WfM Workflow Reference Model and how ERM[®] approaches, implemented with BScaler[®], conform to the model at WfM functional level.

FIGURE 1. WfM Workflow Reference Model and BScaler ERM™ Characteristics



2.1. BUILD-TIME FUNCTIONS

Build-time functions are those that result in a computerized definition of a business process. During the build-time, a business process is translated from the real world into a formal, computer addressable definition by the use of one or more analysis, modeling, and system definition techniques. The resulting definition is referred to by many names, including a process model, a process template, process metadata, or a process definition. WfM utilizes the term 'process definition,' defined as "the computerized representation of a process that includes the manual definition and workflow definition," comprising a number of discrete activity steps, with associated computer and/or human operations and rules governing the progression of the business process through the various activity steps.

Consistent with these WfM propositions for build-time functions, BScaler ERM™ represents the "Business Processes and Workflows" translated from real world experiences and best practices into formal, computer-addressable definitions by use of formal modeling tools and techniques (for example, UML, or Uniform Modeling Language). The resulting build-time functions in BScaler ERM comprise a 'process definition' or 'process metadata' for the complete business process life cycle, starting with customer contacts and leads, proceeding to quotes, sales orders, shipping and invoicing, and completing the life cycle with revenue recognition, accounts receivables management, commission payments, G/L accounting and financials.

2.2. RUN-TIME PROCESS CONTROL FUNCTIONS

According to WfM workflow reference model, the process definition is interpreted at run time by software responsible for creating and controlling operational instances of the process, scheduling the various activities steps within the process and invoking the appropriate human and IT applications resources, etc. The core component in the run-time process control is the workflow management control software (or "engine"), responsible for process creation and deletion, control of activity scheduling within an operational process, and interaction with application tools or resources. Such a software or "engine" may be distributed across a number of computer platforms to accommodate processes, which operate over a wide geographic basis.

BScaler ERM follows WfM guidelines for run-time process control functions through workflow management control software or "engines" for each of the components for the automation of sales-related business processes and workflows. These "engines" are designed to create and delete processes, control and/or schedule activities within business processes, and interact with application tools and resources, such as centralized databases for customer information, parts data (for catalog of items), accounts receivables data, sales force employees data, etc. Furthermore, BScaler ERM can be distributed across multiple computer platforms (due to the portability of Java /J2EE) in multiple geographic locations.

2.3. RUN-TIME ACTIVITY INTERACTIONS

WfM coalition stipulates: "interaction within the process control software (or "engine") is necessary to transfer control between activities, to ascertain the operational status of processes, to invoke application tools and pass the appropriate data, etc." WfM states further that there are several benefits in having a standardized framework for supporting this type of interaction, including the use of a consistent interface to multiple workflow systems and the ability to develop common application tools to work with different workflow products.

BScaler ERM™ follows these WfM guidelines and standards in its implementation of run-time activity interactions, with capabilities for transfer between activities in business processes, continually ascertain and empower end-users to monitor operational status of activities and processes, and invoke required application tools and databases to pass and/or update appropriate databases.

2.4. DISTRIBUTION & SYSTEM INTERFACES

WfM Workflow Reference Model specifies comprehensive standards for distribution and system interfaces: “The ability to distribute tasks and information between participants is a major distinguishing feature of workflow runtime infrastructure. The distribution function may operate at a variety of levels (work group to inter-organization) depending upon the scope of workflows; it may use a variety of underlying communications mechanisms (message passing, distributed object technology, electronic mail, etc).”

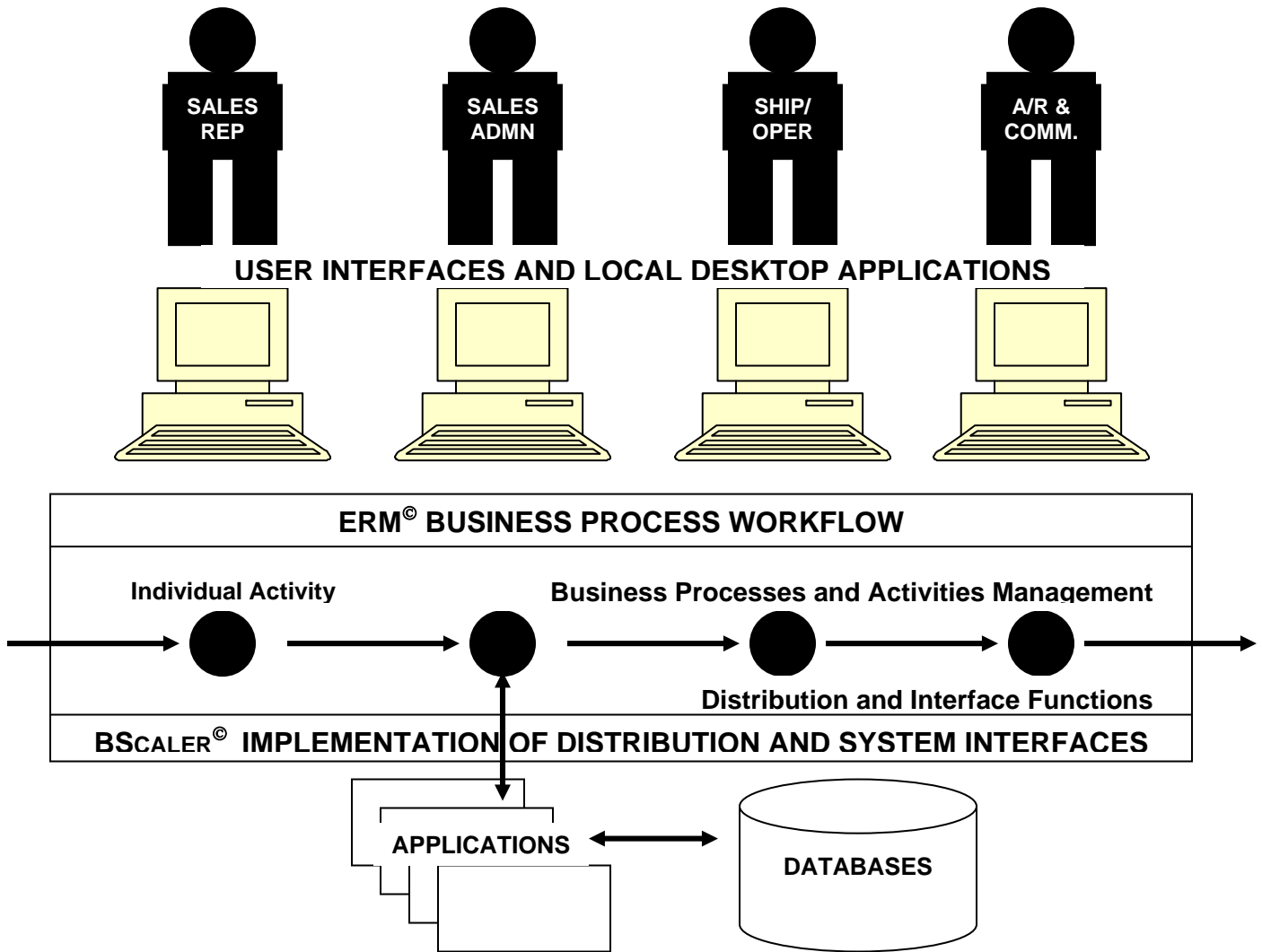
BScaler ERM™ implements WfM-compliant distribution and system interfaces through its interfaces to users and applications distributed across the workflow domain, as shown in Figure 2. In BScaler ERM, each of the interfaces is a point of integration between workflow enhancement services and other infrastructure or application components. For example, subsequent to sales order generation, an interface to production/inventory component operates based on messages passed from the sales order generation component.

In accordance with WfM Coalition recommendations, BScaler ERM™ implements the full range of interfaces covering, but not limited to, the following areas:

- Specifications for process definition data and its interchange
- Interfaces to support interoperability between different workflow systems
- Interfaces to support interaction with a variety of IT application types
- Interfaces to support interactions with user interface desktop functions
- Interfaces to provide system monitoring and metric functions to facilitate the management of composite workflow application environments

Please refer to the ERM® implementation of WfM-compliant distribution and system interfaces through the BScaler interfaces to users and applications distributed across the workflow domain, as shown in Figure 2 on the next page.

FIGURE 2. ERM BSCALER™ DISTRIBUTION AND SYSTEMS INTEFACES



3. ERM[®] AND BSCALER[®] WFM COMPLIANT PRODUCT IMPLEMENTATION

According to WfM, “**product implementation of the workflow reference model should provide a basis for developing interoperability scenarios. This approach identifies the main functional components within a workflow system and the interfaces between them as an abstract model. It is recognized that many different concrete implementation variants of this abstract model will exist and therefore the interfaces specified may be realized across a number of different platforms and underlying distribution technologies.**”

The BScaler ERM[™] product implementation follows precisely these guidelines, identifying components within the workflow system and the interfaces between them as abstract model first, and subsequently providing interoperable scenarios for interfaces among the components. Thus, the BScaler ERM[™] abstract model and the interfaces may be realized across different platforms and distribution technologies.

The main functional components of BScaler ERM[™] Workflow System are shown in Figure 3. The BScaler ERM[™] WfM-compliant product implementation model consists of the following three types of components:

- Software components, which provide support for various functions within the BScaler ERM[™] workflow system (shown as dark-shaded areas);
- Various types of system definitions and control data (shown unfilled), which are used by one or more software components; and
- Applications and application databases (shown as light-shaded areas), which are invoked by the BScaler ERM[™] system as part of the total workflow system.

3.1. SOFTWARE COMPONENTS TO SUPPORT BSCALER ERM[™] WORKFLOW SYSTEM

As shown in Figure 3, the BSCALER ERM[™] workflow system consists of software components to support process definitions and workflow enhancement services and interfaces. The software components are also organized to support various organizational roles in functions such as sales persons, sales administration, shipping/operations, finance and accounting, and management personnel.

The software components in BScaler ERM[™] are built with Oracle object-oriented database systems, Java J2EE, and Oracle 9iAS reports services, thus making componentization and portable software objects libraries consistent with the recommendations of the WfM coalition reference model.

3.2. SYSTEM DEFINITIONS AND CONTROL DATA IN THE BSCALER[™] ERM[™] SYSTEM

THE BSCALER ERM[™] workflow system includes classes and libraries of workflow control data, work lists, and workflow relevant data, all pertinent to workflow activities conducted by the various organizational roles listed previously. Through object-based methodologies and componentization, the workflow engines invoke relevant software components that comprise requisite applications and workflow application data, as shown in Figure 3.

3.2. APPLICATIONS AND APPLICATION DATABASES IN THE BSCALER[™] ERM[™] SYSTEM

The applications and application databases address the requirements for integration of the results of processes and workflow enhancements that support the various organizational roles listed above. Through object-oriented approaches and relational database management tables, the applications and workflow applications data are accessed and updated by the relevant workflow engines, which in turn are administered and controlled centrally by the “BScaler ERM Supervisor,” as shown in Figure 3.

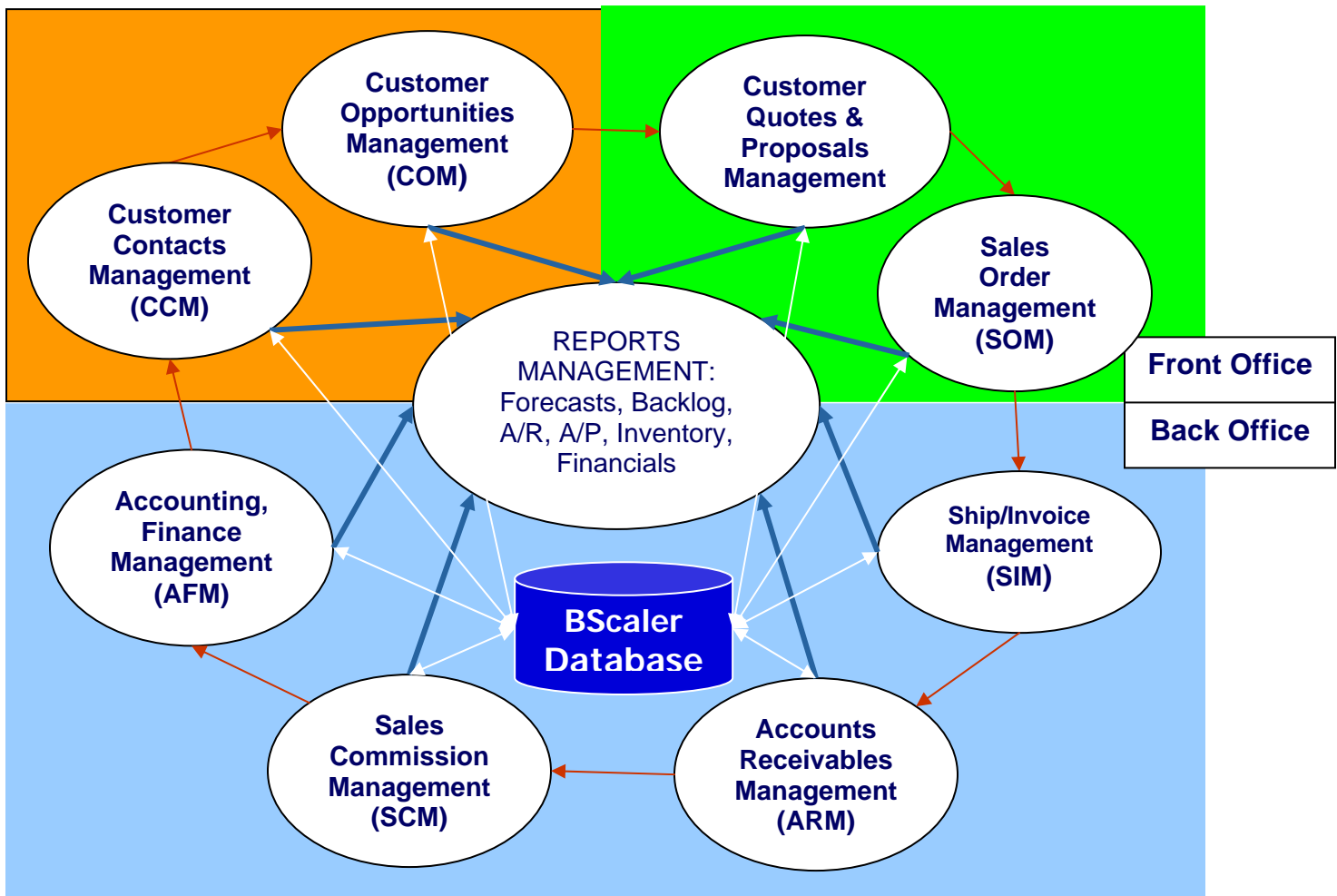
4. CONCLUDING REMARKS

As we have shown in this white paper, the BSCALER ERM™ system follows the guidelines from the workflow management coalition's Workflow Reference Model for implementing the integration and automation of all functions in enterprises. The results of the efforts to adopt the WfM recommendations include the following value-adding features in the BSCALER® ERM® system:

- i. The ERM® workflow model ensures commitment to business process engineering, with technology (of any form or platform) serving merely as a tool.
- ii. The ERM® workflow approach, by following the WfM reference model recommendations, seamlessly integrates all sales-related business processes carried out by a variety of organizational roles across multiple departments in multiple divisions in enterprises.
- iii. The BSCALER® implementation of the ERM® workflow model provides software components, system definitions and control data, and applications and application databases, which support the work list and workflow control, thus providing workflow enhancement services across enterprise and interfaces to other enterprise systems.
- iv. The BSCALER® architecture, design, and implementation provides the essential interfaces for interoperability between sales-related workflows, and interfaces to support interactions with a variety of IT application types and user interface desktop functions.

The BSCALER® implementation of the ERM® workflow model is shown in Figure 4 below.

FIGURE 4. BSCALER ERM™ WORKFLOW SYSTEM



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