ABSTRACT

Integration of Distributed Applications in Message Oriented Environment

The success of all business, whether electronic or traditional, rests upon successful communication between business entities, such as companies or people. Communication has, however, always been a weak link when it comes to business. A new approach to traditional business is electronic business, based upon modern information technology. Modern communication methods have the ability to empower data exchange and speed up transactions between companies and processes, while at the same time make up new rules requiring faster responses to everyday market demands.

The quality of the business process, regardless of company size, depends upon the speed of business transactions with partners, as well as the quality of information in data exchange. Communication between business subjects has greatly changed and advanced, and nowadays it utilizes web services and data exchange based primarily upon web technologies and the Internet. Unlike more traditional methods of communication, this modern technology cannot always satisfy the basic requirements for security, portability, scalability and availability. Throughout the world, efforts are being made to optimize the modern web-based technology, enabling smooth and secure flow of information between business entities.

Integrating services across multiple applications inside and outside of organizations can essentially be managed by two different types of communication: **synchronous** and **asynchronous**. Synchronous communication requires constant availability of linked business resources to successfully perform each transaction. In other words, systems that interact with each other must be up and running with minimum delay, as even the shortest delay in a single business transaction can make an enormous difference in the total time required to perform a specific task. Synchronous application design is based on the assumption that one party (caller process or client) is dependent upon server response and must wait until a sent request is accepted and processed by the server. Even a short time lag in processing of the request, an error in the communication, or an error in business application, can seriously degrade system performance and lead to potentially disastrous system unavailability. On the other hand, asynchronous communication makes it possible to communicate and preserve the full transactional environment even in such unpredictable conditions.

Asynchronous communication is based upon the Message Oriented Middleware (MOM). MOM enables applications to pack the business data as messages, which are easy to handle, transform, log and store.

This paper presents basic advantages and principles of asynchronous systems, which utilize messaging solutions in order to integrate heterogeneous information systems.