System Development Using Application Services over the Net

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1 WHAT IS ASP?

An Application Service Provider (ASP) is an organization that delivers a variety of applications to multiple customers over a network. It deploys and manages application software, system hardware, and networking at a centralized facility on behalf of the customers. Customers then pay a license fee for being able to use these application services for a particular period of time, usually a month or a quarter.

The promise of ASP is that by using application services over networks (the Internet, intranets, and/or extranets), a significant part of system requirements can be met with, it is suggested, little need for initial development and recurring in-house maintenance effort.

Recently more and more kinds of applications, such as ERP and messaging services, have become available on the Internet. At the same time, the pressure to downsizing forces business organizations to outsource services in areas outside their primary competence. These two trends have led to the increase in ASPs. Although the ASP industry is very young, the use of ASP becomes popular as one of the key elements to reduce the total cost of ownership (TCO) of systems. ASP has attracted a lot of interest from a variety of communities including users wishing to reduce information system costs, software vendors seeking to introduce their products to wider range of customers, and network service providers wishing to increase traffic and value derived from their service offerings. As we have been experiencing the transition in mainstream from in-house to COTS-based development style, the next logical step will be ASP-based system development. The tutorial will be the first to explore the emerging ASP based system development paradigm and foster this new area of software engineering.

2 TUTORIAL CONTENT

The aim of this tutorial is to give participants a detailed understanding of the prospects for, and issues arising from, the emerging ASP industry. In this tutorial, we give an overview of the ASP industry and illustrate how ASP works in real settings using case studies.

The tutorial will cover the requirements that application services provided over networks need to meet. These are in particular non-functional requirements and include security, reliability, scaleability, interoperability, flexibility and appropriate performance.

The tutorial will address different architectural options for ASP. These options range over web-based client/server architectures (a web server is accessed through browser-based client interfaces), server based architectures (application code is executed on the ASP host) and mobile-code architectures (application code migrates from the ASP host to the client and executes there).

Architectures for ASP systems are built on enabling technologies, which are discussed in the tutorial. Technologies for building web-based clients include XML and Java Applets. Application servers are distributed systems and the tutorial will describe the different forms of middleware that can be used to simplify distribution and heterogeneity. On the server-side, Servlets and CGI scripts may be used and the tutorial also discusses these.

New forms of development processes will need to be used by ASPs. The tutorial will describe a goal-oriented approach to specifying services. We will then show how to match these specifications with requirements that customers may have. We will also discuss the selection of components that are used for service provision and issues that arise from the integration and possible interaction of components.

The ability to provide application services of networks provides an opportunity for new forms of businesses. The tutorial will discuss the different models of these businesses, identify legal challenges for ASPs, such as responsibility, liability and accountability and identify how service level agreements will be used to mediate between customer and service provider.

Finally the tutorial will identify some of the future prospects and potential problems with application service provision and analyze the cost benefits.