



**BScaler  
White Paper Series**

**BROWSER BASED  
THIN CLIENT COMPUTING –  
TOWARD UBIQUITOUS  
ENTERPRISE APPLICATIONS**

**By**

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# **Browser Based Thin Client Computing – Toward Ubiquitous Enterprise Applications**

**A Position Paper by:**

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Anyone buying an airline ticket over the Internet these days goes through *all transactions* from itinerary specification, to selecting flights, to credit card purchase of ticket, to obtaining a receipt for the travel, and receiving a boarding pass and, when presented to the gate agent, gets the seat to fly, and the entire workflow is conducted through browser based thin client computing (B2TC2) without leaving the browser to enter data into spreadsheets or word documents.

With business processes, transactions, and even complete workflow cycles enabled through B2TC2, why should sales workflow automation be different? Why should phases of sales workflow cycle utilize disconnected automation tools, resulting in manual, and possibly erroneous, data entries and information extractions for reporting and control?

Why should sales force, sales administrators, procurement personnel, accounting and finance, and executives use disconnected off-the-shelf systems and/or Application Service Provider (ASP) hosted systems, and export information manually from one system to another to obtain management reports? Why should management be oblivious to how the various phases are executed and how the information is passed up the ladder for management review and control?

Answers lie in the approaches to workflow automation by vendors who essentially took two significantly different paths, both of which neglected the benefits enabled by B2TC2. One camp utilized the ASP, or Applications Service Provider path, and the other camp took the conventional software tool approach. Both missed the opportunities to integrate workflow functionalities from start to finish and all phases in between, despite the availability of technology to achieve B2TC2 efficiently and effectively.

Looking at the ASP landscape, one finds hosted solutions for one or two closely related sales workflow functionalities, such as lead management, contact management, etc. One would also find hosted solutions for important sales workflow functions such as credit authorization and accounts receivables, which are typically part of yet another disconnected accounting software package.

When companies subscribe to these ASP solutions (and the fallacies of the subscription model by itself is a topic for a separate discussion), employees and management either constantly manually enter and extract information and export to other enterprise applications or, in other cases, do not even utilize the information for management reporting and control.

The other landscape, the conventional software tool approach, creates similar types of disparate and disconnected application systems in organizations. Instead of managing the resources and assets through a system that reflects the workflow and processes, the conventional software tools require stopping the system to extract information required for the next phase of the sales workflow cycle.

Software vendors and developers are now blessed with advances in browser based thin client computing (B2TC2) architectures and technologies that can effectively reduce drawbacks of disparate and disconnected applications. One such system that this writer came across is the recently introduced B2TC2 implementation for the ever-important sales workflow process automation, appropriately called the BScaler Enterprise Resource Manager™ from BScaler, Inc. in Milpitas, CA.

## ***Ubiquitous Enterprise Applications through B2TC2***

It is clear that ubiquitous or omnipresent or everywhere computing extends Network Computing (NC) concepts of the early 1990's, and should respond to calls for integrated applications that are served to thin clients through currently available hardware and software technologies. With BBTCC, hardware-related benefits (minimal configuration and lower cost of ownership) as well as software-related benefits (performance, easy installation and upgrades, simpler administration and management, and enhanced security) of thin client approaches are realized, boosted further by browser-based accessibility any time, anywhere, giving enterprises "Intelligent Appliances with Open Access to Workflow Automation."

For unimpeded workflow automation throughout an enterprise, all data relevant to each of these phases of the workflow cycle *should be entered only once and reused many times by all phases of the enterprise any time, anywhere*. With appropriate user roles and secure users rights, an ubiquitous enterprise system should eliminate the need for data re-entry to progress from one phase to another phase, and empower users to extract information without stopping the systems that automate the processes.

### ***B2TC2 for Workflow Automation – Enterprise Resource Management from BScaler***

It should come as no surprise that ubiquitous enterprise applications, aimed at workflow automation cannot target only at sales force automation or customer relationship management. With the available technologies for browser-based thin client computing applications, workflow automation should provide ubiquitous access to end-to-end automation of all aspects of business processes.

Unlike the ASPs and conventional software tools, this writer's evaluation of BScaler ERM™ in action at one of the leading technology reseller organizations revealed readily noticeable differentiators in it compared to workflow automation tools available in the market place today.

Here is a review of the salient and differentiating features in BScaler ERM. These features also highlight the advances in Browser Based Thin Client Computing (B2TC2) which have been incorporated in ERM to achieve ubiquitous enterprise computing:

- **Open-source Server infrastructure.**  
BScaler ERM runs on low cost low-cost Linux boxes, with the result that it can host enterprise class customers on a single \$45,000 server, compared to a similar commercial Unix machine costing over \$100,000.
- **RDBMS infrastructure.**  
BScaler ERM runs on a commercial-grade RDBMS, compared to enterprise-class DBMS License for Windows at \$25,000 to start and many times over that for UNIX.
- **Rich, intuitive functionality.**  
Browser-based user interfaces have come a long way in the past three years. Sophisticated JavaScript and DHTML that loads quickly and caches locally have been implemented in BScaler ERM™ to offer client functionality that looks and feels as good as any Windows-based local application.
- **Real-time results.**  
With the ubiquitous B2TC2 implementation on a state-of-the-art RDBMS/Linux server, a key differentiator in ERM is timeliness: information presented to the ERM user is what's happening currently in the business. ASPs and conventional software vendors typically require additional development efforts or additional fee for a portal server to get customized and real-time access, however BScaler ERM includes a dashboard approach to obtain real-time information when needed, where needed.
- **Open data access and export.**  
Not only does BScaler provide dedicated multi-tenant servers to their SaaS subscription customers as part of the service, it also offers the ability to import data in standard CSV file formats. It can also provide standard XML interfaces to allow online connection with vendor pricing systems.
- **Risk-free Ownership by Enterprise**  
The BScaler SaaS+ Appliance™ is an enterprise resource automation product running on a BScaler pre-configured Linux Server. The server resides in the BScaler Data Center, and customers access the system through a Browser much the same as they would through an ASP application. The customer owns the Appliance and enjoys many financial benefits from that, which are considerable savings.

Given these differentiators for BScaler ERM™ compared to ERP, SFA, CRM, and other solutions in the market, a logical next question is the pricing model — SaaS+ ownership versus subscription to ASP solutions. This will be a topic for a separate paper by this writer.

#### **About the Author:**

*At the time of first writing this paper, Dr. Raja K. Iyer was a researcher and consultant. He has published over 60 articles in academic and industry publications, and has a Ph.D. in Business Administration from the University of Minnesota. He has over 35 years of experience in the IT industry in professorial, managerial and consultative positions. Dr. Iyer now serves as Vice President Corporate Communications for BScaler, Inc.*