



Rich Internet Applications

# Growth and Challenges

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# Abstract

Rich Internet Applications (RIA) represents the next transition in the evolution of web applications; they promise the richness, interactivity and usability lacking in many of today's Web applications. As with any technological transitions, this implies that there are new opportunities to be explored and new challenges to be negotiated. To maximize the benefits of RIA adoption in tune with contemporary trends, an enterprise should assess the following

- **How does RIA fit in an Enterprise Application Architecture**
- **What role will RIA play in Fast Delivering Global Model**
- **What are business benefits of adopting RIA and what are the challenges?**

## Introduction

The Web has become the preferred platform for conducting business quickly and effectively. So much so that organizations like Amazon and e-bay depends on online applications to a large extent. Users can book a hotel room, plan travel, trade in stocks, bid on auctions and access their private bank accounts and other services online – at the click of button. As the penetration of high –speed broadband in terms of utility, content and user experience. **RIA is the** next logical step in this evolutionary process.

RIA represents the transition of web application from simple, thin client model to a model that provides the user experience of a desktop, client/server application while leveraging the ubiquity of the internet.

## Evolution from HTML pages to RIA

The evolution of the internet started with HTML, which was originally designed to deliver static documents in sync with information via a browser. Over time, the internet rendered rich content – complex graphics, audio, video and multimedia.

Then emerge application that used the Net as a platform for business, rendering dynamic content to users based on back-end business logic and database content. Developers enhanced these capabilities to meet the demands of business applications by including scripts—**JavaScript and VBScript** –and components like Applet and ActiveX to the client (user) computer. While this

enhanced user experience to some extent, the fundamental “document-driven” synchronous approach of traditional internet applications remained the same. As user experience requirements grew in complexity, this approach a handicap for complex business applications. Though there has been significant progress in server-side implementations, the means of rendering information to the end-user remained the same. The need to incorporate the rich, interactive and responsive features of desktop applications was felt increasingly.

Further, the inability to handle complex multi-step business workflows was another hindrance. The synchronous nature of traditional internet applications forced back-and-forth page-flips on users, resulting in slow, confusing and frustrating user experience. Traditional internet applications could neither visually represents large and complex data nor provides interactive manipulation by users.

The latest tradition in this ongoing evolution is **RIA**, which aims to combine the powerful and intuitive user experience of desktop applications with the reach of the internet.

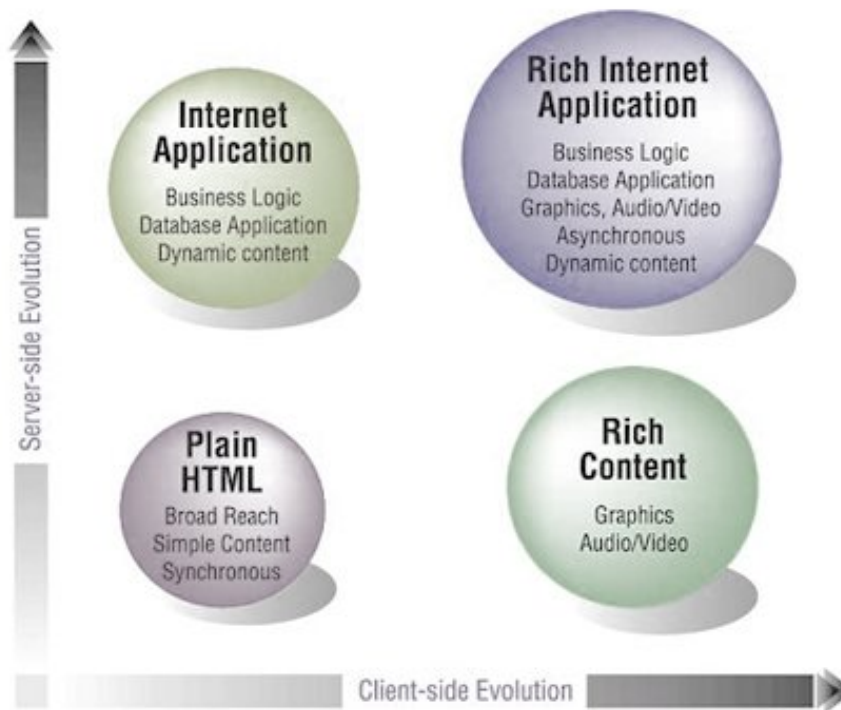


Figure 1: Evolution of Internet Applications

## The promises of RIA are modified:

- **Responsiveness and Interactivity**

**RIA pushes** much of the processing to the client side. It results in reduced network traffic and faster response as the application leverages the Client CPU. Also, on clicking a button or a URL, only the corresponding section of the pages reloads asynchronously which is called as partial post back. This provides continuous visual reference to users as they are not distracted by the changing interface.

- **Rich User Interface**

RIA promises to match the rich user provided by desktop applications, including graphical elements, audio, video and other visualization techniques.

- **Broad Reach**

RIA capitalizes on the broad reach of the internet, allowing application to be accessed anytime, anywhere, by any authorized user.

- **Real time Communication**

RIA enables users to collaborate and share information on the internet through real-time communication channels like instant messenger, video in demand and audio-video conferencing.

## Business benefits of RIA

The responsive, intuitive and effective user experience provided by RIA holds long term business implications for enterprises. By broadening the mode of interaction between end-users and applications, RIA opens new, enriched ways by which enterprises can add value to their products and services.

### **RIA offers the following business benefits to enterprises:**

1. **Increase customer and partner productivity**

RIA eliminates multi screen interface, other single application view and reduces interaction in business process. This results in enhanced user productivity and satisfaction.

2. **Improved customer loyalty**

RIA allows customers and partners of e-commerce sites to manage and communicate account information, check order status and re-order in a more effective way. Companies can offer sophisticated online experience to increase customer retention rate to drive revenue streams.

### 3. Increase in new Customers

Apart from depending on existing customer relationship, RIA also helps businesses acquire new customers. As individual and organization conducts more business online. Web applications double up as the "first line" of interface with the end-customers. With growing competition, it is important to leave a lasting first impression.

### 4. Reduced operational cost

RIA reduces bandwidth usage and server load by moving processing to the web browser.

## Challenges for Enterprises Adopting RIA

Enterprises need to factor in the following challenges while adopting RIA technologies

- **Lack of Standards**

There is a considerable flux, lack of standards and best practices in RIA technologies. The community is debating whether to use Ajax or Flash or even both, while some developers even claim that "Flash is Ajax". Many Ajax tools have cross-browser and cross platform problems. To solve these problems, Open-Ajax Ajax Alliance, an organization of more than 60 leading vendors, open source companies and companies using Ajax, is striving to identify and consolidate best practices, reach a consensus a programming models, provide reference implementations for tolls interoperability and generate wider Ajax adoption through out the industry.

- **Market volatility**

The commercial RIA technology market is still nascent. New Player are emerging continuously. Most of the current vendors – jackBe, Backbase and Sun Microsystems have only started RIA support in their existing product suites.

- **Security Concerns**

Security is a major area of concerns for RIAs, especially Ajax based RIAs. Yammer, Smay and Spacefish-type worms are exploiting "client-side" Ajax frameworks, providing new avenues of attack and compromising confidential information. Several such cross-site scripting attacks were observer, most notable being the Yammer attack on YahooMail and Sammy work on Myspace.com

## Conclusion

RIA represents a transition in the evolution of web applications and brings new equations to the table, empowering business to add value to their products and services. Through there are challenges in RIA adoption, the benefits that businesses can accrue in the long run are too compelling to be ignored.

With the ubiquitous presence of broadband, increasing online presence and with businesses increasingly focusing on making the online experience richer and more lasting for users, RIA has hit the tipping point. Enterprises should adopt RIA in a phased manner. The initial difficulty is worthwhile to gain the first mover advantage.

## About Eden Information Services

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