



Reducing Enterprise Applications Total Cost of Ownership

November 2008

White Paper

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Preface

Objective

The aim of this document is to demonstrate the total-cost-of-ownership (TCO) of business applications that derive from the full cycle of an application from development to deployment and maintenance. The TCO is carefully calculated for various forms of deployment and this document compares the TCO for the various forms of deployment and platforms. The TCO of a business application is very much affected by the underlying technology and platform that facilitates its development and deployment.

Sources

The figures and formulas used in this document are based on Magic Software's past research, third party research, customers' testimonials, and commercial publications from the various vendors this document relates to.

Deployment Techniques and Scenarios

Comparing Apples with Apples

A rich, interactive application can be deployed in various scenarios, using various techniques and technologies. This document compares the TCO of each deployment scenario and technique and technologies in order to provide a realistic comparison.

In this document we cover three forms of deployment:

- Network deployment
- Terminal Server and Citrix deployment
- RIA deployment

These three forms of deployment can be achieved using various technologies, namely:

- uniPaaS Full Client
- Code-Based Full Client
- uniPaaS RIA
- Code-Based RIA

These three forms of deployment are matched to support two different deployment scenarios:

- Multiple Sites (5) Serving 50 end-users
- Multiple Sites (10) Serving 500 end-users

Three Forms of Deployment

Network Deployment

A network deployment enables workstations to access the application to be run fully in the client workstation. This deployment scenario calls for a small client-side footprint. This is because the application resources, excluding the database client module and other device specific modules (e.g. RFID readers), are maintained on a central disk.

Though the network installation of the application suggests a singular point of maintenance, the fact that all end-users must terminate their sessions in order to free the network resources suggests some unavoidable downtime. This is highly detrimental to applications supporting a 24X7 service level. In such cumbersome deployment scenarios, application updates are usually set by long intervals in order to reduce recurring costs of updates and resultant downtime. The fact that all application modules are obtained from a central network location causes a very high consumption of network bandwidth in every instance of the application. This leads to an inevitable reduction in application performance which in turn leads to reduced productivity for the end-user.

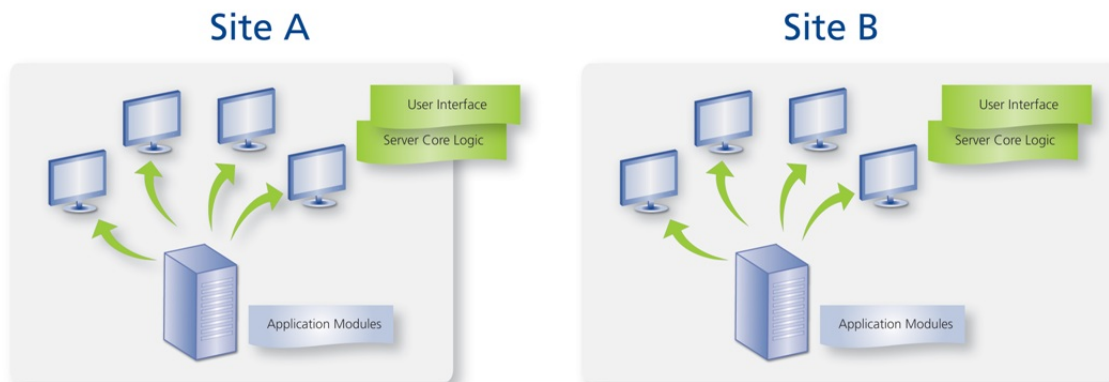


Figure 1: Network deployment requires a server machine that keeps the application modules in every site. Each client loads the application modules and runs both the UI and full core logic on the client side.

Terminal Server and Citrix Deployment

One way of reducing the costs of a simple network installation is by using terminal server based deployment. This is commonly achieved by using Microsoft Windows Terminal Server facilities and additional facilities such as a Citrix Presentation layer. Though this form of implementation reduces some of the TCO factors, they may increase others such as the software licenses and the hardware costs required to support it.

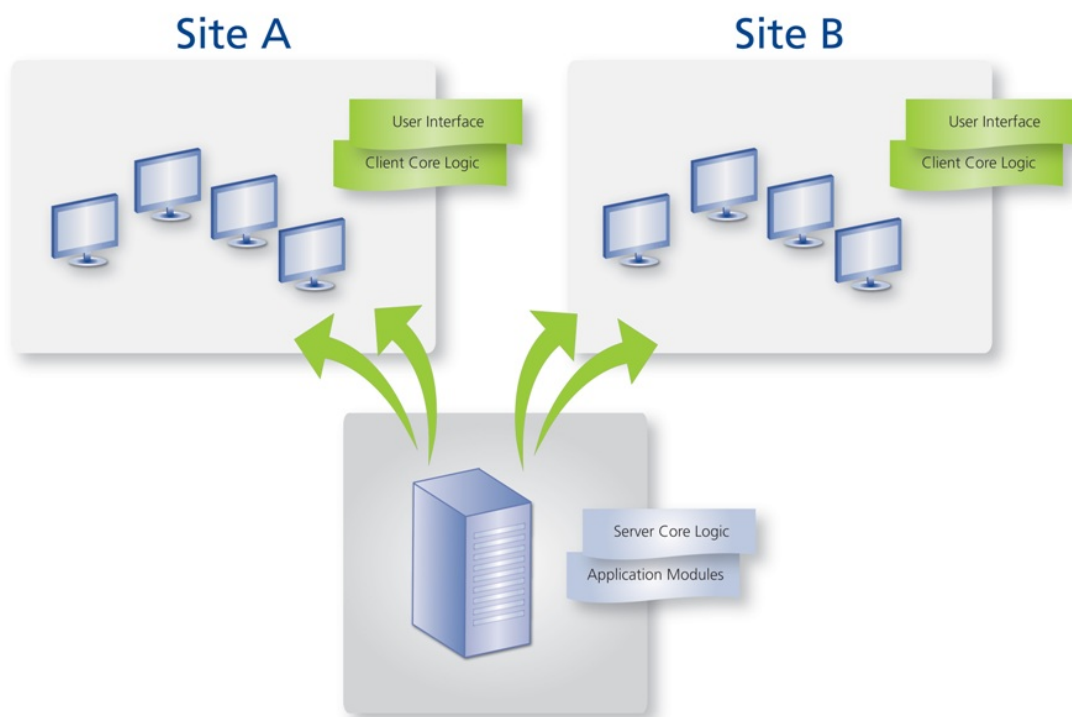


Figure 2: Citrix deployment requires a server farm in a central location serving all sites. The client workstation receives a reflection of the full application being executed on the server.

RIA Deployment

The RIA form of deployment entails keeping a highly optimized singular application location and instantly active and adaptive workstations. These access the application in an always up-to-date fashion without compromising the user experience and application richness.

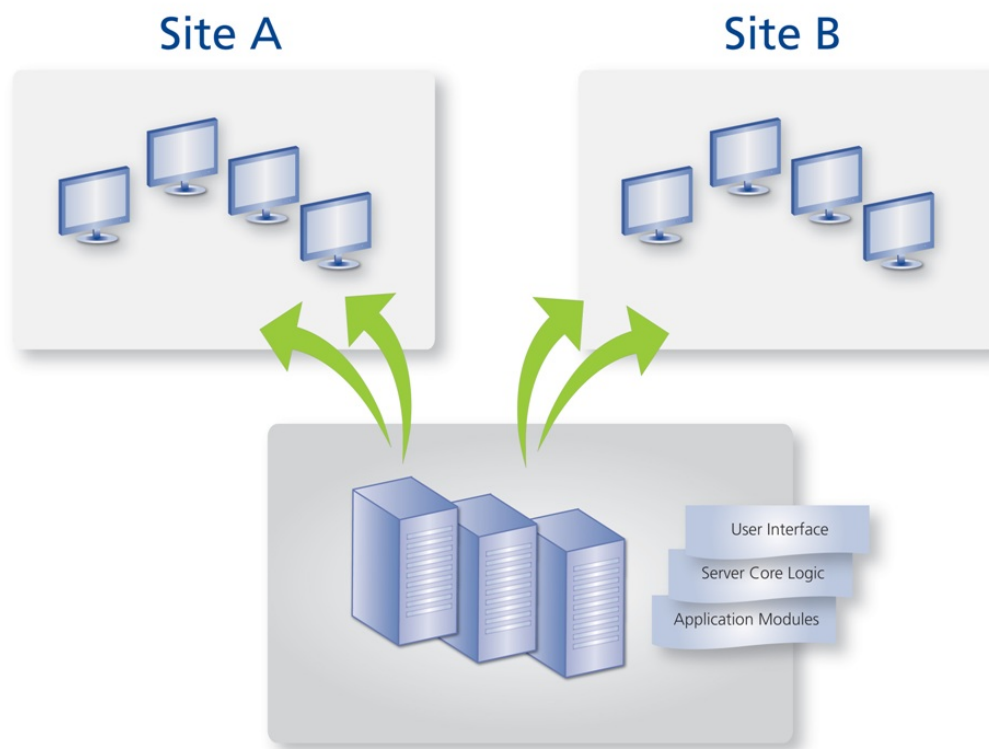


Figure 3: RIA deployment requires a smaller server farm in a central location serving all sites. The client workstation runs the whole UI and the client side logic while the server keeps the application modules and also runs the server side logic.

Four Application Types

uniPaaS Full Client

A uniPaaS Full Client deployment enables the provision of complex business applications with a highly interactive user experience. The application can be deployed either by network access or by a terminal server.

Code-Based Full Client

This application type resembles the uniPaaS Full Client - excluding the IT staff and the resources required to support the application. The complexity of code-based development environments leads to very lengthy development cycles.

This document will examine Microsoft Visual Studio 2008 as an example of a code-based Full Client platform.

uniPaaS RIA

uniPaaS RIA presents a deployment model that offers the best of all worlds. On the one hand the result is a lean, cost saving application, available to any workstation connected over the internet. On the other hand, the deployment benefits from uniPaaS' unsurpassed productivity. This enables the completion of a distributed highly interactive application, using the same size IT staff required for achieving standard Full Client applications.

Code-Based RIA

Code-based RIA relates to the development and deployment of Rich Internet Applications using primarily Client Side technologies such as Adobe Flex, Microsoft Silverlight or Ajax. This type of application requires additional server logic technology in order to produce a fully running RIA. The server logic can be developed using languages such as Microsoft ASP.NET, PHP, Perl, CGI, or any other Web Service-providing platform. This form of development and deployment adds much greater complexity to the development of RIA and leads to a more expensive and lengthier development cycle.

This document examines Microsoft Visual Studio 2008 as an example platform of a code-based RIA.

Two Deployment Scenarios

Multiple Sites (5) Serving 50 End-users

This scenario suggests an application with required accessibility by up to 50 concurrent end-users. However, these end-users are residing in 5 different geographical locations. In this scenario we assume an average of 10 users per site.

Multiple Sites (10) Serving 500 End-users

This scenario suggests an application with required accessibility by up to 500 concurrent end-users residing in 10 different geographical locations. In this scenario we assume an average of 50 users per site.

TCO Factors

There are many factors that need to be considered when calculating the actual cost of ownership of developing, deploying and maintaining a strategic business application. The TCO calculation in this document does not attempt to cover the full scope of the TCO calculation. Instead, it focuses on the factors that may vary by choosing different forms of deployment and technologies.

The varying TCO factors that are covered in this document are divided into three categories:

- Software related factors
- Hardware related factors
- IT staff related factors

Costs – Important Note

The cost presented by each factor corresponds to the general retail price of the various IT elements. The price of each IT element may vary according to geographical location, bulk size, particular commercial agreement, etc.

Software Related Factors

The following costs factors relate to the acquisition and maintenance of the software that is required to facilitate a given deployment scenario.

Application Development Environment

The cost of the environment required for the development of the application is represented by this TCO factor.

The development environment for uniPaaS applications is the uniPaaS Enterprises Studio. The retail price of a single seat of the uniPaaS Studio is around \$5,500.

The development environment for the code-based applications in this example is the Microsoft Visual Studio 2008 Enterprise edition. The retail price of the Visual Studio 2008 Enterprise edition for a single seat, excluding the MSDN subscription, is around \$800.

Application Deployment Platform

This is the cost of the platform required to deploy and sustain the application.

The deployment software required to deploy a uniPaaS Full Client is the uniPaaS Enterprise Open Client. The deployment software required to deploy a uniPaaS RIA is the uniPaaS Enterprise Server and uniPaaS Enterprise RIA server extension. The cost of uniPaaS deployment platform licenses varies according to the form of deployment and the number of concurrent users.

The software required to deploy a .NET Full Client is the Microsoft .NET infrastructure. The software required to deploy a Microsoft Silverlight RIA is the Microsoft .NET infrastructure and the Microsoft WPF extension. There are no deployment costs for Microsoft .NET based applications.

Server Operating System

In any deployment scenario a server machine and operating system are required.

- Network Deployment – This scenario calls for a minimal server configuration providing simple application file access to the various concurrent users. In most cases a single server is sufficient for every deployment site. The retail price of a Windows Server 2008 basic license is around \$999.
- Terminal Server Deployment – In terminal server deployment an enhanced server configuration is required. Moreover, this deployment scheme limits the number of concurrent users that can be served by a given server. In this document we will assume a 40 concurrent user capacity per server. The price of the terminal server operating system is dependent upon the amount of concurrent client access that is permitted on each server machine. The retail price of a Windows Server 2008 supporting 25 concurrent users is \$3,999.
- RIA Deployment – This scenario also calls for an enhanced sever configuration. However, the concurrent user capacity of a given server is much higher than observed in Terminal Server deployment. A RIA deployment scenario may utilize a single server to support around 600 or more concurrent users. The retail price of a Windows Server 2008 basic license is around \$999.

Citrix Presentation Layer

In many Terminal Server scenarios the deployment methods are enhanced by adding an additional layer of the Citrix Presentation Server. Citrix improves the accessibility of terminal server based applications. However, they also add software costs and an additional layer of complexity.

Retail prices for a Citrix concurrent user access is around \$450.

Database Licenses

The example applications covered by this document are based upon the use of the Oracle database.

In scenarios where up to 50 concurrent end-users are served per server – The Oracle Standard edition for a single processor would suffice.

In scenarios where 500 concurrent end-users are served per server – The Oracle Enterprise for 2 processors would suffice.

The retail price for an Oracle Standard Edition Database for a single processor is \$17,500.

The retail price for an Oracle Enterprise Edition Database for a single processor is \$47,500.

Software Maintenance

This is the sum of all the recurring software costs which usually include software maintenance or assurance and technical support and consultancy. This document uses this factor to represent maintenance and software assurance costs only.

Hardware Related Factors

The following cost factors relate to the acquisition and maintenance costs of the hardware required to facilitate a given deployment scenario.

Server Hardware

The server requirements vary according to the deployment scenario.

- A basic, lean server machine, serving a network installation costs around \$1,000.
- An enhanced server, used for running the application platform would cost around \$4,000.

Server Maintenance

Server maintenance includes the direct and indirect costs of server ownership. This includes the costs of server administration, updates routines, hardware upgrades and replacement, operational costs (power consumption, air conditioning, etc), office space, and more.

The cost of server maintenance is estimated to be \$9,000 per server per year.

IT Staff Related Factors

The following cost factors relate to the IT workforce responsible for the development, deployment and maintenance of the application.

IT Staff Size

The size of the required IT staff is not a cost factor per se, but can be used as a guide by which remaining IT staff-related costs are measured.

uniPaaS IT Staff - Based on the highly productive uniPaaS application platform, the IT staff required for developing and maintaining an application ranges from a third to a sixth of the IT staff required for traditional 3GL development environments. In the example presented here of a medium sized application, **3 uniPaaS developers** would be required to develop and maintain a Full Client application.

Code-Based IT Staff - To meet the short time-to-market benchmark set by uniPaaS, code-based Full Client projects require a much larger IT staff usually ranging from three to six times the number of developers. Moreover, due to the complexity added by the client and server separation dictated by the RIA form of deployment, a slightly larger IT staff is required to achieve a corresponding RIA form of deployment. In the example presented here of a medium sized application, **12 code-based, Full Client developers** would be required to develop and maintain a

Full Client application and **15 code-based RIA developers would be required** to develop and maintain a code-based RIA.

IT Staff Costs

IT staff-related costs are assumed to be for the development of an on-shore project.

Application Development

This relates to the cost of the development workforce required to set up the first revision of the application.

Developer Years

The development period is assumed to be of six calendar months engaging the entire development team. This assumption suggests:

- 1.5 developer years for a uniPaaS application both Full Client and RIA.
- 6 developer years for a code-based Full Client application.
- 7.5 developer years for a code-based RIA.

Developers Costs

Assuming on-shore development, the average cost of a developer is assumed to be around \$95,000 per year. This cost includes: Annual Salary, Bonuses, Payroll taxes, Benefits (e.g. workers compensation insurance, medical insurance, etc), Recruitment costs, Hardware & Software, Office space, and Education & Training.

Given the above guidelines the development costs for a medium-size application are as follows:

- Code-Based Full Client = $6 * \$95,000 = \$570,000$
- Code Based RIA = $7.5 * \$95,000 = \$712,500$
- uniPaaS Full Client = $1.5 * \$95,000 = \$142,500$
- uniPaaS RIA = $1.5 * \$95,000 = \$142,500$

Application Maintenance

This relates to the ongoing process of fixing application bugs, adjusting and enhancing the application to meet the ever changing needs of the end-users.

This assumes the average engagement of **a third of development team** throughout the consecutive years for delivering the never ending challenge of application maintenance.

Application Updates Frequency

The frequency by which an application is updated is very much affected by the deployment scenario and technique used and is responsible for the following two cost factors: application updates and the impact of application downtime.

- Network Deployment – In a single site deployment the update frequency is estimated to be around twice a month. In a multiple site deployment the update frequency is estimated to be around once every quarter.
- Terminal Server Deployment – Update frequency is estimated to be around twice a month.
- RIA Deployment – Update frequency is estimated to be around twice a month.

Application Updates

The cost of application updates are derived from the frequency of updates and the cost of updating the application modules.

The hourly cost of the work required to update the application is estimated at around \$200 per hour.

- Network Deployment – In a single site deployment, the time it takes to complete an application update is estimated to be around 2 hours. In a multiple site deployment, the time to complete an application update is estimated to be around a whole day (including travel time and costs).
- Terminal Server Deployment – The time it takes to complete an application update is estimated to be around 1 hour.
- RIA Deployment – The time it takes to complete an application update is estimated to be around 1 hour.

Recurring IT Staff Costs – Calculation Method
Assuming a six months period required for the development of the application, the calculation of the TCO assumes 2.5 years of recurring maintenance costs.

TCO Comparison: uniPaaS vs. Code-Based Platform

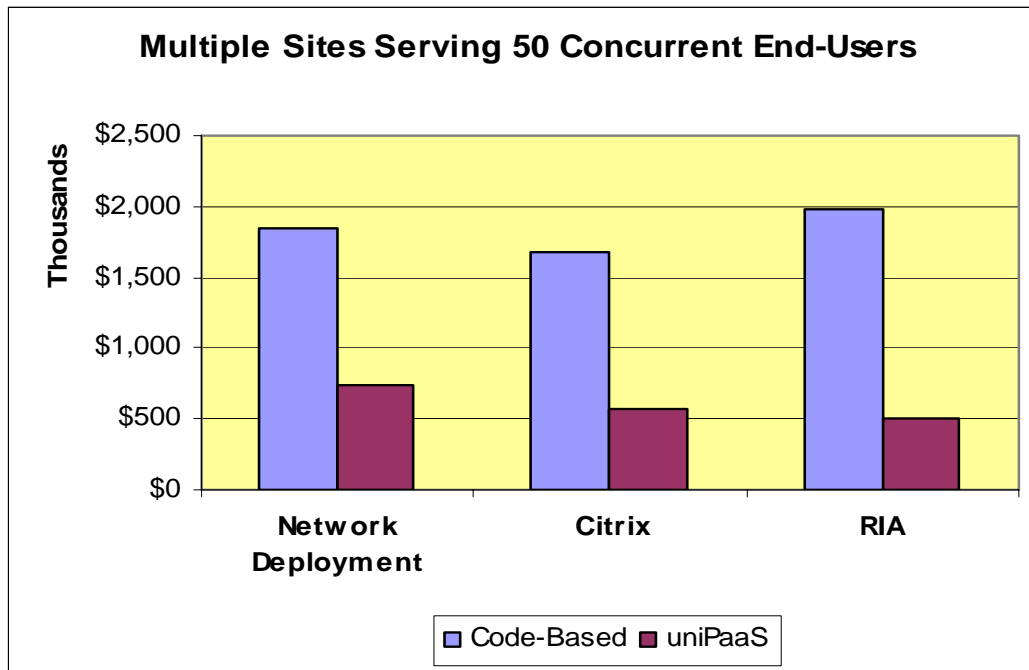


Figure 4: uniPaaS offers up to 75% reduction in TCO and up to \$1.5 Million saving for developing and deploying an application for a multiple sites deployment serving 50 concurrent users for a period of 3 years.

uniPaaS Reduces Application TCO by up to 75% Compared to Code-Based Platform

These calculations show the expected TCO reduction after a period of 3 years in which the application is deployed and maintained. The TCO reduction is calculated both in dollars and in percentage suggesting a possible return on investment for other similar real-life scenarios. The TCO in each scenario using each technique is summarized in the graphs below and fully detailed in [Appendix A](#).

This comparison shows that:

- **The productivity of uniPaaS is the core factor responsible for the lower TCO for complex projects and the significant return of investment.**
- **The unresolved complexity of code-based platforms hinders the expected long term TCO reduction of RIA implementation.**

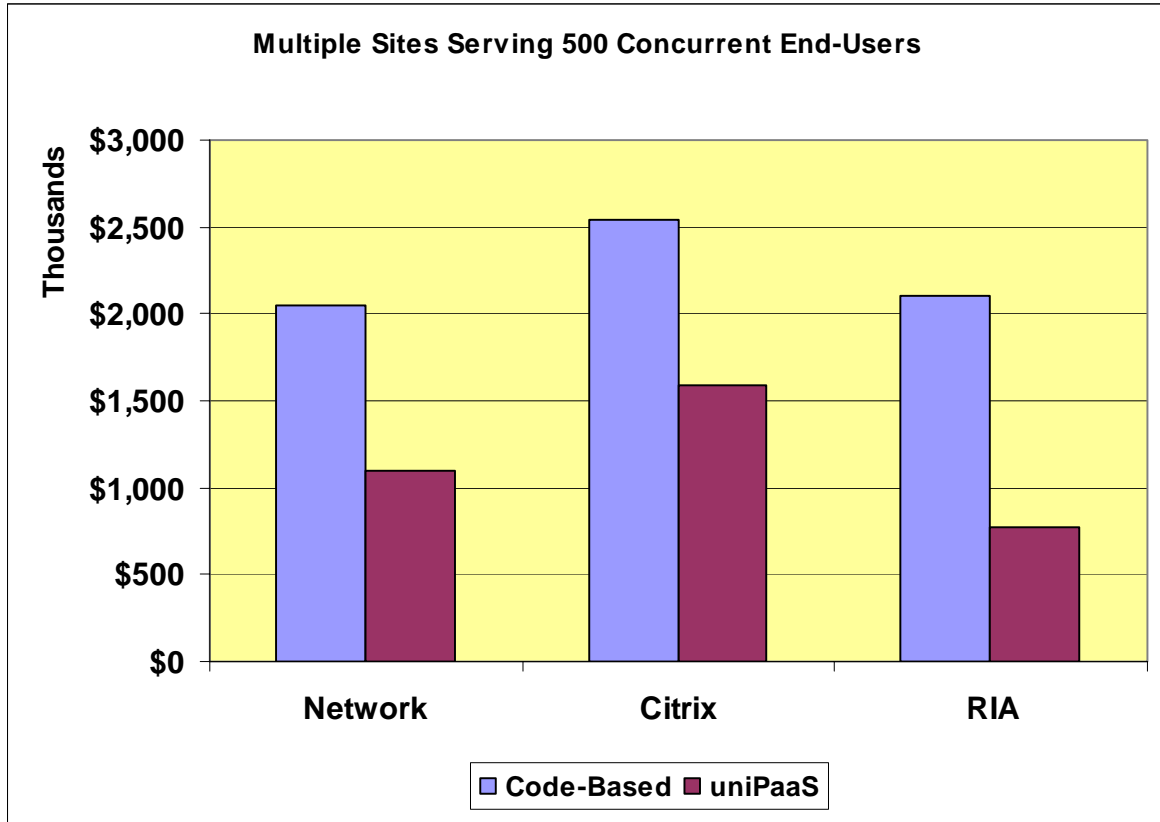


Figure 5: uniPaaS offers up to 63% reduction in TCO and up to \$1.3 million saving for developing and deploying an application for multiple sites serving 500 concurrent users for a period of 3 years.

License Costs vs. Application Development and Maintenance

Focus on Development and Maintenance Costs

The figures clearly shows the ROI advantage of using uniPaaS – thanks to its productivity and the reduced IT staff required to achieve the required business goals (of the application). As previous research has indicated, the cost of software licenses within the grand scheme of a full application development life cycle is very minor. This is why stakeholders realize that the choice of platform and technology is primarily dictated by the ROI gained in the long term.

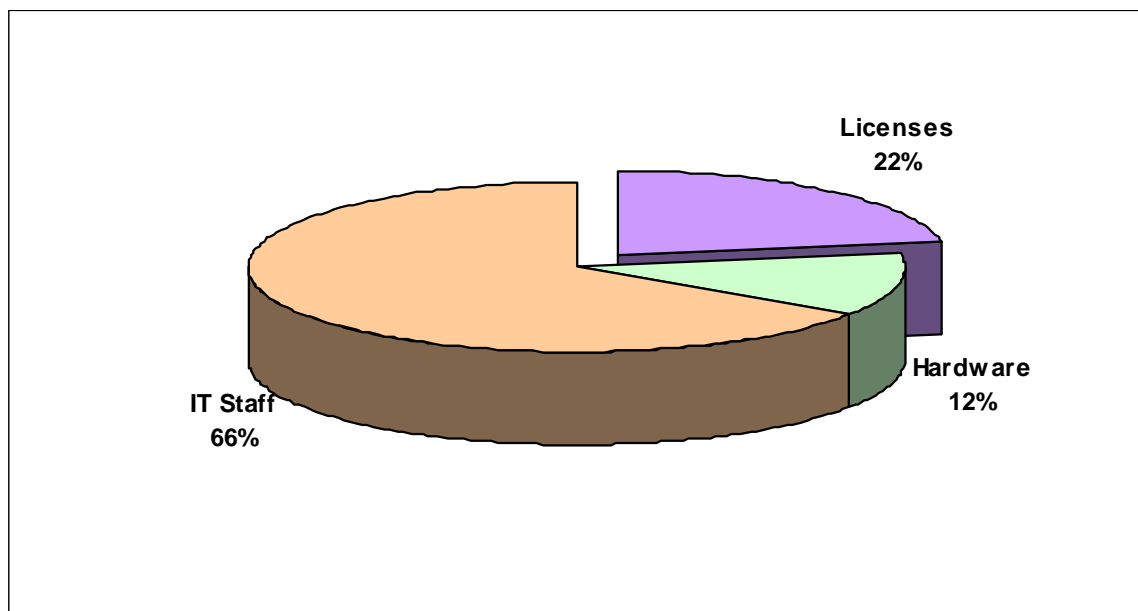


Figure 6: The average proportion cost for each application category over a period of 3 years.

TCO Comparison: uniPaaS RIA vs. other uniPaaS deployment Scenarios

Many software vendors and IT departments have already elected to take advantage of the greatly improved productivity offered by uniPaaS and now provide a range of applications both large and small. The following TCO calculation concentrates on the cost factors that vary between the various deployment modes of uniPaaS leaving out the fixed and common costs such as application development and maintenance.

uniPaaS RIA Reduces Application TCO by up to 70% Compared to Other Deployment Scenarios

These calculations show the expected TCO reduction after a period of 3 years for deploying a uniPaaS application in each of the following deployment scenarios: Network Deployment, Citrix Deployment and RIA deployment. The TCO in each scenario using each technique is summarized in the graphs below and fully detailed in [Appendix B](#).

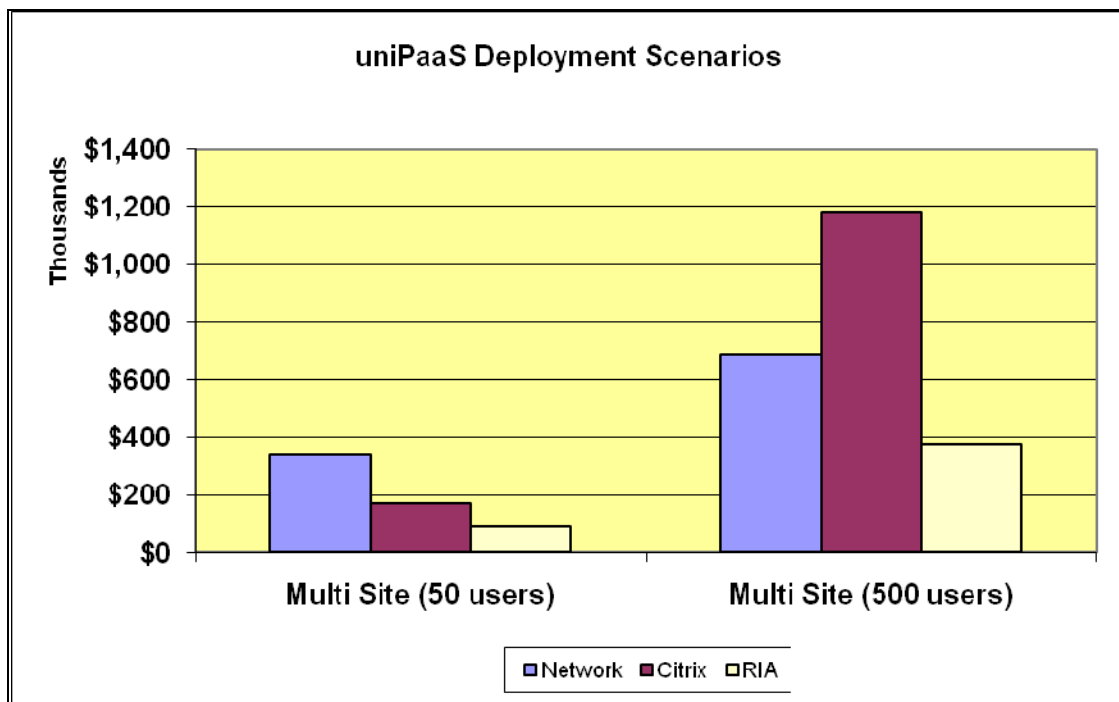


Figure 7: uniPaaS RIA offers up to 70% reduction in TCO and up to \$800,000 saving for the development and deployment of an application for multiple sites serving 500 concurrent users for a period of 3 years.

uniPaaS Addresses Non-Quantifiable Costs

The following factors are known to have an indirect effect on IT expenditures. However, they are not quantifiable and may range from a marginal difference to highly costly.

Security Risks

Security risks relate to the potential violation of application boundaries enabling unauthorized users to view and manipulate sensitive data. Naturally, the ability of an abusive end-user to modify corporate core data may lead to disastrous outcomes.

To compromise on application and deployment security may lead to far greater financial exposure than those associated with the IT project at hand. Companies must make sure that the application and its underlying technology and architecture offer tight security measures to avoid any possible risk of security breach.

Highly Secured Rich Internet Applications

One of the great values offered by the RIA form of deployment is the benefit of having all the sensitive resources, namely the access to the corporate core data, out of reach of the end-user.

Unlike full client forms of deployment, either using network installations or terminal server, the RIA end-user can only access the application and has no direct access to the core data of the organization.

User Experience

Complex business applications usually call for a fully interactive and usable user-interface that enables the end-user to be highly productive with ready access to data and an easy method of performing data updates and data manipulation.

A pragmatic approach is essential in keeping high end-users productive and to avoid end-user frustration.

uniPaaS RIA – Bridging between Usability and Aesthetics

uniPaaS offers internet applications that are both rich and usable by providing a user interface which is highly user-centric. It enables an application to be fully aligned with the line of business the application is designed to serve whilst at the same time remaining open to the myriad options available for user interface enhancements offered by the various UI centric technologies.

Delayed Updates

No complex business application is flawless and fully reflective of the organization's complex line of business. Application updates for both problem resolution and further adherence to the line of business are required to keep the application productive and the end-users satisfied. The

more frequent the application updates are introduced, the more satisfied the end-users will be and the less likely that the application will be abandoned.

RIA Offers Frequent Application Updates

Another great benefit of the RIA form of deployment, which stems from the centralized and lean nature of the application deployment, is the ability to introduce application updates frequently to a very large audience of end-users with zero downtime.

uniPaaS RIA Productivity

Frequent application updates primarily require the ability to implement application modification in extremely short timeframes. The high productivity of the uniPaaS platform coupled with the centralized and lean deployment of RIA offers the best path towards achieving true agility and assured end-user satisfaction.

Conclusion

uniPaaS – Your Strategic Application Platform

The immediate conclusion of the TCO calculations clearly show that in choosing uniPaaS, you choose the most productive platform and the shortest path to deliver fully functional complex business applications. This conclusion is constantly being reinforced by [numerous companies](#) and [independent software vendors](#) around the world.

By choosing uniPaaS as your strategic application platform you can reduce your IT costs by more than 70% which may add up to millions of dollars over the years.

uniPaaS RIA – The Optimal Form of Deployment

The uniPaaS RIA form of deployment proves to be the most cost-effective form of deployment. It offers centralized application management, internet-wide application availability and rich interactive user experience. At the same time, it provides for simple development and application maintenance.

Switching from previous forms of deployment to uniPaaS RIA may reduce your IT costs by 60% and more.

Now you have the opportunity to once again use Magic Software technology to take the next technological leap and easily move to the latest RIA technology.

Reducing Hidden Costs

uniPaaS RIA features high security measures coupled with highly productive user experience. This enables users to avoid the high costs hidden in poorly secured and poorly designed applications.

Reduced Costs + Increasing Revenue = Increased Profits

With the opportunity of rapidly producing internet application with a high standard of interactive user experience, software vendors can reduce their application cost of ownership, and also open up opportunities for increased revenues. With the shortest time-to-market and a wider application reach, the potential for higher revenues is now greater than ever before.

As a corporate CIO or CTO it is important to provide your customers and end-users with highly usable business applications that are fully aligned with their business requirements, while at the same time, dramatically reducing the total cost of ownership.

About Magic Software Enterprises

Magic Software Enterprises Ltd. (NASDAQ: MGIC) is a leading provider of multiple-mode application platform solutions – including Full Client, Rich Internet Applications (RIA) or Software-as-a-Service (SaaS) modes - and business and process integration solutions. Magic Software has offices in 10 countries and a presence in over 50, as well as a global network of ISV's, system integrators, value-added distributors and resellers, and consulting and OEM partners. The company's award-winning code-free solutions give partners and customers the power to leverage existing IT resources, enhance business agility and focus on core business priorities. Magic Software's technological approach, product roadmap and corporate strategy are recognized by leading industry analysts. Magic Software has partnerships with global IT leaders including SAP AG, salesforce.com, IBM and Oracle. For more information about Magic Software Enterprises and its products and services, visit www.magicsoftware.com.

Magic Software is a subsidiary of Formula Systems in the Emblaze Group of companies.

Appendix A

The following tables show the detailed calculation of each scenario for comparing uniPaaS to code-based platforms.

Multiple Sites Serving 50 Concurrent End-Users

The following TCO comparison shows a TCO reduction of up to 75% when choosing uniPaaS as the application platform in any form of deployment.

Cost Factor	Network Deployment		Terminal Server		RIA	
	Code Based Full Client	uniPaaS Full Client	Code Based Full Client	uniPaaS Full Client	Code Based RIA	uniPaaS RIA
Application Development Platform	\$9,600	\$16,500	\$9,600	\$16,500	\$12,000	\$16,500
Application Deployment Platform	\$0	\$16,500	\$0	\$16,500	\$0	\$16,200
Server Operating System	\$4,995	\$4,995	\$7,998	\$7,998	\$999	\$999
Citrix Presentation layer	\$0	\$0	\$22,500	\$22,500	\$0	\$0
Database Licenses	\$87,500	\$87,500	\$17,500	\$17,500	\$17,500	\$17,500
Software Maintenance	\$20,419	\$25,099	\$9,270	\$13,950	\$6,100	\$10,240
Server Hardware	\$5,000	\$5,000	\$8,000	\$8,000	\$4,000	\$4,000
Servers Maintenance	\$45,000	\$45,000	\$18,000	\$18,000	\$9,000	\$9,000
Application Development	\$570,000	\$142,500	\$570,000	\$142,500	\$712,500	\$142,500
Application Maintenance	\$380,000	\$95,000	\$380,000	\$95,000	\$475,000	\$95,000
Live Application Updates	\$24,000	\$24,000	\$9,600	\$9,600	\$4,800	\$4,800
First Year Costs	\$911,805	\$367,545	\$844,033	\$299,773	\$994,449	\$257,219
Second Year Costs	\$469,419	\$189,099	\$416,870	\$136,550	\$494,900	\$119,040
Third Year Costs	\$469,419	\$189,099	\$416,870	\$136,550	\$494,900	\$119,040
3 Years TCO	\$1,850,643	\$745,743	\$1,677,772	\$572,872	\$1,984,249	\$495,299

uniPaaS TCO Reduction	60%	66%	75%
	\$1,104,900	\$1,104,900	\$1,488,950

Multiple Sites Serving 500 End-users

The following TCO comparison shows a TCO reduction of up to 63% when choosing uniPaaS as the application platform in any form of deployment.

Cost Factor	Network		Citrix		RIA	
	Code Based Full Client	uniPaaS Full Client	Code Based Full Client	uniPaaS Full Client	Code Based RIA	uniPaaS RIA
Application Development Platform	\$9,600	\$16,500	\$9,600	\$16,500	\$12,000	\$16,500
Application Deployment Platform	\$0	\$120,000	\$0	\$120,000	\$0	\$126,000
Server Operating System	\$9,990	\$9,990	\$51,987	\$51,987	\$999	\$999
Citrix Presentation layer	\$0	\$0	\$225,000	\$225,000	\$0	\$0
Database Licenses	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000
Software Maintenance	\$22,918	\$48,298	\$53,817	\$79,197	\$21,600	\$47,700
Server Hardware	\$10,000	\$10,000	\$52,000	\$52,000	\$4,000	\$4,000
Servers Maintenance	\$90,000	\$90,000	\$117,000	\$117,000	\$9,000	\$9,000
Application Development	\$570,000	\$142,500	\$570,000	\$142,500	\$712,500	\$142,500
Application Maintenance	\$380,000	\$95,000	\$380,000	\$95,000	\$475,000	\$95,000
Live Application Updates	\$48,000	\$48,000	\$62,400	\$62,400	\$4,800	\$4,800
First Year Costs	\$965,049	\$534,639	\$1,310,196	\$879,786	\$1,079,699	\$463,249
Second Year Costs	\$540,918	\$281,298	\$613,217	\$353,597	\$510,400	\$156,500
Third Year Costs	\$540,918	\$281,298	\$613,217	\$353,597	\$510,400	\$156,500
3 Years TCO	\$2,046,885	\$1,097,235	\$2,536,631	\$1,586,981	\$2,100,499	\$776,249

uniPaaS TCO Reduction		46%		37%		63%
		\$949,650		\$949,650		\$1,324,250

Appendix B

The following tables show the detailed calculation comparing uniPaaS RIA to other forms of uniPaaS deployment.

Multiple Sites Serving 50 Concurrent End-Users

The following TCO comparison shows a TCO reduction of up to 72% when choosing uniPaaS RIA over other deployment scenarios.

Cost Factor	Full Client on Network	Full Client on Citrix	uniPaaS RIA
Application Deployment Platform	\$16,500	\$16,500	\$16,200
Server Operating System	\$4,995	\$7,998	\$999
Citrix Presentation layer	\$0	\$22,500	\$0
Database Licenses	\$87,500	\$17,500	\$17,500
Software Maintenance	\$21,799	\$10,650	\$6,940
Server Hardware	\$1,000	\$8,000	\$4,000
Servers Maintenance	\$45,000	\$18,000	\$9,000
Application Updates	\$24,000	\$9,600	\$4,800
First Year Costs	\$155,395	\$91,623	\$49,069
Second Year Costs	\$90,799	\$38,250	\$20,740
Third Year Costs	\$90,799	\$38,250	\$20,740
3 Years TCO	\$336,993	\$168,122	\$90,549

uniPaaS RIA TCO Reduction	73%	46%	
	\$246,444	\$77,574	

Multiple Sites Serving 500 Concurrent End-Users

The following TCO comparison shows a TCO reduction of up to 69% when choosing uniPaaS RIA over other deployment scenarios.

Cost Factor	Full Client on Network	Full Client on Citrix	uniPaaS RIA
Application Deployment Platform	\$120,000	\$120,000	\$126,000
Server Operating System	\$4,995	\$51,987	\$999
Citrix Presentation layer	\$0	\$225,000	\$0
Database Licenses	\$95,000	\$95,000	\$95,000
Software Maintenance	\$43,999	\$75,897	\$44,400
Server Hardware	\$10,000	\$52,000	\$4,000
Servers Maintenance	\$90,000	\$117,000	\$9,000
Application Updates	\$48,000	\$62,400	\$4,800
First Year Costs	\$320,995	\$671,636	\$255,099
Second Year Costs	\$181,999	\$255,297	\$58,200
Third Year Costs	\$181,999	\$255,297	\$58,200
3 Years TCO	\$684,993	\$1,182,231	\$371,499

uniPaaS RIA TCO Reduction	46%	69%	
	\$313,494	\$810,732	