



## Get the facts

Microsoft Exchange 2010 vs. IBM Lotus Domino 8.5



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## 1. Introduction

The messaging market (mail and calendaring) in the corporate world is currently dominated by two major players: IBM's Lotus Domino and Microsoft's Exchange. Many organizations at one time will face the choice: Should we upgrade or migrate? To make an informed choice, knowledge of both platforms is required. Both from a technical perspective as in terms of cost. However, there appears to be a serious lack of good and reliable reports which compare these two platforms. Most comparisons available on the internet are either outdated or written with a strong bias from the manufacturer. This paper attempts to fill this gap.

Specialists on one platform usually have (almost) no knowledge of the other platform. Microsoft employees or business partners will therefore during discussions, due to the lack of proper comparisons, often quote information which they found on Microsoft's marketing page on this subject.

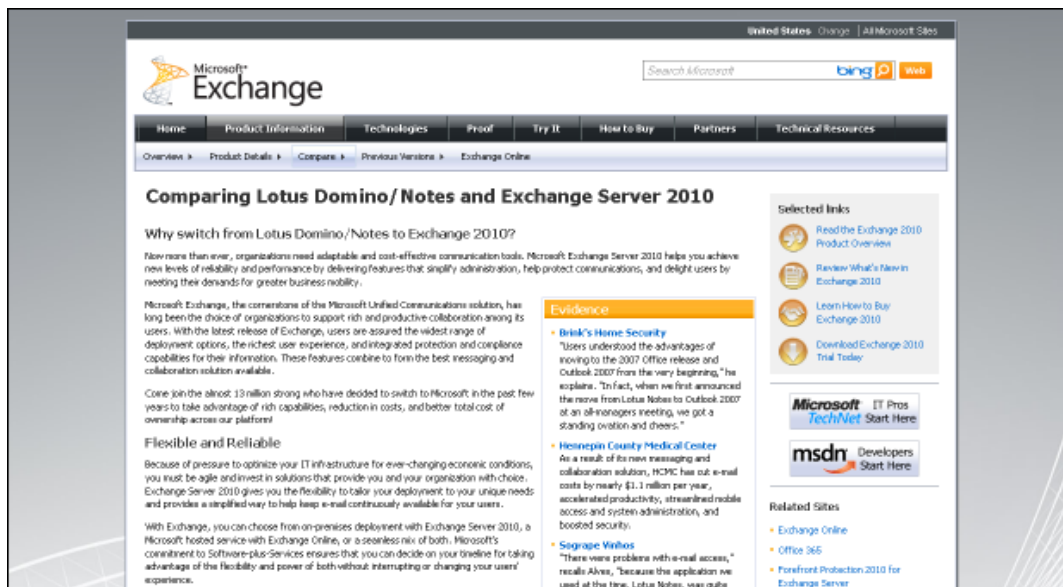


Figure 1 <http://www.microsoft.com/exchange/en-us/notes.aspx>

As this page, analog to Microsoft's anti-Linux campagne "Get the Facts<sup>1</sup>", tries to create confusion and contains many factual errors, one might expect that IBM has created a counterpart for this page. This however is not the case. Because of the position that Microsoft's page acquired from this omittance by IBM, this page will be used as the starting point for this document.

<sup>1</sup> <http://www.linuxplanet.com/linuxplanet/reports/6078/1/>

## 1.1. About this document

This document provides a comparison between Lotus Domino 8.5 and Microsoft Exchange 2010 based on factual and verifiable information. This document is an aggregation of a series of blog articles, which were published (in Dutch) on [socialsoftwareblog](http://socialsoftwareblog.nl)<sup>2</sup>. Lotus Domino and Microsoft Exchange will be compared in several areas. The base for this comparison is Microsoft's Exchange vs Domino marketing page<sup>3</sup>. On this page Microsoft discusses several functional areas which they consider as a competitive advantage of Microsoft Exchange over Lotus Domino. This document will look at how the arguments they use compare to the truth. This document will then discuss other functional areas, which are relevant for a good comparison between the products, but which Microsoft consciously or subconsciously left out. It's no surprise that most of these parts are functional areas where Lotus Domino has a competitive advantage over Microsoft Exchange.

The areas which will be discussed in this document are:

- The User Experience
- Enterprise services & Total Cost of Ownership (TCO)
- Unified Communications
- Enterprise Mobility
- Interoperability
- Storage, archiving and retention
- Upgrading your environment
- Workflow applications
- Integration with Social software.

## 1.2. About the author

Martijn de Jong is a senior consultant at ilionx Internet & Collaboration Solutions. He has over 15 years of experience in writing product analyses and comparisons based on his own research and external sources. Martijn is well known for his technical articles on subjects regarding the IBM Lotus Software family of products. With his background it's safe to say that Martijn is not unbiased. As a technical consultant however the author will stick to the facts as much as possible. These facts will be substantiated by verifiable sources.

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<sup>2</sup> <http://www.socialsoftwareblog.nl>

<sup>3</sup> <http://www.microsoft.com/exchange/en-us/notes.aspx>

### 1.3. Disclaimer

Opinions in this document are the personal opinions of the author. Ilionx is an independent ICT service provider and offers both IBM and Microsoft based solutions to its customers.

Although in practice, Lotus Domino and Microsoft Exchange are regularly compared to each other it's really impossible to do an 1-to-one comparison. Where Microsoft Exchange is a pure messaging product, Lotus Domino is a complete application platform. For the price of a Lotus Notes and Domino license you get all kinds of functionality for which you would have to use many different products on the Microsoft side. Replacing Lotus Domino to Microsoft Exchange therefore often means a migration to Exchange + Active Directory + IIS + SQL Server + SharePoint + Visual Studio, etc.

Nevertheless, there are plenty of companies who only use the messaging capabilities of Lotus Domino. When they run an older version Domino, they will have to make choices: Upgrade to Lotus Domino 8.5 or migrate to Exchange 2010. Companies that run on older versions of Exchange will have to choose between migrating to Exchange 2010 (you cannot upgrade an Exchange environment) or migrate to Lotus Domino. Both groups are therefore advised to read this document.

## 2. User Experience

In this chapter the user experience for both Lotus Notes and Microsoft Outlook are discussed based on Microsoft's marketing page. On its marketing page, Microsoft claims that:

*Microsoft Exchange continues to deliver the leading messaging experience for end users and deliver on the business needs of IT. IBM Lotus Notes and Domino continue to work to add features and functionality to their software that are native to Exchange.*

So what is the truth here? Basically Microsoft's last sentence is correct, but misses one important addition: "and vice versa". Lotus Domino exists already for more than 21 years. It is therefore obvious that the much younger Exchange has borrowed many features from Lotus Domino. Right now you can see that both manufacturers carefully keep looking at each other. Exchange 2010 finally contains a number of features which have been available in Lotus Domino for many years. For example, with the release of Outlook 2010 it is finally possible to view conversations in the same way as in Lotus Notes since Lotus Notes 8 (from 2007), while the ability to integrate your social networks in the Notes client which stems from the same release is still missing in Outlook 2010.

On the other side IBM has put quite a few features in Lotus Notes 8.x, which have been available in Outlook for a while like the possibility to save emails as .eml files. Currently we do see that the update cycle for Lotus Notes is shorter than for Microsoft Outlook which means that IBM adds new functionality to the Notes client faster than Microsoft to the Outlook client. In the end it's a game of tag between the two. Sometimes Lotus Notes is ahead in features. Other times Outlook is slightly ahead. It's obvious though that Microsoft's statement that Lotus Notes and Domino is always something behind is not based on the facts.

We already mentioned here the two clients that belong to each product. Next to the Outlook and Notes client, users will also work with the web variants of both products: Outlook Web Access and Lotus iNotes. When we discuss the User Experience of Lotus Notes/Domino and Microsoft Exchange/Outlook we should therefore look at all four clients.

### 2.1. Lotus Notes 8.5

Lotus Notes version 8.0 (released in 2007) brought a major change in the user interface. In preparation for this version a usability team was formed which has been involved in improving the user interface of the Lotus Notes client and that work is continuing. Opinions on the user experience of the Lotus Notes client, based on older

versions of Lotus Notes are therefore simply out-dated. The Lotus Notes 8.x client is also built on a new framework based on Eclipse. This makes it much easier for third parties to write plug-ins for the Lotus Notes client and this feature is used extensively.

The Lotus Notes client has both the advantage and disadvantage that it's the client for an application platform. On the one hand you can do a lot more with Lotus Notes than with a pure messaging client. On the other hand this leads to a larger memory footprint compared to a pure messaging client and more options which might be confusing for users who are used to pure messaging clients. The concept of the new Notes client is to put all sources of information which help you to do your work, so not just email, at your fingertips within the Lotus Notes client. This includes creating connections between these sources of information. When used well, this functionality of the Lotus Notes client can really improve the productivity of your employees.

## 2.2. Microsoft Outlook 2010

Microsoft released the Office 2010 suite in May 2010. Outlook 2010, which is part of Office 2010 received a new "ribbon" interface, which we previously saw in Word and Excel 2007. Although the ribbon interface in these Office components was quite well received, there are also outspoken opponents. It is however without a doubt that it's not a good idea to introduce Outlook 2010 to your users without any form of education. The interface simply changed too much. A few of the new features of Outlook 2010 are showing conversations in your mailbox, giving you a better overview of associated emails and an easy way to search through all mails regardless of the folder. Both functionalities have been available in Lotus Notes since the nineties, while the way conversations are implemented in Outlook 2010 was introduced in Lotus Notes in 2007. A nice new feature in Outlook 2010 are the MailTips which warn you when for example you are about to send a message to a large amount of users.

## 2.3. iNotes

Where the Lotus Notes client is also used for Lotus Notes applications, iNotes is a pure messaging client. iNotes is available in three flavours. The full client is functionally equivalent to the Lotus Notes client, including right-click menus and Sametime awareness (instant messaging).

The Lite client is for slower connections (ISDN / modem connections, etc.) or people who simply prefer a simple mail client. The Lite client lacks the right-click menu and Sametime awareness. Other missing functionality in this version are among others some calendar functions and the possibility to view someone else's mailbox.

The ultra-lite client is specifically designed for reading your mail on mobile devices. All clients are fast and intuitive and are known as very mature. iNotes also supports all modern browsers.



## 2.4. Outlook Web App

Microsoft has renamed the web client of Exchange 2010 from Outlook Web Access to Outlook Web App. The functionality has improved considerably putting it on the same level with iNotes. Outlook Web App now finally supports most modern browsers, which i.a. makes Outlook Web App available on MacOS.

## 2.5. Microsoft's Comparison

So, after this description of all clients, what does Microsoft have to say about this subject?

*Superior user experience: Don't take our word for it, take our customers'. In a case study by Brink's Home Security, Rob Trotter, Senior Vice President and Chief Information Officer for Brink's Home Security, said, "Users understood the advantages of moving to the 2007 Office release and Outlook 2007 from the very beginning. In fact, when we first announced the move from Lotus Notes to Outlook 2007 at an all-managers meeting, we got a standing ovation and cheers." Exchange 2010 delivers more for the user experience than ever before with an enhanced conversation view for mail triage, speech-to-text transcription for voice mail and MailTips to improve messaging efficiency and avoid accidental or unintended e-mails. Although recent versions of Notes updated the user interface, it lags behind in key users features and the addition of Eclipse as an underlying structure has increased both the memory and disk footprint that has required, in some cases, new hardware to take advantage of the new release.*

Microsoft forgets to mention here that Brinks was still working with the Lotus Notes R5 client (from 1999). This situation can be compared to users who are still working with Windows '98 and are informed that they will be migrated to Windows 7.

## 2.6. Conclusion

Although Outlook certainly also has its quirks<sup>4</sup> and its haters<sup>5</sup>, it can't be denied that there are many vocal people who hate<sup>6</sup> Lotus Notes. When prompted for their experiences these people's experiences with Lotus Notes, like the users of Brinks home security, usually stop at Lotus Notes 6.5 or even Lotus Notes 5. Regularly versions of 10 years old are compared to versions which do meet current standards.

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<sup>4</sup> [http://wanderingstan.com/2008-02-01/67\\_reasons\\_that\\_outlook\\_sucks](http://wanderingstan.com/2008-02-01/67_reasons_that_outlook_sucks)

<sup>5</sup> <http://www.outlooksucks.com/>

<sup>6</sup> <http://www.ihatelotusnotes.com>

With Lotus Notes 8, IBM has managed to catch up with Microsoft's Outlook client regarding the functionality and usability aspects. Most features which users who migrated from Outlook to Notes 8.x still missed were included in Lotus Notes 8.5.2. Due to the relative recentness of Outlook 2010 and Lotus Notes 8.5.2 no good comparisons can be found, but these comparisons do exist for Lotus Notes 8 and Outlook 2007. Analysts put the functionality and usability of Lotus Notes 8.x on par with Outlook. Even die-hard Outlook fans have to admit<sup>7</sup> that there's little wrong with Lotus Notes 8. There will always be people who prefer one or the other client, but ultimately they do not differ much from each other. Regardless of how much Microsoft would like us to believe otherwise, Outlook is no longer a reason to migrate from Lotus Domino to Microsoft Exchange.

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<sup>7</sup> <http://teneo.wordpress.com/2009/08/20/a-second-look-at-lotus-notes/> en  
<http://www.sitemotif.com/blog/?p=454>

### 3. Enterprise Services & TCO

In this chapter we focus on Enterprise Services and the total cost of ownership. On their marketing page, Microsoft writes the following on this subject:

*Microsoft delivers multi-tenant scalable solutions that provide advantages in total cost of ownership, flexibility, and IT control. Services isn't just about taking an on-premises server and putting it in a data center; it's about building in scalability from the beginning, and Exchange Server 2010 delivers that architecture natively. IBM does not offer this full range of deployment choices but provides only limited outsourced solutions. And their LotusLive iNotes offering is based on their acquisition of Outblaze, a consumer grade e-mail offering that creates a separate messaging experience for those users. This calls into question IBM's ability to scale Lotus Domino to millions of users while maintaining low costs.*

Language wise this is a weak paragraph in Microsoft's story as they put together multiple terms without describing the cohesion between them. Instead of focusing on what Microsoft writes, we will focus on the differences between Microsoft Exchange and Lotus Domino in the areas which they mention. These areas are:

2. Scalability
3. Total Cost of Ownership / TCO
4. Flexibility
5. Architecture
6. Outsourced / Cloud solutions

#### 3.1. Scalability

Both Microsoft Exchange and Lotus Domino are used in both small and large environments, so both products are scalable in that respect. However, scalability is also about the ease with which you can scale an environment from a few thousand users to double that size. At this point there's a clear win for Lotus Domino. I'll discuss the why of this victory when we get to the architecture of both products.

#### 3.2. Total Cost of Ownership (TCO)

One of the main considerations when choosing a messaging platform is the total cost of ownership (TCO). If you add up all aspects to do with messaging, how much do you spend on this service when you choose for Lotus Domino vs. Microsoft Exchange.

The image to the right gives a good overview of what is considered part of the TCO. Microsoft claims on their page that Microsoft Exchange "offers advantages in terms of total cost of ownership". They didn't mention compared to what product that advantage would be and available sources suggest that there's certainly no advantage when you compare the TCO to Lotus Domino. Applicable<sup>8</sup>, a company that specializes in both Microsoft and IBM solutions compared the TCO based on customer cases for both products and found IBM solutions to be 52% cheaper on infrastructure and user support costs. IT comparison<sup>9</sup> shows in their report that Lotus Domino has a significant lower TCO than Microsoft Exchange.

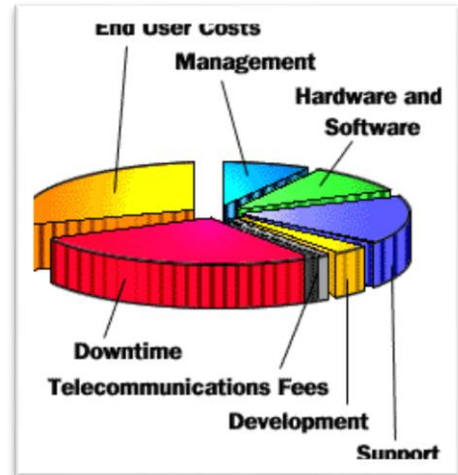


Figure 2  
<http://www.abraxax.com/html/tco.html>

In these comparisons Microsoft Exchange 2007 was compared to Lotus Domino 8. With version 8.5 IBM introduced i.a. DAOS<sup>10</sup> and the ID Vault<sup>11</sup> which significantly reduced the TCO. Although Microsoft introduced some new features in Exchange 2010 which could lower the TCO, these by no means closed the gap. When we talk about the TCO, Microsoft Exchange is more expensive than Lotus Domino. One of the reasons for this higher Total Cost of Ownership is that on average Microsoft Exchange needs significantly more servers<sup>12</sup>. More servers means higher costs for maintenance, backup etc. The pictures above also show that a large portion of the TCO is in planned and especially unplanned downtime. In this area Lotus Domino has a better track record than Microsoft Exchange.

### 3.3. Flexibility

Microsoft indicates that their solutions offer advantages in terms of flexibility. You should however mainly read this as the flexibility to integrate with other products from Microsoft. Integration with products from other vendors is not on the menu. This strongly contrasts with IBM Lotus Domino and Notes, which runs on about every imaginable platform and where the Notes client can now easily be extended with

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<sup>8</sup> <http://www.applicable.com/news/Pages/TCOWhitePapersComparingIBMANDMicrosoftDeploymentCosts.aspx>

<sup>9</sup> <http://itcomparison.com/Mail/Exchange2k7vslotus8/Exchange2k7vslotus8.htm>

<sup>10</sup> <http://www.socialsoftwareblog.nl/blog.nsf/dx/daos-wat-is-het-en-wat-levert-het-op.htm?opendocument&comments#anc1>

<sup>11</sup> <http://www.ineco.nl/members/ineco.nsf/forum/viewtopic/007ppedh-server-nieuw-in-lotus-notes-85-id-vault.html>

<sup>12</sup> <http://www.wissel.net/blog/d6plinks/SHWL-83KM3V>

plugins from third parties in addition to the possibility that the Notes client always offered to customize your templates to your own needs.

### 3.4. Architecture

*Services isn't just about taking an on-premises server and putting it in a data center; it's about building in scalability from the beginning, and Exchange Server 2010 delivers that architecture natively.*

It's not completely clear what Microsoft tries to say with this line, but it's a good moment to take a look at the differences in architecture.

Microsoft Exchange contains one or multiple message stores to store messages. Lotus Domino (and Notes) uses the Notes Storage Format (NSF) containers. The main difference between the two is that Microsoft stores multiple mailboxes in one message store (in Exchange 2010 these are called databases), while Lotus Domino stores every mail file in its own nsf file.

The number of message stores/databases per Exchange server is limited, while there's no limitation on the number of nsf files in Lotus Domino. For reasons of performance the size of an Exchange message store is also limited. Several sources<sup>13</sup> advice to keep the size of an Exchange message store limited to 100 GB.

These restrictions limit the maximum number of mailboxes per Exchange server. Larger organisations will therefore need multiple Exchange servers. Scaling up capacity in Exchange environments is not always easy. Increasing the number of users or increasing the total storage per user, may necessitate redesigning your Exchange environment.

Although Exchange 2010 supports more users and storage per Exchange server, the principles described above haven't changed. Lotus Domino's scalability is a lot better in this area. Lotus Domino allows you to use large Unix or Linux based servers, which allows you to support more users with larger mail files per server. Adding a Domino server to an environment is also very easy and this can usually be done without redesigning your environment. Lotus Domino is clearly the winner when it comes to scalability.

### 3.5. Outsourced / Cloud Solutions

*IBM does not offer this full range of deployment choices but provides only limited*

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<sup>13</sup> [http://en.wikipedia.org/wiki/Microsoft\\_Exchange\\_Server](http://en.wikipedia.org/wiki/Microsoft_Exchange_Server)

*outsourced solutions. And their LotusLive iNotes offering is based on their acquisition of Outblaze, a consumer grade e-mail offering that creates a separate messaging experience for those users. This calls into question IBM's ability to scale Lotus Domino to millions of users while maintaining low costs.*

These last lines discuss the possibilities to host your mail environment of premises. This can either be in a hosted environment or in the Cloud. There are multiple parties who offer hosted Exchange environments. In the Netherlands those outnumber the providers offering hosted Domino environment by a fair bit, though the latter exist too in increasing numbers. A hybrid form are the environments which are hosted on hardware at the customer site, but are maintained by an external party. In this category Lotus Domino gains ground due to the success of the Lotus Foundations server<sup>14</sup>.

When you think about hosting your messaging environment elsewhere, the current portfolio of Cloud solutions offer a viable alternative to the hosted environments mentioned above. IBM offers both LotusLive<sup>15</sup> iNotes and Lotus Live Notes<sup>16</sup>. Microsoft's remarks on IBM's offering in the Cloud are completely out-dated. LotusLive iNotes offers simple email and calendaring possibilities which can be accessed through a web browser or by any mail client which supports the IMAP or POP protocols. LotusLive iNotes includes virus/spam protection and support for mobile devices. With \$3,- per user per month for a 25GB mailbox, IBM offers the cheapest commercial email service of the main three cloud providers (IBM, Microsoft, Google). For a richer mail and calendaring experience including the use of the Lotus Notes client, and Sametime chat functionality, IBM offers LotusLive Notes which is based on Lotus Domino (8.5). Prices per user per month start at \$5,-.

Microsoft offers Exchange Online<sup>17</sup> as their messaging offering in the cloud. Interestingly enough this service is, 1½ years after the introduction of Exchange 2010, still based on Exchange 2007. Prices start at \$6,- per user per month.

From this information it's clear that in the area of hosted environments and cloud services, Microsoft can't stand up to their claim. IBM does offer a full range of deployment options and their messaging offerings in the Cloud are both more feature rich and cheaper.

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<sup>14</sup> <http://www.ikwijsdeweg.be/>

<sup>15</sup> <https://www.lotuslive.com>

<sup>16</sup> <https://www.lotuslive.com/en/services/notes>

<sup>17</sup> <http://www.microsoft.com/exchange/en-us/exchange-online.aspx>

### 3.6. Conclusion

In this important part of a messaging product, IBM scores solid points on scalability, total cost of ownership and flexibility. Microsoft historically has been trailing in these areas and although Exchange 2010 contains some good improvements they haven't succeeded in closing the gap.

TCO is an important focus area for IBM in their development of Lotus Domino and IBM has succeeded in lowering the TCO of Lotus Domino with each release. This makes it unlikely that Microsoft will catch up anytime soon.

## 4. Unified Communications and Enterprise Mobility

### 4.1. Unified Communications

*A single unified communications platform: Microsoft Exchange Server 2010 continues to address users' needs by providing new capabilities for unified messaging, integrated e-mail, voice mail, instant messaging (IM), Short Message Service (SMS) text messages, and mobility management. All of these capabilities are provided within a single Exchange product compared with the multiple, disparate products that an IBM deployment requires.*

We have to grant Microsoft points here. Exchange 2010 offers integrated voicemail and sms services, for which you would need Lotus Sametime Unified Communications server on the IBM side. Despite what Microsoft claims above, Exchange 2010 does not offer instant messaging. You need the Microsoft Lync Server for this. IBM has divided the functionalities mentioned above (except for voice mail and sms messaging) over Lotus Domino, Lotus Sametime limited and Lotus Notes Traveler. Both extra products are for free with a Domino Enterprise license. The installation of these products is so simple that you can easily build three Domino servers including Sametime and Traveler in the time it costs to build one Exchange server, while the administration of these products is integrated in the Domino Directory. Smaller organizations can even choose to install all products on a single server (as your only server). This is not possible with Microsoft Exchange.

### 4.2. Enterprise Mobility

*Built-in enterprise mobility: In Exchange Server 2010, mobile users can access their messages from a truly universal inbox with SMS text messages, e-mail, voice mail, and saved IM conversations. IT administrators can control the devices that connect to their networks through a block/allow list to ensure that only approved devices connect to the Exchange Server messaging data.*

*The best part of mobile access in Exchange Server 2010 is that it is all built into Exchange Server. You do not need to buy extra servers and client access licenses (CALs) from third-party providers or manage another, separate system for mobile access.*

*In contrast, Lotus Notes Traveler, Lotus' mobile experience for Domino, which was recently rewritten to provide support for Exchange ActiveSync, provides only a basic*



*mobile experience that analysts have said should not be deployed without “a third-party security and management offering.”<sup>18</sup> Exchange has 47 mobile policies to manage and protect information and security of the devices that connect to your network.*

In the past IBM left the support for mobile devices to third parties like Commontime's mNotes<sup>19</sup>. However, a small company like Commontime doesn't have the same bargaining power as Microsoft, which meant that the support from providers for Microsoft Exchange exceeded the support for Lotus Domino by a large margin. IBM recognised this and as the importance of mobile devices grew, they decided to take matters in their own hands with the introduction of Lotus Notes Traveler in 2007. They've been working hard on Traveler ever since and have managed to almost close the gap. The most used smartphone businesswise is currently RIM's BlackBerry. Their BES server has always been available on both Lotus Domino and Microsoft Exchange. For other devices, Microsoft created a de facto standard with their ActiveSync protocol. For this reason, IBM licensed ActiveSync and implemented the protocol in Lotus Notes Traveler. Through this protocol Traveler supports almost all platforms that support Microsoft Exchange. IBM has also improved the security options of Lotus Notes Traveler and brought them on par with the security options in Microsoft Exchange including encryption and remote wipe.

The report from Gartner that Microsoft refers to is dated December 17, 2007. At that time, IBM had just released the very first, indeed functionally limited version of Lotus Notes Traveler. IBM has introduced many new versions since then which have invalidated Gartner's remark.

### 4.3. Conclusion

When we take the above in consideration we have to conclude that although Microsoft Exchange enjoys better support from mobile devices, the difference is a lot smaller than Microsoft would like us to believe.

Popular devices like the Blackberry, iPhone/iPad, Android devices, Windows Mobile devices, Symbian devices and most non-Symbian Nokia devices are fully supported through Lotus Notes Traveler. Security options for mobile devices like a remote wipe in case a device is lost or stolen and sending data over encrypted connections are supported by both products. IBM is still working hard on further improving the features and support of Lotus Notes Traveler. An advantage of keeping this

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<sup>18</sup> [http://www.gartner.com/DisplayDocument?ref=g\\_search&id=565418](http://www.gartner.com/DisplayDocument?ref=g_search&id=565418)

<sup>19</sup> <http://www.commontime.com/>

functionality in a separate add-on is that IBM can and does release new Traveler versions separate from Lotus Domino.

On Unified Communications Microsoft scores points with the integration of voicemail and sms services in Exchange, but loses points on the absence of instant messaging features. In Lotus Domino the instant messaging functionality is also in a separate product, but where IBM's Lotus Sametime Limited is free with Lotus Domino, Microsoft's Lync server is not.

## 5. Interoperability

### 5.1. Active directory

*Single, industry-leading directory interoperability: The Exchange team built the first native active directory application, Exchange 2000, almost nine years ago. IBM announced this feature for Domino 8.5.x releases<sup>20</sup>, and by the time it is shipped, Exchange will have a ten-year head start on interoperability with the leading directory service in enterprises today, providing rich, powerful experiences to end users and IT Pros alike.*

The above claim from Microsoft is ill founded. Their reference is a page on the blog of Ed Brill, director of Lotus Software, about new features in Lotus Domino 8.5.x. Nowhere on this page is there any mention of plans to use the Active Directory for Lotus Domino 8.5's configuration. The idea of swapping the Domino Directory, which is the base for the complete configuration of the product, for Active Directory is rather absurd and untrue. IBM Lotus in Domino version 8.5 still uses the Domino Directory with which they have over 20 years of experience.

The confusion of Microsoft's author is probably caused by an initiative by IBM for Lotus Domino which is called "Directory independence". An idea in this initiative was to create the possibility to move person and group data to another LDAP directory, which would create the opportunity for companies who use company-wide LDAP directories to maintain all person and group data in one place. Person and group data are relatively separate from the configuration of an environment.

IBM however decided to simplify ID management in another way<sup>21</sup>. The Directory Independence initiative was part of a broader Identity Management strategy which in Domino 8.5 cumulated into the ID Vault and Notes shared login. Notes shared login replaces the Notes ID password by a hash made up of a combination of the Windows machine ID and the Windows user ID. This way a user who is logged in to his machine (which can be through his Active Directory account) can start Lotus Notes without logging in again. Unlike the previous client single logon functionality in older versions of Lotus Notes, Notes shared login works independently from the Windows password and therefore continues to work as your Windows password changes.

A new feature in Lotus Domino 8.5.2 is the support for the Simple and Protected GSSAPI Negotiation Mechanism (SPNEGO). This mechanism, which is also supported by

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<sup>20</sup> <http://www.edbrill.com/ebrill/edbrill.nsf/dx/notesdomino-8.5-in-one-page-on-ibm.com>

<sup>21</sup> <http://www-01.ibm.com/support/docview.wss?rs=899&uid=swg21416004>

Outlook Web App, allows a user who is authenticated against an Active Directory to authenticate to a web application without logging in again.

Apart from this new functionality Lotus Domino offer since version 5 (released in 1999) the possibility to authenticate web browser users through other LDAP directories (among which Active Directory). Microsoft doesn't have this kind of support for Outlook Web App.

## 5.2. Sharing of calendars and communication with third parties

*Delivering tools for the global economy: Microsoft Exchange Server 2010 includes the ability to share calendars with users outside your organization and associate permissions that you are comfortable with. In this release, secure messaging is not only supported within your organization, but for external users as well. Microsoft Exchange Server 2010 now enables secure communications with vendors, partners, and customers who previously required third-party tools or separate account management.*

What is striking here is that a direct comparison with Lotus Domino is missing. Microsoft is presenting an improvement over Exchange 2007. Exchange 2010 introduced "Federated sharing" which makes it easier to grant calendar access to users outside your domain. It's no longer necessary to give them access to your entire Active Directory. The condition is that the organization of these people also uses Microsoft Exchange and that a link is established between the Active Directories.

The ability to chat is not in Exchange 2010, so this remark by Microsoft is not correct. To chat with Outlook, you'll have to install Microsoft Lync Server (formerly known as Office Communications Server or OCS) or Lotus Sametime. These are separate products. The possibility to send secure messages to other businesses that use Lync server/OCS was introduced in OCS 2007 R2 (which was released in 2009). Lotus Sametime offered this possibility for a while already and using the Sametime Gateway it is also possible to safely exchange messages with other instant messaging systems.

Lotus Domino always had the opportunity to share data of any kind with other Domino using organisations using cross certificates. Lotus Notes 8.5 added the possibility to share calendars with others through the iCal standard<sup>22</sup>. Outlook supports the iCal standard since Outlook 2003. iCal, or iCalendar, is a standard internet calendar format that enables users to synchronise electronic calendars across different computers and

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<sup>22</sup> <http://www.ibm.com/developerworks/lotus/library/notes85-icalendar/index.html?ca=drs-&ca=dgf-ip>

different programs. The Lotus Notes calendar can display multiple iCal calendars in an overlay in a single calendar. This option also allows you to share calendars between Microsoft Exchange and Lotus Domino.

### **5.3. Conclusion**

If we look at both aspects we see that on interoperability there aren't that many differences. Lotus Domino has the advantage that browser clients can authenticate against multiple LDAP directories, but Exchange users are unlikely to experience any limitations in having to authenticate against the Active Directory. For exchanging information with third parties, both products have built-in methods to do this in a secure way. We didn't discuss the possibilities of the clients (Notes & Outlook) here to interoperate with third parties. As we saw in chapter 2, Lotus Notes does win in this area.

## 6. Storage, Archiving and Retention

*Storing, archiving, and retention: Microsoft Exchange Server 2010 addresses the needs to specify what data is stored and for how long with native e-mail archiving and robust retention policies that provide the tools you need to meet increasing compliance requirements. Exchange Server 2010 also enables powerful cross-mailbox searching capabilities that can be delegated through role-based access control, to ensure that the right people have the right tools to protect your organization. Domino provides only limited archiving and in most cases requires third-party products, with additional cost and complexity, to achieve the compliance capabilities that Exchange Server 2010 delivers natively.*

### 6.1. Restoring Mail and Retention

#### 6.1.1. Restoring Mail on Exchange

Storage, archiving and retention are traditionally the Achilles heel of Microsoft Exchange. Exchange administrators struggle daily with the procedures for restoring accidentally deleted emails. The problem is Exchange's architecture with its message stores/databases. Because there are multiple mailboxes in a database, to restore some mails from one mailbox, the administrator first has to restore the entire database from the backup. This database is easily 100 GB in size, but officially may grow up till 16 TB. When this database is finally restored the administrator will have to copy the mails back into the user's mail file. Users can't do this themselves.

The good news for Exchange administrators is that Microsoft has improved this part considerably in Exchange 2010. Backups are now created as snapshots on disk, making it very quick to attach them to the Exchange server. Using scripting commands in the Microsoft PowerShell the administrator can copy mails from the snapshot to the mailbox of the user or even another user. For less recent mails, the backups will probably be no longer online in which case the administrator is out of luck as the mails will have to be restored the old way.

#### 6.1.2. Retention on Exchange

Because of these problems with the restoring of mails, retention was always a big problem with Microsoft Exchange. When the security department requested several mailboxes for a forensics investigation this meant overtime for the Exchange Administrator. However, Microsoft has introduced a new feature in Exchange 2010 which improves this situation considerably. In Exchange 2010 you can specify that mail should be kept for a certain retention period, e.g. one year. This means that any mail sent and received is kept, even when the user discarded it. When this mechanism is

used, users can also restore accidentally removed mail themselves. In addition, people with a certain role (e.g. a security officer) can see and search all mail that was sent and received in the organisation in the set period.

Obviously this is a huge benefit for forensics investigations. This feature however does have a downside. It comes at the expense of disk space and performance as all mail for a particular user needs to be stored in the same Message store as where the mailbox of the user is located. All mail stays for the chosen retention period in the message store. Also the “will you join for lunch”-mails or mails with funny movies. Even when the user immediately deleted the mail. The Exchange server needs to keep these mails indexed at the cost of performance. Another downside is that as an administrator you lose all control over the size of the Message stores / databases. Normally the administrator can set quotas on mailboxes and by limiting the amount of mailboxes in a message store he will have a good idea of the ultimate size of this message store. When the retention feature is used, there’s no limit on the size of the mailbox as even when the users stays within his quota the deleted documents will add to the size of the message store.

### **6.1.3. Restoring Mail on Lotus Domino**

Due to Lotus Domino’s architecture where each user’s mailbox corresponds to a physical .nsf file, Domino historically always had the upper hand regarding restoring mail and retention. Where with Exchange a corrupt message store leads to problems for many users, a corrupt mail file in Domino means a problem for just one user.

If a Domino mail user has mistakenly deleted mails, the administrator only has to restore the mail file for that user, which would usually be no more than a few hundred MB. The mail file can be restored directly to a directory on the Domino server to allow the user himself to copy missing mails back to his current mail file.

### **6.1.4. Retention on Lotus Domino**

Retention in Domino can be implemented using the Mail Journaling functionality which ensures that every incoming and outgoing mail can be stored in one large database. This feature has been around since Lotus Domino 6 (released in 2004). In addition, companies that need this kind of functionality have often created or purchased extra applications which extend this functionality for them, handily using the fact that Lotus Domino is an application platform.

## 6.2. Archiving

### 6.2.1. Archiving on Exchange

Exchange 2010 features a new archiving ability called Personal Archive. It enables users to easily archive mails to a special archive folder which shows in their normal mailbox. Searches which are performed on the user's mailbox will still find mails which are in their archive folder, so from a user's viewpoint this is a neat option. From a technical perspective however this option doesn't have much value at all. The archive folder is physically stored in the same message store/database as the user's mailbox, which means this feature has the same flaw as the retention feature e.g. no control over the size of the message store (unless the administrator puts quota on the Personal Archive with negates it goal). It also means that archived mail can't be put on cheaper storage. Seeing these limitations one might wonder why one would implement this archiving functionality at all instead of just removing the quota of user's mailboxes and let them keep all their mail in there? Surely users would prefer this over any archiving solution. The answer is twofold:

- Performance of the Exchange server. The archiving folder doesn't need to be indexed as often as the normal mailbox, which saves the Exchange server resources.
- The Personal Archive can also be used to assemble mails that were archived in the past using 3<sup>rd</sup> party solutions, .pst files stored on the desktop etc.

### 6.2.2. Archiving on Domino

Lotus Domino's native archiving solution allows mails of a certain age, defined by policies, to be automatically archived to a separate .nsf file which, unlike Exchange, can be on another server with cheaper storage. Users can also archive selected mails themselves to this archive. The archive is easily accessible for the user through a link in their mail file. The one downside of Domino's native archiving solution is that users can't do a multiple mailbox search to search for mails in their normal inbox and their archive at the same time. Third parties have jumped on this omission and provide archiving or search products that do provide this feature.

## 6.3. Storage

*With Microsoft Exchange 2010 customers can choose cheaper, lower-cost storage types including DAS, SATA, and JBOD without sacrificing reliability or performance. IBM provides Domino attachment object store (DAOS), but customers are not provided with a true range of storage options to reduce costs for all users.*



DAS, SATA and JBOD are expensive words for simple storage mechanisms. What storage options a middleware product like Exchange or Domino can use is dependent on the operating system that the product runs on. What Microsoft tells us here would be the same as when IBM would tell you that Domino now also works with cheap DirectX 9 video cards. The one has nothing to do with the other.

To understand what point Microsoft tries to make we have to look at previous versions of Microsoft Exchange, which brings us back at Exchange's message stores. The chosen architecture led to the situation where previous versions of Exchange generated that many input/output operations per second (iops) that larger Exchange environment only reached acceptable performance levels on expensive storage solutions like SANs and fast RAID<sup>s</sup><sup>23</sup> or were severely limited in the amount of users that could be supported per Exchange server.

Microsoft worked hard in Exchange 2010 to optimise the Message store, which now theoretically can reach acceptable performance levels on cheaper storage. Lotus Domino with their Notes Storage Format (NSF) containers never suffered from the performance problems that plagued Exchange. It therefore has been possible for years to run larger Lotus Domino environments in combination with cheaper storage solutions. Nevertheless Lotus Domino technicians have found more and more ways with each release to even further reduce the use of resources by the Domino server, with the result that in the past 10 years upgrading your Domino server to a new release gave organisations the possibility to host more users on that same server on the same hardware than before the upgrade.

Contrary to the techniques that Microsoft mentioned, the Domino Attachment and Object Service (DAOS)<sup>24</sup> is a feature of the middleware. DAOS separates attachments in mails from the mail file and makes sure that every attachment is saved only once per Domino server in a way which is completely invisible for the user. This results in effectively less bytes on your disks. Without DAOS the same mail files already use less space on a Lotus Domino server than on a Microsoft Exchange server<sup>25</sup>. DAOS saves at least another 30% in disk space and that pays off in lower storage costs, lower costs for backup, etc.

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<sup>23</sup> <http://www.windowsitpro.com/article/compliance/a-first-look-at-exchange-2010.aspx>

<sup>24</sup> <http://www.ibm.com/developerworks/lotus/library/domino-green/>

<sup>25</sup> <http://blog.darrenduke.net/Darren/DDBZ.nsf/dx/mail-file-size-domino-vs-exchange.htm>

#### 6.4. Conclusion

Storage, archiving and retention have always been weak points in the architecture of Microsoft Exchange. Microsoft has acknowledged this fact and has tried to improve this in Exchange 2010 and they certainly succeeded. IBM however also has been busy and succeeded with Domino 8.5 in on the one hand improving the server efficiency, allowing your Domino server on the same hardware to support more users and on the other hand with DAOS considerably reducing the required storage. Microsoft has built a very nice feature to help with retention policies. This retention functionality in Lotus Domino is currently not as extensive. The way Microsoft has implemented this feature, however, ensures that high costs are associated with its use. You need significantly more storage and Exchange servers if you want to use this functionality. Time will tell if companies are willing to accept this extra cost. In the field of storage and archiving Lotus Domino is definitely the big winner. In terms of retention, there is a small functional benefit for Exchange, but with a clear "but ".

## 7. Upgrading your environment

The next three chapters describe components of the two products that Microsoft chose not to discuss on their marketing page. The fact that they didn't, means there's a good chance that these are not Exchange's strongholds. However, to compare Microsoft Exchange and Lotus Domino you should look at the total picture and that does include these components. We start off with the difference in upgrading your environment to the next major release.

Companies have to deal with an upgrade on average every two to three years (when we omit service packs). In the past 10 years, Microsoft has released a new version of Exchange on average every three years (2000, 2003, 2007, 2010).

IBM was a bit faster with 6 major versions in the same period (R5, 6, 6.5, 7, 8, 8.5).

Although companies sometimes skip a version, this is not always smart. The costs you save by not upgrading, you often more than lose by not being able to use the improvements in the new version. Especially the upgrade to Lotus Domino 8.5 has a return on investment of less than a year<sup>26</sup>.

To compare the upgrade procedures of Microsoft Exchange and Lotus Domino, I'll list the official information of both manufacturers on how to perform an upgrade:

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<sup>26</sup> [http://www-01.ibm.com/software/lotus/offer/forrester\\_webcast.html](http://www-01.ibm.com/software/lotus/offer/forrester_webcast.html)

### 7.1. Migrating Exchange 2007 to Exchange 2010

Microsoft has extensive online documentation<sup>27</sup> on how to proceed with an upgrade from Exchange 2003 or Exchange 2007 to Exchange 2010. This diagram gives a good overview:

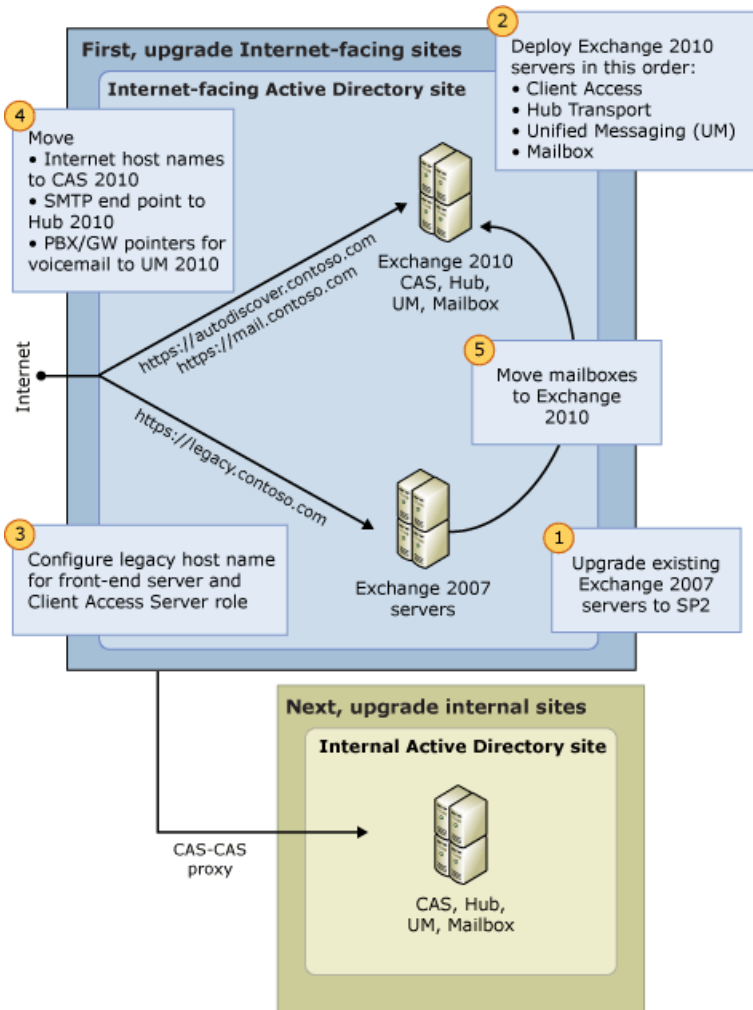


Figure 3 Upgrade diagram from Microsoft

In short the upgrade comes down to this:

7. Buy new hardware for the Exchange servers
8. Install Windows 2008 R2
9. Upgrade the Active Directory
10. Install Exchange 2010
11. Move the mailboxes from the old servers to the new servers
12. Change all references (dns addresses etc.) to the new servers

<sup>27</sup> <http://technet.microsoft.com/en-us/library/dd638158.aspx>

An in-place upgrade is impossible with Exchange. Extra hardware is always necessary during an upgrade of Microsoft Exchange. Because of this we speak in this section of a migration and not of an upgrade. Many Microsoft consultants, when questioned on this situation will try to explain that it's good for the stability of your messaging environment to redesign this environment every now and then. Although it surely doesn't do any harm to take a good look at the architecture of your messaging environment from time to time, it's questionable whether this should be done every two to three years. It is amazing that a middleware product is so dependent on an operating system that each release is accompanied by an investment in new hardware and new operating systems.

## 7.2. Upgrade Lotus Domino 6.5 / 7 / 8.0 to Lotus Domino 8.5

IBM also has extensive documentation<sup>28</sup> on how to perform an upgrade of a Domino environment. IBM lists four options to upgrade your environment:

1. Upgrade your existing Domino server(s) – This is the easiest method
2. Move existing servers to new hardware
3. Install new Domino servers (inherit identities)
4. Install new Domino servers (new identities)

If you have no problems in your current Domino domain there is no reason not to do an in-place upgrade. This is the procedure for the upgrade of a Domino environment:

1. Upgrade the Domino Directory of your administration server
2. Upgrade the Domino code of your administration server
3. Upgrade the other servers in your domain
4. Upgrade the ODS (On Disk Structure) of your databases (including the mail files)
5. When the Notes clients have been upgraded, upgrade the mail files to the latest version of the mail template

Such an upgrade will take only a fraction of the time of the migration of an Exchange mail domain and when your mail servers are clustered this can even be done without any downtime. As Domino deals more efficiently with its resources with each new version, it is not necessary to upgrade your hardware if there previously were no problems with the performance. Sometimes with an upgrade of your Domino server to the latest version you can even delay an upgrade of your hardware. Domino also hardly has any OS dependencies so there's usually no need to upgrade your server operating system for a Domino upgrade.

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<sup>28</sup> <https://www-304.ibm.com/support/docview.wss?uid=swg21406047>

### 7.3. Conclusion

When we compare the differences in upgrading to the next release between Microsoft Exchange and Lotus Domino, the latter makes Exchange look very pale. Where Lotus Domino always allows you to do an in-place upgrade, Microsoft once again failed to deliver this option with Exchange 2010. Microsoft is aware of the fact that this is a weak point in Exchange<sup>29</sup>. They blame the strongly modified database schema for the new mailbox stores. Lotus Domino 8.5 however also contains many modifications to the On Disk Structure (ODS) of the Domino databases, but the ODS upgrade can be done in-place. You can even delay upgrading the ODS till after the upgrade.

For upgrades, Exchange is also plagued by the strong integration with the server operating system. Exchange 2010 only runs on Windows Server 2008, while most organisations have Exchange 2007 running on Windows Server 2003. In that case an in-place upgrade wouldn't have been possible regardless of the database

You do not see this problem with Lotus Domino. Domino is supported on many platforms and runs on even more including all versions of Windows 2000 to 2008. The result is that where most Domino environments currently run at least Domino 7 and most run Domino 8.x, there are still a lot of Exchange 2003 environments.

Even Microsoft themselves have not dared so far to upgrade their Exchange environment: Exchange-Online, the hosted Microsoft Exchange environment is, 1½ years after the introduction of Exchange 2010, still on Exchange 2007.

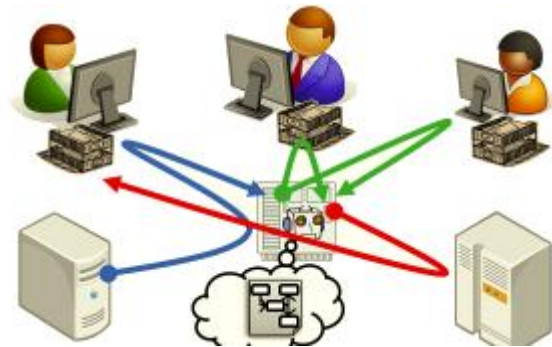
Microsoft sales consultants will try to avoid talking about the tricky part of upgrading to a new version as much as possible in sales calls. When it does come up, they will try to downplay the issue. Especially for larger environments, the costs of an upgrade however are an important factor to take into consideration. These are recurring costs that may have a significant impact on the Total Cost of Ownership of the product. The cost of an upgrade of Lotus Domino is easily a factor of 10 lower than for Exchange and this contributes significantly to the lower TCO of Lotus Domino compared to Microsoft Exchange.

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<sup>29</sup> <http://www.networkworld.com/community/node/49129>

## 8. Workflow Applications

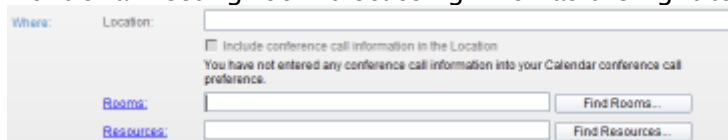
In the disclaimer we mentioned that a comparison between Lotus Domino and Microsoft Exchange is a comparison between apples and pears. Where Exchange is a pure messaging product, Lotus Domino is a complete application platform. Although there are many companies who only use the email functionality of Lotus Domino, the fact that they have a product that when used properly can increase the productivity of the employees substantially without any costs for additional licenses, should not be discarded. Let's look at how an organisation could benefit from this functionality.



### 8.1. Employability of Lotus Domino

A good start for a company would be to use Lotus Domino for simple applications like:

- Leave requests  
Enter a leave request electronically where emails are automatically sent to your manager who can approve or reject your request with a simple push on a button. Other employees can easily see who is on leave and when.
- Travel requests  
Request visits to conferences, clients or offices abroad via an application, where the workflow of requesting approval from managers, booking of flights and hotel rooms etc. is all done through the application.
- Reserving meeting rooms and resources  
Book your rooms, beamers, projector screens, whiteboards etc. directly when planning a meeting in your calendar. Of course, a room can be booked only once for a particular time slot, so there won't be multiple groups standing in front of a meeting room discussing who has the right to use it.



These are a couple of examples of processes that in many companies are still done using paper calendars or application forms. Lotus Domino makes it very easy to automate such processes and make them more efficient. The above examples are very generic, so templates for these applications are often free or available at low cost. An application for reserving meeting rooms and resources is shipped with Lotus Domino and is called the Resource Reservation database. For other applications, you can take a look on [OpenNTF.org](http://OpenNTF.org), where more than 100 applications are available for free, or you

can ask your IBM Lotus Business Partner. This is by no means to say that Lotus Domino would only be suitable for simple workflow applications. Some companies run their core applications on Lotus Domino. An example of a famous public web site that was originally written on Lotus Domino is Kieskeurig.nl. However, these are not the type of applications to start with when you currently use your Domino server only for mail and want to start making better use of your investment.

## **8.2. Employability of Microsoft Exchange / SharePoint Foundation Server**

For similar functionality in terms of applications on the Microsoft side we have to look at SharePoint. Although a comparison between SharePoint and Lotus Domino is beyond the scope of this paper, I'll briefly discuss the free version of SharePoint: SharePoint Foundation Server. A statement that in contrast to Microsoft Exchange you get a free mature application platform wouldn't be fair if we disregard the free offering from Microsoft. Apart from the limited functionality of this version however, this offering on further investigation turns out to be not as free as it seems. To be allowed to use the Foundations server, the right license for Windows Server 2008 is required. This comes down to that for each person who will use the SharePoint Foundations server you need a Windows Server CAL (Client Access License). Since you do not need these licenses for Exchange, these costs are the additional costs to use SharePoint. You don't have such extra costs with Lotus Domino.

In addition, Lotus Domino has the advantage of the Lotus Notes client, enabling applications to seamlessly integrate into the mail environment, e.g. with forms with special formatting stored in a mail, buttons in a mail with extensive executable code (which the Execution Control List deems as safe), and additional fields sent along with an email, which can be visualised with computed text. These possibilities have great advantages for workflow applications. Microsoft offers nothing comparable in this respect.

## **8.3. Conclusion**

When comparing Lotus Domino and Microsoft Exchange it's tempting to ignore Domino's capabilities as an application platform. After all, the focus is on the messaging functionality and not at the possibilities as an application platform, which Exchange lacks. This however leads to a crooked comparison. Lotus Domino is characterized as an application platform that has a low threshold for developing applications. Many useful applications are out-of-the-box with Lotus Domino or can be found on OpenNTF. Chances therefore are very high that Lotus Domino as an application platform can play a useful role in the company to automate processes in a simple and inexpensive way. Although this possibility in a direct comparison is difficult to express in monetary terms, it is important to realize that you lose this option when you choose Microsoft Exchange.



## 9. Integration with Social Software

IBM and Microsoft have a distinctly different vision regarding the future of information exchange and this difference reflects on Lotus Domino/Notes and Microsoft Exchange/Outlook. When choosing one of the platforms it's therefore good to take this vision and the implications it will have for the future of both products along in your decision.

### 9.1. IBM – Email is one the sources of information

The central elements In IBM's vision are the interaction between people and the relationship between information. People can communicate with each other in different ways. Via email, but also via the telephone, face-to-face, instant messaging and via social networks like Twitter, Facebook and LinkedIn or through internal social networks (such as a Lotus Connections environment). You probably recognize the situation that



you know you have discussed something with another person, but you don't remember through which medium. As people start mixing more media to communicate, this will occur more and more often in the future. Young people hardly use email.

Communication goes via Hyves, Facebook or MSN. In IBM's view, the boundaries between mail and other forms of information is fading, making it important to bundle these different sources of information and display them in one clear overview. This concept comes together in "Project Vulcan". Project Vulcan is a blueprint for what is to become the next version of Lotus Notes (which is expected in the first half of 2012). Information from different sources comes together in this client and is tagged to persons or subjects. To visualise this is, imagine that you receive an email from a contact from another company and as you read the mail you automatically see relevant news about that company in a separate part of the window, and the latest status messages of this contact in Twitter, LinkedIn and Facebook. In this vision, email is combined with stored chats, messages through social networks and other information that is available on a person or topic to give you a complete picture.

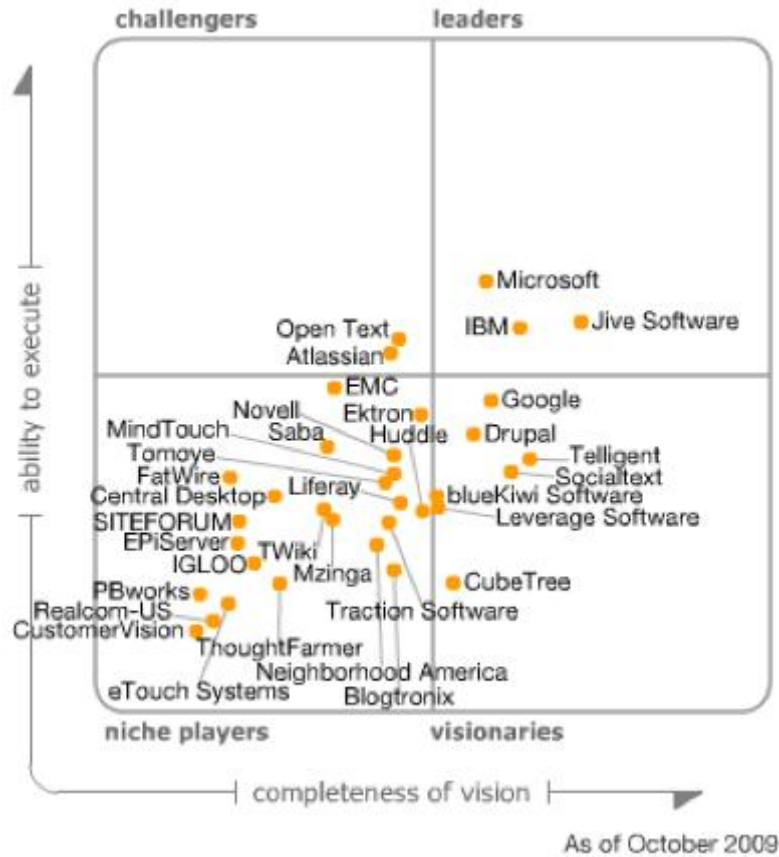
### 9.2. Microsoft – Email stays a separate entity

Microsoft is much more conservative in this area. They see the increased use of social networking sites, but see no added value to the current status of emails. There are Facebook and LinkedIn connectors for Outlook, but these just display the status updates of your contacts in a separate part of the screen, similar to the widgets for the Lotus Notes client. Creating connections between different forms of information is currently not available in Outlook and there are no indications that this will change in the near future. For the next few years, Outlook will remain an email / calendaring

client with integrated chat client, RSS feeds and possibly Facebook and LinkedIn plugins, where these components are all independent of each other.

### 9.3. Conclusion

In the area of social software both IBM and Microsoft are seen as leaders by research firms like Gartner and Forrester.



Both Microsoft SharePoint 2010 and Lotus Connections 3.0 are very good platforms for a social enterprise. According to Gartner, the difference between the two is in "Completeness of Vision" and this is reflected in the messaging systems of both. Where IBM Lotus Notes is an integral part of its social platform strategy (which doesn't require you to have Lotus Connections), Microsoft's social software aspirations are limited to SharePoint. Outlook remains a mail / calendaring program. IBM's strategy seems to be better prepared for the future. The current youth live with social media. They regard email as out-dated. When they enter the labour market, they will feel more at home and efficient with a platform that supports this social way of thinking and working than when they are forced to use out-dated, as they see it, techniques. The choice however is also determined by the company culture and how you communicate using electronic media. Companies that mainly manufacture goods and where email is used for top-down communication have little added value from IBM's

approach. Organisations where knowledge and knowledge sharing is important will benefit.

## 10. Conclusion

When we look at the various areas that were discussed in this paper, the differences between Microsoft and IBM Lotus are small. Microsoft's Outlook client is regarded by many as more user friendly when used solely for email and calendaring. The differences with the latest version of Lotus Notes however are small and Lotus Notes is the better client when it comes to combining different sources of information. Microsoft scores points with the slightly broader support of mobile devices and the new solution for retention. IBM scores points in the areas of storage, archiving, interoperability, scalability, ease of upgrading and working with social software. In addition, it should not be forgotten that next to a messaging platform Lotus Domino is a powerful application platform. The largest victory however is scored by Lotus Domino in the Total Cost of Ownership. Independent sources indicate that Lotus Domino has a significantly lower TCO than Microsoft Exchange.

### 10.1. Upgrade or migrate?

In the end both systems are a good choice to build a stable messaging platform. Nevertheless many organisations will ask the question at an upcoming upgrade: Should we upgrade or migrate? Let's look at the different scenarios.

#### 10.1.1. Current Platform: Microsoft Exchange

The costs of a migration from an older version of Exchange to Exchange 2010 are quite high. As indicated earlier, you need extra servers to build the new Exchange environment. Because the user interface of Outlook 2010 has substantially changed from Outlook 2007 and Outlook 2003, some form of education should take place to familiarize users with this new interface. However, the cost of migrating to Lotus Domino will still be much higher. Although these costs due to the lower TCO of Lotus Domino will be earned back on the long run, a migration to Lotus Domino mainly makes sense when Lotus Domino is also used as an application platform.

#### 10.1.2. Current Platform: Lotus Domino

The costs of an upgrade to Lotus Domino are relatively low. When the environment is running well, the servers can be upgraded in-place so this can be done very quickly. The biggest costs will therefore be in upgrading the Lotus Notes clients. Lotus Notes 8.5 when compared to Notes 7 contains so many changes and new functionality that it is advisable to offer users some form of education.

Given the many enhancements in Lotus Notes and Domino 8.5 an upgrade to this version makes a lot of sense. A migration to Microsoft Exchange never does. Such a migration is, compared to an upgrade, very expensive, while the associated costs can never be earned back due to the higher TCO of Microsoft Exchange.

When we look at the complete picture it basically comes down to the following:  
In general it's best to stick to your current platform and upgrade this platform to the latest version. When you are currently using Microsoft Exchange there could however be reasons to seriously consider a migration to Lotus Domino.

## 10.2. Reasons for a migration

When we look at this conclusion, it's surprising that there's currently an opposite trend in the market. Although there are organisations migrating from Microsoft Exchange to Lotus Domino, there are currently more organisations migrating the other way. Why do these organisations make this choice? We have looked at a couple of these migrations to try to figure out their reasons and evaluate if these would hold under scrutiny. These are some reasons we found on why companies migrate from Lotus Domino to Microsoft Exchange:

### 10.2.1. Ignorance

Ignorance is not a nice term to use, because it suggests that companies didn't do their homework before making a decision. Nevertheless a lot of migrations appear to be based on ignorance. This is not so strange if you take into consideration the lack of information regarding comparisons between Lotus Domino and Microsoft Exchange. This lack of knowledge culminates in herd behaviour. When you hear of another company that they migrated to Exchange, it seems safe to do the same under the assumption that the other company did their research. A good example of this is the migration at Achmea.

*Following the merger with Interpolis insurance company Achmea decided to migrate its messaging environment from IBM Lotus Notes to Microsoft Exchange. "It was an easy choice" says program manager Steph Berghuis. "Exchange is the de facto standard in similar companies<sup>30</sup>.*

Apart from the fact that this program manager seemed unaware that many similar companies do use Lotus Domino as their messaging platform, this remark clearly reveals that the options haven't been thoroughly investigated. A comment by an employee in the article further proves this:

*Yet, not every employee is equally pleased with the new system. "I would welcome it if we went back to Lotus Notes" says Maud Hamel, who manages the hiring of external IT personnel for Achmea IT. Mail Program Outlook works fine but I miss the database features of Notes. A lot of acrobatics are required to use our databases with Outlook. "Hamel sees the transition to the new program as a step back. "You can't even simultaneously send and archive a mail!"*

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<sup>30</sup> [http://www.computable.nl/artikel/ict\\_topics/ecm/3090410/1277020/twee-emailsystemen-naast-elkaar-is-geen-optie.html#ixzz0yvW46eNN](http://www.computable.nl/artikel/ict_topics/ecm/3090410/1277020/twee-emailsystemen-naast-elkaar-is-geen-optie.html#ixzz0yvW46eNN)

Too little thought had gone into the integration with Domino applications. The clearest assessment on this migration, however, is stated in the comments by someone who was closely involved in the migration:

*Nice story of Mr. Berghuis, but I do not share his perception. How do you explain to someone that you phase out an environment that completely redundant (in case of server failure) without any interaction of individuals, without mail quotas, delivers more than 6000 applications.*

*What did the organisation get in return?*

*Mail quota and a lot of extra costs for system administration and maintenance (now by Getronics and Atos, which works out very cheap or maybe not?)*

*A SharePoint solution that's still in its infancy is not capable of hosting the applications that Lotus Domino hosts.*

*The already mentioned TCO made us cry when we saw how many servers had to be equipped during the pilot phase.*

*The current environment of Achmea at the time of the merger with Interpolis had more than enough headroom to host those extra 5000 users with a bit of extra storage!!*

*If you had phased out the Exchange platform, you would have had direct savings. Users would have been saved from their 10 MB mail file, yes 10 MB default, and they would have had direct access to 6000 applications. Did you say quick win?*

*You may explain to me "without problems worth mentioning" a bit more. That's not what I remember. I only remember the loss of a great solution for the organisation<sup>31</sup>.*

*A former project teammember and former Achmeaan.*

This leaves no room for doubt. With this migration, based on ignorance, Achmea / Interpolis wasted a lot of money, while their new environment is less capable than their old one.

There's a clear role here for the salespeople of IBM and their business partners to make sure their customers receive the right information to make a well informed decision. We also hope that this paper will help to make it easier to find correct information regarding these two platforms on the internet.

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<sup>31</sup> [http://www.computable.nl/artikel/ict\\_topics/ecm/3090410/1277020/twee-emailsystemen-naast-elkaar-is-geen-optie.html](http://www.computable.nl/artikel/ict_topics/ecm/3090410/1277020/twee-emailsystemen-naast-elkaar-is-geen-optie.html)

### 10.2.2. Standardisation on one platform / single vendor strategy

Frequently organisations express the desire to standardise as much as possible on the platform of one manufacturer. If a manufacturer can offer a product on every level there are some clear advantages. Products usually work better with other products when they come from the same manufacturer and if there are problems, there is only one manufacturer responsible so parties can't start pointing fingers. Because of Microsoft's monopoly on the desktop, this single vendor strategy usually boils down to a choice for Microsoft and this has initiated many migrations of Lotus Domino to Exchange.

It is however questionable whether this is a sensible strategy. Among the youth, Microsoft's Windows monopoly is under fire. In America, students are increasingly opting for a MacBook with MacOS. Some sources even quote 70% of new students. This is a trend that is bound to occur worldwide in the near future. When this group joins the workforce, they will prefer to use an OS in their work environment that is familiar to them and that will no longer be Windows.



The alternative to the single vendor strategy is the "best of breed" strategy. Although Microsoft's products are in general of good quality, they are not considered "best of

breed” in every area and it’s unlikely that this will change in the future. Frans Nauta<sup>32</sup>, chairman of the former Dutch innovation platform and columnist for radio program “BNR denktank” mentioned Microsoft in his column<sup>33</sup> as an example of a company that has lost the power to innovate. On SocialSoftwareBlog<sup>34</sup> we also discussed this. This means that a choice for Microsoft as single vendor holds the risk that your competitors who do use a “best of breed” strategy will have a competitive advantage.

When your competitors do have a competitive advantage with their “best of breed” strategy it’s hard to switch. Jon Brodtkin of Networkworld describes Microsoft’s 2010 software as the 'most complicated lock-in decision in years'<sup>35</sup>. A choice for this path will mean that when Microsoft decides to significantly increase the license fees, like they have done in the past<sup>36</sup>, you have no other choice than to pay.

### 10.2.3. User-oriented choices

It has been said that “directors do not want Exchange. Directors want Outlook”. There is no doubt that Microsoft's client enjoys a greater popularity than Lotus Notes. “My employees use Outlook at home”, is also frequently mentioned. For a migration however, this is a sophism. The latest Outlook Express client came with Windows XP, while the Outlook client is not provided in the standard consumer versions of Office. Young people rarely use Outlook at home. They use Gmail, Hotmail or other Web-based mail clients.

Employees who come from other companies will often know Outlook, but they likely won’t know Outlook 2010, while the user interface of this version has changed so much that knowledge of Outlook doesn’t mean that one can get started with this client right away. On the other hand, when it’s about a migration, people are familiar with Lotus Notes.

Another problem surfaces in this reasoning: Many organisations don’t see the need to offer any form of user education to their employees for the chosen messaging platform. Many user frustrations however are caused by not knowing what the tricks are for a particular client. From a broad experience I know that a course of 1½ hours

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<sup>32</sup> <http://www.nauta.org/>

<sup>33</sup> [http://www.bnr.nl/static/jsp/play.jsp?url=http://streaming.bnr.nl/csStreamingAudio/columns/y2010/m07/d06/nauta\\_20100706.mp3&titel=Frans Nauta](http://www.bnr.nl/static/jsp/play.jsp?url=http://streaming.bnr.nl/csStreamingAudio/columns/y2010/m07/d06/nauta_20100706.mp3&titel=Frans+Nauta)

<sup>34</sup> <http://www.socialsoftwareblog.nl/blog.nsf/dx/microsoft-nu-als-het-ibm-van-1985.htm?opendocument>

<sup>35</sup> <http://www.networkworld.com/news/2010/072910-microsoft-lockin.html?hpg1=bn>

<sup>36</sup> <http://www.zdnet.co.uk/news/desktop-os/2008/05/14/windows-small-business-server-prices-almost-double-39417160/>



for Lotus Notes 8.5 makes a huge difference in user's effectiveness to work with this client. The same goes for Outlook. This is therefore an investment with a very short return on investment period.

When we look at these reasons, it shows that the trend to migrate from Domino to Exchange is an unhealthy one. The expectation would be that many organisations in hindsight regret their decision to migrate. This is also what Gartner describes in their latest report<sup>37</sup>: IBM customers migrating to Microsoft will likely be disappointed.

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<sup>37</sup> <http://www.edbrill.com/edbrill/edbrill.nsf/dx/gartner-says-ibm-customers-migrating-to-microsoft-will-likely-be-disappointed>