
Understanding Digital Dashboard

Microsoft's Digital Dashboard system is designed as an add-on to Outlook 2000 personal information manager. We look at how support staff can make the experience enjoyable for their users.

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The word "portal" has become a vital part of the computing vernacular in recent times thanks to concentration on managing lots of information in a single place. Microsoft's Digital Dashboard provides a method of creating an information portal for use on end-users' systems, providing them with the means to include information pertaining to their particular function.

The software is designed to work in conjunction with Microsoft's Outlook 2000 software, a personal information manager that includes email, calendar and contact management facilities. The Dashboard product is available free from Microsoft's Web site (www.microsoft.com/solutions/km/DigitalDashboard.htm), and it is downloadable as a "starter kit" file. Once executed, the file installs the Digital Dashboard files within their own folder, and enables you to begin developing personalised pages.

Digital Dashboard works by appropriating the Outlook Today page within the Outlook software. This page is designed to be the top page in the hierarchy of different views and areas within the Outlook program. It is the page that appears automatically when you start up the software.

The most attractive thing about Digital Dashboard is its reliance on standard Internet technologies in order to work. When the starter kit is downloaded, apart from a few sample files and a set of introductory documents describing the product architecture, the only code of note introduced into Outlook is a couple of files designed to enable inclusion of Outlook objects in a standard Web page when building HTML pages using Microsoft's FrontPage Web design tool.

These .DLL files can be found along with SETOUTLOOKTODAY.REG, a small file containing a registry entry that enables end-users to change their default Outlook Today page. This frees up the user to point this page to an HTML file that has been created in Frontpage. Both of these are installed in the C:/PROGRAM FILES/DIGITAL DASHBOARD folder.

The material that you can put on a Digital Dashboard page is therefore limited only to what you can put on a Web page, making the product very flexible. Digital Dashboard pages can include static content such as images and text, but they can also be written to include ActiveX controls and Java applets. Such client-side technologies can make Digital Dashboard pages dynamic and interactive, but there are other possibilities.

Because the Digital Dashboard is essentially a window onto any Web page of the developers' choosing, it is possible to access Web pages that use the Active Server Pages (ASP) technology from Microsoft. This enables the information portal developed for your end-users to access pages with state management, meaning that the Dashboard can also access personalised Web services.

```
REGEDIT4
[HKEY_CURRENT_USER\Software\Microsoft\Office\9.0\Outlook\Today]
"url"="http://digidash/-home.htm"
```

Figure 1 - Registry entry telling your users' Outlook programs where to look for the Outlook Today pages.

The development of more recent technologies, such as Microsoft's Simple Object Access Protocol (SOAP), make it possible to access more complex server-level objects based on non-Microsoft standards such as the Common Object Request Broker Architecture (CORBA), extending the possibilities for your end-users.

The other technology included within the Digital Dashboard DLL file is the Outlook View control. This ActiveX control acts as a wrapper for the entire Outlook 2000 application file, giving you the ability to manipulate the Outlook object model from within a Web page. Microsoft software engineers explain that this is downloaded the first time that a Digital Dashboard-enabled system accesses the Internet. You can find it in C:\WINDOWS\DOWNLOADED PROGRAM FILES.

It is this control that the Dashboard DLL files enable FrontPage to access, by including an extra drop-down item on the program's Insert menu. It means that Frontpage developers can include Outlook controls within the standard HTML pages, so that users can still have access to Outlook-specific elements such as the task list, calendar and email folders. When used within the Digital Dashboard environment, the control effectively gives you elements of Outlook, within a Web page, within Outlook - a Russian doll approach to application customisation.

Nuggets

Microsoft calls the different information elements that you can incorporate into a Digital Dashboard page "nuggets". A nugget can be anything publishable on a Web page, including an ActiveX control, or simply a discrete portion of HTML code that can be packaged and re-used among different developers.

It is possible to embed corporate data into your users' Digital Dashboard pages as nuggets. Such data integration may be used to display data of, for example, regional ice cream sales for a sales director in chart form using one nugget, while

Dashboard for Support

While Digital Dashboard carries many obvious benefits for end-users, support staff might also want to consider it as a valuable asset in their own work. One potential application for support engineers whose users are running Windows NT is to use the performance monitoring capabilities of NT to display system activity on the local machine in an information nugget.

The performance monitor in NT and Windows 2000 displays information such as the amount of RAM the system has, how much is being used, whether it is paging to disk and what the CPU utilisation is. When applications are installed on Windows NT, they also register themselves with the performance monitor to provide more information. Making this information easily accessible on end-user desktop machines can provide support engineers with an invaluable way of finding out information from users over the telephone without having to physically attend the users' site.

The ability to collate information from various sources, viewing them in a single place, also has the potential to make life much easier for harried support technicians. It is theoretically possible to produce HTML code that would collate information from different users' desktop machines and display them in an information nugget at the support engineer's own Digital Dashboard. Be warned, though, that Microsoft software engineers argue this may be stretching the capabilities of the product, and recommend a dedicated tool such as the Systems Management Server.

Nevertheless, the ability to put Exchange discussion folders into the Digital Dashboard, and to include code that would reproduce the MSN Messenger instant messaging program on the Dashboard page as an information nugget, presents support engineers with an ideal way of accessing a central knowledge base from a single application. Being able to hand-off problems via chat or a discussion group from Outlook in a follow-the-sun support environment, or to query all your peers at once about a difficult technical question when on the phone to an end-user, can be invaluable. Having it in a single application makes for even greater efficiency.

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showing a map produced in Microsoft Excel, populated with data about the day's weather. Such data can come from many different external sources, including ODBC-compatible databases such as SQL Server.

Data can be made available in either read-only or interactive form. However you connect your users' systems to these external data sources, you will use the ActiveX DataSource control which, while not displayed on the Digital Dashboard page, is nevertheless resident during such data accesses. It functions as a gateway between the page and the place where the data is held. Support staff skilled in Visual Basic can create complex links to such back-end systems, but Microsoft advises doing it from Excel, using the PivotTable ActiveX component. This enables you to take data from the back-end OLAP cube and model it to fit your users' requirements.

A Chart control is also available to depict the data in graphical form. This control will use the PivotTable control to achieve the end results. Once the data has been published through Excel in this way, you can simply copy the HTML into the

Producing Content

There are three main issues for support staff to consider when deciding what type of content they will make available to their users:

Bandwidth

Many developers can go overboard and include lots of dynamic content that is available from the Internet. Examples include online traffic cameras, which is one example used by Microsoft in its demonstrations. Others include constantly updated news feeds. Unless handled properly, giving access to such automatically updated content could swamp your Internet connection, and the problem will increase with the number of users you are supporting.

The simple solution is either to reduce the amount of Internet-based content available and restrict it to in-house resources, or to cache the data using a local proxy server. You will still need a healthy switched LAN infrastructure behind your firewall, but it will free up your more expensive WAN link.

Security

Security is disabled if you link to pages within Outlook using the http:// prefix. If you are using frames within your users' Outlook Today page, browsing security is also disabled. One way to protect your users is to ensure that any hyperlinks placed within the Outlook Today page are navigated within the parent frame, rather than within a subframe. This will provide them with security alerts when accessing content online. Nevertheless, it is therefore even more important than normal to make sure that any content from the Internet that you include as part of your users' Outlook Today pages is trusted.

Content Support

Because the browser functionality within Outlook 2000 is restricted to the Trident rendering engine, many of the features within Web pages may not function properly. According to Microsoft's material, forms will not work properly, frames will not function as expected, and it will be difficult to display tabular data. Consequently, if you want these more advanced features, you will need to change settings in the Windows registry:

```
[HKEY_CURRENT_USER\Software\Policies\Microsoft\Office\9.0-
\Outlook\Webview\mailbox]
```

```
"url"=http://digidash/home.htm (enter the location of your digital
dashboard here)
```

```
"navigation"="yes"
```

This will carry a performance overhead because you will be forsaking the DLL-based display mechanism for the full Internet Explorer approach.

“Information can be drawn out of the directory system using ADSL, Microsoft’s tool for querying the hierarchical infrastructure.”

Digital Dashboard page to make it available to your users. A Spreadsheet component can also be used to publish the data inside a mini-spreadsheet containing many of the same features that you will find in Excel. This will work for data that is already contained within an Excel spreadsheet. To publish data based on queries to external sources, you can produce an Interactive PivotTable and publish it to a Web page.

Deployment

The Digital Dashboard software is an ideal means of empowering your users. Given that they will probably be distributed out across different divisions and network segments within an organisation, it is vital to handle the deployment of the system as effectively as possible. There are two different methods of deploying the system, each with their own strengths and weaknesses.

The first is to replace the existing DLL file within your users' Outlook 2000 installations with a new one containing the new Outlook Today page, developed by your IT department to reflect the information that your users need to see. The downside to distributing DLL files containing custom Outlook Today pages is that the information portal becomes more difficult to administer. If you want to change the initial page that is displayed, you will need to send an update to every machine in your network. This is not an insurmountable problem, however; Microsoft's System Management Server enables you to distribute files quickly to remote machines.

The second approach is simpler, and involves putting your custom-designed Outlook Today page in its original HTML format on a central server. You can then send a single registry entry in the form of a .REG file that will tell your users' Outlook programs to look for that page whenever they are told to access their Outlook Today pages.

Microsoft's overview of Digital Dashboard development, contained in the starter kit, lists the registry entry as shown in Figure 1. It is possible to send the registry entry through to end-user machines using the Office 2000 Custom Installation wizard, or you can simply put it on a Web page and get your users to surf to it and select it.

One advantage of the first approach is that the DLL file method allows for faster load times. Because the file is located on the local hard drive, your users will be

“If your users’ discussion groups are powered by Microsoft Exchange, then you can simply add the relevant discussion folder to the user’s Public Folder Favorites list.”



Figure 2 - Microsoft has produced its own MSNBC-focused file for use with Digital Dashboard.

able to access the initial page much more quickly. Note, however, that the page will still need to access external sources for dynamic content. Another reason for the difference in speed between the first and second approaches is that, when loading a Web page, Digital Dashboard has to process it through the built-in Trident rendering engine, which Outlook uses as a cut-down version of Internet Explorer to save on system resources and increase performance. The DLL does everything natively, removing such processing from the equation.

If you decide to publish an Outlook Today page using a central Web server, it is still possible to personalise the nuggets of information that your users see. This can either be done using the Active Directory service that is a part of Windows 2000 Server, or using registry entries on the desktop system.

Information can be drawn out of the directory system using ADSI, Microsoft's tool for querying the hierarchical infrastructure. The information display can be personalised according to criteria such as the end-user's department or location. Microsoft's material also recommends storing user preferences in the registry using the

```
window.external.Setpref( <strStringValueName>,<strStringValueData> )
```

methods, or by taking advantage of the Web-based nature of the Digital Dashboard technology to provide the Web server with the ability to store user states in the form of cookies.

For the Road

One of the biggest issues facing support staff when trying to maintain their users' Digital Dashboard functionality is road warrior support. Many staff will need to take laptop computers with them when they travel, and will consequently not always have access to their network connection. It would be useful for them to be able to take as much data with them as possible.

If your users' discussion groups are powered by Microsoft Exchange, then you can simply add the relevant discussion folder to the user's Public Folder Favorites list. Then select which folder you would like available for offline use in the Offline Folder Settings dialog box (accessible via the Tools/Synchronise menu). Being able to use the full version of Internet Explorer 5 solves this problem, providing synchronisation support.

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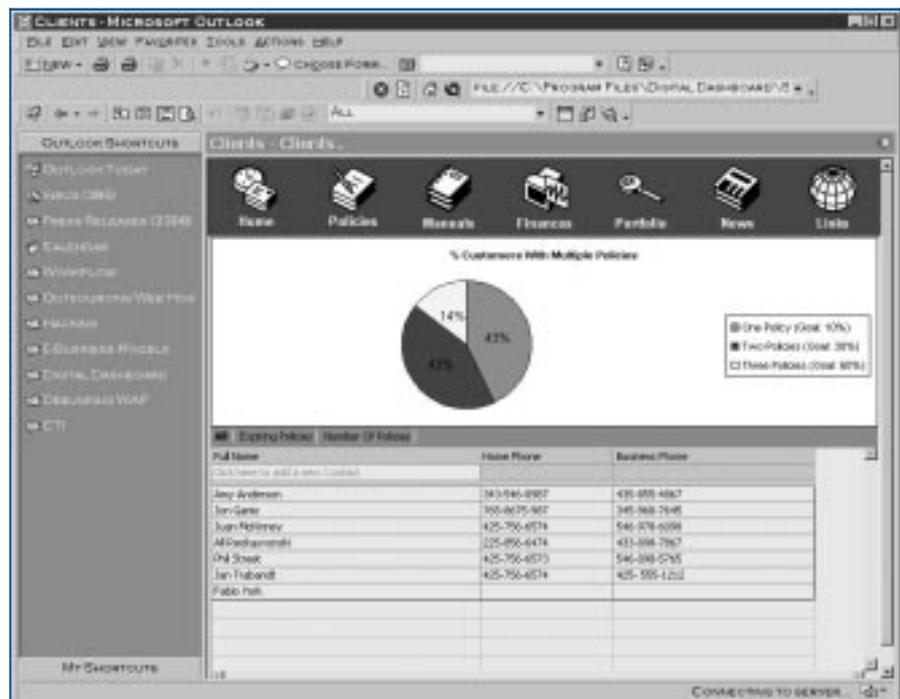


Figure 3 - One of the sample dashboards provided with the Starter Kit. You can lift useful code from these files.



Figure 4 - Use Frontpage to manipulate Outlook Objects in your dashboard design.

The Internet Explorer Synchronisation Agent takes care of synchronising the Internet and intranet content for offline use. You can set up your users' Internet Explorer system to make specific pages available in this way by including them in the Favorites folder and checking the Make Available Offline box. You can specify how many levels of hyperlinks from that page to store by using the Properties button from within the same dialog box.

Microsoft says that it is not immediately obvious how to make the Outlook Today page itself available offline and to synchronise it. Presumably, those members of support staff who have distributed the page to their users in DLL form will have an easier time of it, because the page will already be on the hard drive. Nevertheless, there are ways to do it when the page is centrally stored. The company recommends creating a public folder and making the Digital Dashboard page the home page of that folder. Outlook Today will then look within the Internet Explorer cache for the page when offline.

Conclusion

Digital Dashboard is an excellent way to enhance your users' efficiency by bringing lots of information together into a single place. Furthermore, it's free, making it a no-brainer for staff whose end-users are already using Outlook 2000. Nevertheless, as with all enabling technologies, there are decisions to make that will affect the level of sophistication that you can offer your users, along with the performance of their personal information portals. Your evaluation of the trade-off between these two criteria will depend largely on the information requirements of your end-users, along with the efficiency of your network infrastructure and your use of tools such as proxy servers.

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