**User Options.** These include navigation selections. Navigation buttons, home, website map, searches. **The user options must include navigation to a library of reports,** **selections to browse the business dimensions and the attributes within each dimension, and interface to business metadata.**

**Almost personalized display.** Users can have a personalised view of data in the DWH. On fb u can personalise your profile the way you want it to be.

**User Support.** In a lengthy process, a user must have the reassurance that nothing will be lost in the middle of the process. The user must know where he or she is in the process so that proceeding further will not be interrupted. During access to the Web-enabled data warehouse, let the user know the intermediary status information. For example, in running reports, provide the status of the reports to the users.

**User Experience.** Users are eager to visit and stay on a page that is nicely formatted. If there are too many distractions and problems, users tend to shun the pages. Be judicious in the use of fonts, colors, blinking graphics, bold texts, under- lines, audio clips, and video segments.

**Personalized Information.** It is almost impossible to provide predefined queries that will satisfy the requirements of everyone in the value chain, so strive to provide ad hoc capabilities for asking any type of question related to any type of data in the warehouse.

**Self-service Access.** As the Web opens up the data warehouse to more users, both inside and outside the enterprise, tools must provide autonomous access to information. Users must be able to navigate and drill out to information sources. It must be practically an environment with self-service access where users may serve themselves.

**Performance.** Industry experts agree on a less than 10-second response time for a page to deliver the first screen of useful contents. The page may keep loading for a longer time, provided useful contents can be seen within 10 seconds. Design for the modem with the lowest speed. Display navigation buttons immediately. Reveal contents in a planned order: the useful ones immediately, followed by the ones at the next levels of usefulness. Reconsider slow and redundant graphics. Use page caching techniques. Ensure that the physical database design enables fast response times.

Java. Do you need advanced 3-D visualization, drill-through, drag and drop, or similar high-end functionality? Then Java is the technology for you. Java is available on all major client platforms. As Java applets are not allowed to write to hard drives or print to local printers, for some applications this could pose a problem. Because Java is an interpretive language, it is somewhat slower than compiled languages. The desktop must be equipped with a Java-enabled browser. As Java applets have to be downloaded from the server every time, sometimes the long download times may not be acceptable. Java is suitable for an interactive client, where long load times may not be a factor.

ADO. This is Microsoft’s solution for distributed Web-based systems. ADO, implement- ed as Microsoft DLLs or data link libraries, can be installed by downloading from a server using a browser. As expected, ADO runs only on Windows platforms, thereby excluding UNIX and Mac configurations. Being a compiled interface, ADO is faster than Java. **ADO/MD, Microsoft’s extension to ADO as part of Pivot-Table Services, can be used to create ActiveX controls in Visual Basic to manipulate data in OLAP services from a Web page**. ADO is restricted to Windows platforms where you have good control of DLLs.

Plug-ins. These are browser-specific programs that execute within the browser itself. Plug-ins can be installed on the local drives. Because each browser needs its own plug-in, proach. OLAP clients on multiple platforms, especially those using Java, may have a problem because of limitations in bandwidth.

* Consolidation: involves the aggregation of data such as ‘roll-ups’ or complex expressions involving interrelated data. Foe example, branch offices can be rolled up to cities and rolled up to countries.
* Drill-Down: is the reverse of consolidation and involves displaying the detailed data that comprises the consolidated data. Drill-down for details. The user of metadata can drill down and proceed from one level of metadata to a lower level for more information. For example, you can first get the definition of a data table, then go to the next level for seeing all attributes, and go further to get the details of individual attributes.

**Strengths**

* Works with any browser.
* Platform-independent.
* Open standard.
* Static graphics.

**Weaknesses**

* Only moderately interactive. You cannot interact with HTML pages.
* Static pages. Pages do not change, all users view the same data at the same time irrespective of their location unless web admin changes the content.
* Some platform limitations with dynamic HTML.

ActiveX Data Objects (ADO) is an [application program interface](http://searchexchange.techtarget.com/definition/application-program-interface) from Microsoft that lets a programmer writing Windows applications get access to a relational or non-relational [database](http://searchsqlserver.techtarget.com/definition/database) from both Microsoft and other database providers. **For example, if you wanted to write a program that would provide users of your Web site with** [**data**](http://searchdatamanagement.techtarget.com/definition/data) **from database or an** [**Oracle**](http://searchoracle.techtarget.com/definition/Oracle) **database, you could include ADO program statements in an** [**HTML**](http://searchsoa.techtarget.com/definition/HTML) **file that you then identified as an** [**Active Server Page**](http://searchwindowsserver.techtarget.com/definition/Active-Server-Page)**. Then, when a user requested the page from the Web site, the page sent back would include appropriate data from a database, obtained using ADO code.**

ActiveX Data Objects (ADO) is an application program interface from Microsoft that lets a programmer writing Windows applications get access to a relational or non-relational database from both Microsoft and other database providers.

A **plug-in** (or **add-in** / **addin**, **plugin**, **extension** or **add-on** / **addon**) is a [software component](http://en.wikipedia.org/wiki/Software_component) that adds a specific feature to an existing [software application](http://en.wikipedia.org/wiki/Software_application). When an application supports plug-ins, it enables customization (to alter to suit individual requirements). The common examples are the plug-ins used in [web browsers](http://en.wikipedia.org/wiki/Web_browser) to add new features such as search-engines, virus scanners, or the ability to utilize a new [file type](http://en.wikipedia.org/wiki/File_type) such as a new video format. Well-known browser plug-ins include the [Adobe Flash Player](http://en.wikipedia.org/wiki/Adobe_Flash_Player), the [QuickTime Player](http://en.wikipedia.org/wiki/QuickTime_Player), and the Java plug-in, which can launch a user-activated [Java applet](http://en.wikipedia.org/wiki/Java_applet) on a web page to its execution on a local [Java virtual machine](http://en.wikipedia.org/wiki/Java_virtual_machine).

**Java** is a general-purpose [computer programming language](http://en.wikipedia.org/wiki/Programming_language) that is [concurrent](http://en.wikipedia.org/wiki/Concurrent_computing), [class-based](http://en.wikipedia.org/wiki/Class-based_programming), [object-oriented](http://en.wikipedia.org/wiki/Object-oriented_programming), and specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "[write once, run anywhere](http://en.wikipedia.org/wiki/Write_once,_run_anywhere)" (WORA), meaning that [compiled](http://en.wikipedia.org/wiki/Compiler) Java code can run on all platforms that support Java without the need for recompilation. Java is one of the most popular programming languages in use, particularly for client-server web applications, with a reported 9 million developers.