

QUICK TAKE



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Oracle Application Express Helps Build Web Applications Quickly

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EXECUTIVE SUMMARY

A lesser-known but powerful application development tool that comes freely bundled with an Oracle DBMS is Oracle Application Express. Over the past year, the adoption of Oracle Application Express has increased twofold mainly because it is easy to use, saves money when consolidating spreadsheets and desktop databases, and comes bundled for free with Oracle databases. Although Oracle Application Express is not a replacement for Java or .NET programming environments, it can help develop simple Web-based applications that access Oracle databases quickly.

TARGET AUDIENCE

Application development professional, enterprise architecture professional, chief information officer

APPLICATION EXPRESS IS AN EASY-TO-USE APP DEV TOOL

Over the past 12 months, Forrester interviewed 25 Oracle enterprises to find out their experiences using Oracle Application Express (APEX). All those interviewed found APEX to be an easy-to-use application development tool that helps to develop Web applications very quickly. Although APEX is unlikely to be the primary reason for customers to migrate from other DBMSes to Oracle, it does help customers consolidate many distributed desktop databases and spreadsheets to a centralized repository for improved data sharing, enforcement of higher data security standards, and enhanced manageability. Many customers are using APEX to develop Web applications that perform simple lookup of data, generate online reports, and implement data entry forms.

“We currently have 35 applications that use Oracle Application Express, and that’s likely to grow to 50 to 75 by the end of this year. These applications are key business applications including financial calculators, rate sheets, and loan and funding application processing. There are up to 5,000 users who are using these applications built using Oracle Application Express running on Oracle databases.” (Chase Home Equity)

Oracle Application Express is an application development tool for developing Web applications that access data from Oracle databases, whether it is read-only or transaction-related activity. All of the APEX components reside within the Oracle database, and therefore APEX integrates with regular DBMS roles and privileges. APEX not only comes with built-in wizards for easy point-and-click application

development, but it also offers interfaces to PL/SQL, SQL, and HTML to create rich applications. APEX integrates with the DBMS engine, which means that it seamlessly works with Oracle Real Applications Clusters (RAC) and regular database backup and recovery procedures. It also allows integration with advanced database features such as Oracle Text, OLAP, spatial and fine-grained access control, and auditing, offering a comprehensive application development environment.

APEX Offers Several Benefits That Make It Appealing To Customers

Oracle has come a long way in understanding what customers really want when it comes to accessing data quickly and easily, and APEX delivers such an environment. The tool offers several benefits, including:

- **An easy-to-use application development environment.** The APEX is a user-friendly Web application development tool for users who have some basic understanding of programming concepts. Simple Web applications can be created with a few mouse clicks, while advanced application development capability exists with interfaces to PL/SQL, SQL, and HTML code.

“We have been using Oracle Application Express for two years, and it has been a very productive tool for us. The main reason we started using it was that we were able to develop Web applications very quickly with minimal effort. We have already replaced some of our forms-based applications with Oracle Application Express and plan to replace others, as well.” (Corporate Express)

- **Consolidation of desktop databases and spreadsheets.** Many customers have found that APEX can help consolidate desktop databases and spreadsheets into a more centralized, manageable, and shareable environment. Such consolidation also helps lower cost because APEX comes bundled with Oracle databases. With APEX, some large enterprises have successfully eliminated hundreds of Microsoft Access and FileMaker desktop databases and Microsoft Excel spreadsheets.

“With Oracle Application Express we were able to consolidate hundreds of desktop databases into a single Oracle data repository. The benefits in cost savings and improved manageability have been huge. We are now also looking at consolidating many of our spreadsheets with Oracle Application Express.” (Large telco)

- **Lower costs of application development.** Oracle Application Express comes bundled with all Oracle databases at no additional cost and therefore offers a very cost-effective application development environment. In addition, it allows Web applications to be developed and deployed quickly and with minimal effort.

“Our experience on Oracle Application Express has been excellent. It’s easy to use, very productive, and quick to deploy. It has in some cases replaced our Java and .NET

applications. Oracle Application Express cuts development time in half, besides reducing IT operating costs.” (Chase Home Equity)

- **Tight integration with Oracle DBMS.** Oracle Application Express is integrated with the database schema and internal DBMS structures, which offers reliability. It works with Oracle RAC, and regular backups and upgrades do not affect Oracle Application Express deployments.

“One of the key advantages we found with Oracle Application Express is that it’s an integral part of the DBMS. Any database backup or recovery we normally do also automatically takes care of Oracle Application Express.” (eCommerce company)

- **Real-time interactive application development.** Another characteristic of APEX is that you can build applications in prototype mode and add additional requirements over time. With APEX, you can even start using the Web application before it has been completed, one of the key reasons why developing applications using APEX is faster than using Java or .NET programming environments.

“Developing applications using Application Express is very interactive. You can start by putting together a prototype very quickly and adding to it. Once you get over the learning curve, which is small compared with other application development tools, you can exploit Application Express very quickly. We have developed a Web-based application from scratch in about a week.” (Shell)

Some Concerns Exist But Are Disappearing

Although customers have raised some concerns, these are usually outweighed by the product’s benefits. Most customers are concerned about:

- **The future of APEX.** Having used WebDB in the past, a product that had similar functionality and was killed by Oracle, some customers remain skeptical of APEX’s future. As a result, some enterprises are waiting longer to decide whether they should adopt APEX. Forrester finds that Oracle is putting more efforts into APEX than it put into WebDB, and has also established a road map for Version 3.

“We have been a WebDB user in the past and developed several business applications on it, running on Oracle 9i back-end database. When Oracle released Oracle Application Express, we were left homeless. There was no migration path from WebDB to Oracle Application Express. We were told to rewrite our applications using Oracle Application Express — which basically meant throwing away our old WebDB investment. We hope that Oracle Application Express does not go through the same fate.” (Discrete manufacturer)

- **Vendor lock-in.** APEX can only be installed on Oracle databases, which limits the usage. In addition, any code written to enhance the Web application, such as using PL/SQL programs, further creates a vendor lock-in because of proprietary SQL extensions.

“Although Oracle Application Express forces you down the vendor lock-in path, considering that it only takes one-tenth of the time to develop applications, using it is certainly worth the investment. You can either write a 100% portable application with more time, effort, and money, or write applications quickly and with less cost. Oracle Application Express is a good fit for the latter.” (Technology company)

- **Manageability when dealing with many database instances.** The APEX has to be installed on every database that it uses data from, unless database links are created between various Oracle databases. So sharing forms, code, and application can become difficult when dealing with multiple Oracle database instances.

“As far as Oracle Application Express is concerned, we found that it’s good for a single database/single repository use. But when it comes to accessing multiple databases, it can be a challenge, since you have to create distributed joins — which requires security considerations and more administration efforts.” (Discrete manufacturer)

- **Database performance.** Although APEX typically does not add overhead to the database server, any unoptimized queries or poor indexing schemes could affect performance. Therefore, carefully plan when using APEX on mission-critical production databases. Oracle recommends using resource limits and profiles to control system resources.

“Although end users can use APEX, we don’t allow it. End users are not able to work as DBAs, and if the usage is wrong, it can kill performance. End users don’t know the tables, or how or what to access; they are not developers.” (Corporate Express)

RECOMMENDATIONS

APEX IS SUITABLE FOR DEVELOPING WEB APPLICATIONS FOR ORACLE

Enterprises looking for a quick and easy-to-use application development tool for Oracle will find APEX a good fit. APEX is not a replacement for Java or .NET programming environments, but it can help develop and deploy Web applications quickly. Enterprises that are planning to use APEX should:

- **Initially limit the application development only to tech-savvy users.** Although APEX can be used by end users and business users, limit the application development mainly to tech-savvy users including developers and DBAs. Having an understanding of the data model and knowing what data to access are key requirements for developing applications using APEX.

- **Look at consolidating spreadsheet and desktop databases.** One of the key benefits of APEX is data sharing, and enterprises can leverage this by consolidating spreadsheets and desktop databases.
- **Start small and grow.** Initially, deploy APEX on one or two Oracle databases mainly to understand the benefits and issues. Also consider developing internal standards and policies, documenting best practices, and sharing templates and forms to maximum productivity.
- **Nail down any data-security-related issues.** Extra security measures should be taken when deploying APEX, especially if the database deals with private data. Perform routine audit of role and user access on databases that run APEX applications.
- **Limit the development of APEX on production databases.** Similar to application development policies for other programming environments, APEX should not be used directly on production environments.
- **Train the developers and DBAs.** Although APEX is relatively easy to learn and use, to take full advantage of the product, consider training developers and DBAs.