Maximize the ROI of Your Oracle Investment utilizing APEX

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Who Am I?

➢ Principal Consultant and Founder of Mauli Systems, Inc.

➢ Oracle Certified Professional (OCP)

➢ 30 years of IT experience - as data architect, systems architect, developer and DBA.

➢ 20 Plus Years of IT Consulting experience.

➢ Author of Registered Copyright Software "MSI Data Certification System".

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Disclaimer

This presentation is intended to provide you an overview of Rapid Application Development Tool - Oracle Application Express, based on the knowledge and experience that we have as well as based on the material publicly available from various sources including Oracle. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code or functionality.

Maximize the ROI of Your Investment utilizing APEX

➤ We will review the overall technology architecture of APEX and provide a comparison with other development technologies.

➤ This presentation demonstrates

  ➤ how and where APEX can be used to significantly reduce the overall cost of application development

  ➤ improve time to market

  ➤ maximize existing investment in Oracle technologies and skills within your organization.

Agenda

➢ Why Introduce Another Application Development Tool and Why APEX?

 ➢ APEX vs. Other Technology Options

➢ APEX FUD (Fear, Uncertainty, and Doubt)

➢ APEX Architecture Overview

➢ Quick Demo

➢ Q&A

Why Introduce Another Application Development Tool?

Application Development Technology is continuously evolving. Introduction of new tools are a natural part of the technology lifecycle

- Starting from Mid 1980s – Client Server Technology
  - Oracle Forms
  - PowerBuilder
  - Centura (Gupta SQL)
  - VB, FoxPro, etc.
- Late 1990s – Web Technology
  - Dreamweaver / JSP
  - ColdFusion
  - ASP, etc.
- Mid-2000s - Enterprise Application Development Tools
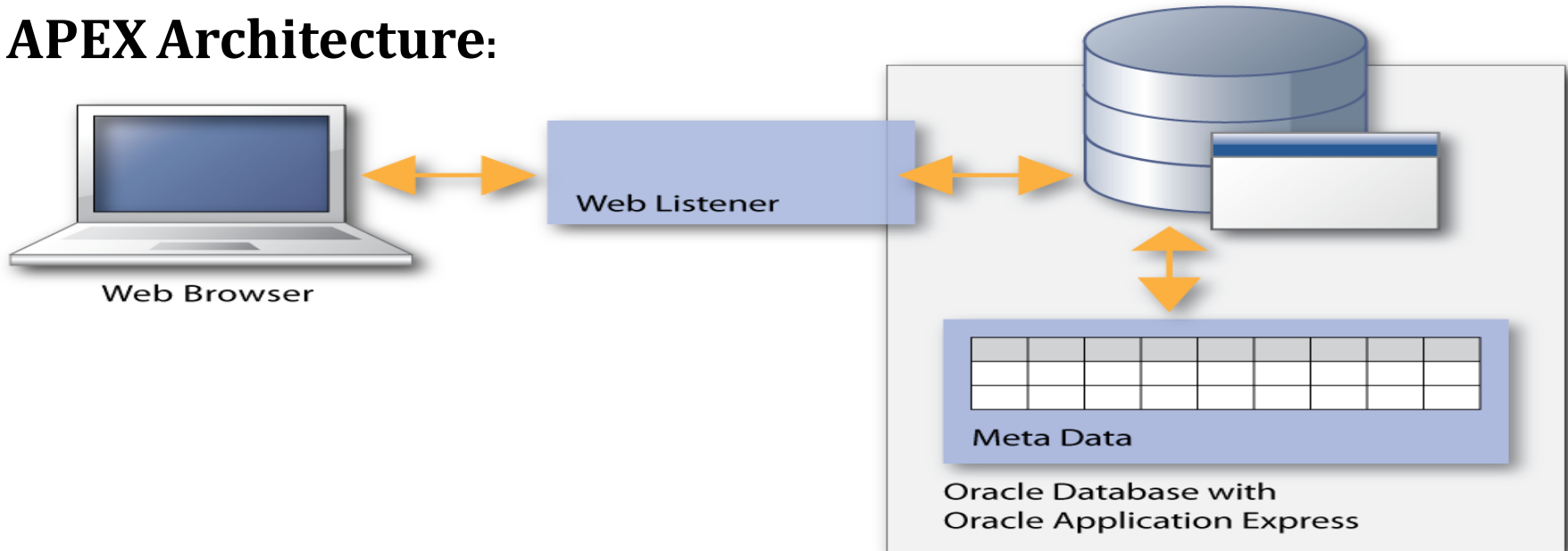 - Java
  - .Net

Why Introduce APEX?

➢ APEX - Architecturally lightweight compared to other platforms

➢ Maximizes ROI, Leverages existing Oracle technology and skill set Investments

➢ APEX is a FREE Oracle built-in Feature

➢ Can compliment existing technology eco-system

➢ Professional, robust, secure applications, with Quick Time To Market

Lightweight compared to other platforms
Contrast APEX vs. .Net / Oracle Solution

APEX Architecture:

Web Browser

Web Listener

Meta Data

Oracle Database with
Oracle Application Express

Sourced from Oracle

➢ SQL, PL/SQL, HTML, Java Script
➢ Browser
➢ OS Independent – Oracle Dependent
➢ Oracle Access Manager (Optional)
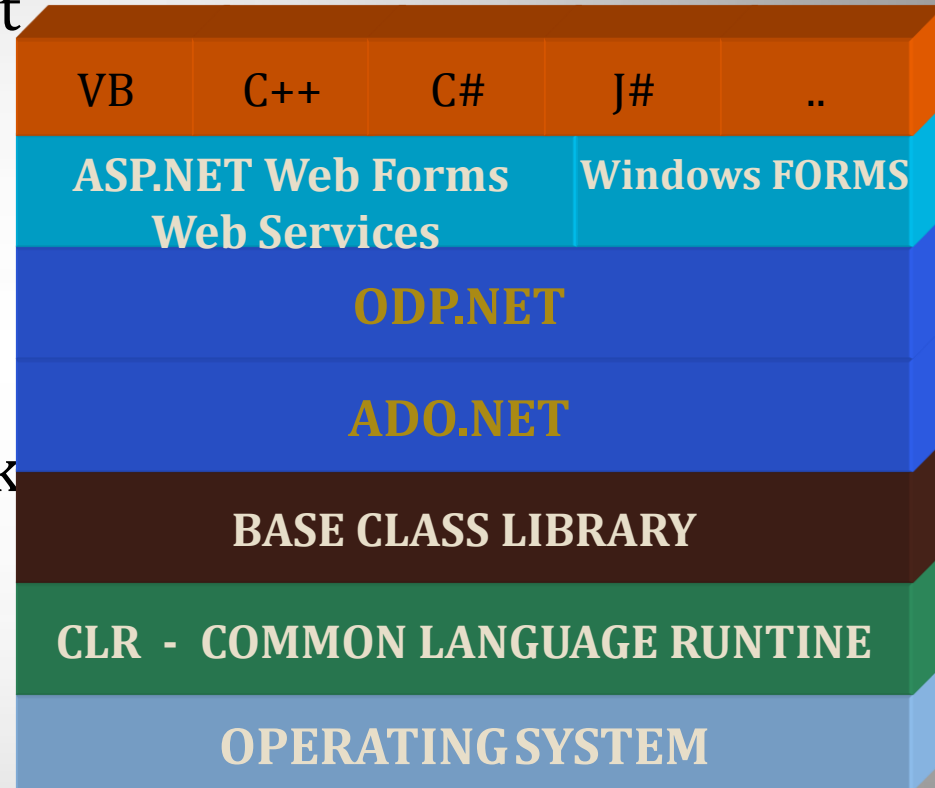➢ Team Development (FREE)

Heavyweight compared to APEX
Contrast APEX vs. .Net / Oracle Solution

Typical .Net Architecture with Oracle:

➢SQL, PL/SQL, HTML, Java script

➢* Visual Studio

➢OS Dependent

➢ADO.NET, ODP.NET

➢OO

➢C#, VB, C++…

➢Nhibernate /Entity Framework

➢CLR - Framework 2.0 – 4.5

➢Custom Framework

➢MVC/MVP Architecture

➢IIS

➢AZMAN

➢* TFS

* = Separate license for developers

VB	C++	C#	J#	..
ASP.NET Web Forms Web Services			Windows FORMS	
ODP.NET				
ADO.NET				
BASE CLASS LIBRARY				
CLR - COMMON LANGUAGE RUNTINE				
OPERATING SYSTEM				

APEX Application Development ROI

- Lowers overall cost of
  - Development
  - Deployment
  - Maintenance
  - Upgrades
- Quick Time To Market
  - Business benefits by deploying solutions quickly
  - Free up resources – available for next project
- Maximizes existing investments in Oracle
  - APEX is FREE – Including Support
- Leverages existing skilled Oracle developers to contribute more broadly

Leverage existing Oracle Skill set Investments

Client/Server e.g. Oracle Forms	Oracle APEX	Microsoft .Net (Web)
SQL & PLSQL	SQL & PLSQL (60%)	SQL & PLSQL
Forms	APEX Framework	Visual Studio, ADO.Net, ODP.Net
HTML*	HTML	HTML
JAVA Script*	JAVA Script	JAVA Script
		OO
		C#, VB, J#, ..
		MVC/MVP Architecture
* applies to forms running under JVM		Nhibernate / Entity Framework (LINQ)

Compliments existing eco-system
Where does APEX fit in?

Sourced from Oracle
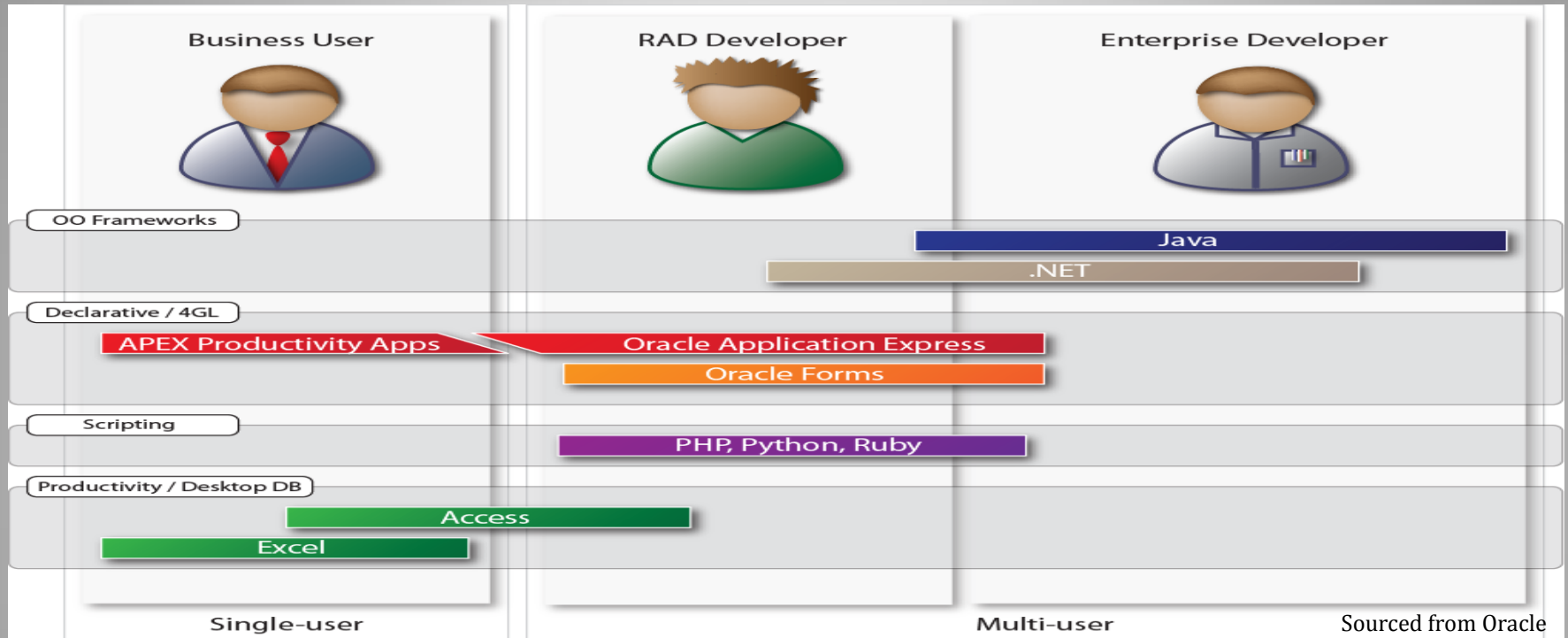
> APEX in the same spectrum (Declarative / 4GL, RAD) as Oracle Forms. APEX can be used for converting client-server applications, including Oracle Forms Applications.

> .Net and Java - considered as Enterprise Development platforms

Compliments existing eco-system
Leverage the full spectrum of the Oracle database's capabilities:

- ➢ SQL
- ➢ PL/SQL
- ➢ VPD / FGAC
- ➢ RAC
- ➢ Spatial
- ➢ OLAP
- ➢ Flashback
- ➢ Web Services
- ➢ Text
- ➢ Multimedia
- ➢ Analytic Functions
- ➢ Globalization
- ➢ XML DB
- ➢ eBusiness Suite

Sourced from Oracle

Professional Applications,
Quick Time To Market

RAD Developer

- How well does your existing development platform support RAD?
- Do you need to enforce developers to use an enterprise application development tool to develop all the applications ?
- What % of In-house Applications are small scale (departmental) vs. enterprise ?
- Cost effective solution for
  - Rapid application prototyping
  - Tactical Solutions

APEX FUD (Fear, Uncertainty, and Doubt)

- Is APEX Scalable and Secure ? Yes
  - APEX resides within the Oracle DB it inherits all the strengths of the DB in relation to scalability, security, reliability, etc.
- Is not the architecture too simple to scale? No
  - Simple Architecture with minimum network overhead and scales as you scale the Database.
  - APEX also works in RAC environment.
- Is APEX only a personal productivity tool similar to Excel or Access? No
  - APEX is capable to handle complex applications with a lot of users and large volume data. Keep data related logic and business rule in the database ("Thick Database")

APEX FUD (Fear, Uncertainty, and Doubt)

➢ Is APEX Extensible ? Yes

    ➢ APEX provides Web 2.0 features out-of-the-box, such as Interactive Reports, Flash Charts, etc., but can also be extended with JavaScript, JS Libraries and AJAX to incorporate more Web 2.0 capabilities.

    ➢ Extend APEX framework by adding plug-ins

➢ Will I need additional costly tools? No

    ➢ Develop, Deploy, Maintain using Internet Browser

➢ Do we need to pay for additional license? No

    ➢ FREE With the Database License, including support

APEX FUD (Fear, Uncertainty, and Doubt)

- Are skilled developers readily available? Yes
  - Growing APEX developers community
  - Require 60-70% of SQL – PLSQL skills
  - You have to have sql/plsql developers.
- Will there be a significant learning curve? No
  - There is no significant learning curve for Oracle developers
  - Easier Learning curve compared to .Net or Java

APEX FUD (Fear, Uncertainty, and Doubt)

- The notion about something that's free is too good to be true…
  - Try it out….
- Will Oracle charge for APEX in the future?
  - Oracle provides APEX, SQL Developer, etc. at no-cost to encourage development in Oracle Technologies and increase utilization of the Oracle Database
- Is Oracle Committed to the platform?
  - Apex is in it's 10th major release since 2004

APEX FUD (Fear, Uncertainty, and Doubt)

- Is there any additional cost for maintenance on technology? No
  - It is metadata driven, code resides in DB.
  - No additional cost for Backup, Recovery, DR.
- Do we need additional tool for version control? No
  - Version Control for APEX is not that different from PL/SQL
- How well it integrates with other applications?
  - APEX applications are web based. Can be easily integrated with outside data sources using Web Services and DB links.
  - Integrates with AD and SSO solutions
- Do I need another set of UI Standards? May be
  - You can use any built-in UI standards or one-time investment for customization.

APEX FUD (Fear, Uncertainty, and Doubt)

- Is there market place adoption?
  - Catalog of Commercial Applications
  - Catalog of Internet Applications
  - Catalog of Consulting Companies
  - Oracle APEX Site
  - ODTUG - Oracle Development Tools User Group

- ARIA People Search is Oracle's most used internet application with a peak load of over 30,000 page requests / hour running on a single 2 CPU server

- AskTom is a very popular and highly available internet site

- www.thinkquest.org has over one million users running on an Oracle RAC environment

Customer Feedback

Saving $200,000 with Application Express

"At National Air Traffic Controllers Association (NATCA), we looked at the use of ApEx by very inexperienced developers to build a vital and successful internet application for a 15,000 member organization. Because of this powerful, versatile and convenient tool, NATCA was able to save $200,000 on internet software and come away with a highly customized product capable of evolving and changing with new requirements at almost no cost to the organization, as well as develop its own ability to build and deploy other internet apps to satisfy future needs. ".

Bill Holtzman, National Air Traffic Controllers Association, you may contact him at skyworker@comcast.net.

Customer Feedback

"At Northgate Revenues & Benefits, we have used APEX to replace our **legacy Oracle Forms system comprising around 1500 Forms**. Our user interface has **10,000 end users daily**, across 172 clients, who this year sent out over 12 million Council Tax annual bills worth Â£15billion and will pay out benefits of over Â£13billion. Our clients now experience, on average, sub second response times across a working day. We are continuing to leverage our investment in Oracle Application Express by delivering citizen facing solutions as well as launching the conversion of our Social Housing application which will replace **3,500 Oracle Forms** running at 100 clients worldwide, with a total of 15,000 end users managing circa 3,000,000 properties. Oracle Application Express has helped us to make the move away from Oracle Forms whilst delivering benefits to our clients and our business."

-- Alan Powell, Director of Products and Services, Northgate Public Services

APEX Architecture Overview

Building Integrated Systems
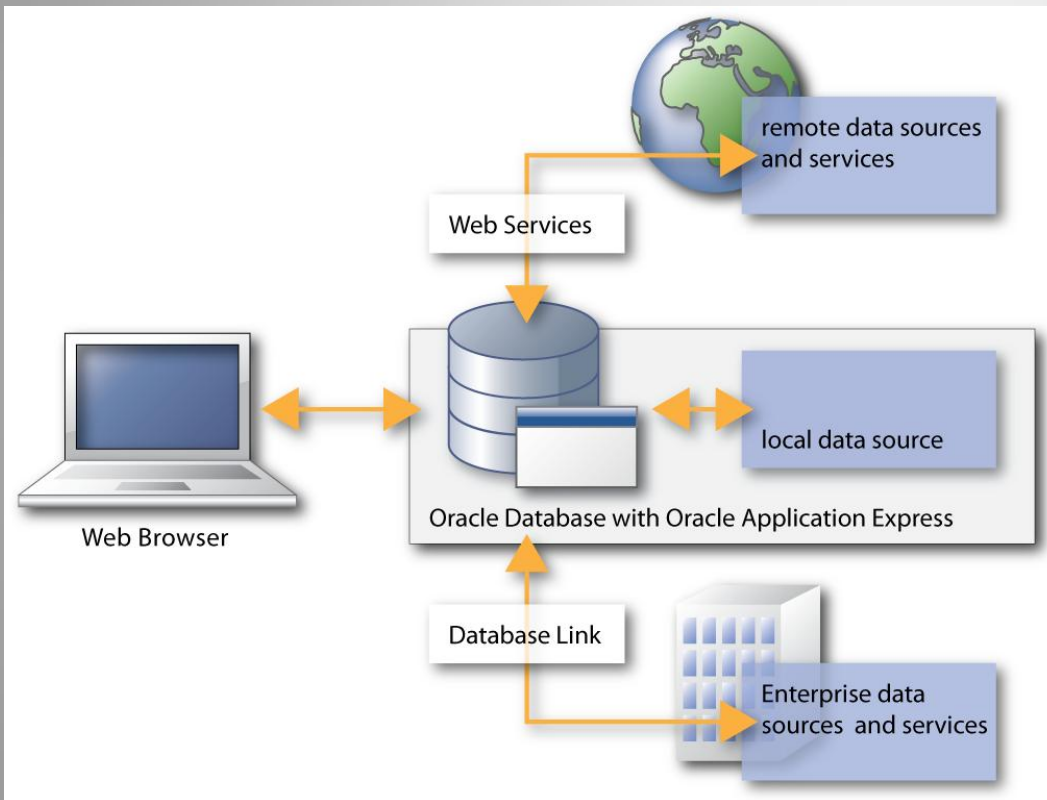
- The APEX Engine, and hence APEX applications, can be easily integrated with outside data sources using Web Services and DB links

- Given that APEX resides within the Oracle DB it can easily integrate with other Oracle database features

- APEX applications can also be extended using JavaScript and AJAX to provide a richer UI

APEX Architecture Overview

APEX Deployment Options
Deployable on any Oracle Database
accessed using only a Web browser

Cloud / Hosted

On Premise – In Datacenter

On Premise - Departmental Server

Personal Database

Sourced from Oracle

➤ Develop and Run it across any platform that runs Oracle.

➤ Start out in the cloud and move in house or vice versa.

➤ Develop on your personal database and deploy to hosted service – its up to you.

APEX Architecture Overview

➢ Runs within the database

  ➢ Application logic and data on same tier = less network traffic

  ➢ Leverages database functionality; SQL, bind variables, result set caching, RAC, analytics, DB buffer cache, …

➢ Stateless

  ➢ Session state maintained within database

  ➢ Sessions not processing or generating pages have zero load on the server

➢ Scalable

  ➢ Scales up to large systems with 100,000's of online users

  ➢ Scales down to your laptop

APEX Architecture Overview

APEX – Diversity & Portability

- Browsers
  - Firefox, IE, Safari, Chrome
- Mobile
  - iPhone, iPad, Android
- Operating Systems
  - Everywhere Oracle runs, Solaris, Windows, Linux, HP-UX, AIX …
- Hardware
  - From laptops to clusters of large SMP's to Exadata
- Portable to The Cloud

APEX Architecture Overview

Out of the Box Development Features

Reports	Validations	Translation Services
Forms	Processes	Conditional Processing
Charts	Computations	Authentication
Calendar	Branches	Authorization
Templates	Web Services	Session State Management
Navigation	Email Services	Logging & Monitoring

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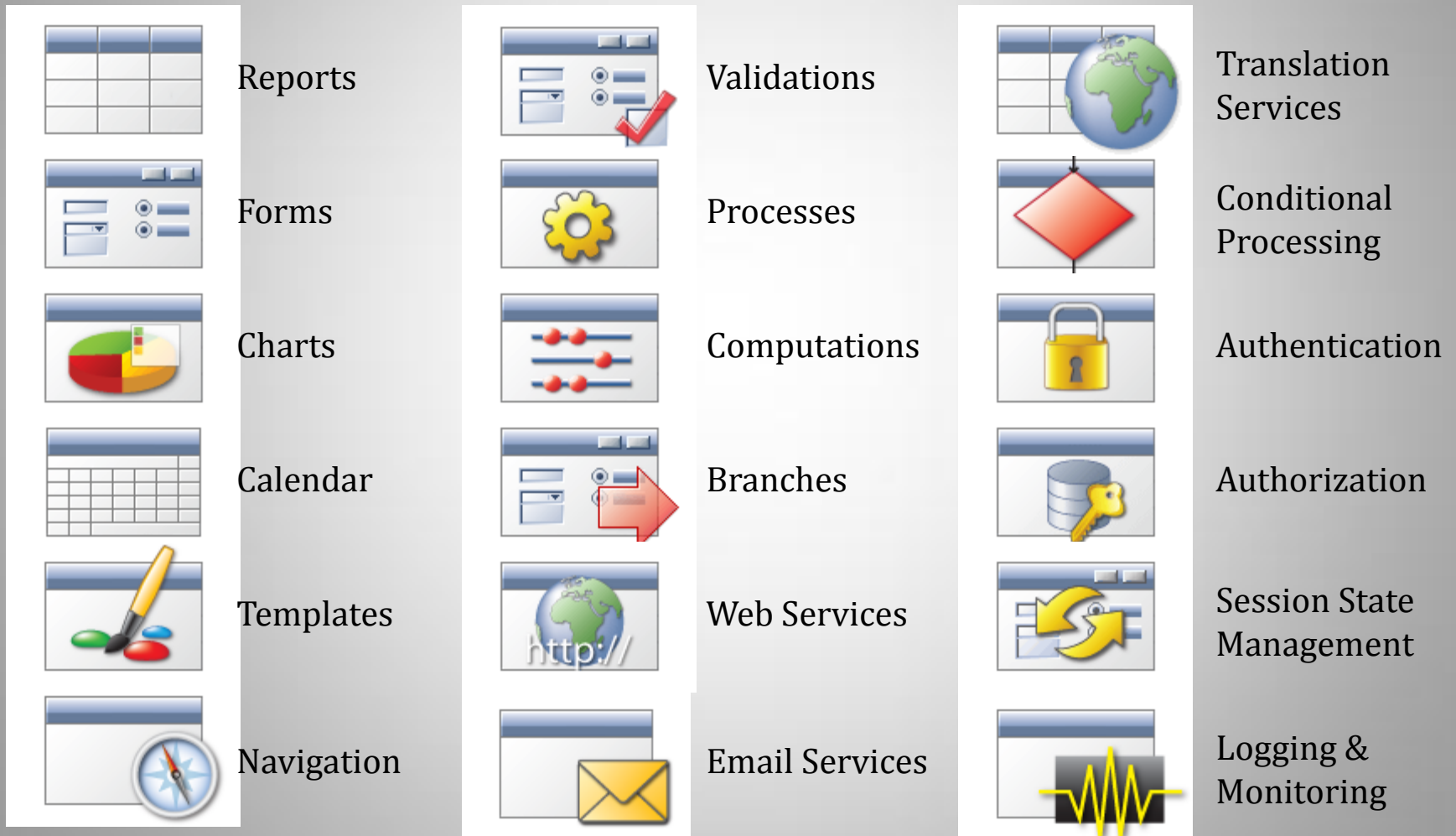
APEX Architecture Overview

Oracle Application Express Use Cases

Data-driven Applications
Develop opportunistic and departmental productivity applications
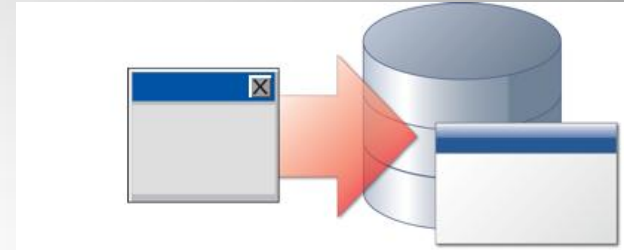
Oracle Forms Modernization
Leverage SQL & PL/SQL declarative programming skills to move Forms applications to HTML / Web 2.0
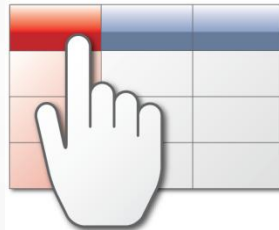
Online Reporting
Build SQL-based reporting applications on existing database schemas

Spreadsheet Web-ification
Convert spreadsheets to Web applications where they can be concurrently viewed and edited
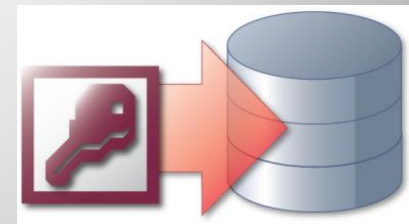
Access Replacement
Consolidate outgrown Access applications to the Oracle database with an APEX Web front end

APEX Architecture Overview

Interactive Reports

Sourced from Oracle

➤Out of the box declarative Web 2.0 reporting

➤Dramatically enhances end-user capabilities

APEX Architecture Overview

APEX Plug-Ins

➢ Extend built-in functionality with new item types, region types, processes, dynamic actions, etc.

➢ Declarative property and attribute settings

➢ Once loaded, use in similar fashion to native components

➢ Included in APEX application export

➢ Encourages APEX community contributions

➢ Catalog of APEX Plug-Ins
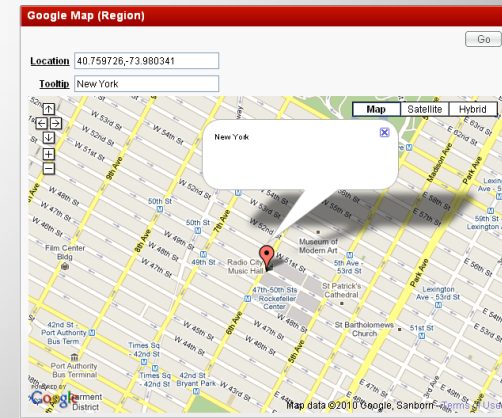
Demo

➤ APEX Runtime
  - ➤ Sample Database Application
  - ➤ Sample Data Upload
  - ➤ Interactive Reporting

➤ APEX Application Builder / Development

➤ APEX Admin

➤ APEX Export / Deploy

➤ Learn More

➤ Plug-Ins Demo

➤ Sample Internet Application

Summary

➤ APEX

  ➤ Lightweight Architecture

  ➤ Integrated within Oracle Database

  ➤ Overall Cost of Ownership is significantly low

  ➤ Very closely aligned with Client-Server (Declarative / 4GL) Forms Technology

  ➤ Maximizes the ROI, Leverages existing Oracle Technology and Skill set Investments

  ➤ Greatly Enhances the Efficiency and Productivity

Our Services and Products

➢ IT Consulting and Project Management

➢ Software development, maintenance, enhancement, upgrade, migration and support

➢ Database architecture and administration

➢ Data-warehousing, business intelligence and reporting

➢ System integration, conversion and infrastructure support

➢ IT staff augmentation

➢ On-site, Off-site and / or Off-shore services

Our Services and Products

➢ MSI Data Certification System

➢ Automated reconciliation / balancing system to help companies to ensure the data integrity between systems / databases. Help mitigate the Operational Risk by adding controls and provide assistance in achieving compliance with a complete audit trail on internal controls for data.

➢ Visit www.mauli.com for more information

Thank You!

➢ This presentation will be soon available on NYOUG website.

➢ Send me questions & comments directly:

  ➢ Kashyap Shukla, Mauli Systems, Inc.

  ➢ email: kashyap_shukla@mauli.com

Q&A