



KEY POINTS

- Today, we'd like to tell you about INTERSOVL's unique approach to data delivery: Virtual Data Warehousing.

TRANSITION

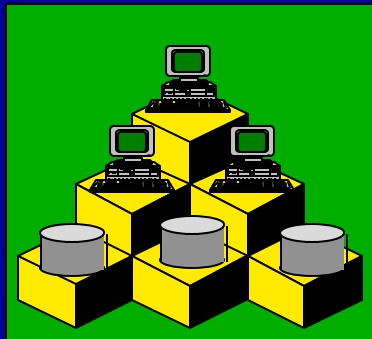
- In case you haven't heard of INTERSOVL...

INTERSOLV & ODBC

- **Our Strategy: Virtual Data Warehousing for simplified data access across the enterprise**
- **The Technology Review:**
 - Traditional ODBC Drivers
 - ODBC for the enterprise
 - Second Generation ODBC Technology
- **ODBC Evolution**
- **ODBC Performance Issues**



DataDirect Product Series



- Virtual Data Warehousing
- End User Focused
- Dynamic Access
- Technology Insulation
- Minimal Infrastructure

Open Access to Enterprise Information

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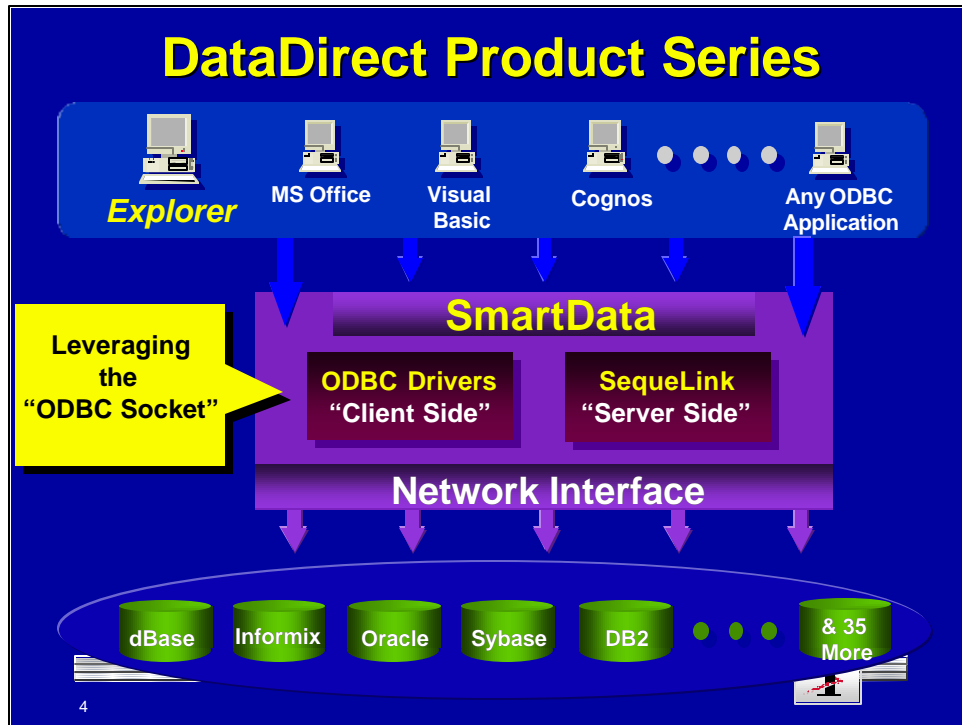


KEY POINTS

- INTERSOLV's approach is demand driven.
- We focus on the end user requirements first, and provide immediate access to information.
- INTERSOLV does this with low cost, and quick deployment.
- The solution is complementary to traditional warehousing, and can even be used to "prototype" end user requirements before building tremendous infrastructure in a physical warehouse.

TRANSITION

- Let's look at more detail...

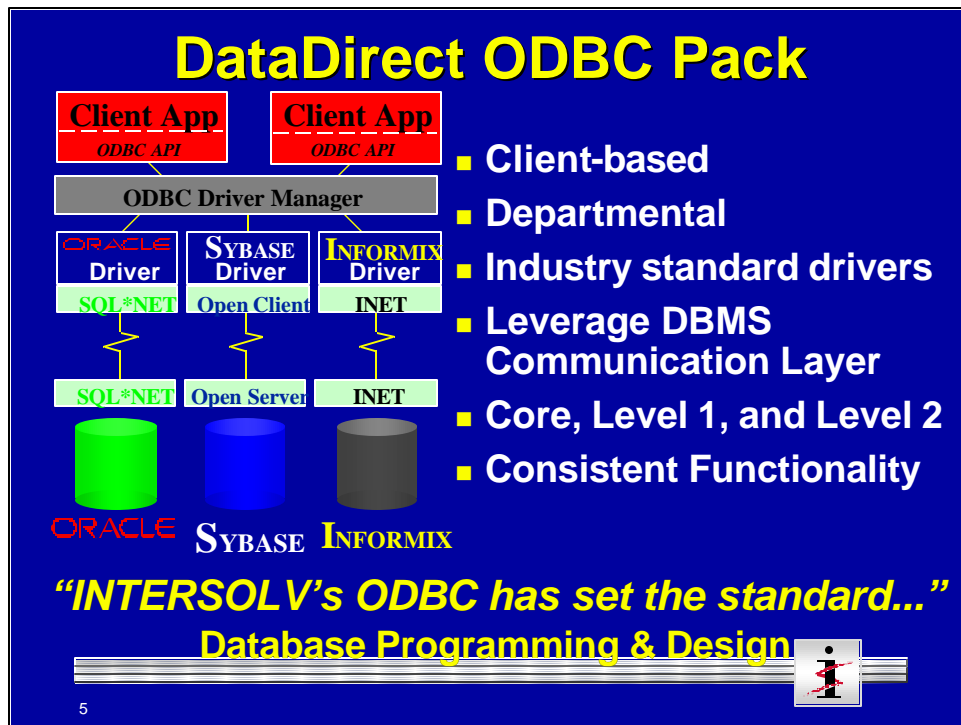


KEY POINTS

- INTERSOLV's Virtual Data Warehouse is implemented through the DataDirect Product Series.
- DataDirect consists of 4 pieces: Presentation, SmartData, Connections, and Warehouse Management Tools.

TRANSITION

- Let's discuss each part...

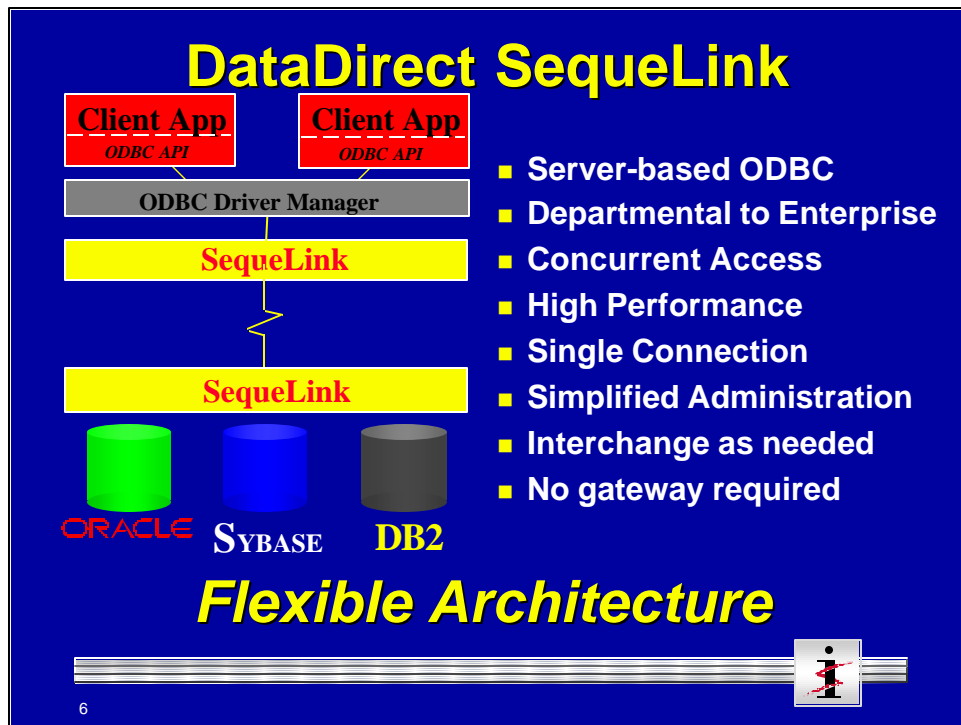


KEY POINTS

- Over 35 different databases and 8 operating systems are supported by DataDirect’s client-based ODBC Drivers.
- DataDirect ODBC Drivers allow you to leverage technology you have already deployed for data access, such as SQL*Net for Oracle or OpenClient for Sybase for immediate access to data, while gaining open access into the ODBC-compliant applications in your organization.
- DataDirect ODBC drivers provides the fullest level of ODBC compliance possible.
- We also GUARANTEE a consistent level of functionality. DataDirect ODBC drivers are put through INTERSOLV’s stringent ODBC Verification Suite which tests the driver to it’s fullest functionality.
- No vendor in the industry has a larger suite of ODBC drivers available.
- This investment in multiple databases and platforms has made ODBC a complete solution for building and deploying client/server applications.

TRANSITION

- As we look to scale and expand the virtual data warehouse and data access across the enterprise, DataDirect solution offers.....



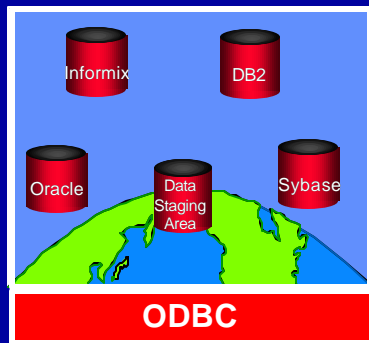
KEY POINTS

- ODBC has solved the multi-database development problem by providing a single, open, plug and play interface for applications developers and has become the de-facto standard. However, ODBC has not traditionally solved the IT professional's challenge for rolling out multi-database access technology.
- As data warehousing solutions are rolled out from the department to the enterprise, IT needs a single, unifying architecture and infrastructure for installing and maintaining multi-database access technology across their organizations.
- Maximum Flexibility because, to add a new data source for your users, you simply add a new SequeLink server... you do not have to update all the clients. This may not be much of an issue when you have say 20 or 50 clients, but becomes a major organizational challenge when you have hundreds or thousands of clients.
- Open access through ODBC driver on the client so still plug and play with all ODBC-compliant applications in the organization.
- Offers distributed processing for any client-centric application, while maintaining Optimal Performance via direct connections to server data.

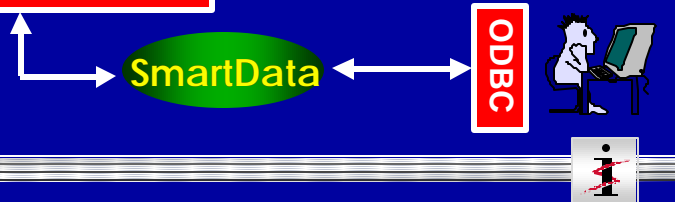
TRANSITION

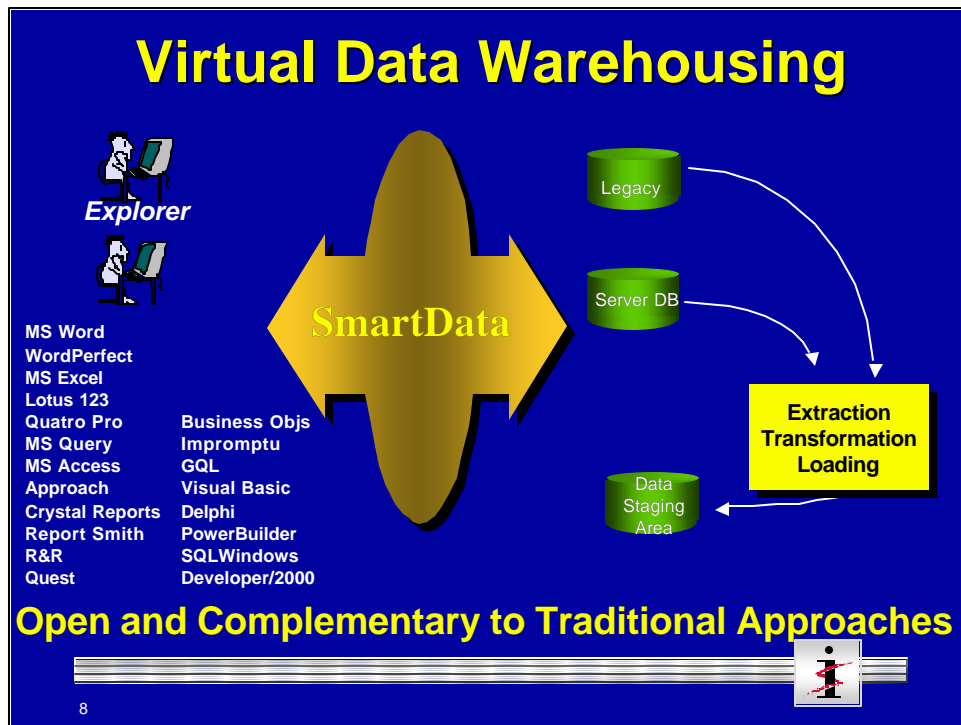
- DataDirect SequeLink delivers server-based data access by....

Second Generation ODBC: *DataDirect SmartData*



- Leverages ODBC interface
- Open Architecture
- Easy access to data
- Hides complexity in user-friendly terms
- Simple Administration
- ODBC data access





KEY POINTS

- There are many times when a physical data warehouse may be appropriate. Examples include complex OLTP systems, high volume systems, or environments where time variant information is important.
- The Virtual Data Warehouse allows you to access data contained in a physical warehouse--because of its openness-- and to data in production systems. This allows the organization to “think outside the warehouse” and answer even more business questions.
- SmartData allows you to enable access first while you are enabling a physical warehouse. This allows organizations to define requirements first to ensure a physical warehouse fits requirements.
- Our Virtual Data Warehousing Partners Programs provides synergy's from common solutions. Partners such as Platinum, Red Brick, Evolutionary Technologies, and Carelton provide tools to enable organization to build physical data warehouses.

TRANSITION

- Our Virtual Data Warehouse supports nearly all databases...

The ODBC Timeline: *INTERSOLV First to Market!*

■ The Beginning:

- Windows 3.1

■ The Platforms:

- Windows NT
- OS/2
- Macintosh
- Sun Solaris for UNIX

■ The Evolution:

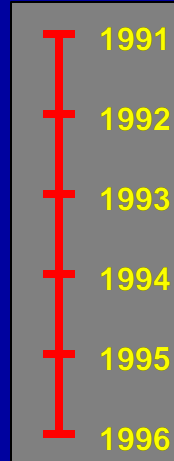
- ODBC 1.05 and ODBC 2.0
- Windows 95

■ The Innovation:

- SmartData Technology

■ The Future:

- ODBC 3.0 and OLE-DB



Data Sources: *INTERSOLV Broadest Support!*

- Adabase
- ALLBASE
- Btrieve
- Clipper
- DB2
- DB2/2
- DB2/6000
- DB2/400
- DB2/VSE
- DDCS/2
- DDCS/6000
- dBASE
- Excel
- FoxPro
- Gupta SQLBase
- Gupta SQLHost
- IMAGE/SQL
- INFORMIX
- INGRES
- Interbase
- Micro Decisionware
- MS SQL Server
- NetWare SQL
- Oracle
- Paradox
- PROGRESS
- RdB
- Scalable SQL
- Sybase System 10
- Sybase SQL Server
- Sybase NetGateway
- Teradata
- Text files
- XDB

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KEY POINTS

- INTERSOLV DataDirect provides a complete set of drivers to support the most popular databases in the market today. In fact, DataDirect technology provides open access to more than 35+ databases across 15+ operating systems.
- No other vendor offers more ODBC drivers than INTERSOLV. We've been able to achieve this from a broad knowledge of database technology across different environments.
- INTERSOLV's vast supply of drivers provides organizations a one-stop shop for all the ODBC drivers an organization will need.
- DataDirect is unique in that it provides direct access (no gateway) to large systems such as the Mainframe MVS/DB2, the AS/400 DB2/400 and the VAX RdB.
- We also have partners who can leverage legacy data such as VSAM, IMS, and IDMS.

TRANSITION

- Let's discuss some benefits...

ODBC Partnerships: *INTER SOLV Drives market acceptance!*

- Lotus
- Powersoft
- CA
- IBM
- Sybase
- Oracle
- Borland
- Microsoft
- Gupta
- SunSoft
- Arbor
- Pilot
- Praxis
- Asymetrics
- Clear Access
- Crystal
- Delrina
- JetForm
- PlanningScience
- ProtoView
- Trinzic
- MapInfo
- Platinum
- Macola
- MicroStrategy
- Polaris
- XcelleNet

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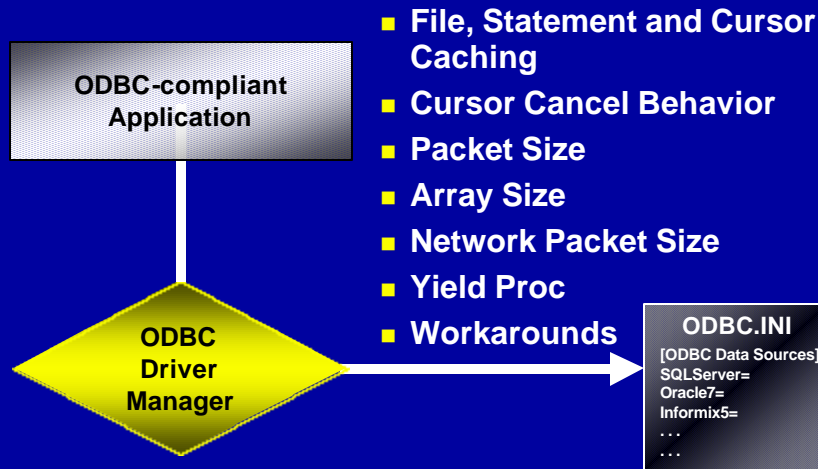
KEY POINTS

- As you can see, numerous software vendors have utilized INTERSOLV DataDirect technology into their tools and applications
- This isn't a list of "marketing relationships." These vendors are actually utilizing DataDirect to make their applications more competitive
- This integration has provided data insulation for the vendors, and allowed a broader focus on the tool's purpose. Independent database access has proved beneficial to these customers.
- These vendors, along with others, have made ODBC the de facto standard.

TRANSITION

- The best part of DataDirect is INTERSOLV's award winning service offerings...

ODBC Performance: *Configuring Drivers via .INI*



ODBC Performance: *Application Coding Tips I*

- **Catalog calls:**
 - Cache Catalog info
 - Minimize null params to Catalog calls
 - SQLDescribeCol more efficient than SQLColumns
- **Retrieving Data:**
 - Minimize LONG data fetching
 - SQLExtendedFetch with SQLSetStmtOption (SQL_ROWSET_SIZE) reduces calls and cleaner code than SQLFetch
 - SQLSetStmtOption (SQL_MAX_SIZE) reduces LONG data
 - SQLBindCol reduces calls over SQLGetData



ODBC Performance: *Application Coding Tips II*

- **Executing Statements:**
 - SQLExecDirect on one use statements
 - SQLParamOptions for array processing
- **Updating Data:**
 - Use SQLSpecialColumns to optimize WHERE Clauses
 - Use Positoned updates ("current of cursor" or SQLSetPos)
- **Design Options:**
 - Use cursor library only if needed (SQL_CUR_USE_IF_NEEDED)
 - Minimize connections
 - Use Asynchronous calls when supported (STMT and CONN)
 - Turn off Auto-Commit

