Data Virtualization: Achieve Better Business Outcomes, Faster

What You Will Learn

Over the past decade, businesses have made tremendous investments in information capture, storage, and analysis. But having a wealth of data isn't the same as having valuable information. Cisco® Data Virtualization provides a way for organizations to turn their data stores into valuable information that improves decision making and propels the business forward. You'll learn the essentials of data virtualization, including:

- What data virtualization is and its benefits
- When – and when not – to use data virtualization
- How to deploy data virtualization to benefit your business

How Much Data Is Too Much?

The challenge of making business decisions in a networked world isn't a lack of data. It's having data residing in multiple systems, global locations, locked away in spreadsheets, and in people's heads. It's wondering if data sources are credible – or even current. And for many organizations, the most difficult part of making good decisions is making them quickly. There just isn't enough time to find and analyze the valuable data that they have.

Better Information Drives Better Decisions

Almost every enterprise faces these challenges to a greater or lesser degree. But how businesses address them makes the difference between becoming a market leader or an "also-ran." The fact is, better information leads to better decisions and better business outcomes.

The Harvard Business Review[1] stated that data-driven companies are 5 percent more productive and 6 percent more profitable than their competitors. Another study was even more positive. If you break down performance improvements to just several 1-percent improvements across the business, the difference is dramatic, as shown in Figure 1.

Figure 1.   What is 1% Improvement Worth?

1% reduction in customer churn	=	6% increase in profits
1% improvement in average selling price	=	8.7% increase in operating profit
3% improvement in perfect orders	=	1% improvement in profit margin
5% improvement in forecast accuracy	=	10% improvement in perfect orders
10% increase in customer satisfaction index	=	50% increase in profits and 25% retention improvement

Source: Big Data: Big Hype, Big Challenges, Big Opportunity, Nick Heudecker Research Director, Information Management Gartner 2013

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[1]   Harvard Business Review, Big Data's Management Revolution, October 2012.

Eliminating the Roadblocks

Being able to easily access and use vast data stores has always been challenging. Over the past decades, businesses have made huge, ongoing investments in information capture, storage, and analysis. But in just the past few years, the problem has become 10 times worse. It isn't just more data. If it was, more compute and database horsepower could fix it. The bigger issues for businesses are proliferating data silos and ever-expanding distribution.

In the past, humans entered most important business data and managed it in centralized data warehouses, such as Teradata and transaction systems such as SAP. These were the traditional data sources for many large businesses. Today, an almost infinite number of connected devices and systems generate data automatically. These devices and systems, also known as the Internet of Everything (IoE), are creating large data silos everywhere imaginable. In addition, data is being moved to the cloud, forming even more data silos loaded with huge amounts of data. Salesforce and Workday applications, content providers, such as Reuters and Comcast, and elastic storage and compute services such as Amazon Redshift and Microsoft Azure are a few examples.

Multiple silos ultimately lead back to the business. Its data resides in some – or all – of these places, as well as in disconnected desktop spreadsheets and people's heads. According to Gartner[2], through 2017, 90 percent of the information assets from big data analytic efforts will be siloed and unusable across multiple business processes.

To win, businesses need to take advantage of all of it. But how?

Data Virtualization: The Way to Become Agile

Industry-leading businesses are addressing the challenge with data virtualization. Data virtualization is an agile data integration approach that organizations use to:

- Gain more insight from their data
- Respond faster to accelerating analytics and business intelligence requirements
- Reduce costs by 50 to 75 percent compared to data replication and consolidation approaches
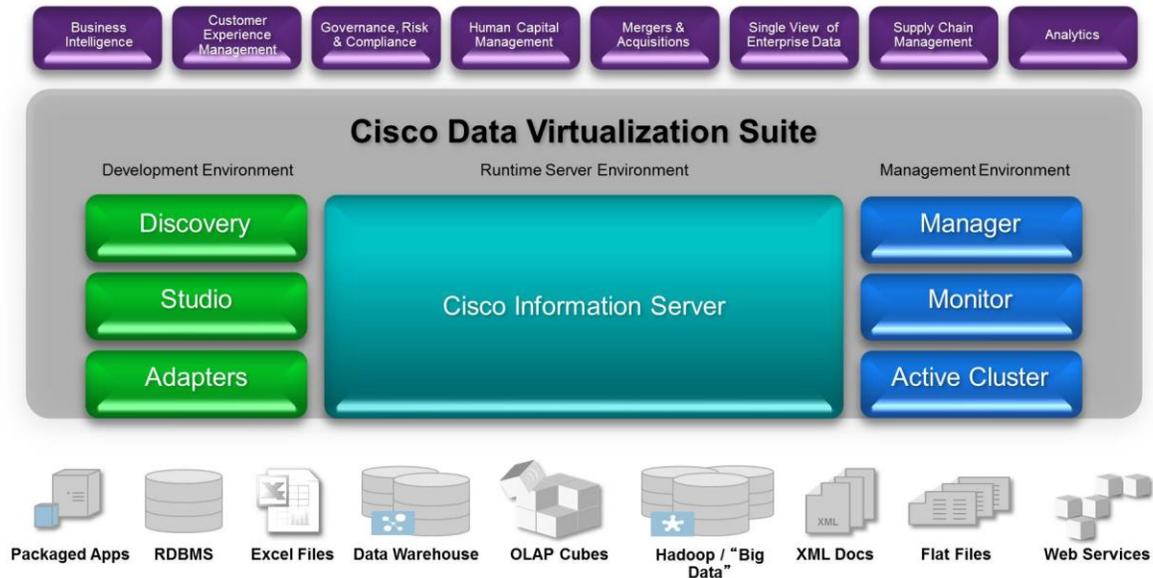
Data virtualization abstracts data from multiple sources and transparently brings it together to give users a unified, friendly view of the data that they need. Armed with quick and easy access to critical data, users can analyze it with their favorite business intelligence and analytic tools to solve a wide range of problems. For example, they can increase customer profitability, bring products to market faster, reduce costs, and lower risk.

Cisco Data Virtualization Delivers Easy Access to Data

Cisco Data Virtualization is agile data integration software that makes it easy for you to access your data, no matter where it resides. An integrated data platform lets users query all types of data from sources across the network as if it were in a single place. Users get instant access to the data they need, without having to deal with complex IT systems. Figure 2 illustrates how the Cisco Data Virtualization solution provides a single source for bringing data together from multiple systems, locations, and sources.

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2   Gartner, Predicts 2014: Big Data, November 20, 2013.

Figure 2.   Cisco Data Virtualization Suite

Cisco Data Virtualization Delivers Real Results

Businesses that have deployed Cisco Data Virtualization report three primary types of benefits. First, they achieve better business outcomes. Users are empowered because they can get exactly the data they need, in the way that they need it. With data available in one trusted place, they no longer wonder about its credibility. They can confidently move the business forward knowing that they have the best information available.

Second, data virtualization's time-to-solution is 5 to 10 times faster than traditional database extract, transformation, and loading (ETL) techniques. Businesses no longer wait weeks or months for new data sets.

Third, data virtualization saves money. A lot. Businesses report reducing costs associated with accessing data by up to 75 percent. In addition to cost savings from faster turnaround, businesses no longer have to build and support specialized data marts.[3]

When Should You Use Data Virtualization?

Data virtualization is almost indispensable today for most enterprises. If your organization relies on data warehouses; builds specialized data marts; maintains data in multiple locations; has teams that require insight around the world; has multiple lines of business that require close coordination; must improve risk management; needs to significantly reduce time to market; or has unsustainable costs associated with decision-making – you need to consider data virtualization.

Businesses that have adopted Cisco Data Virtualization use it to answer almost any imaginable question:

- How do we increase customer profitability?
- How do we bring new products to market faster?
- How can we sustainably manage rising costs associated with delivering the right data when it's needed?
- How can we improve our risk exposure?

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[3]   *Data Virtualization: Going Beyond Traditional Data Integration to Achieve Business Agility*, Judith R. Davis and Robert Eve.

- What factors are jeopardizing our compliance efforts?
- How can we be sure that our data is trustworthy?
- Which projects should we move to the next phase of development?
- What is the cost impact of developing one project instead of another?

For IT, data virtualization can help meet internal users' needs better without compromising existing investment in infrastructure. It can:

- Enhance business intelligence and analytics investments by improving insight sooner
- Increase return on data warehouse investments
- Meet user needs faster by providing better information agility
- Integrate big data, cloud, SAP, Oracle applications, and other sources more easily
- Modernize your information management architecture

Using Cisco Data Virtualization

Cisco Data Virtualization provides a unified, business-friendly view of data from across a wide range of sources, as shown in Figure 3.

Figure 3.   Cisco Data Virtualization Solution

Cisco Data Virtualization can be installed quickly, with an easy-to-adopt overlay to existing infrastructure. Once deployed, it is easy for IT to use and manage:

- **Develop**: Your IT staff uses Cisco Data Virtualization's comprehensive data analysis, design, and development tools to build business views, also known as data services.
- **Run**: When business users run a report or refresh a dashboard, the Cisco Data Virtualization high-performance query engine accesses the data sources and delivers the exact information requested.
- **Manage**: Built-in data virtualization management, monitoring, security, and governance functions help ensure security, reliability, and scalability.

Suppose you need to build an application with specific parameters for the user to see a specific view or service. Your data comes from designated sources across the organization. Cisco Data Virtualization combines the data sources into the correct view through a drag-and-drop interface, allowing you to automatically discover the data and relationships needed, build the views you need, and work with the user to iterate the views to achieve the correct results. At runtime, when the application requests data, Cisco Data Virtualization retrieves the requested data from the original sources, and delivers it to the application. Users have what they need in real time.

When Not to Use Data Virtualization

Data virtualization is not the answer to every data integration problem. Sometimes data consolidation in a warehouse or mart, along with ETL is a better solution for a particular use case. And sometimes a hybrid model is the right answer. You can use the Cisco Data Integration Strategy Decision Tool to help you decide when to use data virtualization, data consolidation or a hybrid combination.

Who Uses Cisco Data Virtualization?

Hundreds of organizations use Cisco Data Virtualization. These are just a few:

Comcast

Millions of Comcast customers manage their services online. Comcast needed a way to improve accuracy and performance of account ownership changes. With Cisco Data Virtualization, Comcast accelerated customer requests for an ownership change from 10 seconds to 1.2 seconds, reduced customer service costs by US$2000 per day, and improved customer satisfaction.

Compassion International

The world's largest Christian child development organization serves more than 1.2 million children and aims to quadruple beneficiaries by 2020. Compassion implemented a data virtualization layer and enterprise information that performs 50 percent faster with improved data quality and integrity.

Fortune 50 Computer Manufacturer

Outsourced manufacturing operations required global visibility into orders and inventory across six regional procurement systems. The company chose a data virtualization approach to integrate global procurement data for analysis and reporting. This solution was in production faster than a data warehouse alternative and reduced infrastructure and development costs by more than US$1M annually. Faster inventory turns and improved customer satisfaction also provides an ongoing return on investment of millions of dollars per year.

Fortune 50 Financial Services Company

This firm provides retail, corporate and commercial services for customers worldwide. When it acquired another large financial services organization, it needed to quickly integrate disparate systems and data. Cisco Data Virtualization helped the company meet critical time constraints and delivered a new level of flexibility. It also enables the firm to add new revenue-generating data services.

Global 50 Energy Company

One of the world's largest oil and gas producers needed a way to provide access to information stored and managed in multiple systems and locations for analysis, reporting and decision making. With Cisco Data Virtualization, the company reduced overall development costs by 40 percent, reduced risk, increased revenue, and improved efficiency and resource allocation for greater competitiveness.

NYSE Euronext

NYSE Euronext operates financial markets and provides innovative trading technologies globally. It must meet strict service-level agreements – a process greatly complicated by the sheer complexity of its business and operating environment. Using Cisco Data Virtualization, NYSE Euronext identified savings of over US$4.5 million annually from migrating just one application to the data virtualization platform.

Pfizer

Pfizer is the world's largest drug manufacturer. With a complex portfolio of projects that is constantly changing, it needed an easy way to obtain integrated information that supports analysis, portfolio decisions, and resource-allocation decisions. Using Cisco Data Virtualization, Pfizer reduced the time needed to obtain new information from months to days, significantly improved data quality, and decreased R&D project dates missed by 60 percent.

Qualcomm

Qualcomm is a world leader in next-generation mobile technologies. The company had to dramatically increase efficiency to keep pace with volatile markets and needed to better manage multiple terabytes of data. Qualcomm implemented Cisco Data Virtualization and improved data management efficiency. The expected reduction in development costs for initial projects is more than US$2 million.

Why Cisco Data Virtualization?

Why look to Cisco for data virtualization? One reason is that customers trust us to help them solve challenging problems. Just as important, Cisco Data Virtualization is the most proven offering in the market. We have successfully delivered highly complex implementations that yield powerful outcomes for their owners. When we say we wrote the book on data virtualization, we mean it literally. *Data Virtualization: Going Beyond Traditional Data Integration to Achieve Business Agility* is the handbook for data virtualization and highlights numerous successful deployments.

Cisco Data Virtualization is built on 350 man-years of research and development, six million lines of code, and millions of hours of production deployment. The solution code includes the industry's most powerful optimization algorithms. And Cisco is the only vendor that can offer end-to-end network, compute, and data synergy.

Summary

Today's challenges associated with managing and effectively using massive data stores will continue to grow. Data virtualization is the only approach proven to help businesses achieve better business outcomes, faster. Cisco Data Virtualization is the most proven, most successful data virtualization solution available. With it, world-leading companies are harnessing the power of their data to achieve significantly better business impact.

You can start your data virtualization initiative with specific projects that address immediate information needs. You can also deploy enterprisewide data virtualization with common semantics, shared objects and architecture, and an Integration Competency Center.

For More Information

To learn more about successful data virtualization deployments, visit the Cisco Data Virtualization Video Portal, or read the book, *Data Virtualization: Going Beyond Traditional Data Integration to Achieve Business Agility,* which includes deployment case studies from ten enterprises.

For more information about Cisco Data Virtualization, speak with your Cisco representative or visit www.cisco.com/go/datavirtualization.