3 ways to boost
development productivity

Contents

Introduction
When developers and DBAs don't speak the same language, defining terms and processes becomes critical.

1

Increase automation
Automating integration and paying attention to data governance can help streamline development processes.
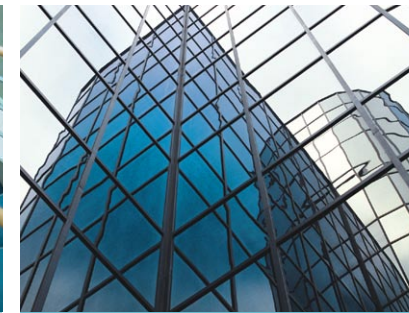
2

Improve skills and integrate views
Changing times mean changing skill sets—and heterogeneous tools help ease everyone's burden.

3

Embrace mashups
Enterprise mashups can be quickly created and deployed to get applications out to users fast.

4

IBM solutions
IBM has a variety of tools and solutions, including XML and mashup resources, to help support smarter business outcomes.

5

Introduction

Making a business decision without data to back it up is like blindly diving into a pool and hoping that the water is deep enough. But the data you need isn't always easily available or easily analyzed. This information typically resides in several data repositories within the enterprise—including in spreadsheets and other desktop data maintained by line-of-business (LOB) employees—and in information sources outside the corporate firewall.

As a result, user demand for new applications that are tightly focused on specific business issues is growing fast. But most database administrators (DBAs) and developers have less time than ever to meet these needs.

IT departments are understandably focused on large-scale enterprise projects and system availability, which often doesn't leave room to deliver applications for small groups of LOB users. The result is a growing gap—the "quick applications gap"—between the pressing need for such applications and the ability of IT departments to develop them.

However, there are tools and strategies that can boost productivity for developers, DBAs and data architects so they can close the quick applications gap and give business users the applications they need to do their jobs better. For the maximum impact, these tools and strategies focus on ways to:

- Improve skills and integrate views
- Improve communications
- Increase automation

This e-book will examine methods to achieve these goals, including the use of enterprise mashups—Web applications that combine existing information retrieved from internal and external data sources.

Define, define, define

DBAs and developers can find it difficult to communicate clearly. Often they don't speak the same language, don't understand each other's roles and don't face the same problems. The skill sets of database developers, software developers and business analysts are different, and that, too, can lead to communication issues.

To improve the situation, development teams need to focus on hand-offs—of plans, project management and details of application development—from one individual or group to another. They need to define data labels and make definitions and requirements more precise. They can do this by using business glossaries, which provide a formal way to address the terminology definition issue, and tags and subgroups, which help improve communication both inside and outside the enterprise. They can also improve communication via collaboration and social networking—two capabilities mashups can offer through the sharing of mashable assets.

| CONTENTS | INTRODUCTION | INCREASE AUTOMATION | IMPROVE SKILLS AND INTEGRATE VIEWS | EMBRACE MASHUPS | IBM SOLUTIONS | RESOURCES |

Automate integration for development benefits

Most IT managers will agree that IT skills take up a large portion of their budget. In many cases, the amount spent on training, retaining and finding new talent is the single biggest cost center for an IT development workshop. Therefore, decreasing the level of skill required to maintain an IT system and meet customer demands can be very useful for companies looking to slash development costs. In addition, automating mundane database maintenance chores can free up developers, DBAs and architects to focus on critical tasks, and can help reduce errors and time lags. IBM offers numerous built-in database features and database tools to help automate many areas of the data life cycle, from requirements to retirement.

Take IBM® DB2® pureXML® technology: by combining XML data and relational data into one database, DBAs and developers can query across both types of data in one SQL query or XQuery. Accessing and modifying XML data is seamless and happens without the explicit knowledge of developers who may not be familiar with the nuts and bolts of XML data storage. This helps reduce the need for new skills when accessing XML data, which would not be the case in a development environment that keeps the two data types in separate databases.

Using DB2 pureXML, developers can adapt and respond automatically to modifications to industry standards. Only by capitalizing on the potential of the current standards-driven environment—with

its promise of enabling seamless business process transformation; allowing tight, facilitated linkage to and among value-chain partners; and the potential for capturing additional efficiencies from existing infrastructure—can companies truly claim to be positioned for the future, much less operate optimally in the present.

Industry formats provide agreed-upon ways to exchange information between and within companies. Financial industry formats include ACORD for insurance, FIXML for financial trading and MISMO for mortgages. Other industry formats are used in federal government applications (such as GJXDM) and healthcare applications (such as HL7). The XML messages being exchanged are often stored for a variety of purposes, such as auditing, tracking and querying. Many organizations devote considerable programming effort to mapping these industry formats into relational data for storing in databases. Each time the format changes, new mappings must be devised and additional programming is required.

The financial industry, for instance, found that it needed the flexibility and extensibility of XML to define a standard data format that could capture the high variability of financial derivatives. As a result, it developed the Financial Products Markup Language (FpML), which is essentially an XML schema that defines how XML elements and attributes are used to describe derivative trades.

> "*IBM Data Studio enables us to bridge the gap between object-oriented design and relational database technology. By doing so, we can speed the development of high-quality applications and improve developer productivity by 25 to 50 percent.*"
>
> – **Kevin Campbell**,
> Application Architect,
> Univar USA

Take advantage of new solutions while using skills you already have

Even developers trained in rapid application development may not have the technical skills to design applications that consolidate data from the many internal, external, structured, unstructured, departmental and desktop data sources that LOB users request.

In some cases, the lack of skills is a result of a failure among job incumbents to evolve their role. For example, as applications and infrastructures move toward loosely coupled designs, the data architect role begins to encompass system architecture, business process management semantics, cross-platform analysis and other skills. Training for these skills can be costly and time-consuming. In addition, developers' work is hampered by too many development tools being used in the environment and the lack of a holistic view of the enterprise computing landscape.

One way to solve the problem is to adopt development techniques that do not require developers to be trained in new skills, yet result in applications that integrate various data streams and give users data in context. Companies can also use database monitoring and optimization tools that don't require retraining, or tools that can be used across different products.

Enterprise mashups: Creating contextual applications

Many organizations have found that enterprise mashups are an effective way to improve IT practitioner productivity and enable flexible and rapid development of contextual business applications—the kind of applications LOB users need.

Mashups create highly contextual applications that combine existing information retrieved from data sources both internal and external to the organization. Because they can be quickly assembled and deployed—in hours or days versus months or years for enterprise applications— enterprise mashups are an ideal way for IT departments to close the quick applications gap.

Mashups are becoming increasingly common: Gartner suggests that 80 percent of enterprise applications will involve mashups by 2010.[1] They generally don't require long lead times, new staff, new skill sets or disruptions to existing projects.

Mashups can ease the challenges caused by lack of training, as they provide connection-ready access to a full range of data sources. This enables developers to rapidly unlock structured, semi-structured or unstructured information sources from across the enterprise. Mashups can also help ease communication difficulties by enabling organizations to catalog previously built widgets and "consumable" data feeds, rate them and repurpose them for future use. DBAs can

prioritize their time when setting up security and privacy access controls for enterprise data, making it ready for consumption as a service in an enterprise mashup environment. Developers can then use this data and quickly surface it via mashups.

In addition, IT practitioners can populate an "enterprise mashups catalog" that promotes reuse of previously created assets, and includes user ratings associated with each asset. Such reuse can shorten development time for subsequent mashup development projects. Finally, mashups help increase automation by surfacing information from a range of data sources automatically and efficiently.

Other key mashup enterprise benefits include:

- **Rapid access**—Business users and IT can effectively collaborate to rapidly build applications that surface accurate information.
- **Reliable information**—Business users no longer need to depend on ad hoc spreadsheets that contain outdated data from various systems; via mashups, they gain access to real-time, reliable information.
- **In context**—Enterprise mashups provide the context that business users need to make decisions based on an accumulation of relevant information.

IBM tools support development productivity gains

IBM offers a portfolio of solutions that can help you implement the strategies mentioned in this e-book, alleviate productivity bottlenecks and resolve issues in application development—as well as help developers close the quick applications gap. They include:

IBM DB2 pureXML

IBM DB2 pureXML helps developers reduce the amount of effort typically involved in managing XML data, and it serves data at high speeds. By simplifying and automating data management for DBAs, it helps free up time to work on development projects rather than database and data maintenance. It also helps boost productivity by enabling developers to integrate data streams from inside and outside the enterprise in their current form.

By seamlessly integrating the XML and relational data in DB2, IBM has made it possible for developers who work with XML data to do so without having to learn a lot of new skills or query techniques. For the most part, developers can ignore the way data is stored on disk.

The pureXML support built into various developer, DBA and architect tools from IBM is another highlight of IBM's support for the XML data format. These tools can work together seamlessly to provide a consistent interface for the various roles that are engaged in different stages of the data life cycle.

IBM Optim portfolio

IBM Optim™ software is part of the IBM Integrated Data Management portfolio, which helps simplify collaboration among developers and DBAs. As a result of this optimized, collaborative environment, development time can be slashed by up to 50 percent. It also helps speed new skill development for employees, who can learn skills once and use them with all supported databases. In addition, IBM Optim pureQuery Runtime is a high-performance data access platform that provides an innovative approach to help build high-quality, high-performance database applications. It supports the use of best practices for SQL and Java™ Database Connectivity (JDBC), helping to improve application performance. And it facilitates developer and DBA collaboration to enhance the security, performance and manageability of Java or Microsoft® .NET applications.

IBM Mashup Center

The IBM Mashup Center provides an easy-to-use enterprise mashup solution that supports rapid assembly of dynamic situational applications with the security and governance capabilities that IT requires. The IBM Mashup Center can help you reduce your application backlog and improve productivity by empowering LOB self-service application development.

Resources
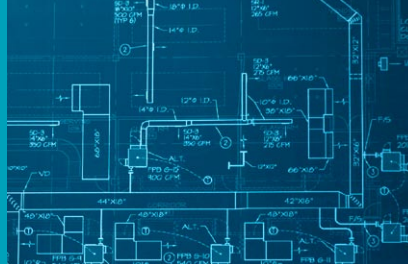
For more information about the following topics, please visit:

IBM DB2 pureXML

- **ibm.com**/software/data/db2/xml

- Demo: Benefits of DB2 pureXML

IBM Optim portfolio

- IBM Optim development productivity solutions

- Demo: Integrated Data Studio

IBM Mashup Center

- Video: Introduction to Mashups

- White paper: The business case for enterprise mashups

IBM