

ACCURATE DATA: A CRITICAL SUCCESS FACTOR FOR SOA

Your SOA Could be DOA Without Good Data

Never before has information been so important to organizations. It's obvious that you need good data to achieve success with service-oriented architecture, but many organizations are having difficulty updating their data integration approach and infrastructure to meet the evolving needs of SOA.

According to new research, SOA dramatically increases the importance of creating an accurate, integrated data infrastructure, and many CIOs are struggling to address the challenge. The survey, conducted by IDG Research Services, polled CIOs at midsize and large enterprises on the role that information plays in SOA implementations. Respondents spoke at length about their SOA efforts and the challenges they face in creating an SOA framework that pulls from a consistent and accurate data infrastructure.

Nearly universally, those surveyed agree that a foundation of consistent and up-to-date underlying data drives SOA project success on a number of levels.

"It's key to the whole process," says Jonathan Weinberg, vice president of technology at Thomson Financial Services in Stamford, Conn. "I think that you need to have consistent data throughout the process. Each of these services needs to be able to talk to each other and they need to be speaking a common language. If they are exchanging incompatible data, it's going to be impossible to be successful in [SOA implementa-

tions]. It's critical to the entire process."

Moreover, respondents note that they must manage both master and transactional data types, which require separate tactics. Particularly with the increasing complexity of SOA projects that span multiple environments, the consistency of master data—essentially reference data used to manage data types—becomes paramount. With SOA, it's important to reference consistently across systems in order to create a standard, dependable data record.

For example, a certain kind of test in a multi-hospital setting must be referenced throughout by the same name or abbreviation if the SOA is to draw from multiple applications and pull pertinent information on a patient who has visited more than one hospital in the group. And with hospitals spread across five states, getting accurate master data is even more important.

"Because these are integrated systems, every item number has to be the same across all hospitals and clinics—every drug descriptor has to be exactly the same, every drug test name has to be the same," says Mike Von Bergen, manager of ITC/Systems at Avera McKennan, the hospital group, based in South Dakota. "Having multiple entities across multiple states makes the complexity of SOA high. The master data is everything to us."

CIOs also point to the importance of creating one single transactional data view in order to

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make accurate business decisions, and SOA implementations are no different. Respondents cite the criticality of consistent transactional data, particularly as services grow more complex and pull data from disparate information sources.

"Transactional data is essential to my business. We are in the business of commercial real estate, leasing properties and land around the world. Everything must be up to date," says the CIO of a real estate firm. "Transactional data is critical in order to have the up-to-date data needed to make intelligent, on-the-spot decisions."

Risks

Neglecting issues of data consistency will nearly certainly impede the successful implementation of

complex SOA projects that work in a heterogeneous environment, and respondents cite a number of risks that must be addressed to maximize SOA value. Specifically, those surveyed identify the following:

- **SOA that fails to deliver business value.** One of the primary benefits of SOA is its ability to reach across multiple applications and aggregate the data necessary to make informed decisions. But if the data is inaccurate, companies run the risk of making decisions based on the wrong information.

"Bad business decisions will be made if someone is working with outdated data," says Michel Boeckx, CTO at AKER-North Philadelphia Shipyard. "In our business, the stages of production

TIBCO PERSPECTIVE ON ROLE OF INFORMATION

Insights from Matt Quinn, VP of Product Management and Strategy, TIBCO

The cost savings from using SOA as a faster, more efficient mechanism for application development are undeniably real, and more companies are reporting these benefits. The much larger value proposition comes from what you do with your new agile IT infrastructure to transform business processes. But these business processes are only as effective as the data they rely on.

So, to fully harness the power of SOA, an organization must first effectively manage its information assets.

"Only by making rich, accurate and consistent information available where and when it's most needed can companies continually improve processes and performance and anticipate and seize new business opportunities," says Matt Quinn, vice president of product management and strategy at TIBCO.

This has proved a challenge for many companies. Services whose data sources are plagued with redundant, inconsistent, inaccurate or outdated information will not deliver the expected

benefits or yield the desired results.

"The problem of data inconsistency isn't new, but in an SOA environment it is more evident and dramatic," says Quinn. "With composite applications that cut across systems, inconsistencies can no longer be ignored."

That's why organizations are increasingly implementing a comprehensive master data management (MDM) solution as part of their enterprise SOA strategy. Doing so can eliminate issues with data inaccuracy and inconsistency, automate data processes, help disseminate accurate information within and outside the enterprise through a data services infrastructure, and ultimately ensure that SOA initiatives deliver all of their potential benefits.

MDM has value across many industries and business processes, such as the retail initiative Global Data Synchronization or the Global Healthcare Exchange in the life sciences sector. Such programs clearly show the interest companies have in mitigating the significant business

impact of unaligned data.

With far-reaching bottom-line consequences, MDM will not succeed as a purely IT initiative. If CIOs want MDM to succeed, it must be a joint effort between IT and the business users who work with the data every day and who are affected by its accuracy and consistency.

To keep business users involved, IT executives must find MDM solutions that adapt to the way the business works rather than ask the business to adapt to how the software is built. Moreover, when the business must change a process or introduce a new service, CIOs need to respond quickly and flexibly.

"The value of an MDM solution is not in the initial cleansing and integration, but in the ongoing enforcement of information governance and the automation of information management processes—introducing, updating and synchronizing information," says Quinn. For this type of transformation to be successful it must have the support and enthusiastic embrace of its biggest stakeholders: the everyday business users.

will be impacted. Whether material is just ordered or if it is already received—that is the kind of information which is very critical. It has to be 100 percent accurate.”

• **Failed applications and project abandonment.**

Users won't buy in to any application that does not make their lives easier, and respondents acknowledge that inconsistent data increases the risk of project failure.

“The risks are loss of customer satisfaction and trust. Therefore, the potential for strategic advantage offered by SOA is also essentially lost,” says Scott Clayton, director of information services and technology at VT Specialized Vehicles Corp.

The CIO of a media and entertainment company agrees: “Any application where the integrity of the data can't be trusted is very quickly not going to be depended on. There are risks to the success of the application and the business activity it supports.”

• **Reduced profitability and legal liability.** An SOA project that leads to misinformed business decisions could eventually hurt the bottom line, a disastrous business outcome.

“Bad decisions are made, lawsuits can happen based on inconsistent or outdated data,” says the real estate company CIO. “You make a deal based on up-to-date data, and if that data becomes stale and is no longer valid, then it could affect the bottom line.”

Implementation Challenges

Addressing the underlying data inconsistencies brought to light by enterprise-wide SOA implementations presents a number of challenges to CIOs, and a surprising number of them are not technical. The politics of working with different

groups, development teams and divisions, and/or across geographies presents a challenge to enterprise-wide deployment.

“The biggest challenge was coordinating between different development teams,” says Weinberg. “It was a lot of work to get everyone on the same page and to let them know what the benefits of SOA were and how we were going to go about implementing that across these disparate teams.”

Respondents say they find themselves playing the role of diplomat as they broker agreements across business functions.

“Everyone wants something different,” says Boeckx. “There are varying requirements, and while they need or want almost the same information, there are some little differences that exist and the requirement for SOA is that the data be consistent, totally consistent.”

CIOs also run into data territoriality issues within IT itself and find it difficult to integrate and standardize legacy systems, different data and database designs—all barriers to creating accurate and consistent data. As a result, CIOs are taking a careful, considered view of building SOA for the long term.

“When you're doing an enterprise-wide SOA [implementation], you want to get it right the first time because you don't want to be changing your architecture—the core components of your architecture—very often,” says Clayton. “You need underlying services and you need uniform ways to communicate with those back-end services—those being the databases, your services for authentication and authoriza-

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tion, how you're going to represent the user interface to the users, etc. So we've had to make some decisions about framework that we're going to have to live with."

Another wrinkle: Many of the applications CIOs work with have not yet been made SOA-capable.

Role of IT

CIOs point to the need to create strategies to ensure that information interoperates cleanly among data sources. Here, IT can help in several ways:

- **Interoperability.** "When we're out there looking for other vendors to partner with, [interoperability] is something that is part of our criteria," says Von Bergen. "They have to have the capabilities to integrate. We talk to a lot of people who are already using the product or approach to ensure it does what they say it does."
- **Changing IT roles.** As CIOs realize the need to build SOA architecture from the 50,000-foot level, they tap IT architects to take a more strategic role. Moreover, developers and programmers face the need to change. As they build services that reach across applications and functions, IT staff must think about business processes and how they best match discrete data sources. For this to work, CIOs must ensure that IT workers move beyond data territoriality to open up and share data resources enterprise-wide. "SOA requires changing our programmers' mentality, and people do not understand why we need to change the way we are doing things now," says Boeckx.
- **Vendor expectations.** CIOs wrestling with these expectations are turning their attention to the help that vendors can give, and respondents voice a clear mandate for SOA standards and a move away from

proprietary SOA offerings. "Every vendor unfortunately has a level of 'proprietary-ness' and a level of their own interpretation of SOA," says the CIO of a global banking company. "That is really what the challenge is—that is really what this is all about—that every vendor is doing it a little differently and there are different interpretations of SOA."

Respondents particularly cite the need for vendor services to help with SOA implementations. "We would expect to work with a vendor, and the attributes we would look for would be their ability

to address every phase of the service life cycle, from initial development, through the service, and through to the changes to the service in order to meet the new business requirements," says Boeckx.

CIOs universally recognize that the risks of implementing enterprise-wide SOA with inconsistent or outdated data could not only obstruct the success of the implementation, but could actually hurt the business itself. With such a high risk factor, it's clear that CIOs rate the role of information in a successful SOA deployment very highly, and are building their strategies accordingly.

"We also created a unified strategy for information integration because information and SOA have a symbiotic relationship," says Bhaskar Chakrabarti, principal IT architect at JP Morgan Chase in New York City. "SOA not only relies upon the information integration strategy, but, on the other hand, information management also helps with respect to SOA principles and practices." ■

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