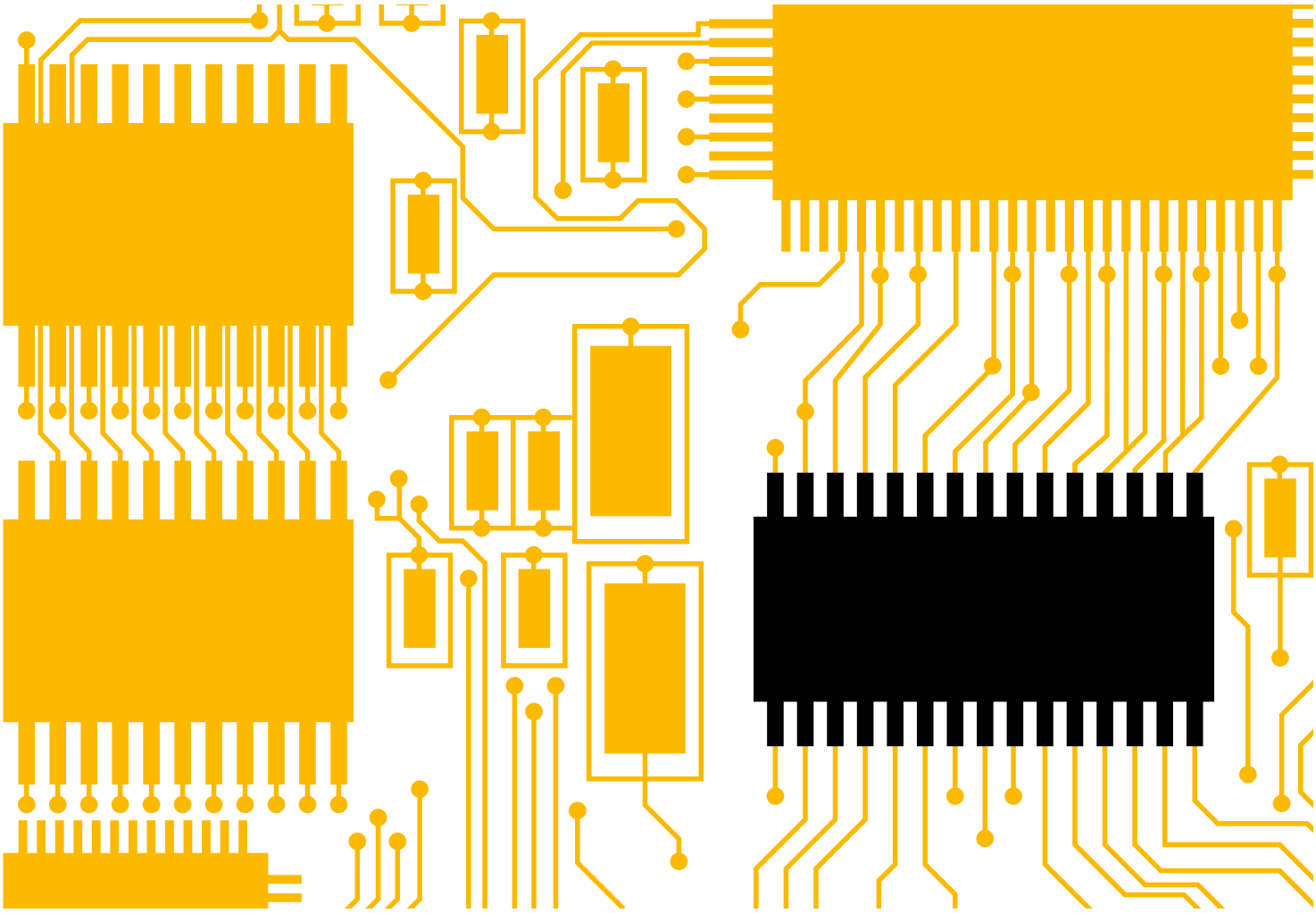
SAP Thought Leadership Paper
Information Management

Using Information to Drive Business Innovation

The Future of Data Management



The Best-Run Businesses Run SAP™

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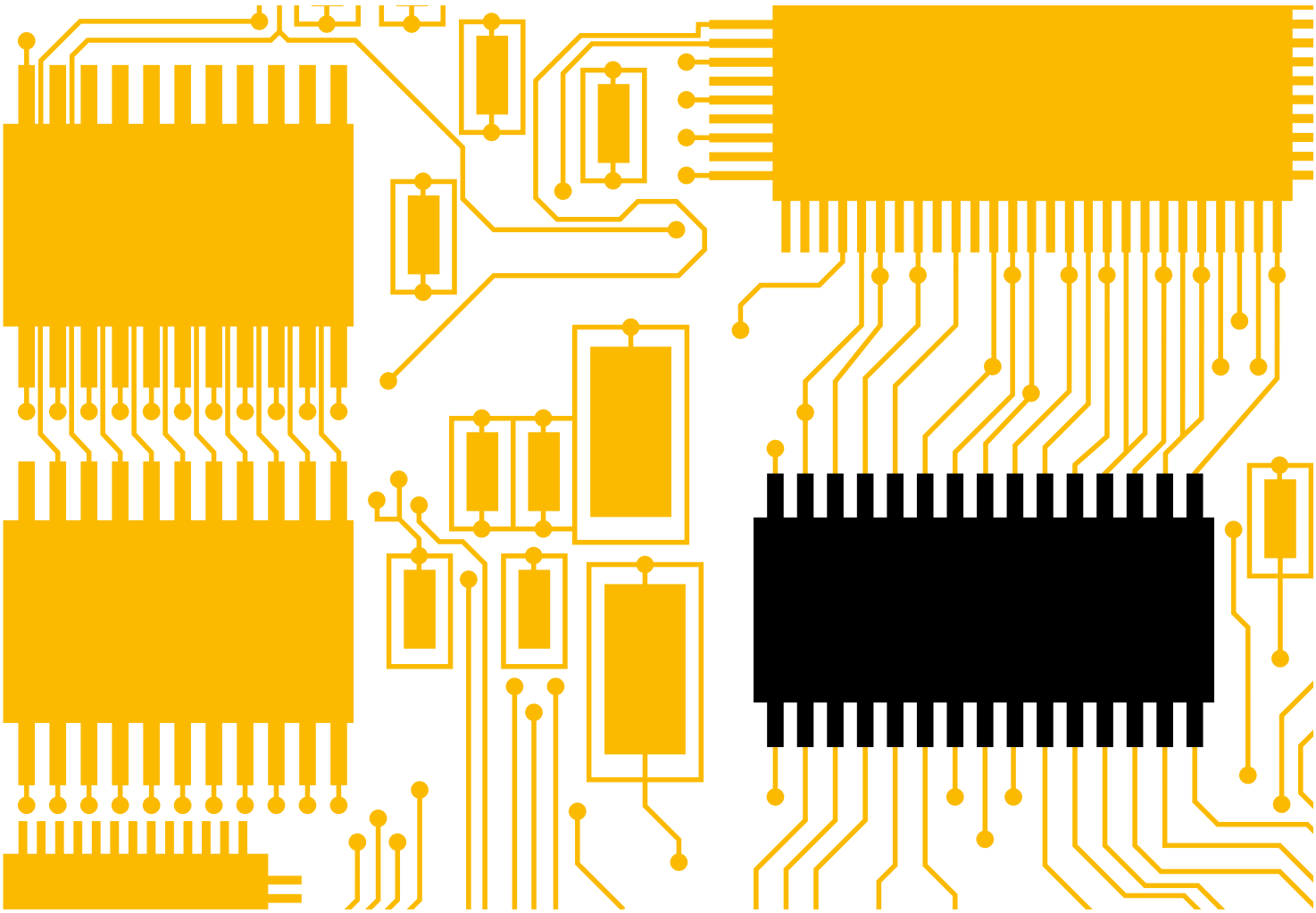
Nearly all businesses regard innovation as a technique for gaining competitive advantage. Data is a key contributor to innovation, and we produce, store, manage, and process more information than at any point in history. Conventional applications, novel data sources, devices, and real-time feeds are all major contributors to the profusion of data. With proper planning, infrastructure, and technology, you can derive value from your abundant data, promote business optimization, and obtain a stronger competitive position.



Executive Summary

In a highly competitive world, businesses seek differentiation based on the quality, range, and accessibility of their information assets. It's not enough to simply capture and maintain the larger data categories and volumes that every organization encounters today. Instead, transforming all of this raw data into strategic superiority requires an information management infrastructure that satisfies essential prerequisites.

Specifically, your data must be:

- **Real time** – Obtainable as soon as it's created
- **In context** – Presented in the right frame of reference
- **On demand** – Available where and when it's needed
- **Seamless** – Synchronized, even if it comes from disparate systems
- **Secure** – Available only to those people and systems given the authority to interact with it
- **Efficient** – Accessible quickly and smoothly, with minimal latency and overhead

In this paper, we present our vision of how you can skillfully use technology to capitalize on information to directly lead to improved business innovation. We describe each of the above requirements, along with how you can employ these characteristics to innovate and thrive. We then identify a comprehensive, end-to-end data management strategy and related technology platform that can help you deliver on the promise of innovation.

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The Game Changers

Regardless of your specific industry or domain, it's likely that your enterprise is discovering firsthand how new and existing data sources are spawning continuous – and enormous – streams of information. Data comes from traditional origins, such as enterprise applications, and countless new sources, many of which are generated by machines. Examples of these new wellsprings include e-commerce click trails, RFID and other sensors, Web queries, and mobile devices – to name just a few. Additionally, your organization must use and retain its data for much longer periods than in the past, for manifold reasons such as operational mandates, competitive analysis, and regulatory requirements.

Leaders of organizations like yours see the potential of reaping enormous rewards from this data. Benefits include smarter decisions, increased customer satisfaction, and enhanced revenue. Faced with all these prospective improvements, it's no surprise that so many enterprises view their data as a strategic asset. However, to achieve these positive results, your users must be able to successfully navigate this ocean of information.

To leverage data correctly and expeditiously, your organization's data infrastructure must satisfy each of the preconditions previously mentioned: that is, your data must be real time, in context, on demand, seamless, secure, and efficient. Let's examine these necessities in more detail, along with how your enterprise can use them to improve operations and encourage innovation.

ENABLING REAL-TIME ACCESS TO CURRENT DATA

Traditional and new data categories both offer tremendous value, but only if they're immediately available for your business users and decision makers. Working with stale, out-of-date information can be worse than having no data at all.

For example, users in global call centers rely on real-time data to help resolve callers' problems and complaints while they are on the phone with them. Real-time resolution reduces costs by eliminating the need to contact the client at a later point in time with an answer. Plus, you gain happier customers: delivering more responsive support goes a long way toward increasing customer satisfaction.

ACCESSING DATA IN CONTEXT

Your users can only employ data successfully if it has meaning and adds value in the right setting. Enabling access to data in context can inspire new insights, expand horizons, and lead to better conclusions. For example, with in-context data, your operational personnel are better prepared to use information to drive innovation. Supplying your salespeople with comprehensive, meaningful views of their customers' order, payment, and service history can help uncover new opportunities for incremental revenue.

ACCESSING KEY BUSINESS DATA ON DEMAND – NO MATTER THE DEVICE

Whether it's brand-new data or decades-old archived information, your users have come to expect access to all data instantaneously – and on the device of their choice (often, their mobile devices). With an infrastructure capable of on-demand access, your enterprise can offer customers secure access to their data without needing to get the client support team involved. This functionality advances your customer service while reducing costs.

FOSTERING EASE OF USE WITH SEAMLESS ACCESS TO DATA

You want to make it easy for your business people to interact with the right data without needing to "jump through hoops" – even if the information is from disparate systems or sources. Your technology solution should help them by "filling in the blanks" to support users in their quest for innovation.

An information platform that permits seamless data access will present your client-support personnel with all-inclusive views of customer interactions. These views should be available whether your communications are conducted in a technical support application, via a mobile device, or through social media.

SECURING YOUR DATA

It's crucial for you to protect sensitive customer information and thereby achieve business and regulatory compliance. Along with that, you need to make sure your solutions present the right data to consumers who are authorized to interact with it.

For example, a manufacturing firm can use its information infrastructure technology to determine who should be able to access data such as order and shipment details. In this way, it can grant the appropriate, secure access to partners, resellers, suppliers, and customers without exposing sensitive invoice and payment information.

INCREASING EFFICIENCY

To achieve the highest degree of utility from all of your data, gaining access must be simple and speedy. The overarching goal for your enterprise's information architecture is to present all required information quickly, with minimal latency. Rapid and efficient access makes it easier for users to do their jobs and also lets your customers reap the rewards of self-service. The end result for your organization is increased user efficiency, greater productivity, and customer satisfaction.

To leverage data correctly and expeditiously, your organization's data infrastructure must make data available in real time, in context, and on demand – while ensuring that it is seamless, secure, and efficient.

End-to-End Data Management Strategy

LEVERAGING DRAMATIC CHANGES IN STORAGE AND PROCESSING SPEEDS

Keeping track of all this data – and reaping its rewards – would be cost prohibitive if not for the dramatic decreases in the price of storage that have taken place in the past two decades. However, cheaper and more expansive storage is only one part of the picture. Information processing speed is also very important.

Accessing data that's kept in memory is approximately 10 million times faster than accessing data that's stored on disk (a blindingly fast 0.4 nanoseconds for memory instead of a more leisurely 4 million nanoseconds for disk). These performance differentials mean that memory-based solid-state disks must now be included in any enterprise-grade information architecture.

CHANGING THE GAME WITH INNOVATIVE SOLUTIONS

The cost and performance improvements that we've just portrayed are game changers that are helping spawn new, innovative solutions capable of supporting the broad spectrum of contributors to your enterprise's data portfolio. Your technology solutions should address big data, analytics, cloud computing, mobile devices, and social networking.

Leverage Big Data

"Big data" is an umbrella term that refers to two major converging trends:

- **Greater volume of data** – There are now much larger amounts of information in play, ranging from terabytes to petabytes
- **More categories of data** – There are also many more data categories, including traditional data along with unstructured information

You should be sure that your data management strategy can encompass both "big data" trends – greater volumes and broad categories of data.

Tap into Analytics

High-powered analytic capabilities are within reach of just about every organization today. You can use these new analytics tools to stimulate more intelligent tactical and strategic business decisions.

Manage Your Data with Cloud Computing

Cloud computing can help you lower costs, increase service levels, and provide broader information access. Many organizations are rolling out hybrid cloud strategies as well, with certain categories of information remaining behind the firewall.

Empower Your Users with Mobile Computing

Forward-thinking enterprises understand that mobile devices will be a reality from now on. Your users expect to access data on the device of their choice, which increasingly is a smartphone or tablet computer.

Expand Your Customer Reach via Social Networking

More and more of your employees and customers are using social networking for myriad reasons. Facebook, Twitter, and other social network platforms are increasingly popular and provide opportunity for you to interact with your business users and customers.

EXTRACTING THE MOST VALUE FROM YOUR BUSINESS DATA

Naturally, your organization needs to construct a data management platform capable of extracting the most value from all the data your business collects. Your platform must offer capabilities that excel at the essential data management requirements for transacting, moving, storing, processing, and analyzing data.

Ensure Transactional Integrity as a Matter of Course

Traditional transactions are still at the heart of your enterprise's daily operations even though there are many new categories of unstructured, ad hoc information. Accordingly, your solution must protect transactional integrity as a core competency.

Move Your Data to Where It's Needed

Data is being gathered and managed in more locations, which means that your technology platform needs to be able to efficiently move this information to wherever it's needed. Your sources and destinations will range from enormous remote server farms all the way down to a single mobile phone.

Enable Sufficient Storage

With data being collected at a faster pace, your technology platform must provide various options for maintaining this information. Your options may include using solid-state disks as well as established disk storage.

Create Efficient Processes

To fully exploit the potential of your big data, your technology platform must be able to work through all of your information to answer questions as quickly as possible. Establishing efficient processes will help you get the most out of your data.

Analyze Your Data to Spur Innovation and Better Decisions

Once all your data is in place, it's time to pair it with business intelligence so you can drive better decisions and encourage innovation. In the past, formidable barriers between online transaction processing (OLTP) and data analytics solutions hindered effective data analysis. Today, those walls are coming down. Closer integration helps OLTP processes by incorporating historical information into in-the-moment processes, while your analytics applications gain greater relevance with access to real-time information.

LEARN MORE

SAP understands that there's no "one size fits all" approach to information storage and management. For this reason, we offer a broad range of solutions that are designed to address your unique requirements. Our solutions include:

- **SAP® Sybase® Adaptive Server® Enterprise (SAP Sybase ASE)**
- **SAP Sybase IQ server**
- **SAP Sybase SQL Anywhere® solutions**
- **SAP Sybase Event Stream Processor (SAP Sybase ESP)**
- **SAP Sybase Replication Server®**
- **SAP HANA® platform**

As a major player in the database world, SAP follows a set of core principles:

- **Drive game-changing innovation in the database market**
- **Protect and extend our customers' investments**
- **Deliver an open and optimized data management portfolio**
- **Innovate across our entire solutions portfolio**

Learn more at www.sap.com/solutions/technology/database/index.

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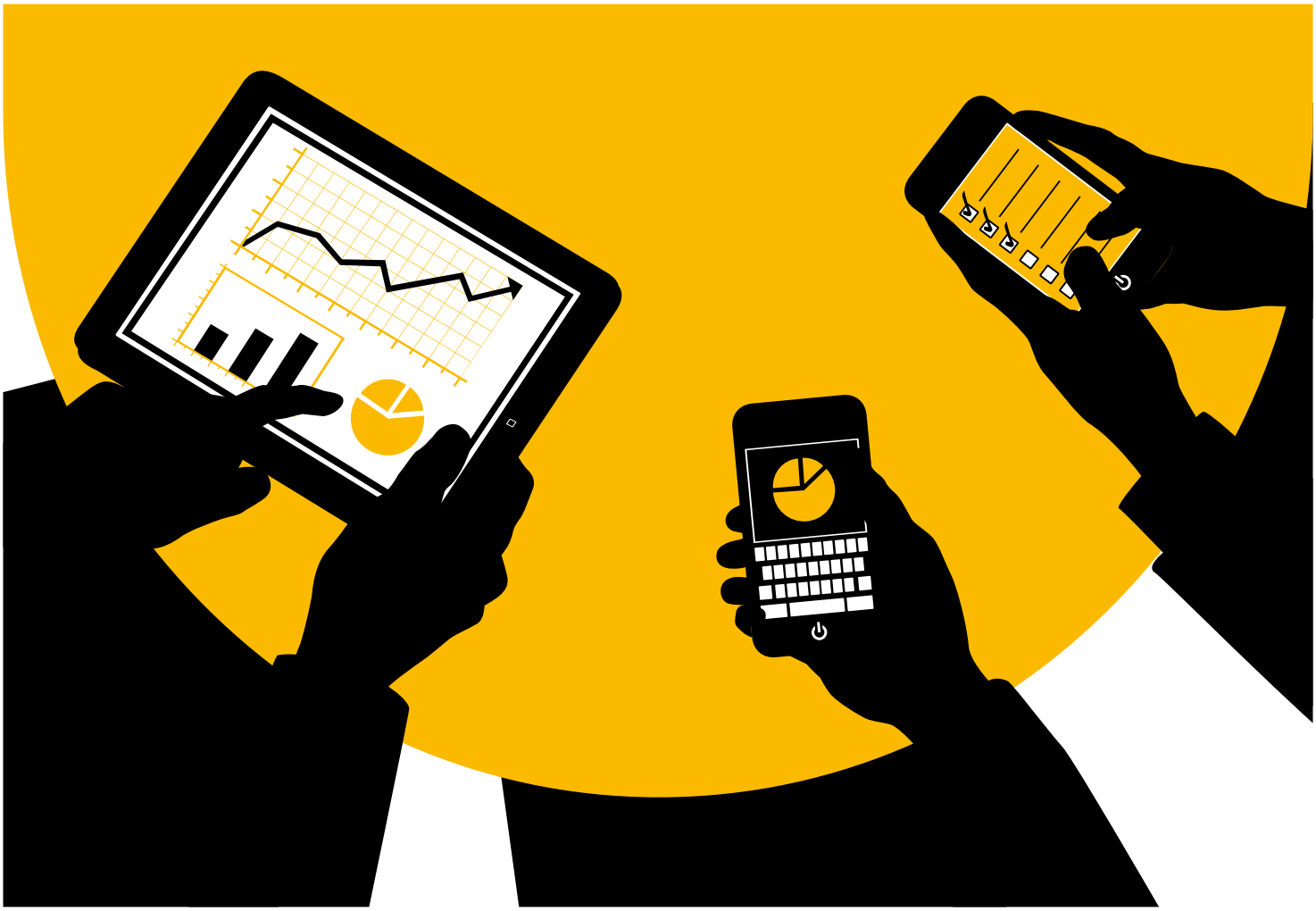

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