

Microsoft Dynamics™  
Enabling Real-World SOA to connect  
your business vision with software

White Paper

Date: March 30, 2007

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## ***Introduction***

Businesses need to connect processes, people, and information both within the organization and across organizational boundaries. Service-Oriented Architecture (SOA) is an emerging architectural style that helps meet these demands. Microsoft Dynamics has made investments in Web services and other SOA technologies across our product lines to help customers take a “Real-World” approach to SOA. This paper walks you through the tools and technologies that enable service orientation. The purpose of this paper is to share with you the value of Real-World SOA and a few success stories from our customers who have taken on Real-World SOA projects to support their business vision

## ***What is Real-World SOA?***

Business solutions don't work in silos. The free flow of information within and across organizational boundaries coupled with the ability to adapt to changing business requirements, are key business needs. With organizations increasingly relying on their information technology (IT) infrastructure to help drive success, lack of integration among IT assets can make it difficult for IT to respond quickly and effectively to changing business needs. Such inflexibility can increase costs, decrease customer responsiveness, hinder compliance, impede information flow and decrease worker productivity. Service Oriented Architecture (SOA) enables IT to meet the changing demands of businesses and to exploit new business opportunities. SOA is a design approach to organizing existing IT assets, so that the heterogeneous array of distributed, complex systems and applications can be transformed into a network of integrated, simplified and highly flexible resources<sup>(1)</sup>

SOA by itself is not sufficient to guarantee alignment of business and IT. SOA projects have limited success when they are driven from the bottom up by developers. Building SOA for the sake of SOA without reference to the business context is typically a project without organizing principles and guidance, and can result in a chaotic implementation with no business relevance. On the other hand, taking a top-down mega-approach to SOA can require enormous time investments, where by the time the project is complete, the solution no longer maps to business needs. In contrast, successful SOA initiatives are driven by strategic vision and business needs, and are realized through incremental, iterative SOA projects that are designed to deliver on business goals – what we call a “Real-World” approach to leveraging service oriented architecture.

At the core of the ‘Real-World’ approach to SOA is our objective of connecting your business vision with software. The goal of any SOA project should not be to rip and replace the entire IT infrastructure. Real-World SOA is about taking a pragmatic approach to systems integration so customers can quickly deploy new solutions that involve sharing data and processes across multiple systems. Time-to-value is much more immediate because this approach to SOA does not require a complete overhaul of existing technologies and business processes. Just as the name implies – through this approach we want to unlock the real-world value from existing assets wherever applicable. By exposing data and business processes as Web services, Microsoft Dynamics™ enables other systems to integrate seamlessly with its product lines. In addition, our ‘integrated innovation’ based on standards across the Microsoft technology platform can help further reduce time and money you need to spend on customizing the systems in order to support new opportunities. The result is a pragmatic approach to SOA that delivers real business value.

People are at the heart of any business. The degree to which your business solution architecture enables them to connect with the information they need and to the actions they must take is key to realizing greater success with the solution.

The Microsoft Dynamics research and development groups has conducted extensive research to create the Microsoft Dynamics Customer Model that helps us design software and services that supports the ways people interact in a business to achieve their goals <sup>(3)</sup>. The processes and the process orchestration that are built into our software are based on this in-depth customer research. As a result, we help provide software that can fit with your systems and processes.

## ***How Microsoft Dynamics enables Real-World SOA***

This section takes you on a tour of how Microsoft Dynamics enables customers and partners in Real-World SOA projects. Ranging from simple integration requirements to business challenges that necessitate the orchestration of processes across organizational boundaries ultimately providing enhanced business insight, different business scenarios can serve as driving factors for customer's to take on Real-World SOA projects.

Once the business problems and challenges are identified, the service orientation life cycle begins with creating services that expose data and business processes ("Expose"). Once individual services are exposed, they must be pulled together or composed into larger business processes or workflows. The goal of the compose phase is to enable greater business flexibility and agility by allowing processes to be added or changed without being constrained by the underlying IT systems and applications ("Compose"). The composed services can then be consumed in different ways to create new composite applications ("Consume"). The key tools and technologies that enable service orientation include:

- Web services that help enable implementation of the 'Expose' phase. For existing technology assets that cannot natively speak Web services, interoperability is attained through the use of adapters.
- Microsoft Office SharePoint Server and BizTalk Server - two key server technologies that help with composing or orchestrating services.
- Microsoft Dynamics client for Microsoft Office and SharePoint Server which serves as the platform for consuming the services

These tools and technologies that are an integral part of Microsoft Dynamics help in every phase of a Real-World SOA project and are explained here.

### **Expose**

The "Expose" phase of the Real-World approach to SOA focuses on identifying which services to create from the underlying applications and how the services are implemented. Service creation can be fine grained (a single service that maps to a single business process) or coarse grained (multiple services come together to perform a related set of business functions). The most common way to implement services is through Web services. In addition to exposing data and business processes through Web services, Microsoft Dynamics provides pre-packaged

connectors, adapters and tools to create new services. The following summarizes the different tools and technologies that help with the expose phase of a Real-World SOA project.

### **Web services**

Web services help enable technology-neutral, standards-based communication both within the organization to break down the “silos” and across organizational boundaries. They are based on a core set of communication standards, including XML for representing data, the Simple Object Access Protocol (SOAP) for data exchange, and the Web Services Description Language (WSDL) to describe the capabilities of a Web service. Microsoft has invested heavily in Web services, building its entire next generation developer platform around Web services with Microsoft .NET. The extended components of the .NET Framework 3.0 for building and leveraging Web services are Windows Communication Foundation (WCF), Windows Workflow Foundation (WF), Windows CardSpace, and Windows Presentation Foundation. WCF takes Web services to the next level by providing developers with a highly productive framework for building secure and reliable Web service applications that interoperate across platforms.

Microsoft Dynamics leverages the .NET framework. Microsoft Dynamics solutions greatly simplify Real-World SOA projects since core service orientation capabilities are built not only in to Microsoft Dynamics products but also in its native infrastructure: Microsoft Platform components like SQL Server, BizTalk Server, SharePoint Services and Office SharePoint Server. Data and business processes within Microsoft Dynamics product lines are exposed as Web services that integrating applications can make use of. For example,

- Microsoft Dynamics AX - In addition to exposing relevant data and business processes as Web services today, Microsoft Dynamics AX will align with the .NET framework 3.0.
- Microsoft Dynamics CRM - Entities shipping with and created in the Microsoft Dynamics CRM platform are programmable through secure Web service APIs. With Microsoft Dynamics CRM architecture, Web services can be defined – their relationships can be defined – and the services can then be exposed.
- Microsoft Dynamics GP - With the release of Developer Toolkit for Microsoft Dynamics GP, the system offers Web services to access documents and processes in the system. Microsoft Dynamics GP 10.0 exposes over 250 Web services that are built on the .NET framework.
- Microsoft Dynamics NAV 5.1, built on the .NET framework, will be completely Web service enabled with a potential of over 1600 Web services out-of-the box. Customers and partners can add new Web Services as well as extend existing ones, with the Microsoft Dynamics NAV tools.
- Microsoft Dynamics SL 7 is built using Visual Studio 2005. This lays the foundation to leverage the .NET platform to expose web services with Microsoft Dynamics SL

Use of Microsoft Dynamics Web services ranges from streamlining data entry to performing complex processes. Web services enable the smooth flow of information to and from your web storefront, legacy or back office applications. As an example, a truck driver, delivering goods, could update inventory records in Microsoft Dynamics from his mobile application that utilizes Web services offered by Microsoft Dynamics to integrate in to the system. The inventory records get updated real-time and the truck driver does not have to return to the office to provide information on delivered goods. Data integrity is preserved as the business logic within

Microsoft Dynamics is executed, to check on the data entered via the mobile application. In this case, the ability to update the inventory records automates a labor-intensive process and enables real-time tracking of inventory status. Multiple integrations could also be built in to this service. For example, when the inventory record is updated in Microsoft Dynamics, the service could trigger the process of replenishing inventory if it goes below the required stocking level. Such a process helps in effective inventory management. The Real-World SOA in action section of this paper provides more examples of the use of Web services in real business scenarios.

### **Application Integration Framework (AIF) for Microsoft Dynamics AX**

AIF for Microsoft Dynamics AX is a new integration framework that is designed to support a number of businesses-to-business scenarios including the order-to-cash as well as the procure-to-pay cycles, in addition to application-to-application integration scenarios including hub and spoke deployments. With AIF, developers with limited web experience can easily create their own Web services, without writing a single line of code. This helps users quickly adapt to changing business processes and requirements by creating and customizing the services that they need with ease.

AIF also provides a rich infrastructure to establish business policies, such as regulating access and information visibility with respect to the data and actions associated with a process. For example, a manufacturer may decide to expose inventory data to its vendors. The manufacturer may also want to differentiate the information provided to preferred vendors and standard vendors. AIF allows the manufacturer to establish the business policies that cater to their specific needs and provides a wide range of flexibility with respect to regulating data and associated actions. In all, through the XML-based transaction and document-oriented interfaces AIF allows the free flow of information across organizational boundaries through web services, thereby enabling users in the “Expose” phase of the service orientation life cycle.

### **Prepackaged Connectors and Adapters**

Pre-built connectors and adapters play an important role to helping achieve seamless interoperability across different systems thereby enabling the “Expose” phase of the service orientation life cycle. As an example, Microsoft Dynamics AX that provides Web services natively also provides a standard connector to BizTalk Server that defines the data mappings and process flows into and out of the Microsoft Dynamics AX system. With 23 applications and technology adapters delivered out of the box, BizTalk Server helps deliver connectivity to third-party applications such as those from SAP, Oracle, PeopleSoft and other legacy systems. To unlock the value of existing assets that may not natively speak Web services, adapters and connectors play a key role in providing interoperability thus helping enable the “Expose” phase of a Real-World SOA project.

## **Compose**

Once services are exposed, the next phase is to integrate and orchestrate processes – called the “Compose” phase. Microsoft provides enabling technologies that support the flexible design, automation, management, and optimization of business processes. Two of the key server technologies for orchestration of processes are BizTalk Server and Office SharePoint Server 2007. Following is a summary of how Microsoft Dynamics and the server technologies work together in composing or orchestrating processes.

### **Microsoft Dynamics & Microsoft Office SharePoint Server**

Designed to help optimize the way people work within and across organizations, Office SharePoint Server enables users to take advantage of workflows to automate and orchestrate business processes. For example: Microsoft Dynamics GP 10.0 utilizes the workflow engine to gain more visibility into common business activities like order review and approval, issue tracking, and signature collection. Integrating to Office SharePoint Server, Microsoft Dynamics GP leverages its Web services to enable workflow, search of structured data, out-of-box dashboards, and list or profile pages for key roles within the portal. This integration facilitates end users to easily define and orchestrate (compose) their own processes using familiar Microsoft tools. As another example, through its Web services architecture, Microsoft Dynamics CRM can, not only provide data integration with other applications, but can also provide process integration. Microsoft CRM leverages the .NET platform and through its Web services, provides users the ability to integrate and orchestrate processes using SharePoint or any other application. Microsoft Dynamics CRM adapts easily to your existing business workflow and helps streamline business processes thus enabling the “Compose” phase of your Real-World SOA project

### **Microsoft Dynamics & BizTalk Server**

Microsoft Dynamics and BizTalk Server together help enable customers implement their “Compose” phase of a Real-World SOA project. BizTalk Server acts as the management layer that orchestrates Web services, controlling the flow and aggregating individual services into a larger composite solution. With its core architecture based on XML and the .NET Framework, BizTalk Server supports all the open standards upon which Web services are built. Through the use of a broad range of adapters that BizTalk Server offers, customers can leverage existing IT assets, making the functionality of legacy systems and applications available throughout the organization. In addition, BizTalk Server allows the addition of customer-created business rules to alert users when a situation requires attention or intervention. Adding BizTalk Server to Microsoft Dynamics provides agile integration, intelligent real-time process visibility, and adaptive business process orchestration (composing services) both within the four walls of the enterprise, and across the entire value chain, helping to deliver a fully connected business. In addition, BizTalk Server provides native EDI, B2B and RFID capabilities that customers can leverage as valuable building blocks in their Real-World SOA projects. The Real-World SOA in action section of this paper provides examples of the use of Microsoft Dynamics and BizTalk Server in many business scenarios.

## **Consume**

The exposed services and composed processes deliver business value only when they connect people and the work they do. The goal of the “Consume” phase is to create applications that help increase worker productivity and enhance insight into business performance.

Both Microsoft Dynamics AX and Microsoft Dynamics CRM can consume Web services directly from other products and offerings and act as ‘composite application’ providing an integrated experience. In addition, Microsoft Dynamics Client for Microsoft Office and SharePoint Server provides an agile platform for the consumption of services. The following section summarizes the use of Microsoft Dynamics Client for Microsoft Office and SharePoint Server.

### **Microsoft Dynamics™ Client for Microsoft® Office and SharePoint® Server**

Microsoft Dynamics Client for Microsoft Office and SharePoint Server serves as a platform to consume multiple services and create composite applications that deliver great business value. Microsoft Dynamics Client for Microsoft Office consists of a number of self-service applications that are built to plug into the Microsoft Office system and Office SharePoint Server. Using the Microsoft Office system applications such as Microsoft® Office Excel® and Microsoft® Office Word, employees in roles such as Sales, Marketing or Operations can search financial, human resources, or supplier records within their back-end systems, and incorporate relevant information directly into the spreadsheet or document they are working on. For instance, Microsoft Dynamics Snap for Business Data Lookup allows a user to search their Microsoft Dynamics AX system records from within the document, spreadsheet or email that they are working on, as seen in the picture here. The Microsoft Office system products also have built-in support for consuming Web services: InfoPath has built-in support for binding to data through Web services, and Visio has built-in support for consuming database-driven Web services, such as Web services exposed by SQL Server's relational database.

Microsoft Dynamics portals that are built using Office SharePoint Server technology help share information easily, providing a strong collaboration platform. Through the use of portals, Microsoft Dynamics Client for Microsoft Office and SharePoint Server can provide employees with direct access to the most up-to-date business information by consuming Web services exposed by Microsoft Dynamics applications and other sources, thus enabling the “Consume” phase of your Real-World SOA project.

## ***Real-World SOA in action***

Using the tools and technologies that enable service-orientation, described in the previous section, customers and partners have pursued real-world SOA projects. In this section our customers and partners articulate the benefits they have realized, sharing with you their success stories. The solution and results help demonstrate the success of our customers in realizing their vision through the tools and technologies we provide to enable Real-World SOA.

### **Advanced Electronic Solutions<sup>2</sup>**

AES<sup>2</sup> (Advanced Electronic Solutions<sup>2</sup>) based out of San Diego is a construction-options integrator that installs a wide array of electronic and high tech equipment in residential and commercial buildings. Operating with multi-million dollar contracts from San Diego City School District, housing developers, AES<sup>2</sup> has partnerships with leading manufacturers like Sony, Dell, Sharp and others.

**BUSINESS SCENARIO :** AES<sup>2</sup> was on the lookout for an end-to-end enterprise system that would help automate their construction fulfillment cycle. No out-of-the box solution could meet their specific needs. Automated workflow was deemed mission-critical for this system integration business. AES<sup>2</sup> wanted a scalable, cost-effective solution.

**SOLUTION:** AES<sup>2</sup> engaged with Microsoft Gold-certified partner Solutions Consulting Group (SCG) to create this vertical specific solution using a Real-World approach to SOA. The ease of customization and standards-based integration provided by Microsoft Dynamics CRM and its Web services, together with Microsoft Dynamics GP, orchestration and consumption of services provided by BizTalk Server and SharePoint services made the automation of construction fulfillment cycle a reality.

**RESULTS:** The solution was implemented in phases by SCG in 9 months. The Company was able to achieve a 360-degree view of all facets of its business, from floor plans to subdivision plots to previous projects. Real-time project visibility through portals was achieved with SharePoint services integrated with Microsoft Dynamics. By leveraging Microsoft's unified solution stack, AES<sup>2</sup> has developed a congruent, highly integrated solution resulting in 151% overall growth in the business and 21% increase in profitability. They have performed more than 4500 total installations across 25 home builders. AES2 and SCG are partnering together and championing the system they created, as a solution for the construction industry sub-vertical across the nation.

### LinPepCo Corporation

Based out of Lincoln, Nebraska, LinPepCo distributes beverages and other supplies via their own dedicated fleet of delivery trucks from three distribution centers in Midwest. Their customers range from large retail chains to individual vending machines.

**BUSINESS SCENARIO:** For LinPepCo, load planning was a critical operation for their business. It was time consuming and demanded expertise that only a few people were trained to do. In addition, these instructions were hand written and the load planning was done using paper-based processes. Once picking and loading of these products was completed, manual update to systems had to be performed for real-time information availability. LinPepCo needed a solution that would automate many aspects of load planning, picking, and updating any changes to orders.

**SOLUTION:** Wireless handhelds for picking and scanning product integrated to Microsoft Dynamics GP using the Web services provided by Microsoft Dynamics GP enabled seamless integration and automation of load planning. Microsoft technologies that were used include Microsoft Dynamics GP, Microsoft® SQL Server, SQL Reporting Services, Microsoft Exchange Server, and the .NET Developer Toolkit. LinPepCo engaged with Quadis Technologies and Appolis, a Microsoft Gold Certified Partner specializing in Microsoft Dynamics GP, to implement this automated load planning logic.

**RESULTS:** The implementation time from the date the contract was signed to going live, was just about 90 days. Enhanced automation of labor-intensive manual process increased operational efficiency for LinPeopCo. Also LinPepCo expects annual savings of \$40,000 with implementation across all facilities.

### Derby City Council

Derby City Council is rated among the best local authorities in England and Wales by the Audit Commission, providing 230,000 people with more than 600 public services.

**BUSINESS SCENARIO:** Derby City Council which has 12,000 employees wanted a customer relationship management system to overcome departmentalized service delivery and fragmented views of citizens and their needs.

**SOLUTION:** Built on Derby's™ Strategic IT Framework, the solution incorporates Microsoft Dynamics CRM 3.0 for essential customer relationship management processes, and Microsoft®

BizTalk Server 2006 to orchestrate processes between agencies. Microsoft® Office InfoPath® 2003 and Microsoft® Office SharePoint® Portal Server 2003 ensure that Customer Service Information System (CSIS) agents and departmental specialists can share public records effectively. The orchestration functions of BizTalk Server 2006 are used to send e-mail messages to the appropriate customer teams, helping them respond to calls effectively. BizTalk Server also updates case records in Microsoft Dynamics CRM 3.0 with links to InfoPath 2003 forms in SharePoint Portal Server 2003. This ensures that every customer-facing council employee shares one view of the clients call. BizTalk Server 2006 also monitors case histories to detect completion, and updates Microsoft Dynamics CRM 3.0 when queries are resolved.

**RESULTS:** The new framework fully supports Derby's agenda for streamlining services to citizens by placing accurate, up-to-date information at agent's fingertips. Benefits include: improved quality of service from Derby Direct and most effective use of departmental specialist expertise.

### Lads Pet Supplies

Lads Pet Supplies sells a variety of pet foods to businesses including breeders and acts as a distributor for national companies like IAMS to sell their products to large chains such as PetSmart.

**BUSINESS SCENARIO:** Faced with shrinking margins and intense competitive pressures, Lads needed a cutting-edge software solution that could increase warehouse efficiency and propel them securely in to the future.

**SOLUTION:** To meet this challenge Lads worked closely with Microsoft partner, Appolis to help them extend their Microsoft Dynamics GP solution. Together they implemented a custom solution by integrating WithoutWire Warehouse (WoW)-a wireless management system developed by Appolis with Microsoft Dynamics GP distribution solution using industry standard technologies with Microsoft Dynamics GP distribution solution, utilizing Microsoft Dynamics GP Web services. Lads order entry employees use SmartList to see when their orders are processed through WoW and then integrated into Sales Order Processing for Microsoft Dynamics GP, which then automatically generates an invoice. As a result of integrating Microsoft Office Excel® 2007 with Microsoft Dynamics GP, Lads entry order process has also become more efficient.

**RESULTS:** The ability to integrate data between Microsoft Dynamics GP and WoW is saving Lads time and money. Previously, inventory adjustments, ticket printing, and route assignments had to be done manually. Now, with data sharing between Sales Order Processing, Purchase Order Processing, and WoW, the information is available in a couple of keystrokes, and inventory adjustments are made automatically through the system. Employees can view real-time information whenever they need it. They are also able to retrieve data from outside sources efficiently, without data loss and without compromising data integrity. Lads is now experiencing increased efficiency in their day-to-day operations and from their employees, resulting in new levels of customer satisfaction.

## sia Abrasives Holding AG

The Swiss based group sia Abrasives Holding AG is the third largest manufacturer in its field worldwide. The sia Group has companies in 12 countries and is present with agencies in more than 100 additional countries. The factories are located in the U.K. and Switzerland. Headquarters is in Frauenfeld, Switzerland.

**BUSINESS SCENARIO:** The sia Group was using many local ERP systems, which was inefficient because it meant that orders had to be entered twice. The sia Group wanted to standardize and consolidate all these small systems with an integrated ERP system that supported its international presence.

**SOLUTION:** The sia Group implemented Microsoft Dynamics AX in eight quite diverse group companies – from an Austrian sales company with five users to a U.K. manufacturing company with 65 users. The sia Group streamlined its order taking processes and can now easily react to changes in any country as well as saving costs on development and training. The sia Group implemented the Commerce Gateway module of Microsoft Dynamics AX together with BizTalk Server to orchestrate processes and as a result has been able to automate its intercompany business in one streamlined system.

**RESULTS:** As a result of implementing Microsoft Dynamics AX, sia Abrasives can now exchange sales and purchasing information electronically. Benefits include: Streamlined processes and standardized company-wide procedures, International functionality, savings in development and training, a technology infrastructure that grows with the business.

## Lantmannen Unibake

Lantmännen Unibake Poland produces both fresh and frozen bakery products to supermarkets and cash-and-carry stores

**BUSINESS SCENARIO:** The company planned a rapid expansion of its market with new production lines. It needed a business management system that could handle a fast growing workload and streamline business processes.

**SOLUTION:** Lantmännen Unibake implemented Microsoft Dynamics AX, which improved production flexibility and quality, and eliminated waste. Microsoft partner IT PiAST, a specialist in business management implementations, was chosen to carry out the installation and customization. IT PiAST carried out extensive integration as part of its implementation. In the production area, industrial automation devices have been extensively integrated into the Microsoft Dynamics AX system. In the warehouse, a Wi-Fi network connects the warehouse

module to wireless terminals placed on forklifts. Recipe, quality, and traceability components have been implemented within the production area that has improved productivity and operating flexibility, and cut waste. Lantmännen Unibake uses Microsoft BizTalk Server and Microsoft Dynamics AX.

**RESULTS:** Benefits for Lantmannen include: greater manufacturing flexibility, revenue growth by 43 percent since systems implemented, strictest food quality systems extended throughout plant, more efficient and better motivated employees, warehouse waste eliminated and product returns reduced

## MW Brands

MW Brands is one of Europe's leading seafood brands, and a growing force in the global seafood business. Based in United Kingdom, MW Brands was recently spun out of a major global food company and established as its own enterprise.

**BUSINESS SCENARIO:** The goal at MW Brands was to implement a high performance supply chain integration solution, that would support the requirements of the new enterprise, but cause no disruption to existing orders entering the business from key customers. Given the time-sensitive nature of both their business and the situation, MW Brands wanted a solution that would offer quick time to market and still meet their needs for a scalable, world class architecture that would support their projected growth.

**SOLUTION:** As a stand-alone company, MW Brands needed to implement a new ERP system to manage their entire business operations including: sales order capture, pricing links to distribution, back office financials, import / export and supply chain. MW Brands decided to pursue a Real-World SOA solution, comprised of Microsoft Dynamics NAV, BizTalk Server and the GXS Trading Grid. MW Brands has been able to implement the solution very quickly, realizing their goal of quick time to market, and –perhaps even more significantly – with no disruption to customer service.

**RESULTS:** Their Real-World SOA solution is helping them achieve the following goals: reduced operating costs and elimination of manual order checking, migration to a scalable, world class ERP and B2B infrastructure and migration with no customer disruption.

## Jet Support Services (JSSI)

Jet Support Services Inc. (JSSI) based out of Chicago, Illinois is in aircraft maintenance service business.

**BUSINESS SCENARIO:** JSSI wanted to expand its aircraft maintenance services business around the world, but its employees, vendors and customers were hampered by labor-intensive and disjointed processes.

**SOLUTION:** JSSI implemented the Microsoft Dynamics GP financial suite of applications, SQL Server, BizTalk Server, Business Portal for Microsoft Dynamics GP and the Microsoft Office

system. JSSI's Real-World SOA solution involving these Microsoft technologies has unleashed potential in its employees, customers and vendors. The solution has enabled JSSI to increase revenues and profits by expanding operations to Europe, Africa and South America. The new system dramatically improved customer service and vendor relations.

**RESULTS:** JSSI is realizing significant business benefits at the bottom line: Sales increased 20% in one year, while operating costs remained flat; time required to create invoices and make payment against them has gone from 10 days to 10 seconds per invoice; the vendor invoice analysis process from 30 days moved to less than 10 and saved at least \$60,000 annually in reduced payment processing costs. The solution also helped expedite cash receipts by a minimum of \$2 M per month and reduced audit fees by > 25% through Electronic Bank Reconciliation and reduced time required to produce supporting financial backup.

### Roland DGA Corporation

Roland DGA has an extensive network of dealers that sell its inkjet printers to customers in North and South America. Headquartered in Irvine, California, the company has 100 employees.

**BUSINESS SCENARIO:** Roland DGA depends on dealers in North and South America to sell its wide-format inkjet printers, vinyl cutters, 3-D scanning and milling equipment, and engravers. To support and develop working relationships with dealers, the company needed a comprehensive customer relationship management (CRM) system.

**SOLUTION:** Roland DGA teamed with Microsoft® Gold Certified Partner Axonom and implemented Microsoft Dynamics™ CRM to create a foundation for customer information that integrates easily with other systems. To gain industry-specific functionality, the company also implemented Axonom-developed solution Powertrak™, an add-in that extends Microsoft Dynamics CRM functionality. With Microsoft Dynamics CRM, Roland DGA created a centralized repository of customer data that sits alongside the Microsoft Office applications that employees use every day, for example, Microsoft Office Outlook® messaging and collaboration client. Within Office Outlook, employees can access Microsoft Dynamics CRM sales and customer service modules to make sales decisions, track reported problems, and obtain strategic views of the business. Employees create all new accounts in Microsoft Dynamics CRM; then, if an account requires a financial record, they link the account with Microsoft Dynamics GP. When they update information in one system, the changes automatically reflect in the other.

**RESULTS:** The combined solution of Microsoft Dynamics CRM and Powertrak was implemented in phases using a combination of resources from Roland DGA and Axonom. Benefits include: comprehensive data visibility, streamlined processes and industry-specific support. For example, marketing managers have reduced the time it takes to fulfill literature requests by 10 to 20 hours a week. Lead routing—a process that once took weeks—has been whittled down to within 48 hours.

## Stream Solutions

Stream Solutions is Australia's Leading Print Management Company and offers a web portal for the printing industry. Buyers can publish their requirements and seller can offer quotations for the work. On acceptance, the system builds the purchase and sales transactions as required. It also handles the logistics of deliveries and dispatch in warehouses. Stream Solutions engaged with Acumen Business Solutions with the requirement to design a system that is extensible. Sales order processing and Purchase order processing transactions from their portal were committed to Microsoft Dynamics GP via Web services. Acumen further customized the Web services for their specific requirements. A further application allows PDF invoices to be created, printed and filed automatically in sales Series Post. Their system also uses SQL Reporting Services to render, print and file the documents. The result is that Stream Solutions has a platform which is reliable and extensible.

## American Iron & Metal

American Iron & Metal, with a global presence across the Americas, Europe, Asia and Australia, is in the business of recovering and recycling scrap metal by-products into valuable, reusable raw materials. Over time American Iron & Metal had implemented several systems (AS400, EPICS etc.) to support their information needs. In an effort to centralize all the information American Iron & Metal engaged with Microsoft Gold Certified partner, Groupe Conseil LVMB, to create a solution that met their needs. The outcome was a solution with Microsoft Dynamics GP as backend that integrated with other systems that are very specific to their industry. American Iron & Metal used Web services provided by Microsoft Dynamics GP to build its reliable bridge with several systems. Benefits that American Iron & Metal gained by using Microsoft Dynamics GP and Web services included flexibility and ease of use with no compromise on data validation. American Iron & Metal implemented this solution in 1 month.

## Oncology and Hematology Associates

Oncology Hematology Associates (OHA) of Southwest Indiana, headquartered in Evansville, has three locations from which it delivers laboratory, radiation, and chemotherapy services to cancer patients.

**BUSINESS SCENARIO:** OHA wanted to find a way to integrate its multiple business processes to improve efficiency, support collaboration, serve its patients better, and increase its profitability.

**SOLUTION:** OHA uses several Microsoft Dynamics GP accounting applications to manage accounts receivable, general ledger, purchase orders, and accounts payable. OHA developed an electronic health record for its patients' charts and deployed Microsoft BizTalk Server and Microsoft® BizTalk® Accelerator for HL7. With this solution, OHA can exchange patient data—in real time—among its practice management software, its internal billing system and laboratory system, and an external lab facility. OHA also deployed Microsoft Office SharePoint® Portal Server 2003 and set up a portal site for sharing information. With this collaborative solution, OHA gained improved efficiency and data accuracy.

**RESULTS:** The practice's revenue and patient load have both grown by 15–20 percent in just 18 months. Other benefits include: easier collaboration among doctors and facilities, ability to serve more patients with existing staff, improved business process and data accuracy.

### Killdeer Mountain Manufacturing

Killdeer Mountain Manufacturing is a contract manufacturer based in Killdeer, N.D. with 300 employees producing electronic circuit board assemblies, cables and support equipment. Its focus is on-time delivery and quality.

**BUSINESS SCENARIO:** To remain competitive, KMM needed to modernize and automate its supply chain communications to increase efficiency, provide information in real time and reduce human error.

**SOLUTION:** An RFID-enabled supply chain network based on Microsoft Dynamics™ GP and BizTalk® Server. The streamlined business processes and process orchestration achieved with this Real-World SOA solution provides Killdeer real-time information, improves visibility and cuts costs across the enterprise.

**RESULTS:** Benefits realized by KMM include: cycle time cut in half, increased efficiency and productivity, enhanced customer service, improved inventory visibility and elimination of the need for a third party value-added network.

### Dixon Hughes

Dixon Hughes provides accounting, auditing, tax and consulting services to businesses in a variety of industries. It operates with staff of over 900 employees in 24 offices and serves clients throughout the United States. Dixon Hughes' affiliation with Moores Rowland International provides access to resources in 88 countries around the world.

**BUSINESS SCENARIO:** Dixon Hughes believes that their unique combination of regional, national and international resources, along with local firm responsiveness and personal attention is what provides them the perfect blend of professionalism and service. Seamless information flow from its CRM system to its other systems was crucial to its operation

**SOLUTION:** Dixon Hughes chose ExactTarget for Microsoft Dynamics CRM, which is an add-on Software as a Service (SaaS) application that is integrated to Microsoft Dynamics CRM through its Web services. The solution enables Dixon Hughes to create, deliver, and track compelling emails that leverage CRM data. ExactTarget's approach is unique in that it includes a

comprehensive toolset to drive dynamic content and deliver personalized messages on behalf of Lead, Contact and Account Owners.

**RESULTS:** ExactTarget 's solution accesses data directly from Microsoft Dynamics CRM through its Web services to create, deliver, and track email messages – which means users can keep their data right where they want it with no data synching or moving data back and forth between systems. With ExactTarget for Microsoft Dynamics CRM, users no longer have to worry about complicated HTML editors or the load placed on their own servers to deliver email messages. ExactTarget for Microsoft Dynamics CRM provides intuitive content creation and email delivery tools, along with powerful segmentation and personalization capabilities, real-time tracking results and analysis using Microsoft Reporting Services, and unparalleled delivery. WennSoft is currently in the beta phase of this project, so final business results are not yet available

### Wennsoft

WennSoft located in New Berlin, Wisconsin provides innovative business management solutions for both public and private sector organizations focusing on project-oriented, field service and equipment and fleet management.

**BUSINESS SCENARIO:** WennSoft's contact records are subdivided into unqualified contacts, "currently evaluating" prospects and existing accounts. WennSoft engaged with Vtrenz, Microsoft SaaS ISV and part of the Dynamics Certified Solutions Program, to help automate their lead generation process.

**SOLUTION:** Vtrenz iMarketing Automation is an on-demand solution. Using Microsoft Dynamics CRM Web services, the Vtrenz integration engine synchronizes each contact's data between Microsoft Dynamics CRM and iMarketing Automation.

**RESULTS:** With the real-time flow of information between Vtrenz iMarketing Automation and Microsoft Dynamics CRM, benefits are expected to accrue for WennSoft's marketing, sales and account management teams as they can see the touch points with a prospect or customer which will help them to sell, cross- or up-sell to the individual and not with generic offers. WennSoft is currently in the beta phase of this project, so final business results are not yet available

## ***Conclusion***

A “Real-World” approach to SOA, beginning with a focused understanding of business problems, enables organizations to align their IT assets with changing business needs and deliver on business goals. Microsoft Dynamics enables customers to take on this approach to help realize their business vision. Microsoft Dynamics solutions greatly simplify Real-World SOA projects since core service orientation capabilities are built not only in to the Microsoft Dynamics products but also in its native infrastructure - Microsoft technologies like SQL Server, BizTalk Server, SharePoint Services and Office SharePoint Server. In addition to Microsoft Dynamics Web services, the core capabilities of service-orientation are complemented with connectors, adapters and server-based solutions that support seamless integrations and the free flow of information. Microsoft Dynamics customers of different sizes have realized business value such as increased operational efficiency, strong collaboration across boundaries and enhanced user experience by using the “Real-World” approach to SOA. Our customer and partner success stories, some of which we have shared in this paper, re-iterates the ease of customization and standards-based integration we provide through our underlying architecture. Learn more about the tools and technologies we offer and take on Real-World SOA projects with confidence.

## Appendix

1. Real-World SOA through the Microsoft Platform :  
<http://www.microsoft.com/biztalk/solutions/soa/whitepaper.mspx>
2. Service Orientation and its role in your Connected Systems Strategy  
<http://msdn2.microsoft.com/en-us/library/ms954826.aspx>
3. Microsoft Dynamics RoleTailored Business Productivity whitepaper  
<http://www.microsoft.com/dynamics/product/familiartoyourpeople.mspx>
4. Microsoft Dynamics GP: Web services fact sheet  
[http://download.microsoft.com/download/1/3/6/136695BE-7A4A-43E0-9F5D-C9A85399AFB4/GP\\_WebServices.pdf](http://download.microsoft.com/download/1/3/6/136695BE-7A4A-43E0-9F5D-C9A85399AFB4/GP_WebServices.pdf)
5. Application Integration Framework  
<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/axitpro/html/576efdc3-8efc-48c5-bc4a-99308190c9fa.asp>
6. Biztalk Server and web services  
<http://msdn.microsoft.com/msdnmag/issues/07/03/ServiceStation/>
7. Talking with Navision: Exposing .NET components to Navision  
<http://msdn2.microsoft.com/en-us/library/aa973247.aspx>
8. Microsoft Dynamics AX Web Services and BizTalkServer  
<https://mbs.microsoft.com/NR/rdonlyres/A406B66D-A035-427B-822E-16D4B1768ECA/9393/MicrosoftDynamicsAXWebServicesandBizTalkServer.pdf>
9. Using Microsoft Dynamics CRM web services  
<http://msdn2.microsoft.com/en-us/library/aa685883.aspx>
10. Microsoft Dynamics GP, Microsoft Dynamics CRM together can help improve employee productivity, customer satisfaction, and company performance  
<http://www.microsoft.com/dynamics/gp/product/crmintegration.mspx>

