

Integrating the Enterprise

Leveraging New Technology to Tackle the Integration Challenge

A Technical Brief
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Tackling The Integration Challenge

With Synergy/Connex

As a greater number of businesses forge into, and progressively mature in the eCommerce marketplace, there is an increasing demand to integrate new and existing enterprise applications into an overall eBusiness solution. The roadblocks to success for many small- to medium-size businesses have been the cost, time, and expertise required to perform integration between existing legacy systems, eCommerce applications, process/workflow management applications, and supply-chain partners.

Typically this integration has been difficult due to dissimilar platforms, operating systems, databases, applications, and proximity. As a result, business processes are fragmented and inefficient. These challenges have put business in the position of having to choose between differing paths to eCommerce and business process automation. As a result, many eBusiness initiatives fail because supporting applications and processes are unable to provide a seamless solution to end users, and valuable data to executive and managerial decision makers.

This paper outlines how the Synergex/Connex Integration Platform can be leveraged to seamlessly integrate business processes, and the applications that support them, as well as reducing the time-to-deploy and implementation costs associated with integrating disparate and distributed applications. As a result, businesses can better manage their internal processes and inter-operate with external processes.

Application Suites

In an attempt to avoid the problems created by implementing disparate applications, many businesses consider an "Application Suite" that provides a pre-integrated set of process automation modules with built-in, cross-functional integration. SAP and Siebel are good examples of solutions that automate a variety of business processes within an Application Suite. Each offers a unique blend of Financials, Human Resources, Procurement, Customer Relationship Management, Marketing Campaign Management, and/or Sales Force Automation.

The built-in integration between product modules within an Application Suite is a major benefit. Unfortunately, more and more companies are finding it difficult to deploy these solutions and maintain an acceptable return on investment (ROI). Resource intensive customization is often necessary in order to deliver a user-friendly and functional set of tools to the end-user desktop. Differing requirements and experience levels between end-user groups make it difficult to create user interfaces and workflows that efficiently assimilate into business operations. Often, a module does not natively function within the boundaries of enterprise operational parameters. In many cases, users are forced to modify their workflow in order to interact with these applications. This may create a sense of "application indifference," which leads end-users to find workarounds to, or cause them to improperly use, the application. To remedy this situation, extensive customization of the application is required. Such an effort is resource-intensive and costly, which decreases the application's return on investment (ROI).

In companies where implementation of application suites has been successful, there are often further challenges integrating with, or in some instances replacing, legacy systems and eCommerce applications due to the complexity of customizations within the application suite, and the absence of a flexible integration platform.

Best-Of-Class Applications

An alternative method for providing business process automation can also be achieved by implementing one or more “best-of-class” applications. For example, a company may choose to implement a Miva Merchant eStore, Lawson Financials, and a SalesLogix SFA/CRM solution.

This type of approach provides cost-effective, highly specialized application solutions while at the same time building islands of information that are not integrated. Each of these independent applications is carefully selected by the business to provide process automation that appropriately fits requirements, budget and timeframe constraints. Until recently, the major obstacle to this approach has been integration between these “best-of-class” applications.

The Concept of Business Relationship Management (BRM)

The concept of Business Relationship Management (BRM) brings into focus the importance of integration within distributed application environments. Of utmost importance is the ability to process across platforms, applications and business entities. The criticality of solving these issues over a TCP/IP transport will determine how the Internet will be utilized in years to come. By integrating business processes, data, and applications using e-enabling technologies such as Synergy/Connex, a business will be better prepared to compete, provide a positive customer experience, and build strong brand loyalty.

Businesses typically have systems that automate key processes that are critical to daily operations. For instance, “customers” are typically serviced by a Customer Relationship Management



(CRM) system that allows tracking of issues from inception to resolution. Prospects are typically managed within a Sales Force Automation (SFA) or Opportunity Management system that allows tracking from target to close. These two processes (CRM and SFA), however, are components of a larger and more complex process known as Business Relationship Management (BRM).

BRM provides a higher-level of detail that not only includes the complexity of the individual business process components, but also the detail of handoffs that occur between them. For example, a “New Customer” event may occur after a prospect is “Won” and agrees to become a customer. If an enterprise is utilizing disparate systems to track prospects and customers, it will be important for these systems to simultaneously communicate and interact with this critical event by passing the prospect information from the SFA application (prospects) to the CRM application (customers). A typical BRM model might consist of the following simplified processes:

Campaign > Sales Opportunity > Customer Support > Customer Retention

Within these processes are critical sub-processes and stages that are conducted as part of daily operations. As an example, an SFA process might consist of these sub-processes:

- Contact Management
- Prospecting
- Qualifying
- Won (Close)
- Lost
- Objection (still a prospect, but has an obstacle to being “won”)

Integration between disparate business process systems provides the enterprise with more accurate information pertaining to the overall goals and objectives of the company, allowing upper management to make better, more informed decisions.

The Integration Challenge

The challenge of implementing best-of-class solutions into a unified Business Relationship Management (BRM) solution is integration. In the past, this has been a high-cost, high-maintenance process. Because of this, many businesses are hesitant to explore the “black box” that is integration.

The Synergy/Connex Solution provides an integration platform that quickly and efficiently integrates existing business systems with best-of-class applications within and across firewalls, and across the Internet. It also creates an e-solution environment that integrates into your business process and workflow across differing platforms. This allows businesses to leverage both existing and new technologies.

Using data-sharing standards such as XML (Extensible Markup Language), EDI (Electronic Data Interchange), and others, the Synergy/Connex platform provides dynamic link brokers that integrate with applications, existing legacy systems, eCommerce engines, and more. These link brokers enable rapid integration development, configuration, and customization. As a result, Synergy/Connex Solutions provide cost-effective integration that is low-maintenance and provides high ROI.

This is all made possible by leveraging the integration platform to dynamically generate and manage connections (link brokers) that enable communication between disparate systems within an enterprise. The use of several key technologies enable the Synergex/Connex Integration Platform to provide cross-platform solutions that can inter-operate with other technologies, messaging systems, and applications.

JAVA

Java is a cross-platform programming language from Sun Microsystems that can be used to create interactive functionality through a web browser. Java programs are typically embedded into HTML documents. Using small Java programs (called applets), Web pages can provide the user with easy-to-use, yet sophisticated, functionality. Java is not a compiler-based language. Instead, runtime “interpreters” are available for most operating systems and platforms, providing cross platform portability of Java code.

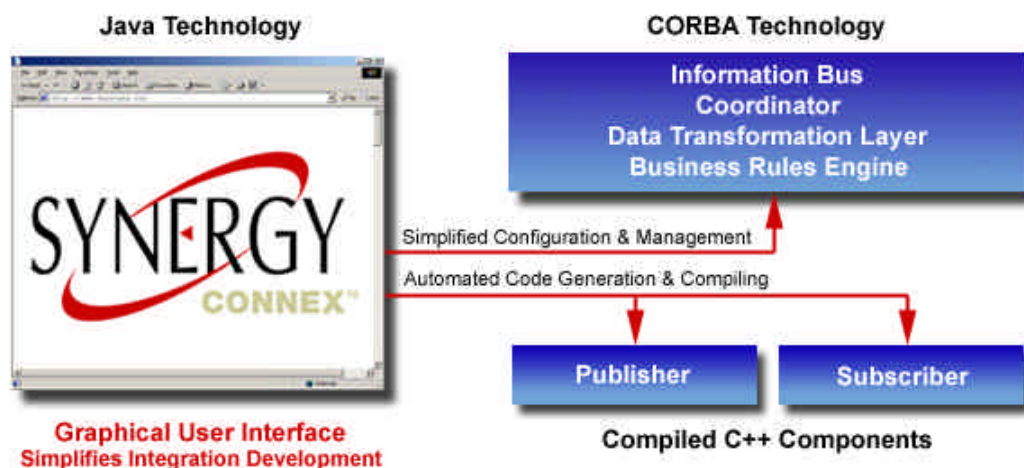
CORBA

CORBA, which is an acronym for Common Object Request Broker Architecture, consists of a technology layer that assists in transferring messages to and from objects between various platforms within a distributed environment, regardless of where they reside or who designed them. In short, CORBA defines true interoperability by specifying how Object Request Brokers (ORBs) from different vendors can interoperate.

C++

C++ is an object-oriented version of the “C” programming language. C++ is the basis on which the Java programming language was built. C++ compilers, which transform program code into executable machine language, are widely available for most operating systems and platforms. This gives C++ code the ability to be “portable” across many platforms.

Complex Technology Simplifies The Integration Process



Application Integration Connectivity

There are fundamentally different methods that can be used to facilitate connections between an integration framework and enterprise applications. Static integration uses the traditional and costly approach of analyzing application API's and then writing code (static adapters) that will connect and communicate. Dynamic integration leverages technology that "hot-builds" these LinkBrokers (dynamic adapters) for an API, which provides connection and communication without the need for API analysis and manual coding.

Static Adapters

stat·ic (stă'tĭk): adj. Having no motion, being at rest. Fixed. Stationary. n. Interference. Obstruction.

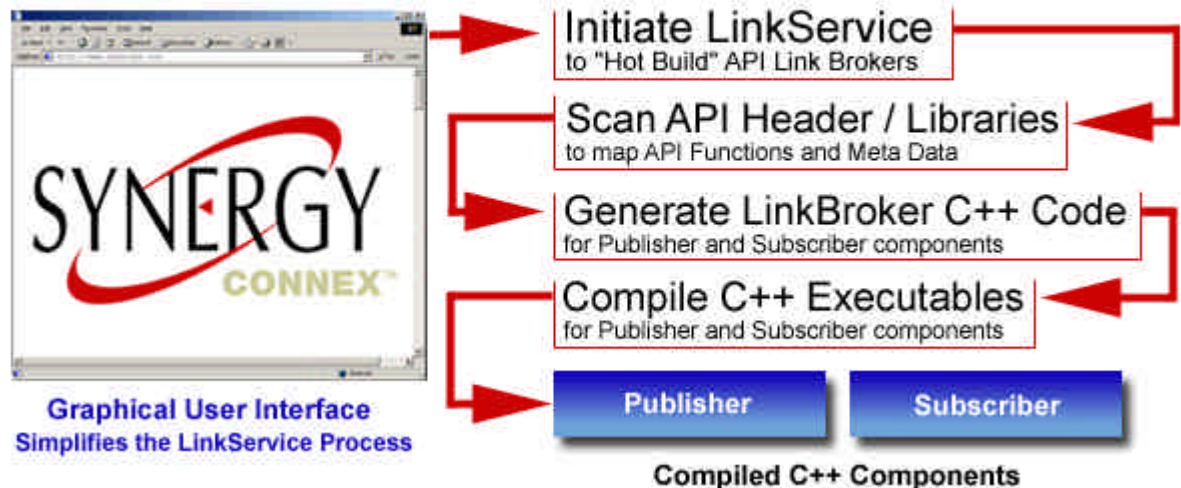
Enterprise Application Integration (EAI) solutions have been traditionally achieved by creating custom software that manages events, connections, business rules, and data transformation. Once completed, the solutions were functional but very expensive to maintain and manage. A simple change to the business process or workflow could result in hundreds of man-hours of coding and testing to deploy. Often this would include extensions to API's, modified database connections, and changes to static API adapters. Since these types of integrations are "non-intelligent", they cannot create on-the-fly connections between applications.

Dynamic Link Brokers

dy·nam·ic (dĭ-nām'ĭk): adj. Characterized by continuous change, activity, or progress. N. An interactive system or process.

With today's sophisticated technology, it is now possible to achieve integration connectivity quickly by "hot building" dynamic adapters (LinkBrokers) with the Synergy/Connex Integration Platform. Using a unique *Patent-Pending*, highly automated process called **LinkService**, Synergy/Connex eliminates the complex programming usually required to create API adapters that facilitate application integration. The net result is a highly functional application connection that is generated quickly, at low cost, and is very simple to update and maintain. This approach saves development time and cost resulting in a very high return on investment (ROI).

Building Dynamic LinkBrokers With LinkService



The Benefits Of Dynamic vs Static Application Connectivity

Integration implementations using static solutions typically result in applications that function, but at high cost and lower return on investment (ROI). Ever-changing business requirements, market conditions, and the fast-paced Internet economy require an integration solution to constantly evolve by adapting to changes required within various integrated applications. This evolution demands an ongoing change initiative that must follow a strict product development lifecycle in order to insure application and integration integrity. Such initiatives require many hundreds or thousands of man-hours to undertake. Business analysts must discover and document business, process and workflow requirements. From these, a technical design must be conceptualized. Once approved, software engineers who code and unit test the application must implement the design. Completed implementations must then be tested for functional application, workflow and process conformation, data integrity, regression, and final user acceptance. Each of these touch points provides the opportunity for failure, additional change requests, or acceptance. The highly iterative process of developing, testing and deploying enterprise software is time consuming, human resource intensive, and costly. For many small- to medium-size enterprises, the cost to deploy and maintain integration using static implementation methodology is unacceptably high.

Rapid Application Development (RAD)

Dynamic Integration Connectivity methods provide a Rapid Integration Development environment that builds mission-critical solutions while reducing development time by up to 50 percent. The Synergy/Connex Integration Platform eliminates the need for teams of high-cost software developers and complex implementation lifecycles, which dramatically reduces complexity within the integration development process.

Simplified Change Management

As an added benefit, the Synergy/Connex platform provides business with the ability to rapidly react to changing needs and market conditions by making real-time modifications to business rules, data transformations, and connections. Changes to an API only require that a new LinkBroker be generated and deployed, without the need for programming or the constraints of a complex development effort. Business rules and integration events can be added, changed or removed in real-time by leveraging the Rule Manager and Data Mapping components. Load balancing can be provided by quickly and easily creating new server instances and re-directing message traffic. All of this can be achieved, without the need to stop and re-start services or disrupt application end-users, via the GUI administrative console.

Lower Cost Of Development

By leveraging the technological advantages provided by the Synergy/Connex platform, integration can be rapidly implemented at significantly lower cost without the need for large development teams or expensive API expertise.

Lower Cost Of Maintenance

Also by leveraging the technological advantages provided by the Synergy/Connex platform, integration can be monitored, administered and maintained without the need for a complex support staff or expensive API expertise.

The Synergy/Connex Solution

The emergence of the Internet as a vehicle for applications platforms provides business with an opportunity to drastically change the way they operate. Today, collaborative opportunity exists, at a systems level, which was not possible just a few years ago.



According to *Information Week*, it is estimated that software license fees make up just 25% of the cost-to-deploy standalone CRM packages while the remaining 75% of cost is attributed to implementation and integration costs (March, 2001). Synergy/Connex is uniquely positioned to provide a combination of best-of-class applications and Rapid Integration that effectively reduces the cost of implementation and integration.

To this end, the Synergy/Connex Solution enables you to quickly deploy a unified, high-performance e-business environment that adapts to the needs of your business so you can benefit from technology innovations that...

- Integrate your existing business systems and best-of-class software to create a complete e-business solution.
- Provide your partners, suppliers, customers, and employees with a seamless online experience.
- Adapt to meet changing business needs and gets up and running in as little as three months.
- Inter-operate with other open standard technologies to provide maximum flexibility for your investment.
- Extend your enterprise to wireless devices.

Synergy/Connex Solution Components

The Synergy/Connex Solution delivers both application integration and business applications as a managed service. Each Synergy/Connex application and service package is enabled for quick application integration using best-of-class software. The solution is comprised of three major components, as follows:

Synergy/Connex Integration Platform

At the heart of Synergy/Connex is our proprietary integration platform, which provides a simple yet scalable solution. As a result, it enables integration between local and remote enterprise applications, application service providers, ecommerce applications, B2B trading partners, and wireless devices.

Synergy/Connex Applications

These modular applications, built from best-of-class software components, deliver functionality that can be quickly added, removed, or extended to meet the evolving needs of your business.

Synergy/Connex Service

Our team of first-rate experts provides core competencies that enable, support and extend your existing enterprise applications with the Synergy/Connex applications and integration platform.

Benefits Of Synergy/Connex

Low Cost, High ROI Dynamic Integration Technology

The Synergy/Connex Integration Platform greatly reduces the need for custom coding and application expertise for building API adapters. Instead, it provides a framework that enables dynamic integration connectivity and rapid integration development. The platform's technology and methods dynamically create connections (LinkBrokers) into an API, effectively reducing development time and cost. As a result, businesses realize a higher return on investment (ROI) that is not possible using traditional static adapter methods.

Adding Value With "Best-Of-Class" Applications

Synergy/Connex Applications combine the benefits of implementing best-of-class capabilities with the advantages of dynamic integration connectivity. This unique combination provides small- to medium-size businesses with solutions that seamlessly integrate with legacy systems, eCommerce applications, wireless applications and trading partners. These applications are cost-effective, quick to deploy, and immediately add positive value to the bottom line. Current Synergy/Connex applications include the following, with others scheduled to be added on a regular basis.

- Accounting
- Call Center Management
- eCommerce
- eCRM (Customer Relationship Management)
- eMarketing
- Enterprise Application and Data Integration
- Financials
- SFA (Sales Force Automation)
- Wireless and Voice Technology

Real-Time Scalability

As integration messaging increases, the Synergex/Connex platform provides the capability for real-time scaling. Coordinator and Rules Engine components can be added to the integration framework in real-time, without the need to stop and re-start applications or other services.

Automated System Configuration

The Synergy/Connex architecture automates many system-configuration and management tasks, saving time and money. In a traditional EAI environment, this is a major component in deploying integration solutions.

Cross Platform Capability

The Synergy/Connex Integration Platform is capable of running on almost any business platform including Unix, Linux and Microsoft operating systems. Configuration management is provided with a Web browser-based Java applet that will run on almost any computer in any environment.

Security

Synergy/Connex benefits from plug-in, end-to-end message security that provides encryption for your data to ensure it moves securely over the TCP/IP transport.

Opportunities For Synergy/Connex

Being in business these days means being online. For mid-sized businesses, this requires more than a simple web presence. It means the imposition of unique requirements on daily business operations, and significant changes in the way companies do business. Synergex offers a unique blend of integration technology, application functionality, and unparalleled service offerings known as Synergy/Connex Solutions. These components help businesses implement requirements by e-enabling legacy applications, adding value with Best-of-class applications, providing development expertise, and supporting the solution with a service offering. In short, Synergy/Connex offers a total e-business solution.

BPI - Business Process Integration

Businesses with disparate applications typically have fragmented business processes without defined cross-process handoffs. The result is inefficient throughput, lower productivity, diminished sales, and a drop-off in customer satisfaction. By consolidating these disparate processes into a higher-level group of enterprise processes, companies will begin to see improvements that positively impact the bottom line and help to create a loyal customer base.

A2Ai - Enterprise Application-to-Application Integration

Disparate applications inherently create disparate islands of information. As a result, using this data for enterprise reporting is difficult, costly, and requires additional management. Access to an enterprise view of data and processes requires application-to-application integration (A2Ai). As eCommerce evolves, the pressure to integrate new applications with legacy business systems will become increasingly more important. High value, low cost, and rapid deployment will become requirements in helping the enterprise extend business and process to the Internet. The Synergy/Connex Solution provides a rapid deployment and management system for creating once-complex integrations between enterprise applications.

A2Di – Application-to-Database Integration

Legacy systems, particularly custom-coded applications, typically are devoid of an application programming interface (API), which makes integration a very difficult challenge. By leveraging the Synergy/Connex Integration Platform, it is now possible to perform database-to-database, application-to-database, and database-to-application integration in a fraction of the time it takes using traditional methods.

B2Bi – Business To Business Integration

The Internet has rapidly evolved over the last five years. At its inception, the Web was used primarily as an information access tool. Technology advancement allowed for the evolution of a second phase, which enabled Business-to-consumer (B2C) electronic commerce (eCommerce). A third phase saw the dawn of Business-to-business (B2B) solutions that allowed for supply chain and procurement automation via web applications. The fourth phase will evolve B2B into a Business-to-business Integration (B2Bi) environment that will allow trading partners and procurement channels to streamline operations using an internet-based framework, which will require “cross-firewall” integration. The success of B2Bi will rely largely on an enterprises ability to quickly and cost effectively implement B2Bi.

S2Ei – Solution-to-Enterprise Integration

In some instances an enterprise may need to add new applications to an already-integrated group of legacy applications. In other instances, an enterprise may have a single application suite into which they wish to integrate a new application.

In both cases, it is possible to utilize the Synergy/Connex Best-of-class applications combined with our Integration Platform, to provide “plug-in” managed solutions.

Integration Interoperability

The Synergy/Connex Integration Platform is a proprietary solution that provides interoperability with other integration standards. Message formats, queuing technologies, and object management methodologies can extend the Synergy/Connex solution so that it can grow as business needs change and technology advances.

Extending The Enterprise To Wireless Devices

Using HTML and WAP enabled wireless devices, it is now possible to use Synergy/Connex to extend applications and information across the web and on to PDAs, wireless phones, and other personal communications devices.

Synergy/Connex Is The Perfect Solution

Independent Software Vendors (ISVs)

ISVs (Independent Software Vendors) traditionally sell business process automation and support software directly to IT organizations. These solutions are often implemented as non-integrated applications that have little or no ability to communicate with existing core business systems. At worst, this creates an obstacle to selling the solution based on its inability to integrate seamlessly into the businesses existing applications infrastructure. At best, the solution creates an integration challenge for the IT organization.

ISVs can add value to their software offerings by leveraging the power of the Synergy/Connex Solution.

- Synergy/Connex Integration Platform provides an automated LinkService that hot-builds dynamic API LinkBrokers that allow for rapid integration development and simplified integration maintenance.
- Synergy/Connex Integration Platform provides an open integration infrastructure that builds a foundation for current and future applications.
- Synergy/Connex Applications combine best-of-class functionality and pre-built dynamic LinkBrokers that quickly integrate into the Synergy/Connex Integration Platform.
- Synergy/Connex Applications provide ISVs with an additional revenue stream by providing Managed Value Added Solutions into their product channels.
- Synergy/Connex Service provides ISVs with on-demand integration and application expertise to implement support and manage solutions.
- Integration adds value to ISV product offerings by providing integration capability and removing integration-related sales obstacles.

Application Service Providers (ASPs)

Application Service Providers specialize in providing totally managed software solutions to businesses for a monthly fee. Businesses that opt for this type of solution typically have neither the resource nor expertise to operate such solutions themselves, or are compelled to select this solution in order to provide a higher ROI than a traditional software development and management approach. In exchange for a totally managed solution, businesses must accept the limitations of an ASPs application functionality since there is usually only one product offered per business process. Integration can be achieved between the ASPs suite of applications, but it has difficult or impossible to cost-effectively integrate an ASP solution with a businesses existing applications infrastructure.

ASPs can extend their solutions into an enterprises existing applications infrastructure.

- Synergy/Connex Integration Platform provides an automated LinkService that hot-builds dynamic API LinkBrokers that allow for rapid integration development and simplified integration maintenance between a businesses existing applications infrastructure an the ASP software solutions.
- Synergy/Connex Integration Platform provides an open integration infrastructure that builds a foundation upon which an ASP can provide a totally managed and totally integrated solution.
- Synergy/Connex Applications combine best-of-class functionality and pre-built dynamic LinkBrokers that provide a simple way to add additional applications into an ASPs product mix.
- Synergy/Connex Applications provide ASPs with additional revenue streams by providing rapid integration and additional best-of-class applications into their customer channels.

- Synergy/Connex Service provides ASPs with on-demand integration and application expertise to help implement, support and manage solutions.
- Integration adds value to ASP product offerings by providing integration capability that can be extended into a customer's existing applications infrastructure, providing added value to the ASP solution.

End-User Companies

Many end-user companies have implemented one or many business process applications that provide functional support for a subset of their overall business process requirements. Unfortunately, for many small- to medium-sized businesses, the cost of integrating these applications has made it difficult to consolidate data and process across these disparate systems. The pain of integration has driven some into implementing "all-in-one" solutions that do not meet the needs of the entire enterprise. This results in "application indifference" brought about by dissatisfied end-users.

End-user companies can now leverage the benefits provided by best-of-class applications by easily integrating them into their existing applications infrastructure.

- Synergy/Connex Integration Platform provides an automated LinkService that hot-builds dynamic API LinkBrokers that allow for rapid integration development and simplified integration maintenance.
- Synergy/Connex Integration Platform provides an open integration infrastructure that builds a foundation for current and future applications.
- Synergy/Connex Applications combine best-of-class functionality and pre-built dynamic LinkBrokers that quickly integrate into the Synergy/Connex Integration Platform.
- Synergy/Connex Applications provide a low-cost, high-ROI solution for integrating and managing their applications infrastructure.
- Synergy/Connex Service provides professional services that provide integration and application expertise as well as integration and applications management.
- Integration adds value to the existing applications infrastructure by providing consolidated workflow and business process management, data integrity, and business management integrity.

Summary

The Synergy/Connex Solution provides small-to-medium sized enterprises with the ability to quickly and cost effectively satisfy three critical business needs.

INTEGRATION

Providing integration between legacy applications, web applications, supply chains, databases, wireless devices, and existing application infrastructures.

APPLICATIONS

Adding Best-of-class applications into an existing applications infrastructure, extending enterprise applications to wireless devices, and interacting within supply chains and with trading partners.

SERVICE & SUPPORT

Deploy and manage the solution that is best for your business by utilizing professional services, application and API development, integration development, monitoring, and maintenance.