SYSPRO™

SYSPRO Technology

Simplifying your Success™

About SYSPRO

SYSPRO is an internationally-recognized, leading provider of enterprise business solutions. Formed in 1978, SYSPRO was one of the first software vendors to develop an Enterprise Resource Planning (ERP) solution. Today, SYSPRO is a global company, represented on six continents and by more than 1500 channel and support partners. Thousands of companies across a broad spectrum of industries in more than 60 countries trust SYSPRO as the platform on which to manage their business processes.

Customer focus is a core component of SYSPRO's corporate culture and one of the key reasons for SYSPRO's strong leadership position in the enterprise application market. By focusing on people and building lasting relationships with customers and partners, SYSPRO consistently excels at guiding customers through all aspects of their adoption and ongoing usage. The aim is to deliver world-class solutions that give customers the control, insight and agility they need for a competitive advantage in a global economy. As such, SYSPRO provides a unique combination of robust, scalable technologies that ensure minimal risk and a high return on investment.

SYSPRO continually develops remarkable software that simplifies operational effectiveness and keeps customers in control of their businesses. Our vision is focused on meeting customer needs today and in the future.

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Introduction

Since its inception, SYSPRO has been providing software solutions to the small- and medium-sized business (SMB) market in the manufacturing and supply chain industries. The solutions enable these organizations to manage all aspects of their business using technology that:

- Is appropriate for their needs
- Fits the organizational and cost constraints in which they operate
- Minimizes the risks of technology adoption
- Provides the flexibility to change should market dynamics dictate

It allows the system to be tailored to suit specific requirements and new technologies to be used to further enhance the user experience.

In addition, the business can integrate other enterprise applications with SYSPRO for better operational control and management reporting. Taking this further, the software can extend beyond the enterprise to allow trusted customers and suppliers the ability to link with their own systems for better order and delivery performance.

In an industry where change is rapid, SYSPRO is able to keep pace with, and even move ahead of, technology developments. This enables our customers in the SMB market to improve productivity and efficiency while maintaining their competitiveness.

From continuing to improve on existing functionality to releasing brand-new features such as mobile applications and business process modeling, SYSPRO ensures that its customers are able to operate 'Simply Smarter'.

The SYSPRO Product

A single DNA foundation enhanced over 35 years

SYSPRO has been providing enterprise software for the SMB market for 35 years. SYSPRO's software is unique because it is based on a single code base, rather than being a mixture of different applications acquired over the years. The software is developed around business objects, components or blocks of code that represent a specific set of business rules and processes. Because of its component-based architecture, SYSPRO's functionality can be continually extended through the addition of new components, whether they are internally developed additions or new technology from a partner.
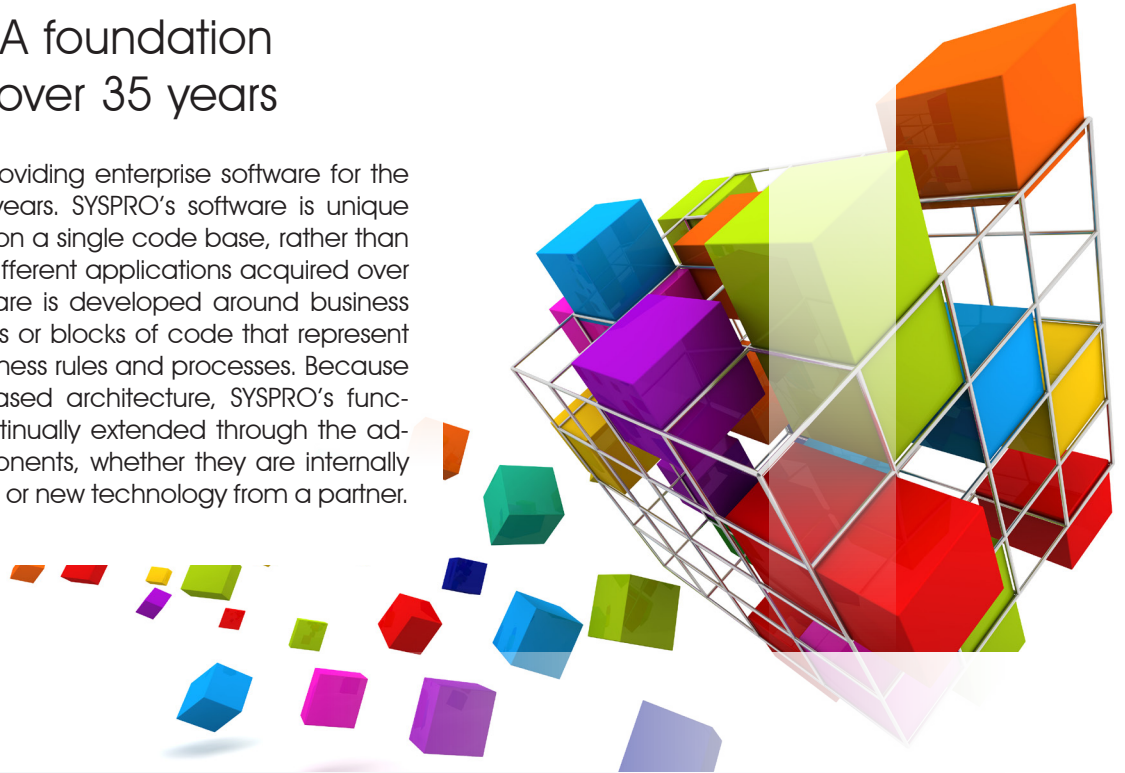
Standards-based technology

SYSPRO has always based its products around appropriate and relevant industry standards. In the early days, its technology used standards that allowed it to operate on both UNIX and DOS platforms. As standards evolved to a more Windows-based architecture, especially among the SMB market, SYSPRO took on industry standards that were Microsoft-oriented. One of the earliest Microsoft standards to be embraced was the .NET Framework. As the .NET Framework stack has developed, SYSPRO has been able to provide an open architecture and platform for developers to enhance and customize the SYSPRO user experience, as well as a set of APIs (application programming interfaces) for building connected applications, workflows and graphical user interfaces.

The Extensible Markup Language (XML) open standard was adopted as the standard for describing parameters and passing data between applications.

In the mobile applications field where multiple architectures create new problems for developers, SYSPRO has adopted HTML5 as the standard for mobile web deployment.

By being selective in the standards it adopts, SYSPRO makes it easier to build and re-use existing skills.

The combination of single code base and standard technology from Microsoft has allowed SYSPRO to offer unique solutions to the SMB market:

- Delivering integration capability to third-party applications before it became common
- Empowering customers to tailor the user interface of their SYSPRO client software
- Allowing customers to choose Microsoft Office as a user interface, cost effectively
- Providing a model-based implementation approach that is appropriate for the SMB market
- Offering a fully integrated process and workflow management toolkit

As standards change, e.g., mobile applications, SYSPRO continues to adapt and innovate to keep up with the changes.

Multi-tier architectures

Different operational situations require different IT architectures, and SYSPRO's architecture allows companies to deploy the software in a number of ways. SYSPRO uses a client/server architecture, where the programs that control the user interface (screens etc.) reside on a client machine, commonly a PC, and the application logic, data and main processing take place on a separate server.

SYSPRO separates the programming logic from the data to allow the system to be deployed in the optimum way for a business, depending on the type of infrastructure, size of business, and cost constraints.

The three elements of the SYSPRO architecture – database, application, client – can be combined or separated depending on the requirement. Implementing SYSPRO in a two-tier architecture is suitable for limited or small-scale environments. In cases of high application load, or large database size, the system can be implemented as a three-tier architecture.

The SYSPRO client can run via a normal TCP/IP connection, or can be set up to run over a WAN in thin client mode (mainly just for the graphical user interface), using application virtualization and streaming technologies such as Terminal Server or Windows Communication Foundation.

In addition, SYSPRO is available through the cloud using infrastructure such as the Microsoft Windows Azure platform.
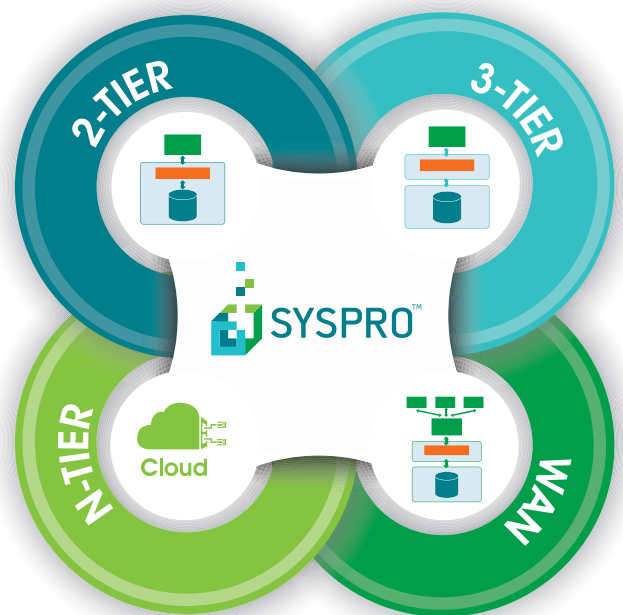
Scalability

SYSPRO provides the ability to scale to large deployments, handle high-volume single server instances, and accommodate multinational organizations with hundreds of subsidiaries.

SYSPRO Technology Architecture

User Interface

Communication

Programs

Business Logic

Database

Integration

Tools
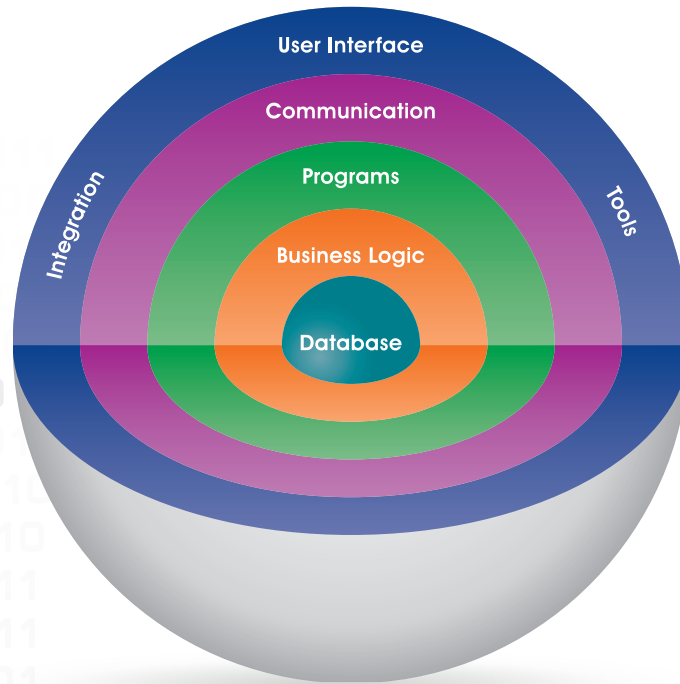
Database

The data of SYSPRO comprises all the master data (customer, supplier, inventory, etc.) as well as the operational, transactional and other information that SYSPRO manages. This requires a robust and secure data management system that will ensure data integrity and support high transaction volumes. To provide this capability, SYSPRO uses Microsoft's SQL Server relational database management system.

Business logic

At the heart of SYSPRO ERP are its business rules – business logic or functionality that is inherent to the application. Business rules are encapsulated in SYSPRO business objects, proprietary technology comprised of executable pieces of code that implement the business logic. The business objects ensure that the integrity of rules and data is maintained, whether the business objects are accessed from another SYSPRO program or an external application.

Programs

SYSPRO's development methodology uses the modular approach. The modules are built around core solutions – Financial, Distribution/Supply Chain, Manufacturing, Enterprise Reporting and Business Process Modeling. Because of SYSPRO's modular approach, companies can define how best to use SYSPRO technology to meet their exact requirements, and license only those components they need.

SYSPRO Product Supporting the Value Chain

Financial Control	Production Management	Distribution Management	Purchasing Management	Sales Management	Services
Accounts Receivable	Inventory Control	Warehouse Management	Purchase Orders	Sales Orders	Process Modeling
Accounts Payable	Bill-Of-Material	Inventory Control		Blanket SO	Workflow
Cash Book	Work-In-Progress	Lot Traceability	Blanket PO	Trade Promotions	Integration
General Ledger	Requirements Planning	Forecasting		Point of Sale	Analytics
Assets Register	Lot Traceability	Optimization	Landed Cost Tracking	Sales Analysis	Reporting Services
	Analytics	Goods in Transit/ Supply Chain Transfer		Quotations	Contact Management
	Product Configurator	Load Planning	Return To Vendor	Returned Merchandise Authorization	
	Engineering Change Control				
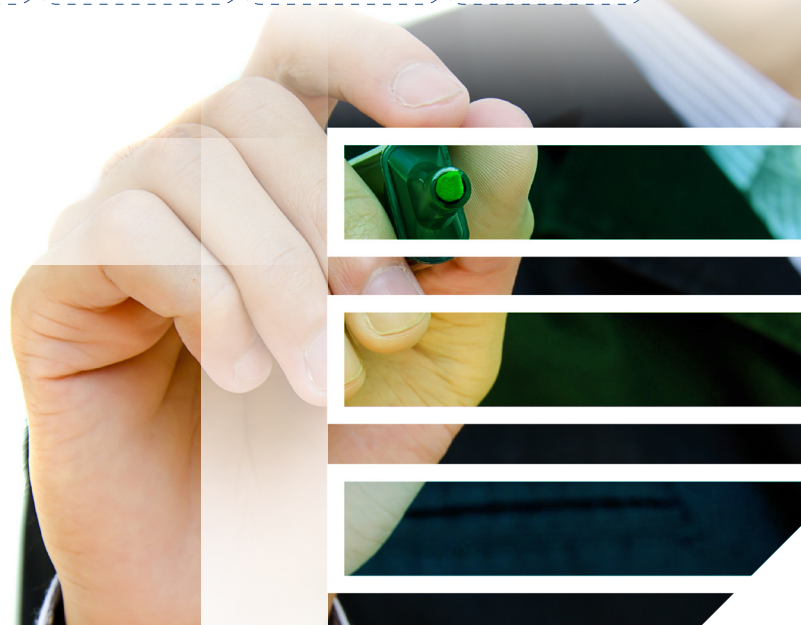
Communication technology

The SYSPRO client communication software is built on Microsoft's Windows Communication Foundation (WCF). WCF provides a communication layer that is reliable and robust with an open infrastructure so it is easy to deploy. It promotes the building and consumption of service orientated applications. The communication layer allows any application or system access to a large number of APIs which makes for easy integration using the REST or SOAP endpoints. There are several advantages to using WCF:

- Simplified network administration and communications infrastructure
- Multiple platform availability – Windows, web, mobile
- Standard SYSPRO security is automatically applied
- Accessible anytime, anywhere

Agile user interface

The SYSPRO user interface (UI), which makes use of Microsoft .NET technology, allows complete personalization and customization of the SYSPRO client experience – even in the hands of the user. The information presented in the UI can be customized by adding or removing contextual panes based on user functions. Panes are windows containing graphs, list views and other types of visual controls that are appropriate to the content being displayed. This makes for an agile user interface as the screen layout and content can be altered quickly.

Using the Windows Presentation Foundation (WPF) standards for the presentation interface, technology such as XAML and .NET User Controls allow developers to be creative when it comes to personalizing the user interface to fit the requirements of all users in an enterprise. Additional functionality which can improve the user experience includes:

- **SYSPRO gadgets:** These are quick views of relevant information; and
- **Federated Search** which provides an easy way to search, for particular items of information in the SYSPRO environment.

The combination of WPF in the user interface and WCF for communication makes possible the delivery of a Rich Internet Architecture (RIA) user experience. This is especially useful in cloud-based deployments.

The user interface of modern devices that include touch screens is catered for through SYSPRO's use of the modern UI style, as embodied in Windows 8. For example, tiles in SYSPRO are the equivalent of icons used to help navigate to common user functions; these tiles can be 'active', meaning that they can provide the user with frequently updated information without having to run the application. Flow graphs can also be used to graphically represent the sequence of the steps that a process must follow.

User roles

To ensure people have access to the processes, tools and information they require for their jobs, SYSPRO provides role-centric administration. Roles are created using meaningful names that match a job function. They are used to control the content and look of menu items, panes, display and entry forms, list views and other screen elements. This enables the user experience to be customized for a specific role, and can be used to enforce segregation of duties and security access.

SYSPRO Office Integration

SYSPRO has brought the familiarity of Microsoft Office applications Word and Excel to the SYSPRO user interface. **SYSPRO Office Integration (SOI)** enables users to access and query information from the SYSPRO ERP system using Word or Excel. It also allows users to record email activities from Microsoft Outlook. This can be done without having SYSPRO installed on the computer, and can also be done remotely using secure web services.

SYSPRO Mobile - Espresso

In the world of mobile applications, multi-channel and multi-platform delivery modes make application development complex. The **SYSPRO Espresso** framework enables mobile applications to be developed and deployed using a development environment that is endpoint independent.

With SYSPRO Espresso, developers are freed to use their existing development skills (HTML, C#) to create mobile business solutions without dealing with the specific requirements of each make and device.

SYSPRO Espresso applications can take advantage of smartphone sensors such as camera and geolocation, and can also be used in offline mode when out of network contact; synchronization can be done once contact is restored.

SYSPRO Espresso also creates an opportunity for organizations to support a BYOD (Bring Your Own Device) policy by supporting a device-independent user interface.

Security

SYSPRO's security controls enable enterprises to implement compliance policies by centrally defining the roles of the organization and configuring the program access permissible for each role, as well as the data the role is allowed to access, down to the field level.

In addition, **SYSPRO e-Signatures** offers centralized control over who is allowed to process which transactions, and ensures the integrity of operations. Security access, transaction logging and event triggering can be managed against a list of business processes and on a transaction-by-transaction basis.

Continuous controls monitoring is made possible through automated notification when significant events occur. An audit trail of completed transactions indicates who performed a transaction and when it occurred.

Integration

SYSPRO was one of the first software vendors to provide a framework that supported Service Oriented Architecture (SOA). SOA is a set of principles for deploying loosely-integrated services that are particularly suited for a web-based world and use multiple implementation platforms.

Using SOA can bring increased flexibility and agility to a system, and improved information exchange.

The **SYSPRO Integration Framework** provides the component-based technology to integrate SYSPRO with third-party and user-developed applications (including Microsoft Office products). The framework allows third-party applications to work directly with SYSPRO business logic and data without needing a SYSPRO client. This enables SYSPRO and data to be accessed and updated via a network or over the Internet but still within the control of SYSPRO business and security rules.

Using information

Reporting

SYSPRO offers an industry-leading enterprise reporting solution with **SYSPRO Reporting Services (SRS)**, using the well-known Crystal Reports Engine. Apart from providing standard reports, SRS enables the custom design of reports to virtually any level of complexity, complete with tailored reporting options, preferences, and layout features such as graphs. It allows reports to be shared between users while protecting access to information. SRS also provides the ability to quickly and simply produce professional-looking reports.

Cost savings are realized through the inclusion of built-in drivers, report archiving, quicker development time by eliminating the need for external report designers, and protection from changes in technology upgrades.

Analytics

An advantage of using SQL Server is that it also provides an add-on component – Analysis Services – to enable analytic capabilities. **SYSPRO Analytics** makes use of Analysis Services to build a data warehouse from which analytics cubes are created. The information in the analytics cubes can be displayed by any software that has the ability to access an OLAP data source, one of the most common being Microsoft Office Excel.
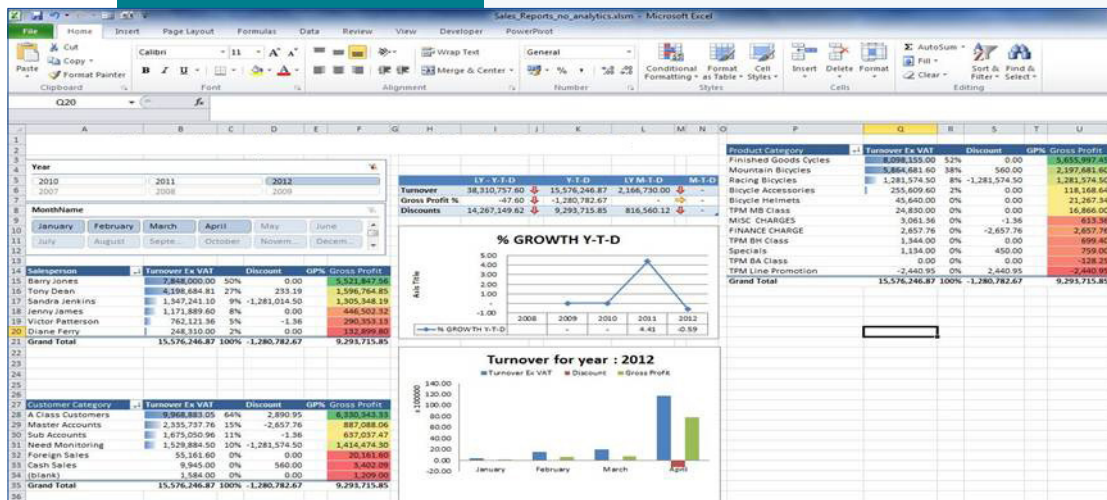
Dashboards

To get real-time graphical views of operational data and transactions, SYSPRO offers **SYSPRO Dashboards.** These provide business users with analysis and what-if modeling tools to take advantage of the data in their ERP.

Tools

Process Modeling

Business processes are the key to understanding the flow of information and activities within an organization, and process modeling has become important as a way of viewing, understanding and improving business processes. **SYSPRO Process Modeling (SPM)** is a tool that allows processes and activities to be mapped onto the SYSPRO ERP system; it uses the Enterprise Architect application from Sparx Systems to build the process models.

SPM is unique: not only does it have pre-modeled business processes, it also provides links from the business processes directly into the SYSPRO application.

SPM provides pre-configured and modeled process patterns on which a company's unique process requirements can be mapped. It provides a model-driven architecture that supports management by aligning IT with company strategy, business objectives and sustainability, and organizational roles. As the model data – processes, activities, roles, hierarchies, and configurations – are stored in a central repository, they can be accessed at any time for further process improvement and auditing purposes.
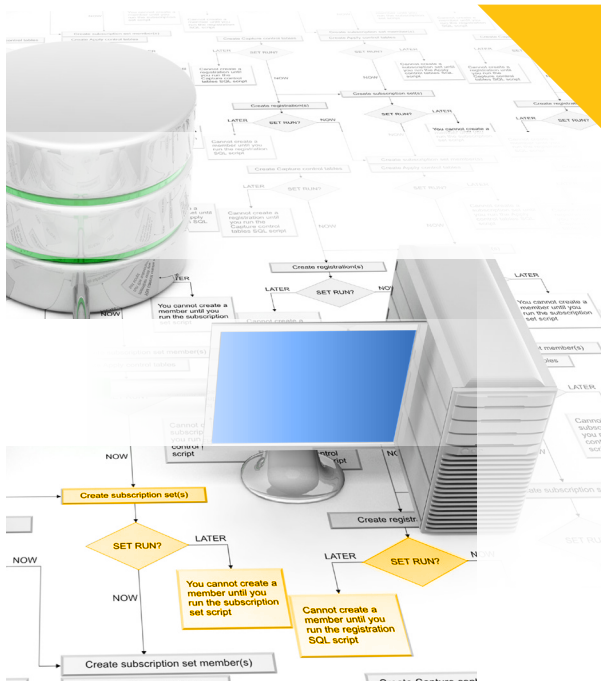
Workflow

Organizations are increasingly concerned that business processes are conducted properly – to improve efficiency, streamline operations, and ensure regulatory compliance. The **SYSPRO Workflow Services (SWS)** module provides users with an easy way to orchestrate or describe workflows in a visual form, much like flow charts but without the need to understand computers or programming. The basis of SWS is Microsoft Workflow Foundation which provides the framework to create and maintain workflows and activities, and manage a monitoring service. SWS uses Microsoft's Windows Communication Foundation for workflow communication and allows for various different communication or transport protocols.

Mobile

iPad®   iPhone®   Android   Symbian

Channel of Choice

WEB   Desktop Client   SOA business objects

Microsoft Office®   MS Outlook®   MS Word®   MS Excel®

SYSPRO™

Communication Protocols

WCF REST

SOAP

HTTP

WCF-NetTcp

Host Process

A workflow

An activity

Customer Services

Custom Activity Libraries

Windows Workflow Foundation

Base Activity Library and Framework

Runtime Engine

Runtime Services

Windows Service, IIS, AppFabric

SYSPRO technology enabling you and your business to be Simply Smarter...

The benefits of the SYSPRO architecture are applicable to both users and developers. The breadth and depth of functionality enabled by the architecture are hard to match and provide important features to a business selecting an enterprise software application.

The SYSPRO Eco-System

Other Applications

Microsoft Office®   Components

Channel of Choice

WEB   Desktop Client   SOA business objects

Terminal Server

Mobile

iPad®   iPhone®   Android   Symbian

Web Services

e.net Solutions

Windows® Server

e.net Solutions

WCF   DCOM

Visual Studios®   Windows clients   Microsoft® Lync™

Microsoft Office®   MS Outlook®   MS Word®   MS Excel®

Windows® 7   Gadgets Federated Search

Microsoft® SQL Server™

Microsoft® SQL Server™

CALs   Analysis Services

Extensibility – is the capability of a system to cater for future growth by including mechanisms for expanding and enhancing the system with new capabilities without having to make major changes. SYSPRO has shown proof of this with e.net Solutions, power tailoring and SYSPRO Process Modeling.

Accessibility – through e.net Solutions, users and other applications can gain access to SYSPRO in different ways, including new devices and mobile user interfaces.

Flexibility – the components of SYSPRO's architecture provide the flexibility to customize and present the application in different ways.

Tailorability – the user interface features in SYSPRO allow almost any change imaginable to be made to the screens that a user sees. This can be extended to tailoring reports, enabled through SYSPRO Reporting Services.

Version-independence – SYSPRO's technology ensures that user customizations made in one version of the software can be upgraded to a newer version without having to go through long and expensive conversion processes.

Security – with the combination of SYSPRO role-based administration to regulate access, and e.net Solutions managing access from external applications, the security of the SYSPRO application is maintained.

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