Highlights: Digital Technologies

SYSPRO 8

Reference Guide

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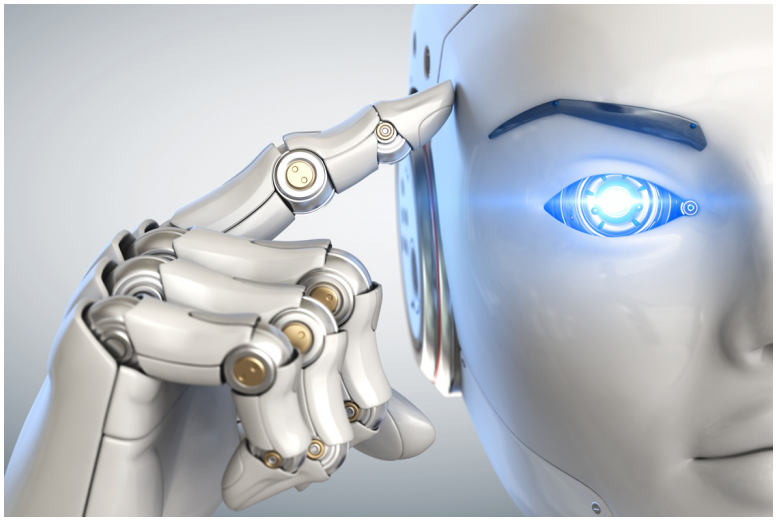
SYSPRO
Simplifying your Success

CONTENTS

Digital Technologies

Digital Technologies

The following provides a summary of the newly-developed features and functionality available in ***SYSPRO 8***.



SYSPRO delivers long-term business value, ensuring the viability of your business infrastructure. Future-proof your ERP investment by leveraging emerging disruptive technologies and the latest innovations.

Collaboration is improved through Social ERP and Analysis using predictive analytics and Data sentiment.

2019-R2

SYSPRO Rules Engine

The **SYSPRO Rules Engine** helps you streamline your business processes by acting as a sophisticated *if/then* statement interpreter (i.e. rule translator).

A set of services monitor your SYSPRO transactions in real time and (once a specific set of rules is defined) they analyze and determine when something you're interested in happens. Your configured actions required by each rule are then processed accordingly.

Rules are applicable to all SYSPRO transactions, regardless of where they originate (e.g. SYSPRO core product, ***SYSPRO Avanti***, ***SYSPRO Espresso***, etc.).

Benefits:

Incorporating rules that monitor your SYSPRO database log enable the following capabilities:

- **Stay informed**

  Always be aware of what's happening in your business by configuring rules that inform you when specific transactions take place.

  > **FOR EXAMPLE:**

> When a customer reaches their credit limit, SYSPRO can push a notification to ***SYSPRO Avanti***, begin a conversation using the **SYSPRO Bot** and surface a ***SYSPRO Harmony*** beat.

- **Automate processes**

  Automate actions that are required when particular events occur.

  > **FOR EXAMPLE:**
  >
  > Track the history of a specific database column.

- **Predict outcomes**

  Use predictions supplied by the **SYSPRO 8 Machine Learning** service within any part of a rule.

  The **SYSPRO Rules Engine** automatically picks up any active AI Models focused on the same table as your target table, making these outputs available within your list of variables.

  This lets you add conditions to a rule, as well as use prediction outcomes in your actions.

  > **FOR EXAMPLE:**
  >
  > If the probability of a purchase order being late is higher than 80%, then push a ***SYSPRO Harmony*** beat that states '`There is an 87% change that order 000164 will be late`'.

Rules Administrator

The **Rules Administrator** lets you create and maintain rules within ***SYSPRO Avanti***.

You can define the following parts for rules:

Part	Description
Target	This indicates the table (and operation on the table) that should initiate a rule.
Variables	These are used to define or manipulate any values required in the **Conditions** or **Actions**. They include fixed values (e.g. strings, integers, dates) C# snippets and SQL retrieval.
Conditions	This is a set of conditional expressions that must be met before any actions are performed. To execute a specific action, conditions act as triggers that are initiated according to how the condition was configured.
Actions	Actions are executed when the rule conditions are met.

AI Integration

You can now use predictions supplied by the **SYSPRO 8 Machine Learning** service within any part of a rule.

> **FOR EXAMPLE:**
>
> The **SYSPRO 8 Rules Engine Service** automatically picks up any active machine learning models focused on the same table as your target table, making these outputs available within your list of variables.
>
> This lets you add conditions to a rule (e.g. if the probability of a purchase order being late is higher than 80%, then continue to the actions) as well as use conditions in your actions (e.g. a Harmony message could state: 'There is an 87% chance that order 000164 will be late').

Notifications and Actions

A number of new actions can now be executed by the **SYSPRO 8 Rules Engine Service**:

Action	Description
Avanti Notifications	These are messages sent to an operator in ***SYSPRO Avanti***.
Espresso Notifications	These are messages sent to an operator in ***SYSPRO Espresso***.
SYSPRO Bot Messages	These are messages sent to an operator on the **SYSPRO Bot** (using the proactive messaging feature).
Delete Rule	This deletes a rule after all its actions have executed (useful for once-off rules).
Disable Rule	This disables a rule after all its actions have executed.

Sample Rules

A number of sample rules have been added to the **Rules Administrator**:

LCT shipment might arrive late

Description	Notifies an operator that a shipment might arrive more than 10 days late.
Actions	▪ Sends an Avanti notification ▪ Posts a Harmony beat
Uses	Sample Machine Learning model `LctDaysLate`.

Job status rule

Description	Notifies an operator if a new job will be Late or On time.
Actions	▪ Sends an Avanti Notification.
Uses	Sample Machine Learning model `JobStatus`.

New stock code added

Description	Notifies an operator when a new stock code is added to the inventory list.
Actions	▪ Posts a Harmony beat ▪ Sends the SYSPRO Bot a proactive message ▪ Sends an Avanti notification

WIP Material Cost

Description	Notifies an operator when the actual material cost exceeds the expected material cost.
Actions	▪ Posts a Harmony beat ▪ Sends the SYSPRO Bot a proactive message ▪ Sends an Espresso notification ▪ Sends an Avanti notification

AR Invoice Late Payment Predicted

Description	Notifies an operator when a late invoice payment is predicted for a customer.

Actions	▪ Posts a Harmony beat ▪ Sends an Avanti notification
Uses	Sample Machine Learning model `CustomerInvoicePayDays`

Sales order return reason

Description	Notifies an operator why sales orders over a certain value might be returned.
Actions	▪ Sends an Avanti notification.
Uses	Sample Machine Learning model `LostSaleReason`

Predict supplier payment

Description	Predict supplier payments.
Actions	▪ Sends an Avanti notification
Uses	Sample Machine Learning model `ApInvoicePayment`.

Artificial Intelligence and Machine Learning Versioning and Status Support

The **Administration UI** program within ***SYSPRO Avanti*** has been enhanced to allow you to :

- Activate a selected project that you require to be used for all predictions.
- De-activate active projects when they are not required.
- Delete a de-activated project that is no longer required.

Download and Import projects

The **Administration UI** program within ***SYSPRO Avanti*** has been enhanced to allow you to download and import projects (i.e. you can now download a selected project in the project tree list using the browser and import it at another site).

This is particularly helpful when a SYSPRO partner builds a project off-site as they can now easily import it to the customer's machine.

Gauges Infrastructure (KPI Integration)

For regression models, AI tiles can now use gauges to display a predicted value, indicating whether it is positive or negative (tile type: **MLGauge**).

You can use the **Insight Tile KPI Definition** program (core SYSPRO) to define a KPI for your tile. ***SYSPRO Avanti*** will use this KPI to render the AI tiles.

Anomaly Detection

The following anomaly project samples have been added to the **Administration UI** program in ***SYSPRO Avanti***:

- Purchase Order Line Anomaly
- Sales Order Line Anomaly

Business Scenario Expansion

Additional sample business scenarios are now available using predictive and exception machine learning and artificial intelligence:

- PO receipting process and scrap
- Predicted supplier performance
- LCT expected delivery
- Chance of a machine producing a fault
- Sales of stock codes by location
- Payment of invoices by customer
- Lost sales reason predicted

SYSPRO Bot

Bot Skill Development Platform

You now have access to a development platform that enables the development, testing and deployment of Bot skills, customized to situational requirements.

Proactive Messaging

You can now create rules via the Bot or within the Rules Administrator that activates any of the trained skills and which can trigger the Bot to initiate a conversation.

> **FOR EXAMPLE:**
>
> If you set a price alert on a stock code via the Bot, this creates a rule in the Rules Engine, which in turn initiates a Bot conversation when the alert is triggered.

Skills Expansion

The following new skills are now available with the SYSPRO BOT:

- Delete Alert Rule
- Disable Alert Rule
- Enable Alert Rule
- Statement Print

- Print Purchase Order
- Print Quote
- Reprint Quote
- Reprint Purchase Order
- Pricing
- Standard Price Query
- Set Price Alert
- Query Purchase Order
- Purchase Order Menu
- Quotes
- Add Non-stocked Code
- Add Non-Stocked Quote Line
- Add Quote Line
- Cancel Quote
- Confirm Quote
- Create Non-Stocked Quote
- Requisitions
- My Alerts
- Bank Query
- Create purchase order
- Customer Quotes
- Inventory Query
- Add Purchase Order Line
- Predictions
- Create RMA
- Create Requisition
- Add Requisition line
- Requisition Query
- Requisition routing
- RMA Query
- Update Purchase Order Header
- Supplier Invoices
- Supplier Query
- Supplier receipts
- Requisition Approval

2018-R2

AI and Machine Learning

Machine learning forms part of the ***SYSPRO Artificial Intelligence*** module. It uses specific algorithms and statistics to examine historical data. The program then uses the data patterns to reveal trends and predict future outcomes, benefiting management by presenting the big business picture.

Although these predictions require minimal human intervention, they rely heavily on the data quality and the attributes of the SQL statement. Reliable predictions will support business processes and improve decision making by learning from past experiences.

SYSPRO Bot

Artificial Intelligence means customers deal with an intelligent and human-like chatbot that answers queries quickly.

Chatbots which answer and even predict customer queries automate customer service to free up resources in the business.

The (AI) web robot resides within the SYPRO ERP ecosystem and streamlines business functions through natural conversations with the BOT.

2018-R1

SYSPRO Harmony (Social ERP)

SYSPRO Harmony is a collaborative, user-friendly social platform at the core of ERP that gives users a familiar interface through which to interact with the SYSPRO ecosystem and conduct their daily business.

The platform is embedded in the SYSPRO product and combines a number of technologies (e.g. Social Media, Collaboration, Machine Learning, Cognitive Services and Data Analytics) into one application:

Benefits:

- View your company's operating status 24/7
- Drive user collaboration with social ERP conversations
- Harness the power of machine learning on your data to achieve sentiment analysis on your transactions
- Simplify complex technologies and business processes
- Enable faster decision making
- Follow relevant information and have this surface automatically
- Enable integration of SYSPRO data onto a messaging platform
- Enable trend analysis in conversations
- Improve user experience with a familiar, easy-to-use social media-type user interface
- Encourage system usage across the entire organization

Social ERP conversations

Harmony is a collaborative, user-friendly social platform at the core of ERP that gives users a familiar interface through which to interact with the SYSPRO ecosystem and conduct their daily business.

Follow information

As with social media, Harmony users can follow, post and collaborate within the organization network using real-time information from the SYSPRO database. Using the data generated from these interactions, the system intelligently pushes pertinent information to the user using familiar interfaces.

This provides a more personalized working platform for users, allowing them to create their own profile, follow and track key data, take action and provide and share insights relevant to both internal and external stakeholders, all from a single view.

Sentiment integration

Data Sentiment enables a complete spectrum picture of customer opinion about your services or products for informed and strategic decision making. Visual ques (the equivalent of

emoticons) help alert users by attaching sentiment to specific items.

Key notes attached to these items are detected to reveal the tone in terms of the state of an event, customer or component which tracks potential future issues regarding customer service and happiness before they arise.

Emoji	Sentiment
	Very happy
	Happy
	Neutral
	Unhappy
	Very unhappy

Trend Surfacing (Auto-Aggregation)

Most social media applications (like **Twitter** or **LinkedIn**) use intelligent machine learning algorithms to detect trends from the messages posted and then surfaces that information to the user according to relevance.

Similarly, Harmony uses predictive analytics to reveal trends that provide actionable insight. The difference is that not only does Harmony process machine learning and trend detection on conversations, it also processes these on the core SYSPRO database.

Harmony identifies transactions on the SYSPRO database, the key fields against which these transactions are being processed and then performs trend detection and aggregation on the data. It presents this information in chart form to reflect what is currently trending in the SYSPRO database.

> **FOR EXAMPLE:**
>
> A stock code could be used in a large number of sales orders, as well as some purchase orders and RMAs.
>
> In this case, that stock code would be trending.

This highlights critical information without you having to request it or consolidate reports across the different modules.

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