



TESİSLERDE PROSES EMNİYETİ
SEMPOZYUMU



2-3
MAYIS
2024




STOCK	LAST	CHG	%	BDLOT	BID	OFFER	OFLOT
378	9,750	+90	+0.51	378	9,725	9,750	90
1,891	1,025	+20	1,000	1,891	1,025	1,030	6,184
60	2,220	+40	2,220	60	2,220	2,310	23
1	3,510	3,510	3,510	1	3,510	3,610	7
0	0	0	0	0	0	50	2,167,013



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**Rockwell
Automation**

Proses Endüstrisinin Geleceğinde Dijitalleşmenin Önemi

Umut Kiper – Business Manager

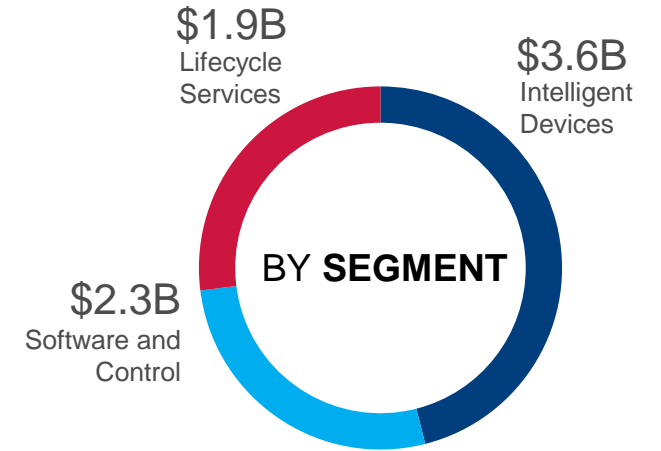
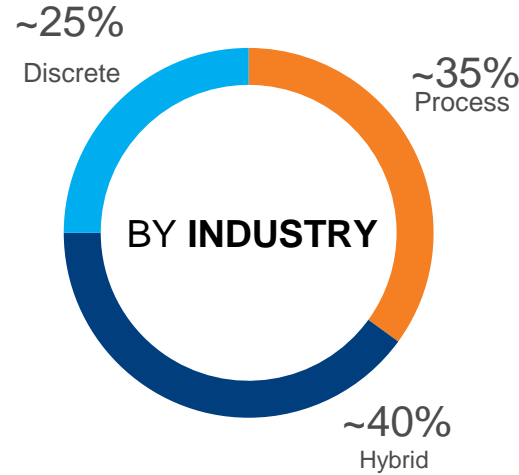
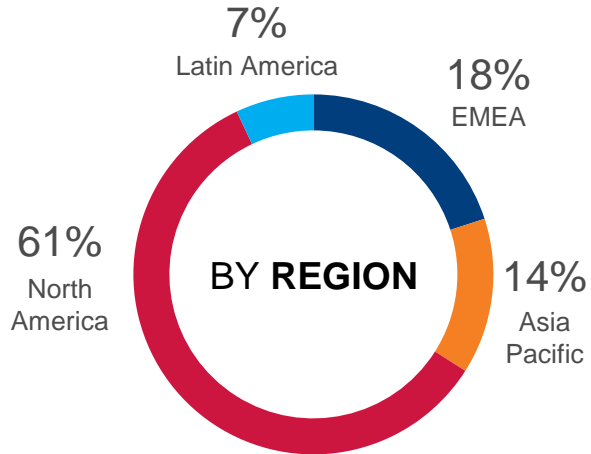
 [umutkiper](#)

Proses Endüstrisinin Geleceğinde Dijitalleşmenin Önemi

- Rethink what a modern distributed control system (DCS) can do for you
PlantPax
- Power of the Artificial Intelligence
Logix AI & Guardian AI
- Benefits of the usage Computerized Maintenance Management System
Fiix
- All is under control with Augmented Reality
Vuforia

Rockwell Automation at a glance

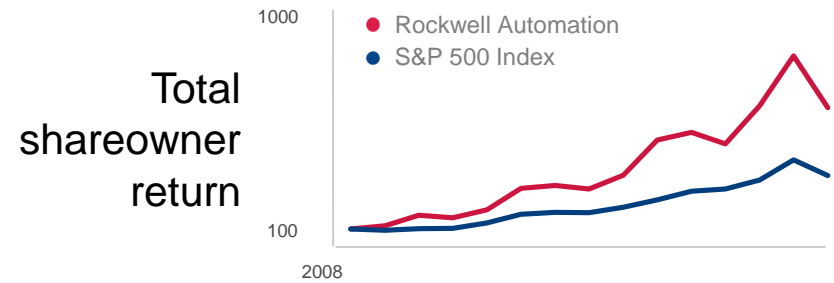
2022 SALES
7.8
BILLION
USD



Serving
customers for
120 years

100+
Number of countries

28k
Employees: more than
half outside the U.S.





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Rethink what a modern distributed control system (DCS) can do for
you

PlantPax



Rethink what a modern distributed control system (DCS) can do for you



CHARACTERIZED
PERFORMANCE

SCALABLE
AND FLEXIBLE

HIGH
AVAILABILITY

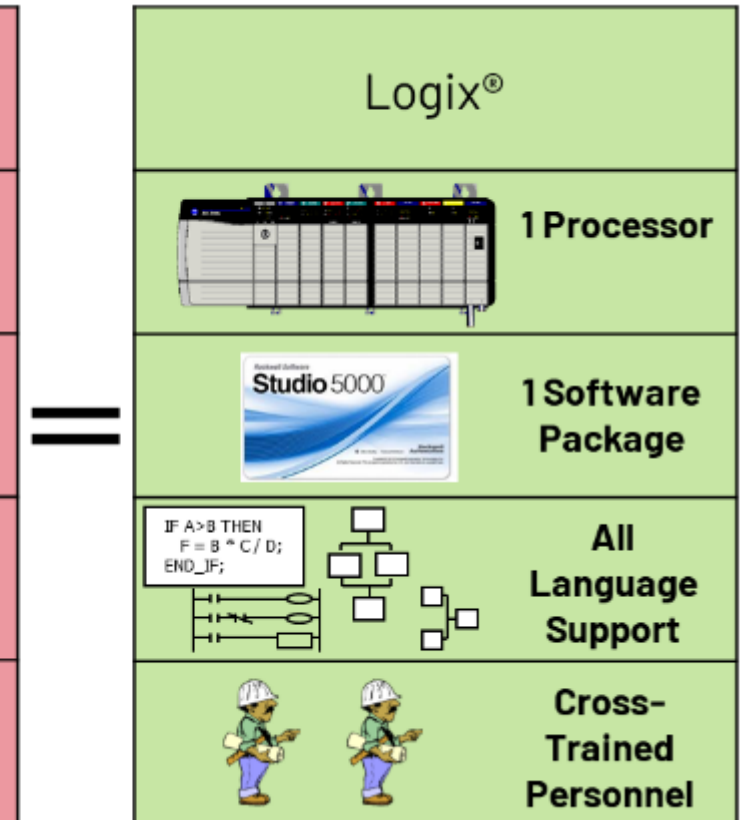
MAXIMIZE
EFFICIENCIES

Value of PlantPax

Conventional Approach

	Sequential / Batch	Motion	Process	Motor	Safety	Discrete
Multiple Processors						
Multiple Software Packages						
Different Programming Languages			 IF A>B THEN F = B * C / D; END_IF;			
Multiple Engineers & Maintenance						

Rockwell Automation Integrated Architecture®



Value of PlantPax

PAO	
PAO_02	
Inp_OpenedFdbkData	Out_CVData 4.0
Inp_ClosedFdbkData	Out_CVOpenData 0
Inp_PosFdbk	Out_CVCloseData 0
Inp_HandFdbk	Out_Reset 0
Inp_IntlkOK	Val_Pos 0.0
Inp_NBIntlkOK	Val_CVSet 0.0
Inp_IntlkAvailable	Val_CVOut 0.0
Inp_IntlkTriph	Sts_BypActive 0
Inp_IOFault	Sts_Err 0
Inp_DeviceFault	Sts_Hand 0
Inp_RdyReset	Sts_OoS 0
Inp_Reset	Sts_Maint 0
Cfg_CVEUMin	Sts_Ovrd 0
Cfg_CVEUMax	Sts_Ext 0
Cfg_CVRawMin	
Cfg_CVRawMax	
BusObj	0

FLEX5000:1:O.Ch00.Data

For Engineers

P_Motor - Single Speed Motor

- Motor has Run Feedback
- Operator command resets fault
- External command resets fault
- Motor can be jogged
- In Override, bypass Interlocks and Permissives that can be bypassed
- Operator 'Stop' command always available
- External 'Stop' command always available
- Allow local 'Start' or 'Stop' without triggering fault

For Maintenance

PowerFlex 755 Variable Frequency Drive

Operator

Running Forward

Feedback (Hz) ▲ 23.05 Forward

Reference (Hz) 50.00 50.00

Output Current (Amps) 0.15

Output Power (KW) 0.01

Torque Current (Amps) 0.03

Drive Ready

For Operators



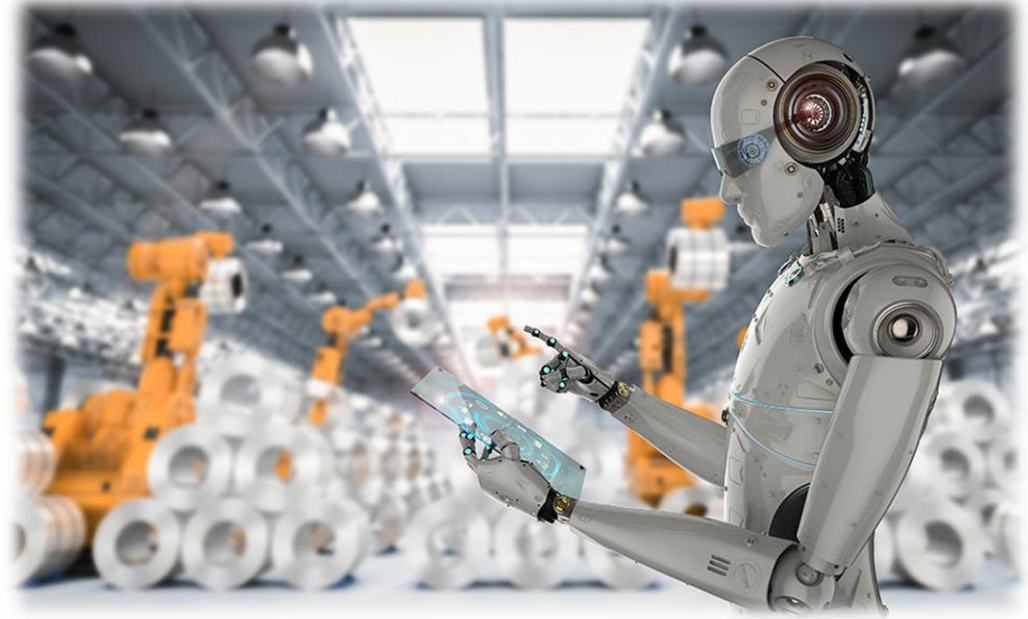
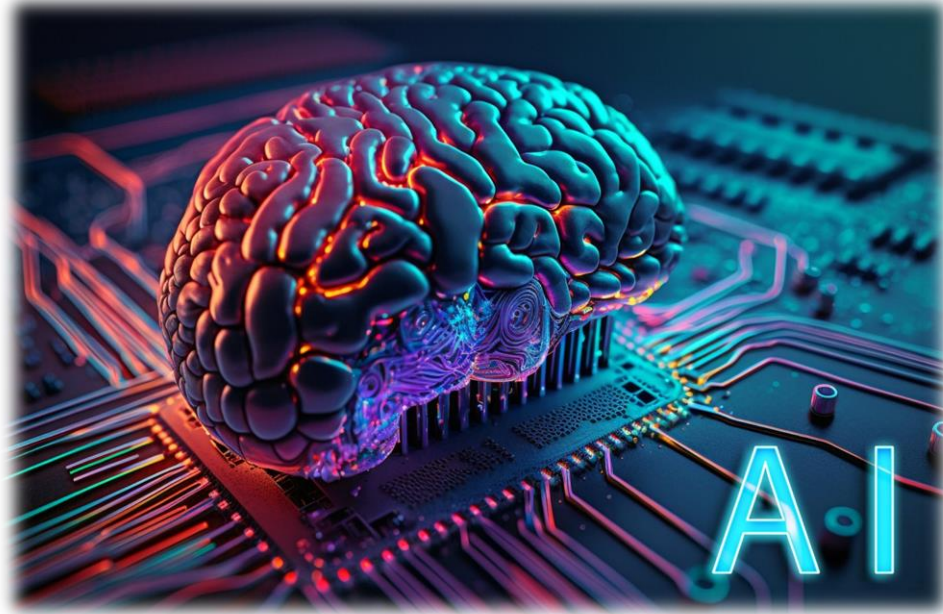
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Power of the Artificial Intelligence **Logix AI & Guardian AI**



Power of the Artificial Intelligence



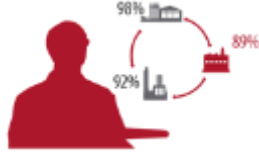
DESCRIPTIVE

DIAGNOSTIC

PREDICTIVE

PRESCRIPTIVE

ENTERPRISE



What plant performed the best?



Why is site A throughput below plan?

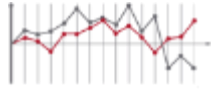


Will I meet plan today? Tomorrow?

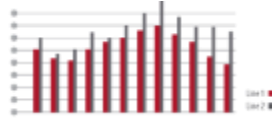


How can I change operations to improve profitability? Yield? Quality?

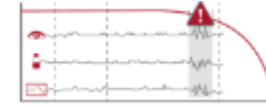
SYSTEM



Is Line 1 running ok?



Why is Line 1 quality poor?

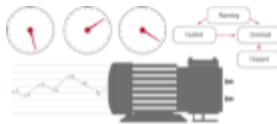


I predict that Line 1 quality is moving out of tolerance.



What action should the operator take to avoid poor quality?

DEVICE



Am I running ok?



Why did a fault happen?



I predict a fault will happen soon.



What action should be taken to avoid the fault?

Power of the Artificial Intelligence

FactoryTalk **Logix AI**

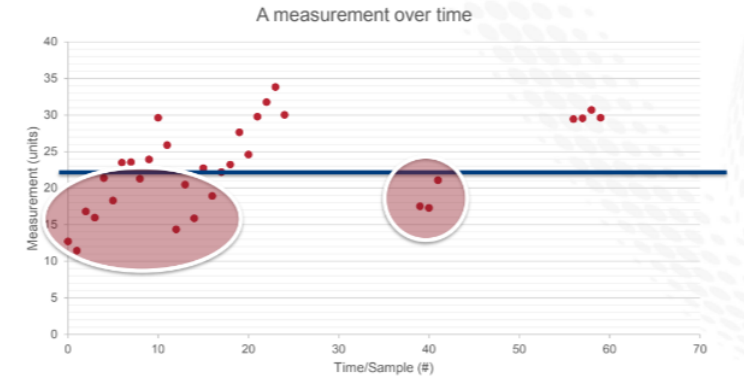
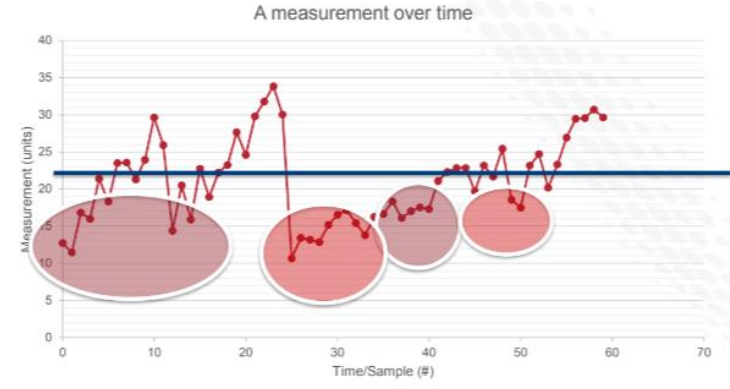
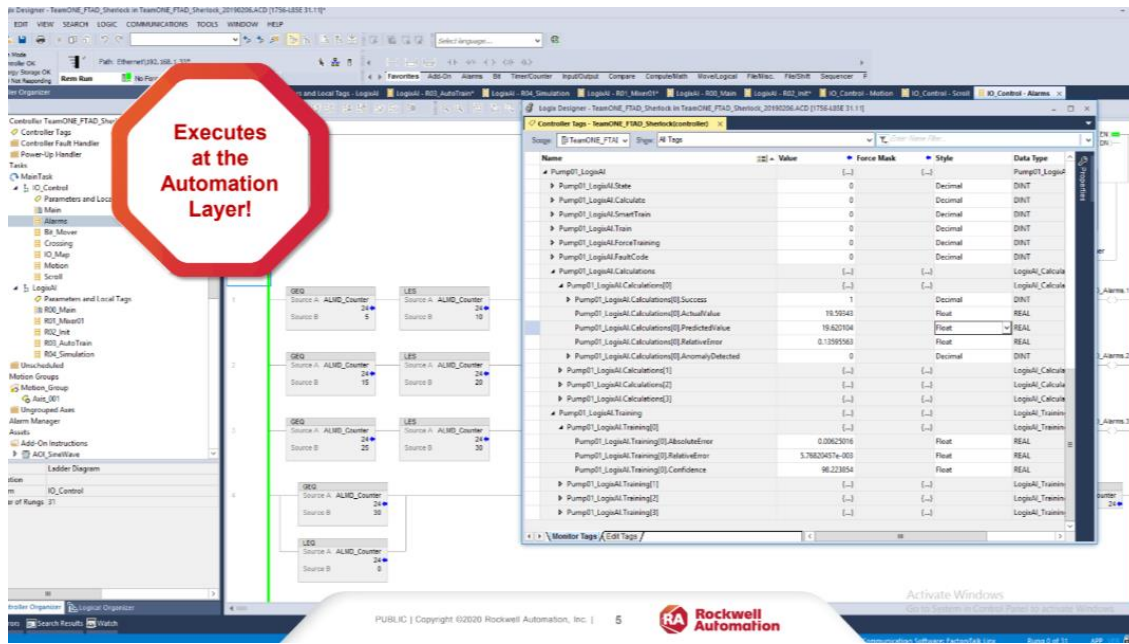
There are many analytic technologies in the market today, but most require deep expertise in both **data science** and **industrial processes** which often prevents operational technology (OT) professionals from taking advantage of them.

FactoryTalk Logix AI
changes the game.

FactoryTalk **Guardian AI**

Optimize **maintenance activities** and **reduce unplanned downtime** with advanced notice of upcoming asset failures provided by **FactoryTalk Analytics Guardian AI.**

FactoryTalk Logix AI



You select the “variable of interest” that you want to model and monitor
 You select potential inputs or state variables that could impact your variable of interest
 Logix AI automated modeling cleanses the data and determines the relationships as a mathematical function
 You set the model to calculate predictions



FactoryTalk Guardian AI

FT Analytics GuardianAI

Assets overview

Line #1 12 assets	At Risk: 4	To Label: 6
Line #2 3 assets	At Risk: 2	To Label: 1
Line #3 3 assets	At Risk: 1	To Label: 2
Line #4 2 assets	Healthy	
Line #5 1 asset	Healthy	

Line 1

Search assets

All Assets: 10 At Risk: 2 To Label: 3 Healthy: 7

Pump #1	2 Identified Risks	4 Deviations to Label	Last event: 28 Mar, 11:52
Fan #2	2 Identified Risks	1 Deviation to Label	Last event: 26 Mar, 16:03
Motor #1	1 Identified Risk	1 Deviation to Label	Last event: 15 Feb, 06:39
Motor #1			
Fan #4			
Pump #6			
Pump #7			
Blower #1			

Click the "At Risk" tab to see a focused view of the assets for which FactoryTalk Analytics GuardianAI has identified a risk.

Fan #2
PowerFlex 755, 192.158.1.38 **2 Identified Risks**

Misalignment	Severity: High	Identified: 12d ago
Heating	Severity: Medium	Identified: 10d ago



Pumps

- Impeller Unbalance
- Blade Fault
- Cavitation
- Viscosity Changes
- Shaft Misalignment
- Change in Fluid Dynamics



Fans and Blowers

- Blade Misalignment
- Blade Unbalance
- Blade Wear
- Loose Blade
- Electrical Fault
- Motor Fault
- Shaft Misalignment
- Fan Bearing Fault



Motor Analytics

- Unbalance
- Shaft Misalignment
- Loose Structural Mounting
- Mechanical Looseness
- Rotor Rub
- Ball Bearing Fault
- Inner Race Bearing Fault
- Outer Race Bearing Fault
- Bearing Cage Fault



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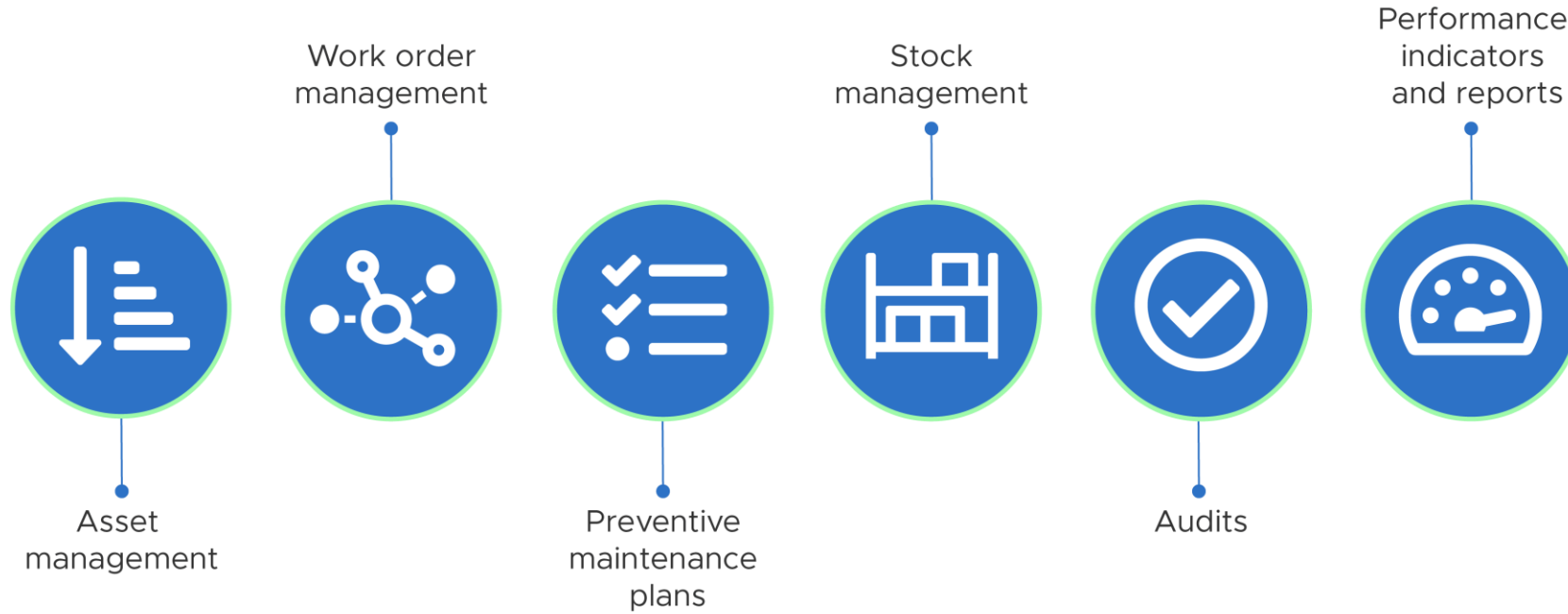


Benefits of the usage Computerized Maintenance Management System **Fiix**

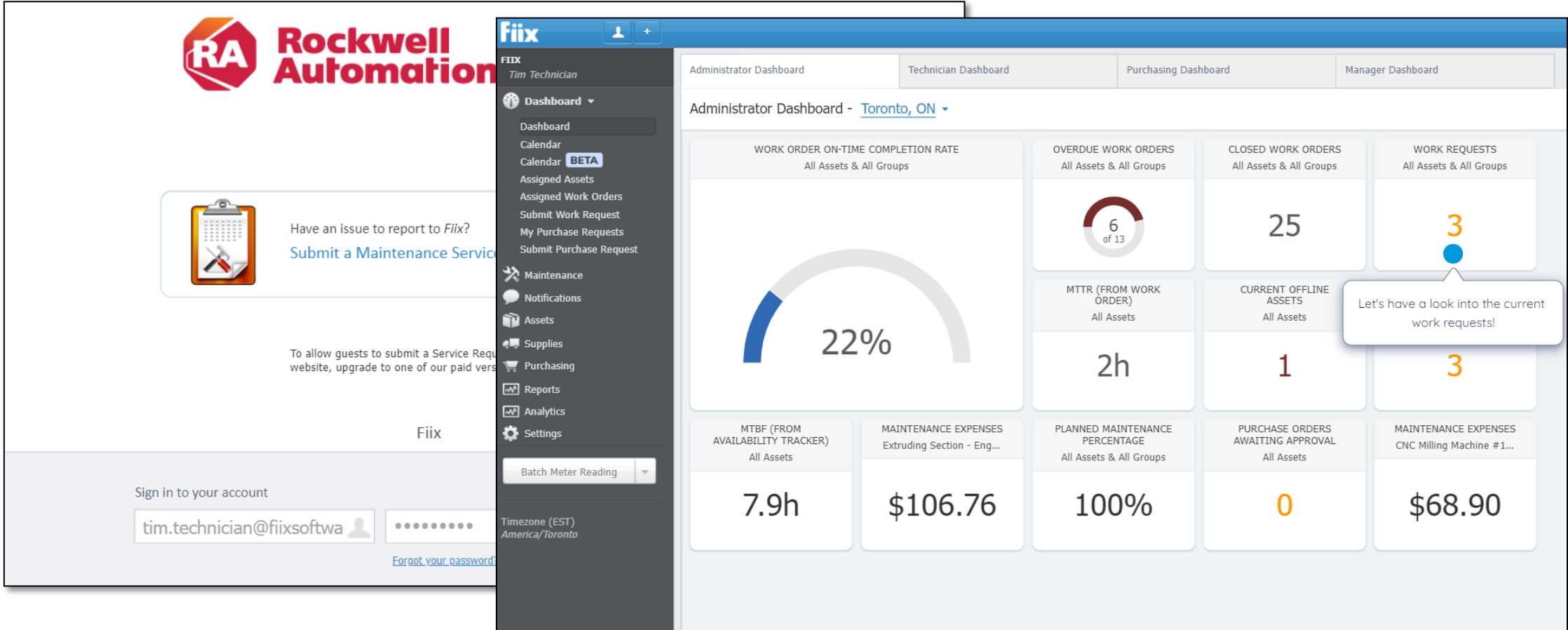


Benefits of the usage Computerized Maintenance Management System

MAIN FUNCTIONS OF A CMMS



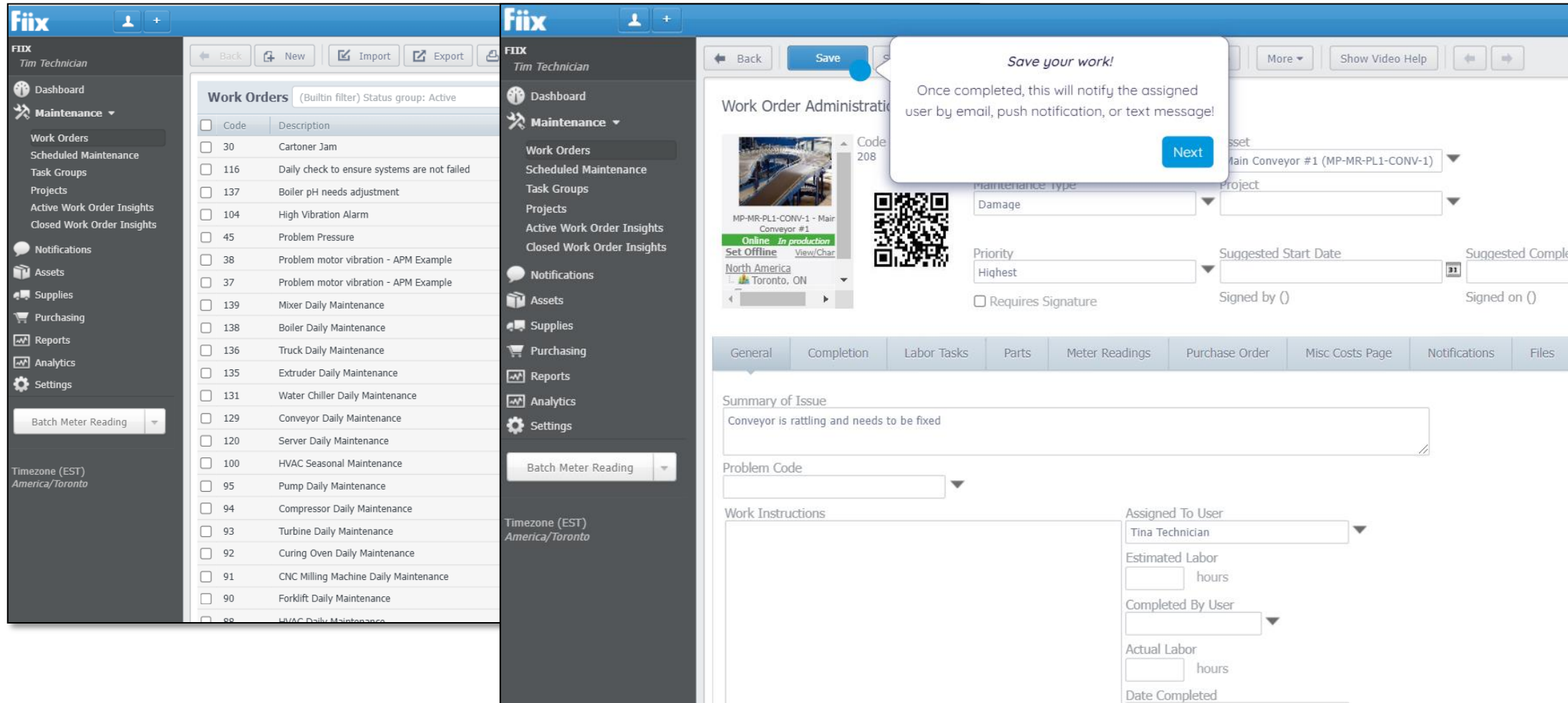
Benefits of the usage Computerized Maintenance Management System



The screenshot displays the Fiix software interface, which is a Computerized Maintenance Management System (CMMS). The interface is divided into several sections:

- Header:** Shows the Rockwell Automation logo and the user's name, Tim Technician.
- Navigation Menu:** Includes options like Dashboard, Calendar, Assigned Assets, Submit Work Request, My Purchase Requests, Submit Purchase Request, Maintenance, Notifications, Assets, Supplies, Purchasing, Reports, Analytics, and Settings.
- Administrator Dashboard - Toronto, ON:**
 - WORK ORDER ON-TIME COMPLETION RATE:** 22% (All Assets & All Groups)
 - OVERDUE WORK ORDERS:** 6 of 13 (All Assets & All Groups)
 - CLOSED WORK ORDERS:** 25 (All Assets & All Groups)
 - WORK REQUESTS:** 3 (All Assets & All Groups)
 - MTTR (FROM WORK ORDER):** 2h (All Assets)
 - CURRENT OFFLINE ASSETS:** 1 (All Assets)
 - MTBF (FROM AVAILABILITY TRACKER):** 7.9h (All Assets)
 - MAINTENANCE EXPENSES:** \$106.76 (Extruding Section - Eng...)
 - PLANNED MAINTENANCE PERCENTAGE:** 100% (All Assets & All Groups)
 - PURCHASE ORDERS AWAITING APPROVAL:** 0 (All Assets)
 - MAINTENANCE EXPENSES:** \$68.90 (CNC Milling Machine #1...)
- Callout Box:** A tooltip message says "Let's have a look into the current work requests!" pointing to the Work Requests metric.
- Footer:** Includes a sign-in section for "tim.technician@fiixsoftwa" and a "Forgot your password" link.

Benefits of the usage Computerized Maintenance Management System



The screenshot displays the Fiix software interface for a technician. On the left, a sidebar menu includes options like Dashboard, Maintenance, Work Orders, Scheduled Maintenance, Task Groups, Projects, Notifications, Assets, Supplies, Purchasing, Reports, Analytics, and Settings. The main area shows a list of work orders with columns for Code and Description. A detailed view of a work order is shown on the right, including a QR code, asset information (MP-MR-PL1-CONV-1 - Main Conveyor #1), maintenance type (Damage), priority (Highest), and a 'Save your work!' notification. The notification states: 'Once completed, this will notify the assigned user by email, push notification, or text message!' with a 'Next' button. Below the notification, there are tabs for General, Completion, Labor Tasks, Parts, Meter Readings, Purchase Order, Misc Costs Page, Notifications, and Files. The 'Summary of Issue' section contains the text 'Conveyor is rattling and needs to be fixed'. Other fields include Problem Code, Work Instructions, Assigned To User (Tina Technician), Estimated Labor (hours), Completed By User, Actual Labor (hours), and Date Completed.

Benefits of the usage Computerized Maintenance Management System

The screenshot displays the Fiix software interface, which is a Computerized Maintenance Management System (CMMS). The interface is divided into several sections:

- Left Sidebar:** Contains navigation options such as Dashboard, Maintenance, Notifications, Assets, Supplies, Parts And Supplies, Current Stock, Batch Stock Adjustment, Inventory Cycle Count, Bill Of Materials Groups, Businesses, Parts Forecaster, Purchasing, Reports, Analytics, and Settings.
- Top Navigation:** Includes buttons for Back, New, Import, Export, Print, and Print Asset Tags.
- Main Content Area:**
 - Active work orders dashboard:** Shows key metrics: 1,009 Active, 1 Due Later Today, 646 Late, and 360 No Due Date.
 - Late Work Orders:** A pie chart showing the distribution of late work orders by due date: Due earlier today - 1, Due last week - 10, Due 2 weeks ago - 11, and Due more than 2 weeks ago - 624.
 - Late High-Priority Work Orders:** A horizontal bar chart showing the count of work orders for various technicians, with Ashish having the highest count at 39.
 - Active WOs by User:** A table showing the number of active work orders for each user, categorized by whether they are scheduled maintainers.
 - Active WOs by Type:** A horizontal bar chart showing the count of work orders for different maintenance types, with Preventive having the highest count at 400.
 - Active WOs by Priority:** A pie chart showing the distribution of work orders by priority: Low - 182, Medium - 75, High - 366, and No Priority - 364.
- Bottom Right:** A callout box states: "All of these reports can be downloaded or emailed!".
- Bottom Left:** A "PRODUCT TOUR" button with a "6" icon is visible.



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All is under control with Augmented Reality **Vuforia**



All is under control with Augmented Reality



Labor and
Training Costs



Training
Effectiveness



Service Dispatch



Service
Documentation

All is under control with Augmented Reality



Improve traditional training methods



Empower frontline workers to service and troubleshoot equipment



Replace outdated, inaccurate or non-existent hardcopy instructions



Improves maintenance and helps optimize asset efficiency





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TEŞEKKÜR EDERİZ.