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*Tuesday, July 26, 2022*

## Centralized Purchasing With Automation

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## | Disclosures

- The presenter has no real or perceived conflicts of interest related to this presentation

Note: This program may contain the mention of suppliers, brands, products, services or drugs presented in a case study or comparative format using evidence-based research. Such examples are intended for educational and informational purposes and should not be perceived as an endorsement of any particular supplier, brand, product, service or drug.

## Learning Objectives

*At the end of this session, participants should be able to:*

1. Identify key faults in automating a purchase order process flow
2. Recognize areas of the purchase order process that need improvement
3. Describe the value of integrating BI dashboards and other integration software tools into the purchase order workflow



**44**

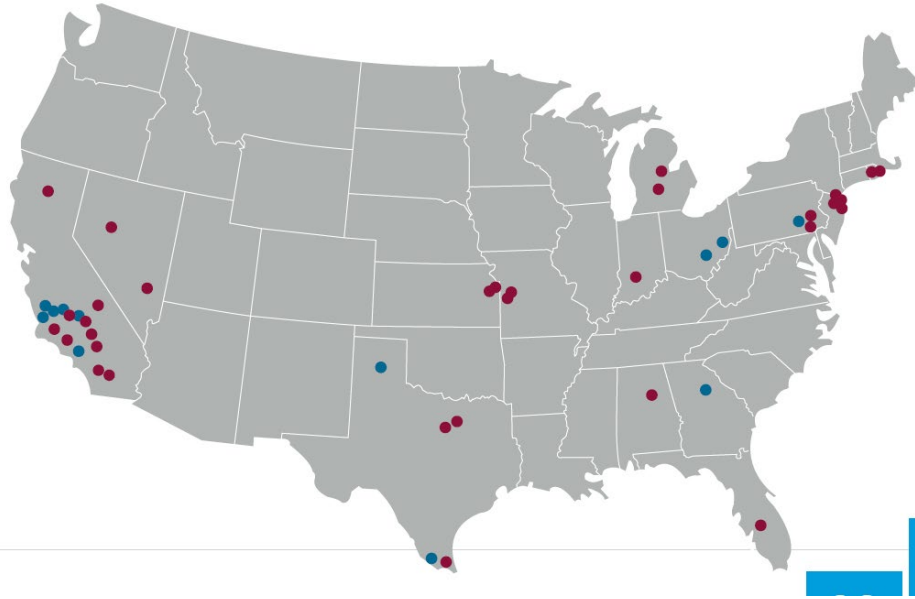
Hospitals

**14**

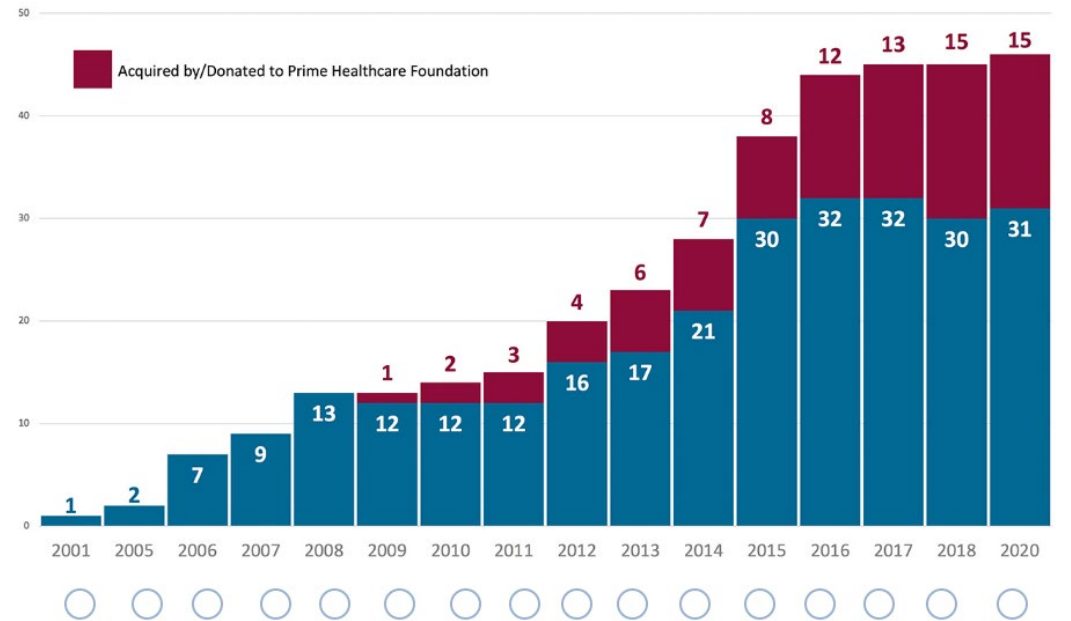
States

**14**

Foundation  
Hospitals



## Our Growth



*Centralized purchasing- Approach/Vision*

# Centralization

| Defined as...

to remove authority in a system, company, country, etc., from local places to one central place so that the whole system, etc. is under central control:





# Centralization – Why is it important?

# Centralization – Shared Services

## Support – Centralized resource sharing

- Application
- Purchasing
- HR
- Administration
- AP/Payroll



## Contract Management

- National level IDN agreements
- Leveraging volume for pricing discounts
- Implementing risk models leveraging size of the IDN and history of repair needs and contract cost

## Project Management

- Corporate team working on implementation that reduce cost and timeline without compromising on quality
- Standardization of vendors and workflows
- Standardization of equipment based on actual need

### Examples

- Omnicell – Automated Dispensing Cabinets
- Stanley Healthcare – Hugs, Asset Tracking, Elopement, Temperature and Humidity monitoring

## Purchasing

- Centralized purchasing
- Sourcing from different vendors
- Invoice audits

## Service

- Standardized Maintenance Program
- Sharing of staff between hospitals
- In house service team for equipment with high contract cost



# | Centralization – Purchasing

## Challenges

- Item Master
- Pricing Variances Across Sites
- Compliance
- Exceptions
- Data Quality
- Invoice Issues
- Approvals
- Duplicate Vendors

## Benefits

- Standardization
- Purchasing Control
- Tier Optimization
- Visibility & Enterprise Reporting
- Resolution focused effort
- Process Design, Deployment & Improvement
- Scalability & Adaptability
- Value Adds

# Centralization – Project Overview

# Centralization – Project Management

## Methodology



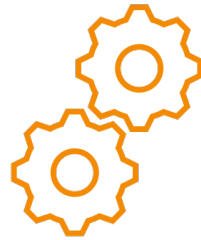
Plan,  
design &  
develop  
solutions

---



Implement

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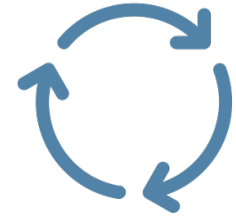
Monitor &  
audit  
processes

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Continuously  
analyze data

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Continuous  
Improvements

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# SCM LAWSON PROCESS

## REQUISITION

**Requester**  
RQC: Create a requisition  
Stock / Non-Stock / Specials items

Stock item?

No

Yes

Pick ticket : issued for item to be fulfilled

### Warehouse : Inventory Replenishment

IC140: Vendor reorder Advice daily for restocking Stock Items

IC66: PO worksheet for stock items that need to be ordered for the warehouse

## APPROVAL WORKFLOW

Level 1: Department Director

Requisition Total >\$5,000

No

Clinical dept. requisition?

Level 2: Chief Nursing Officer (CNO)

Level 3: Chief Financial Officer (CFO)  
Chief Executive Officer (CEO)

Requisition Total >\$25,000

Level 4: Designated VP/Director

Notify Corporate

PO100: Converts requisitions to PO

IC66 Batch

## PROCUREMENT



PO23 | PO20: Review, validate and process information on the purchase order for stock, non-stock, special/service purchase orders

GHX Vendor?

No

Buyer will place the order manually with the vendor via email, fax, phone

GHX Exchange (EDI)  
GHX Meta Trade (Non EDI)  
\*Vendor setup within GHX transmitted via PO-850

Order confirmation: Corp Buyer will need to confirm receipt of order confirmation from the vendor via GHX (POA-855) / Email

Yes

PO120: Mass PO Issued via EDI to vendors through GHX  
Job run frequency: 30 mins

## RECEIVING & RETURNS



PO30: PO Receiving

Does item match order?

No

Does quantity match order?

Can it be used soon?

PO 31: Vendor Returns  
\*Buyer message issued via PO52

PO132: Issue RMA to vendor

PO Receiving Complete

Yes

Yes



## AP-INVOICE



Vendors will send Invoices through EDI -INV 810 ( GHX vendors) or other way like email or Fax to Facility AP or Centralized AP teams

Invoice discrepancy?

AP20/MA60: AP will match the PO in AP20/MA60 and pay the vendor the invoice amount

If invoice did not match to the PO. AP will send the invoice to Corp Buyer for a review to modify the PO or to get revised invoices from vendor.

PO Closed

No

Yes

Yes

Yes

Yes

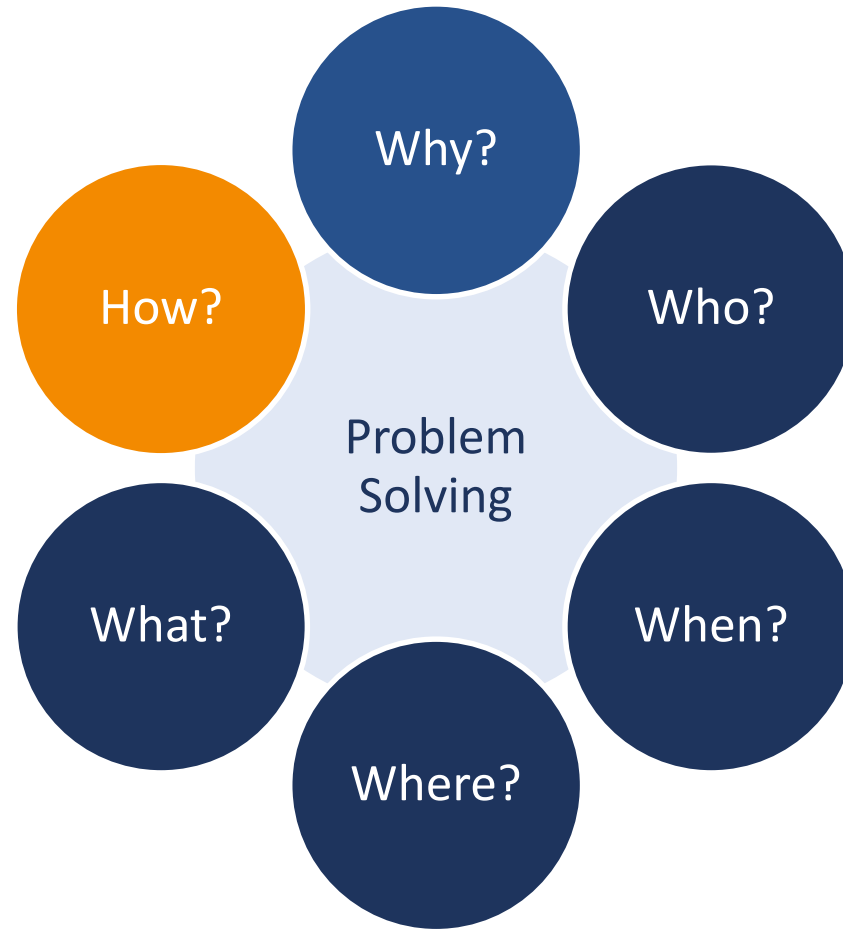
# Centralization – System Review



*“Automation can only be driven through the existence of clean data.”*

# Centralization – Problem Solving

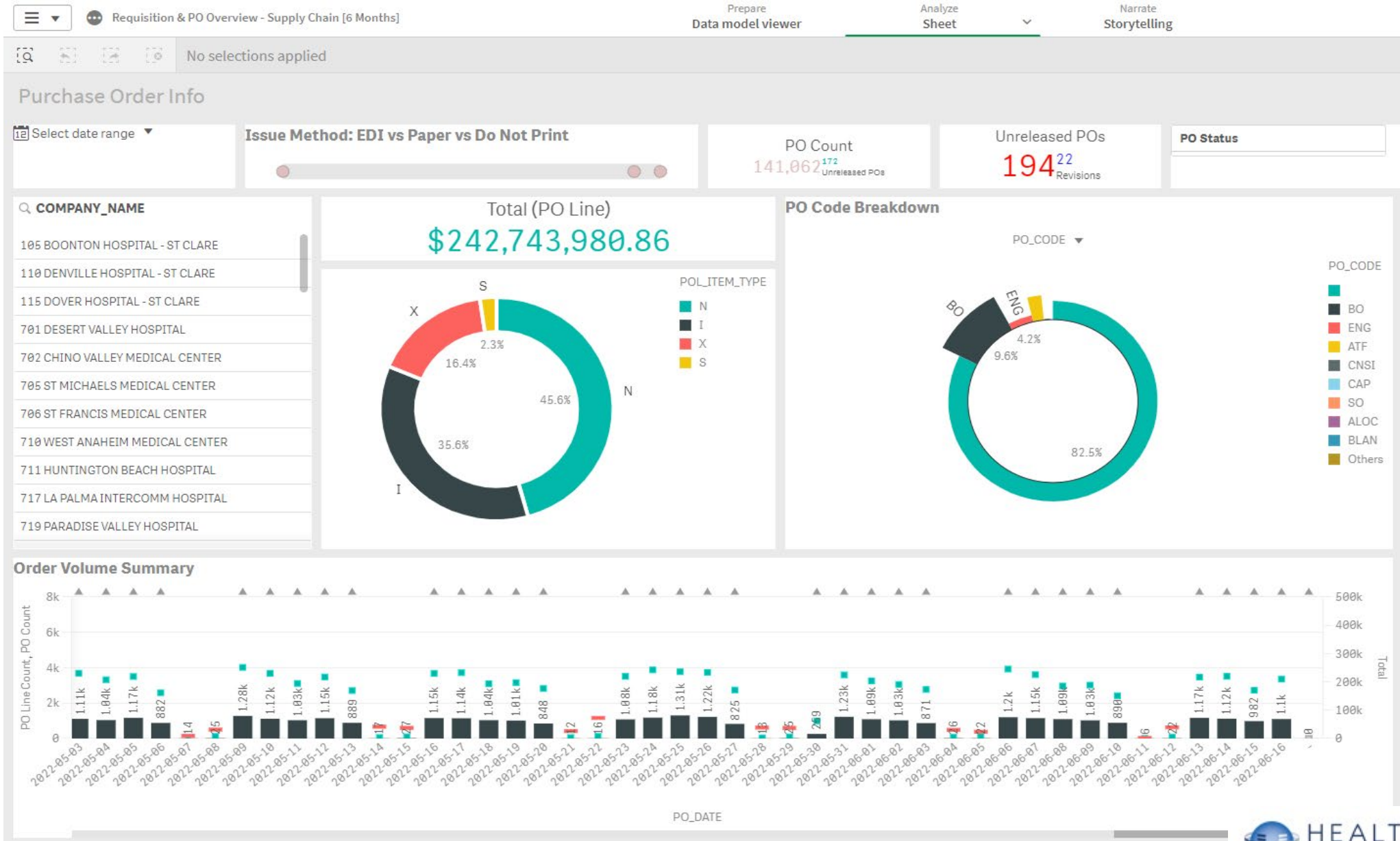
5Ws and 1H Technique





# Centralization – Resource Planning

# Centralization – Order Volume



## Centralization – Buyer Workload

### Purchase Order

- 75% of all purchase orders are converted from a requisition by the system.
- 25% of them are assigned PO codes or have issues that are manually converted.

### Exceptions

- 1 in 4 PO lines have an exception; 1 or many exceptions on the same line.
- ~780 incidents daily.
- Multiple follow-ups to resolve an issue.
- Very important to clear it as invoice matching is dependent on PO data.

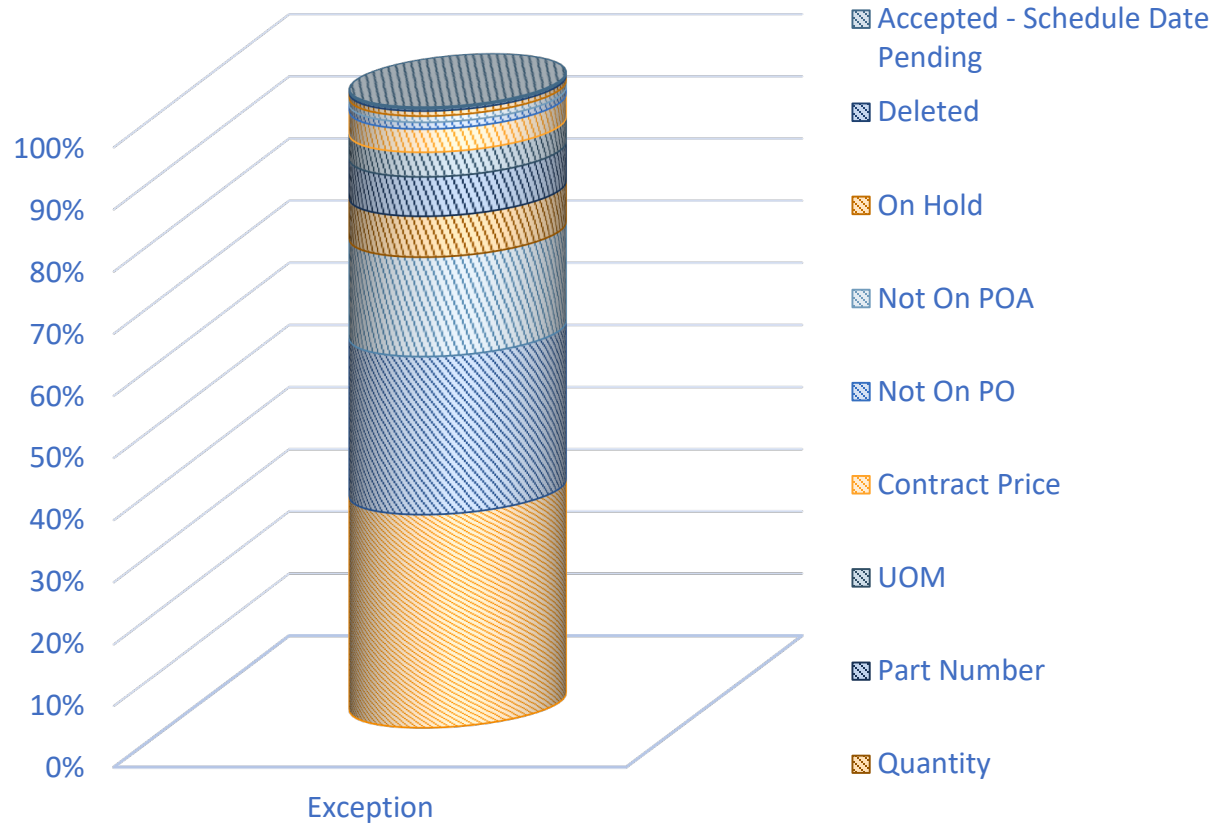
### Invoice Disputes

- ~6%-10% of invoices are escalated.
- ~20 mins per dispute.
- ~105 incidents daily.
- Multiple follow ups.

### Customer Support

- Internal/External customers and vendors.
- ~900 incidents daily excluding the counts above.

# Workload – Exceptions



Exception Type	Exception	Grand Total
Backordered	34.45%	34.45%
Price	25.43%	25.43%
Rejected	16.00%	16.00%
Quantity	6.57%	6.57%
Part Number	6.34%	6.34%
UOM	3.96%	3.96%
Contract Price	3.73%	3.73%
Not On PO	1.08%	1.08%
Not On POA	1.01%	1.01%
On Hold	0.82%	0.82%
Deleted	0.34%	0.34%
Accepted – Schedule Date Pending	0.27%	0.27%
<b>Grand Total</b>	<b>100.00%</b>	<b>100.00%</b>

## Workload – Invoice Disputes

### Estimated Requirement

Row Labels	Issue Count	Issue Count (%)	Time Taken (min)	Time Taken (%)
Not on PO	133	6.29%	10,095	22.16%
Qty/Price Issue	1,009	47.73%	9,804	21.52%
PO Status Closed	134	6.34%	7,862	17.26%
Item/Price/UOM details mismatch	219	10.36%	6,511	14.29%
PO Not Found	133	6.29%	4,801	10.54%
Vendor Incorrect	194	9.18%	2,573	5.65%
Item Not Received	158	7.47%	2,568	5.64%
Invoice to Pay	96	4.54%	967	2.12%
PO Status Unreleased	31	1.47%	316	0.69%
Credit Hold	7	0.33%	63	0.14%
<b>Grand Total</b>	<b>2,114</b>	<b>100.00%</b>	<b>45,560</b>	<b>100.00%</b>

\* 1 month's data

# Resource Planning

## Overall Estimated Requirement

Task	Count	5 mins	15 mins	30 mins	Total (min)	Total (hr.)	FTE
Purchase Orders	1,100	825	165	110			
Exceptions	780	428	227	125			
Invoice Disputes	105		63	42			
Customer Support	900	540	360				
	<b>2,885</b>	<b>8,964</b>	<b>12,232</b>	<b>8,304</b>	<b>29,499</b>	<b>492</b>	<b>61</b>

## Assumptions

### Purchase Orders:

05 mins : 75%  
15 mins : 15%  
30 mins : 10%

### Exceptions:

05 mins : Backorder, Quantity,  
Part Number, UOM, Not On PO,  
Not On POA, On Hold, Deleted,  
Accepted - Schedule Date  
Pending  
15 mins : Price, Contract Price  
30 mins : Rejected

### Invoice Dispute:

15 mins : 60%  
30 mins : 40%

### Customer Support:

05 mins : 60%  
15 mins : 40%



# Centralization – Workflow & Training

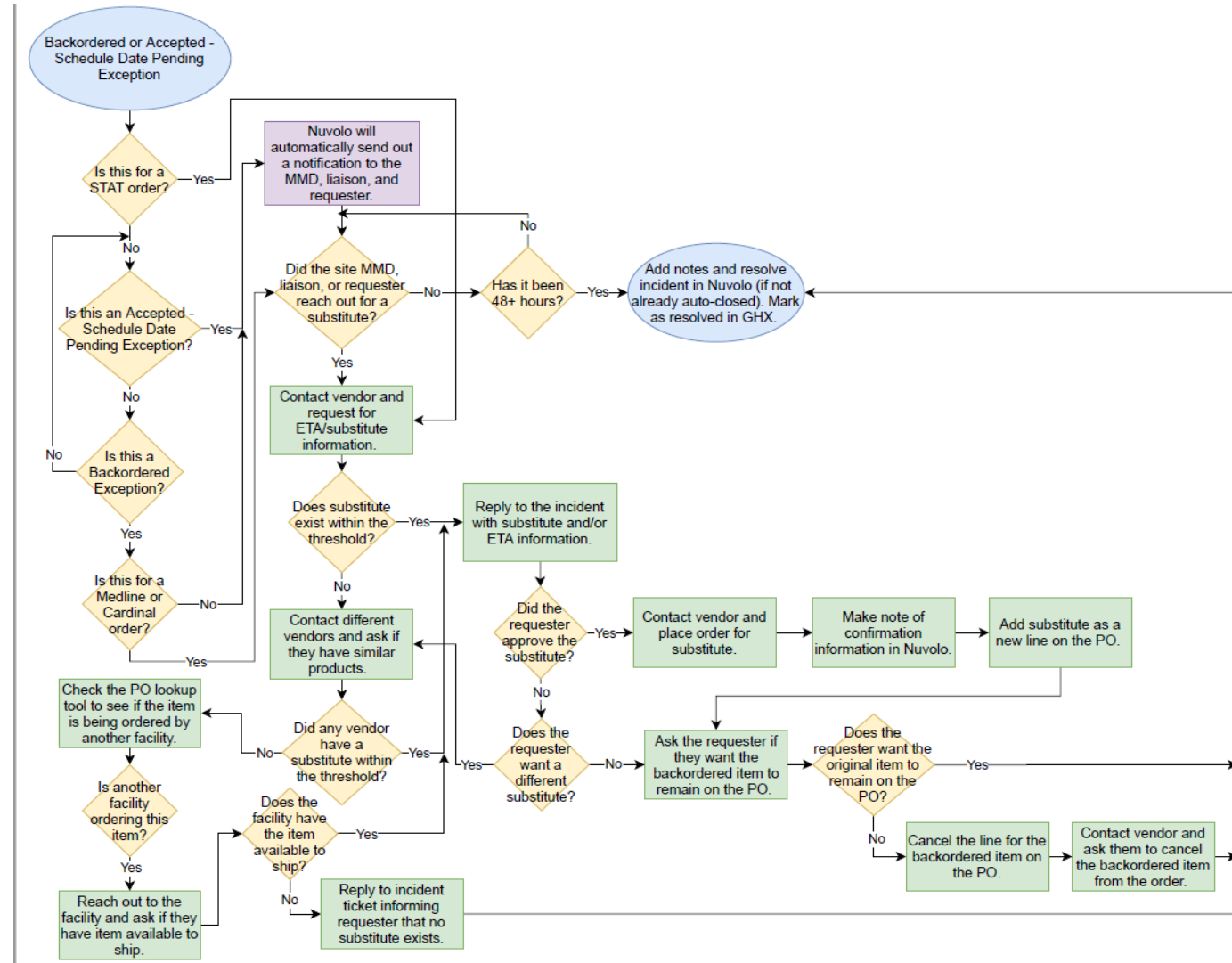
# Workflow & Training

## Why create workflows?

- Thorough understanding of end-to-end process
- Ability to define key decision-making steps
- Gain understanding of tools and reporting requirements
- Lays the foundation for the logic building required for automation

## Training needs

- Knowledge of business process
- Terminology
- Technical adeptness
- Multitasking and efficiency
- Habit formation



# Centralization – Scalability

# Centralization - Scalability



	2019-10	2019-11	2019-12	2020-1	2020-2	2020-3	2020-4	2020-5	2020-6	2020-7	2020-8	2020-9	2020-10	2020-11	2020-12	2021-1	2021-2	2021-3	2021-4	2021-5	2021-6	2021-7	2021-8	2021-9	2021-10	2021-11	2021-12	2022-1	2022-2	2022-3	2022-4
HOSP_LIVE_COUNT	0	2	2	0	0	0	0	0	0	0	1	0	2	0	0	0	0	1	3	5	0	0	1	4	7	5	0	0	0	10	2
BUYER_COUNT	1	3	5	7	13	12	10	11	12	17	18	16	22	21	22	21	19	18	20	25	23	31	45	40	52	57	58	59	68	66	65
HOSP_LIVE_COUNT_AGG	0	2	4	4	4	4	4	4	4	4	5	5	7	7	7	7	7	8	11	16	16	16	17	21	28	33	33	33	33	43	45

Centralization – Do we have to deal with issues?

# Issues

*“There isn’t a single day that goes by where we don’t see at least one new issue and we scratch our heads asking “What?”, “Why? Would we/they do that?”*





# Centralization – Systems & Tools

# System Consolidation

Information at Your Fingertips

“

When I started ServiceNow in 2004, my vision was to build a cloud-based platform that would enable regular people to route work effectively through the enterprise.

Fred Luddy  
Founder and Chairman of the Board



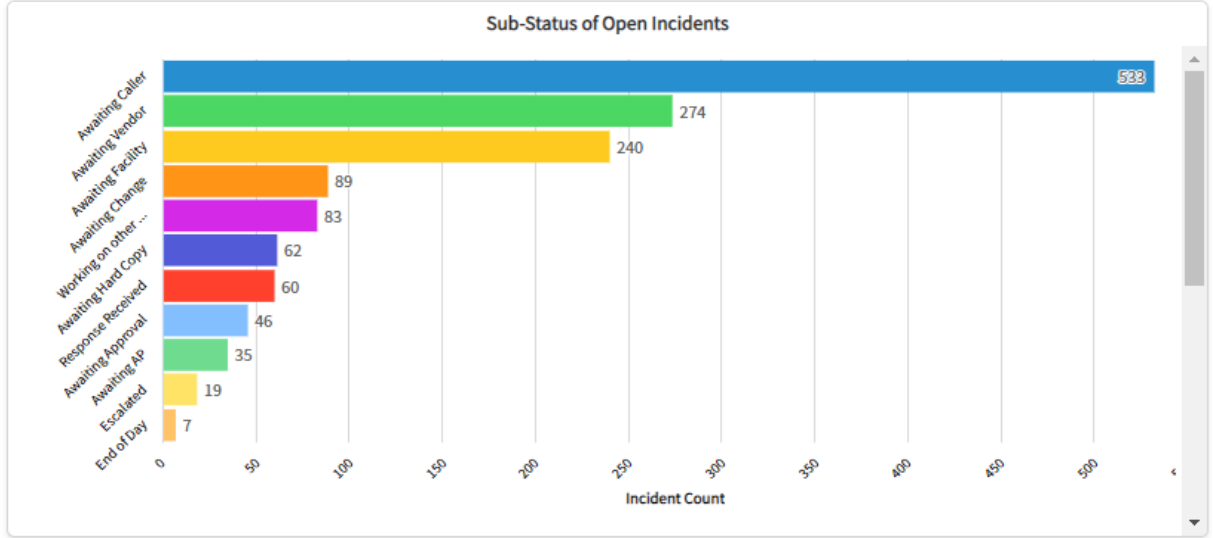
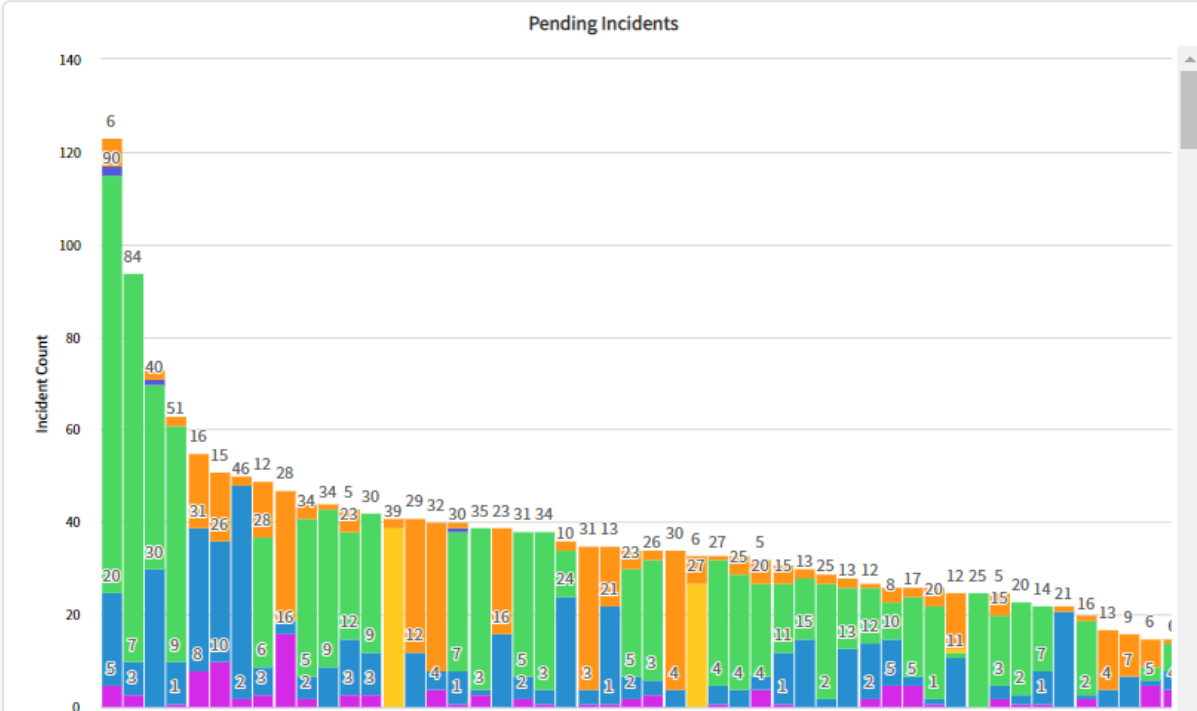
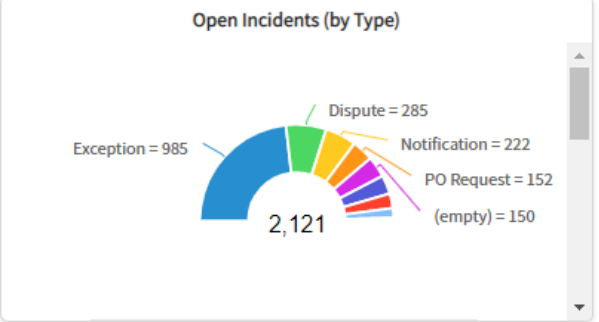
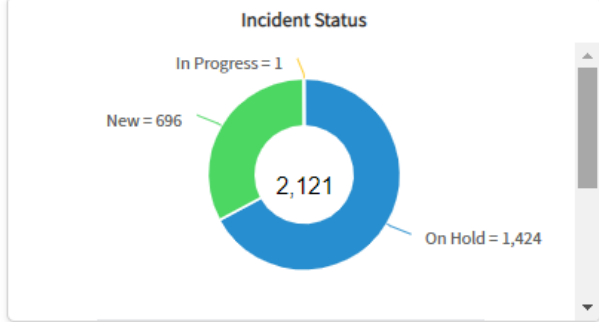
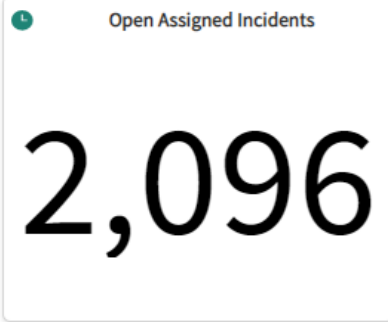
*“any piece of information you want should be available to you.”*  
- Bill Gates



# Purchasing Management Dashboard

☰ Purchasing Management ▾

Incidents Purchase Orders TBD Buyer Messages Exceptions Buyer Primera Users Disputes



Incident - Overview  
Loading report...

# Purchasing Management Dashboard

## Worker Schedule

☰ ☐ Purchasing Management ▾

Incidents Purchase Orders TBD Buyer Messages Exceptions Buyer Primera **Users** Disputes

### User Activity

		Schedule	(empty)	2:30-11:30 weekdays	5AM - 2PM Weekdays	6-3 weekdays	7:30-4:30 weekdays	Count
Status	User							
▶ Offline	Total		26	1	35	4	10	76
Count			26	1	35	4	10	76

Active

0

Away

0

Offline

76

# Purchasing Management

## Knowledge Base

All

[Import Articles](#)

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[Post a Question](#)

### Knowledge Bases

#### Application Menu

1 Articles

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#### Biomed Invoice

8 Articles

Subscribe

#### BMSI Buyers

0 Questions and 4 Articles

Subscribe

#### Nuvolo

5 Articles

Subscribe

#### Primer Server

2 Articles

Subscribe

#### QLIK

2 Articles

Subscribe

#### RTLS

0 Questions and 1 Articles

Subscribe

#### Social QA

0 Questions and 0 Articles

Subscribe

#### Support Team

72 Articles

Subscribe

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[Equipment Patient Incident Procedure](#)  
[How to create PO Requisition](#)  
[New Users](#)  
[Supply Chain - New Centralized Sites](#)

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[Module Overview \(Simple\)](#)  
[Module Overview \(Simple\)](#)  
[Clinical Work Orders Overview](#)  
[GHX Automation](#)

# Purchasing Management

## Knowledge Base

INC0677780

Follow Preview In Progress Save Update Escalate Start Audit Delete

Number: INC0677780

\* Caller: Vendor

Vendor Name:

Vendor Email: GMB-QAP@cardinalhealth.com

Hospital: PARADISE VALLEY HOSPITAL

Purchase Order: 719117039

\* Short description: Recall: PO# 719117039-SO for REQ#1498801 -MailToken:C6911K

\* Channel: Email

State: New

Urgency: Normal

Assignment group: Purchasing Buyer

Assigned to: Mohammed Khan

Related Search Results

Related Search: Recall: PO# 719117039-SO for REQ#1498801 -MailToken:C6911K

<a href="#">Supply Chain - New Centralized Sites</a> Support Team   Supply Chain	Description/Transform Maps SC PO POAUDIT - GRAB POA = POAUDIT PCR = PURCHORDER POAUDIT SECTION, D = Delete, L = Cancel, R = Release PCR.COM... Author: Brenda Reyes-Gutierrez ● Last modified: 2022-05-13 ● Rating: ★ ★ ★ ★ ★	Attach
<a href="#">Incident Updates Jan 13 2021</a> Buyers   Incidents	-Assignments (Link to topic start) Incident tickets will be scrubbed to find PO# or REQ#. If found, it will search in Nuvol... Author: Brenda Reyes-Gutierrez ● Last modified: 2021-03-30 ● Rating: ★ ★ ★ ★ ★	Attach
<a href="#">How to review and process Bill Only (...)</a> Buyers   Purchasing	to REQ or email PID form along with the Requisition to purchasing mailbox) If the PO is missing all requisition with a <... Author: Rani Ilapakurthi ● 5 views ● Last modified: 2021-02-24 ● Rating: ★ ★ ★ ★ ★	Attach
<a href="#">How to add order confirmation informa...</a> Buyers	Supply Chain Non EDI vendors order confirmations, PO Status and other Exception details will be entered in line User Fields in PO20 Once t... Author: Rani Ilapakurthi ● 4 views ● Last modified: 2021-01-11 ● Rating: ★ ★ ★ ★ ★	Attach
<a href="#">Categorize PO items for ENG blanket POs</a> BMSI Buyers   ENG Blanket PO	Hi PO Requester, We would like categorize PO items for ENG blanket POs (service agreement POs sure to enter the PO<... Author: Anny Yu ● Last modified: 2022-05-14 ● Rating: ★ ★ ★ ★ ★	Attach

Notes Resolution Information

Watch list: Ruth Granados, GMB-QAP@cardinalhealth.com

Work notes list:

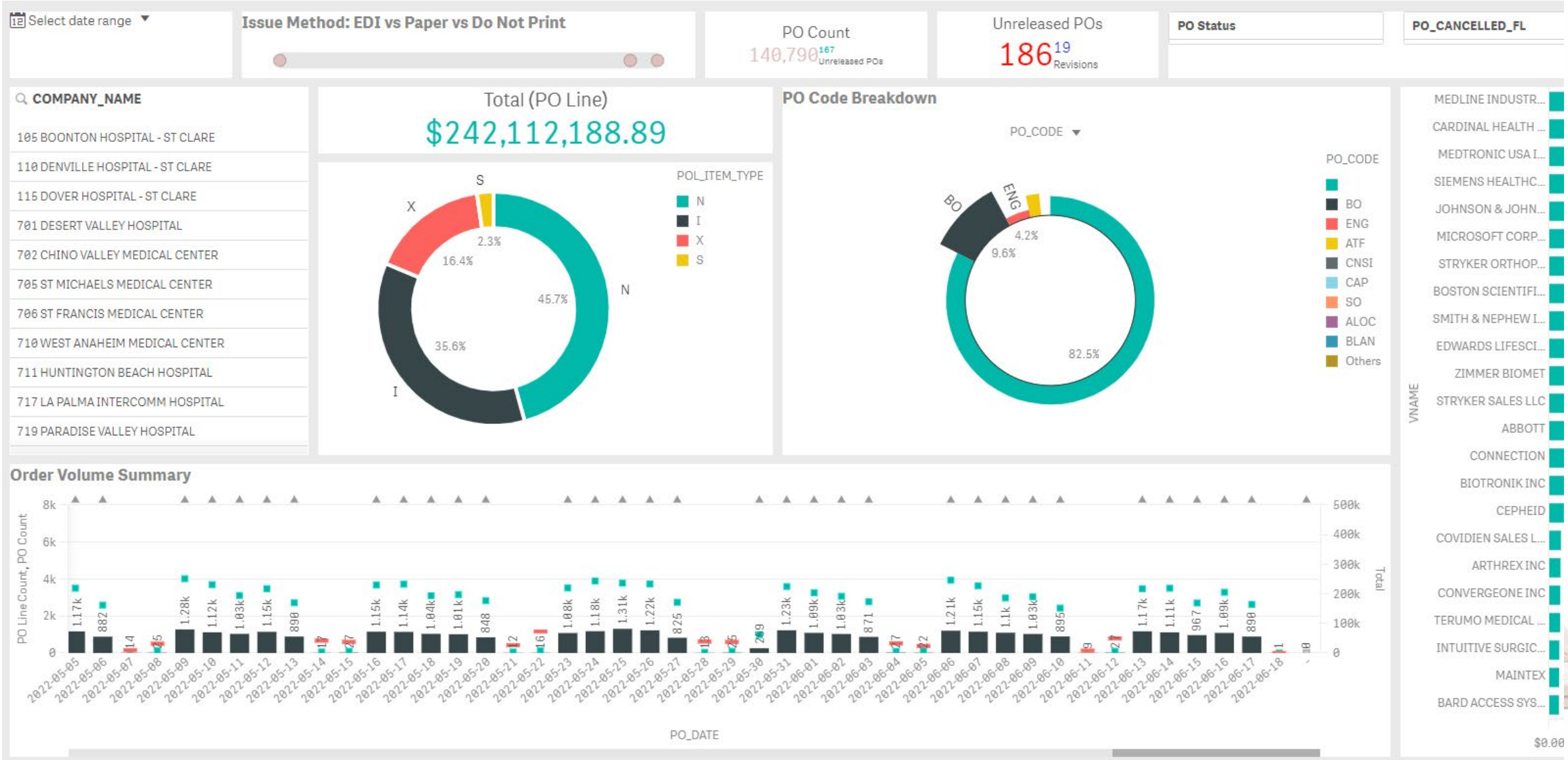
Work notes: [Text Area]

Additional comments (Customer visible) Post



# Business Intelligence (BI)

# BI Dashboard



# BI Dashboard

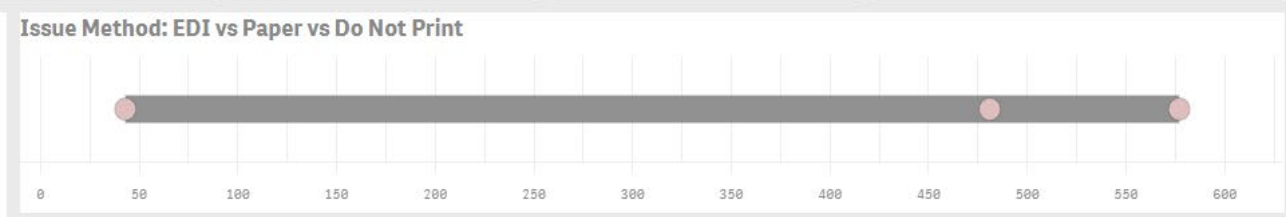
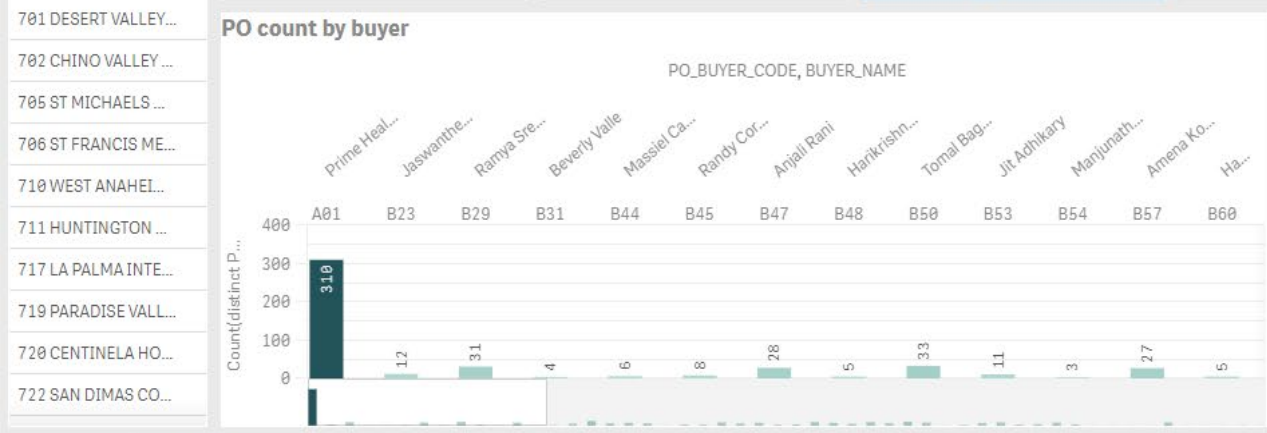
## Purchase Order Throughput

☰ Requisition & PO Overview - Supply Chain [6 Months]
 Prepare Data model viewer
Analyze Sheet
Narrate Storytelling

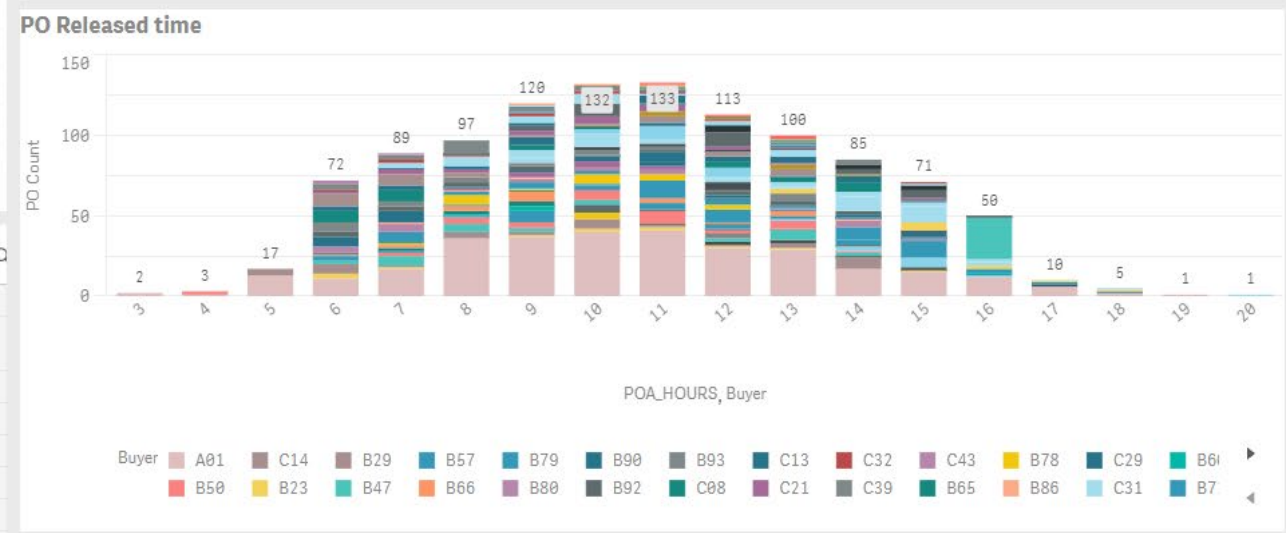
🔖
📄 Duplicate
📄 Order Volume
⏪
⏩

### Order Volume

🔍 Company
**PO Date**
**PO Released Date**
Unreleased POs **0**
Unreleased POs **0**
PO Count **1,101**
PO Line Count **3,332**
Total (PO Line) **\$1,567,958.81**



PO_D...	COMPANY_NUM&'&COMPANY_NAME	REQ_...	PO_N...	PO_C...	BUYER_NAME	POA_...
2020-05-13	701 DESERT VALLEY HOSPITAL	1503130	701024629	BO	Ismail Haroon Pansare	6
2022-03-02	745 RIVERVIEW REGIONAL MEDICAL CTR	1430425	745158333	BO	Preeti Alla	7
2022-05-02	706 ST FRANCIS MEDICAL CENTER	1480869	706031950	BO	Amrita Bose	12
2022-05-13	110 DENVILLE HOSPITAL - ST CLARE	1480260	110093696	BO	Preeti Alla	10
2022-05-13	701 DESERT VALLEY HOSPITAL	1504165	701024636	BO	Ismail Haroon Pansare	10
2022-05-17	701 DESERT VALLEY HOSPITAL	1504148	701024640	BO	Ismail Haroon Pansare	10
2022-05-25	727 HARLINGEN MEDICAL CENTER	1502844	727006629	BO	Preeti Alla	7



# Primer: Validation Tool

# Web application

## Purchase Order Validation Tool [Includes historical purchases across hospital and contract information]

Copy Excel CSV Show 100 entries Search:

PO Number	PO Line Number	PO Date	Item	Vendor	Vendor Item #	Manufacturer Name	Manufacturer Item #	Item Type	Lawson Item #	Item Description	Quantity	UOM	Entered Cost	Extended Amount	Prime Score
<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>
740002375	7	2022-06-17	136116	697 - MEDLINE INDUSTRIES INC(740A)	VALE1552	COVIDIEN	E1552	N		ELTRD ESURG 2.84IN 3/32IN EDG	1	CA			19.07 %

PO Number	PO Date	PO Code	Manufacturer	Manufacturer Number	Vendor(Purchase From)	Item Description	Unit of Measure	Conversion Factor	Price	Matched Price
<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>
706031570	2022-05-19				697 - MEDLINE INDUSTRIES INC(706D)	ELECTRODE NEEDLE 2.8	EA	1		
740002013	2022-05-09		COVIDIEN	E1552	697 - MEDLINE INDUSTRIES INC(740A)	ELTRD ESURG 2.84IN 3/32IN EDG	CA	150		
706027558	2022-02-22				697 - MEDLINE INDUSTRIES INC(706D)	ELECTRODE NEEDLE	EA	1		
705063809	2022-02-01		COVIDIEN	E1552	697 - MEDLINE INDUSTRIES INC(705A)	ELTRD ESURG 2.84IN 3/32IN EDG	BX	50		
706025402	2022-01-06				697 - MEDLINE INDUSTRIES INC(706A)	ELECTRODE NEEDLE	EA	1		
738334747	2022-01-03		COVIDIEN	E1552	697 - MEDLINE INDUSTRIES INC(738A)	ELTRD ESURG 2.84IN 3/32IN EDG	CT	150		
110084905	2021-12-14		COVIDIEN	E1552	697 - MEDLINE INDUSTRIES INC(115A)	ELTRD ESURG 2.84IN 3/32IN EDG	CA	150		
758036717	2021-12-13		COVIDIEN	E1552	31100 - COVIDIEN SALES LLC(758A)	ELTRD ESURG 2.84IN 3/32IN EDG	CT	150		
758032420	2021-09-20		COVIDIEN	E1552	31100 - COVIDIEN SALES LLC(758A)	ELTRD ESURG 2.84IN 3/32IN EDG	CA	150		

# Web application

## Purchase Order Validation Tool [Includes historical purchases across hospital and contract information]

Vendor Name	Vendor Number	UOM	UOM Multiplier	Quantity Purchased	Number of different prices
<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>
COVIDIEN SALES LLC	E1552	CA	150	1	1
COVIDIEN SALES LLC	E1552	CT	150	2	1
MEDLINE INDUSTRIES INC	VALE1552Z	BX	50	1	1
MEDLINE INDUSTRIES INC	VALE1552	CA	150	4	3
MEDLINE INDUSTRIES INC	VALE1552	CT	150	1	1
MEDLINE INDUSTRIES INC	VALE1552H	EA	1	62	1

Showing 1 to 6 of 6 entries

Previous  Next

Show  entries

Search:

Vendor Name	Agreement Number	Effective Date	Expire Date	Priority	UOM	UOM Multiplier	Price	Amount Purchased	Contract applies to
<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>
CARDINAL HEALTH 200	HPG_4735_T1_31091	2018-03-01	2022-08-31	2	CA	150			1
CARDINAL HEALTH 200	HPG_4735_T2_31091	2018-03-01	2022-08-31	2	CA	150			13
CARDINAL HEALTH 200	HPG_4735_T3_31091	2018-03-01	2022-08-31	2	CA	150			26
COVIDIEN SALES LLC	CATQ_COVIDIEN SALES_31100	2019-11-25	2027-01-01	5	BX	50			Contract applies to every site
COVIDIEN SALES LLC	HPG_4735_T1_31100	2018-03-01	2022-08-31	2	CT	150			1
COVIDIEN SALES LLC	HPG_4735_T2_31100	2018-03-01	2022-08-31	2	CT	150			13
COVIDIEN SALES LLC	HPG_4735_T3_31100	2018-03-01	2022-08-31	2	CT	150			26
MEDLINE INDUSTRIES INC	HPG_4735_T1_697	2018-03-01	2022-08-31	2	CA	150			1
MEDLINE INDUSTRIES INC	HPG_4735_T1_697	2018-03-01	2022-08-31	2	EA	1			1
MEDLINE INDUSTRIES INC	HPG_4735_T2_697	2018-03-01	2022-08-31	2	BX	50			15

Showing 1 to 10 of 15 entries

Previous   Next



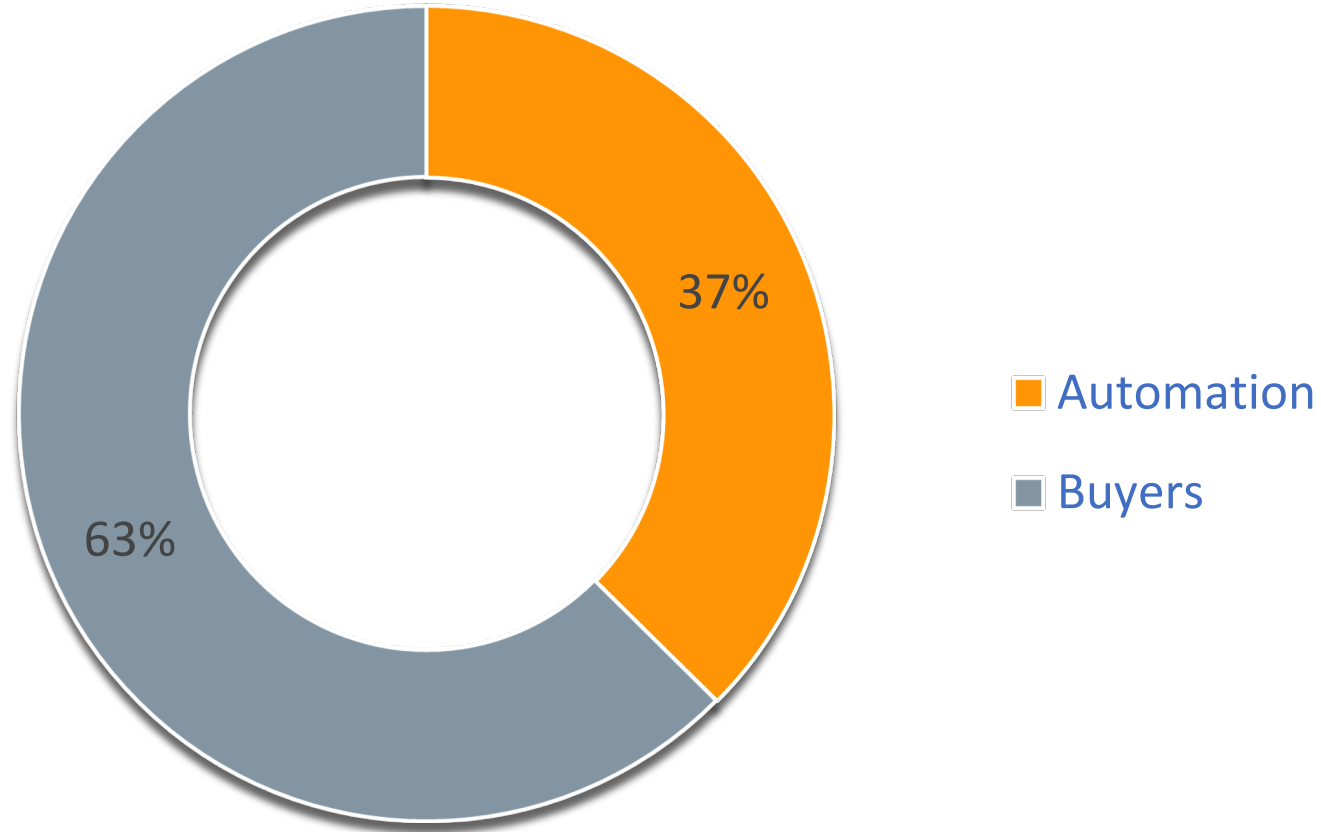


# PO Automation



# Automation – Phase 1

Percentage of Orders Processed by Automation and the Buyers



# Savings & Benefits

# | Savings Opportunity – Centralization, PO Automation & Dashboards

## Resources

- Reduction of effort required to process 50% of orders.
- 

## Purchases

- Tier optimization, Increase in contract spend, capital.
- 

## Invoice Disputes

- ~\$810k in the last one year.
- 

## Purchased Services

- In-house programs.
- Contract cancellations.

## Benefits – Centralization, PO Automation & Dashboards

- Reduction of effort required to process 50% of purchase orders.
- Ability to focus efforts on issues and other domains.
- Removal of manual mundane tasks and encourages using the system to increase efficiency.
- Reduces manual errors.
- Better understanding of issues within our system.
- Proactively integrate with alternate systems to extract data.
- Increased visibility and control in purchases and disputes throughout the system.

Reasons for PO Automation Failure	Purchase Order %
Contract exist but last 2 price does not match and higher price	6.26%
Good PO	63.97%
High Quantity Issue	17.60%
Higher cost than avg and no contract	2.72%
No history	13.81%

# Projects in Progress & Next Steps

## Projects in Progress & Next steps

- Warehouse ordering automation.
- Vendor classification, standardization and consolidation.
- Warehouse receiving efficiencies
- Conversion of lab to a perpetual location.
- Invoice automation.
- Item categorization and standardization.

## References

- Cambridge.org
- Source: Moujib, A. (2007). Lean Project Management. Paper presented at PMI Global Congress 2007—EMEA, Budapest, Hungary. Newtown Square, PA: Project Management Institute.



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# Thank you...

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