Predictive Revenue Assurance

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Business Overview

Industries face constant pressure of maintaining a healthy cash flow by using financial policies and processes to survive and enable growth even in difficult times.
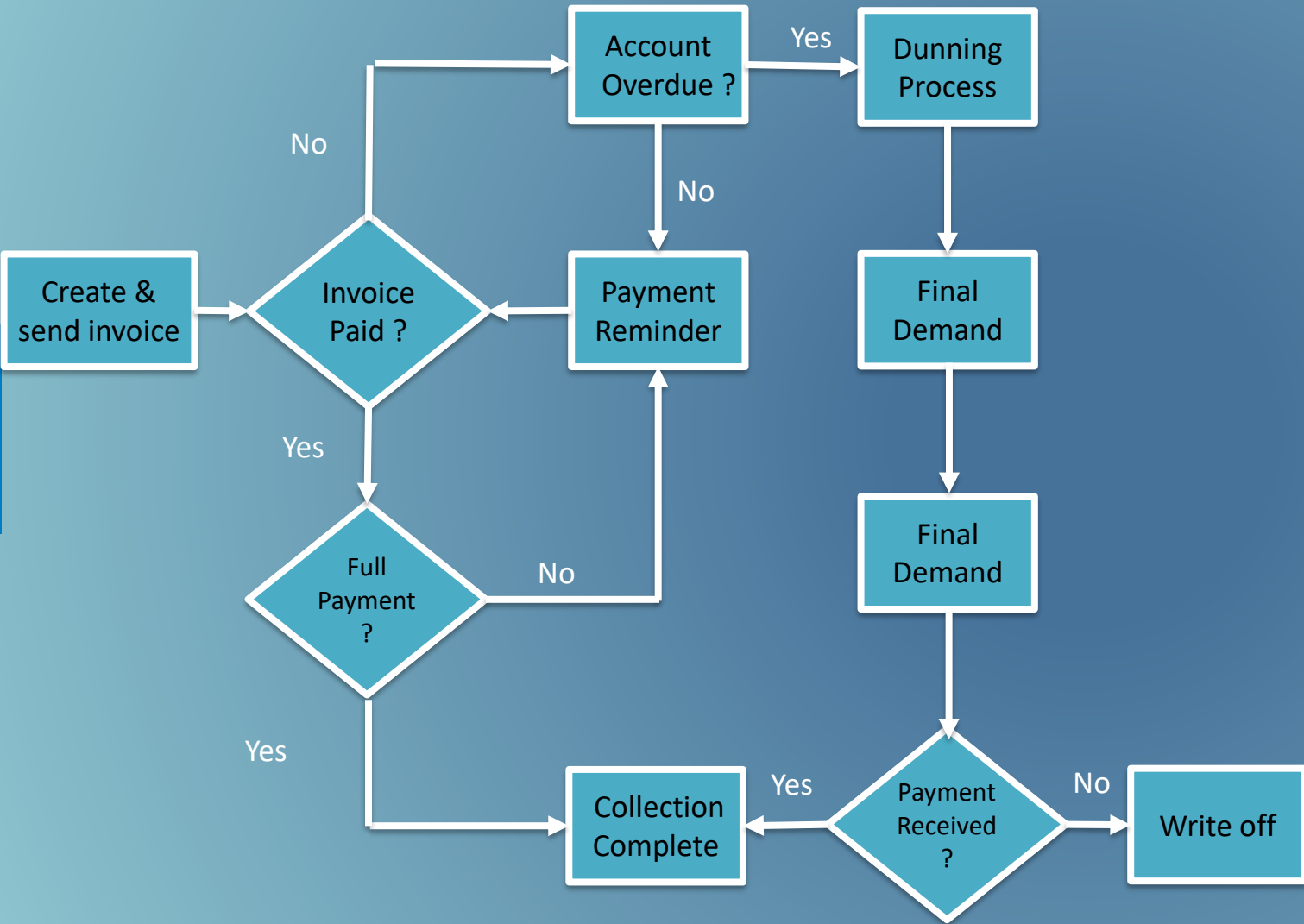
Effective management of Accounts Receivable and overall financial performance of firms are positively correlated.

With B2B transactions increasing in volume and complexity, poor management of AR can lead to unnecessary expenses and cash flow problems

An efficient AR management and collections strategy is now must to avoid cash flow problems, unnecessary added costs associated with uncollected receivables and putting future investments at risk.

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Accounts Receivable Process

```
Create &        →   Invoice      No →   Account      Yes →   Dunning
send invoice        Paid ?             Overdue ?            Process
                      │                   │ No              │
                      │ Yes               ↓                 ↓
                      │               Payment           Final
                      ↓               Reminder          Demand
                    Full                ↑                 │
                    Payment  No ────────┘                 ↓
                    ?                                   Final
                      │ Yes                             Demand
                      ↓                                   │
                    Collection  ← Yes  Payment  No →  Write off
                    Complete           Received ?
```
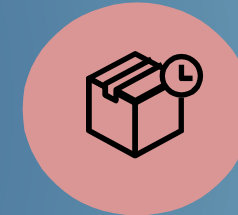
Top Reasons for Payments Delays

Inadequate staff in credit department

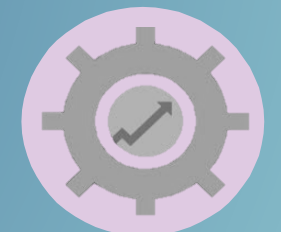Customers receiving the invoice too late to process payment on established credit terms

Delay in Invoice Approval by Business

Incorrect Invoices

Manual cash collection process

AP of customers affected by delay in their own AR

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DID YOU KNOW?

	US, Mexico & Canada	Western Europe
B2B sales made on credit	52.6%	60.4%
Value of receivables past due	25.3%	28.9%
Receivables remaining past due after 90 days	5.2%	4.6%
Value of receivables lost when not paid within 90 days	51.9%	35.0%
Value of receivables written off as bad debt	3.2%	2.2%
Average DSO increased (from ~35) to	48 Days	50 Days

➤ The most common credit management techniques used in Europe are manual assessment of the customers' creditworthiness and dunning letters

➤ The hardest hit by late payments from B2B customers is the wholesale/retail/distribution sector

40% Of collections budget wasted because of poor portfolio definition and segmentation

25% Of credit departments do not have adequate staff to manage workload

30% Of time spent on gathering information and prioritizing activities for collection

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Infosys Solution Overview

Uses SAP ECC or S4HANA systems for source data collection

Leverages custom application of Machine Learning to optimize AR management and collections process

Analyses historical payment patterns to generate insights

Predicts risk of each overdue invoice and assigns ranking based on chances of recovery.
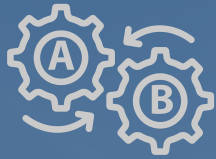
Prioritizes invoice / customer to be followed up for pending payments to allow for faster and higher revenue assurance

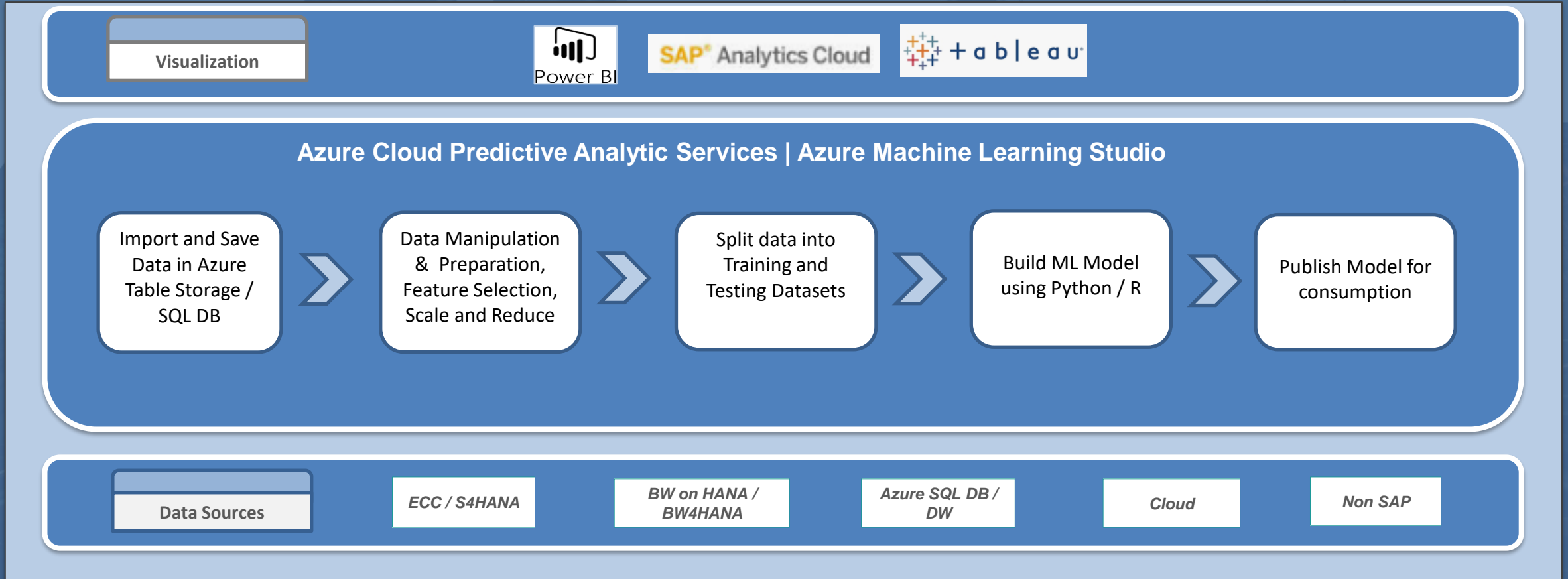Helps to identify risk and optimize collection resources and effort

Data Flow

Model is created in Azure Marketplace - Python ML library for prediction and assignment of ranking for each overdue invoice based on chances of recovery.

Visualization is done on Power BI or SAC where prediction results and insights on historical/current data can be analyzed

Visualization

Power BI   SAP® Analytics Cloud   +ableau

Azure Cloud Predictive Analytic Services | Azure Machine Learning Studio

Import and Save Data in Azure Table Storage / SQL DB → Data Manipulation & Preparation, Feature Selection, Scale and Reduce → Split data into Training and Testing Datasets → Build ML Model using Python / R → Publish Model for consumption

Data Sources

ECC / S4HANA   BW on HANA / BW4HANA   Azure SQL DB / DW   Cloud   Non SAP
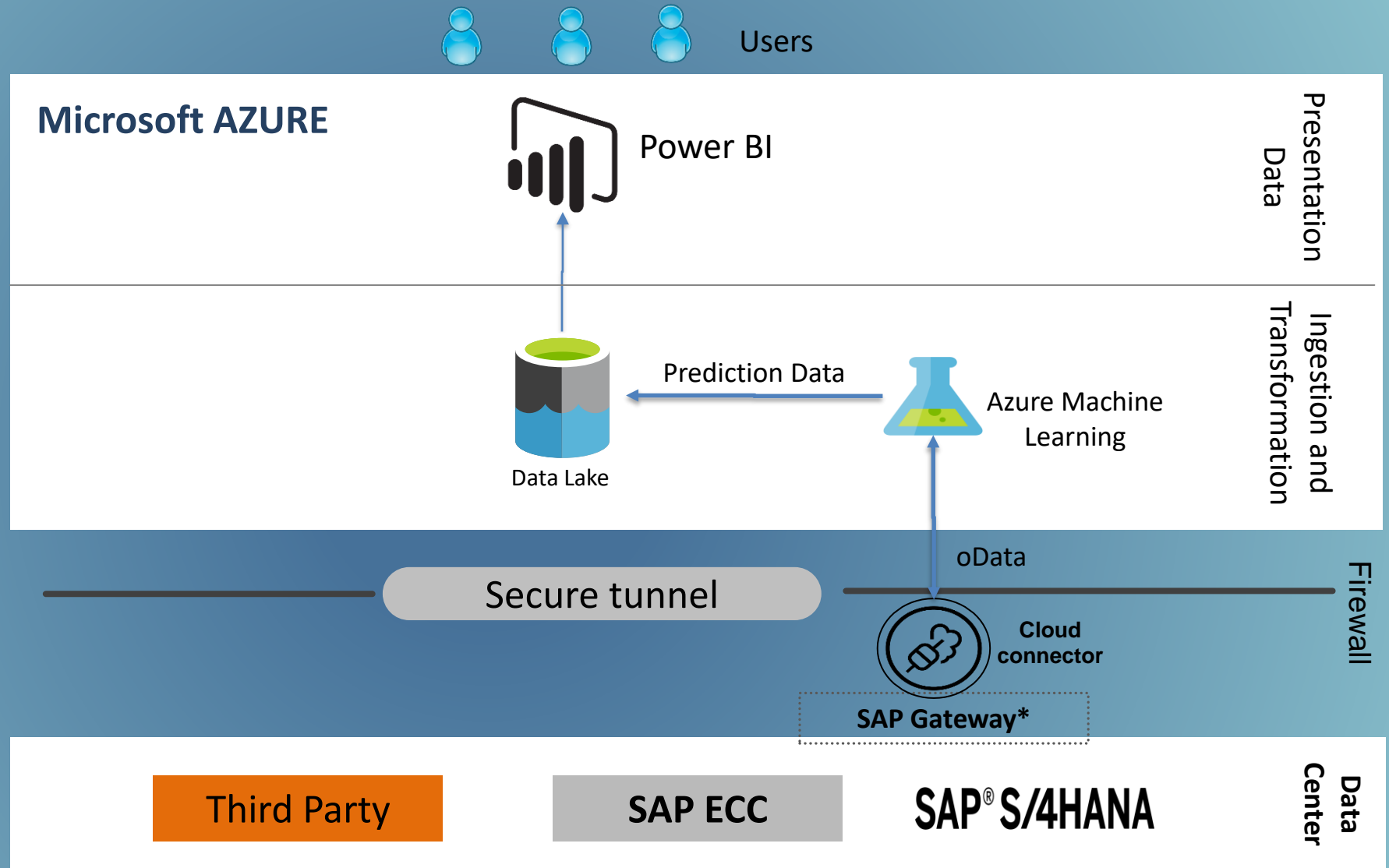
Account Receivables Source Data can be taken from ECC / S4HANA or BW / BW4HANA or any Non-SAP or Cloud based platforms like Azure

Invoice and Customer specific features are taken as input to analyze historical payment behavior

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Azure Architecture

Users

Microsoft AZURE

Power BI

Ingestion and Transformation

Presentation Data

Prediction Data → Data Lake

Azure Machine Learning

oData

Secure tunnel

Cloud connector

Firewall

SAP Gateway*

Third Party   SAP ECC   SAP® S/4HANA

Data Center

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Solution Implementation

Invoice Factors as Input

- Invoice No
- Invoice Status
- Customer
- Posting Date
- Payment Due Date
- Actual Payment Date
- Days to Pay
- Days Taken for Payment
- Payment Late By
- Overdue By
- Risk Class
- AR Amount

Data Cleaning and Wrangling

Apply ML Algorithm

Predict ranking based on chances of recovery

Predicted Ranking for collection prioritization

Invoice No	Customer	Gross AR Amount	Predicted
199916683	50770	36,487.85	● 4
199915172	46703	6,023.24	● 4
199915174	46703	5,514.55	● 4
2199908784	40978	50,940.05	● 2
199902742	52819	5,133.76	● 3
199928185	38264	5,596.45	● 4
2199917143	40978	23,424.23	● 2
199928550	47861	7,139.00	● 3
199913811	48460	9,467.21	● 2
199916502	50591	5,014.20	● 4
199918049	51843	6,602.92	● 2
199902449	52306	6,150.90	● 4
199906591	42484	25,850.49	● 4
199930167	54344	7,151.86	● 2
2199918201	40978	5,709.18	● 2
199930178	54422	7,527.88	● 2
1499903775	51843	10,683.29	● 2
1499910238	37996	5,531.45	● 2
2199907818	41248	5,797.26	● 1
2199909290	37921	5,045.81	● 1

Invoices with Overdue Amount > $5000 are considered for input.

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Solution Output – Dashboard

Total invoices	Amount	Open Invoices	Amount	Overdue Invoices	Amount	Recovered Invoices	Amount	91
89392	$28,904,103.87	15212	$14,418,567.48	6661	$7,251,783.48	2284	$3,337,127.86	Recovery % (Rank 1 & 2))

Top 5 customers by overdue amount

Customer	Invoices	Amount
51843	185	$280,906.65
40978	80	$851,029.18
37899	12	$46,496.11
37921	5	$96,345.67
42484	5	$37,548.69

Overdue Amount by days
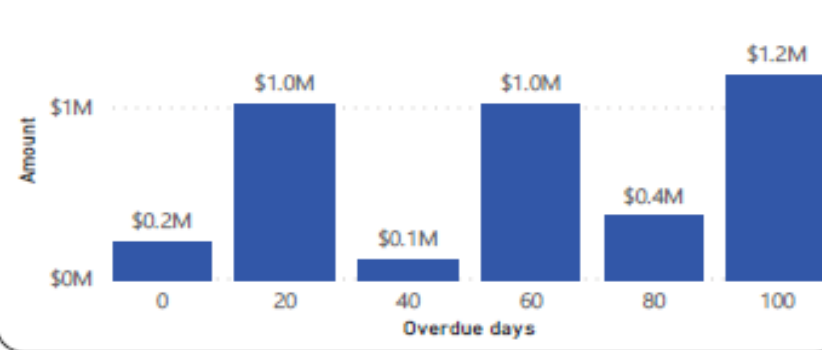
Top 5 customers by recovered amount

Customer	Invoices	Amount
45592	16	$70,901.45
49296	2	$42,449.67
42833	7	$20,895.80
50450	1	$20,682.33
50895	3	$19,410.46

Overdue Amount by Predicted Rank

34.41% (34.37%)
9.95% (9.94%)
18.97% (18.95%)
33.69% (33.65%)

Predicted Rank
1
2
4
3
5
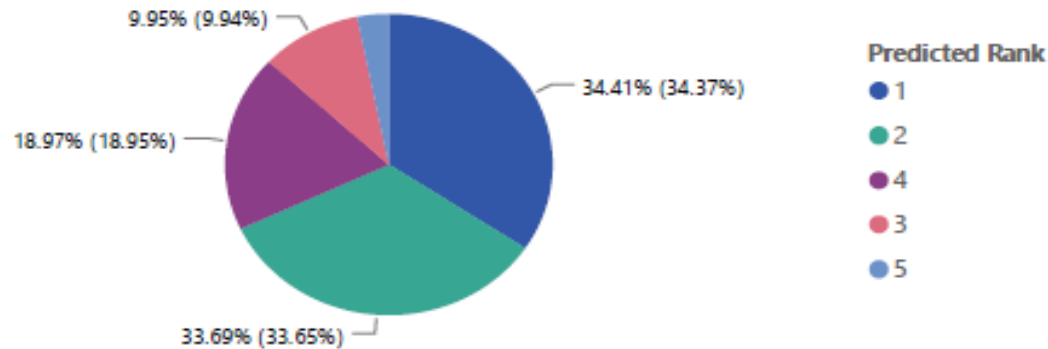
Recovery Amount by Predicted Rank

4.71% (4.7%)
24.91% (24.88%)
66.55% (66.47%)

Predicted Rank
1
2
3
4
5
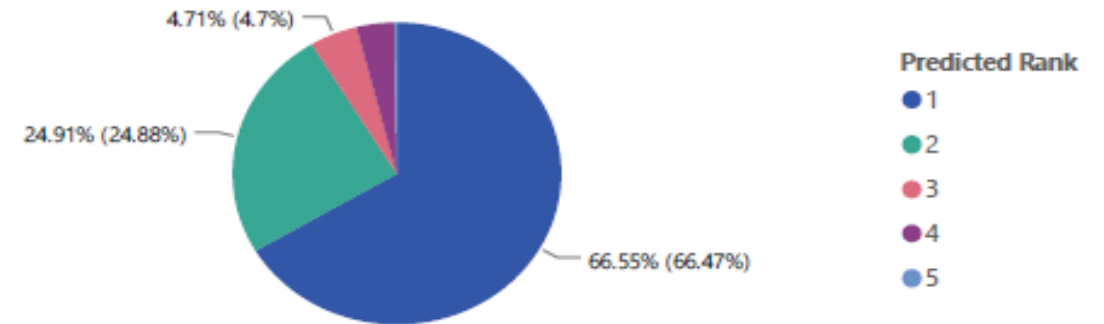
Overdue Amount	Predicted Rank	Recovery Amount	Predicted Rank
$2,495,150.66	1	$2,220,725.92	1
$2,443,056.57	2	$831,354.82	2
$1,375,578.49	4	$157,131.96	3
$721,425.27	3	$123,406.29	4
$225,014.74	5	$8,257.83	5

askus@infosys.com

THANK YOU

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