

# AR – Collections forecasting

Facility services provider

Built a dynamic AR forecasting model to provide visibility into expected collections at a customer level for a 13-week period

# Facility services company needs to “unlock” AR projection

## Picture this...

You're looking for detailed and accurate 13-week collections forecast every week to have enhanced visibility in cash flow as the existing process is not data-driven and requires frequent manual adjustments and provides limited visibility into variance vs. actuals.

## You turn to Accordion.

We partner with your team to enhance, automate and streamline the forecasting process that would enhance the accuracy of the forecast within a short period of time, including:

- 1) Incorporating historical payment behavior of the customers in the forecast by using DBT (days beyond terms) trends.
- 2) Centralizing the process to consolidate customer level payment information and incorporating an additional layer into the model.
- 3) Enabling easy tracking of each adjustment layer and its impact on forecast with revised template resulting in reduced instances of manual adjustments while making the process faster, simpler and intuitive.
- 4) Tracking of Actuals vs. forecasted collections at the end of the week and in between the week to track accuracy and analysis of the WoW change in future week's forecast to identify key change levers.

## Your value is enhanced.

- You have automated and streamlined the overall methodology with accelerated delivery of the preliminary forecast by 50% compared to existing process every week, enabling more time for you to improve the forecast.
- You have the forecast accuracy of more than 99% over a 13-week period, excluding few special cases where the team pulled the payments a week earlier than they were forecasted.
- Mid-week Actuals vs. Forecast enables the you to focus on the pending invoices and customers.

### KEY RESULT

- >99% forecast accuracy
- 50% accelerated forecast

### VALUE LEVERS PULLED

- DBT Analysis
- Consolidation of Portal reports
- Variance Analysis

# Forecasting AR – Collections for a facility services provider

## Situation

- Client requires detailed and accurate 13-week collections forecast every week to have enhanced visibility in cash flow. However, the existing process was not data-driven and required frequent manual adjustments which were time intensive and provided limited visibility into variance vs. actuals.
- Partnered with the client to enhance, automate and streamline the forecasting process that enhanced the accuracy of the forecast while reducing the time to forecast

## Accordion Value Add

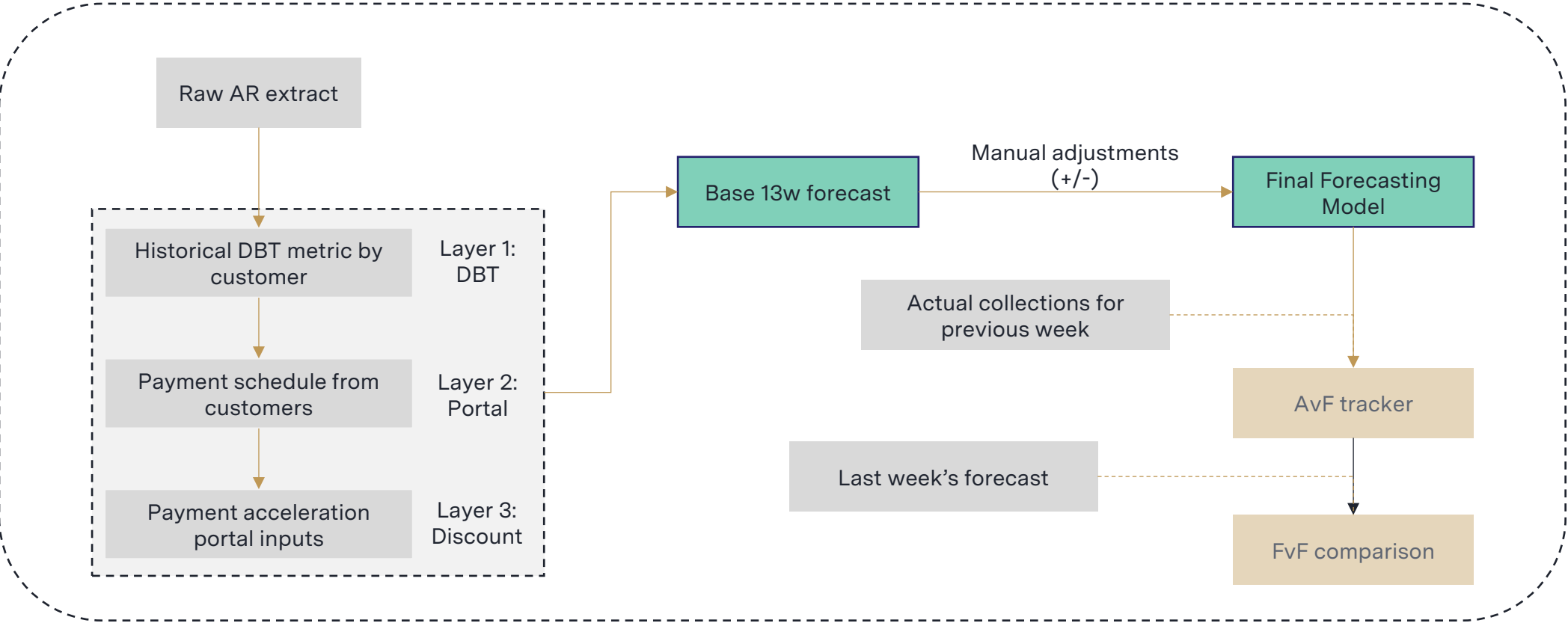
- Enhanced the forecast by incorporating historical payment behavior of the customers in the forecast by using DBT (days beyond terms) trends
- Centralized the process to consolidate customer level payment information and incorporated an additional layer into the model
- Enabled easy tracking of each adjustment layer and its impact on forecast with revised template resulting in reduced instances of manual adjustments while making the process faster, simpler and intuitive
- Robust tracking of Actuals vs. forecasted collections at the end of the week and in between the week to track accuracy and analysis of the WoW change in future week's forecast to identify key change levers

## Impact

- Automation and streamlining of the overall methodology resulted in an accelerated delivery of the preliminary forecast by 50% compared to existing process every week, enabling more time to the Collections team to improve the forecast
- The Data driven approach led to a forecast accuracy of more than 99% over a 13-week period, excluding few special cases where the team pulled the payments a week earlier than they were forecasted
- Mid-week Actuals vs. Forecast enables the Collections team to focus on the pending invoices and customers

# Methodology/ Approach

- The existing approach leveraged out-of-date assumptions to adjust the forecast leading to lack of real-time visibility. Furthermore, the final forecasting adjustment process was highly manual (personnel driven) and iterative in nature.
- Automated the overall process while making it data driven by incorporating external inputs in a layered structure and including dynamic assumptions (monthly update of DBT metric, past due collections trends, reserve estimations, collection manager mapping, etc.)



# Forecast evolution by each adjustment layer

Uncollectable (\$) by customer

Category	Customer	Metrices	Open AR	Week 1	Week 2	Week3	Week4	Week5	Week6	Week7	Week8	Week9	Week10	Week11	Week 12	Week13	Total 13w	Discounts	Reserves
Top 50	Customer 1	Current Due (\$)	\$ 30,340.5K	\$ 13,608.3K	\$ 501.7K	\$ 96.8K	\$ 575.0K	\$ 13,741.2K	\$ 74.7K	\$ 448.6K	\$ 25.0K	\$ 1,269.4K	-	-	-	-	\$ 30,340.5K	\$ 53.0K	\$ 1,800.0K
	Customer 1	Adj. Past Due (\$)	\$ 4,025.1K	\$ 277.5K	\$ 321.0K	\$ 321.0K	\$ 277.5K	\$ 277.5K	\$ 190.7K	\$ 168.9K	\$ 168.9K	\$ 168.9K	-	-	-	-	\$ 2,172.1K		
	Customer 1	DBT Forecast (\$)		\$ 13,885.8K	\$ 822.6K	\$ 417.8K	\$ 852.5K	\$ 14,018.8K	\$ 265.3K	\$ 617.5K	\$ 193.9K	\$ 1,438.3K	-	-	-	-	\$ 32,512.6K		
	Customer 1	Portal (\$)		\$ 12,707.3K	\$ 611.6K	\$ 210.8K	\$ 162.4K	\$ 12,662.5K	\$ 1,177.7K	\$ 212.5K	\$ 8.9K	\$ 126.9K	-	-	-	-	\$ 27,880.6K		
	Customer 1	Portal Ad. (\$)		\$ 12,707.3K	\$ 611.6K	\$ 210.8K	\$ 162.4K	\$ 14,018.8K	\$ 265.3K	\$ 617.5K	\$ 193.9K	\$ 1,438.3K	-	-	-	-	\$ 30,225.8K		
	Customer 1	Manual Ad. (+/-)			\$ 446.5K	\$ 534.6K	\$ 869.5K	(\$ 206.1K)	\$ 980.1K	(\$ 168.9K)	(\$ 168.9K)						\$ 2,286.8K		
	Customer 1	Final Forecast (\$)		\$ 12,707.3K	\$ 1,058.1K	\$ 745.4K	\$ 1,031.9K	\$ 13,812.7K	\$ 1,245.4K	\$ 448.6K	\$ 25.0K	\$ 1,438.3K	-	-	-	-	\$ 32,512.6K		
	Customer 1	Last week (\$)		\$ 12,707.3K	\$ 1,018.7K	\$ 768.3K	\$ 1,264.2K	\$ 13,756.4K	\$ 1,246.0K	\$ 448.6K	\$ 262.8K	-	-	-	-	-	\$ 31,472.2K		
	Customer 1	Variance W-o-W (\$)		\$ .0K	\$ 39.4K	(\$ 22.9K)	(\$ 232.3K)	\$ 56.3K	(\$ .6K)	-	(\$ 237.8K)	\$ 1,438.3K	-	-	-	-	\$ 1,040.4K		
Top 50	Customer 2	Current Due (\$)	\$ 12,118.0K	\$ 66.5K	\$ 22.5K	\$ 61.3K	\$ 5,979.2K	\$ 52.3K	\$ 23.7K	\$ 23.1K	\$ 2.0K	\$ 5,887.3K	-	-	-	-	\$ 12,118.0K	-	\$ 62.5K
	Customer 2	Adj. Past Due (\$)	\$ 149.9K	\$ 11.2K	\$ 12.9K	\$ 12.9K	\$ 11.2K	\$ 11.2K	\$ 7.7K	\$ 6.8K	\$ 6.8K	\$ 6.8K	-	-	-	-	\$ 87.4K		
	Customer 2	DBT Forecast (\$)		\$ 77.7K	\$ 35.4K	\$ 74.2K	\$ 5,990.4K	\$ 63.5K	\$ 31.3K	\$ 29.9K	\$ 8.8K	\$ 5,894.1K	-	-	-	-	\$ 12,205.4K		
	Customer 2	Portal (\$)		-	\$ 193.5K	\$ 42.8K	\$ 5,775.7K	\$ 101.4K	\$ 24.8K	\$ 7.2K	\$ 20.8K	\$ 5,750.6K	-	-	-	-	\$ 11,916.9K		
	Customer 2	Portal Ad. (\$)		-	\$ 193.5K	\$ 42.8K	\$ 5,775.7K	\$ 63.5K	\$ 31.3K	\$ 29.9K	\$ 8.8K	\$ 5,894.1K	-	-	-	-	\$ 12,039.9K		
	Customer 2	Manual Ad. (+/-)					\$ 166.5K				\$ 5,894.1K	(\$ 5,894.1K)					\$ 166.5K		
	Customer 2	Final Forecast (\$)		-	\$ 193.5K	\$ 42.8K	\$ 5,942.2K	\$ 63.5K	\$ 31.3K	\$ 29.9K	\$ 5,903.0K	-	-	-	-	-	\$ 12,206.4K		
	Customer 2	Last week (\$)		-	\$ 199.8K	\$ 43.7K	\$ 5,981.4K	\$ 31.8K	\$ 25.0K	\$ 22.9K	\$ 1.3K	-	-	-	-	-	\$ 6,305.9K		
	Customer 2	Variance W-o-W (\$)		-	(\$ 6.3K)	(\$ .8K)	(\$ 39.1K)	\$ 31.7K	\$ 6.3K	\$ 7.0K	\$ 5,901.6K	-	-	-	-	-	\$ 5,900.4K		
Top 50	Customer 3	Current Due (\$)	\$ 2,332.0K	\$ 85.2K	\$ 51.4K	\$ 792.9K	\$ 212.6K	\$ 30.4K	\$ 113.0K	\$ 82.3K	\$ 964.1K	-	-	-	-	-	\$ 2,332.1K	-	\$ 12.5K
	Customer 3	Adj. Past Due (\$)	\$ 2,049.9K	\$ 260.3K	\$ 301.1K	\$ 301.1K	\$ 260.3K	\$ 260.3K	\$ 178.8K	\$ 158.5K	\$ 158.5K	\$ 158.5K	-	-	-	-	\$ 2,037.4K		
	Customer 3	DBT Forecast (\$)		\$ 345.6K	\$ 352.5K	\$ 1,094.0K	\$ 472.9K	\$ 290.8K	\$ 291.9K	\$ 240.8K	\$ 1,122.6K	\$ 158.5K	-	-	-	-	\$ 4,369.4K		
	Customer 3	Portal (\$)											-	-	-	-	-		
	Customer 3	Portal Ad. (\$)		\$ 345.6K	\$ 352.5K	\$ 1,094.0K	\$ 472.9K	\$ 290.8K	\$ 291.9K	\$ 240.8K	\$ 1,122.6K	\$ 158.5K	-	-	-	-	\$ 4,369.4K		
	Customer 3	Manual Ad. (+/-)											-	-	-	-	-		
	Customer 3	Final Forecast (\$)		\$ 345.6K	\$ 352.5K	\$ 1,094.0K	\$ 472.9K	\$ 290.8K	\$ 291.9K	\$ 240.8K	\$ 1,122.6K	\$ 158.5K	-	-	-	-	\$ 4,369.4K		
	Customer 3	Last week (\$)		\$ 440.9K	\$ 355.7K	\$ 416.7K	\$ 1,112.6K	\$ 382.5K	\$ 300.3K	\$ 259.6K	\$ 199.2K	-	-	-	-	-	\$ 3,467.5K		
	Customer 3	Variance W-o-W (\$)		(\$ 95.4K)	(\$ 3.2K)	\$ 677.3K	(\$ 639.7K)	(\$ 91.7K)	(\$ 8.4K)	(\$ 18.8K)	\$ 923.4K	\$ 158.5K	-	-	-	-	\$ 902.0K		
Top 50 Total			\$ 106,603.3K	\$ 18,983.0K	\$ 7,367.0K	\$ 7,273.6K	\$ 16,057.6K	\$ 19,698.0K	\$ 5,010.6K	\$ 5,994.3K	\$ 10,359.6K	\$ 5,059.5K	\$ 1,114.9K	\$ 71.7K	\$ 1,184.6K	\$ 642.9K	\$ 98,817.5K	\$ 86.6K	\$ 7,891.8K
Top 51-100	Current Due (\$)		\$ 7,695.8K	\$ 1,320.7K	\$ 867.5K	\$ 676.2K	\$ 1,618.6K	\$ 697.4K	\$ 682.4K	\$ 920.5K	\$ 390.9K	\$ 166.9K	\$ 66.5K	\$ 35.6K	\$ 101.5K	\$ 120.3K	\$ 7,665.0K		\$ 5,000.0K
	Adj. Past Due (\$)		\$ 8,806.8K	\$ 486.4K	\$ 562.6K	\$ 562.6K	\$ 486.4K	\$ 486.4K	\$ 334.2K	\$ 296.1K	\$ 296.1K	\$ 296.1K	-	-	-	-	\$ 3,806.8K		
Top 51-100 Total			\$ 16,502.6K	\$ 1,807.1K	\$ 1,430.0K	\$ 1,238.7K	\$ 2,105.0K	\$ 1,183.9K	\$ 1,016.5K	\$ 1,216.6K	\$ 687.0K	\$ 463.0K	\$ 66.5K	\$ 35.6K	\$ 101.5K	\$ 120.3K	\$ 11,471.8K		
101 +	Current Due (\$)		\$ 9,275.6K	\$ 758.9K	\$ 1,037.9K	\$ 1,072.7K	\$ 2,540.5K	\$ 1,509.8K	\$ 645.8K	\$ 509.9K	\$ 280.9K	\$ 500.7K	\$ 125.9K	\$ 105.5K	\$ 15.7K	\$ 123.9K	\$ 9,228.2K		\$ 7,200.0K
	Adj. Past Due (\$)		\$ 11,127.4K	\$ 501.8K	\$ 580.4K	\$ 580.4K	\$ 501.8K	\$ 501.8K	\$ 344.7K	\$ 305.5K	\$ 305.5K	\$ 305.5K	-	-	-	-	\$ 3,927.4K		
101 + Total			\$ 20,403.1K	\$ 1,260.7K	\$ 1,618.3K	\$ 1,653.1K	\$ 3,042.3K	\$ 2,011.6K	\$ 990.6K	\$ 815.4K	\$ 586.3K	\$ 806.2K	\$ 125.9K	\$ 105.5K	\$ 15.7K	\$ 123.9K	\$ 13,155.6K		
Grand Total			\$ 143,508.9K	\$ 22,050.8K	\$ 10,415.4K	\$ 10,165.5K	\$ 21,204.9K	\$ 22,893.5K	\$ 7,017.8K	\$ 8,026.3K	\$ 11,632.9K	\$ 6,328.7K	\$ 1,307.3K	\$ 212.8K	\$ 1,301.8K	\$ 887.2K	\$ 123,444.9K	\$ 86.6K	\$ 20,091.8K
Grand Total Prior Week				\$ 23,794.9K	\$ 11,835.3K	\$ 9,640.4K	\$ 20,064.1K	\$ 19,392.7K	\$ 4,891.9K	\$ 3,238.2K	\$ 3,006.3K	\$ 788.5K	\$ 762.8K	\$ 324.9K	\$ 343.6K				
Variance (\$)				(\$ 1,744.0K)	(\$ 1,419.9K)	\$ 525.1K	\$ 1,140.8K	\$ 3,500.7K	\$ 2,125.9K	\$ 4,788.1K	\$ 8,626.6K	\$ 5,540.2K	\$ 544.5K	(\$ 112.1K)	\$ 958.2K	Expected discounts owing to payment			
% variance				-7.3%	-12.0%	5.4%	5.7%	18.1%	43.5%	147.9%	287.0%	702.6%	71.4%	-34.5%	278.8%				

Expected discounts owing to payment acceleration

Evolving forecast at each layer:

DBT  
Portal  
Manual Adj.WoW  
Forecast  
variance

Provides the age of pending orders along with the average duration at each stage of the order lifecycle

## Actuals vs. Forecast tracker

## WoW Variance Tracking

		Week 1				Week 2				Week 3			
Category	Customer Group	Forecast	Actuals	Variance (\$)	% Variance	Forecast	Actuals	Variance (\$)	% Variance	Forecast	Actuals	Variance (\$)	% Variance
Top 50	Customer 1	\$44,977	\$43,143	(\$1,835)	-4.1%	\$2,563,160	\$2,719,535	\$156,376	6.1%	\$176,636	\$174,935	(\$1,700)	-1.0%
Top 50	Customer 2	\$442,777	\$461,550	\$18,773	4.2%	\$37,839	\$39,963	\$2,124	5.6%	\$587,003	\$592,023	\$5,020	0.9%
Top 50	Customer 3	\$373,500	\$357,651	(\$15,849)	-4.2%	-	-	-	-	\$3,516	\$3,452	(\$64)	-1.8%
Top 50	Customer 4	-	-	-	-	-	-	-	-	\$6,349	\$6,291	(\$58)	-0.9%
Top 50	Customer 5	\$97,500	\$102,428	\$4,928	5.1%	\$34,000	\$36,237	\$2,237	6.6%	\$192,092	\$195,129	\$3,037	1.6%
Top 50	Customer 6	\$22,732	\$21,737	(\$995)	-4.4%	\$16,219	\$17,051	\$832	5.1%	\$87,064	\$85,407	(\$1,657)	-1.9%
Top 50	Customer 7	-	-	-	-	-	-	-	-	\$24,785	\$24,375	(\$410)	-1.7%
Top 50	Customer 8	-	\$56,213	\$56,213	-	\$115,637	\$122,443	\$6,806	5.9%	\$138,764	\$140,687	\$1,922	1.4%
Top 50	Customer 9	\$38,220	\$36,605	(\$1,615)	-4.2%	\$36,633	\$34,759	(\$1,875)	-5.1%	\$8,500	\$8,384	(\$116)	-1.4%
Top 50	Customer 10	\$129,187	\$136,820	\$7,633	5.9%	\$11,206	\$11,812	\$606	5.4%	\$3,000	\$3,058	\$58	1.9%
Top 50	Customer 11	\$21,722	\$22,778	\$1,056	4.9%	\$3,120	\$2,954	(\$166)	-5.3%	\$90,402	\$92,085	\$1,683	1.9%
Top 50	Customer 12	\$3,717	\$3,876	\$159	4.3%	\$248,664	\$231,470	(\$17,194)	-6.9%	\$24,377	\$24,617	\$240	1.0%
Top 50	Customer 13	\$598,697	\$572,092	(\$26,605)	-4.4%	\$5,830	\$6,189	\$359	6.2%	\$56,996	\$56,619	(\$377)	-0.7%
Top 50	Customer 14	\$38,041	\$35,857	(\$2,184)	-5.7%	\$54,641	\$50,967	(\$3,674)	-6.7%	\$25,000	\$24,582	(\$418)	-1.7%
Top 50	Customer 15	-	-	-	-	\$697	\$655	(\$42)	-6.0%	(\$10,400)	(\$10,600)	(\$199)	1.9%
Top 50	Customer 16	-	-	-	-	-	-	-	-	-	-	-	-
Top 50	Customer 17	\$39,440	-	(\$39,440)	-100.0%	\$198,177	\$187,778	(\$10,399)	-5.2%	\$20,402	\$20,062	(\$340)	-1.7%
Top 50	Customer 18	\$30,925	\$29,535	(\$1,389)	-4.5%	-	-	-	-	\$51,834	\$51,519	(\$315)	-0.6%
Top 50	Customer 19	\$605	\$576	(\$29)	-4.8%	\$140,423	\$147,519	\$7,096	5.1%	\$140,746	\$138,737	(\$2,009)	-1.4%
Top 50	Customer 20	-	-	-	-	\$10,000	\$9,461	(\$539)	-5.4%	-	-	-	-
Top 50	.	.	.	.	.	.	.	.	.	.	.	.	.
Top 50	.	.	.	.	.	.	.	.	.	.	.	.	.
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Top 50	.	.	.	.	.	.	.	.	.	.	.	.	.
Top 50 Total		\$6,489,494	\$6,167,116	(\$322,378)	-5.0%	\$7,053,561	\$7,516,019	\$462,457	6.6%	\$6,741,700	\$6,867,994	\$126,294	1.9%
Top 51-100 Total		\$1,012,835	\$969,301	(\$43,534)	-4.3%	\$768,542	\$810,065	\$41,522	5.4%	\$1,108,221	\$1,125,115	\$16,893	1.5%
101 + Total		\$2,377,676	\$2,250,220	(\$127,456)	-5.4%	\$2,377,676	\$2,217,785	(\$159,891)	-6.7%	\$898,377	\$907,699	\$9,322	1.0%
Grand Total		\$9,880,005	\$9,386,637	(\$493,368)	-5.0%	\$10,199,780	\$10,543,869	\$344,089	3.4%	\$8,748,299	\$8,900,808	\$152,509	1.7%

# DBT analysis by customer

DBT [Weighted Avg.] calculated  
basis historical payment  
behaviour

Category	Customer	DBT (days)	Actual Invoice Due Date	Revised due date
Top 50	Customer 1	-25	7/1/20XX	6/6/20XX
Top 50	Customer 2	20	5/2/20XX	5/22/20XX
Top 50	Customer 3	1	5/29/20XX	5/30/20XX
Top 50	Customer 4	25	4/18/20XX	5/13/20XX
Top 50	.	.	.	.
Top 50	.	.	.	.
Top 51-100	Customer 51	-14	5/30/20XX	5/16/20XX
Top 51-100	Customer 52	-35	7/12/20XX	6/7/20XX
Top 51-100	Customer 53	11	5/3/20XX	5/14/20XX
Top 51-100	Customer 54	8	6/3/20XX	6/11/20XX
Top 51-100	.	.	.	.
Top 51-100	.	.	.	.
101 +	Customer 101	0	6/5/20XX	6/5/20XX
101 +	Customer 102	-7	5/1/20XX	4/24/20XX
101 +	Customer 103	5	4/28/20XX	5/3/20XX
101 +	Customer 104	3	4/1/20XX	4/4/20XX
101 +	.	.	.	.
101 +	.	.	.	.

Getting expected  
payment date basis DBT