

IDII Design

3PL Profit & Loss Calculations

Determining Client Profitability

Design Paper

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Overview - Determining Client Profitability

Current 3PL Needs

There is a strong need to automate the lengthy monthly business process of determining which clients of a third party logistics provider (3PL) are profitable and which are not. Business analysts at each 3PL churn through Warehouse Management System (WMS) & financial data each month to provide management a client-by-client profitability analysis. These reports generally show each client with the monthly totals of inbound volumes, outbound volumes, revenue, costs, and profit.

The WMS currently provides roughly 90% of this data, but does not have the costing. Therefore IDII has designed this research report & software design, to describe capture of the last 10% of the data, report the resulting analysis, and how to leverage the resulting data to make sure a 3PL operation is profitable.

Third party logistics providers, contract warehouses, public warehouses, and fourth party logistics providers (4PL) AKA lead logistics providers (LLP) – all painstakingly produce these executive reports each & every month.

Expected Savings

This expensive re-occurring churning of data, spreadsheets, and consolidation of data takes 2 or more man weeks every month. Assuming a **single business analyst** at a 3PL named “AB Distribution” is paid 60K a year, with 40% benefits; our simple calculation is the following

$$\text{Savings} = (\text{Salary} * \text{Factor to Include Benefits}) * \text{Percentage of Time Saved}$$

$$42,000 = (60,000 * 1.40) * \frac{1}{2}$$

Conservative savings amount is \$42,000 per year for 1 business analyst's involvement.

The $\frac{1}{2}$ is saving 50 percent of the business analyst's time, or 2 weeks each month. By automating this process via computer software programs, the savings would be \$42,000 each year for this 3PL.

Mid-size to large size 3PL's commonly have multiple salaried professionals performing this monthly task. Commonly found are additional business analysts or customer service representatives (CSR) involved in data acquisition and roll-up. Therefore the ROI would be much greater than our conservative example of the single business analyst.

One of the primary benefits is having the detailed profit & loss data on any client in order to renegotiate rates with an unprofitable or marginal client. Each 3PL must calculate their savings for their operation. There are additional benefits described in this design paper as well.

Section 2 - 3PL Client Billing and Costing

With the ground work laid in the prior section, let's add the costing elements needed to compute & save an estimated cost alongside the billable charge. Diagram 2 below is more complex than diagram 1 – since costing computations have been added.

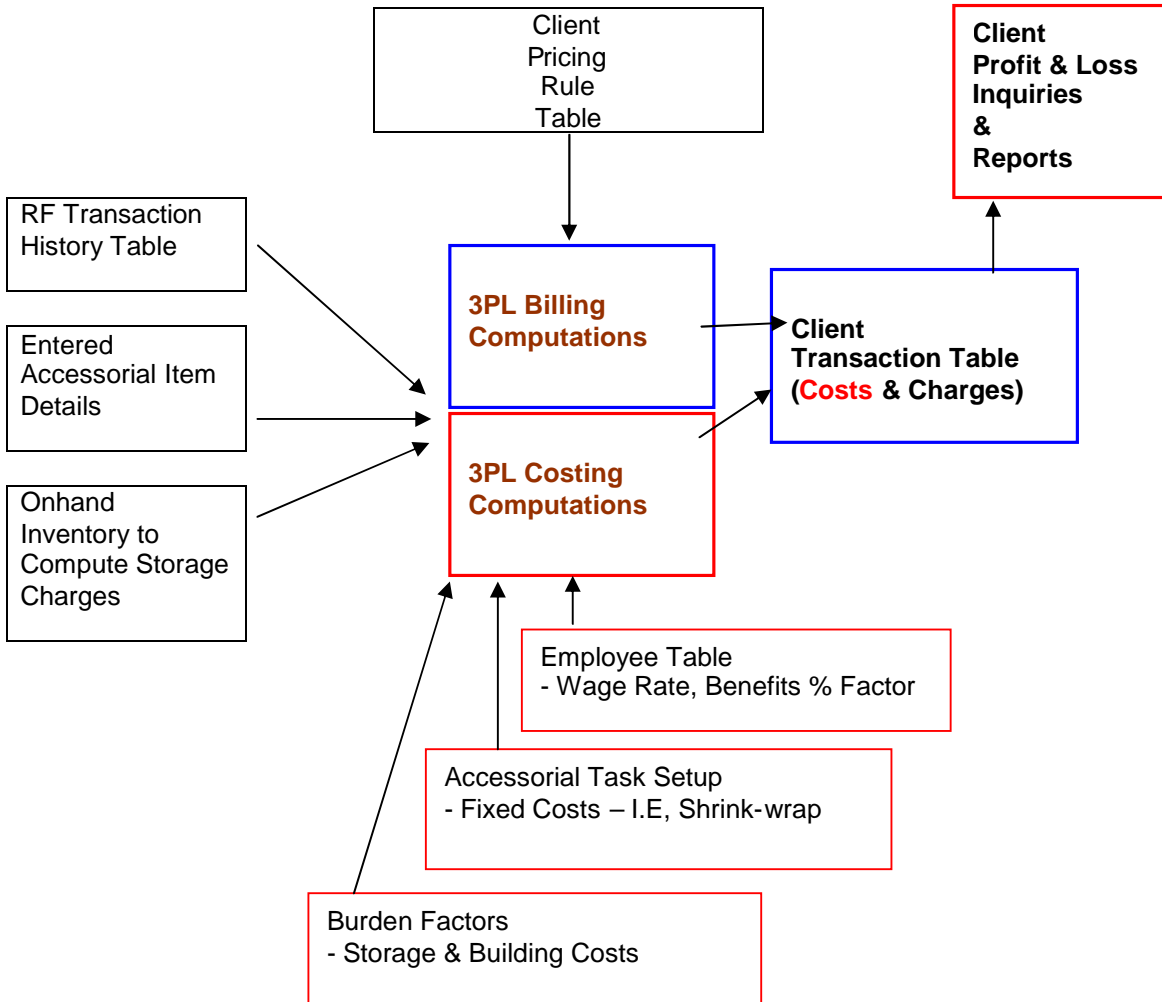


Diagram 2 – 3PL WMS Billing & Costing for ABC Pricing & ABC Costing

New information has been added to accomplish the profit & loss computations as shown in Diagram 2 above. **These new items are in red boxes.** Most of these new items assist us in determining the **costs** (ABC Costing) of each task & storage space utilized by the client. To compute the profitability is a simple math calculation:

$$\text{Profit or Loss Amount} = \text{Client Charges} - \text{Client Costs}$$

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Section 3 - How to Automate This Process

ABC Pricing - ABC Costing = Profitability

There are many software solutions that create billable **charges** for the 3PL's clients. These billable charges are called ABC pricing in accounting terminology, for this is the price the client will pay for each detailed task, storage, or accessorial charge. These charges are at a very granular level.

By adding an estimated cost field to each billable task, storage, and accessorial charge billed to a client, one is able to have both ABC costing and ABC pricing. Once the estimated cost field is added and calculated – the profitability of each task, storage, and accessorial charge can be computed by subtracting the price charged minus the estimated cost to determine a profit or loss amount. For example, the following table shows the detailed level with information:

Date	Client	Part #	Unit	Billable Task	Elapsed Time	Charge	Estimated Costs	Profit / Loss
May 20	Classic	PickleDill51	Plt	RF Receive	01:55	10.85	4.55	6.40
May 20	Classic	PickleDill51	Plt	Storage	1 month	15.00	9.25	5.75
May 20	Classic	PickleKos4	Plt	Shrink Wrap	02:36	1.25	3.85	2.60-

Table 3 – Detailed Level of Charges, Costs, and Resulting Profit or Loss

In Table 3, the first line item is the task to receive and putaway a pallet (plt) of Dill Classic pickles part number PickleDill51. Based on RF start and end times it took 1 minute 55 seconds. Based on contracted rates with this client, the billable charge is \$10.85. Based upon actual time spent on this task, for this user's hour rate, the estimated cost was \$4.55. Net profit is \$6.40.

The second line item is for billing of storage on a pallet of Dill Classic pickles that has been in the warehouse for a full month. Based on contracted rates, the storage charge is \$9.25. Our estimated storage costs are \$9.25. Net profit is \$5.75

The last line item is losing money – the 3PL is losing \$2.60 on this manual accessorial task of shrink-wrapping a pallet of kosher Classic pickles part number PickleKos4. It took 2 minutes 36 seconds of labor to perform this operation, plus the costs of plastic & machine overhead. Total estimated costs were \$3.85, but the billable charge was only \$1.25. One should be seriously thinking “out of the box” → thereby asking, “Are we losing money every time that we shrink wrap a pallet for Classic?”

Section 4 - Start at the Top & Drill Down

3PL Executive - Client Inquiry

Executives and owners want to frequently reviews (1) which clients are the top clients, (2) which ones are making the most profit, and (3) where exactly am I losing money. Our Client Inquiry answers all three of these items. This inquiry can be run on-demand for any prior month or date range, as well as monitoring the current situations by running a month-to-date (MTD) inquiry.

All screen data can be printed and exported to Excel, in order to use the data to renegotiate rates with specific clients. This inquiry is not limited to the top clients, as it spans all clients and has three levels of drill down.

Initial Executive View for Selected YTD, Quarter, Month or MTD

Client	Revenue	Cost	Profit	Inbound Pallets	Inbound Volume	Inbound Weight	Outbound Pallets	Outbound Volume	Outbound Weight
Classic	3101502	2888155	213347	16345	...					
Bitgo	2403363	1765464	637889	8245	...					
Zebra	2198777	1564232	634545	7900	...					
Metro	1508500	1278500	230000	7423	...					
Bamco	1175666	1105666	70000	8215	...					
...

Table 4 – Client Inquiry Sorted in Revenue Order

Our top client Classic is highlighted in yellow, indicating that there is an underlying issue. Other clients are in green, indicating that all product groups for all client products are profitable. A client would be highlighted in red, if there were a loss, as the level being viewed. The inquiry may be resorted by clicking on any column label. E.G., click on Total Inbound Pallets results in a client list in descending order by Inbound Pallets.

Drill Down to Level 2 (Product Groups)

Well, what's going on with Classic? One may drill down on any client. Double click on Classic above to drill down for more detail. The next screen appears – show product group information within our Classic client.

Product Group	Revenue	Cost	Profit	Inbound Pallets	Inbound Volume	Inbound Weight	Outbound Pallets	Outbound Volume	Outbound Weight
Dill	1101502	1288155	186653-	5345	...					
Kosher	1003363	885464	117889	3245	...					
Paper	1008777	964232	44545	2900	...					

Table 5 – Client Inquiry – Product Groups Displayed for a Selected Client

About Industrial Data & Information Inc.

IDII is an independent research & management consulting company that is focused on supply chain software. Independent indicates that IDII represents a client without any “conflict of interests”. IDII gives unbiased, independent, honest, and informative advice & research.

IDII consults with 3PL and private warehouse operations on selecting & implementing WMS & TMS software.

Our latest research report “Who’s Who In 3PL WMS Software” covers detailed profiles & comparisons of WMS solutions for the 3PL marketplace. This research report aids in tremendously determining the best software applications and eliminating some solutions based on practical criteria.

About the Author

Philip Obal is President of IDII, a research & management consulting company with a focus on supply chain software. Phil Obal has designed, implemented, & managed large software implementations including ERP, WMS, and TMS. He has over 25 years in software applications. He has been at Chief Technology Officer at a large industrial wholesaler and an R&D Director at an ERP software company.

Phil frequently assists clients in selecting & implementing a new warehouse management system (WMS) and transportation management system (TMS). Phil produces research on WMS & TMS Software Solutions and writes frequently on technology.

The most recent publications that IDII has published is “Third Party Logistics WMS Software Research”, “Selecting Warehouse Software from WMS & ERP Providers” and “Glossary of Supply Chain Terminology”. These publications are available from www.Amazon.com and on www.IDII.com. Our popular “Glossary of Supply Chain Terminology” is available in print or online at <http://www.scglossary.com>.

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