



## Financial Model Building for Risk Management of Receivables in Indian Pharmaceutical Industry

### KEYWORDS

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### I. Introduction to receivables management

A firm's profitability is determined partly by way of its receivables management. An efficient management of receivables will yield significant results and its neglect can be highly dangerous to any firm. A sample of thirty two pharmaceutical companies are selected for this study on the basis of high sales turnover and data for this study were collected for a period from 2000-01 to 2010-11 to analyze whether the sample companies really managed their Receivables or not. This paper aims at presenting the importance of accounts receivable in the credit policy management and developing a suitable model for managing receivable risk in Indian context.

The process of medical accounts receivable management is truly a misnomer. In a perfect world, accounts receivable would require nothing more than collection—not management or process. However with growing complexity, payment ambiguity, payer plans, co-pays, co-insurance and other factors that drive up costs in healthcare delivery, the management of the accounts receivable process continues to demand more attention. With an average of 30 percent in denial rates and informed speculation of 15 percent in lost revenues on an annual basis, we must conclude that the management processes currently in place are woefully inadequate and costly. Unfortunately, the national healthcare debate on improvement does not address the A/R management process (or lack thereof) where significant cost savings could be achieved.

According to most industry publications, the majority of medical providers collect a portion of their charges within 60 to 70 days from the date of service as compared to five to 10 days required of most retail service providers. Let's understand the possible reason for the same.

On average, medical providers have over 60 various contracts with payers for services rendered that do not typically include the reimbursement amounts.

Each patient has a unique status within annual healthcare insurance plans as it relates to eligibility, allowable, network status, coinsurance, and covered services—factors not available to medical providers in advance of the visit with any consistency or clarity from the various payers.

The allowable and eligibility are reset and, in many cases, change annually. This eliminates any consistency from payer, procedure and patient over the years.

A 30 percent denial or reject rate for services rendered would incur significant financial hardship on the provider.

The cost of collection approximates 20 percent of the benefit. To justify this cost, each claim requires an average cycle process of two to four times from provider to payer to resolve the balance owed. If the cycle cost were \$5.00 each, the aver-

age cost would be from \$10.00 - \$20.00. With an estimate of \$100.00 paid per cycle, the cost would be 10 percent to 20 percent. These figures are substantially higher than the cost of collection for other retail service providers.

The consequences of these simple factors create the increasing demand for accounts receivable management systems to clear a path through this murky process. Today, there are two competing methods to manage the process. They are Task Management and Denial Management. Let us understand these managements in a bit detail format.

### Task Management

Task Management is embedded within the majority of commercial practice management or receivable management systems. This methodology lifts or queues accounts within the existing accounts receivable based upon some user defined rules in order to serve up an account to be worked.

The main strength of task management is to achieve a segmentation of the Accounts Receivable to allocate among the billing staff, provides the billing manager with some basis of evaluating employee productivity, efficiency, & effectiveness, provides responsibility for a particular work queue and allows flexibility to create multiple queues.

The weaknesses are tendency to have too many, duplicate queues and duplicative work, embedded within the system are work queues that must be updated to insure queue logic does not omit/drop new information does not segment claims production issues from receivables, little or no capture of denial consistency by payer, provider or procedure, does not provide a means to develop and implement denial action rules, can promote "just working an account" for work's sake versus resolving an account; in other words, an analyst might be more focused on touching that charge and adding notes than collecting money, progressing its status, by identifying reasons for denials and fixing them, does not facilitate denial reporting to improve the entire billing process, little improvement in billing efficiency per full-time equivalent employee (FTE) Account Receivable is dependent upon embedded PMS systems

### Denial Management

Denial Management is a new process methodology whereby patterns and consistencies within denied transactions are analyzed and resolved in a batch process regardless of the account.

The strengths of denial management is to provides a reporting vehicle to reduce incoming denials within the provider RCM process, allows capture of the consistency in transaction denials by provider, payer, procedure, date and reason, improves claim throughput per FTE by three to four times, segments claims production issues from Accounts Receivable issues, bypasses embedded, queue-based rules in practice

management systems to eliminate, duplication and provide the ability to pull all receivables with all balances for analysis, allows view of credit balances within a provider or practice, allows for development and implementation of denial adjudication rules to manage certain conditions, easier process to train new staff, derives Account Receivable independently from embedded practice management applications.

The weaknesses are it requires integrated payment posting and imaging and indexing of correspondence to fully optimize the process, it also isolates and eliminates the traditional excuses in accounts receivable for healthcare by forcing action to resolve accounts versus just working accounts. Clear, definable accountability from the denial management process is a critical benefit in addition to the other benefits.

The key differentiators between the two distinct methodologies of Task Management and Denial Management lie in the batch analysis, reporting and accountability provided by the latter versus the single-file and single-threaded approach of task management. Task Management limits the visibility and flexibility required for productivity improvement. Queuing systems do not provide the reporting needed to reduce denials and are fenced-in due to the limitations embedded in the practice management systems. Denial Management provides an open frontier to analyze, resolve and scale business office operations.

## II. Necessity of a model

In order to reduce the risk involved in trade credit offering, a company should apply a credit management process. The credit management process should begin with defining the credit goal and then defining the company's credit policy. The credit management process is then constituted by the decisions to grant the credit, applying risk reduction methods and credit screening, monitoring the level of receivables, collecting cash, and reporting the whole process. The credit policy management usually aims at setting the optimal credit policy and thus the optimal level of accounts receivable.

In particular, the optimal credit policy is connected with the decision to grant the trade credit. In a model version, and within the credit management process, a company aware of the risk involved should constantly analyze the credit performance. Thus, it is able to adjust properly the model of optimal credit policy to the current market situation. The credit risk influences strongly the effectiveness of the whole credit management procedure. Some companies even introduce the collection policy which refers to obtaining payment of past-due accounts. It should also be pointed that the problems with credit collection often appear as a result of wrong customers' creditworthiness analysis.

Therefore, the company should continuously revise if the collection of receivables is proper. Here an important role plays an accounts receivable risk management model.

The aforesaid facts give enough reasons

- To conduct research and analyze collection risks and
- To created a new model of collection risk management suitable for the business environment in Indian Pharmaceutical Industry.

## III. Nuances involved

- Cash collection is one of the most important functions of a company, second only to revenue generation. Thus, accounts receivable risk management is an indispensable tool for every company. The accounts receivable collection risk cannot be fully avoided, and cannot be reduced by the full amount. Nevertheless, it can be reduced to an acceptable, tolerable and reasonable measure that does not jeopardize the business success and long-term business goals. Accounts receivable risk management includes research, analysis and detection of possible risks

of receivables collection failures prior to the execution of the sales contract and insurance measures against these risks. The results obtained by the conducted research and by analysis of existing models of accounts receivable collection risks, created a new model of collection risk management suitable for the business environment found in India.

- Furthermore, this model may be applied in other similar economies in transition, lacking the features of a modern market economy such as: a fully functioning legal system based on the rule of law, the existence of all necessary institutions to enforce the contracts, a developed democratic and social system, and a functioning economic system. No risk management model can replace a fully functioning legal and economic system. Implementation of reforms in all areas is a fundamental condition for solving these problems. Nevertheless, a well designed risk management system of accounts receivable collection is a good and appropriate transition tool that may create the preconditions for recovery and development of a market economy.
- The proposed model of accounts receivable risk management is based on cash flow indicators, working capital and assets ratios, the coefficient of accelerated liquidity and the relationship between total liabilities and equity. The proposed model should be optimal in the assurance against accounts receivable payments risks in India because it is based on domestic financial statements data and insurance instruments that do exist in the country.
- The first statistical hypothesis relates to the selection of adequate economic indicators, and inquires whether there is such a set of economic indicators which could ensure maximum informational efficiency with respect to India's payment system. The second statistical inquiry relates to the design of optimal receivables collection risk management model, which along with the selected indicators takes into account other factors, such as the amount of debt and the strength of the instruments of insurance. This hypothesis presumes there is no such system of managing the risks of receivables collection in India's system of payments, which is good and appropriate for the transition period and can create assumptions for development of a market economy.

## IV. Indicators & Variables

The indicator "value added", was used as a criterion to differentiate between profitable and non-profitable enterprises. The indicator "value added" is according to the "Business Excellence model" based on the economic profit over and above the own cost of capital, i.e. opportunity cost of capital. Own cost of capital is a product between the enterprises equity and the cost of debt capital represented by the average bank savings rate (4%). The "value added" indicator is calculated by the following formula:

$$\text{Value added} = (\text{Net profit}) / \text{Equity} \times 0.04$$

Enterprises having this rate greater than 1 are profitable and the other having this rate lower than 1, are not.

Regarding the variables, selected statistical tests and the application of regression analysis is done to define the dependent and independent variables. The dependent variable is a dummy variable shown in binary form, and defined by the value added indicator. Independent variables are indicators chosen by the analysis of relevant scientific literature and suggested by the majority of its authors. Independent variables are numerical and classified into three groups: liquidity indicators, cash flow indicators, and solvency indicators as shown in the following table. The independent variables are the most commonly used financial ratios.

**Table 1: Indicators of Financial Modelling**

| Indicators            | Ratio                                 | Definition  | Data Source                       |
|-----------------------|---------------------------------------|---|-----------------------------------|
| Liquidity Indicators: | Current Ratio                         | Current Assets/ Current Liabilities                         | Balance Sheet                     |
|                       | Working Capital to Total Assets Ratio | (Current Assets – Current Debt)/ Total Assets               | Balance Sheet                     |
|                       | Quick Ratio                           | (Current Assets – Inventories)/ Current Liabilities         | Balance Sheet                     |
| Cash Flow Indicators: | 1. Cash Flow Ratio                    | Free Cash Flow/ Current Liabilities                         | Cash Flow Report<br>Balance Sheet |
|                       | 2. Free Cash Flow Ratio I             | (Operating CF ± Investment CF)/ Total Liabilities           | Cash Flow Report<br>Balance Sheet |
|                       | 3. Free Cash Flow Ratio II            | Net Cash Flow of all activities/ Total Liabilities          | Cash Flow Report<br>Balance Sheet |
| Solvency Indicators:  | Gearing Ratio                         | Non-current Liabilities/ (Non-current Liabilities + Equity) | Balance Sheet                     |
|                       | 2. Debt Ratio                         | Total Liabilities / Total Assets                            | Balance Sheet                     |
|                       | 3. Debt-to-Equity Ratio               | Total Liabilities / Equity                                  | Balance Sheet                     |

The used liquidity ratios are: the current ratio, the working capital to total assets ratio, and the quick ratio. The current ratio is the ratio of current assets to current liabilities. It shows the company's ability to pay back its short-term liabilities with its short-term assets (cash, inventory, receivables). The higher the ratio, the more capable the company is of paying its current obligations. The limit to the ratio is 1. Working capital to total assets ratio (WCTA) shows the availability of working capital (difference between current assets and current debt) in relation to total assets. The limit value of this indicator is 25% of working capital in relation to the total assets, i.e. the values higher than 25% mean there is sufficient liquidity. Quick ratio (QR, also known as Acid-test) is an alternative measure of liquidity, similar to the current ratio, but it does not include the inventories into current assets as they may be difficult to liquidate quickly. The limit value is (0.8).

The used cash flow ratios are: the cash flow ratio, free-cash-flow 1 to total liabilities ratio and free-cash-flow 2 to total liabilities ratio. Cash flow ratio shows the firm's capability to pay off its current liabilities. The limit value was set on 0.4, i.e. 40%, and assumes the company's ability to meet all its current obligations. When the ratio of cash flow is greater than 0.4 the company should have no problems with liquidity, and when the coefficient is lower than 0.4, the company indicates a financial instability and possible future illiquidity. The cash flow from operating activities in "healthy" companies and financial institutions is at least 40% of the current liabilities, or at least 20% of total liabilities.<sup>1</sup>

Recently, the most frequently used, but also the most controversial category of cash flow is free cash flow. However, the problem in literature is that there is no single definition for the calculation of free cash flow. Usually, defined as the difference between cash flow from operating activities and capital expenditures necessary to maintain the same level of operations, the two sub-categories of free cash flow are free cash flow 1 (a money flow necessary to maintain the present business activities), and free cash flow 2 (a money flow readily available to improve the present business activities). To get these measures in form of a ratio, they are compared relative

to total debt to receive:

Free cash flow 1 to total debt (FCF1TD) and Free cash flow 2 to total debt (FCF2TD).

The used solvency indicators are:

Gearing ratio (GR), shows the level of long term debt relative to total capital.

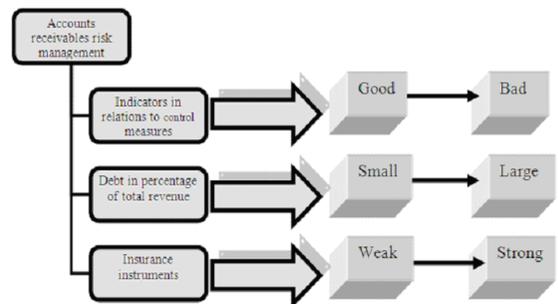
Debt ratio (DR) shows the company's ability to meet all its outstanding obligations.

Debt-to-equity ratio (D-E).

**V. Model Assumption**

- a. Before deriving a Model for accounts receivables risk management it has become pertinent to discuss the assumptions on which it is developed.
- b. The data set is based on a relatively small number of observations, which can be used in a wide spectrum of industries.
- c. The data set is based on financial reports of only Indian pharmaceutical companies and they do fully comply with the International Financial Reporting Standards. There persists data unification without error, in spite of changes in financial reporting rules in 2006.
- d. All the companies under study fully disclose complete sets of all financial data correctly and accurately in the verification forms.
- e. The indicators are optimal across all observed companies.

**A Model of Accounts Receivables Risk Management**



The worse the indicators, the stronger the collaterals needed. When signing a contract with a business partner, the company shall not ask for any collateral if the analyzed indicators' values are better than the control values, and if the claims size from the contract is not greater than 5% of overall claims. If the receivables' value, on the other hand, amounts to 25% or more of all claims, very strong collaterals shall be asked for (bank guarantees and secured bonds) It has been shown that it is possible to construct a corporate system of receivables collection risk management in India's system of payments that could safeguard the lenders from debtor's default.

**VI. Conclusion**

- a. The problem of receivables collection is complex, large and not easily solvable in the existing situation. It is partly inherited from earlier economic system without clear market rules and defined ownership rights. As the illiquidity infection spreads, the collection of receivables problem is threatening the national economic collapse. When successful and profitable enterprises enter into liquidity problems, it is only a matter of time when they'll stop paying to their creditors. Because of lacking legislative, executive and judicial authorities, mortgages and other instruments of insurance of receivables, are insufficient means of guarantee. Bankruptcy proceedings are not im-

plemented in a way commensurate to developed market economies. The problems with unpaid receivables in India will be solved neither quickly nor easily. Implementation of reforms in all areas of institutional development is critical for solving collectables problems, particularly reforms in payments and transactions system.

- b. When signing a contract with a business partner, the company shall not ask for any collateral if the analyzed indicators' values are better than the control values, and if the claims size from the contract is not greater than 5% of overall claims. If the receivables' value, on the other

hand, amounts to 25% or more of all claims, very strong collaterals shall be asked for (bank guarantees and secured bonds).

- c. It is possible to construct a corporate system of receivables collection risk management in India's system of payments that could safeguard the lenders from debtor's default. The created model is optimal in Indian context as it is based on datasets from financial reports of Indian pharmaceutical companies.

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