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## Legal Bills That Make Sense: A Case of a Strategic Pricing DSS

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#### Introduction

The complexity and heterogeneity of today's world have resulted in an increasingly litigious society which finds a growing need for more lawyers. In the midst of such growth, many law firms are challenged by their clients over their legal bills. Problematic billing practices are not a secret in the law practitioners' circle [4][7][10][16]. The amount of legal fees paid to a lawyer is typically determined by such factors as the lawyer's specialty, education, experience, title, and reputation. Although clients would hire a law firm that would charge less, the cost alone is not a deciding factor when selecting attorneys, which implies that a low price or a good pricing strategy may not be a core competence [11][12] for a law firm. Nevertheless, a good pricing strategy coupled with reliable analytical techniques remains an important business factor. Take legal fee disputes for instance. As the demographics of clients shift from individuals to corporations, more clients can afford the financial and human resources to fight their legal bills [1][2][5][7][10][22]. This trend calls for a serious reconsideration on how to structure and determine legal fees, not simply because of disputes and nuisance but because the billing process must be approached from a strategic point of view so that legal bills may make sense for both the law firms and the clients. In the law practitioner's community, numerous forums are being reported surrounding the issue of how to structure legal fees [13][17][18][24]. This phenomenon clearly indicates two facts: (i) there is no consensus among law practitioners on how legal fees should be determined, and (ii) a 'system' or a rational model of fee determination is acutely in need.

While various methods are currently employed by law practitioners for different types of services, they can be categorized into a few groups. The most popular billing method is called 'hourly billing.' Legal fees are calculated by multiplying a predetermined hourly rate by the number of hours the lawyer spends on the case. While law firms find it inadequate to set fees arbitrarily (which they do), surveys confirm that this billing method is predominant [8][24]. As this approach was found inappropriate in some special cases, several alternative billing methods were introduced. Such alternative methods are often referred to as 'value billing.' Three commonly used value billing approaches are: fixed fees, unconventional time-based billing, and result-based billing [6][14][17][21] [23].

#### **RHO: A Decision Support System for Hourly Rate Determination**

The current research is motivated by the need for more systematic ways to determine legal fees, and is intended to provide a rational guideline to reach feasible solutions

facilitated by a decision support system (DSS). RHO is a DSS which incorporates key decision models and relevant internal/external data. Usually DSS are developed to solve less structured problems [9][19][20], and to help perform sophisticated analyses and forecasting tasks. RHO is a typical DSS which facilitate either individual or collaborative decision making in the legal fee determination context.

A model base is a repository of decision models such as financial, statistical, and other OR/MS models to augment analytical capabilities. Employment of such models for decision making contributed to the development of a branch of DSS called model management (MM) [3][25]. RHO takes advantage of two types of models: (i) various forecasting models and (ii) a strategically developed optimization model which will be described later. The database in RHO contains variety of internal and external data such as financial data (revenues, direct and indirect costs), human resources data (staffing information, billing rates by category, and annual salaries paid to individual lawyers), operational data (billable hours, etc.), and market intelligence (billing rates of competitors). As the decision making process progresses, the user can view historical data, make projections by feeding the data into selected forecasting models, and manipulate parameters of the optimization model.

#### **Optimization Model for Rate Determination**

A bill that makes sense will stem from hourly rates that make sense. As pointed out earlier, a system to provide a rational method to determine sensible rates is needed. In determining hourly rates, law firms should take the following aspects into account among others:

(1) Profitability: Legal bills will not only cover the cost to run the business but also should ensure a certain level of profit. An example of strategic objective in terms of profitability may be to achieve a profit level that is comparable to or exceeding that of the previous year.

(2) Competitiveness: Hourly rates of law firms in many regions are surveyed and published in various law practitioners' journals and newspapers. (See [15] for example.) To stay competitive, a firm must pay heed to competitors' rates whether or not it would match them.

(3) Track records: Determination of hourly rates is also a function of internal factors such as rank, experience, and salary history. For example, a partner's hourly rate for the next year would not be totally unrelated to this year's rate so long as the firm is in a steady condition. Further, law firms maintain certain salary gaps between different ranks experience.

Profitability and competitiveness are two competing elements in that one tends to increase the rates while the other holds them down. Since both elements are a function of hourly rates, we find it appropriate to construct an optimization model in which the hourly rates are the decision variable, profit maximization is the objective, and the competitiveness requirement and hourly rate track records play the role of constraints. The optimization model in RHO incorporates a few assumptions as listed below:

- There is a hierarchy in the law firm, ranging from senior partners to entry level associates, and same hourly rates apply to those on the same rank.
- Revenue produced by those at a particular rank can be calculated by multiplying the sum of billable hours for the rank by the rank-specific hourly rate. Adding up the revenue for each rank across the hierarchy yields total revenue.
- The profit for the next year is set to exceed that of this year.
- Based on the market rates, a set of limits (upper and lower) are established in such a way that the firm's rates fall between them.
- Next year's rate for a given rank can be set higher than the current one, but may not be increased beyond a certain percentage point.
- A gap is maintained between the rates of any two adjacent ranks.

These assumptions help simplify the operational details. More realistic and involved models can be developed by introducing more specific conditions or by eliminating oversimplifying elements. Fig. 1 shows the optimization model corresponding to the above assumptions and rationale. It is worth mentioning that this model is merely an instance of the described decision paradigm, and various models can be developed depending on the law firm's situations and policies.

$$Max = \sum_{i=1}^{n} (\rho_{i,i} h_{i,i}) \cdot E_i , \qquad (1)$$

subject to

$$\sum_{i=1}^{n} (h_{i,i} \rho_{i,i}) \cdot E_{i} - \Pi_{i-1} > 0 , \qquad (2)$$

$$l_i \le \rho_{i,i} \le u_i$$
,  $i = 1, ..., n$ , (3)

$$\rho_{i,i-1} \le \rho_{i,i} \le p_i \rho_{i,i-1} \qquad i = 1, ..., n, \text{ and } t \ge 1,$$
(4)

$$\gamma_{i} \rho_{i+1,i} \le \rho_{i,i}$$
  $i = 1, ..., n-1$ , (5)

where

<i>D</i> .,	= the decision variable, hourly rate of lawyers at level <i>i</i> at year <i>t</i> ,
i	= level at which a lawyer is ranked (e.g., 1 for senior partners,
	2 for junior partners, 3 for senior associates, 4 for the next
	level associates, etc.),
n	= number of levels,
Ь	= sum of billable hours of lawyers at level i at year t,
₿,	= total expenses at year t, (projected if in the future),
11,	= net profit at year t , (projected if in the future),
۰,	= lower bound of hourly rate for level <i>i</i> based on market intelligence,
$u_i$	= upper bound of hourly rate for level <i>i</i> based on market intelligence,
$P_{\ell}$	= rate of increase in hourly rate for level <i>i</i> for the next year,
	and
<i>n.</i> ,	= gap between the hourly rates for levels i and i-1 (ratio).

### Fig. 1 An LP model developed with the DSS

#### How RHO helps: An Illustration

To illustrate how RHO can help in the rate determination process, we consider the following scenario. There are several levels of partners and associates in the law firm. The optimization model described in the previous section suggests that a few parameters must be estimated beforehand: e.g., expected billable hours for each level for the coming year, projected total expenses, and the current year's net profit, etc. Further, the upper and lower limits of hourly rate for each level should be strategically established using the market intelligence. The rate of increase and inter-rank gap factors are other controllable variables, and thus can be determined independently. The forecasting models in the model base are utilized to determine these parameters. Once they are secured, the

optimization model incorporates them via model integration to calculate optimal hourly rates and expected net profit.

The number of lawyers at each rank, their salaries, and billable hours in the past years, as well as detailed historical financial data are used to estimate the parameters. Twelve competitor firms are identified and their hourly rates have been obtained. These market rates are to be analyzed to set the upper and lower limits. This particular round of setting the upper and lower limits is extremely judgmental, and thus, calls for a high degree of understanding of the business. Following the projections and parameter estimation comes the culmination of the decision making process -- running the integrated model with RHO to find out the optimal hourly rates, and perhaps re-running it with variations in the scenario.

#### Discussions

The DSS proposed in this paper can aid partners in systematically determining legal, help rationalize and justify the rates to themselves, and communicate with clients over their bills with more confidence. Further, it will provide the firm with the flexibility to establish "value billing." From an informal assessment process, it was possible to infer the following appreciation and benefits of the system:

- flexibility to respond to unexpected and sudden changes;
- what-if analyses with varying scenarios;
- more objective decisions via of analytical interactive software;
- improved communications among partners;
- improved data management; and
- improved accuracy in the billing process.

Although the current paper deals with a fairly simplistic rate determination scenario, the potential to apply the system to more complicated and expanded situations is very viable. A future research agenda is noteworthy here. An experimental study using RHO in a real fee determination environment is being designed in order to validate the system's decision support functionality in terms of model development, and to study the group dynamics during the decision making process of coming up with estimates of parameters using various forecasting methods.

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