THE COMPENSATION SYSTEM OF SALESPEOPLE IN TEXTILE WORLD: A CASE STUDY

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1. INTRODUCTION

THE SOCIALIST REPUBLIC OF VIETNAM, located in South East Asia, was known as one of closest allies of the Soviet Union in the 1980's. After the collapse of the Soviet Union in 1990, Vietnam entered a period filled with hardship: her economy was closed and lacked capital. At that time, the Vietnamese socialist system was based on state ownership of land, buildings, machines and etc. Most business organizations were owned by the State, and workers were guaranteed a job, but mobility was limited. There was no incentive compensation system, except for promotion due to seniority. Every employee received a flat payment, regardless of performance. Thus there was no incentive for employees to work hard for the company. The lack of incentives also manifested itself in the lack of innovation. The initial intent of the socialist system was to replace economic incentives with political and moral appeals to the workers' patriotism and socialist consciousness. Thus wages were not paid according to abilities, but according to needs (i.e., minimum for food, clothes, shelters...). Later, the planning and incentive systems were refined, but incentive problems still existed, especially with regard to quality.

The collapse of communism in Eastern Europe in the 1990s had a major impact on Vietnam's traditional markets and caused a lot of difficulties for the Vietnamese government. To overcome these difficulties, the government decided to adopt a market-oriented system, in which prices are allowed to adjust to demand and supply forces. Numerous new adjustments in policies had been carried out in this period, especially employment policy. For example, workers had to get used to 3-years contracts, which meant there was no more job guarantee. A worker now had to work harder in order to keep her job, and that reduced shirking. However, this policy alone did not motivate employees, nor did it guarantee their loyalty to the company. The policy only "forces" an employee to work in order to keep her job, since there is nothing tying the employee to the company, except for the minimal core contract between the individual and the organization. To make the individual stay with the company over a long period, the employee and the organization have to share the same objectives, and an incentive contract can be seen as a means to align individual and organization objectives. A well designed incentive compensation plan appeals to a worker's self-interests and makes them "volunteer" to work harder for the organization objectives.

Previously, the company's executives had no authority to allocate financial resources to any operations without approvals from the government central planners. Therefore, an incentive compensation program was not available to the company as tool to motivate workers. At the present time, decision making is decentralized to the organization level. Nowadays, a company operates as an independent unit, and its financial statement is only reported to the government at the end of the year. Decentralization has given more autonomy to the CEO in using financial resources to create incentive compensation plans for coordinating and motivating employees. Some interesting questions could be raised concerning the implications of such a decentralized policy. For example, how does the CEO of a company allocate the company's financial resources to create incentives for the employees to work harder, and what principles does she use to design incentives compensation plans?

The objective of this paper is to design a practical compensation plan for Textile World, a garment company in Vietnam, using the insights from the principal-agent theory. The paper is organized as follows. In Section 2, a brief account of the structure and functioning of Textile World is given. Also, discussed in this section are different types of compensation plans, the current compensation scheme adopted by Textile World, and its hidden transformation problem. In Section 3, a literature review of recent developments in the subject is presented. In Section 4, a model along the line of the principal-agent theory is formulated for Textile World to fins an optimal compensation scheme for its salesforce. The analysis of the theoretical model is carried out in Section 5, culminating in a formula, represented by (50), that can be used to compute the various optimal commission rates. The centerpiece of the paper – a new incentive compensation scheme proposed for Textile World and its effect explained – based on the insights gained from the theoretical model and the industry's practice – is presented in Section 6. Section 7 provides a summary of the results of the paper and suggests directions for future research.

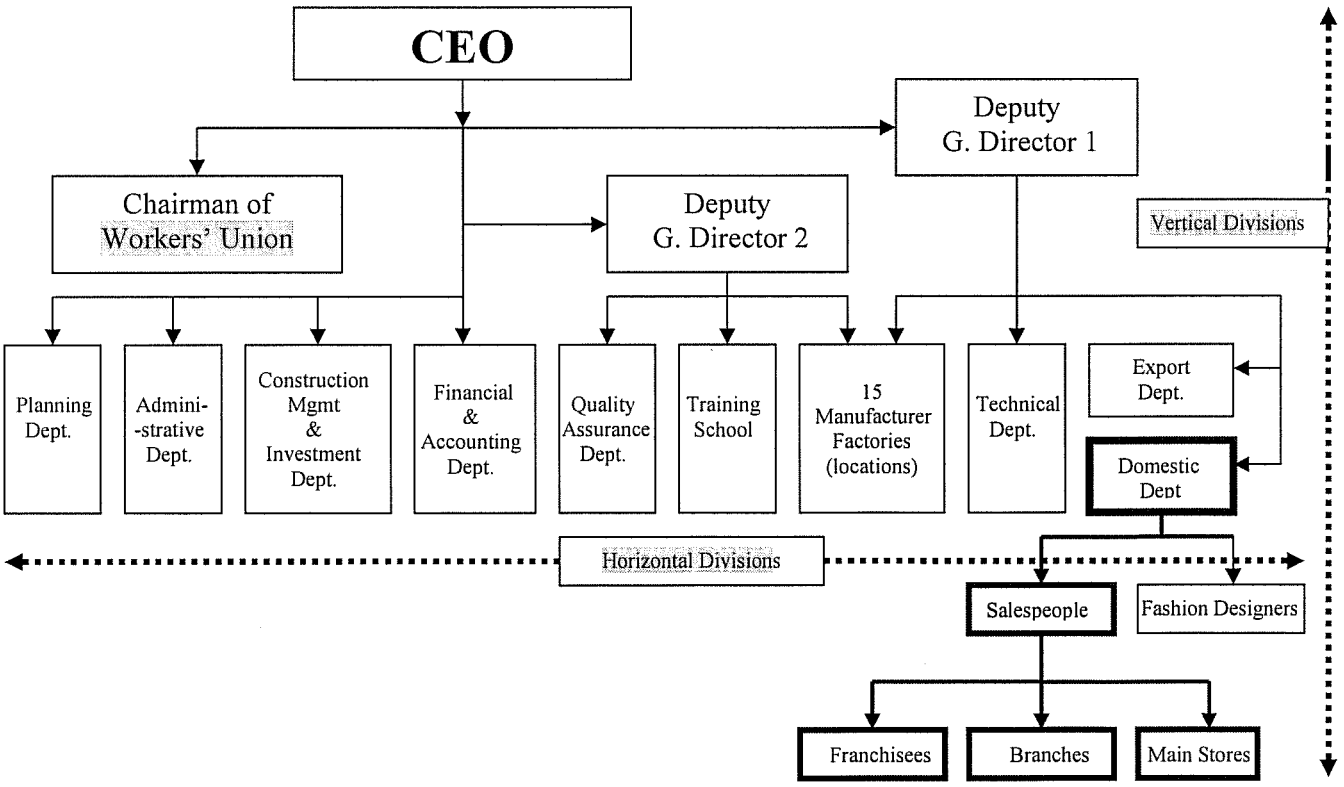
2. THE STRUCTURE AND FUNCTIONING OF TEXTILE WORLD

Since its foundation as a garment maker in 1935, Textile-World has grown to become one of Vietnam's foremost apparel companies with an excellent reputation. The company is currently operating 15 factories, and has more than 6000 employees. Its products range from men's shirts, pants, jackets, tops and bottoms to ladies' wear, and formal suits. The annual capacity is around

7 million units of these products, with 80% of the production being exported to all over the world. The products of Textile World are ordered by many exclusive brand name retailers, such as Gaps, the Bay, and Pierre Cardin. In the domestic market, the company has its own brand name product lines, which are very well known to Vietnamese consumers.

2.1. *Organizational Structure*

The following organization chart reflects the management structure of Textile-World, which can be defined as multidivisional form of organization. Under this structure, each individual division has its own managers, who control their own division and are held responsible for their performance report to higher-level managers, who evaluate them, coordinate their activities, and plan the firm's strategy. Because the present study focuses mainly on the compensation system for salespeople in the Domestic Department, the routine operations of this department will be presented in some details, so that the behavior of the salespeople and their contributions can be better understood.



The Domestic Department is the division that is responsible for all the activities involving the domestic operations of the company. This department is made up of three main groups of employees: fashion designers, salespeople, and retailer stores. The retailer stores are classified into three separate types: the main stores, the branches, and the franchisees. The main stores are legally owned by the company. In the main stores, managers and employees are hired and trained by the company, operating costs are paid by the company, and revenues are collected by company. Textile World has 20 main stores located from the south to the north of Vietnam. Each main store is a representative agent for the company in big cities or main provinces of Vietnam, such as Ho Chi Minh City (in the South), Da Nang City (in Central Vietnam), Thai Binh (a province in the North). However, most of main stores (9 main stores in total) are located in Hanoi – the capital of Vietnam. Normally, each main store has one store manager and several cashiers. The total number of employees in a main store varies from 2 to 10 employees, with the number of employees in a main store depending on the size and location of that main store.

On the other hand, branches and franchisees are owned by outsiders, and they have to pay for their operating costs. They both have a contractual agreement with the company that allows them to operate a retail outlet using a name and format developed and supported by the company. The only difference between a branch and a franchisee is the way they receive the products and compensations from the company. A franchisee is operated as a permanent wholesaler for the company; it has the right to buy the product at a lower price and is free to sell the product at the price it wants to set. There is no compensation for the franchisee, since it is entitled to the profit made from selling the product at a price higher than from the price it pays the company to obtain the product. In contrast, a branch has to pay a credit amount to obtain the products and must sell at the products at the prices set by the company. The branch cannot change the retail prices, but the company will pay a commission to the branch owner for each unit sold. A branch owner can return the unsold products (without damage) at the end of the month while a franchisee cannot. That means the franchisees have to assume more risks than the branches, while the branches assume more risks than main stores, since they have to pay for their own operational expenses (hiring, rents...). There are also some minimum selling quotas per month for the branches. If their sales can not exceed these quotas in a consecutive three-month period, the contract will be canceled. The contract with franchisees are only canceled when they violate the term of agreements in selling products, such as selling fake products under the name of company.

The second group of employees in the Domestic Department consists of fashion designers. The fashion designers have the simple responsibility of designing and examining new styles of products for the domestic market. Normally, the fashion designers will obtain the information about the customer's new fashion taste from the salespeople in order to design new fashion styles for company's products. Also, they sometime work as a team with the salespeople to construct a fashion exhibition in order to marketing for the new products.

The third group of employees in the Domestic Department consists of the salespeople, who have more blurring and complicated duties than others. First, salespeople in Textile World are also called marketing people, and are responsible for researching the consumer market and finding an efficient way to market the company's products. The research of the salespeople are used by both the executives – in formulating the strategies and objectives of the company for the future market – and by the fashion designers – for adjusting their designs, basing on the customers' new tastes. In order to find an efficient way to market the products, they have to contact with public communication services such as Television channels, radio centers, and newspaper publishers to develop the advertising programs for the company image. Second, salespeople have to provide product information, such as new product lines available, special offerings, seasonal discounts events, and service support to the retailers. They also have to take the complaints from the customers or retailers and provide the necessary support to solve the problems faced by retailers, such as bad quality products, logo and retailers' designed outlet (i.e., store designed interface), storage and delivery problems. Lastly, the salespeople also have the responsibility of finding new wholesale customers by contacting different companies to advertise for the products.

2.2. *Current Compensation Schemes of Textile World*

From the discussion in Section 2.1, we can see four main salesforces in the Domestic Department: the main stores, the branches, the franchisees, and the salespeople. Among of these salesforces, we do not need to consider the franchisees, since they do not need a compensation plan from the company. However, we still need to consider their buying price to make sure that they do not enjoy an advantage over the other salesforces. Otherwise, this will create an internal competition among the four salesforces. Currently, the company is providing different

compensation plans for the main stores, the branches, and the salespeople. These plans use the Vietnamese currency (Vietnamese dong) as their payments. To make the compensation plans easier to understand, I use the exchange rate of one Canadian dollar for 12,000 Vietnamese dongs. Since Vietnam is a developing country, the annual salary is much lower when compared with that in Canada. The average annual salary is around $2,000 – $5,000 per year for the middle class in Vietnam, while in Canada it is from $35,000 to $55,000. In order to have a normal life (i.e., medium payments for food, clothes, utilities, shelters and entertainments – middle class) for a family of four members (two parents and two kids), it costs around $3,000-$4,000 per year.

Currently, the company is applying incentive compensation plans for both main stores and branches. In the main-store system, the company sets different monthly revenue quotas for each main store, and the quotas depend on the location, size, and historical sales average of that store. If the actual revenue exceeds the quota, the main store will get commission from 3% to 7% of that exceeded amount. The commission rate depends on the cumulative performance of the store. Specifically, a store will get a commission rate of 7% for exceeding quota in this month (April) if its last consecutive three months' revenue (January, February, March) was not below the quota. It will get 5% commission if its last two months' revenue (February, March) was above or equal to the quota. Similarly, it obtains a 3% commission if its last month's revenue (March) was not below the quota. However, if the last three consecutive months' revenue was below the quota, the store will not get the commission even it exceeds the quota in this month. On the other hand, a branch will get the commission of 7% on its actual sales. It does not have the selling quota as the main-store system because it already has to pay for its own operational costs. In fact, the branch has to use part of its commission to pay for its operational cost. If it does not function well, the branch will get no profit, or even worse, lose money.

Surprisingly, although the salespeople provide support service to the main stores and branches, they do not take part in the compensation plans for these outlets. Salespeople are categorized as the employees at the Domestic Department and get paid by a straight compensation plan. The following table presents the average income for a salesperson in Textile-World:

Base pay	*: $1,500.00 / year*	*OR*	*$125.00 / month*
Expected Bonus / fringe benefit	*: $ 72.00 / year*	*OR*	*$ 6.00/ month*
Total Salary per salesperson	*: $1572.00 / year*	*OR*	*$131.00 / month*

Basically, the wage is calculated according to the formula:

$$\text{Wage} = \underbrace{\left(\text{Coefficient of wage} * \text{coefficient value} * \text{number of working days}\right)}_{\text{Base Pay}} + \text{Bonus}$$

The base pay in the formula is considered as a fixed pay since its variation is insignificant. The coefficient of wage depends on the position and the seniority of the employee. The higher position and the longer the employee works for the company, the higher the coefficient of wage he/she gets. The coefficient value is determined by how much the company pays for each coefficient of wage. Normally, the coefficient value depends on how well the company performs in one month. If the company makes a higher profit in this month, the coefficient will increase proportionally. It also sometimes depends on the movement of foreign currency, since more than half of the company's revenue is based on exporting products. However, the change of the coefficient value is usually not very significant since the company has a lot of employees and also needs to save for future investments or bad times. In brief, the coefficient of wage depends of the individual's profile, while the coefficient value is the same for every employees, and only changes when the profit of the company changes. For example, the average coefficient for the cashier in a main store with less than 10 years working for the company is 1.82; the coefficient value is $2.1/the wage coefficient; and number of working days is 25. Then the base pay for the cashier is (1.82 * $2.1 * 25) = CAN$95.55. The expected bonus is also different from month to month. It includes bonus from events such as holidays or special company's events, pension plan, and benefits from individual health insurance. Since this bonus does not relate to the salespeople's duties, we can look at it as an average bonus amount per month – or a fix pay. In other words, Textile-World is using a straight salary compensation plan for salespeople; that is, salespeople receive a fixed amount of compensation for each day they work.

2.3. *Types of Compensation Plans*

To understand the advantages and disadvantages of Textile World's current compensation plans, I want to analyze thoroughly some common types of compensation plans employed in large organizations these days. They are quota-bonus plans, incentive compensation plans, and combination compensation plans.

In large companies in industrialized nations, we rarely see a straight 100% salary plan, such as the current compensation plan employed by Textile World for its salespeople. The advantage of this plan is easy for the employee to understand and for the department to administer. It also creates the "safety" feeling for the salespeople when they cannot find enough wholesale orders. Furthermore, under a straight-salary plan, the manager has more flexibility in assigning salespeople to different activities and sales areas. For example, salaried salespeople will undertake non-selling activities, such as providing support services for a group of stores and agents, and will not be upset if they are transferred from a high-sales-volume-stores group to a low-sales-volume-stores group. The major disadvantage of the straight-salary plan is employees' lack of immediate incentives to improve their productivity. The employees know that their compensation will not change in the short run whether they work hard or slack off. Their pay also remains the same whether they find more or fewer wholesale orders. Another disadvantage for the company is that straight salary becomes a fixed cost the firm incurs even when sales decline. In general, the straight-salary compensation plan for salespeople is only appropriate for some special cases, such as for new salespeople who are in training period or for salespeople in new target markets. In these cases, salespeople do not have enough experience or customer relationship to find wholesale orders, and thus need a safe compensation plan in order to maintain a minimum living standard.

Quota-bonus plans have performance goals or objectives established to evaluate employee performance. Quotas are often used with compensation plans that allow salespeople to earn a bonus if their sales exceed their quota over a certain time period. This plan describes the current compensation applied to the main stores' system, which was mentioned in Section 2.2. Each main store of Textile World has a sales quota to fulfill, and is compensated with a base pay for its position plus a straight commission – between 3% and 7% – for exceeding the quota. The effectiveness of a quota–bonus plan depends on setting reasonable and fair quotas. However, setting effective quotas can be hard. In order to set a desired quota, the manager needs to observe

the full efforts that employees are able to put into their jobs. Because salespeople in the same department may have different abilities and face different selling environment, quotas should be developed for each salesperson based on his/her experience and the nature of the store area where he/she works. In Textile World, the number of main stores is not too high (20) and the department's manager may reasonably observe the potential of each store. Thus, she can set different appropriate bonus quotas for different stores. These quotas will be evaluated and adjusted annually to make sure they reflect the growth of the stores and the changing selling environment. However, Textile World does not adopt this approach for its salespeople. Instead, Textile World falls into the trap of "simplicity" in using 100% flat pay as compensation for its salespeople.

Incentive compensation plans pay employees according to their productivity. Many retailers now use incentives to motivate greater sales productivity. Under some incentive plans, a salesperson's income is based entirely on commission (totally opposite to 100% straight-salary plans). Normally, the percentage is the same for all merchandise sold (about 7%). But some retailers use different percentages for different categories of merchandises (4% for low-margin and 10% for high-margin items). By using different percentages, the retailer provides additional incentives for its salespeople to sell specific items. Incentive plans may include a fixed salary plus a smaller commission on total sales or a commission on sales over a quota. For example, a salesperson might receive a salary of $200 per month plus a commission of 2% on all orders that he/she can find per month. Incentive compensation plans are a powerful motivator for salespeople to sell merchandise, but they have a number of disadvantages. For example, it is hard to get salespeople who are compensated totally by commission to perform non-selling activities. Understandably, they are reluctant to spend time providing supporting services to the main stores when they could be making money by finding orders. A sale manager's task is to ensure that her salespeople devote adequate attention and effort toward promoting specified products by appropriately allocating their selling efforts among the various products to maximize the firm's profit. Salespeople must also continue to monitor the sales and availability of non-promoted products and attend to other non-selling tasks, such as upgrading product knowledge, gathering market intelligence, and writing reports. Therefore, the majority of firms use a sales quota-bonus incentive scheme in conjunction with a salary to influence salespeople's selling efforts in such situations. The salary provides security and encourages the performance of non-selling activities,

while the quota-bonus-plan motivates the salesperson to raise her productivity. The question is "what should be the ratio between salary and incentive pay?" Many factors, such as types of product, duration of products, etc. need to be weighted by firms in deciding this ratio. For example, on average about 85% of a salesperson's total income is in the form of salary in a typical pharmaceutical firm, while more than 60% of an automobile salesperson's pay comes from commissions. The Report on Sale and Marketing Personnel Compensation 1999 / 2000 published by Watson Wyatt Data Services, Rochelle Park, New Jersey, surveyed 2141 organizations and collected data on 100,944 job holders. The report is over 800 pages long, and Exhibit 1 represents some highlights on total cash compensation and mix by buyer type. With "consumer" buyer types, the mix-pay between direct compensation (base pay only) and total cash compensation (base pay plus annual incentives) is 44/56 and 43/57 for sale representatives and senior sales representatives, respectively. Based on the survey, total cash compensation seems to allow the manager to exert more influence on her salespeople.

Combination compensation plans may contain mixed characteristics of a straight salary plan, a straight commission plan, and a quota-bonus plan. Theoretically, the formula of a combination compensation plan should be as follows:

Fixed Pay	(Salary)
+ Performance Pay	(Commission)
+ Bonuses - Rewards	(Seasons, Events)
+ Fringe Benefits	(Social Insurance, Medical care)
+ Reimbursed Expense	(Phone, travel, equipment)
Total compensation	

Relative to straight-salary compensation plans and incentive compensation plans, combination compensation plans have several advantages. Because the objectives of a compensation plan usually involve quickly and effectively rewarding a combination of action, results, and behavior, rather than one simple action, combination compensation plans prove most appropriate. Combination compensation plans can be targeted to encourage a specific kind of behavior, a specific action, or results that might raise an employee's sales effort that a straight-salary or a total commission compensation plan is not able to produce. However, combination compensation plans lack the simplicity of the previous plans, which makes them harder to administer and more difficult for the salespeople to understand. A common mistake in design of combination

EXHIBIT 1: Total cash compensation and mix by buyer type

	Buyer Type											
	All Buyer Types Combined			Consumer			Industry			Distributor		
	Base	TCC	Pay Mix	Base	TCC	Pay Mix	Base	TCC	Pay Mix	Base	TCC	Pay Mix
Sales Trainee	$35.2	$39.7	47/53	$31.7	$34.6	48/52	$37.5	$40.7	48/52	$39.9	$40.4	50/50
Sales Representative	$39.0	$51..5	43/57	$35.9	$46.6	44/56	$43.8	$56.2	44/56	$39.4	$54.0	42/58
Senior Sales Rep.	$52.9	$70.0	43/57	$47.9	$63.3	43/57	$60.3	$74.1	45/55	$56.3	$74.6	43/57
National Account Manager	$76.5	$98.2	44/56	$70.8	$102.3	41/59	$83.2	$97.6	46/54	$73.3	$94.5	44/56
National Sales Manager	$98.0	$109.9	47/63	$98.0	$104.2	48/52	$99.1	$112.5	47/53	$89.7	$100.0	47/53

	Retailer			Health Care			Government			Not for profit		
	Base	TCC	Pay Mix	Base	TCC	Pay Mix	Base	TCC	Pay Mix	Base	TCC	Pay Mix
Sales Trainee	$32.1	$37.7	46/54									
Sales Representative	$35.8	$54.0	40/60	$46.9	$65.4	42/58	$40.9	$45.8	47/53			
Senior Sales Rep.	$48.5	$94.4	34/66	$56.8	$77.9	42/58	$51.9	$61.4	46/54	$54.9	$59.9	48/52
National Account Manager	$82.0	$94.1	47/53	$72.0	$95.0	43/57						
National Sales Manager	$98.0	$105.4	48/52	$97.9	$121.2	45/55						

TCC = Total cash compensation = Base salary plus annual incentive
All $s are median numbers updated to January 1, 2001
All $s in thousand USA$

ECS Report on Sales and Marketing Personnel Compensation
Watson Wyatt Data Services
April 1, 1999

compensation plans involves offering a specific compensation for too many activities, rather than emphasizing the most important ones. Because of their complexity, combination compensation plans might require more frequent revisions than either a straight-salary compensation plan or a total commission compensation plan.

2.4. *Hidden Transformations of Current Salespeople's Compensation Plan and its Real Damaging Impact*

Putting aside the slack-offs coming from a straight-salary plan, I now address one important underlying transformation that arises from Textile World's current compensation plan – called "*Entrusting wholesale orders to main stores*." This transformation will damage the company much more than the company expects. A manager might think that the straight-salary plan saves money for the company. However, in some situations, the outcome is totally opposite. As mentioned in Section 2.2, Textile World is currently applying a quota-bonus system for its main stores. The company sets a monthly revenue quota for each main store, and a main store will get a bonus commission if it exceeds the sales quota. However, the salespeople do not take part in this plan, and get paid by a straight-salary compensation plan. Main stores and salespeople both take responsibility in getting wholesale orders. However, if the salespeople keep their wholesale orders and report these orders to the manager, they will get a very small bonus that is around 0.25% of the value of that order. Therefore, salespeople will not keep these orders for their records but establish a long-term relationship with a main store's managers in order to entrust their wholesale orders into the main store's revenue statement. This will increase the revenue of the main stores and help it exceeds the quota. The more the revenue exceeds the quota, the better the commission the main store can obtain, and also the better the share of this commission the salespeople can obtain. In fact, the company has noticed this problem, but remains "silent" and considers it a good motivating strategy by allowing this state of affairs to go on. Since the quotas are adjusted annually, we can understand that these quotas include the expected wholesale orders coming from salespeople. For salespeople and main stores, it is a win-win situation. For the company, it makes the administration process less complicated. The company just needs to pay commission to the main stores and leave the task of how to divide the commission to the main stores and the salespeople. This strategy, however, has many weaknesses and creates bad effects on the company's long-term growth.

First, the main stores do not receive the same level of support service from the salespeople. To make sure a main store exceeding the quota at the end of each month, salesperson has to choose the main store with the best selling performance in his/her support group to entrust wholesale orders. This means that the salesperson will put his/ her efforts as much as possible on that main store to make its sales better while reducing his/her time for other main stores. In the worse case, the salespeople will use their power in information access to create unfair advantages for their entrusting main store. Therefore, the sales of the remaining main stores, especially the ones that do not have advantages on location at the beginning and need extra support service, will decrease dramatically. Since the decreasing sales at other main stores do not affect to the salespeople, an internal competition will appear between main stores caused by unequal support service. Obviously, this problem will damage the company's business.

Second, it creates resentment by the salespeople. When the main store's revenue exceeds the quota, the company will pay a commission ranging from 3% to 10% to the main store, depending on how much the realized sales exceed the quota. Part of this revenue deservedly belongs to the salespeople. However, the store will keep around 1.5% to 2.5% (depending on the agreement between the salespeople and the main stores) before giving the rest to the salesperson. This can be understood as the "commission" or the benefit the main store gets from being entrusted. Therefore, the main store is earning an extra benefit that does not come from its duties, while salespeople have to accept the disadvantage because the company does not offer them any incentive pay. This problem will damage the salespeople's morale and discourage them from contributing to the company in the long run.

Finally, the company will fail in collecting data to evaluate performance and predict future sales. When the company needs to analyze the potential of a main store, based on different factors such as location advantage, new product line, customer's loyalty, etc., the data do not reflect the main store's real capacity. In particular, when there is movement or changing in salespeople's labor force, the revenues of that "most productive" main store might drop dramatically. Besides, the company lacks the knowledge to evaluate the real ability of a salesperson or to discover which salesperson can find the most wholesale orders. Thus, the manager will not have any appropriate

plan to motivate her salespeople, and this will damage salespeople's morale and cause them to leave the company in the long run.

3. THE LITERATURE ON SALESFORCE COMPENSATION

A sales manager's job is getting work done through his subordinates. His or her success depends on the success of salespeople. You must hire the best; terminate the rest; train them in product knowledge, customer relations, competitor knowledge, and sales skills; deploy; organize; and staff correctly. As is well known, salespeople play a fundamental role in controlling the retail system and expanding the consumer market for the company's products. An efficient compensation system will not only help to exploit the potentials of current internal employees but also create the attraction for outsiders, who can infuse a new spirit in the company. To fully capitalize on a salesperson's potential, a sales manager must motivate that person. Successful sales managers are agents of change. They take advantage of change, and they modify people's behavior. No longer can leaders hire workers and expect to get motivated individuals. Learning how to motivate is now one of the most relevant and essential skills leaders can possess in today's ever-changing workplace. Before the 1980s, good leadership was usually synonymous with assertive decision-making. Leaders were celebrated for their courage and risk-taking when shaping corporate strategies. Those times have changed. Today, leaders must go beyond the day-to-day operations and tough decisions. Leaders in today's society are expected to be social scientists, and the great leaders of today and tomorrow are those gifted individuals who have mastered the art of motivation. The ability to understand people and to be able to tap into their respective motives is the skill that makes the difference in today's society. However, it is not easy to control the employees' behaviors in contributing their efforts since (i) it is very difficult to monitor the actual efforts of each salesperson, and (ii) even if it is possible, a complicated administration will make such plans infeasible. Instead firms usually provide compensation plans based on the salesperson's out put. In this section, I will present some basic foundations about designing optimal compensation plans which were developed by other authors in recent times. Also, I will provide the stylized facts related to the various compensation plans with their advantages and disadvantages. From that I will develop my own compensation plan for my case study in the later Section 6.

A compensation scheme for salespeople serves several objectives. First and foremost, it compensates a salesperson for exerting the efforts required to sell a product of the company. Second, a compensation scheme might provide incentives to motivate a salesperson to provide the right level of effort desired by the company. Third, a compensation scheme might provide an efficient mechanism for risk sharing between the salesperson and the company.

Compensation for salespeople may take many forms. A salesperson might receive a straight salary, regardless of performance. He or she might receive income under the form of a commission, based upon the number of units sold, the sales generated, or the profits made by the company. The pay of a salesperson might consist of a straight salary plus a commission. In addition to regular pay, a salesperson might receive bonus payments. The bonus payments might be implicitly or explicitly tied to performance at various levels – individual, group, plant, division, or the company as a whole – and performance might be defined in various ways. A salesperson might receive a bonus if he or she exceeds the sales quota set by the company, with the bonus payment depending on how much actual sales exceed the quota.

Now if a salesperson were always able to perform as required by the company, and if it were easy to determine the level of effort he or she provides, then it would be relatively simple to design an appropriate compensation scheme. The company just decides on the level of effort that it wants the salesperson to exert; specify the payment; then write these decisions into a contract. Because performance is easy to measure, the salesperson will be paid or not, depending whether he or she has performed as required by the contract. However, actual sales frequently depend on many factors that lie outside the control of a salesperson. The amount of sales generated by a salesperson might depend on how the product is being advertised or marketed or on the behavior of the firm's competitors. The sales realized might be low in spite of the efforts put in by a salesperson, because the industry is in a depressed state. The performance of a salesperson thus becomes random. Intuitively, to motivate a salesperson to provide a desired level of effort, pay is often made to depend on performance. However, the randomness in performance will lead to the randomness in pay and because most people dislike risk, basing compensation on performance will subject a salesperson toe risks that he or she is not willing to bear. An incentive contract thus

must present an efficient way for sharing risk between the company and the salesperson while making as much profit as possible for the firm.

There are two strands of salespeople's compensation in the sales management literature: a descriptive sales management literature and a theoretical salespeople's compensation literature. The descriptive sales management literature (see, for example, Stanton and Buskirk (1983) provides a list of specific factors believed to be important in designing a compensation scheme that is appropriate for a given situation. This strand of the literature often suggests guidelines on the split between a fixed payment and incentive pay. See, for example Smith (1968). However, it does not provide any theoretical justification for prescribing these guidelines. The descriptive sales management literature is also silent on how a manager should choose a compensation scheme among many possible salespeople's compensation schemes.

The theoretical strand in the sales management literature looks at the problem from the perspective of the principal-agent theory and formulates the problem as a game between the manager (the principal) and a salesperson (the agent). The fruit of such a formulation is an incentive contract that balances the risk sharing between the company – assumed to be risk neutral – and a risk averse salesperson while trying to generate as much profit for the company as possible. The seminal paper in this strand of the sales management literature is Holmstrom and Milgrom (1987), who demonstrated that a linear compensation scheme is optimal under some reasonable conditions. The work of Holmstrom and Milgrom has been applied by Lal and Srivasan (1993) in designing compensation plans for single- and multi-product salesforces.

Among the theoretical strand, one might also mention Basu, Lal, Srinivasan, and Staelin (1985), hereafter referred to as BLSS, who used the principal-agent framework to provide an explanation for the use of different types of compensation plans across firms. These researchers classified compensation plans into four groups: (i) compensation plans which are independent of the salesperson's performance (e.g., 100% straight salary); (ii) compensation plans based at least in part on one's own output (commissions, bonus, or any combination of the above with or without salary); (iii) compensation plans based on one's performance relative to other salespersons (e.g., sales team or contest); and (iv) compensation plans which offer a variety of difference

compensation packages and allow the salesperson to choose the one that suits him the best. Such plans have been suggested by Gonik (1978) or Ram C. Rao (1990).

Because the BLSS model is formulated as a one-shot game, it forces the agent to choose his or her effort level for the entire accounting period. In reality what happens is that the company announces a compensation scheme at the beginning of an accounting period and that a salesperson might continuously adjust his or her effort rate at each point in time to maximize expected utility. The drawback of the BLSS analysis is clearer when salespeople's past effort are unusually successful and normally they will put less effort in the next period. On the other hand, a poor beginning, which makes the achievement of the quota seemingly out of reach, might induce the sales person to abandon all subsequent efforts. Therefore, it is important to extend the BLSS's framework to a dynamic setting in which the salesperson can continuously modify his or her efforts, depending on past outcomes. Another important contribution of BLSS concerns the more managerial relevant question of the proportion of incentive pay in total pay (salary + commission). These researchers argued intuitively that the salary portion of total compensation should increase with increased uncertainty in the selling environment, the marginal cost of production, and the attractiveness of alternative job opportunities for the salespeople. These questions and their answers have been analyzed in a comprehensive manner in the book entitled "Economics, Organization, and Management" by Milgrom and Roberts (1992, Chapter 7).

Another important dimension of a salespeople's compensation scheme involves a heterogeneous salesforce, namely a salesforces made up of salespersons of various selling skills. This question has been analyzed by Rao (1990), who suggested that the sales manager could provide different types of compensation plans, among which salespeople can choose, basing on their abilities. This researcher analyzed the problem of optimal compensation plans by taking into account the asymmetric information aspect of the problem, i.e., the fact that each salesperson knows his selling ability level, while the sales manager only knows the distribution of selling ability of the salesforce. While Rao's analysis does not allow for heterogeneity with respect to utility functions or territory potentials nor emphasizes equity concerns, it provides formal support and valuable directions for designing a common sales incentive scheme that induces every salesperson to achieve a quota that reflects his true ability. A drawback of Rao's analysis is that it makes the assumption that the manager knows the salespeople's utility function. This assumption might be

justified in the case of a company with a small team of salespeople like Textile World. Rao did note that implementation of the optimal scheme in his analysis requires quantification of the salesperson utility functions, the efffort-sales response function, and the selling ability distribution. However, this researcher decided to leave these matters for future research. This question has been tackled by Mantrala, Sinha, and Zoltners (1994), who proposed a method for estimating the utility function of a salesperson, based on his or her ranking of a number of sales-quota bonus combinations.

4. THE MODEL

The model formulated in this section is a simple game between Textile World – assumed to be a risk neutral player – and a risk-averse salesperson. The model is based on Lal and Srinivasan (1993) and Holmstrom and Milgrom (1991). The game is not intended to capture all thee intricate interactions between the company and the various subgroups in the organization – main stores, branches, franchisees, and salespeople – through the various compensation schemes that the company offers to these groups. A game the outcome of which constitutes a set of comprehensive incentive compensation schemes that are intended to induce the members of these groups into providing the levels of efforts desired by the company is beyond the scope of the present paper.[1]

Consider an accounting period, say one year. At the beginning of the accounting period, the company announces a compensation scheme to the salesperson. During the accounting period, the salesperson can adjust her sales efforts, depending on her past performance. For simplicity, I model this adjustment of sales efforts throughout the accounting period by considering the accounting period as the unit time interval $[0,1]$, then dividing the accounting period into n equal

[1] To model such a complicated game, one might try to use the theoretical machinery developed by Bernheim and Whinston (1986). Under such a framework, the game has several stages, and its extensive form can be sketched as follows. In the first stage, the company announces a set of compensation schemes, one for each of the groups in the organization. In the second, stage of the game, the players, such as main stores, branches, and franchisees, determine the levels of efforts that they want to offer. Also, in this stage of the game, a main store communicates to the salesperson who provides support service to the main store an arrangement for sharing the store's bonus payments, with the share depending on the number of sales
orders that the salesperson manages to entrusts to the store. In the fourth stage of the game, the salesperson exerts his or her efforts, which together with various random factors, determine the realized sales generated. At the end of

subintervals; say $[0,t_1)$, $[t_1,t_2)$,..., $[t_{n-1},1]$, with $t_i = i/n, i = 1,...,n-1$. A subinterval might represent a week or a month. During each subinterval, the effort level chosen by the salesperson is assumed to be constant.

Let $(x_{0,t}, x_{1,t}, x_{2,t}, x_{3,t})$ denote the list of efforts that the salesperson devotes to her various duties during subinterval $t, t = 1,...,n$. Here $x_{0,t}$ denotes the efforts allocated to provide support service for the main store; $x_{1,t}$ denotes the efforts allocated to selling the normal good (good1); $x_{2,t}$ denotes the efforts expended on selling the discounted or old-fashioned good (good 2); and $x_{3,t}$ denotes the efforts spent on selling formal suits (good 3). The realized sales of the normal goods, the discounted goods, and formal suits are assumed to be given by

(1) $$y_{i,t} = f_i(x_{i,t}) + \varepsilon_{i,t}, \qquad (i = 1,2,3, t = 1,...,n),$$

where $f_i : \Re_+ \to \Re_+$ is an increasing and concave function, and $\varepsilon_{i,t}$ is a random variable that is normally distributed with mean 0 and variance σ_i^2. Note that the variance of $\varepsilon_{i,t}$ depends only on the type of goods, not on time. The deterministic part on the right side of (1), namely $f_i(x_{i,t})$, thus represent the expected sales of good i, as a function of the effort put by the salesperson into the selling of this good.

For the main store, the realized sales of the three goods are assumed to be given by

(2) $$\hat{y}_{i,t} = \hat{f}_i(\hat{x}_{i,t}, x_{0,t}) + \hat{\varepsilon}_{i,t}, \qquad (i = 1,2,3, t = 1,...,n),$$

where $\hat{x}_{i,t}, i = 1,2,3, t = 1,...,n$, is the level of efforts expended by the main store in subinterval t to sell good i, and $x_{0,t}$ is the effort that the salesperson puts in to provide the support service for the main store. We shall assume that the salesperson takes $\hat{x}_{i,t}, i = 1,2,3, t = 1,...,n$, as given in determining her effort inputs in each selling activity in each subinterval. Also, $\hat{f}_i : \Re_+^2 \to \Re_+$ is a concave and increasing function, and $\hat{\varepsilon}_{i,t}$ is a random variable that is normally distributed with mean 0 and variance $\hat{\sigma}_i^2$.

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the fourth stage, the salesperson collects his or her salary and the share of the bonus payments that the main store obtains from the company.

Let $z_{i,t}, i=1,2,3, t=1,...,n,$ denote the wholesale order of good i that the salesperson entrusts to the main store during the subinterval $t, t=1,...,n$. Then the wholesale orders that the salesperson keeps for her records during the same subinterval is given by $y_{i,t}-z_{i,t}, i=1,2,3, t=1,...,n.$ Furthermore, the main store's total sales of good i during subinterval t – the sales generated by the main store's own efforts plus the wholesale orders entrusted by the salesperson – are given by $\hat{y}_{i,t}+z_{i,t}$.

The salesperson's utility of income, say $u(\omega)$, is assumed to be given by $u(\omega)=-e^{-r\omega}$, where ω is income and $r>0$ is a parameter. An individual with such a utility function has constant absolute risk aversion, and the parameter r represents her measure of absolute risk aversion. The salesperson's disutility of effort during a subinterval, say t, is assumed to be given by $v(\sum_{i=0}^{3} x_{i,t})$, where $v:\xi \to v(\xi)$ is strictly increasing and strictly convex in ξ, the total effort exerted in a subinterval. It is assumed that the disutility function is expressed in monetary terms, so that the net income of the salesperson over the entire accounting period is $e^{-r\left[\omega-\sum_{t=1}^{n} v(x_{0,t}+x_{1,t}+x_{2,t}+x_{3,t})\right]}$.

Let $(y_{i,1}-z_{i,1},...,y_{i,t}-z_{i,t})_{i=1,2,3}$ and $(\hat{y}_{i,1}+z_{i,1},...,\hat{y}_{i,t}+z_{i,t})_{i=1,2,3}$ denote, respectively, the sales histories up to time t, as reported by the salesperson and the main store. A compensation scheme adopted by the company for the salesperson is a function

$$(7) \qquad \phi:(y_{i,t}-z_{i,t})_{\substack{i=1,2,3\\ t=1,...,n}} \to \phi\left((y_{i,t}-z_{i,t})_{\substack{i=1,2,3\\ t=1,...,n}}\right).$$

Similarly, a compensation scheme for the main store – as a whole – is a function

$$(8) \qquad \hat{\phi}:(\hat{y}_{i,t}+z_{i,t})_{\substack{i=1,2,3\\ t=1,...,n}} \to \hat{\phi}\left((\hat{y}_{i,t}+z_{i,t})_{\substack{i=1,2,3\\ t=1,...,n}}\right).$$

The problem of designing a compensation scheme for the salespeople of Textile World can now be formally stated as follows:

$$(9) \qquad \max_{(\phi,\hat{\phi})} E\left[\sum_{t=1}^{n}\sum_{i=1}^{3}(p_i-c_i)(y_{i,t}+\hat{y}_{i,t})-\phi\left((y_{i,t}-z_{i,t})_{\substack{i=1,2,3\\ t=1,...,n}}\right)-\hat{\phi}\left((\hat{y}_{i,t}+z_{i,t})_{\substack{i=1,2,3\\ t=1,...,n}}\right)\right]$$

subject to

$$(10)\qquad E\left[u\left[\begin{array}{l}\phi\left(\left(y_{i,t}-z_{i,t}\right)_{\substack{i=1,2,3\\t=1,\ldots,n}}\right)+\varphi\left(\left(\hat{y}_{i,t},z_{i,t}\right)_{\substack{i=1,2,3\\t=1,\ldots,n}}\middle|\hat{\phi}\right)\\-\sum_{t=1}^{n}v\left(\sum_{i=0}^{3}x_{i,t}\left(\left(y_{i,s},\hat{y}_{i,s}\right)_{\substack{i=1,2,3,\\s=1,\ldots,t}}\right)\right)\end{array}\right]\right]\geq u_0.$$

Observe that the objective function in (9) represents the expected profit of the company. In (9), p_i and c_i denote, respectively, the price and unit cost of good i. In (10), the expression on the left side of the inequality represents the salesperson's expected utility. In this expression $\varphi\left(\left(\hat{y}_{i,t},z_{i,t}\right)_{\substack{i=1,2,3\\t=1,\ldots,n}}\middle|\hat{\phi}\right)$ represents the payment made by the main store to the salesperson in return for the wholesale orders that the salesperson entrusts to the main store. Therefore, the letter φ denotes the partial compensation of the total main store's compensation that the salesperson receives for the entrusting amounts. Also, $x_{i,t}\left(\left(y_{i,s},\hat{y}_{i,s}\right)_{\substack{i=1,2,3\\s=1,\ldots,t}}\right)$ represents the effort level that the salesperson devotes to selling good i during subinterval t. This level of effort is allowed to depend on the salesperson's sales history as well as the main store's sales history up to time t. On the right side of (10), u_0 is the reservation utility level of the salesperson. Inequality (10) translates the participation constraint: in order for the salesperson to accept the contract, the utility yielded by the contract must be at least equal to the utility she obtains by working elsewhere.

Holmstrom and Milgrom (1987) considered the problem of providing incentives over time for an agent with constant absolute risk aversion. The optimal compensation scheme is linear in total sales, even though the firm can use a more complicated compensation schemes that depend on the entire sales history of the salesperson, as formulated by (9) and (10). The linear compensation scheme will induce the salesperson to put in a steady effort rate for the entire accounting period. Exploiting these results, Lal and Srinivasan (1993) transformed their own dynamic programming formulation into a static principal-agent problem. In this paper, I also adopt the approach of these last researchers by considering only compensation schemes that are linear in the total sales of each good for the entire accounting period and that induce the salesperson to put in an effort level that is steady through time. Thus I shall assume that

(11) $$\phi\left(\left(y_{i,t}-z_{i,t}\right)_{\substack{i=1,2,3\\t=1,\ldots,n}}\right)=\alpha_0\sum_{i=1}^{3}\sum_{t=1}^{n}(p_i-c_i)(\hat{y}_{i,t}+z_{i,t})+\sum_{i=1}^{3}\alpha_i\sum_{t=1}^{n}(p_i-c_i)(y_{i,t}-z_{i,t})+\beta$$

and

(12) $$\hat{\phi}\left(\left(\hat{y}_{i,t}+z_{i,t}\right)_{\substack{i=1,2,3\\t=1,\ldots,n}}\right)=\sum_{i=1}^{3}\hat{\alpha}_i\sum_{t=1}^{n}(p_i-c_i)(\hat{y}_{i,t}+z_{i,t})+\hat{\beta}.$$

Furthermore, I shall also assume that the salesperson receives – for each unit of a good in the wholesale orders entrusted to the main store – a fraction, say θ, of the marginal compensation that the main store receives from the company for this unit. More precisely, I assume that

(13) $$\varphi\left(\left(\hat{y}_{i,t},z_{i,t}\right)_{\substack{i=1,2,3\\t=1,\ldots,n}}\middle|\hat{\phi}\right)=\theta\sum_{i=1}^{3}\hat{\alpha}_i(p_i-c_i)(\sum_{t=1}^{n}z_{i,t}).$$

5. ANALYSIS OF THE MODEL

To analyze the model formulated in the preceding section, first note that if $\hat{\alpha}_i > \alpha_i$, then there is an incentive for the salesperson to entrust all of the wholesale orders of good i that she generates to the main store. Indeed, if she keeps a unit of this good for her record, then the incentive income she obtains for this unit is α_i, according to the compensation scheme the company offers her. Entrusting the unit to the main store will generate an income of $\hat{\alpha}_i$ to the main store. Thus if $\hat{\alpha}_i > \alpha_i$, then the salesperson could benefit by entrusting the unit of this good to the main store and demand at least α_i in return. Because $\hat{\alpha}_i > \alpha_i$, this action is feasible, and both parties will benefit if the salesperson does not ask for more than $\hat{\alpha}_i$. The only thing left for the salesperson and the main store to decide is how to split the surplus $\hat{\alpha}_i - \alpha_i$ between them. Thus to discourage the salesperson from colluding with the main store, the company should not set $\hat{\alpha}_i$ higher than $\alpha_i, i = 1,2,3$, and I will assume that the company adopts this policy for the rest of the analysis. This assumption allows us to separate the problem of designing a compensation scheme for salespeople from that for the main store.

5.1. *The Incentive Constraint*

To solve the principal-agent problem stated by (9) and (10), let $\left((\alpha_i)_{i=0,\ldots,3},\beta\right)$ be the compensation scheme that the company offers the salesperson. If x_0 is the level of effort the salesperson puts in during each subinterval to provide support service for the main store and $x_i, i=1,2,3,$ is the effort level the salesperson puts in – also during each subinterval – to sell good i, then the net income obtained by the salesperson at the end of the accounting period is

$$\begin{aligned}(14)\quad &\alpha_0\sum_{i=1}^{3}\sum_{t=1}^{n}(p_i-c_i)\left(\hat{f}_i(\hat{x}_{i,t},x_0)+\hat{\varepsilon}_{i,t}\right)+\sum_{i=1}^{3}\alpha_i\sum_{t=1}^{n}(p_i-c_i)\left(f_i(x_i)+\varepsilon_{i,t}\right)+\beta-nv(\sum_{i=0}^{3}x_i)\\ &=\alpha_0\sum_{i=1}^{3}\sum_{t=1}^{n}(p_i-c_i)\hat{f}_i(\hat{x}_{i,t},x_0)+\sum_{i=1}^{3}\alpha_i\sum_{t=1}^{n}(p_i-c_i)f_i(x_i)+\beta-nv(\sum_{i=0}^{3}x_i)\\ &\quad+\alpha_0\sum_{i=1}^{3}\sum_{t=1}^{n}(p_i-c_i)\hat{\varepsilon}_{i,t}+\sum_{i=1}^{3}\alpha_i\sum_{t=1}^{n}(p_i-c_i)\varepsilon_{i,t}.\end{aligned}$$

The certainty equivalent of the above random net income is

$$\begin{aligned}(15)\quad CE\left((x_i)_{i=0,\ldots,3}\middle|(\alpha_i)_{i=0,\ldots,3},\beta\right)&=\alpha_0\sum_{i=1}^{3}\sum_{t=1}^{n}(p_i-c_i)\hat{f}_i(\hat{x}_{i,t},x_0)+\sum_{i=1}^{3}\alpha_i\sum_{t=1}^{n}(p_i-c_i)f_i(x_i)+\beta\\ &\quad-nv(\sum_{i=0}^{3}x_i)-\frac{1}{2}rn\alpha_0^2\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2-\frac{1}{2}rn\sum_{i=1}^{3}\alpha_i^2(p_i-c_i)^2\sigma_i^2.\end{aligned}$$

Observe that the first line on the right side of (15) represents the expected value of the salesperson's compensation. On the second line on the right side of (15), the first term represents the disutility of efforts, while the remaining two terms together represent the risk premium. If the salesperson accepts the contract, then she will choose the list of efforts (x_0,x_1,x_2,x_3) that maximizes the certainty equivalent represented by (15). The following first-order conditions characterize the optimal effort levels chosen:

$$(16)\quad \alpha_0\sum_{i=1}^{3}\sum_{t=1}^{n}(p_i-c_i)\frac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_{i,t},x_0)-nv'(\sum_{i=0}^{3}x_i)\le 0,$$

with equality holding if $x_0>0$, and

$$(17)\quad \alpha_i\sum_{t=1}^{n}(p_i-c_i)f_i'(x_i)-nv'(\sum_{i=0}^{3}x_i)=0. \qquad (i=1,2,3).$$

To avoid the drawback of BLSS model about the uncertainty of efforts' distribution in an accounting period that I referred in Section 3, I assume that $\hat{x}_{i,1}=\ldots=\hat{x}_{i,n}=\hat{x}_i, i=1,2,3$. Thus, we can simplify (16) and (17), respectively, as follows:

$$(18)\quad \alpha_0\sum_{i=1}^{3}(p_i-c_i)\frac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_i,x_0)-v'(\sum_{i=0}^{3}x_i)\le 0,$$

with equality holding if $x_0 > 0$, and

$$(19) \quad \alpha_i(p_i - c_i)f_i'(x_i) - v'(\sum_{i=0}^{3} x_i) = 0. \qquad (i = 1,2,3).$$

Observe that if $\alpha_0 = 0$, as is the case with Textile World, then it follows from (18) that $x_0 = 0$, i.e., the salesperson will not devote any effort to providing support service to the main store. Also, note that the optimal levels of effort do not depend on β. That is, the optimal levels of effort depend only on the incentive parameters $\alpha_i, i = 0,...,3$. In the last analysis, the value of β should be chosen so that the expected utility yielded by the incentive contract is the same as the reservation utility.

In what follows, I shall assume that $x_i > 0, i = 0,...,3$. Furthermore, to keep the notations from becoming too cumbersome, I shall let $\alpha = (\alpha_0, \alpha_1, \alpha_2, \alpha_3)$ to denote the *list of incentive intensities* and $x(\alpha) = (x_0(\alpha), x_1(\alpha), x_2(\alpha), x_x(\alpha))$ denote the list of efforts, that the salesperson devotes, respectively, to support service, selling good 1, selling good 2, and selling good 3. The components of the list $x(\alpha)$ are the values of $x_i, i = 0,...,3$, that solve the system constituted by (18) and (19). The system of equations constituted by (18) and (19) thus determines x in terms of α. I shall assume that the map $\alpha \to x(\alpha)$ has an inverse, say $x \to \alpha(x)$.

Starting from this point, I will derive the term of $\alpha'(x)$ in order to solve the first-order condition of the certain equivalent income for the company (equation (43)) later, which will contain the $x'(\alpha)$ term or an inverse of $\alpha'(x)$ in the equation.

When $x_0 > 0$, (18) becomes

$$(20) \quad \alpha_0(x)\sum_{i=1}^{3}(p_i - c_i)\frac{\partial \hat{f}_i}{\partial x_0}(\hat{x}_i, x_0) - v'(\sum_{i=0}^{3} x_i) = 0.$$

Differentiating (20) with respect to x_0, we obtain

$$(21) \quad \alpha_0\sum_{i=1}^{3}(p_i - c_i)\frac{\partial^2 \hat{f}_i}{\partial x_0^2}(\hat{x}_i, x_0) + \sum_{i=1}^{3}(p_i - c_i)\frac{\partial \hat{f}_i}{\partial x_0}(\hat{x}_i, x_0)\frac{\partial \alpha_0}{\partial x_0} - v''(\sum_{i=0}^{3} x_i) = 0.$$

It follows from (21) that

$$(22)\qquad \frac{\partial \alpha_0}{\partial x_0} = \frac{v''(\sum_{i=0}^{3} x_i) - \alpha_0 \sum_{i=1}^{3} (p_i - c_i) \frac{\partial^2 \hat{f}_i}{\partial x_0^2}(\hat{x}_i, x_0)}{\sum_{i=1}^{3} (p_i - c_i) \frac{\partial \hat{f}_i}{\partial x_0}(\hat{x}_i, x_0)}.$$

Differentiating (20) with respect to $x_i, i = 1,2,3,$ we obtain

$$(23)\qquad \frac{\partial \alpha_0}{\partial x_i} \sum_{i=1}^{3} (p_i - c_i) \frac{\partial \hat{f}_i}{\partial x_0}(\hat{x}_i, x_0) - v''(\sum_{i=0}^{3} x_i) = 0.$$

It follows from (23) that

$$(24)\qquad \frac{\partial \alpha_0}{\partial x_i} = \frac{v''(\sum_{i=0}^{3} x_i)}{\sum_{i=1}^{3} (p_i - c_i) \frac{\partial \hat{f}_i}{\partial x_0}(\hat{x}_i, x_0)}, \qquad (i = 1,2,3).$$

For $i = 1,$ differentiating (19) with respect to x_0, we obtain

$$(25)\qquad \frac{\partial \alpha_1}{\partial x_0}(p_1 - c_1) f_1'(x_i) - v''(\sum_{i=0}^{3} x_i) = 0,$$

from which we have

$$(26)\qquad \frac{\partial \alpha_1}{\partial x_0} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_1 - c_1) f_1'(x_1)}.$$

Again, for $i = 1,$ differentiating (19) with respect to x_1, we obtain

$$(27)\qquad \frac{\partial \alpha_1}{\partial x_1}(p_1 - c_1) f_1'(x_1) + \alpha_1 (p_1 - c_1) f_1''(x_1) - v''(\sum_{i=0}^{3} x_i) = 0.$$

It follows from (27) that

$$(28)\qquad \frac{\partial \alpha_1}{\partial x_1} = \frac{v''(\sum_{i=0}^{3} x_i) - \alpha_1 (p_1 - c_1) f_1''(x_1)}{(p_1 - c_1) f_1'(x_1)}.$$

For $i = 1,$ differentiating (19) with respect to x_2 then rearranging the result, we obtain

$$(29)\qquad \frac{\partial \alpha_1}{\partial x_2} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_1 - c_1) f_1'(x_1)}.$$

Similarly,

(30) $$\frac{\partial \alpha_1}{\partial x_3} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_1 - c_1) f_1'(x_1)}.$$

In the same manner used to compute $\partial \alpha_1 / \partial x$, we have for $i = 2$:

(31) $$\frac{\partial \alpha_2}{\partial x_0} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_2 - c_2) f_2'(x_2)},$$

(32) $$\frac{\partial \alpha_2}{\partial x_1} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_2 - c_2) f_2'(x_2)},$$

(33) $$\frac{\partial \alpha_2}{\partial x_2} = \frac{v''(\sum_{i=0}^{3} x_i) - \alpha_2 (p_2 - c_2) f_2''(x_2)}{(p_2 - c_2) f_2'(x_2)},$$

and

(34) $$\frac{\partial \alpha_2}{\partial x_3} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_2 - c_2) f_2'(x_3)}.$$

Finally, for $i = 3$, we have

(35) $$\frac{\partial \alpha_3}{\partial x_0} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_3 - c_3) f_3'(x_3)},$$

(36) $$\frac{\partial \alpha_3}{\partial x_1} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_3 - c_3) f_3'(x_3)},$$

(37) $$\frac{\partial \alpha_3}{\partial x_2} = \frac{v''(\sum_{i=0}^{3} x_i)}{(p_3 - c_3) f_3'(x_3)},$$

and

(38) $$\frac{\partial \alpha_3}{\partial x_3} = \frac{v''(\sum_{i=0}^{3} x_i) - \alpha_3 (p_3 - c_3) f_3''(x_3)}{(p_3 - c_3) f_3'(x_3)}.$$

In what follows, I shall let

$$(39)\qquad A=\left(\frac{\partial \alpha_i}{\partial x_j}\right)_{i=0,1,2,3,j=0,1,2,3}$$

denote the derivative of α with respect to x. By the inverse theorem, the derivative of x with respect to α is

$$(40)\qquad \left(\frac{\partial x_i}{\partial \alpha_j}\right)_{i=0,1,2,3,j=0,1,2,3}=A^{-1}.$$

5.2. *The Optimal Compensation Scheme*

The company's expected profit at the end of the accounting period, as a function of the list x of efforts put in by the salesperson in each subinterval is

$$(41)\qquad \Pi(x)=\sum_{i=1}^{3} n(p_i-c_i)(f_i(x_i)+\hat{f}_i(\hat{x}_i,x_0))-\sum_{i=1}^{3} n\hat{\alpha}_i(p_i-c_i)\hat{f}_i(\hat{x}_i,x_0)-\hat{\beta}.$$

As a function of α, the certainty equivalent income for the company plus the sales person is

$$(42)\qquad \Pi(x(\alpha))-nv(\sum_{i=0}^{3} x_i(\alpha))-\frac{1}{2}rn\alpha_0^2\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2-\frac{1}{2}rn\sum_{i=1}^{3}\alpha_i^2(p_i-c_i)^2\sigma_i^2.$$

The optimal incentive intensities are obtained by choosing the list α that maximizes (42). The first-order condition that characterizes the optimal compensation scheme is

$$(43)\qquad \begin{aligned}&\Pi'(x(\alpha))x'(\alpha)-nv'(\sum_{i=0}^{3} x_i(\alpha))(1,1,1,1)x'(\alpha)\\&-rn\left(\alpha_0\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2,\alpha_1(p_1-c_1)^2\sigma_1^2,\alpha_2(p_2-c_2)^2\sigma_2^2,\alpha_3(p_3-c_3)^2\sigma_3^2\right)=(0,0,0,0).\end{aligned}$$

Using (40) in (43), I can rewrite (43) as follows

$$(44)\qquad \begin{aligned}&\Pi'(x(\alpha))A^{-1}-nv'(\sum_{i=0}^{3} x_i(\alpha))(1,1,1,1)A^{-1}\\&-rn\left(\alpha_0\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2,\alpha_1(p_1-c_1)^2\sigma_1^2,\alpha_2(p_2-c_2)^2\sigma_2^2,\alpha_3(p_3-c_3)^2\sigma_3^2\right)=(0,0,0,0).\end{aligned}$$

Multiplying (44) by A, I can simplify (44) to

$$\Pi'(x(\alpha)) - nv'\Big(\sum_{i=0}^{3} x_i(\alpha)\Big)(1,1,1,1)$$

(45)

$$-rn\left(\alpha_0\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2,\alpha_1(p_1-c_1)^2\sigma_1^2,\alpha_2(p_2-c_2)^2\sigma_2^2,\alpha_3(p_3-c_3)^2\sigma_3^2\right)A=(0,0,0,0).$$

Using (19) and (20), I can rewrite (45) as follows

$$\Pi'(x(\alpha))$$

(46)

$$-n\left(\alpha_0\sum_{i=1}^{3}(p_i-c_i)\frac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_i,x_0),\alpha_1(p_1-c_1)f_1'(x_1),\alpha_2(p_2-c_2)f_2'(x_i),\alpha_3(p_3-c_3)f_3'(x_{3i})\right)$$

$$-rn\left(\alpha_0\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2,\alpha_1(p_1-c_1)^2\sigma_1^2,\alpha_2(p_2-c_2)^2\sigma_2^2,\alpha_3(p_3-c_3)^2\sigma_3^2\right)A=(0,0,0,0).$$

Now letting

(47)

$$B=\begin{pmatrix}\sum_{i=1}^{3}(p_i-c_i)\frac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_i,x_0) & 0 & 0 & 0\\ 0 & (p_1-c_1)f_1'(x_1) & 0 & 0\\ 0 & 0 & (p_2-c_2)f_2'(x_i) & 0\\ 0 & 0 & 0 & (p_3-c_3)f_3'(x_{3i})\end{pmatrix}$$

$$=diag(b_{00},b_{11},b_{22},b_{33})$$

and

(48)

$$D=\begin{pmatrix}\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2 & 0 & 0 & 0\\ 0 & (p_1-c_1)^2\sigma_1^2 & 0 & 0\\ 0 & 0 & (p_2-c_2)^2\sigma_2^2 & 0\\ 0 & 0 & 0 & (p_3-c_3)^2\sigma_3^2\end{pmatrix}$$

$$=diag(d_{00},d_{11},d_{22},d_{33}).$$

I can express (46) under the following more compact form:

(49)

$$\frac{\Pi'(x(\alpha))}{n}=(\alpha_0,\alpha_1,\alpha_2,\alpha_3)[B+rDA].$$

It follows from (49) that the incentive intensities of the optimal compensation scheme are given by

(50)

$$(\alpha_0,\alpha_1,\alpha_2,\alpha_3)=\frac{\Pi'(x(\alpha))}{n}[B+rDA]^{-1}.$$

Suppose that the disutility function of effort is linear, say $v(\xi)=\xi$. Then $v''(\xi)==0$, and (39) is reduced to the following diagonal matrix:

$$A=\begin{pmatrix} -\dfrac{\alpha_0\sum_{i=1}^{3}(p_i-c_i)\dfrac{\partial^2\hat{f}_i}{\partial x_0^2}(\hat{x}_i,x_0)}{\sum_{i=1}^{3}(p_i-c_i)\dfrac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_i,x_0)} & 0 & 0 & 0 \\ 0 & -\alpha_1\dfrac{f_1''(x_1)}{f_1'(x_1)} & 0 & 0 \\ 0 & 0 & -\alpha_2\dfrac{f_2''(x_2)}{f_2'(x_2)} & 0 \\ 0 & 0 & 0 & -\alpha_3\dfrac{f_3''(x_3)}{f_3'(x_3)} \end{pmatrix} \tag{51}$$

$$=diag(\alpha_0a_{00},\alpha_1a_{11},\alpha_2a_{22},\alpha_3a_{33}).$$

Using (51) in (50), I can rewrite (50) as follows:

$$\begin{aligned}(\alpha_0,\alpha_1,\alpha_2,\alpha_3)&=\frac{\Pi'(x(\alpha))}{n}\begin{bmatrix}diag(b_{00},b_{11},b_{22},b_{33})\\+rdiag(d_{00},d_{11},d_{22},d_{33})diag(\alpha_0a_{00},\alpha_1a_{11},\alpha_2a_{22},\alpha_3a_{33})\end{bmatrix}^{-1}\\&=\frac{\Pi'(x(\alpha))}{n}\begin{bmatrix}diag(b_{00}+rd_{00}\alpha_0a_{00},b_{11}+rd_{11}\alpha_1a_{11},\\b_{22}+rd_{22}\alpha_2a_{22},b_{33}+rd_{33}\alpha_3a_{33})\end{bmatrix}^{-1}.\end{aligned} \tag{52}$$

In a more explicit manner, (52) can be rewritten as follows:

$$\begin{aligned}\alpha_0&=\frac{1}{n}\frac{\partial\Pi(x(\alpha))}{\partial x_0}\frac{1}{b_{00}+rd_{00}\alpha_0a_{00}}\\&=\frac{1}{n}\frac{\partial\Pi(x(\alpha))}{\partial x_0}\frac{1}{\sum_{i=1}^{3}(p_i-c_i)\dfrac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_i,x_0)-\alpha_0r\sum_{i=1}^{3}(p_i-c_i)^2\hat{\sigma}_i^2\dfrac{\sum_{i=1}^{3}(p_i-c_i)\dfrac{\partial^2\hat{f}_i}{\partial x_0^2}(\hat{x}_i,x_0)}{\sum_{i=1}^{3}(p_i-c_i)\dfrac{\partial\hat{f}_i}{\partial x_0}(\hat{x}_i,x_0)}},\end{aligned} \tag{53}$$

$$\begin{aligned}\alpha_1&=\frac{1}{n}\frac{\partial\Pi(x(\alpha))}{\partial x_1}\frac{1}{b_{11}+rd_{11}\alpha_1a_{11}}\\&=\frac{1}{n}\frac{\partial\Pi(x(\alpha))}{\partial x_1}\frac{1}{(p_1-c_1)f_1'(x_1)-r\alpha_1(p_1-c_1)^2\sigma_1^2\dfrac{f_1''(x_1)}{f_1'(x_1)}},\end{aligned} \tag{54}$$

$$\alpha_2 = \frac{1}{n}\frac{\partial \Pi(x(\alpha))}{\partial x_2}\frac{1}{b_{22} + rd_{22}\alpha_2 a_{22}}$$

(55)
$$= \frac{1}{n}\frac{\partial \Pi(x(\alpha))}{\partial x_2}\frac{1}{(p_2 - c_2)f_2'(x_2) - r\alpha_2(p_2 - c_2)^2\sigma_2^2\dfrac{f_2''(x_1)}{f_2'(x_1)}},$$

and

$$\alpha_3 = \frac{1}{n}\frac{\partial \Pi(x(\alpha))}{\partial x_3}\frac{1}{b_{33} + rd_{33}\alpha_3 a_{33}}$$

(56)
$$= \frac{1}{n}\frac{\partial \Pi(x(\alpha))}{\partial x_3}\frac{1}{(p_3 - c_3)f_3'(x_3) - r\alpha_3(p_3 - c_3)^2\sigma_3^2\dfrac{f_3''(x_3)}{f_3'(x_3)}}.$$

Observe that the incentive intensities represented by (43) through (56) are higher when the gross margin are higher; lower when the variance of sales increase; and rises with the curvature - $f_i''(x_i)/f_i'(x_i)$ *of the production function of sales.*

6. AN INCENTIVE COMPENSATION SCHEME FOR TEXTILE WORLD

The literature review describes several compensation plans and suggests that combination plans would be the most desirable ones for Textile World. To construct a practical compensation program, one first has to decide *the total dollars of compensation* for a successful or top salesperson. The total compensation appropriate for a successful salesperson is determined by the complexity of the sales and type of selling. It also depends on the budget of the company, which is distributed among salespeople. Normally, there is no limit for the sales commission since it relates directly to the volume of products sold. The more products a salesperson can sell, the higher pay she will earn. However, there is a limit for extra bonus and reimbursed expense (travel, phone...), relative to revenues. In Textile World, the expense/revenue ratio is limited to 10% for each salesperson. This value is calculated basing on the overall products' gross margin and standard expenses. Basically, the standard expenses are determined by the expectation of costs in transportation, costs in communication, and miscellaneous costs. For example, the manager expects a salesperson will travel around 50km per day, which costs him around 2 litres of gasoline,[2] at the cost of $0.83 per litre. Then the transportation cost for a month with 6 work

[2]In Vietnam, salespeople normally use motorcycles, which take less gas than with cars.

days per week amounts to about $39.84. The other expenses are also calculated based on the manager's expectation. Since there are variations in prices, and also to allow for unexpected and exceptional cases, the manager always considers extra credits for the salesperson. Moreover, the expenses do not simply include only the direct compensation expenses for salesperson; they also include indirect expenses that arise under a new system. This means that when a new system is brought into operation, it always creates extra costs for the company – the costs incurred by integrating the old and new systems, administration costs, and training costs. All these costs are used to support the new system and increase its efficiency.

The next decision is dividing those dollars between fixed and performance pay (*Mixed pay rule*). The mix between performance and fixed pay depends on: (i) balancing the salesperson's and company's needs, (ii) the type of salesperson the company wishes to attract, (iii) the salesperson's influence on the sale, (iv) the type of product /service sold, and (v) rewarding the salesperson's specific actions / results most important to the company's success.

First, the correct mix between performance and fixed direct compensation must reflect the company's and salespeople's needs. Basically, the company needs to attract, retain, and motivate salespeople who produce a desired level of sales at a cost that generates profit and allows a good return on invested capital. Good salespeople need a compensation plan that relieves them of basic financial worries, gives them pride in what they earn, reflects their qualifications and experience, and is equal or better than that offered by the competition. Compensating salespeople on the basis of the cost of replacing them – or just the cost of preventing them from leaving – does not satisfy these needs. As discussed in Section 5, the optimal commission rates, namely the optimal incentive intensities, are computed according to the formula represented by (50). According this formula, the optimal commission rate is higher for a product with a higher gross margin, but lower for a product with a higher sales variance. The optimal incentive intensities, as can be seen from (50), can be computed independently of the fixed pay β. The value of β should be chosen at the end to induce the salesperson into accepting the compensation scheme, without obtaining an expected utility higher than the reservation level. However, it does not prevent the employee from leaving the company in the future when he/she gets a better job opportunity. That means a minimum expected utility equal to the employee's reservation utility does not create loyalty toward the company.

Second, the mix of performance versus fixed pay acts as a natural filter in attracting certain types of salespeople. The manager should review the profile of each employee to see their desired personal characteristics in order to understand their drives of self-motivation. For example, salespeople who are team players, ambitious to climb the executive ladder, steady rather than top performers, prefers fixed pay oriented compensation plan, while performance-pay-weighted compensation plans general attract aggressive career salespeople with no ambition for promotion into management. Another important factor is the influence that a salesperson has on the sales. The more influence the salesperson has on the sale, the more performance pay should represent as a percent of total direct compensation. For example, the combination compensation plan for Textile-World is focused on the finding wholesale orders, which depends heavily on the salesperson's ability. Therefore, I put more weight for performance pay and less weight for fixed pay. Because Textile-World is a big brand name in Vietnam, and because its products are heavily advertised and presold by management, the company has established many long-term relationships with other big corporations. Therefore, salespeople can use the brand name as an advantage in selling products. This factor suggests less weight for performance pay and more weight for fixed pay.

The type of product is also a very important indicator for the mix pay rule. It determines the value of each product unit, the life cycle of each product, and the functions of each product, which could affect directly the level of difficulty in selling the product For example, a salesperson in the automobile industry and a person in the clothing industry would have different mixes of compensation plan. The automobile industry produces a technical, sophisticated product with high unit price, while the garment industry sells clothes, which are non-technical, unsophisticated products. Clothes have lower unit price and modified rebuys, which require constant customer visits for reorders. This factor suggests a higher weighting of performance pay. Lastly, the manager needs to determine the special actions that are important to the company's profit and puts more performance compensation weight on these actions. For example, in Textile World, creating more customer accounts and establishing a long term relationship with customer are the most important activities for salespeople. Therefore, I put some extra rewards for the salespeople's specific action such as new account bonus, loyalty

bonus. These compensation options will enhance the performance of salespeople and put more weights on performance in the mix pay rule.

BLSS provided the following table of "Conditions Influencing The Proportion Of Salary To Total Pay For Salespeople:"

TABLE I

Conditions Influencing The Proportion Of Salary To Total Pay For Salespeople

Conditions	Proportion of Salary to Total Pay should be			
	Lower		Higher	
1. Importance of salesman's personal skills in making sales	Considerable	x	Slight	
2. Reputation of salesman's company	Little known		Well known	x
3. Company's reliance of product on advertising & other sales promotion activities	Little	x	Much	
4. Competitive advantages of product in term of price, quality, etc	Little		Much	x
5. Importance of providing customer service	Slight		Considerable	x
6. Significance of total sales volume as primary selling objects	Greater	x	Lesser	
7. Incidence of technical or team selling	Little	x	Much	
8. Importance of factors beyond the control of salesman which influence sales	Slight		Considerable	x

The table contains some conditions that cover similar ideas already discussed above. These conditions involve the importance of a salesperson's personal skills in making sales, the reputation of the company, and other important factors beyond the control of the salesperson in influencing the sales. BLSS also described in more detail conditions for advertising, promotion activities, price and quality of products, sales volume, and team selling. These conditions help to separate to a certain degree the contribution of the salesperson's own effort from the influence of other factors on total sales. For example, if the company is well known, the less effort the employee will have to put into his job to sell the same product amount as selling for a little known company. Therefore, the proportion of salary to total pay should be higher, i.e., the manager should put less weight on performance pay.

After considering all the above factors, the mix pay that I choose for Textile World ranges from 59/41 to 45/55, which reflects the average compensation percentages for a middle salesperson. For the exercise, I first set the fixed pay at a standard base level. Next, I set the performance pay (bonus, commission) such that for a middle salesperson, the performance pay will vary from 41% to 55% of the total compensation. Besides using different companies in the same industry as reference, I also use *trial and error* to adjust the performance commission rates to satisfy this mixed pay condition.

The centerpiece of the paper is the combination compensation scheme, given in Exhibit 2, that I design for Textile World in 2005. This table can be defined as the formal contract between the company and the salesperson. The detailed explanation for each term will be provided precisely after the contract exhibit.

EXHIBIT 2: Specific applied compensation plan for Textile-World

COMBINATION MODEL (F-C-R-B-E)
▪ *Fixed pay (F)*: Fix pay is $83 / month and is payable every two weeks. ▪ *Performance Pay (C)*: Commissions are paid according to the type of the good sold and on the 20th of each month for the preceding month. 1. Normal goods: C = (a) + (b) (a) The salesperson receives 1.5% of sales when shipped, less uncollectible accounts receivables, returns, samples, and advertising allowances. (b) The salesperson receives 3% of the resulting gross margin, which equals revenue minus cost of good sold. 2. Discounted goods or out of fashioned goods: The commission is

C = Actual price – minimum discounted price

3. Formal suits (Amount ≥ 10 pairs of suits or equivalent)

The commission is calculated in the same way as normal goods, but with higher commission percentage, according to the formula C=(a) + (b), with a=2% and b=4%.

- *Bonuses – Rewards (R):* Besides the old bonus system (mentioned in fringe benefits), salesperson will get a bonus in the following cases:

1. Terms Bonus

(a) The salesperson will get a one-term bonus if his/her sales can exceed the $sales quota in *6-month* period. The bonuses are provided in Table 1.2.

(b) If (a) is satisfied in two consecutive terms, the salesperson will get an extra two-term bonus.

Table 2

Revenue	One-term bonus	Extra two-term bonus
R ≥ $45,000	$168.00	$126.00
R ≥ $35,000	$84.00	$42.00
R ≥ $25,000	$42.00	$16.00
R ≥ $17,500	$24.00	$8.00
R < $17,500	0	0

Note: If first term's sales are $17,500 and the second term's sales are $36,000, then the total bonus is $24 + $84 + $8 = $116. Also, $8 is the extra bonus for two consecutive terms exceeding quota of 15,700.

2. New account bonus:

For each new customer account established, the salesperson will get a bonus of $5, up to $30 payable at the end of 6-month term.

3. Customer loyalty bonus:

   For any customer account placing more than 5 orders per year or 3 orders per 6 months, the salesperson will get a bonus of $40, payable at the end of that term. If the first term has 3 orders and second term has 2 orders (total 5/yr), then only $40 will be paid at the end of first term.

4. With discounted or out of fashioned goods, although the salesperson does not have commission on sale, the revenue is still accounted for the bonus at the end of each term. There is no difference in bonus between normal goods and formal suits.

- *Fringe Benefits (B):* The fringe benefits are $6 per month payable every two weeks

- *Reimbursed Expense (E):* The salesperson is reimbursed up to $42/month, cumulative for travel and communication expenses, and are payable after expense reports (if appropriate) are received. The difference between 12 months actual expenses and $504 is to be split 50/50 if the actual expense is above $504.

- *Additional Terms:*

1. This formula does not apply for salespeople in training period (the first 6 months) and new target markets, such as the markets in the South of Vietnam. The company should use a straight-salary plan for new trainees and for testing the water for the markets in the South..

2. Each wholesale order needs valid receipts, which can help the manager to identify exactly the day goods are delivered, the payment amount, and by whom the goods are bought and sold, in order for the salesperson to receive the compensation.

3. The total sales amount of each salesperson will be reported once per year so that her performance can be evaluated. The evaluation standard is following the below table:

Table 3

Total sales / year	% Exp / Rev	Ability Level
>$70,000	Up to 7.5%	A (Excellence)
$50,000 - $70,000	Up to 8%	B (Good)
$30,000 - $50,000	Up to 10%	C (Average)
$25,000 - $30,000	<= 9.99%	D (Weak)
Less than $25,000		F

Evaluation and Manager's action:

(a) *Trainees*: After 6 months of training, a trainee has to reach level D to become the assistant of an A-level salesperson or level C to become a main store salesperson for the company. An assistant will receive a straight-salary plan.

(b) *Level F*: A salesperson with level F does not have the ability to find customers. The company should terminate the program for this salesperson and transfer him to a different position or department, allowing him to be in a basic salary plan.[3] If that salesperson is a new trainee, he will be fired.

(c) *Level D*: Providing the appropriate evaluations and additional trainings under an A-level salesperson's supervision. This salesperson will be considered as a sale assistant and receive 100% straight salary plan. If the salesperson has two consecutive times of level D (2 years), then applying (b).

(d) *Level C:* Evaluating and providing methods to improve productivity. The % Exp/Rev should be smaller than 10% (including exceptions). If the expense is far less than 10%, manager should consider in increasing reimbursed expense for that salesperson in the next term (such as extra expenses for going to other provinces or suburbs marketing products).

[3] The company's policy is to avoid firing an employee with seniority unless he has bad actions in the working environment.

(e) *Level B:* Evaluating and considering any extra supported needed from company in order to improve the productivity. For example, increasing reimbursed expense, which is made exp/rev ratio raised up to 8%) and the autonomy in making decision for B-level salespeople. Providing internal meeting to share experiences with other lower levels salespeople.

(f) *Level A*: Salespeople will get the basic salary increased by 50% and have the right to get 1 to 2 assistants from trainees, which is decided by salespeople's team leader. However, if the salesperson will be down to a lower level in next year, he/she will lose all these rights. For this level, the salespeople can apply for a higher expense plan, which is made the exp/rev ratio raised up to 7.5%.

(g) *Team leader:* The first team leader will be taken by the salesperson, who has average highest sales per year. He / she will get the basic salary increased by 150% in the first 12 months and 200% after 12 months plus the normal commissions.

- The team leader will get an extra 2% on the increased sales' amount of the whole team (6-month term).

- The average sales per year is calculated according to the formula $n^{-1}\sum_{i=1}^{n} \$sales_i$, where n is the number of working years and $\$sale_i$ is the sales in dollar terms for year i

- The team leader has the responsibility of evaluating team members' performance and reporting to the higher manager. He has the power in deciding the sales strategy for the team (how to market products, establish customer's relationship...) and the autonomy in using financial resources to increase the team's productivity.[4]

- The team leader's position will be transferred to second best salesperson – the salesperson with the second highest sales per year – if the team's performance, which is evaluated annually, is really substandard, i.e., if the team's sales decrease dramatically, or more salespeople perform poorly.

[4] The financial resource is decided by the department's manager.

4. The salesperson will be assigned to a different location every year, which is done by random draws. The team leader does not have the right to make this decision.

5. Evaluation should be carried out every month under the team leader's direction. A weekly achievement record for each salesperson ($sales) should be posted on the team's board from low to high.

   - The yearly level record (A - F) for each salesperson will be posted on the department board.

6. Some titles, such as the year's top seller, are rewarded to the salesperson who finds the most new customer's account, and rewards should be created to motivate salespeople.

7. Outsider hiring should be done once per year. The company should provide an appropriate 6-month training program and tests to choose the best trainees for sale positions.

8. A customer accounts' profile for each salesperson should be created. The department has to control these profiles in order to avoid the duplicating or stealing customer accounts between salespeople and main stores.

6.1. *Fixed Pay (F)*

A good compensation plan provides a certain level of stability so that salespeople have some downside protections for their income. The fixed pay is one of these protections. The fixed pay should be paid at the minimum level that can satisfy their first basic need or physiological needs such as food, shelter, clothes, and healthcare. An amount of $83 per month is a minimum for basic life for a person in Vietnam. This cash amount is only sufficient to pay for food and shelter for one adult and one child.

6.2. *Performance Pay (C)*

A commission provides an immediate reward for successful performance. It reflects the productivity and efficiency in salespeople's performance. The motivation for increasing productivity is based on three factors: (i) the higher the sales, the higher the pay, (ii) the higher the product margin, the higher the pay, and (iii) the higher the level of sales' difficulty, the higher the pay.

Since the commission is based on the percentage of sales, the higher sales a salesperson generates, the higher the pay she will get. At the beginning, I thought about creating various levels for these commissions; that is, the higher level of sales a salesperson generates, the higher will be the commission rate the company pays. However, there are two main reasons why this method will not work. First, this will make the system more complicated. A universal objective for all sales compensation plans ought to be simplicity. Often salespeople do not understand or remember complicated plans and companies have difficulty administering them. Second, it is not efficient to set a level for initial sales in short period. Usually, the whole sale order has a very wide range of values, which would vary from $1000 to $25,000 per order. For example, if sales are greater than $7000 per month, a salesperson would get 2% instead of 1% of the sales. Salesperson A gets one order of $8,000 in the first month and one order of $2,000 in the second month, while salesperson B gets four orders of $1,000 each in the first month and one order of $6,000 in the second month. Both salespeople get $10,000 total in two months, but they received different commission rates due to different sale distributions overtime. Thus, this performance ranking does not reflect the equity needed in evaluating the productivity of each salesperson. It will be better if one saves this method for evaluating cumulative performance in a longer period, such as a term-bonus, which will be introduced in my discussion on bonus.

To meet the challenge presented by factor (iii), which concerns the various degrees of difficulty in selling the main products of Textile World, I propose three different commission rates: one for each type of good. This method will create incentive for the salespeople to sell the types of goods that the company wants to promote. The main products of the company are shirts, pants, coats, and formal suits. Formal suits constitute a new product line of the company, and is less well known to the consumers. This product is also categorized as a luxury item, which commands a higher price. Therefore, finding wholesale orders for formal suits is more difficult than for a normal product. To motivate the salespeople into putting more efforts on this product, I set a

higher commission rates for it. In contrast, discounted or out-of-fashion goods already have a very low gross margin. The company does not make profits from selling these goods. Although these products have lower prices, they are not necessary low-quality products. Therefore, it is easier to sell wholesales' discounted goods than normal goods. Although there is no commission for discounted or out-of–fhashion products, if the salesperson bargains with the customers and manages to obtain a price higher than the discounted price fixed by the company, she pocket the difference.

Now according to (50), the commission rate should be higher for a product with a higher gross margin, but lower for a product with a higher degree of sales uncertainty. For the case of Textile World, selling formal suits is more risky, which means that its commission rate should be lower relative to that of normal goods. On the other hand, formal suits have a higher gross margin, and in my judgment, the positive impact of a higher gross margin dominates the risk. Furthermore, the risk associated with selling formal suits has been lessened by the marketing efforts of the company for this product line. *Therefore, the commission rate for formal suits should be higher than that of the normal products. In contrast, the discounted or out-of-fashion products have lower selling risk, but also a very low gross margin, and in my judgment the latter effect dominates the former effect. Therefore, for discounted or out-of-fashion products, I propose a commission rate that is lower than that of normal products.*

As a practical matter and in practice, commission rates are also determined by the limitation of total cash compensation and the mix pay ratio. In my proposal, I have also used the average commission percentage (3% of all sales) of big corporations in the same industry as a frame of reference. However, to satisfy factor (ii), I split the commission earned into two terms labeled (a) and (b). The first term, namely (a), is equal to 1.5% of the sales' dollar amount. The remaining term, namely (b), is equal to 1.5% of the profits generated by the sales of the product in question. In general, the gross margin of a product is about 50% of the selling price. Therefore, 1.5% of sales will equivalent to 3% of the commission calculated on the basis of the gross margin, which is (b). If the product has a high gross margin, meaning that cost of goods sold takes less than 50%, salespeople will earn more than 1.5% of sales. However, if the product has a low gross margin, salespeople will earn less than 1.5% of sales. This strategy will motivate the salespeople

to sell products with high gross margins, which creates more profits for the company. It is also a good method to measure accurately the employees' efficiency and productivity.

6.3. *Bonuses (B)*

Bonuses represent an excellent means of using performance pay to reward positive actions and superior results. The bonuses are usually deferred to the end of the accounting period since it is paid on cumulative results. Often a bonus provides an extra, deferred reward for some form of outstanding performance over and above the forecast or goal. Also, the more the performance exceeds the goal, the higher will be the bonus. For example, a salesperson only gets a bonus when he/she keeps exceeding sale quota for a certain of period. In the Textile World combination plan, in order to bring the reward close to the actions/results, I use a 6-month period as the time frame for the bonuses. Although a 6-month period is not a long accounting period, it includes both seasonal months and quiet months. In the clothing market, January, May, and June in the first term and August, November, and December in the second term are seasonal months. In these months, there are special holidays and events, such as the Chinese New Year, changing seasons, new school year's preparation, Christmas, New Year's Eve... which affect positively wholesale orders. Salespeople will take advantage of these occasions to obtain as many orders as possible to compensate for the low-sales months. Thus, a 6-month term is long enough to evaluate appropriately the ability of each salesperson.

In the term-bonus policy (1), I use the dollar sales for 6 months, as the standard quotas for earning bonuses. As, I mentioned in the commission part, it is more efficient if different levels of quotas are set to evaluate cumulative performances. The higher the quota a salesperson can reach, the more money she earns. The most difficult problem in this term-bonus incentive scheme is how to set the appropriate quota levels that can bring out the potential in each salesperson to maximize the profit for the company. If the quotas are too low, the company will incur costs without obtaining any benefits. In contrast, if the quotas are too high, then the salespeople cannot reach them, regardless of how much effort they put in, and this will lower morale among the salespeople.

To obtain the appropriate levels of sale, I use as references the records of the wholesale orders from both salespeople and the main stores for a two-year period. As indicated in my discussion of the problem of "entrusting orders to main store" above, the past records for salespeople alone may not reflect their real abilities. Therefore, the records of wholesaling from the main stores will help me capture the general picture. Exhibit 3A provides the salespeople's wholesales records in years 2003 and 2004, while Exhibit 3B provides wholesale orders in 9 main stores, which are primarily located in the North of Vietnam. Each store has from 2 to 4 cashiers, depending on how large the store is. Although a main store has the location advantage, the customers have to come to the store to place an order, and this has a negative impact on the sales of the store. In contrast, salespeople can approach new customers and contact them in advance to obtain new orders. Therefore, it is possible for a salesperson to reach the level of wholesale orders of the store or close to it. Besides these reasons, my decision is also based directly on the requests of salespeople themselves. When salespeople feel badly about the current compensation plan, they themselves propose their own compensation plans. Due to the limitation of time, I do not introduce in detail theses plans in this paper. However, in building up my quota system, I use the plans proposed by the salespeople to balance the benefits of the company against the demand of the salespeople. In the first alternative plan proposed by the salespeople, they expect to earn a basic pay without any commission at the dollar sales level of $2,625 per month ($15,750 / 6-month, $31,500 / year), which indicates that it should not be a difficult level for them to reach. If it is difficult, they will not be able to reach a higher level of sales to obtain commissions, and one can be sure that salespeople will not propose a compensation plan that is not optimal from their perspective. This is the problem of asymmetric information in microeconomics. But my next question is: "could it be too easy a level for them?" To answer this question, I have to base my reference on the wholesale records for the main stores, in which the average dollar sales for most of stores are less than $2,625 (5 out of 9 stores). Thus, a dollar sales of $15,750 per 6-month should not be a too easy level, but not difficult enough to obtain a bonus. Therefore I set the first level for the bonus a little bit higher than $15,750 namely $17,500. The top bonus should be set at the highest level possible that salespeople can reach by their ability, not by luck. There is one store in the record that reached the annual level of $135,000 per year ($67,500 / 6 months) in year 2004. That result may reflect unusual circumstances since the wholesale orders dropped by a half in year 2005 for no apparent reasons. In my judgment, $45,000 should be a good top level

EXHIBIT 3A: Wholesale records for salespeople's team

Year 2003				Year 2004			
Employee ID	Customer ID	$Sales ($CAN)	Avg. Sales per month	Employee ID	Customer ID	$Sales ($CAN)	Avg. Sales per month
1001	A1	$2,870		1001	A1	$2,754	
	----	$23,275			----	$4,125	
	----	$1,056			----	$1,106	
	----	$1,072					
	----	$2,896					
	Total	$31,169	$2,597		Total	$7,985	$665
1002	----	$462		1002	----	$3,898	
	----	$1,833			----	$18,307	
	----	$4,540			----	$2,292	
	----	$2,933			----	$1,192	
	----	$1,192					
	----	$8,333					
	----	$1,155					
	Total	$20,448	$1,704		Total	$25,689	$2,141
1003	A2	$11,188		1003	A2	$6,187	
					----	$27,875	
	Total	$11,188	$932		Total	$34,062	$2,839
				1004	----	$7,875	
					----	$7,083	
					----	$13,387	
					Total	$28,345	$2,362
				1005	----	$9,167	
					----	$1,467	
					----	$6,417	
					Total	$17,051	$1,421

Salesperson Avg. Sales:	Per year	Per month
Yr 2003	$20,935	$1,745
Yr 2004	$22,626	$1,886

Note: Customer Id is left blank when it represents different customers. There are two cases above, in which same customers come back in the next year.

EXHIBIT 3B: Sales and wholesales records for Main Stores

Store	Mths	REV05	REV04	WSale05	WSale04	Store	Mths	REV05	REV04	WSale05	WSale04	Store	Mths	REV05	REV04	WSale05	WSale04
S1	Jan	28,667.54	31,807.66	13,248.50	7,342.50	S4	Jan	24,555.29	20,969.33	4,655.42	3,446.67	S7	Jan	8,428.25	6,753.25	1,125.00	1,650.00
	Feb	17,015.63	19,117.07	1,295.83	3,833.33		Feb	30,143.72	17,503.54	8,192.67	5,969.33		Feb	2,646.33	2,639.08	0.00	0.00
	Mar	16,772.94	21,202.94	4,154.17	10,415.83		Mar	17,566.83	23,431.37	6,942.32	6,475.00		Mar	4,282.08	3,428.33	520.83	366.67
	Apr	22,143.23	18,359.98	8,548.33	586.67		Apr	22,252.87	15,425.00	5,926.92	2,137.83		Apr	5,922.75	4,666.67	1,250.00	0.00
	May	20,285.06	16,201.64	0.00	0.00		May	18,052.73	17,571.62	6,346.67	6,094.50		May	5,923.92	4,289.50	1,250.00	0.00
	Jun	17,993.20	16,018.00	4,989.75	1,391.67		Jun	17,646.08	19,744.54	4,346.67	6,416.00		Jun	3,440.42	4,285.67	0.00	0.00
	Jul	17,734.02	14,822.30	6,702.83	2,419.17		Jul	14,654.62	18,199.50	5,361.67	4,767.92		Jul	2,639.68	3,530.67	0.00	0.00
	Aug	17,703.43	14,684.48	7,087.50	2,544.17		Aug	17,502.83	18,199.50	4,645.83	12,020.83		Aug	2,616.00	3,608.00	0.00	618.75
	Sep		14,055.92		2,379.17		Sep		19,088.92		9,594.58		Sep		4,476.92		572.92
	Oct		18,805.37		7,935.00		Oct		19,088.92		5,748.75		Oct		4,311.00		1,497.92
	Nov		22,368.33		4,860.83		Nov		23,780.86		6,453.75		Nov		5,972.75		1,420.83
	Dec		19,382.96		3,495.83		Dec		25,195.18		2,166.67		Dec		6,768.67		0.00
	Total	**158,315.03**	**226,826.64**	**46,026.92**	**47,204.17**		**Total**	**162,374.98**	**238,198.28**	**46,418.16**			**Total**	**35,899.43**	**54,730.50**	**4,145.83**	**6,127.08**
	Avg/mth	**15,359.70**	**15,338.41**	**4,029.57**	**2,946.25**		**Avg/mth**	**16,277.19**	**14,330.68**	**4,551.33**	**3,817.42**		**Avg/mth**	**3,830.47**	**3,257.81**	**518.23**	**252.08**
	Term 1	**122,877.59**	**122,707.28**	**32,236.58**	**23,570.00**		**Term 1**	**130,217.53**	**114,645.40**	**36,410.66**	**30,539.33**		**Term 1**	**30,643.75**	**26,062.50**	**4,145.83**	**2,016.67**
	Term 2		**104,119.36**		**23,634.17**		**Term 2**		**123,552.88**				**Term 2**		**28,668.00**		**4,110.42**
S2	Jan	18,750.00	15,448.42	4,565.83	4,997.92	S5	Jan	12,747.83	15,799.75	3,054.17	2,823.33	S8	Jan	28,329.38	29,302.67	2,715.83	10,437.50
	Feb	11,655.42	12,500.17	0.00	1,462.50		Feb	8,478.92	8,334.42	0.00	3,595.83		Feb	27,975.00	43,016.08	4,616.25	25,086.50
	Mar	12,500.00	17,806.06	1,237.50	2,979.17		Mar	8,661.00	10,966.23	4,961.67	799.33		Mar	29,127.17	32,321.03	7,540.58	3,290.33
	Apr	15,853.50	16,957.44	2,150.00	4,626.17		Apr	11,707.92	10,983.94	6,383.33	4,415.00		Apr	32,279.16	37,203.55	9,477.08	9,430.83
	May	16,260.50	16,250.33	3,183.33	3,276.67		May	8,817.75	8,687.94	2,700.00	5,117.67		May	31,397.67	30,967.13	3,044.17	8,872.08
	Jun	15,250.00	16,133.33	3,675.00	2,535.42		Jun	9,110.83	5,088.92	3,000.08	958.33		Jun	20,215.83	29,166.67	4,150.00	6,366.83
	Jul	15,833.33	15,833.33	5,756.67	5,818.33		Jul	8,501.83	5,879.75	3,457.67	1,100.00		Jul	23,746.92	34,354.17	7,094.83	14,489.42
	Aug	11,256.33	15,250.00	1,245.83	2,166.67		Aug	6,086.67	8,450.17	0.00	4,260.00		Aug	31,311.33	29,750.42	14,926.33	5,861.25
	Sep		10,833.33		1,562.50		Sep		14,864.92		3,627.25		Sep		30,811.71		5,479.17
	Oct		15,250.00		3,628.50		Oct		13,646.67		3,979.17		Oct		34,446.67		10,427.08
	Nov		16,683.33		4,435.42		Nov		15,483.75		3,136.25		Nov		49,193.83		18,017.08
	Dec		16,922.52		4,762.08		Dec		15,950.33		6,210.67		Dec		47,332.84		19,670.42
	Total	**117,359.08**	**185,868.27**	**21,814.17**	**42,251.33**		**Total**	**74,112.75**	**134,136.77**	**23,556.92**	**40,022.83**		**Total**	**224,382.45**	**427,866.76**	**53,565.08**	**137,428.50**
	Avg/mth	**11,283.68**	**11,886.97**	**1,851.46**	**2,484.73**		**Avg/mth**	**7,440.53**	**7,482.65**	**2,512.41**	**2,213.69**		**Avg/mth**	**21,165.53**	**25,247.14**	**3,942.99**	**7,935.51**
	Term 1	**90,269.42**	**95,095.75**	**14,811.67**	**19,877.83**		**Term 1**	**59,524.25**	**59,861.19**	**20,099.25**	**17,709.50**		**Term 1**	**169,324.20**	**201,977.12**	**31,543.92**	**63,484.08**
	Term 2		**90,772.52**		**22,373.50**		**Term 2**		**74,275.58**		**22,313.33**		**Term 2**		**225,889.63**		**73,944.42**

S3	Jan	8,340.50	8,927.92	4,468.33	4,161.25	S6	Jan	12,083.33	16,211.67	4,995.83	0.00	S9	Jan	14,933.92	15,518.08	1,251.25	1,670.83
	Feb	4,208.50	6,105.32	0.00	3,303.33		Feb	11,259.50	4,997.75	4,662.50	562.50		Feb	10,009.00	10,952.58	0.00	0.00
	Mar	4,675.08	9,902.31	1,041.67	2,800.00		Mar	5,834.33	5,000.00	1,500.00	825.00		Mar	10,144.00	9,437.17	0.00	1,833.33
	Apr	7,335.68	7,848.43	2,856.67	3,841.92		Apr	8,750.08	7,503.42	1,395.83	1,685.42		Apr	10,836.75	11,241.50	0.00	0.00
	May	7,379.67	7,336.44	2,956.33	5,304.17		May	8,750.45	7,500.33	2,750.67	1,933.33		May	12,479.33	10,844.92	3,898.75	0.00
	Jun	7,333.48	7,919.75	2,395.83	2,810.42		Jun	8,761.08	5,088.92	4,694.58	4,300.00		Jun	9,170.75	10,066.00	0.00	0.00
	Jul	8,485.27	4,840.42	3,520.83	1,900.00		Jul	3,333.33	8,756.17	0.00	4,412.50		Jul	10,420.00	9,170.42	2,133.33	0.00
	Aug	19,407.73	4,790.33	4,373.33	683.33		Aug	5,032.50	6,667.92	0.00	729.17		Aug	8,624.07	9,166.67	2,133.33	0.00
	Sep		5,010.42		1,300.00		Sep		5,003.42		0.00		Sep		5,729.92		0.00
	Oct		5,215.00		1,614.58		Oct		5,835.67		652.50		Oct		10,931.83		0.00
	Nov		7,540.08		3,550.00		Nov		8,750.00		2,458.33		Nov		12,097.25		0.00
	Dec		8,382.21		3,754.17		Dec		10,010.67		4,992.92		Dec		12,140.42		0.00
	Total	**67,165.90**	**83,818.62**	**21,613.00**	**35,023.17**		**Total**	**63,804.62**	**91,325.92**	**19,999.42**	**22,551.67**		**Total**	**86,617.82**	**127,296.75**	**9,416.67**	**3,504.17**
	Avg/mth	**4,909.11**	**6,005.02**	**1,714.85**	**2,777.64**		**Avg/mth**	**6,929.85**	**5,787.76**	**2,499.93**	**1,163.28**		**Avg/mth**	**8,446.72**	**8,507.53**	**643.75**	**438.02**
	Term 1	**39,272.90**	**48,040.16**	**13,718.83**	**22,221.08**		**Term 1**	**55,438.78**	**46,302.08**	**19,999.42**	**9,306.25**		**Term 1**	**67,573.75**	**68,060.25**	**5,150.00**	**3,504.17**
	Term 2		**35,778.46**		**12,802.08**		**Term 2**		**45,023.83**		**13,245.42**		**Term 2**		**59,236.50**		**0.00**

since 8 out of 9 stores could not reach it. However, these quotas should be reevaluated after applying the plan to see whether they are appropriate.

The new account bonus (2) and loyalty bonus (3) are developed to motivate the salespeople to find more new customers while still providing good services to the old customers. The loyalty bonus helps the company to maintain a long-term relationship with the customers. However, in a new account bonus, I put an upper limit for the bonus at $30". Under Textile World's current compensation plan, salespeople are only exploring a very small subset of wholesale customers in a the target market. I believe that there is more chance to bring in many new customer accounts if my proposal is adopted. The term represented by (4) helps to emphasize that the more sales a salesperson generates, the higher the bonus she will earn, regardless of the type of products.

6.4. *Fringe Benefits (F)*

In industrialized nations, fringe benefits for salespeople usually represent a significant expense item for the company. Fringe benefits often vary from 15% to 45% of direct compensation, and include mandatory items such as social insurance, medicare, and unemployment insurance, as well as expected items, such as health, life, and disability insurance, vacations and retirement plans. Fringe benefits might include optional items, such as profit sharing, stock options, education reimbursement, clubs, dental/vision insurance...Because Vietnam is a poor country, fringe benefits are often low. Although $6 per month for fringe benefits is only equivalents to 1% of indirect compensation, it is still high when compared with other private businesses, and it is only available in crown corporations. Thus, I still use the same fringe benefits as the old compensation plan. Later on, when I discuss the internal conflict, which may appear after applying the new plan, I will consider the stock option as an extra fringe benefit.

6.5. *Reimbursed Expense (E)*

In addition to direct compensation, the salesforce is also rewarded through reimbursed expenses. Regardless of products or service, a reimbursement plan should be fair, controllable, fast, simple, easy to understand and administer, and flexible. Salespeople should have an economic incentive for controlling their expenses and for using expense money productively and efficiently. If no

economic incentive exists because expenses are open-ended, salespeople use them as an additional form of compensation. Similarly, management cannot ask its salespeople to pay for expenses when this would lower their total compensation to an unacceptable level. Salespeople should be reimbursed for the expenses they incur promptly. Many smaller companies finance themselves by remaining months behind in paying portions of their salesforce's expenses and performance pay. Many larger companies with weak back-office administrative systems do the same thing. Such behavior increases turnover of salespeople and certainly hurts morale and productivity. Salespeople must fully understand what is included in the expense plan so that they can act accordingly. Thus, the expense plan should be made as simple as possible. A good expense plan also requires a certain amount of flexibility for exceptions in emergency cases, and the exceptions should be evaluated by the sales manager. Salespeople can be asked to pay all of their own expenses out of their basic compensation; the firm and the salesforce can split expenses; or the company can reimburse the salespeople for all their expenses. There are many variations within each of these possibilities. Expense policies, like salespeople compensation plans, require annual review and constant updating to reflect changing conditions.

For my plan, I mix all of the above possibilities. The company will reimburse the salespeople for all their expense (3) if they are not more than the assigned expense amount ($42/month). If it does, salespeople will be asked to pay the difference out of their basic compensation, according to (1). However, if the salespeople do not use their entire assigned expense amount, the remainder will be shared 50/50, according to (2). Under such a plan, the salesperson, who has the most to gain or lose, is the best judge for using the expenses account. Money will not be wasted on unnecessary trips or entertainment. If a salesperson thinks that expenses spent on travel or entertainment will result in orders, they will be willing to incur them. Moreover, cutting expense will reduce a salesperson's expense / revenue ratio, which will affect her performance level. Thus, the expense plan should be linked to the benefits obtained by each salesperson, and this method will induce a salesperson to use the expense account judiciously. Besides, the assigned expense amount also includes some extra expenses for seeking new customers, and such an activity might not bring in immediately new orders. These expenses should be considered as marketing cost and borne by the company. Otherwise, salespeople will not be actively searching for new customers, and will only spend money on travel when they have a 100% chance of getting new orders. In general, this plan will not only motivate salespeople to use the expense

account wisely, but also frees them from worrying about expenses in exploring more about the target market. There is only one difficulty in my expense plan for Textile-world, and the difficulty involves expense receipts. In order to get the expenses paid by the financial department, salespeople have to bring appropriate expense receipts. However, most of transactions in Vietnam do not have the receipts. Thus, I have to approximate the expense for gasoline, using the market price of gas and the expected distance traveled by a salesperson in a month. Other significant expenses should have written receipts, with signatures from the suppliers.

6.6. *Additional Terms*

The additional terms are provided to make the new compensation plan more attractive. The first term, namely (1), indicates that the combination plan is not appropriate for new trainees – due to their lack of experience – and new markets – due to lack of customers. The impact of this item is that it will reduce the commission significantly and will make it less efficient for motivating the salespeople. Therefore, a fixed salary plan should be provided in these cases. The second term, namely (2), will help to eliminate cheating, confusion, and duplication of rewards. Since both main stores and salespeople may take wholesale orders from the customers, the manager needs to be able to identify which wholesale orders belong to whom to prevent mistakes or cheating in rewards.

The third term provides the evaluation standards for salespeople. It will raise the competitive spirit in each salesperson and make them try harder. Currently, salespeople do not work as a team. They are assigned to different targeted locations and, therefore, if they are sometimes unable to fulfill the orders, they will not contact other employees for help. In using this option, I try to bind the salespeople with the incentive induced by a team bonus. If the team performs well, then all the team members get the extra bonus. According to option 3(g), the team leader earns an extra compensation of about 2% on the increased sales of the whole team. In reality, the team leader will distribute this extra bonus to his team members; otherwise, the team will not work together, and the team leader has to take responsibility for this situation. Therefore, there is no need to introduce a specific extra bonus scheme for each team member. Instead, I put this decision in the team leader's hands, and this will let us know how well the leader manages his

team. Besides, I want to make clear that a salesperson with the highest sales record is not necessarily a great team leader. He may be good at selling products, but not good enough for management. Therefore, this position will be evaluated annually, basing on the overall team's productivity. The base salary for a team leader will be raised by 200% in his second year of being the leader, since at that time he will have proved his ability in leader position.

The fourth term will enhance fairness among salespeople. It also helps them to adjust to the selling environment and become more creative. The fifth and sixth terms normally involve management, and their intended effects are psychological. Their objectives are to boost employees' morale because the results are shown to the public. Everyone expects to build up her reputation, and thus will try harder to improve performance. The seventh term is intended to bring in new blood to the salesforce. Hiring outsiders will create a good competitive environment inside the company. In Vietnam, there is a common hiring problem for crown corporations that involve hiring employees basing on personal relationships, without any regard for the employee's abilities. This hiring practice leads to a salesforce with low talents. Therefore, I suggest that the company should hire outsiders annually to infuse a new spirit into the company. In the eighth term, customer's profile will help to create a long-term relationship between customer and company. Although a salesperson might have been transferred to a different position, the company can still provide appropriate post-sales services to the customers.

7. DISCUSSION AND SUMMARY

To ensure the success of the plan, we have to reevaluate the plan constantly. "Did the salesforce reach its objectives and why?" are two questions manager should ask when evaluating any plan. The commission rates, bonus rates and reimbursed expense should be evaluated on 6-month basis. The sales should be recorded promptly. If the records give the manager a positive answer for his evaluation questions, then we keep the plan. If objectives were not reached, we should find out the reasons and adjust the plan to make it more appropriated.

To summarize, Textile World provides a very complicated case for designing compensation system since the salesperson has to devote his efforts to several duties: collecting information, supporting services, and selling products. In the previous research, the authors normally only

constructed a simple model for one type of product, with a simple duty of selling the product. Now, in order to design a compensation scheme for selling 3 different types of products and providing support service, we need at least 4 types of incentives in our model and solving for a (4x4) matrix as described in Section 5. For the support service duty, we also have to consider the mix between the main store's efforts and the salesperson's efforts. According to the theoretical analysis, the compensation for of support service should be high enough to provide incentive for the salespeople to undertake these activities. Furthermore, in practice, most of required information is not available and is time consuming to collect. Therefore, although I provide a general model for all of duties, I have restricted my efforts to a practical model of selling different types of products only. The compensation for other duties will be provided in future research papers.

The paper has also ignored the competition between the external salesforce (franchisees and branches) and internal salesforce (main stores and salespeople). In reality, the insiders always complaint about the commission for the outsiders, since it will help outsiders to give more discounts for the customers, especially in wholesaling. As the result, the internal salesforce will lose their customers for outsiders. This internal conflict will be the subject of my future research. In fact, this internal conflict indicates that there are no sharing objectives or interests between groups of salesforces. They just want to work individually and earn income regardless the damage to the company. Currently, Textile World is evolving to a joint-stock company, and therefore we can apply a stock option to the bonus scheme to solve this problem. Specifically, a fixed percentage of the bonus scheme is withheld and used to buy stock in the firm. This stock is purchased in the open market, so that the capitalization of the firm will be unchanged. Then the stock is held in a trust for the salesforce member, who will not be able to withdraw for 3 years. That means the value of each salesforce member's current bonus is tired to the overall market value of the firms 3 years in the future. The value of the firm will depend on how well all groups of the salesforce are working together to make profits for the company. Also, this plan will cover all employees, and different percentages should be applied to those at the managing director level and above. Besides, this plan will contain some uncertainty for the employees, since they no longer receive cash. They cannot invest in something safer but have to be locked into a single stock whose price might move up or down. To offset the increase risk to some extent, I may put some more compensation in the form of a bonus. For example, the firm will buy 15% more stock

for the employees' trust than the bonus pool would have generated. In brief, the success of this plan will not only depend heavily on the setting rates of compensation which is used to buy the stock for different salesforce groups, but also the value of extra bonus, because it will relate to the firm's value in the future, and the outsiders and employees should not own too many stocks from the firms. These matters need to be considered very carefully before applying the plan. This is a very promising plan since it includes rich incentive effects in its body. The explicit aims were to change the culture, to encourage a long run perspective and cooperation, and to align the employees' interest with one another and with those of the stock owners. This problem will be analyzed in my future research. In short, there are many important challenges that remain to be addressed by theoretical and applied salesforce compensation researchers. I believe the present research is a step forward in meeting some of the common operational challenges faced in practice.

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