

The Study on the Hospitals' Outsourcing

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According to Modern Healthcare's 27th annual Outsourcing Survey in USA, the number of outsourcing contracts for respondents continued to grow and the European healthcare IT outsourcing market generated revenues of US\$396.4 million in 2005 and estimates they will reach US\$697.7 million in 2010. This study explored the outsourcing situations for Taiwan's hospitals, and their difference in hospital type and in accreditation level. This paper also reveals hospital satisfaction degree on non-medical and medical items of outsourcing. This research combined the questionnaire survey method, and the in-depth interview. The results showed: In non-medical items: medical reject and common reject both have the same highest percentage (94.6%) of outsourcing. The gift store (75%) and linen (73%) are on the following high. The lower percentage is the utility maintain (13.5%).

In medical items, the highest rate is the ambulance (51.4%). The hemodialysis also has the higher rate of outsourcing (50%). In nutrition, pharmacy, and nurse, the outsourcing rate is lower than 3%. This showed that Taiwan's hospitals still conservative on outsourcing medical items. The results of the satisfaction paired t test between non medical items and medical items showed the non-medical item has higher score than medical items. This research suggests that hospitals outsourcing more items as far as possible since it can bring financial and human resource saving.

Keywords: outsourcing, hospitals, healthcare

Introduction

According to Modern Healthcare's 27th annual Outsourcing Survey in USA, the number of outsourcing contracts for respondents continued to grow. The 20 largest outsourcing companies reported a combined 11,324 Healthcare clients, up 10.6% from 10,242 the previous year. Laundry jumped ahead of housekeeping as the top hospital department-management contract in this year's annual Outsourcing Survey, with a total of 4,443 contracts in 2004. Housekeeping contracts increased 8.7% to 3,270, while food service contracts increased 7.4% to 2,065 (Kirchheimer, 2005). Frost & Sullivan (2006) finds that the European healthcare IT outsourcing market generated revenues of US\$396.4 million in

2005 and estimates they will reach US\$697.7 million in 2010. One of the strategic tools healthcare executives used to meet the cost-saving target is outsourcing. Even though outsourcing has many benefits, outsourcing will fail if not managed successfully. Hospital executives must choose outsourcing providers who hold the necessary leadership capabilities. Managing outsourcing requires an understanding of outsourcing strategy, the benefits and risks of outsourcing, the evaluation process, and the methods to managing outsourcing providers. With appropriate management, strategic outsourcing should provide healthcare executives with a viable strategy for controlling costs and maintaining quality patient care (Robert 2001, Quinn 2000, Jennings 1997)

The most outsourced functions in healthcare are information technology (29 percent), finance (20 percent), and support services (19 percent) (Shinkman 2000). By outsourcing, hospitals can reap the benefits of medical device reprocessing without assuming additional staffing and compliance burdens. Outsourcing enables hospitals to implement a medical device reprocessing program quickly, with no capital investment and minimal effort (Haley, 2004)

Before negotiating any outsourcing transaction, hospital executives should carefully analyze the legal and regulatory implications, which will vary according to the type of services and the vendor involved (Callahan, 2005) In some cases, lower bids may not mean additional savings for the outsourcer because sometimes the apparent cost of delivering a service may not represent actual cost. For example, savings from low-- cost wages may not compensate for the costs incurred from turnover and quality problems that come from an inexperienced, poorly trained, and unstable workforce (Mobley 2000; Allen 2000). Young (2003) stated that Outsourcing resulted in increased staff morale, upgraded capital equipment and improved services. The outsourcing of pathology and dental technical services aimed to increase labor flexibility, thereby decreasing costs. The outsourcing of lawn mowing was simply to reduce costs. Food services were not outsourced because there was a lack of evidence that costs could be reduced.

The Australian Government, in the health sector, the Human Services Department directed that non-clinical and clinical areas be market tested through benchmarking services against the private sector, with the possibility of outsourcing. These services included car parking, computing, laundry, engineering, cleaning, catering, medical imaging (radiology), pathology, pharmacy, allied health and general practice. Managers, when they choose between outsourcing, and internal servicing and production, would thus ideally base their

decision on economic principles (Young, 2003).

The "severe acute respiratory syndrome" (SARS) disease outbreak to Taiwan in March 2003 (Ksiazek, 2003), this outbreak of 21th century disease have a obvious impact to hospitals' outsourcing, Dr. Sue (SARS, 2003), Director of Center of Disease Control, Taiwan, stated that the outsourcing system should be canceled within hospitals since during this SARS strike, the SARS virus were transmitted to all area of hospitals by the improper management's housekeepers and the laundry workers (they need to change the linen for the words).

Purposes

This study explored the outsourcing situations for Taiwan's hospitals, and their difference in hospital type and in accreditation level. This paper also hospital satisfaction degree on non-medical and medical items of outsourcing.

Samples

The research samples are from the hospital data from the year 2000 to 2004, Department of Health, qualify lists of accreditation from Taiwan. According to Taiwan's system, the hospitals were accredited into three levels: there are medical center, regional, and local. Medial center always have more than 800 beds and have affiliations with medical school.

Methods

This research combined two kinds of methods. First one is the questionnaire survey method, and the second one is the in-depth interview to two CEO of sample hospitals. All are medical centers with more than 1000 beds, and one is not-for-profit hospital, and the other one is public hospital.

The questionnaires were mailed to all 17 medical centers and 71 regional hospitals while the 77 local hospitals were chosen by system sampling methods from 382 local hospitals. The total sample size is 165, and finally 37 returned questionnaires are completely and effectively. The return rate is 22.4%. The data collect period was from the year 2004 to year 2005.

The returned questionnaires were analyzed with the STATISTICA 7.1 version. The person chi-square, ML chi-square, and paired t test were used to get the statistic results.

Instruments

The questionnaire design was combine the research of Kirchheimer (2005), Shinkman (2000), and Martanegara (2003). The questionnaire used in this study is semi-structured questionnaire, and composed of four parts. The first part consists of the questions regarding the title and reasons to conducting this research. The second part is the hospital accreditation level, such as medical center, regional, or local; hospital total beds; and hospital type, such as public, private, not-for-profit. The third part is the definition of outsourcing, and asks whether hospital did outsourcing on 9 items of non-clinical items and 10 items of clinical items. The fourth part is the satisfaction scores, use Likert 5 scales to evaluate the outsourcing on non-medical and medical items.

Results

The results of the second part of questionnaires showed in Table 1. For hospital type, the private

hospital size is smaller and without medical center, while the not-for-profit hospital size is much bigger, and none of them is local hospital.

Table 1. Sample hospitals in Hospital Level and Hospital Type

| Level | Hospital Type | | | Row Totals |
|-------------------|---------------|----------------------|--------------|------------|
| | Type: Private | Type: Not-for-Profit | Type: Public | |
| Local Hospital | 7 | 0 | 3 | 10 |
| Regional Hospital | 4 | 11 | 6 | 21 |
| Medical Center | 0 | 5 | 1 | 6 |
| All Groups | 11 | 16 | 10 | 37 |

The results of the third part of questionnaires showed in Table 2. In non-medical items: medical reject and common reject both have the same highest percentage (94.6%) of outsourcing. The gift store (75%) and linen (73%) are on the following high. The lower percentage is the utility maintain (13.5%). The reasons that the medical reject and common reject outsourcing rate so high are that Taiwan's hospitals have limited space, and without spared area to build burning stove to dispose reject. The gift store also not hospital's major, therefore, hospitals always just rent the space or cooperate with the retail chain store. The linen (sometimes call laundry) takes a lot of space and labor workers in wash, iron, sewing, and package all the uniforms and bed sheets. For those hospitals built in recent 10 years, they tend to be not to set up laundry on hospitals to save space as well as the maintain cost.

Table 2. Summary for Hospital Outsourced Behavior

| Non Medical Item | Number | Outsourced number | Outsourced Percentage (%) | Interpretation |
|-----------------------------|--------|-------------------|---------------------------|------------------------------|
| Medical Reject | 37 | 35 | 94.6 | |
| Common Reject | 37 | 35 | 94.6 | |
| Gift Store | 37 | 28 | 75.6 | |
| Linen | 37 | 27 | 73.0 | |
| Restaurant | 37 | 21 | 56.8 | |
| Security Guard | 37 | 20 | 54.1 | |
| Information | 37 | 18 | 48.6 | |
| Medical instrument Maintain | 37 | 14 | 37.8 | |
| Utility Maintain | 37 | 5 | 13.5 | |
| Medical Item | Number | Outsourced number | Outsourced Percentage (%) | Interpretation |
| Ambulance | 37 | 19 | 51.4 | |
| Hemodialysis | 34 | 17 | 50.0 | 3 hospitals are not included |
| Laser | 32 | 8 | 25.0 | 5 hospitals are not included |
| Shake Wave | 31 | 7 | 22.6 | 6 hospitals are not included |
| Laboratory | 37 | 5 | 13.5 | |
| Radiology | 37 | 4 | 10.8 | |
| Health Exam | 37 | 4 | 10.8 | |
| Nutrition | 34 | 1 | 2.9 | 3 hospitals are not included |
| Nurse | 37 | 1 | 2.7 | |
| Pharmacy | 37 | 1 | 2.7 | |

In medical items, the highest rate is the ambulance (51.4%). Hospital CEO expressed that it is due to the higher cost and human resource concern, the night shift ambulance always contract out. The hemodialysis also have the higher rate of outsourcing (50%). The reason is that there are three to four giant hemodialysis companies in Taiwan and they hired physicians, nurses, technicians, and use the quantity discount advantage to purchase the hemodialysis filters and supplies. The other medical items have low percentage of outsourcing. In nutrition, pharmacy, and nurse, the outsourcing rate is lower than 3%. This showed that Taiwan's hospitals still conservative on outsourcing medical items.

The outsourcing results also test whether the hospital type and hospital level is associated with the outsourcing tendency. The Person Chi-square tests and ML Chi-square were performed and listed on Table 3. On the factor of hospital type, the utility maintain and security guard are statistically significantly at alpha equal to 0.05 level, and they both on the not-for profit hospitals have more outsourcing percentage than others (private and public) hospitals. In the hospital level factor, there are two items are significant, there are gift store and ambulance. Between them, ambulance has higher outsourcing percentage in the regional hospitals and gift store is higher in regional hospitals as well as in medical center.

Table 3 Summary for Significant Chi-square test

| By Hospital Level | Pearson Chi-square | ML Chi-square |
|--------------------------------|--------------------|---------------|
| Non Medical – Gift Store | 9.60(p=.008) | 8.98(p=.011) |
| Medical – Ambulance | 8.10(p=.017) | 8.51(p=.014) |
| By Hospital Type | Pearson Chi-square | ML Chi-square |
| Non Medical – Utility Maintain | 7.56(p=.023) | 9.43(p=.009) |
| Non Medical – Security Guard | 8.74(p=.013) | 9.26(p=.010) |

Remark: testing alpha = .05

The results of the satisfaction scores on fourth part listed on Table 4 and a paired t test was conducted between medical items and non-medical items. In non-medical items, the higher scores is HR (3.92) while the SQ and SC got the lowest score (3.03). In medical items, the PR and SQ have higher score (4.16) and IL has the lower scores (3.38). The paired t test between non medical items and medical items show only the HR have no statistic significance; other items such PR, SQ, SC, EA and TS, medical items have statistic higher score than non-medical items. Only in IL, the non-medical item has higher score than medical items. In general, the medical items have higher scores than the non-medical items.

Table 4. Summary for Satisfaction on Medical item, Non-medical items, and Paired t-Test

| Survey Item | M _{non_out} | M _{out} | SD _{non_out} | SD _{out} | N | t-Value | p-Value |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|----|---------|----------|
| Professional | 3.24 | 4.16 | .723 | .602 | 37 | -7.03 | 0.00000* |
| Service Quality | 3.03 | 4.16 | .726 | .553 | 37 | -7.52 | 0.00000* |
| Saving Capital Investment | 3.03 | 4.08 | .687 | .640 | 37 | -8.22 | 0.00000* |
| Increase Income or Lower Cost | 3.59 | 3.38 | .725 | .828 | 37 | 2.09 | 0.04385* |
| Human Resource Saving | 3.92 | 3.86 | .682 | .822 | 37 | 0.47 | 0.64374 |
| Environment Adaptive | 3.62 | 4.00 | .721 | .745 | 37 | -3.87 | 0.00043* |
| Total Satisfaction | 3.49 | 3.84 | .692 | .602 | 37 | -2.84 | 0.00744* |

Remark: Professional: PR, Service Quality: SQ, Saving Capital Investment: SC, Increase Income or Lower Cost: IL, Human Resource Saving: HR, Environment Adaptive: EA, Total Satisfaction: TS.

M=mean, SD=standard deviation, non_out = Non-medical items outsourcing, out = medical items outsourcing, alpha = .05, “*” means statistical significant

- Results of the in-depth interview of the two hospital②. Advantage of outsourcing of two kinds of hospitals
1. Which items can and can not outsourcing: there are quite differences between the public and private hospitals. In not-for-profit hospital, the CEO stated that only the CEO, CFO, and the director of cashier. However, the public hospital’s CEO is more conservative, and stated that unless the government permit, it is better for comply with the law and regulation.
 - i. Saving hospital management span of control: outsourcing contractors can help to management their staff, therefore, hospital managers can save a lot of energy on it.
 - ii. Improving the efficiency and morale: in some departments, such as the physician therapy, the working hours

- extends from two shifts to three shifts, and the worker can get 60% to 100% more salary compare before outsourcing.
- iii. Labor regulation consideration: Taiwan implemented strict labor law since 1998 and require the employer pay more on the retirement beneficiary.
 - iv. Capital consideration: the upgrade of medical instruments runs too quick for hospital to afford. Therefore, outsourcing can help hospitals to replenish new instruments without financial burden.
 - v. Improved services: outsourcing services have flexible in recruit, better training program, and salary, therefore, always can offer better service to customers.
2. Advantage of outsourcing for public hospitals
 - i. Full-time-equivalent (FTE) concern: Due to the government regulations, public hospitals have limited FTE for each hospital, and outsourcing can help hospitals to get more FTE without to hire workers themselves.
 3. Disadvantage of outsourcing for public hospitals
 - i. Due to the regulations, the public hospitals have to use bids to choose the outsourcing companies. Although some items can take quality into consideration, therefore, price always play the key indicator. Also, when the contract is due (normally one to three years), they have to bids again, and it is not easy for the outsourcing companies consistently provide high quality service.
 4. Concerns to outsourcing
 - i. Hospitals could easily contract for restaurant, gift shop, and restaurant; conversely, a hospital that contracts for highly multi-detector CT scan, laboratory should take more concern on it.
 - ii. Hospitals have to set up a system or director to review and monitor the implementation of the outsourcing companies, and if it con not comply the contract, it need to be rectified immediately.
 - iii. Epidemiology concern: During the 2003 outbreak of severe acute respiratory syndrome (SARS), the outsourcing workers, such as the housekeepers, were caused as the major media to spread the virus due to lack of proper trading.
 5. Disadvantage and drawback of the outsourcing
 - i. when hospitals encounter malpractice or law suite from patients, it is not easy to identify the responsibility
 - ii. The outsourcing companies will hold the cutting edge knowledge and technology, if they cease contract suddenly, hospitals will face a tough situations.
 - iii. The contract documents are not easy to fill up, and it must base on the honest, equality, and mutually trust.

Conclusion

Compare with Shinkman (2000) study, this study

shows higher outsourcing percentage in information (48.6% vs. 29%). One of the reasons is that Taiwan's software industry hold power ability and can provide strong support to contract hospitals. The other reason is that due to Taiwan's single payment system of National Health Insurance, software companies can copy almost uniform software system to contract hospitals with the quantity discount advantage under today's open system of mainframe computer.

The results of this research also showed that the outsourcing of common reject and medical reject is in very high percentage (94.6%). On the other hand, the outsourcing of nutrition, nurse, and pharmacy are the fewer low percentage (less than 3%).

According to results from Table 4 and this research results, we suggest hospitals pay more attentions on service quality on outsourcing non medical items. Also, evaluate the items such as the linen, gift store, information, and try to outsourcing this items as far as possible since it can bring financial and human resource saving. In general, hospitals have higher satisfaction scores in the medical items than in non-medical items.

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