

CHAPTER IV IMPLEMENTATION



4.1 Cost and Benefit Analysis

It is reasonable for any business to consider the expected returns before making any investment. Establishment of a computerized system for on-line inventory management cannot be expected from this general rule. In order to justify the utilization of this system, all the costs and benefits associated with the application of this system must be quantified.

This system spent for 10 months to complete, including system design, system testing, and modification. The costs and benefits are analyzed as follows:

4.1.1 Cost of The System

The costs of this system can be defined and divided into fixed costs and variable costs.

4.1.1.1 The fixed cost are the costs of equipment and related hardware.

Table 4.1: *The fixed cost in six months*

| No. | Product Item and Specification | Date of Purchase | Quantity | Price (Baht) |
|---------------------|--|------------------|----------|----------------------|
| 1 | <u>PC computer</u> - Intel Pentium IV 2.66 GHz - Memory:128 MB-DDR RAM - Hard Disk Drive: 40 GB - 17" CRT Screen - Drive: 52x CD-ROM - Modem/LAN: 56K + 10/100 | Feb 02, 2003 | 1 | 29,000.- |
| 2 | Barcode reader | Feb 05, 2003 | 1 | 11,000.- |
| 3 | Printer - Resolution:4800 dpi - Black17ppm/ Color 12ppm | Feb 02, 2003 | 1 | 12,000 |
| Total amount | | | | <u>52,000</u> |

4.1.1.2 The variable cost are internet time fee, hardware maintenance, and operation personnel cost.

- Internet time fee 500 Baht per month
 - Ribbon and cartridge 400 Baht per month
 - Paper 200 Baht per month
 - Hardware maintenance 200 Baht per month
 - Operation personnel cost 150 Baht per month
- Total amount in six months 1,450 Baht x 6 months
= 8,700 Baht

The labour cost was not included because the owner did not hire a new staff to handle this project except me, therefore, the net total amount was **60,700** Baht (the cost in 4.1.1 plus 4.1.2)

4.1.2 Benefits of The System

The associated benefits are divided into tangible and intangible benefits. Under tangible benefits, all those benefits, which can be given a reasonable Baht value, will be considered. All other benefits will be taken as intangible

4.1.2.1 Tangible benefits

4.1.2.1.1 Inventory Cost Analysis

The major tangible benefit is to reduce the total inventory cost. The total inventory cost saving resulting from the increased efficiency and improved accuracy of the ordering policies, can be observed from the comparison of manual and computerized ordering policies.

Table 4.2 : Sales volume of each item during January through June 2002

| Model | Sales Volume (x 1000 Baht) | | | | | | Total |
|---------------|----------------------------|-------|--------|--------|--------|--------|--------|
| | Jan | Feb | Mar | April | May | June | |
| 1. KV-PG14P42 | 6.01 | | 36.06 | | 12.02 | 6.01 | 60.10 |
| 2. KV-PG21P42 | 270.55 | 69.57 | 239.63 | 100.49 | 170.06 | 100.49 | 950.79 |
| 3. KV-HA21P52 | 120.96 | | | 50.40 | 50.40 | | 221.76 |
| 4. KV-HA21P60 | 32.76 | | 54.60 | | | | 87.36 |
| 5. KV-XA21M60 | 23.52 | 23.52 | | 23.52 | 23.52 | | 94.08 |
| 6. KV-XA25M60 | 16.81 | 50.43 | | 33.62 | 33.62 | 100.86 | 235.34 |
| 7. KV-XA25M63 | 18.49 | | | 36.98 | | 55.47 | 110.94 |
| 8. KV-XG25P50 | 15.13 | 75.65 | 90.78 | 134.50 | 174.85 | 161.54 | 652.45 |

| Model | Sales Volume (x 1000 Baht) | | | | | | Total |
|-----------------|----------------------------|-------|-------|--------|-------|--------|--------|
| | Jan | Feb | Mar | April | May | June | |
| 9. KV-XA29M60 | 50.44 | 50.44 | 25.22 | 50.44 | | 25.22 | 201.76 |
| 10. KV-XJ29M50 | | | | | | 201.70 | 201.70 |
| 11. KV-XJ29M60 | | | | 42.04 | | 147.14 | 189.18 |
| 12. KV-EX29M63 | 100.68 | 33.56 | 33.56 | | | | 167.80 |
| 13. KVXG29M50 | 63.06 | 21.02 | | | | | 84.08 |
| 14. KV-XG29M60 | 43.72 | 43.72 | 43.72 | | | | 131.16 |
| 15. KV-DR29M63 | | | | | | 33.56 | 33.56 |
| 16 KV-XA34M60 | | 42.04 | | | | 84.08 | 126.12 |
| 17. KV-XA43M61 | 151.24 | 75.62 | | 151.24 | | | 378.10 |
| 18. SU-XA43 | | | | 2.23 | | | 2.23 |
| 19. HT-AV475 | 64.32 | 21.44 | | | | 21.44 | 107.20 |
| 20. HT-AV675 | | 54.00 | | | | 27.00 | 81.0 |
| 21. MCE-S78K | | | | 15.45 | | | 15.45 |
| 22. MCE-F88K | 12.02 | 12.02 | 24.04 | 24.04 | | | 72.12 |
| 23. MCE-F808K | | | | | 8.58 | 21.45 | 30.03 |
| 24. SLV-GA45AV | | | | | | 8.58 | 8.58 |
| 25. SLV-GF85MK2 | | | 5.88 | | | | 5.88 |
| 26. MSAC-FD2MA | | 2.98 | 2.98 | | | | 5.96 |
| 27. AC-LS1 | | 1.49 | | | 2.98 | | 4.47 |
| 28. DPP-SV55 | | 18.08 | | | | | 18.08 |
| 29. SVM-25LW | | | 0.7 | | | | 0.7 |
| 30. D-E220 | | 8.79 | | | | | 8.79 |
| 31. D-FJ65 | | | | 4.75 | | | 4.75 |
| 32. D-E350 | | | | 2.93 | | 5.86 | 8.79 |
| 33. MZ-N1 | | | | | | 15.1 | 15.1 |
| 34. CFS-B5SMK2 | | 22.56 | | 18.8 | | 15.04 | 56.40 |
| 35. CFS-B15 | 11.76 | | | | 11.76 | 11.76 | 35.28 |
| 36. CFS-B7SMK2 | | 9.84 | | | | 9.84 | 19.68 |
| 37. CFS-1085 | | | | 8.10 | 13.50 | 13.50 | 35.10 |
| 38. CFD-V7 | | 13.55 | | 21.68 | 13.55 | | 48.78 |
| 39. CFD-V177 | | | | | 6.56 | | 6.56 |
| 40. CFD-S47 | | 11.5 | | | | | 11.5 |
| 41. CFD-G70L | | | 6.57 | | | | 6.57 |
| 42. WM-EX526 | | | | | | 4.76 | 4.76 |
| 43. WM-EX615 | 5.54 | | | | | | 5.54 |
| 44. WM-EX621 | | | 8.34 | | | | 8.34 |

| Model | Sales Volume (x 1000 Baht) | | | | | | Total |
|----------------|----------------------------|-------|-------|-------|-------|-------|--------|
| | Jan | Feb | Mar | April | May | June | |
| 45. WM-EX910 | 3.56 | | | | | | 3.56 |
| 46. WM-FS555 | | | | | 2.77 | | 2.77 |
| 47. WM-FX193 | 4.68 | | 3.90 | 3.90 | 7.80 | | 20.28 |
| 48. WM-FX195 | 3.06 | | | 3.06 | 4.08 | 4.08 | 14.28 |
| 49. WM-FX491 | | | 3.96 | | | | 3.96 |
| 50. WM-FX521 | | 2.78 | | | | | 2.78 |
| 51. WM-FX675 | | | | | | 7.92 | 7.92 |
| 52. WM-GX100 | 3.16 | 4.74 | | | | 9.48 | 17.38 |
| 53. DCR-TRV140 | | | 20.18 | | 20.18 | | 40.36 |
| 54. DCR-TRV340 | | | 25.23 | 50.46 | 25.23 | 50.46 | 151.38 |
| 55. DCR-TRV740 | | | | 28.59 | | | 28.59 |
| 56. CCD-TRV107 | | | 15.13 | 30.26 | | | 45.39 |
| 57. CCD-TRV408 | | | | 16.81 | 16.81 | | 33.62 |
| 58. DSC-P2 | | | | | | 75.64 | 75.64 |
| 59. DSC-P5 | 27.13 | 51.8 | | 74.01 | | | 152.94 |
| 60. DSC-P9 | | | | 27.14 | | | 27.14 |
| 61. DSC-P30 | | 10.68 | | | | | 10.68 |
| 62. DSC-P51 | | | | | | 12.33 | 12.33 |
| 63. DSC-P31 | | | | 9.86 | | | 9.86 |
| 64. DSC-P50 | | 30.41 | | | | | 30.41 |
| 65. DSC-P71 | | | | 16.44 | | 16.44 | 32.88 |
| 66. MVC-FD92 | | | | 49.34 | | | 49.34 |
| 67. 2E-120DXF | | | | 0.97 | | | 0.97 |
| 68. F-V120 | 1.40 | | 1.40 | | | | 2.80 |
| 69. F-V220 | 1.18 | 1.18 | | | | | 2.36 |
| 70. F-V320 | | | 1.78 | | | | 1.78 |
| 71. F-V620 | | | 3.26 | | | | 3.26 |
| 72. LCS-CG3 | 0.74 | | | | | | 0.74 |
| 73. VF-R37K | 0.72 | | | | | | 0.72 |
| 74. VCT-R610UC | 1.0 | | | | | | 1.0 |
| 75. ACC-CSP2 | | | | | 2.68 | | 2.68 |
| 76. NP-FC10 | | 2.24 | | | | | 2.24 |
| 77. NP-FS11 | | 2.23 | | | 4.46 | | 6.69 |
| 78. WM-GX680 | 9.50 | | | | | | 9.50 |
| 79. WM-GX688 | 5.15 | | | | | | 5.15 |
| 80. M-440 | 2.68 | 4.02 | | | | | 6.70 |

| Model | Sales Volume (x 1000 Baht) | | | | | | Total |
|-----------------|----------------------------|-------|-------|-------|-------|-------|--------|
| | Jan | Feb | Mar | April | May | June | |
| 81. M-455 | | | | | 8.04 | | 8.04 |
| 82. MAS-8A | | 0.74 | | | | | 0.74 |
| 83. MAS-16A | | 0.96 | | | | | 0.96 |
| 84. MAS-32A | | 2.98 | 1.49 | | | | 4.47 |
| 85. MAS-64A | | 7.82 | 1.86 | 1.86 | 1.86 | 5.58 | 18.98 |
| 86. MAS-128A | 5.23 | 3.36 | 3.36 | | 3.36 | 6.72 | 22.03 |
| 87. MDR-E818 | 1.08 | | | | | | 1.08 |
| 88. MDR-E828 | 1.85 | | | | | | 1.85 |
| 89. MDR-E829 | 2.20 | | | | | | 2.20 |
| 90. MHC-VX222 | 50.46 | 50.46 | 84.10 | 8.41 | | 8.41 | 100.92 |
| 91. MHC-VX333 | 54.65 | 32.79 | 21.86 | 32.79 | 21.86 | 54.65 | 218.60 |
| 92. MHC-VX555 | 26.90 | 26.90 | | | | 13.45 | 67.25 |
| 93. MHC-VX777 | 45.39 | | 30.26 | 45.39 | | | 121.04 |
| 94. MHC-VP800 | | | 16.81 | 16.81 | | | 33.62 |
| 95. MHC-DP1000D | 42.04 | | | | 58.02 | | 100.06 |
| 96. MHC-DP900 | | | 33.62 | 16.81 | | | 50.43 |
| 97. MHC-S9D | | 26.91 | | | 26.91 | | 53.82 |
| 98. LBT-VR50 | | | | | 63.88 | 15.97 | 79.85 |
| 99. LBT-LV60 | 52.95 | 35.30 | | | 17.65 | | 105.90 |
| 100. DVP-K360 | 30.24 | | | | | | 30.24 |
| 101. DVP-NS300 | 15.12 | | | | | | 15.12 |
| 102. DVP-NS305 | | | | | 13.44 | 13.44 | 26.88 |
| 103. DVP-NS415 | | | | | | 15.12 | 15.12 |

From the table above, on the basis of ABC analysis, KV-PG21P42 has the highest sales volume so this item should be classified in Class A. This item must be compared between manual and computerized method in the same period of the year 2002 and 2003 respectively.

STOCK CARD
XYZ Part; LTD.

Product Name.....Television 21”Model.....KV-PG21P42.....Brand.....Supplier 1Unit.....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | | | |
|-----------|---------|----------|-----------|-------|--------|-------------|-----------|----------|-----------|-------|--------|-----------|-------|---------|---|
| Date | Invoice | Quantity | Cost/Unit | Total | | Date | Invoice | Quantity | Cost/Unit | Total | | Quantity | Total | | |
| | | | | | | 7 / 2/ 02 | 90/34 | 4 | 8,990 | - | 35,960 | - | 15 | | |
| | | | | | | 11/ 2/ 02 | 91/5 | 2 | 8,990 | - | 17,980 | - | 13 | | |
| 13/ 2/ 02 | 1698230 | 5 | 7,730 | - | 38,650 | - | 13/ 2/ 02 | 91/14 | 1 | 8,990 | - | 8,990 | - | 17 | |
| 25/ 2 /02 | 1703642 | 4 | 7,730 | - | 30,920 | - | 27/ 2/ 02 | 008/355 | 2 | 8,990 | - | 17,980 | - | 19 | |
| | | | | | | 28/ 2/ 02 | 92/28 | 1 | 8,990 | - | 8,990 | - | 18 | 139,140 | - |
| | | | | | | 2/ 3/ 02 | 93/5 | 4 | 8,990 | - | 35,960 | - | 14 | | |
| 7/ 3 / 02 | 1708036 | 10 | 7,730 | - | 77,300 | - | 7/ 3 / 02 | 009/412 | 2 | 8,990 | - | 17,980 | - | 22 | |
| 7/ 3 / 02 | 1708049 | 2 | 7,730 | - | 15,469 | - | 8/ 3 / 02 | 93/34 | 4 | 8,990 | - | 35,960 | - | 20 | |
| | | | | | | 8/ 3 / 02 | 009/415 | 1 | 8,990 | - | 8,990 | - | 19 | | |

STOCK CARD
XYZ Part; LTD.

Product Name.....Television 21”Model.....KV-PG21P42.....Brand.....Supplier 1Unit.....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | | |
|------------|---------|----------|-----------|-------|--------|-------------|-----------|----------|-----------|-------|--------|-----------|-------|----|
| Date | Invoice | Quantity | Cost/Unit | Total | | Date | Invoice | Quantity | Cost/Unit | Total | | Quantity | Total | |
| | | | | | | 11/ 3 /02 | 009/422 | 2 | 8,990 | - | 17,980 | - | 17 | |
| | | | | | | 15/ 3 /02 | 94/22 | 1 | 8,990 | - | 8,990 | - | 16 | |
| | | | | | | 16/ 3 /02 | 94/30 | 2 | 8,990 | - | 17,980 | - | 14 | |
| | | | | | | 17/ 3 /02 | 009/0434 | 1 | 8,990 | - | 8,990 | - | 13 | |
| | | | | | | 17/ 3 /02 | 009/0435 | 1 | 8,990 | - | 8,990 | - | 12 | |
| 18/ 3 / 02 | 1712333 | 3 | 7,730 | - | 23,190 | - | 19/ 3 /02 | 94/43 | 4 | 8,990 | - | 35,960 | - | 17 |
| 18/ 3 / 02 | 1712335 | 6 | 7,730 | - | 46,380 | - | 20/ 3 /02 | 009/0448 | 1 | 8,990 | - | 8,990 | - | 16 |
| | | | | | | | 21/ 3 /02 | 95/2 | 3 | 8,990 | - | 26,970 | - | 13 |
| | | | | | | | 26/ 3 /02 | 95/22 | 1 | 8,990 | - | 8,990 | - | 12 |

STOCK CARD

XYZ Part; LTD.

Product Name.....Television 21”Model.....KV-PG21P42.....Brand.....Supplier 1Unit.....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | | | |
|------------|---------|----------|-----------|-------|--------|-------------|-----------|----------|-----------|-------|---|-----------|---------|----|---------|
| Date | Invoice | Quantity | Cost/Unit | Total | | Date | Invoice | Quantity | Cost/Unit | Total | | Quantity | Total | | |
| 30/ 3/ 02 | 1708036 | 10 | 7,730 | - | 77,300 | - | | | | | | 22 | 170,060 | - | |
| 5 / 4/ 02 | 1720635 | 5 | 7,730 | - | 38,650 | - | 11/ 4 /02 | 97/4 | 4 | 8,990 | - | 35,960 | - | 23 | |
| | | | | | | | 12/ 4 /02 | 011/526 | 1 | 8,990 | - | 8,990 | - | 22 | |
| | | | | | | | 20/ 4 /02 | 97/48 | 3 | 8,990 | - | 26,970 | - | 19 | |
| 22/ 4 /02 | 1726915 | 3 | 7,730 | - | 23,190 | - | 27/ 4 /02 | 98/27 | 4 | 8,990 | - | 35,960 | - | 18 | |
| | | | | | | | 30/ 4 /02 | 98/41 | 3 | 8,990 | - | 26,970 | - | 15 | |
| 30/ 4 /02 | 1730671 | 5 | 7,730 | - | 38,650 | - | 30/ 4 /02 | 012/0562 | 1 | 8,990 | - | 8,990 | - | 19 | 146,870 |
| 5 / 5 / 02 | 1734267 | 3 | 7,730 | - | 23,190 | - | 10/ 5 /02 | 99/45 | 6 | 8,990 | - | 54,940 | - | 16 | |
| 13/ 5/ 02 | 1735722 | 11 | 7,730 | - | 85,030 | - | 20/ 5 /02 | 100/43 | 4 | 8,990 | - | 35,960 | - | 23 | |

STOCK CARD

XYZ Part; LTD.

Product Name.....Television 21”Model.....KV-PG21P42.....Brand.....Supplier 1Unit.....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | | | | |
|-----------|---------|----------|-----------|-------|--------|-------------|-----------|----------|-----------|-------|---|-----------|-------|----|---------|---|
| Date | Invoice | Quantity | Cost/Unit | Total | | Date | Invoice | Quantity | Cost/Unit | Total | | Quantity | Total | | | |
| 20/ 5/ 02 | 1738670 | 8 | 7,730 | - | 61,840 | - | 23/ 5 /02 | 101/7 | 5 | 8,990 | - | 44,950 | - | 26 | | |
| | | | | | | | 27/ 5 /02 | 014/685 | 2 | 8,990 | - | 17,980 | - | 24 | | |
| | | | | | | | 29/ 5 /02 | 101/36 | 4 | 8,990 | - | 35,960 | - | 20 | 154,690 | - |
| | | | | | | | 2/ 6 /02 | 102/6 | 4 | 8,990 | - | 35,960 | - | 16 | | |
| 5/ 6 /02 | 1746883 | 5 | 7,730 | - | 38,650 | - | 7/ 6 /02 | 016/777 | 1 | 8,990 | - | 8,990 | - | 20 | | |
| | | | | | | | 8/ 6 /02 | 102/38 | 4 | 8,990 | - | 35,960 | - | 16 | | |
| 10/ 6 /02 | 1749419 | 3 | 7,730 | - | 23,190 | - | 10/ 6 /02 | 016/786 | 1 | 8,990 | - | 8,990 | - | 18 | | |
| 18/ 6 /02 | 1753497 | 5 | 7,730 | - | 38,650 | - | 19/ 6 /02 | 103/38 | 2 | 8,990 | - | 17,980 | - | 21 | | |
| | | | | | | | 24/ 6 /02 | 017/822 | 2 | 8,990 | - | 17,980 | - | 19 | 146,870 | - |

STOCK CARD
XYZ Part; LTD.

Product Name.....Television 21”Model.....KV-PG21P42.....Brand.....Supplier 1Unit.....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | | | |
|-----------|---------|----------|-----------|-------|--------|-------------|-----------|----------|-----------|-------|--------|-----------|-------|----------------|---|
| Date | Invoice | Quantity | Cost/Unit | Total | | Date | Invoice | Quantity | Cost/Unit | Total | | Quantity | Total | | |
| | | | | | | 3/ 7 /02 | 105/13 | 3 | 8,990 | - | 26,970 | - | 16 | | |
| | | | | | | 4/ 7 /02 | 019/907 | 1 | 8,990 | - | 8,990 | - | 15 | | |
| 5/ 7/ 02 | 1761906 | 11 | 7,730 | - | 85,030 | - | 7/ 7 /02 | 105/33 | 4 | 8,990 | - | 35,960 | - | 22 | |
| | | | | | | | 10/ 7 /02 | 019/924 | 1 | 8,990 | - | 8,990 | - | 21 | |
| | | | | | | | 10/ 7 /02 | 019/925 | 1 | 8,990 | - | 8,990 | - | 20 | |
| 16/ 7/ 02 | 1766558 | 4 | 7,730 | - | 30,920 | - | 16/ 7/ 02 | 106/25 | 3 | 8,990 | - | 26,970 | - | 17 | |
| | | | | | | | 22/ 7/ 02 | 106/50 | 2 | 8,990 | - | 17,980 | - | 15 | |
| 23/ 7/ 02 | 1769607 | 5 | 7,730 | - | 38,650 | - | 29/ 7/ 02 | 107/26 | 4 | 8,990 | - | 35,960 | - | 18 | |
| 29/ 7/ 02 | 1772102 | 2 | 7,730 | - | 15,469 | - | | | | | | | 20 | <u>154,690</u> | - |

According to Stock Card page 1 to 5, the average remaining stock of KV-PG21P42 is $(139,140+170,060+146,870+154,690+146,870+154,690) / 6 = 152,053$ Baht. The next step is to calculate the remaining stock of the same item by controlling on computerized system in year 2003 from February to July. Because the value of remaining stock was too high so the target of remaining stock should be 50% or 10 units in each month.

Product Name...Television 21" ..Model.....KV-PG21P42.....Brand.....Supplier 1Unit....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | |
|-----------|----------|-----------|---|--------|---|-------------|----------|-----------|---|--------|---|-----------|----------|
| Date | Quantity | Cost/Unit | | Total | | Date | Quantity | Cost/Unit | | Total | | Quantity | Total |
| 12/02/03 | 5 | 6,440 | - | 32,200 | - | 12/02/03 | 3 | 7,490 | - | 22,470 | - | 2 | |
| 14/02/03 | 5 | 6,440 | - | 32,200 | - | 17/02/03 | 1 | 7,490 | - | 7,490 | - | 6 | |
| | | | | | | 21/02/03 | 2 | 7,490 | - | 14,980 | - | 4 | 25,760 - |
| 4/03/03 | 10 | 6,440 | - | 64,400 | - | 4/03/03 | 2 | 7,490 | - | 14,980 | - | 12 | |
| | | | | | | 6/03/03 | 1 | 7,490 | - | 7,490 | - | 11 | |
| | | | | | | 12/03/03 | 1 | 7,490 | - | 7,490 | - | 10 | |
| | | | | | | 15/03/03 | 1 | 7,490 | - | 7,490 | - | 9 | |
| | | | | | | 17/03/03 | 1 | 7,490 | - | 7,490 | - | 8 | |
| | | | | | | 21/03/03 | 2 | 7,490 | - | 14,980 | - | 6 | |
| | | | | | | 31/03/03 | 3 | 7,490 | - | 22,470 | - | 3 | 19,320 - |
| 4/04/03 | 3 | 6,440 | | 19,320 | - | 7/04/03 | 1 | 7,490 | - | 7,490 | - | 5 | |

Product Name...Television 21" ..Model.....KV-PG21P42.....Brand.....Supplier 1Unit....Set.....

| Receiving | | | | | | Selling Out | | | | | | Remaining | | |
|-----------|----------|-----------|---|--------|---|-------------|----------|-----------|---|--------|---|-----------|--------|---|
| Date | Quantity | Cost/Unit | | Total | | Date | Quantity | Cost/Unit | | Total | | Quantity | Total | |
| 11/04/03 | 5 | 6,440 | - | 32,200 | - | 11/04/03 | 2 | 7,490 | - | 14,980 | - | 8 | | |
| | | | | | | 20/04/03 | 3 | 7,490 | - | 22,470 | - | 5 | 32,200 | - |
| 16/05/03 | 5 | 6,440 | - | 32,200 | - | | | | | | | 10 | | |
| 5/06/03 | 5 | 6,440 | - | 32,200 | - | 5/06/03 | 10 | 7,490 | - | 74,900 | - | 5 | 32,200 | - |
| 25/06/03 | 2 | 6,440 | - | 12,880 | - | | | | | | | 7 | 45,080 | - |
| 4/07/03 | 10 | 6,010 | - | 60,100 | - | 21/07/03 | 5 | 6,990 | - | 34,950 | - | 12 | | |
| | | | | | | 29/07/03 | 2 | 6,990 | - | 13,980 | - | 10 | 60,100 | - |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

In the computerized system, the movement of each product can be checked by INQUIRY icon. The remaining stock of KV-PG21P42 is shown in the figure 4.1.

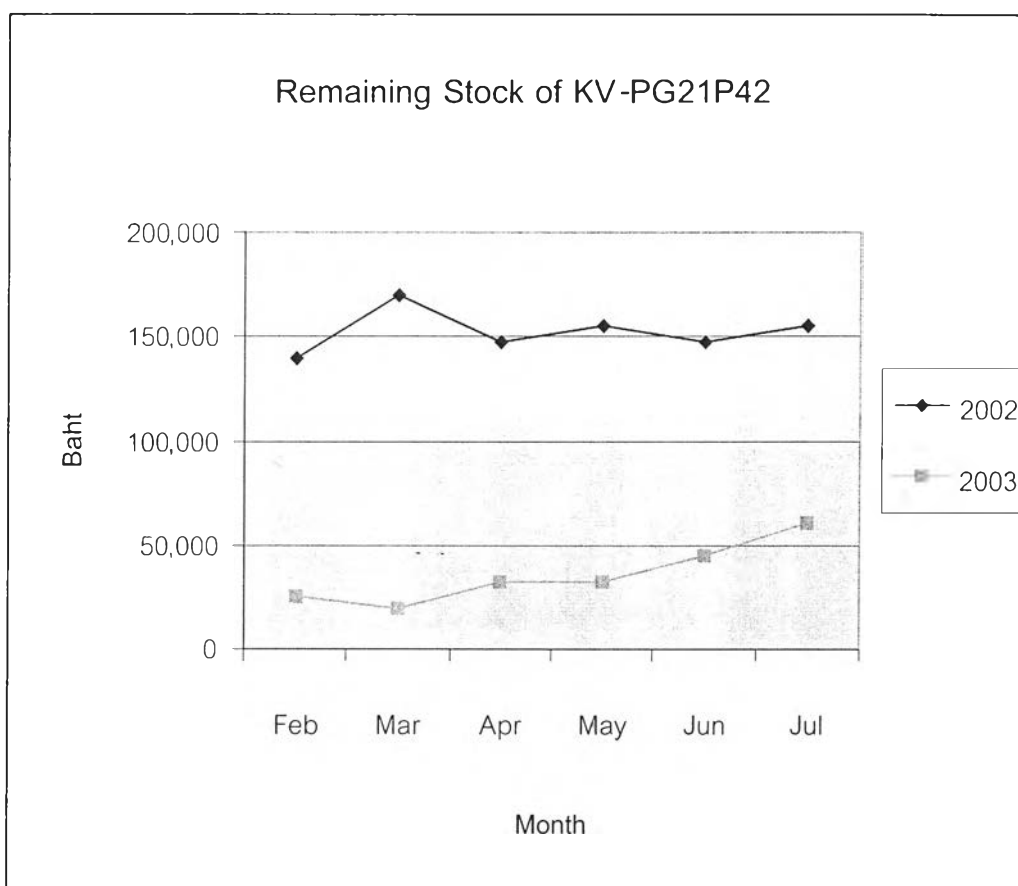


Figure 4.1: The comparison of remaining stock of KV-PG21P42 between 2002 and 2003

Not only item KV-PG21P42 is classified in the Class A, but also KV-HA21P52, KV-XG25P50, and DSC-P8 should be categorized in this Class. Especially for DSC-P8, it is not easy to control this item manually because this item has four colours and the trend of adjusting the price will be decreased.

Firstly, forecasting the customers' demand of colours is difficult to serve them accurately and the second point is that digital still camera product has high turnover ratio. It means the life cycle of each model is short so the price will be decreased after product launching 2 or 3 months later. Supplier 1 absorbs this cost, therefore, if all dealers have these products as less as possible but it is not shortage, Supplier 1 can obtain more benefits. The movements of KV-HA21P52, KV-XG25P50, and DSC-P8 are shown in appendix A.

To consider the inventory cost of KV-PG21P42, the average of remaining stock from February to July 2003 is $(25,760+19,320+32,200+32,200+45,080+60,100) / 6$

= **35,777** baht or approximately 5 sets per months. It is decreased more **425** percent comparing with the data in the same period of previous year. In the beginning, the target of remaining stock was set at 10 sets in each month but the stock level can be controlled at the reorder point being 5. However, for this item, the reorder point cannot be lower than 5 because it risks meeting the shortage.

4.1.2.1.2 Cash flow analysis

This step is to analyze the data of money especially for cash flow. Because the money flow in or flow out of XYZ has been passed via the overdraft of Krung Thai Bank Public Company Limited, therefore, the data below is comparing data of overdraft in Year 2002 and 2003 from February to July.

Table 4.3: *The comparison of cash flow performance between year 2002 and 2003*

| Month | Overdraft (x 1,000,000 Baht) | |
|--|-------------------------------|--------------|
| | 2002 | 2003 |
| February | 5.84 | 8.16 |
| March | 4.63 | 6.48 |
| April | 5.90 | 4.51 |
| May | 5.66 | 2.52 |
| June | 5.78 | 4.98 |
| July | 8.71 | 3.78 |
| Total | 36.52 | 30.43 |
| The difference is 6.09 million bath or approximately decreased 17 percent | | |

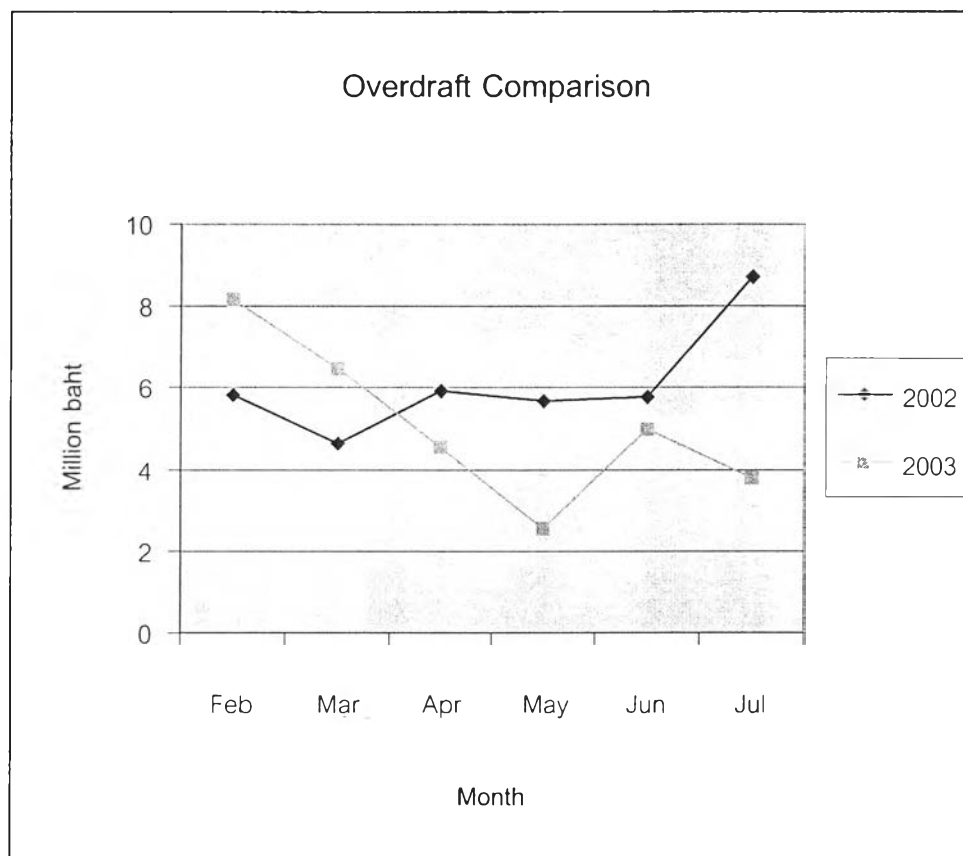


Figure 4.2: The comparison of overdraft between year 2002 and 2003

According to the above table, it shows that the overdraft of XYZ is decreased 6.09 million baht after utilizing the on-line inventory management system. It means that XYZ can reduce the overstock level comparing with the performance of previous year from February to July 6.09 million bath or about 17%.

4.1.2.1.3 The Payback Period

The payback method is a variation of break-even analysis. The break-even point is reached when total costs equal to total benefits. From the data above, in six months, the XYZ company can reduce the overdraft 6.09 million baht and the interest rate of Bank is 5.25 percent per year. Therefore, the money can be saved 159,862.5 baht in six months. The total cost of this project is 60,700 baht. Then the payback period is:

$$\frac{60,700}{159,862.5} \times 6 = 2.28 \text{ months}$$

or approximately = 2 months and 9 days

4.1.2.1.4 The benefit of Supplier 1

The main point of this project is to collaborate between supplier and customer on the basis of supply chain concept. Because AV products have been adjusted the prices frequently in one year especially for digital still camera, IT products, and accessories. To support customers for selling out obsolete products more easily, thus the Supplier 1 usually faces the higher volume of remaining stock, the more increasing expense. If this problem can be solved, this cost will be reduced absolutely.

After running this system from February to July 2003, the credit note or C/N is decreased approximately 50 percent comparing with previous year recorded in the same period as illustrated in table 4.4 and figure 4.3 respectively.

Table 4.4 : *The comparison of Credit Note performance between year 2002 and 2003*

| Credit Note in Year 2002 | | | | Credit Note in Year 2003 | | | |
|---|---------|----------------|-----------|--------------------------|---------|---------------|-----------|
| Date | Invoice | Amount of | | Date | Invoice | Amount of | |
| 27/02/02 | C321653 | 26,034 | 80 | 19/03/03 | C334265 | 2,395 | 90 |
| 24/03/02 | C322660 | 64,970 | 60 | 03/04/03 | C334572 | 1,990 | 20 |
| 11/04/02 | C323325 | 22,231 | 43 | 09/05/03 | C335034 | 4,442 | 60 |
| 24/04/02 | C323698 | 22,552 | 50 | 09/05/03 | C335039 | 15,578 | 20 |
| 08/05/02 | C324007 | 1,202 | 80 | 31/05/03 | C335529 | 13,057 | 17 |
| 28/05/02 | C324729 | 13,337 | 50 | 28/06/03 | C336171 | 10,068 | 60 |
| 02/07/02 | C326152 | 7,245 | 90 | | | | |
| Total | | 157,575 | 53 | Total | | 78,606 | 87 |
| The total amount of C/N in year 2003 is decreased 78,968.66 baht or 50 percent | | | | | | | |

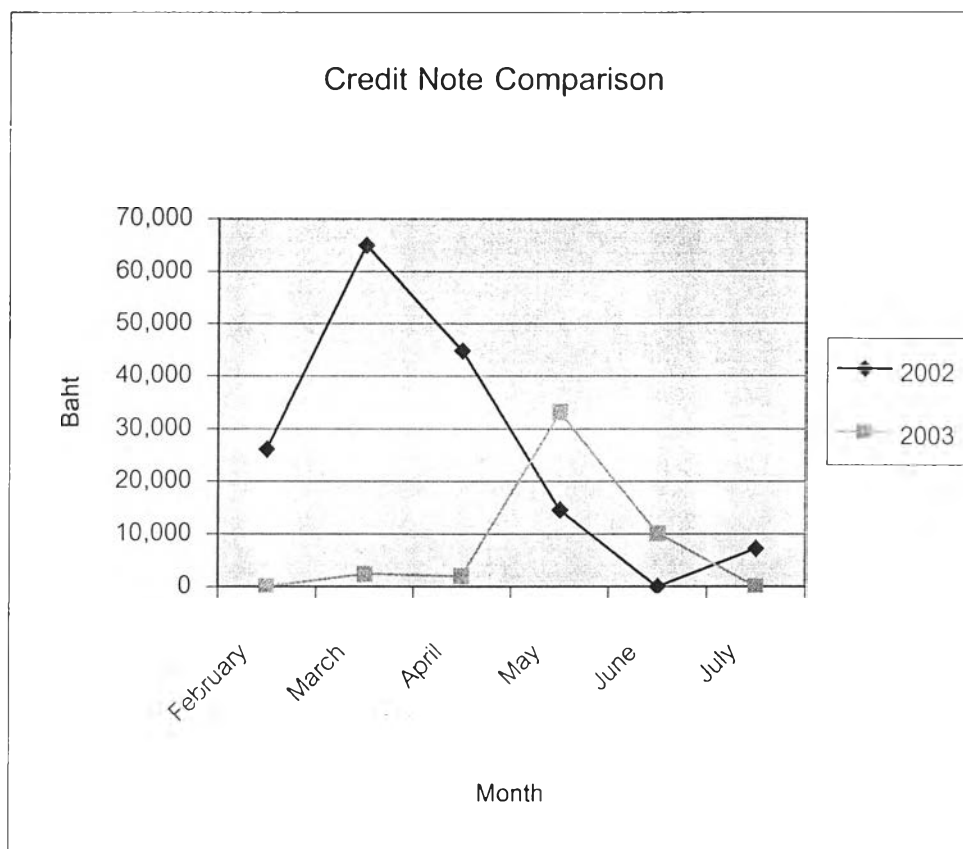


Figure 4.3: *The comparison of Credit Note performance between year 2002 and 2003*

4.1.2.2 Intangible benefits

These are the benefits, which will be positive by the company due to the application of the computerized system for inventory management, but not possible to quantify them by attaching any Baht values to them. These benefits may be categorized as follows:

- Provide accurate information: it can easily provide the information of the inventory, from beginning to the end of each product, by viewing the screen or print-out reports.
- Provide more information: this system generates some reports such as Daily report and Monthly report.
- Data entry errors are corrected quickly and easily through a visual display unit.
- A training course for the staff of the inventory control: in order to develop the utilization of this system, a training course which includes the basic concept of inventory management, the methodology of order releasing and the operations of this computerized system could enhance to the ability of staffs.