**MIS10 Chapter 14 Question File**

The following Tables 1 and 2 show each cost component for the new CAD system as well as annual maintenance costs over a five-year period.

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| Table 1 – CAD System Components Year 0 Costs | | |
| Item | **Quantity** | Cost/each |
| Hardware |  |  |
| PCs | 50 | $1,700 |
| Network Cards | 50 | $50 |
| Servers | 2 | $3,000 |
| Color Laser Printers | 3 | $5,500 |
| Color Laser Plotters | 2 | $3,100 |
|  |  |  |
| Telecommunications |  |  |
| Backup Unit | 1 | $1,200 |
| Cabling w/plugs | 2,000 feet | $0.75/foot |
| Routers w/Firewall | 2 | $500 |
| Switches | 2 | $700 |
| Telephone Connection Costs | ----- | $5,000 |
|  |  |  |
| Software |  |  |
| CAD Software | 50 licenses | $3,500/license |
| Database | 50l licenses | $80 |
| Network | 50 licenses | $70 |
| Office Software | 50 licenses | $250/license |
|  |  |  |
| Services |  |  |
| In-house Trainer | 1 | $50,000 |
| AutoCAD Training | 50 hours | $75/hour |
| In-house Systems Personnel | 1 | $75,000 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 2 – Estimated Annual Maintenance Costs** | | | | | |
|  | 2011 | 2012 | 2013 | 2014 | 2015 |
| PCs | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 |
| Network cards | $500 | $500 | $500 | $500 | $500 |
| Servers | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 |
| Color laser printers | $500 | $500 | $500 | $500 | $500 |
| Plotters | $500 | $500 | $500 | $500 | $500 |
| Tape Backup | $500 | $500 | $500 | $500 | $500 |
| Cabling w/plugs (in feet) | $100 | $100 | $100 | $100 | $100 |
| Routers w/firewall | $100 | $100 | $100 | $100 | $100 |
| Switches | $100 | $100 | $100 | $100 | $100 |
| Telephone connection costs | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 |
| CAD software | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 |
| Database | $500 | $500 | $500 | $500 | $500 |
| Network | $500 | $500 | $500 | $500 | $500 |
| Office software | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 |
| In-house trainer | $40,000 | $30,000 | $20,000 | $10,000 | $10,000 |
| AutoCAD training | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 |
| In-House systems personnel | $75,000 | $76,000 | $77,000 | $79,000 | $82,000 |

The system is expected to be completed at the end of year 0 (2010). From 2011 to 2015, the new system is expected to reduce labor costs by $250,000 per year and to increase gross revenue $150,000 per year.

Use another worksheet to calculate the following, using the capital budgeting models described in this chapter:

* Payback period – indicate yearly and cumulative figures for years 2011-2015
* Accounting Rate of Return on Investment (ROI). Assume depreciation to be the total initial cost of the investment in Year 0.
* Net Present Value, assuming an interest rate of 5%
* Internal Rate of Return