

Hardware and Software Selection

by
Manik Chand Patnaik

HARDWARE SELECTION

- Normally Computer Hardware is purchased on recommendation
- This is because people with purchase authority know less about hardware requirements.
 - They don't know size requirement
 - They don't know capacity needs
 - They don't have a comparison scheme
 - They want a good bye in reasonable budget
 - They have faith in the recommender

Manik Chand Patnaik, R.I.T.

2

SIZE AND CAPACITY REQ?

Features of size and capacity

- Internal Memory size
- Cycle Speed of System
- Number of Communication Channels
- Type of Display
- Type and capacity of Auxiliary Storage

Manik Chand Patnaik, R.I.T.

3

SOFTWARE DICTATES HARDWARE

- Commonly Software dictates minimum hardware configuration.
- Software features dictate additional hardware peripherals (scanner, webcam, tablet)
- Software's connectivity requirements decide requirements for networking components
- Storage needs determine disk configurations
- Backup features specify tape/DVD-R/etc.

Manik Chand Patnaik, R.I.T.

4

COMP. EVAL AND MEASUREMENT

- Comparisons between competing HW platforms are made on the basis of performance data.
- This process needs benchmarking.

Manik Chand Patnaik, R.I.T.

5

AUTOMATIC BENCHMARKING

- This is the process of emulating actual processing workload by using artificial workload generated by automatic programs executing a predefined set of jobs on demand.
- During the execution of the jobs performance measurement is done.
- This measured data is compared with previously measured data from similar systems.
- Eg: CPU mark, 3d mark, cpumark, passmark etc.

Manik Chand Patnaik, R.I.T.

6

MANUAL BENCHMARKING

Tasks:

- Create synthetic programs to simulate workload
- Run the simulator in a variety of configurations
- During run measure the performance
- Compare the results / response obtained

Manik Chand Patnaik, R.I.T.

7

PLUG COMPATIBLE?

- Equipment which can replace the original vendor supplied parts are known as plug compatible equipment.
- Reason: Cost factors e.g.(Canon Color Cartridge 850/-, Compatible Cartridge 400/-)
- Some Common plug compatible equipments:-
 - Printer
 - Hard disk
 - Memory
 - Optical drives

Manik Chand Patnaik, R.I.T.

8

HOW TO ACQUIRE HW?

The financial Factors :

- Rental
- Lease
- Purchase

Manik Chand Patnaik, R.I.T.

9

RENTAL - MERITS

- Short term usage (1-12 months)
- Flexibility in payment
- Cancellation with 1 or 2 month notice from both sides
- Purchase decision can be delayed by using rental
- Good for pilot projects / evaluation tasks
- Quick deployment and flexible hardware usage

Manik Chand Patnaik, R.I.T.

10

RENTAL - LIMITATIONS

- High **cost per day** usage
- Volatile rentals
- No tax benefits for depreciation
- Equipment condition is questionable
- Short notice cancellation can be damaging
- Only for stop gap arrangements and short term solutions.

Manik Chand Patnaik, R.I.T.

11

LEASE - BENEFITS

- Term ranges from 3 to 7 years
- Predetermined payments. Rentals not volatile.
- Less expensive than rental
- No technical obsolescence
- No capital investment
- Some tax advantages
- Lease and own schemes

Manik Chand Patnaik, R.I.T.

12

LEASING - LIMITATIONS

- Legal issues – (Read the fine-print before you sign)
- Less than rental but still the charges are high.
- Lessor gets depreciation benefits and lease amount both
- Premature termination causes litigation / huge fines.

Manik Chand Patnaik, R.I.T.

13

PURCHASE - MERITS

- Quite popular due to dropping prices and increasing rentals
- Long term use
- Depreciation / Ownership benefits from tax
- Attractive purchase schemes, loan schemes
- Maintenance charges are tax deductible
- Taxes on purchases are tax deductible

Manik Chand Patnaik, R.I.T.

14

PURCHASE - LIMITATIONS

- Technological Obsolescence
- Burden of ownership

Manik Chand Patnaik, R.I.T.

15

PURCHASE MAINTENANCE?

- Free Warranty Period is not for infinity !!!
- Vendor Service contracts
- Annual Maintenance contracts from 3rd party
- In-house Maintenance
- Maintenance needs budgeting too!

Manik Chand Patnaik, R.I.T.

16

SOFTWARE SELECTION

- This selection comes prior to the selection of Hardware.
- Further, most software selection will depend on the type of application / project.
- Some standard items like Operating System are selected on the basis of organization's policy.
- Acquisition of Software Libraries require technical insight into the working aspects of them.

Manik Chand Patnaik, R.I.T.

17

SOFTWARE EVALUATION >

- Alternative software is evaluated depending on the Application Requirements:-
 - Transaction types
 - Report types
 - File types / Database usage
 - Volume of storage
 - etc.

Manik Chand Patnaik, R.I.T.

18

SOFTWARE EVALUATION >

- Flexibility
 - Against change in requirements
 - Output flexibility is important
- Audit Features
 - For regular checks (Logging ability)
 - For postmortem studies (trace features)
- Data Capacity (future growth)

Manik Chand Patnaik, R.I.T.

19

SOFTWARE EVALUATION >

- Vendor Support
 - Version Updates
 - Security patches
 - Support hours
 - Tailor made solutions ?

Manik Chand Patnaik, R.I.T.

20

SOFTWARE CONTRACTS

- Contract negotiation is a Legal process.
- Attorneys are to be involved
- Two kinds of contracts
 - Software License and its restrictions
 - Custom programming assignments and ownership issues.
- Protection against discontinuity of software by vendor.
- Training responsibilities / location / costs etc.

Manik Chand Patnaik, R.I.T.

21

FINALLY,

Thanking
You

Manik Chand Patnaik, R.I.T.

22