The MIS Principle Base

Introduction to MIS

1. Systems, as solutions to business problems, "work" only if their total benefits exceed their total costs.

2. Information technology decisions should be made <u>after</u> an information systems solution is conceived.

The Systems Approach

3. An aggregate becomes a whole when it acquires attributes that none of the parts possess.

4. The more repetitive a task, the more structured it <u>can</u>, and it <u>should</u>, become.

5. Problems are already solutions to more real problems.

6. Solutions are disguised problems and are exposed as such when implementation details are considered.

7. We <u>think</u> solutions works (MBF) before we find out if they <u>really</u> do (MBI).

8. We fail not only because we make incorrect assumptions, but also because we are unaware we are making those assumptions.

Information Systems

9. The greatest beneficiaries of information technology are professions whose products/services can be digitized, reproduced, and transmitted without any loss of value.

10. The rate of information systems innovation is much faster physically than it is logically.

Strategic Information Systems

11. The force with which you attract and keep customers is directly proportional to the amount of value you provide them, i.e., the extent to which you solve their problems.

12. Successful companies must balance customer value against corporate value to remain profitable in the long run.

Management Reporting Systems

13. If it is to be improved, it has to be monitored. If it is to be monitored, it has to be measured. (cannot improve without measuring)

14. If it is inspected, it is respected.

15. Carelessly formulated performance indicators produce anomalies when employees "perform to metric".

16. Digital information is precise but hard to grasp quickly. Analog information is easy to grasp quickly, but lacks precision.

17. Interpreting information thoroughly requires two eyes: One to see <u>actual</u> problems in deviations, the other to see <u>potential</u> problems in trends.

18. Drilling down to identify the location of a problem is useful only when you happen to drill down in terms of variables that turn out to reveal variations in performance.

Decision Making

19. Rational decision making is made practical when the facts relating each of the most important alternatives to each of the most important criteria are analyzed to reveal the <u>overall</u> most attractive choice.

20. Decisions need to be made rationally/systematically to the extent that they are made <u>with</u> others or <u>for</u> others.

Decision Support Systems

21. Understanding is accomplished when you manage to explain that which you want to control, but cannot do so directly, in terms of factors that you <u>can</u> control directly. (mathematical model)

22. You can forecast/influence the future by linking actions to their consequences using accurate models of reality, and then asking, "what if …?"

Knowledge-Based Systems

23. We know more than we can tell. (tacit knowledge)

24. If knowledge <u>can</u> be shared, this does not mean it <u>will</u> necessarily be shared. (corporate politics)

25. Unless there are incentives to share knowledge, knowledge will be hoarded.

26. The usefulness of a knowledge-base system depends on the indexing system that allows for effective retrieval of knowledge.

Expert Systems

27. All useful, practical knowledge can, and must, be expressed in the form: IF X THEN Y, where:
- X = problem, diagnosis, situation
- Y = solution, prescription, action

28. Some logic does not sound very logical to some people. (inference engine)

Automation

29. All routine, structured tasks CAN be automated.

30. If a task can be automated, it does not mean it should be automated. (economic, marketing, social, … considerations)

31. Not everything that is called "automated" is truly automated. (marketing abuse)

32. Automation decisions tend to fail when the many possible advantages of automation are not carefully balanced against its many possible disadvantages.

Transaction Processing Systems

33. If it was not recorded, it did not "happen".

34. In computer-supported work, what is real is what the system tells you is real.

35. Queries should be considered transactions (i.e., recorded) in order to minimize opportunity costs (lost sales).

36. Data captured/stored without a clear sense of its relevance/purpose (whether operational or managerial) is a waste of time, money, and data storage.

37. The transaction rock, in addition to making a local impact at the point it hits the pond, makes ripple effects that travel throughout the organization as a whole.

Enterprise Systems

38. Going beyond departmental data to a central repository is the only way to coordinate business activities enterprise-wide.

39. Moving up the supply chain from end-consumer to raw materials supplier, each supply chain participant has greater need for safety stock. (Bullwhip Effect)

E-Business

40. The success/failure of an e-business enterprise depends greatly on the soundness/shakiness of the business model underlying it.

41. The big winners in e-business have been those companies with highly innovative business models.

42. E-Business has overcome the traditional tradeoff between richness and reach by extending both simultaneously.

43. While it may have eliminated some old intermediaries, E-Business has given rise to some new ones (re-intermediation)

Database Management Systems

44. Transaction processing and database management systems are two sides of one coin: TPS decides what data need to be captured in what format and why, while DBMS decides how the collected data need to be stored most efficiently.

45. Databases designed "intuitively" by armatures tend to incorporate redundancy.

46. Data redundancy is the root of all database anomalies.

47. Database normalization guarantees non-redundancy.

48. Database structure must reflect business practices.

Collaborative Support Systems

49. Communication problems are often due to one or more of the three parameters being handled inappropriately: medium (channel), message (content), style (real-time interactivity).

50. Communication diarrhea causes brain constipation.

51. The less/more structured an interaction, the richer/leaner the required communication medium.

52. Communication technologies that extend our abilities tend to have far-reaching behavioral impacts (*The Medium is the Message*).

53. Decisions regarding communication style (whether or not to use real-time interactivity) often involve complex tradeoffs.