the PIECES Framework

A checklist for identifying problems with an existing information system.

- Performance
  - Throughput
  - Response Time
- Information (and Data)
  - Outputs
    - Lack of any information
    - Lack of necessary information
    - Lack of relevant information
    - Too much information – information overload
    - Information that is not in a useful format
    - Information that is not accurate
    - Information that is difficult to produce
    - Information that is not timely to its subsequent use
  - Inputs
    - Data is not captured
    - Data is not captured in time to be useful
    - Data is not accurately captured – contains errors
    - Data is difficult to capture
    - Data us captured redundantly – same data is captured more than once
    - Too much data is captured
    - Illegal data is captured
  - Stored Data
    - Data is stored redundantly in multiple files and/or databases
    - Stored data is not accurate
    - Data is not secure from accident or vandalism
    - Data is not well organized
    - Data is not flexible – not easy to meet new information needs from stored data
    - Data is not accessible
- Economics
  - Costs
    - Costs are unknown
    - Costs are untraceable
    - Costs are too high
  - Profits
    - New markets can be explored
    - Current marketing can be improved
- Control (and Security)
  - Too little security or control
    - Input data is not adequately edited
    - Crimes (e.g. fraud, embezzlement) are (or can be) committed against the data
    - Ethics are breached on data or information – refers to data or information getting to unauthorized people
    - Redundantly stored data is inconsistent in different files or databases
    - Data privacy regulations or guidelines are being (or can be) violated
    - Processing errors are occurring (either by people, machines, or software)
    - Decision- making errors are occurring
  - Too much control or security
    - Bureaucratic red tape slows the system

        - Controls inconvenience customers or employees
        - Excessive controls cause processing delays
- Efficiency
    - People, machines, or computers waste time
        - Data is redundantly input or copied
        - Data is redundantly processed
        - Information is redundantly generated
    - People, machines, or computers waste materials and suppliers
        - Effort required for tasks is excessive
        - Materials required for tasks is excessive
- Service
    - The system produces inaccurate results
    - The system produces inconsistent results
    - The system produces unreliable results
    - The system is not easy to learn
    - The system is not easy to use
    - The system is awkward to use
    - The system is inflexible to new or exceptional situations
    - The system is inflexible to change
    - The system is incompatible with other systems
    - The system is not coordinated with other systems