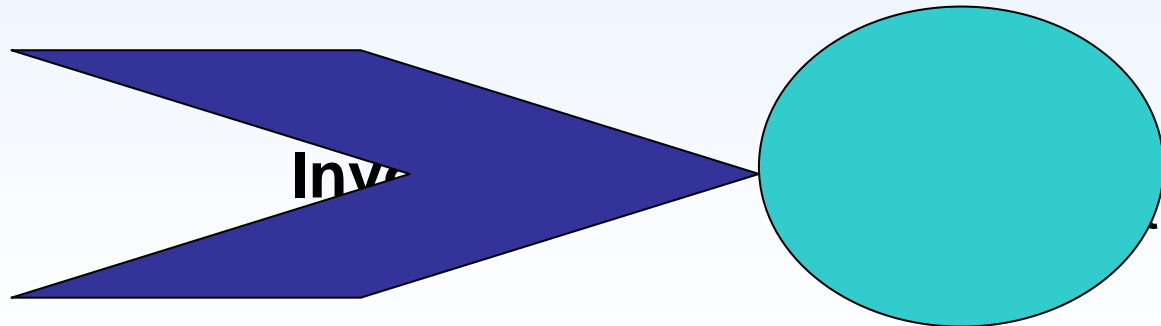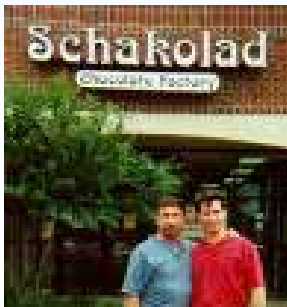# Underlying Principles for System Development methodology

- **P1:** Get the system users involved
  - A communication between system users, analysts, designers, and builders
    - Minimizes miscommunication and misunderstanding
    - Help to win acceptance of new ideas and technological change

Inv

- **P2: Use a problem-solving approach.**

Study and understand the problem and its context

Define the requirement of a suitable solution.

Identify candidate solutions that fulfill the requirements and select the best solution.

Design and/or implement the solution.

Observe and evaluate the solution's impact, and refine the solution accordingly.

- **P3: Establish phases and activities.**

  - All methodologies prescribe phases and activities
  - The number and scope of phases and activities may vary.
  - The Phases are

    # Scope definition

    # Problem analysis

    # Requirement analysis

    #Logical design

    # Decision analysis

    # Physical Design

    # Construction &Testing

    # Installation & Delivery

- **P4** : Document through out Development

  - An ongoing activity of recording facts and specifications for a system for current and future reference

  - Documentation enhances communications and acceptance

  - Stimulates user involvement and reassures management about progress

  - Reveals strengths and weaknesses of the system to multiple stakeholders.
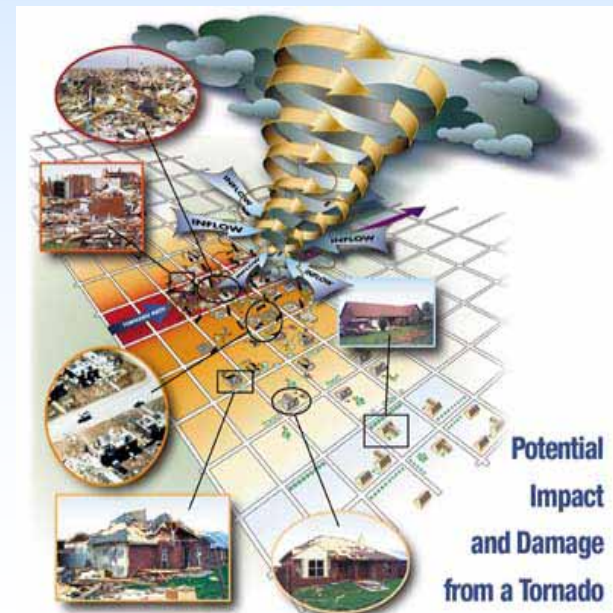
P5: Establish standards.

 # Documentation

 # Quality

 # Automated tools

#Information Technology

Potential
Impact
and Damage
from a Tornado

- **P6** :Manage the process and Projects

Process Management

– Ensures that an organizations chosen process or management is used consistently on and across all projects

– An ongoing activity
  - Documents
  - Teaches
  - Oversees the use of
  - Improves

An organization's
chosen methodology
For system development

– Concerned with
  - Phases
  - Activities
  - Deliverables
  - Quality Standards

- **P6** :Manage the process and Projects Cont….

Project Management

- Process of
  - Scoping
  - Planning
  - Staffing
  - Organizing
  - Directing
  - Controlling a project

- ensures that an information system is developed
  - at minimum cost,
  - within a specified time frame and
  - with acceptable quality.

P7:Justify systems as Capital Investments.

Cost-effectiveness

- Obtained by striking a balance between the lifetime cost of Developing, Maintaining, Operating an information system and the benefits derived from that system
- measured by cost-benefit analysis
- Performed throughout the system development

Risk management

- The process of identifying, evaluating, and controlling, what might go wrong in a project before it becomes a threat

- Driven by risk analysis or assessment

P8:Don't be afraid to cancel or revise scope.

Cancel the project if it is no longer feasible

If project scope is to be increased, reevaluate and adjust the cost and schedule
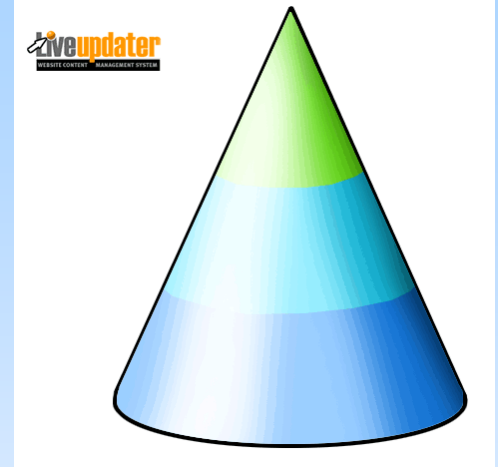
If the project budget and schedule are frozen and not sufficient to cover all project objectives, reduce the scope.

P9:Divide and conquer.

 # divide a system into subsystem and components

--- Easily to conquer the problem
--- Easy to build a large problem

P10: Design systems for growth and change.

the business, their need and priorities change over time

thus, information system that supports a business must also change over time

good methodologies should embrace the reality of change

the systems should be designed to accommodate both growth and changing requirements

#the systems should be designed to scale up and adapt to the business