*** Slide 01

Freelance Graphics Presentation (Draft 11/01/2000)

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A journey of a thousand miles must begin with a single step. Chinese Proverb.
It is better to begin in the evening than not at all. English Proverb.

*** Slide 02

General Systems Theory (von Bertalanffy)

Mantra: Structure/ Flow/ Change (Capra, "Tao of Physics")
- Structure; social system
- Flow; time
- Change; dynamic process

*** Slide 03

Social System

Minimum components of a Social System
- Boundary
- Open System
- Elements
- Relationships among Elements
  - Internal
  - External

*** Slide 04

A typical Social System

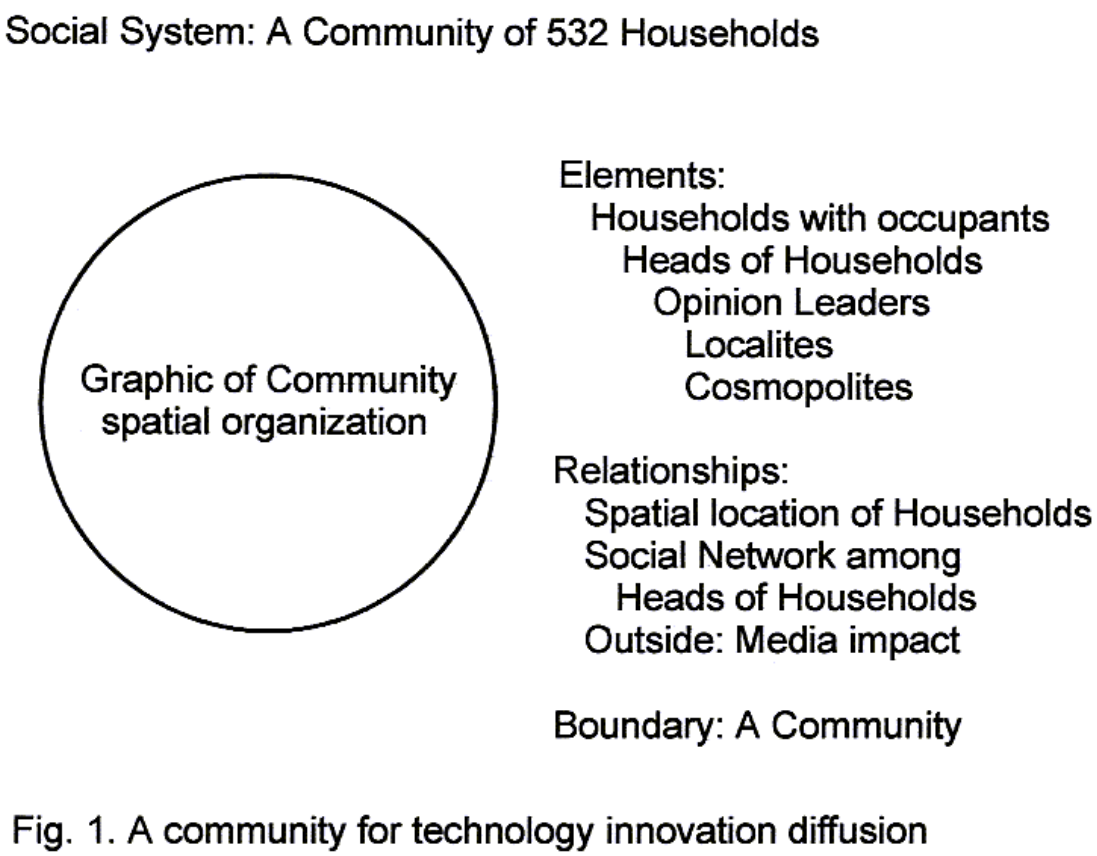

Fig. 1. A community for technology innovation diffusion

Fig 1. A community for technology innovation diffusion.

*** Slide 05

State/ Process Dynamic Model (SPDM)(tm)

Minimum number of modeling components
w System State; symbolized by circles
w Social Processes; symbolized by rectangles
w Direction of change (flow); symbolized by arrows

Three modeling rules
w Models must always begin with a State or a Cycle
w Models must always end with a State or a Cycle
w At minimum, one Process must always occur between two States

Computation within a Process
w Conditional transition probability from one State to another

*** Slide 06

A typical State/ Process Dynamic Model (SPDM)(tm)

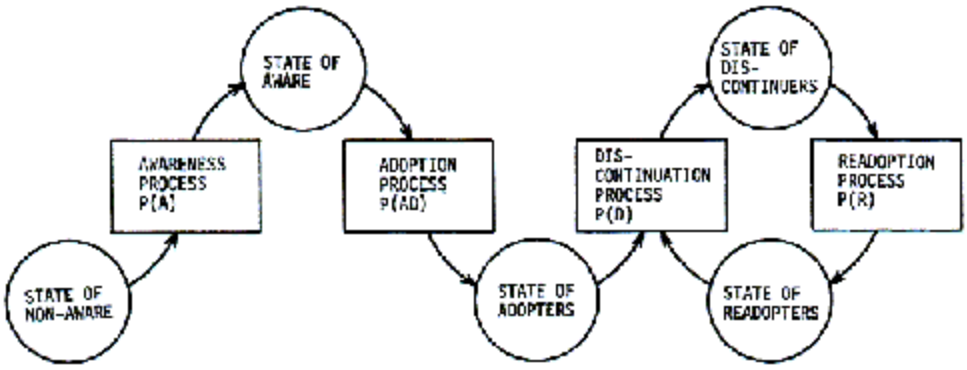

Fig. 2. A technology innovation diffusion model.

Fig. 2. A technology innovation diffusion model.

*** Slide 07

True Experimental Designs (Campbell)
w The Posttest-Only Control Group Design
w Controls for internal validity
w Factors jeopardizing external validity

Six Steps for Computer Simulation Experiments (Naylor "Computer Simulation Experiments ...")
1. The formulation of the problem.
2. The formulation of the Social System model.
3. The formulation of the "State/ Process Dynamic Model".
4. Validation.
5. Experimental design.
6. Data analysis.

*** Slide 08

Experimental Sociology
w Computer Simulation as Experiment Instrumentation

Extension of the Model-View-Coltrol Model (MVC)
w Model: GUI Interface for data acquisition
w View: GUI Interface for model making
w Control: Simulation environment with Monitoring capability

*** Slide 09

JAVA Application

Design of the Social System
w Boundary; open
w Elements
w Relationships; internal, external

State/ Process Dynamic Model Making
w States with data input
w Processes with data input
w Flow; selection of time parameter

*** Slide 10

JAVA Application; continued

Simulation Runs with Monitoring capabilities
w Simulation initialization
w Simulation experiment summarized
w Simulation run
w Monitoring
w Dynamic data analysis

Data Base and Analysis Module
w Data collection of all runs
w Integration with commercial Statistical Package
w Static after-the-fact statistical analysis; off-line