

# A taxonomy of Infrastructures

- ❖ Critical societal infrastructures (CSols) are:  
Intellectual and physical resources that are critical to assure the survival, well-being and progress of human societies
- ❖ Critical support infrastructures (CSuls) for CSols are:  
Teams of skilled humans (professionals) with their tools who build, operate and improve CSols
- ❖ [Ex1] Physical CSol: water delivery systems (Egypt, Babilon, Rome, ..., Los Angeles, etc., etc.)
- ❖ [Ex2] Intellectual CSol: information processing (origination, recording, storage, distribution) systems (clay tablets, papyrus, manuscripts, books, e-texts, etc.)  
Corresponding CSul: authors, scribes, monks, printers (human), publishers, programmers, telecom operators, etc., etc., and their tools

Question: are there non-critical societal infrastrtuctures?

Answer: perhaps — let us debate!

Example: entertainment delivery systems - are they critical to assure the survival, well-being, and progress of our contemporary global society?

# Dep & Sec Terminology Problems in CS&E

1. Many specialties in CS&E are concerned with dep & sec
  - Working concurrently but separately they evolve their own terms
  - Ex: Dependability; survivability; high confidence; trustworthiness
2. Within some specialties new terms are introduced for the following reasons:
  - a) To claim originality for recycled concepts
  - b) To market established concepts as new
  - c) To cater the current fashion and whims of sponsors

Ex: fault tolerance  $\Rightarrow$  self-healing

Current research: we use natural language processing tools to investigate the terminology of dep & sec.

« Term extraction » is used to create a thesaurus and to study the evolution and usage of terms.

The 1800 papers to be studied are from FTCS (29), DSN (1), and DCCA (6) conferences