



# Group Support Systems

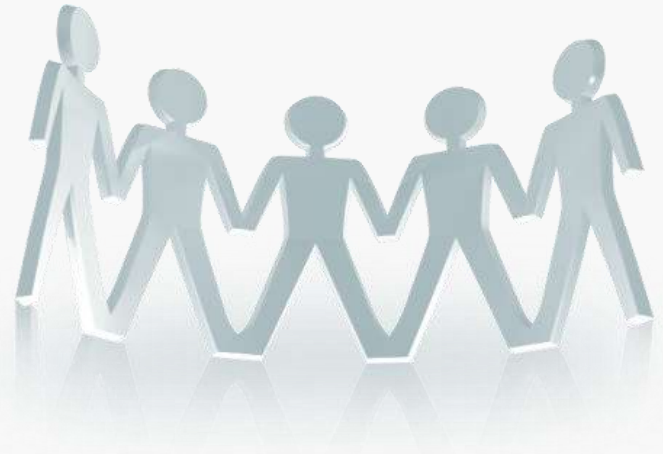
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# Overview

- ▶ Paul and Nazareth (2010)
  - Summary
  - Discussion
- ▶ Evolution of GSS research
  - Defining characteristics
  - Influences
  - Changes
  - Place of Paul and Nazareth's study



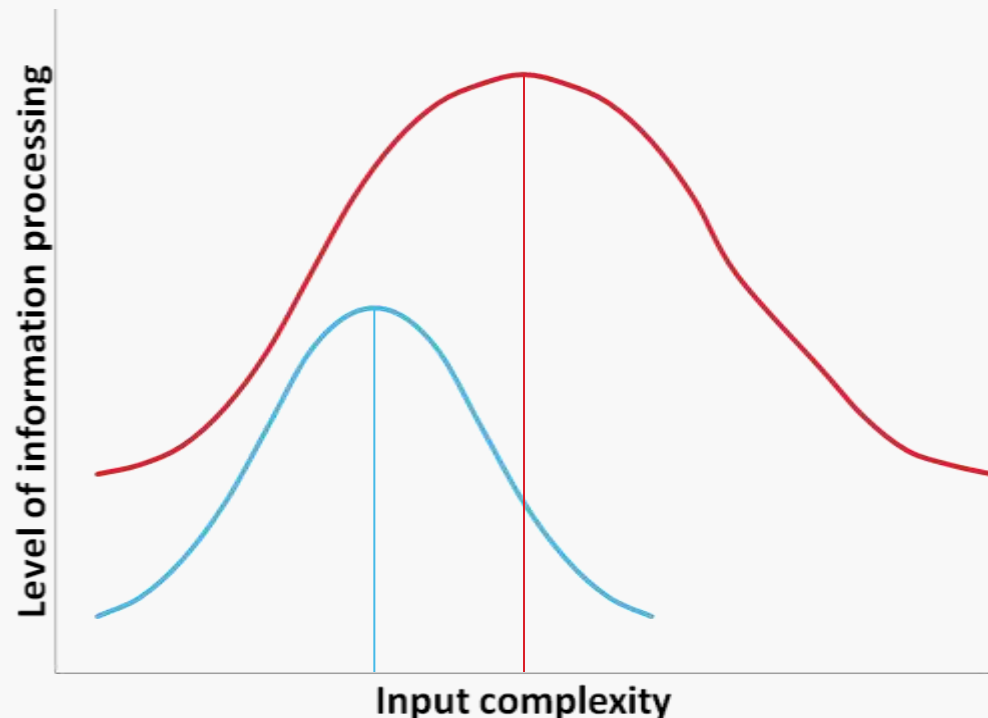
# Paul and Nazareth (2010)

- ▶ Relationship between
  - Information processing
  - Input complexity
  - Time pressures
  - Decision schema
  - Information overload
- ▶ Groups supported by ***group support systems***  
(GSS)

# Paul and Nazareth (2010)

## ▶ Previous research

- Cognitive psychology
- Information load, diversity, complexity
  - Inverted-U relationship between complexity and level of information processing
  - Information overload occurs at tipping point
  - Tipping point differs between individuals, groups



# Paul and Nazareth (2010)

- ▶ Time pressure
  - Inverted-U relationships had also been proposed
- ▶ Reducing information overload
  - Delphi method
  - Quantitative models
  - Regulation of the flow of ideas
  - Others?

# Paul and Nazareth (2010)

## ▶ Hypotheses / propositions

**P1:** Information complexity for group members has an inverted-U, nonlinear relationship with the level of information processing

**P2:** Time pressure and the level of information processing are positively correlated

**P3:** Decision schema increase the complexity that can be handled before the tipping point of information overload is reached

- Schema intended to aid decision, alleviate information overload



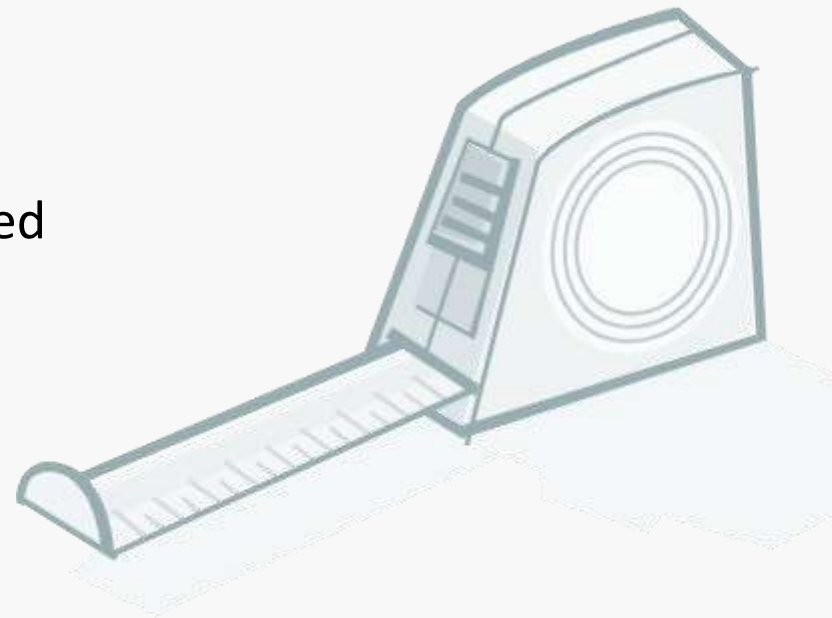
# Paul and Nazareth (2010)

- ▶ Methodology
  - Experiment
  - $n = 54$  groups, 5 undergraduate business majors each
  - Group decision support system (GDSS) and intranet
  - Evaluate, rank MBA programs based on weighting criteria (individually first, then as group)
  - Face-to-face interaction strongly discouraged
  - Group weightings adjusted until 4 out of 5 agree

# Paul and Nazareth (2010)

## ▶ Measures

- Decision time
  - Length of group session
- Information flow
  - Number of intranet pages accessed per time unit
- Information diversity
  - Number of unique pages accessed
- Information volume
  - Number of information bits accessed
  - One bit per attribute
- Time pressure
  - Two-item, five-point Likert scale
  - Found to be reliable and valid



# Paul and Nazareth (2010)

## ▶ Results

- Obtained via polynomial regression
- Supported inverted-U relationship between information complexity and information processing
  - Especially for information flow
  - Less significant for information volume
- Time pressure significant, positively correlated
- Decision schema found to “put off” the tipping point



# Paul and Nazareth (2010)

## ▶ Conclusions

- Groups face information overload just like individuals
- Decision schema, other information to simplify decision making
  - Helps reduce information processing
  - Increase amount and complexity of information groups can use

## ▶ Limitations and future research

- Difficult to generalize
- Suggested extending study
  - Real decision makers
  - Asynchronous and virtual teams
  - Different types of decision schema
  - Better operational measures of variables

# Evolution of GSS Research

- ▶ Defining factor of much research:  
How do groups make decisions?
  - Expected given lineage (i.e. DSS)
- ▶ Early research focus
  - Decision rooms
  - Meetings
  - Stefik et al. (1987) – Colab
  - DeSanctis and Gallupe (1987)



# Evolution of GSS Research

- ▶ Outside the decision room:  
Dennis and colleagues
  - Distributed groups
  - Drew upon CSCW research
  - Taxonomy (Dennis et al., 1988, p. 609)
    - Twelve possible types of GSS
    - Only four non-distributed
  - Primary focus still on meetings
  - Group decision making, rather than group collaboration (as in CSCW)

# Evolution of GSS Research

- ▶ CSCW perspective (Ellis, Gibbs, & Rein, 1991)
  - “Groupware”
  - GROVE system
    - Still restricted to task support, but...
    - Did not require decision making
    - Did not require co-location of group members
- ▶ Some in GSS downplayed decision aspect
  - Connolly, Jessup, and Valacich (1990)
  - Ideas generated forwarded to experts for evaluation
  - Groups may still have passed on ideas judged to be of poor quality

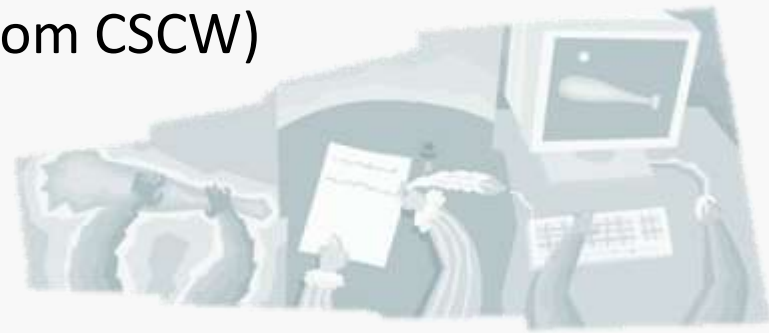


# Evolution of GSS Research

- ▶ Paul & Nazareth's (2010) place
  - Lab experiment, need for control
    - Unavoidably a non-distributed, meeting-like environment
  - Decision room not present
  - Decision being made
    - What criteria are most important for assessing MBA schools?
    - Which MBA schools are the best?
  - Would not be foreign to time-traveling DeSanctis or Gallupe from 1987

# Evolution of GSS Research

- ▶ GSS research still has evolved, however
  - Virtual and distributed teams
  - Collaboration in general (drawing from CSCW)
  - Non-meeting based tasks
  - Alternative perspectives  
(cognitive psychology in this case)
- ▶ Focus still on support of a given task
  - One of the remaining dividing lines  
between GSS and CSCW research
  - Most common, constant factor in GSS literature





**Comments, questions?**

Thank you!