

# Networks in the School of Management

By Maristella Collazo

Ronak Dave

Adam Kishpaugh



# Introduction to Isenberg

- ❖ Offers 7 different majors
  - ❖ B.B.A.- Accounting, Finance, OM, Marketing and Management
  - ❖ B.S.- HTM and Sport Management
- ❖ Recent addition in Fall 2002 of \$16 million, 40,000 square foot addition
- ❖ Two new majors joined SOM increasing population from 1,400 to 2,600 people



# Where Do They All Go?

- ❖ Part of Isenberg's new addition included the "Atrium." Home to eleven tables, five couches and fifty-two chairs, an average of 120 classes (1) are conducted per day. One of Isenberg's priorities is to teach students how to work in groups and make presentations.



# What Does This Mean?

- ❖ Although Isenberg has seven breakout rooms, each equipped with at least one table and four chairs, the overflow inevitably flows into the atrium! Already cluttered with the aforementioned furniture, it is a disaster for network flows and traffic jams.



# What Are Networks? (4)

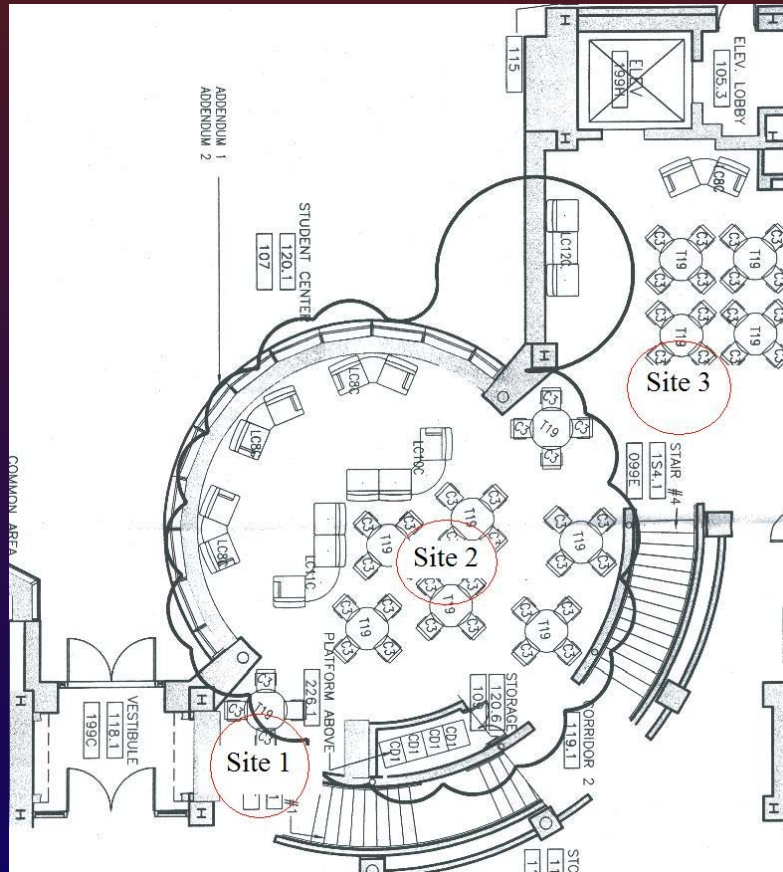
- ❖ Financial
  - ❖ Economical
  - ❖ Society
  - ❖ Transportation
  - ❖ Logistical
  - ❖ Telecommunications
  - ❖ Environment
- ❖ Networks are an interconnected or interrelated chain, group, or system (2). We used the atrium as an example of a transportation network with different Origin/Destination (O/D) pairs.



# Why Networks?

- ❖ Networks are measured in Costs
  - ❖ Cost is a function of travel time, probability of an accident, scenery of the link...(3)
- ❖ For our study, we attempted to measure the amount of “accidents” in the atrium due to the cluttered furniture.
- ❖ We defined “accidents” as:
  - ❖ People stopping, moving, contorting their body or bumping in to one another
  - ❖ People bumping in to furniture

# This Is Our Atrium





# The Process

- ❖ As you can see in the blueprints, we have labeled Sites 1, 2 and 3 as traffic problems
- ❖ We chose crowded periods of the day to measure how many “accidents” occur in each area and to see which area could be most improved





# Time Intervals I

- ❖ A few assumptions were made in deciding upon time intervals
  - ❖ Monday schedules were the same as Wednesday
  - ❖ Tuesday schedules were the same as Thursday
  - ❖ Most students taking classes within Isenberg are juniors and seniors and therefore, their classes meet on a Monday/Wednesday and Tuesday/Thursday basis

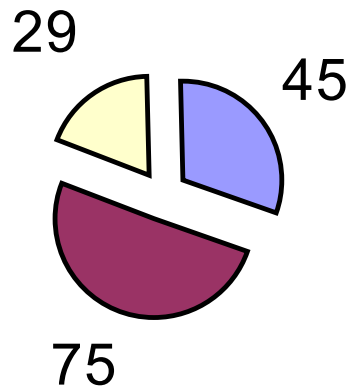


## Time Intervals II

- ❖ Therefore our control studies were done on
  - ❖ Wednesday- 11:25-11:40 am and 1:00-1:25 pm
  - ❖ Thursday- 10:30-11:00 am and 12:30-1:00 pm
- ❖ After analyzing our results, we saw that Site 2 in the middle of the atrium cause the most amount of traffic...

# Here Is What We Saw

## Control Data





# Site 1 and Site 3 Observations

- ❖ Site 1 is a bottleneck for people coming down the stairs and leaving their classrooms.
- ❖ Site 1 was also home to what we referred to as “garbage dwellers”
  - ❖ “Garbage Dwellers” are defined as the students who sat on top of the garbage pails due to lack of tables
- ❖ Site 3 was host to the Marketing Club selling pizza, but the area was open enough for students to get by without a problem



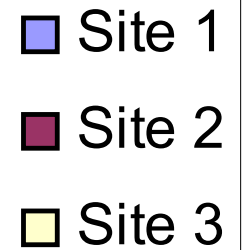
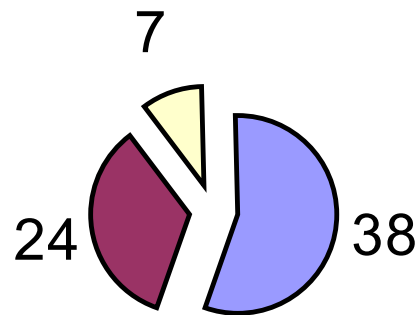
## Site 2 Observations

- ❖ We found that Site 2 was consistently the most congested site
  - ❖ Also, large amounts of students would stop and talk to their friends in Site 2, which caused problems for other students to walk through the atrium
  - ❖ We felt that creating a larger walkway through the middle of the atrium, “Accidents” could be decreased



# Here Are The Results

## Post Removal





# Final Notes

- ❖ As you can see, removing a table in Site 2 created a larger walkway and cut down on “accidents”
- ❖ Although opinions to add or remove furniture are conflicting:
  - ❖ Dean Hanno- “The tables in the atrium are cluttered because we want students to walk around the atrium and not directly through it”
  - ❖ Selena- “We need more tables in the atrium because I have nowhere to study”





# The End

## ❖ Sources

- ❖ SOM Undergraduate Office and Dean Hanno
- ❖ [www.webster.com](http://www.webster.com)
- ❖ Notes from Anna Nagurney's class
- ❖ <http://supernet.som.umass.edu/what/what.html>