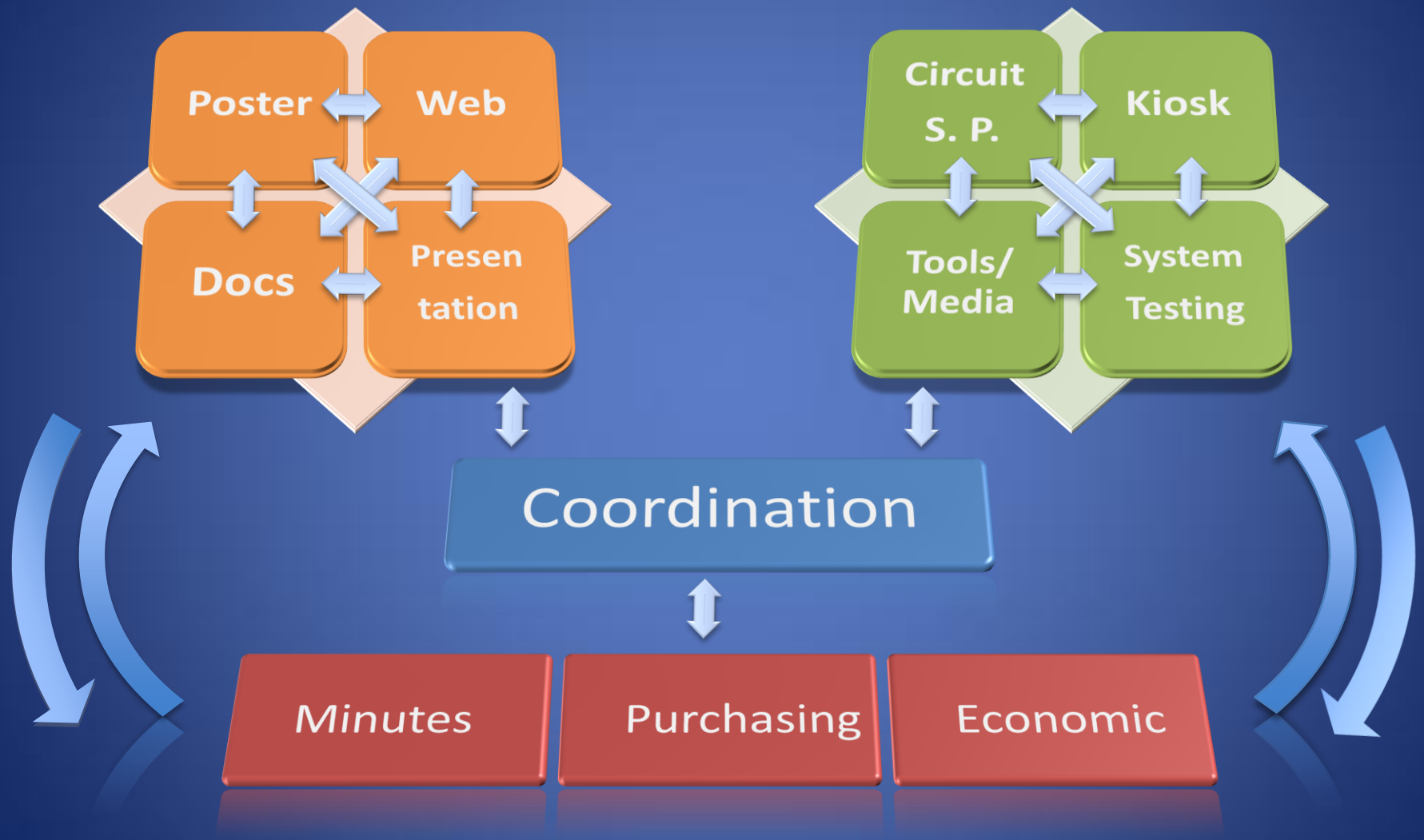
IPRO 344

Improving Energy Efficiency and Offering Quality Audio in Mobile Devices and Intercom Systems

Statement of Problem

In the fast food industry there is no current standard for Drive-Thru systems. Low quality systems can result in order capture error.

Organization of Team



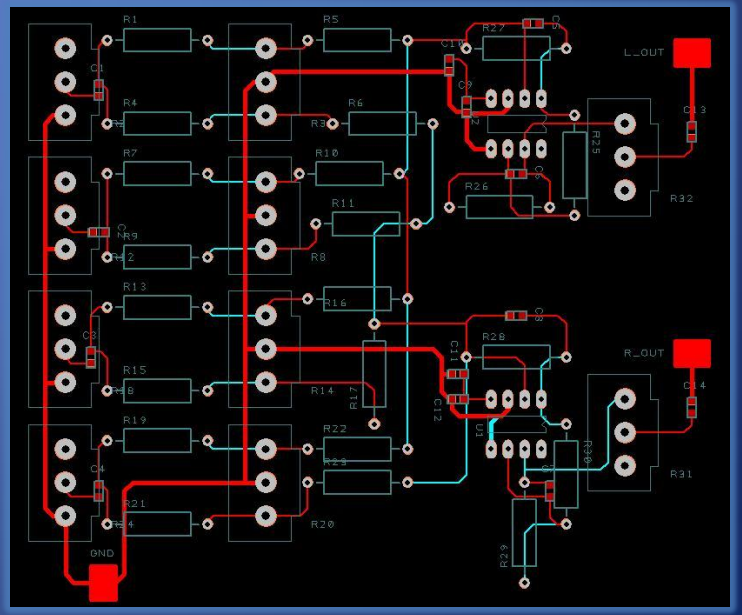
Goals of Project

- **Overall Goals**
  - Create an industry standard for testing and implementing drive thru systems
- **Immediate Goals**
  - Obtain quantitative data on the quality of sound capture for two-way communication systems
  - Create a refined prototype Drive-Thru kiosk
  - Analyze common sources of noise in the Drive-Thru environment

Progress Toward Goals

- New kiosk enclosure designed and constructed

- Designed new circuit additions
  - Equalizer
  - Client priority gate
  - Mixer circuit



Progress Toward Goals (continued…)

- Researched audio quality measurements
  - SII (Speech Intelligibility Index)
  - STI (Speech Transmission Index)
- Software Tools
  - Created software tools to analyze common sources of noise in the Drive-Thru environment
  - Researched software tools to measure SII and STI

Obstacles

- IPRO 343 has changed their focus
  - Solution: Investigated intelligibility standards
- Poor accessibility and adaptability of existing kiosk
  - Solution: Constructed a refined kiosk
- Anticipated Uncertainty
  - No reference for performance of existing systems

Q & A