UNIVERSITY OF WISCONSIN OSHKOSH

2025 IACIS Conference

Redesigning Publisher Slide Decks with ChatGPT: A Design Science Approach

- Dr. Steven A. Schilhabel, University of Wisconsin Oshkosh

- *IACIS 2025 Conference*

The Problem with Publisher Decks

- Publisher-provided slides are:
  - Overloaded with text (full sentences, long bullets).
  - Poorly structured for classroom delivery.
  - Time-consuming for faculty to adapt every semester.
- Result → Ineffective for student learning.

Resource-Based View (RBV)

- A firm is modeled as a bundle of resources. A firm's competitive advantage depends on the characteristics of the resources at its disposal, and when the firm controls resources that are:
  - Valuable: it underpins a value-adding strategy
  - Rare: it is idiosyncratically distributed
  - Inimitable: it is impossible, or difficult, to duplicate for competitors
  - Nonsubstitutable: competitors are unable to replicate the firm's overall value proposition using surrogate resources for the ones that are rare, valuable, and inimitable
- In this case, the advantage will be difficult for competitors to overcome

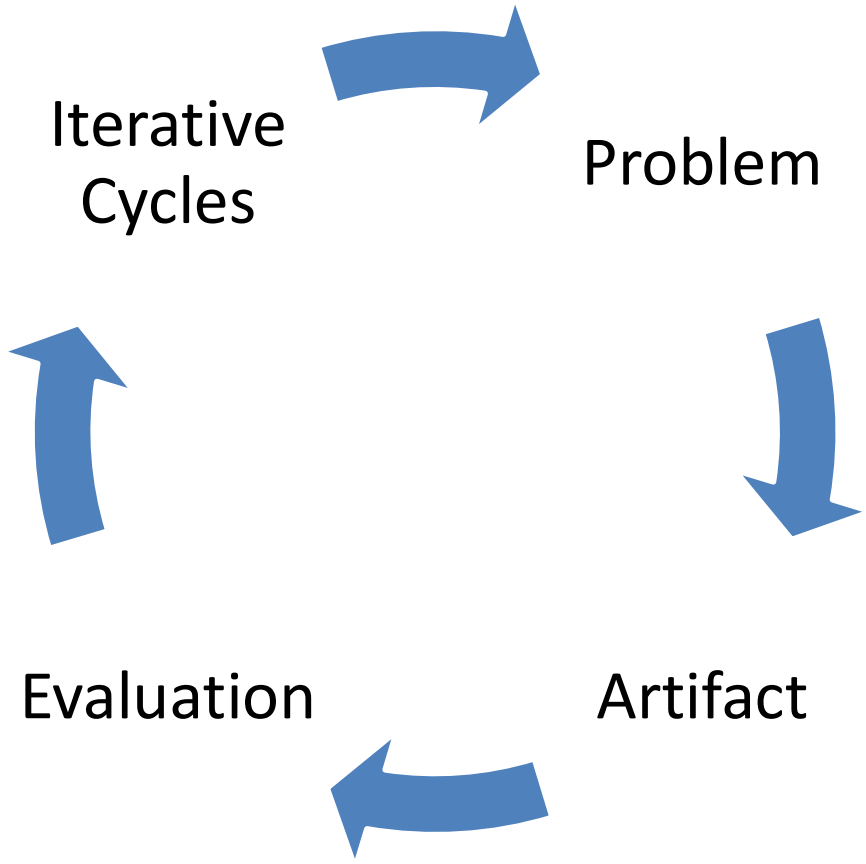
Figure 6. Original publisher-provided slide.

Why This Matters

- **Cognitive Load Theory (Sweller, 1988):** Too much text overwhelms learners.
- **Multimedia Learning Principles (Mayer, 2009):** Better results with concise text + visuals.
- **Modern Slide Expectations:** Clear design aids engagement.
- Faculty need scalable, theory-based redesign tools.

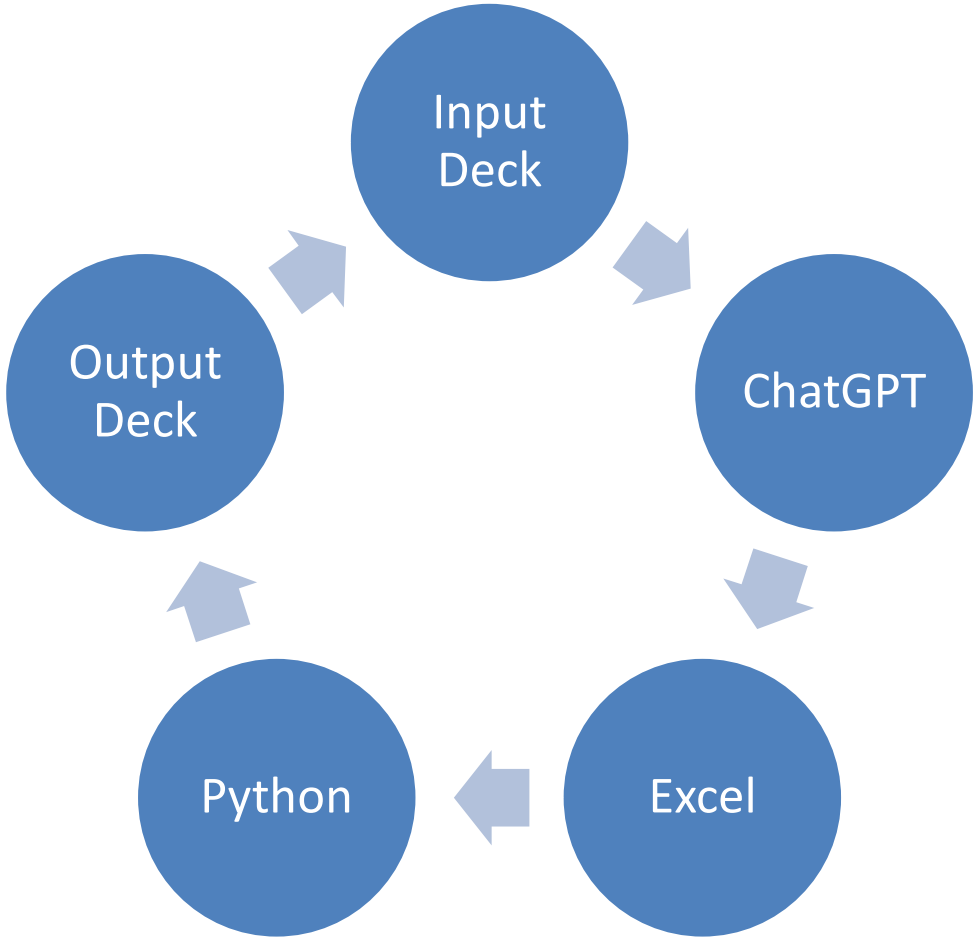
Research Approach

- **Design Science Research (DSR)** methodology:
  - *Relevance:* Reduce faculty prep workload.
  - *Rigor:* Grounded in instructional theory.
  - *Design:* Develop an AI-assisted redesign workflow.



Workflow Artifact

- AI + Automation pipeline:
  - Upload publisher deck.
  - Use ChatGPT with structured prompts.
  - Export revised slides as Excel.
  - Run Python script to auto-generate redesigned PowerPoint.



Prompt Engineering

- ChatGPT prompts structured in 3 stages:
  - Prompt 1: Design guidelines for clarity + concision.
  - Prompt 2: Analyze original deck content.
  - Prompt 3: Output structured table (titles, bullets, notes).

Structured Excel Output

- Consistent, machine-readable output:
  - Columns: Slide # | Title | Bullet Points | Speaker Notes.
- Enables automation and standardization.

Python Automation

- Python script using **python-pptx**:
  - Reads Excel file.
  - Generates PowerPoint deck with titles, bullets, notes.
  - Applies consistent formatting automatically.
- Faculty save hours of manual slide editing.

Before & After

- **Original Slide** (dense, text-heavy).
- **AI-Redesigned Slide** (concise bullets, improved visuals, speaker notes).
- *(Side-by-side comparison — Fig. 6 vs. Fig. 7/8 in paper)*

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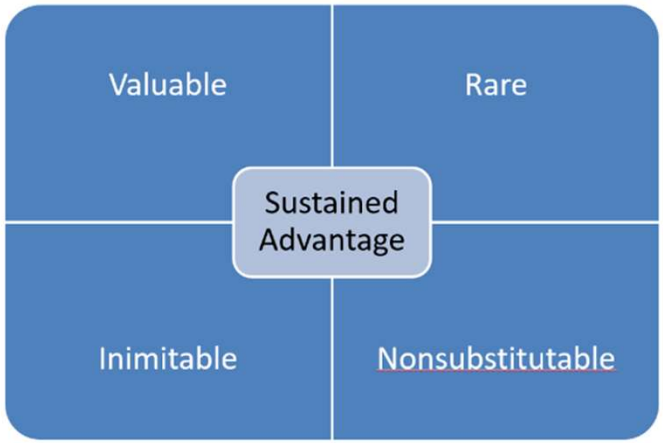

Classroom Application

- Implemented in **IS Capstone course.**
- 29-slide chapter deck redesigned in under 1 hour.
- Faculty time savings: 3–5 hours → <1 hour.
- Students responded positively to cleaner slides.

Benefits

- **For Faculty:** Saves prep time, consistency across courses.
- **For Students:** Easier to follow, better aligned with learning theory.
- **For IS Education:** Provides scalable AI-enabled instructional design workflow.

Challenges

- Requires ChatGPT Plus (file upload capability).
- Initial setup → prompt design + Python script.
- Limited visual generation — images still need manual curation.
- Not all faculty comfortable with automation workflows.

Contribution

- Demonstrates AI as a **practical design science artifact.**
- Bridges gap between pedagogy and automation.
- Scalable framework: applicable to multiple disciplines, not just IS.
- Supports ongoing faculty adaptation to AI.

Appendix / Resources

- https://steveschilhabel.com