

Association for Information Systems

**AIS Electronic Library (AISeL)**

---

AMCIS 2024 TREOs

AIS TREO Papers

---

8-16-2024

## **A Technological, Data-Driven Design Journey for Teaching Business Intelligence and Analytics Projects in Higher Education**

Jongsawas Chongwatpol

*National Institute of Development Administration, jongsawas.c@nida.ac.th*

Follow this and additional works at: [https://aisel.aisnet.org/treos\\_amcis2024](https://aisel.aisnet.org/treos_amcis2024)

---

### **Recommended Citation**

Chongwatpol, Jongsawas, "A Technological, Data-Driven Design Journey for Teaching Business Intelligence and Analytics Projects in Higher Education" (2024). *AMCIS 2024 TREOs*. 139.

[https://aisel.aisnet.org/treos\\_amcis2024/139](https://aisel.aisnet.org/treos_amcis2024/139)

This material is brought to you by the AIS TREO Papers at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2024 TREOs by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# **A Technological, Data-Driven Design Journey for Teaching Business Intelligence and Analytics Projects in Higher Education**

*TREO Talk Paper*

**Jongsawas Chongwatpol**

NIDA Business School, National Institute of Development Administration  
jongsawas.c@nida.ac.th

## **Abstract**

Business intelligence (BI) has been around for decades leveraging tools, methodologies, and technologies to transform data into actionable insights that help an organization make better decisions and that provide strategic and tactical business directions. Although many cases of successful BI implementation have been reported in the literature, many organizations have still not learned enough to ensure the success of BI projects. How can BI and BA solutions be designed effectively? The role of academia is apparent and clearly those students, non-technical background project managers, and inexperienced analysts, who seek to get big data, BI, analytics, and AI related jobs, need help to develop analytical, creative, and logical thinking skills when managing BI and BA projects.

Design Thinking offers a great opportunity to transform the way organizations design and develop BI strategies by integrating a human point of view with the possibility of BI technology along with the requirements for project implementation. How can Design thinking be embedded as a creative learning process to enable decision making in the area of business intelligence and analytics in the classroom environment, especially in the proof-of-concept stage? This study seeks to expand such implications academically and practically by presenting a technological, data-driven design process for integrating design thinking into Business Intelligence (BI) or Business Analytics (BA)-related curriculum.

The case study in a retail supermarket that is presented provides guidelines for how alternative designs that emerge in the problem formulation stage of the design thinking approach are turned into prototypes in the proof-of-concept stage and are subsequently tested and implemented to reflect their proof-of-value and proof-of-use in a retail industry. The proposed data-driven design approach outlines five areas that form the building blocks of the BI and BA strategy: problem, data, analytics, technology, and user spaces. The technological data-driven design journey is outlined as follows:

1. Problem Space: business problem framing and analytical problem framing
2. Types of customers and factors driving customer purchase behaviors
3. Data space: data architecture, data quality, and data preparation
4. Analytics Space: business analytics and model evaluation and validation
5. Technology Space: emerging technology and system architecture
6. User Space: user interface and user experience
7. Turning prototypes into live action.
8. Deployment plan and stakeholder management

This study also summarizes six key learning experiences, categorized as objectives, assessment, space, activities, artifacts, and culture for teachers, students, IS scholars, CIOs, CDOs, and other top management, for creating a design-oriented organizational structure.