**Course Name –** Product Design Thinking Framework

**Collage Name –** Quantum University

**Batch Number - 01**

**Task 4:-** Fix a product configurator and explore the knowledge. Develop a C-K Theory for optimization.

Optimizing the Tesla Car Configurator Using C-K Theory

We will apply the C-K Theory (Concept-Knowledge Theory) to improve and optimize Tesla's Car Configurator.

Step 1: Disjunction (Breaking Existing Boundaries)

This step focuses on identifying the limitations of the current Tesla configurator and introducing disruptive changes.

Limitations in the Current Configurator:

Limited customization (fixed set of colors, wheels, interiors).

No AI-driven recommendations for users.

Static experience with 2D/3D previews but no immersive experience.

No integration of sustainability impact analysis for eco-conscious users.

No collaborative customization (e.g., family or friends providing input).

Breaking Existing Boundaries:

AI-driven smart recommendations based on user preferences and driving behavior.

VR/AR integration to visualize the car in real-world scenarios.

Personalized eco-footprint calculator to show energy savings and emissions reduction.

Custom branding options (personalized logos, custom wraps).

Collaborative configuration mode for multi-user input.

Step 2: Expansion in Concept Space

Now, expand the concept space by exploring new possibilities beyond current knowledge.

New Concepts:

AI-Assisted Customization:

Predict user preferences based on past Tesla models they viewed.

Suggest ideal battery range based on daily commute distance.

Auto-select features based on climate conditions of the user's location.

Immersive Virtual Showroom:

Use AR to project the customized Tesla into the user's garage.

Use VR for an interactive driving experience with different configurations.

Sustainability Dashboard:

Show real-time carbon footprint reduction based on chosen configurations.

Compare different battery options with expected lifespan and efficiency.

Real-Time Pricing & Financing Options:

Adjust payments dynamically as users select features.

Offer trade-in value estimation and leasing options directly in the configurator.

Social & Collaborative Customization:

Allow friends and family to vote on color, wheels, and interior choices.

Enable users to share configurations and get feedback before purchase.

Step 3: Conjunction (Filtering & Structuring Feasible Ideas)

Now, filter and structure the expanded concepts by connecting them to existing Tesla knowledge and feasibility.

|  |  |  |
| --- | --- | --- |
| Concept | Feasibility  (high/medium/low) | Existing Tesla knowledge |
|  |  |  |
| AI-Assisted Customization | High | Tesla’s AI & machine learning algorithms |
| VR/AR Virtual Showroom | Medium | Tesla’s 3D visualization models, unity/unreal engine |
| Real-Time pricing & Financing | High | Tesla’s online ordering system |
| Social & Collaborative Customization | Medium | Tesla’s customer engagement data |
| Sustainability Dashboard | High | Tesla’s battery & energy efficient |

Step 4: Expansion in Knowledge Space

To implement these features, we must expand Tesla’s technological capabilities.

|  |  |  |
| --- | --- | --- |
| Features | New Knowledge Required | Implementation |
|  |  |  |
| AI-Assisted Customization | Deep learning for preference prediction | Train AI on Tesla’s customer data |
| VR/AR Showroom | ARKit, Web AR, VR engine | Develop mobile/web AR  application |
| Sustainability Dashboard | Carbon footprint algorithm | Integrate Tesla’s energy data |
| Real-Time Pricing | Dynamic pricing algorithm | Link configurations to Tesla’s finance API |
| Collaborative Customization | Cloud-based configurator sharing | Build social & feedback feature |

Optimized Tesla car configurator with C-K Theory:

Start

Disjunction: Identify current configurator limitations

Expansion in concept space: Introduce new disruptive ideas

Conjunction: Filter and connect feasible ideas with Tesla’s existing knowledge

Expansion in Knowledge Space: Develop new knowledge and technologies

Implementation: Deploy improved configurator features step by step

Testing & User Feedback: Optimize based on customer experience

Final optimized Tesla car configurator