Portfolio

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UX/UI Design, Research & Strategy

Contents

RESEARCH

01 Master Thesis: Instructions 2.0

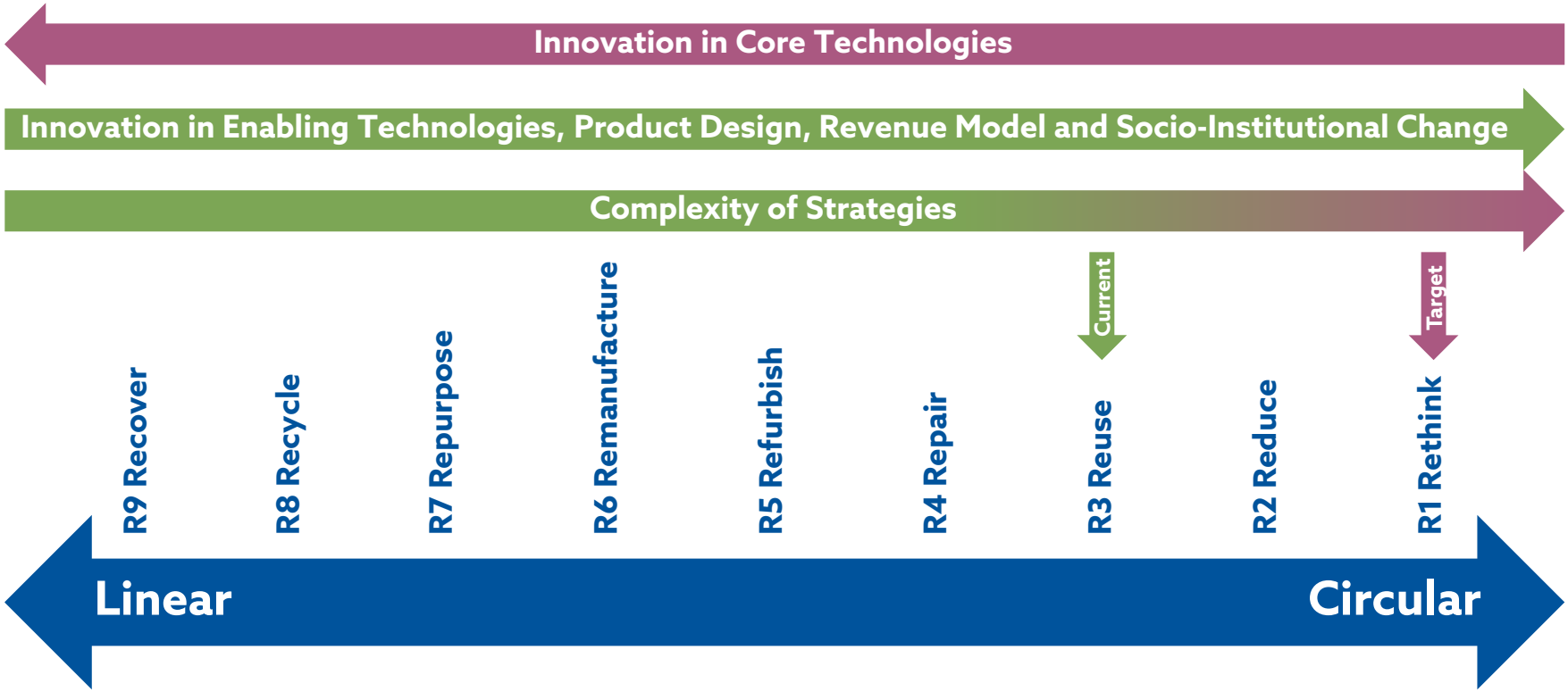
Rethinking instruction design for physical products in a sustainable product landscape

Research Paper

ABOUT

This research explores the intersection of product design, instructional design, and sustainability, focusing on user interactions with physical products in the absence of formal instructions. Motivated by the rise of the circular economy and the increasing prevalence of second-hand products, this study aims to identify gaps in current instruction design and delivery processes and develop innovative solutions to enhance user engagement and understanding.

CIRCULARITY STRATEGY FRAMEWORK

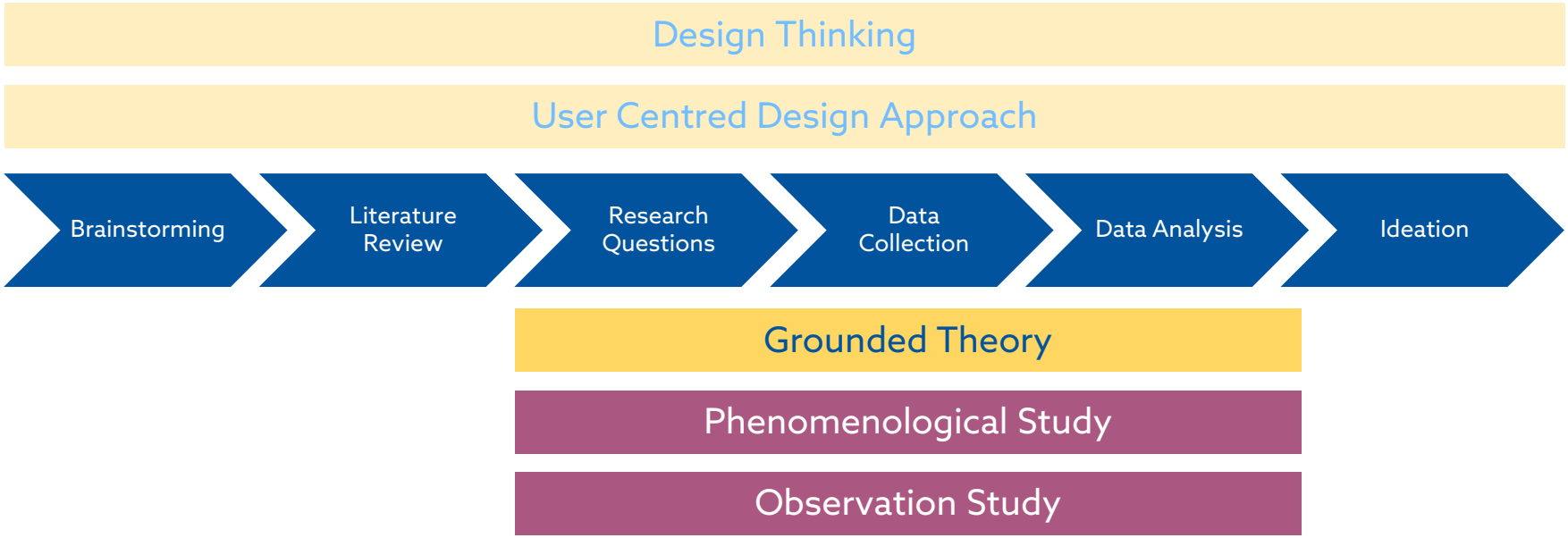


*High level of circularity = fewer resources and pressure on the environment

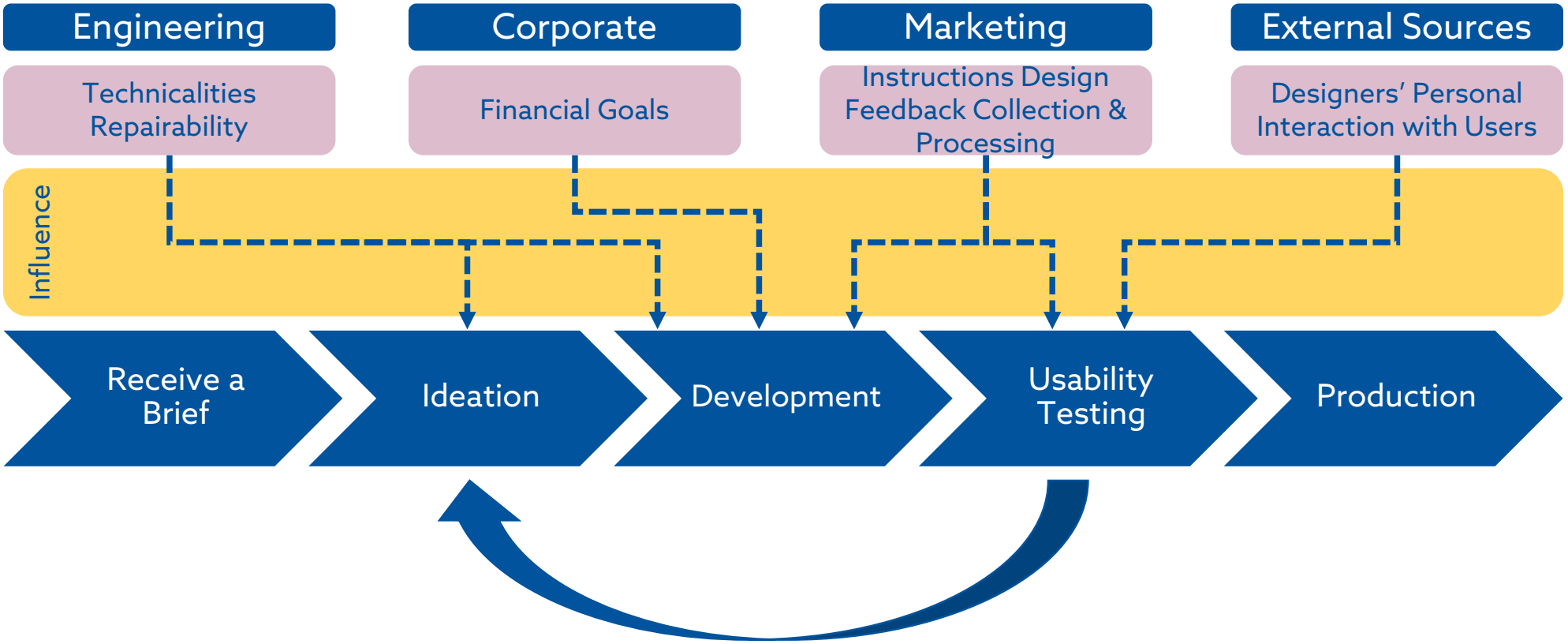
Source: Adapted from Potting, J., Hekkert, M., Worrell, E., & Hanemaaijer, A. (2017). Circular Economy: Measuring innovation in the product chain. ResearchGate.

Research Questions:

- "How do users manage to learn about products purchased second-hand?"
- "How do designers account for repairability, reusability and repurposability of their products in their design process?"



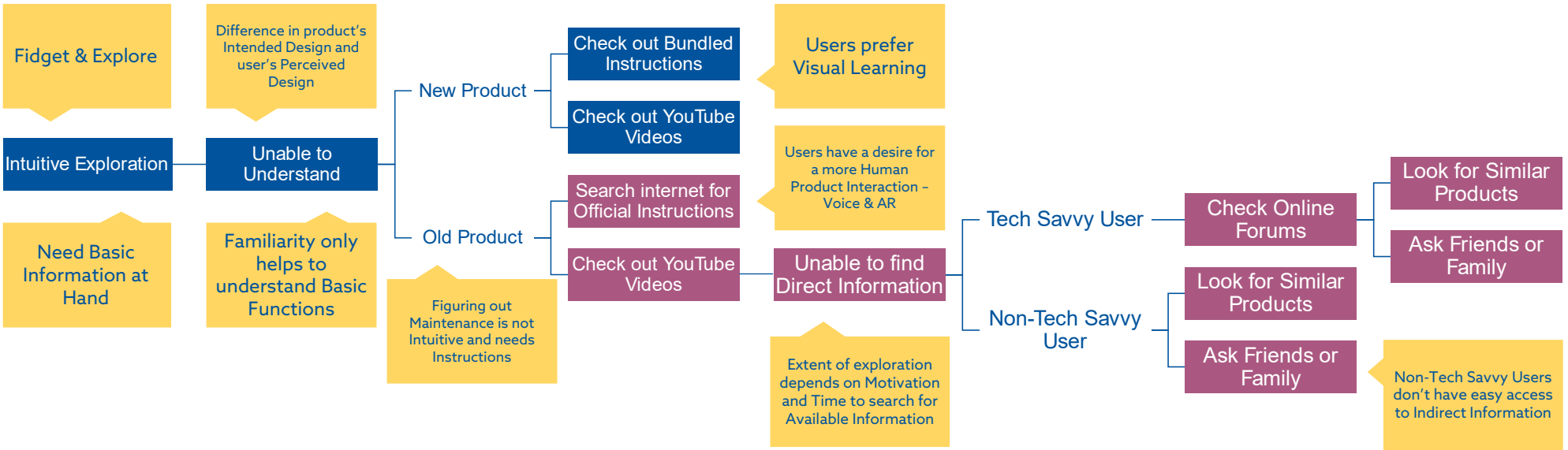
The designers' ***process map*** outlines the stages through which designers navigate, incorporating factors ***influencing sustainability*** and ***instructional design***.



Key Challenges

- Balancing Intuitive Design with Clear Instructions
- Managing Diverse User Feedback
- Practical Business Constraints limit implementation of Circularity Strategies

The users' ***decision tree*** effectively ***condenses complex findings*** into a clear and ***easily understandable process***.



Key Insights

- Reliance on Visual Cues to initially explore products
- Desire for Accessible Basic Information
- Preference for Visual Learning
- Desire for Intuitive and Tangible Interactions
- Product Maintenance is challenging due to its Non-intuitive Nature

User Needs

- Clear and Accessible Product Information
- Intuitive and User-centric Design

Design Process Challenges

Little Influence

Little Monetary Incentive

Difficult Standardisation

User Experience Challenges

Like Circularity

Unpleasant User Experience

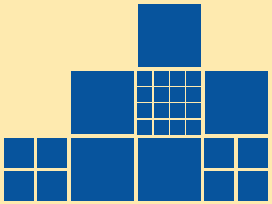
Time Consuming and Tedious

This research underscores a disparity between user needs and current industry practices. To bridge this gap and catalyse industry transformation, a conceptual service framework in the form of a ***Universal Product Information Database*** is proposed.

SERVICE FRAMEWORK - Universal Product Information Database

Key Principles

Accessibility



Modularity

Interactivity

Personalisation

Dynamism

Business Applications

- Promote Circularity in Product Design and Consumption
- Improve Consumer Education & Accessibility
- Promote Innovation in Business Models
- Data Analytics for Product Development and Marketing Strategies

Key Stakeholders

- Governmental Organisations or Open Source Software Companies to Manage the Platform
- Consumers
- Product Designers and Manufacturers
- AI Service Providers

Future Research

- Platform Architecture and Functionality
- Stakeholder Engagement and Collaboration
- Economic Viability and Business Models
- User Testing and Evaluation
- Legal and Ethical Considerations

RESEARCH

02 Design for Longevity: Mobility

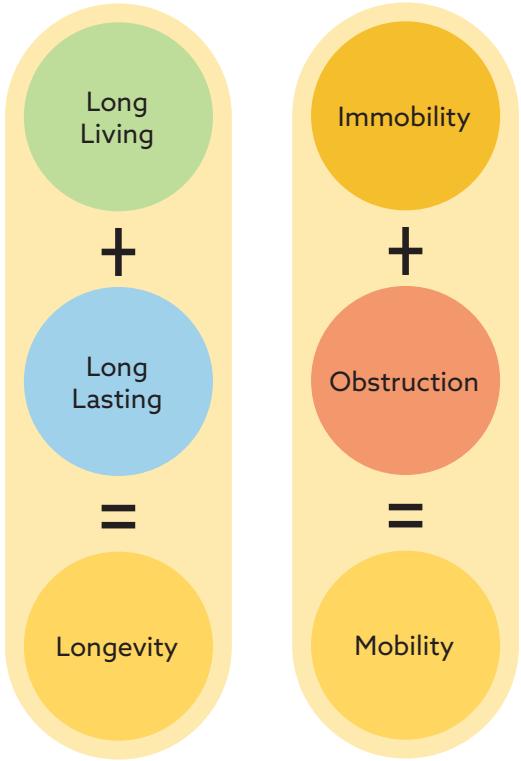
Research Project with MIT AgeLab and Mr. Sheng-Hung Lee, PHD researcher at MIT, Cambridge, USA

ABOUT

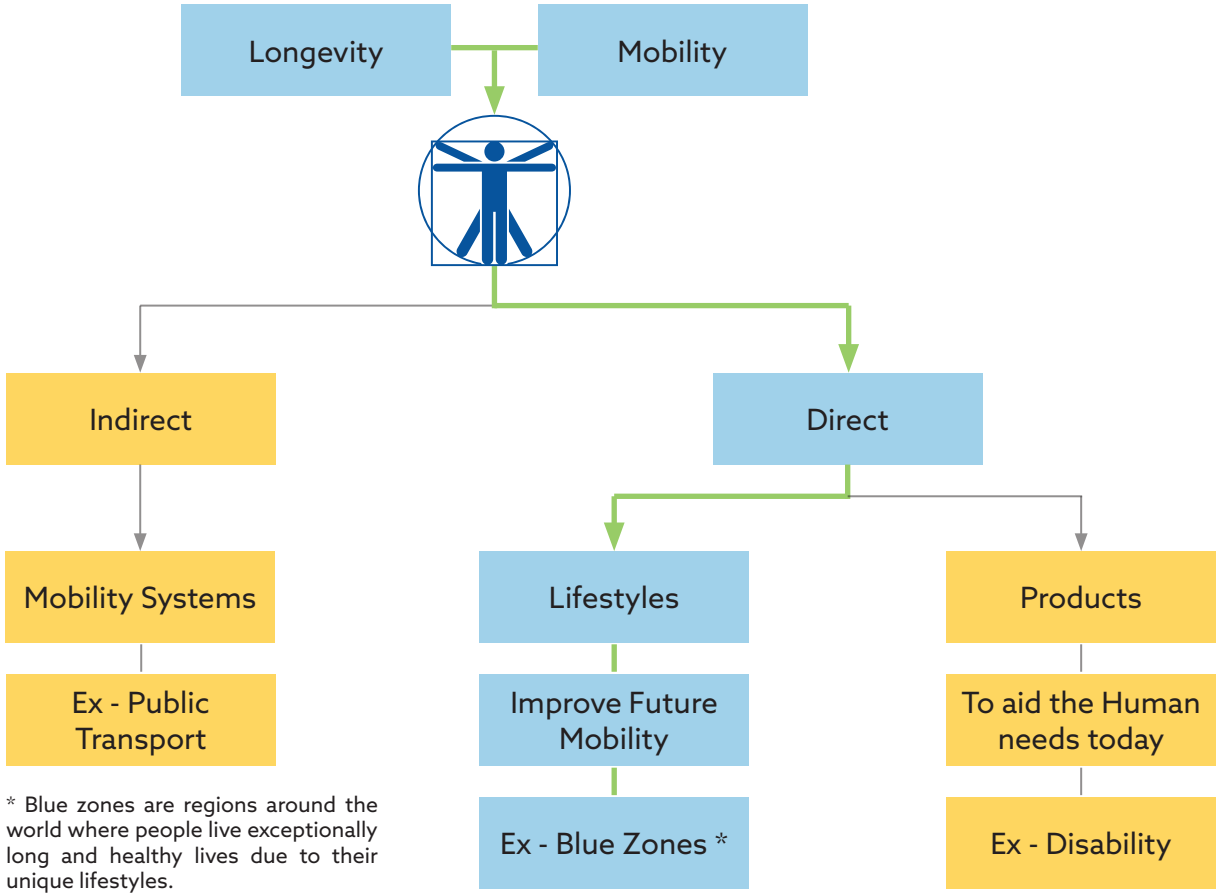
This project delves into the intricate realm of design for longevity and mobility, where the focus is on human-centered approaches to creating products, services, and experiences that not only enhance the quality of life but also help extend the lifespan of individuals. The quest for understanding the impacts of modern lifestyles on longevity and mobility forms the backdrop of this exploration. The project aims to unravel the complexities of these concepts through an interdisciplinary lens, employing a mix of methodologies including literature review, workshops, and qualitative interviews.

CONCEPTUAL FRAMEWORK

Etymology & Ontology



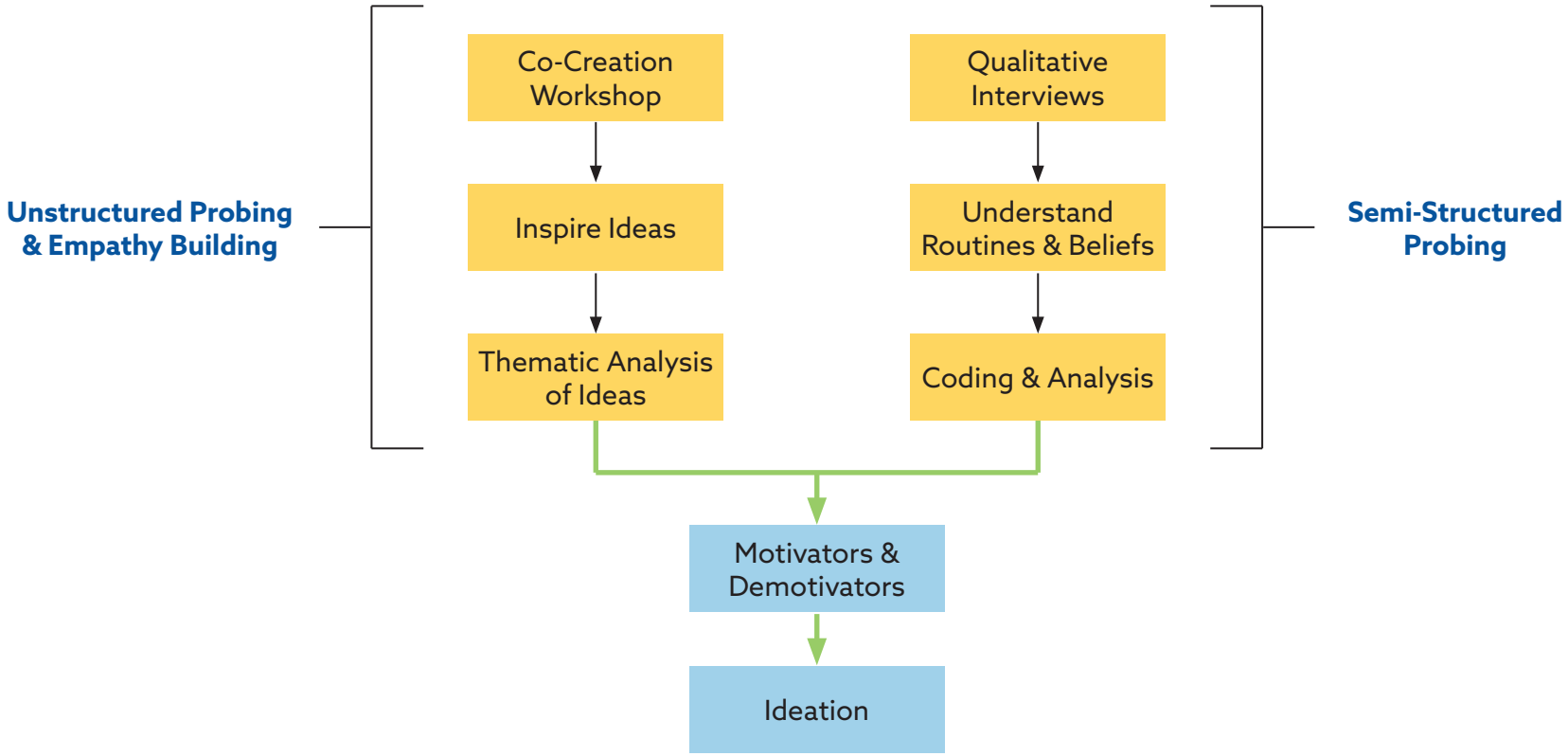
Approaches to Longevity & Mobility



* Blue zones are regions around the world where people live exceptionally long and healthy lives due to their unique lifestyles.

Research Question:

"How can we address the immobility epidemic and encourage physical activity in today's sedentary young generation?"



Motivators

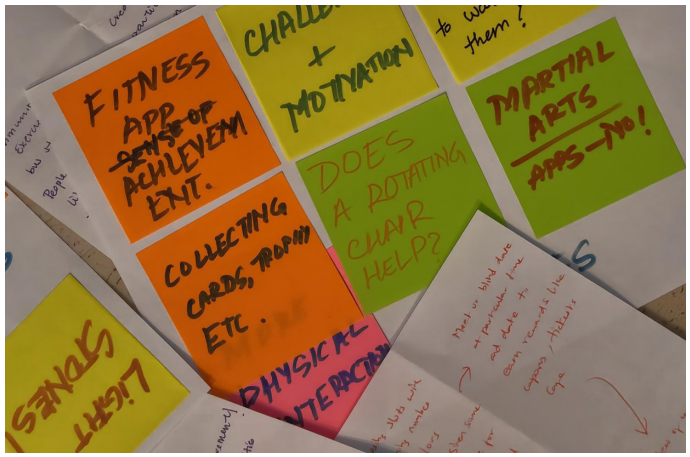
- Social Interaction
- Nature
- Proactive Intervention
- Better Mental Health

Demotivators

- Work Stress
- Lack of Time
- Laziness / Lack of Motivation

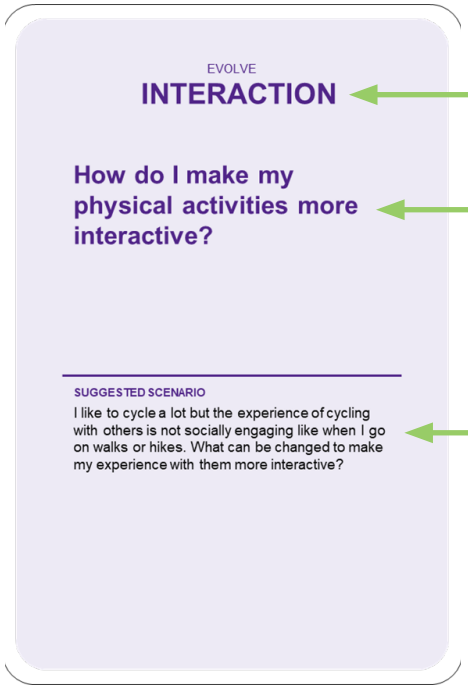
Key Goals & Beliefs

- Healthy diet is also required to stay fit
- Bad lifestyle have consequences
- Social interaction is important
- There are multiple ways to stay fit



Low Fidelity + For Design, Experiment & Prototype = Unified Cards → { Specific Keyword, Specific Goal, Scenario Question }

Unified Card Design*

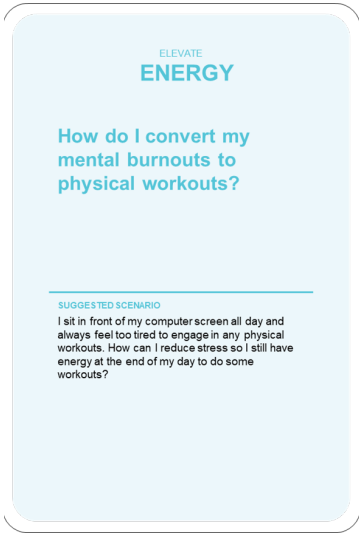


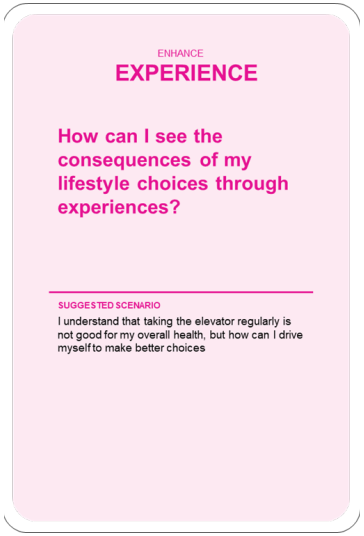
Goal and Keyword
Built upon motivations from the research

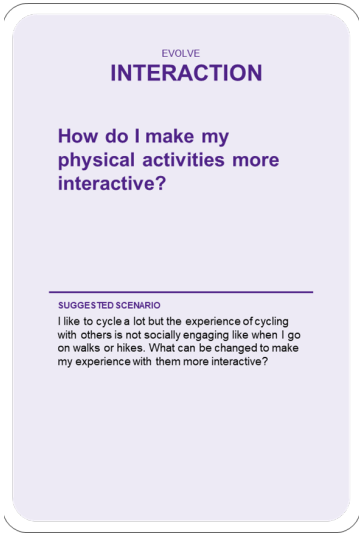
High Level Question
Based on interview dialogues and insights

Example Scenario
To be used as a reference or pattern recognition to identify similar scenarios

* Design is inspired from material from the D4L toolkit and research insights







STRATEGY

03 MaaS Innovation: The WikiMove Case

Business Strategy Project with WikiMove, a MaaS operator, Munich, Germany

ABOUT

The Mobility as a Service (MaaS) market is experiencing explosive growth, but this surge has also led to saturation with numerous small companies vying for dominance. WikiMove, a MaaS operator currently utilizing a standard business model in collaboration with the Bamberg government, faces this very challenge. This project delves into an analysis of WikiMove's existing model, seeking innovative strategies to diversify revenue streams and secure a larger market share in tier 2 and 3 German cities.

EXISTING BUSINESS MODEL ANALYSIS

To formulate business model improvement strategies for WikiMove, this project begins by dissecting their current model using ***Business Model and Value Proposition Canvases***. This analysis pinpoints key ***shortcomings***.

No Proprietary Value Proposition

In a saturated MaaS market, WikiMove lacks a service or feature that set them apart from competitors. This ***limits their ability to attract and retain customers***.

Limited Customer Segments

WikiMove's focus on local governments and citizens ***restricts its reach***, hindering opportunities for business model expansion.

Limited Revenue Streams

- **Service partnerships:** Collaborations with local city governments.
- **Commissions:** Earned from service providers on-boarded onto their platform.
- **Planned subscription model:** Designed to generate recurring revenue from citizens.

The revenue from these streams depends solely on WikiMove ***being able to on-board a massive user base, which is a problem***.

Leveraging research insights, the redesigned business model aims to overcome the shortcomings in WikiMove's existing strategy.

What can be the ***New Possible Propositions***?

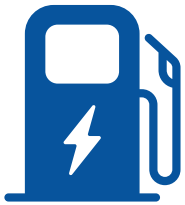
Unified Platform

Data Licensing

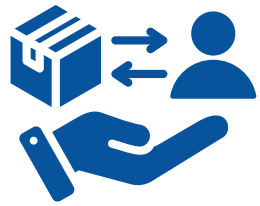
Data Management

Data Analysis & Insights

Parking Management



EV Charging Network



Transaction Mediation

Who can be the ***Potential New Customers***?

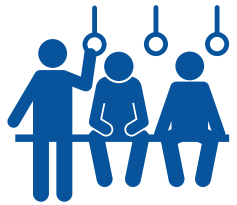
Existing Mobility Service Providers

Administrative Authorities

Event Management Organisations

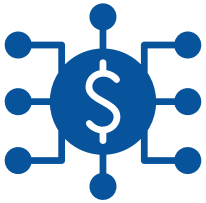
Brick & Mortar Businesses

Vehicle Owners



Commuters, Travellers & Tourists

How might we ***Do It***?



Diversifying financial streams through new investors, partners and customers.

Providing customised solutions for all customer segments.

Integrating services like parking management and EV charging to on-board new end users.

UI DESIGN

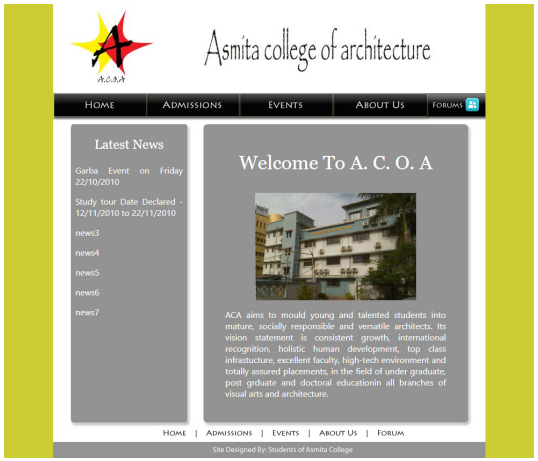
04 Decade Detox: Revamping a 2011's Website

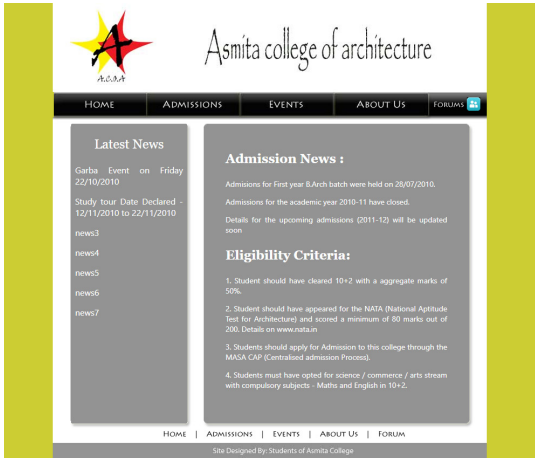
Analysing website design from an previous freelance project and revamping its user flow

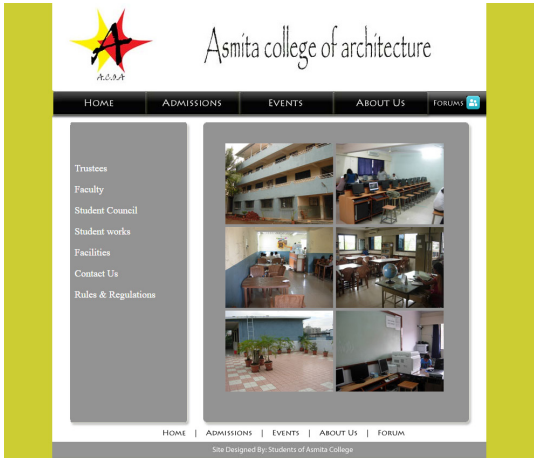
ABOUT

A design that was cutting-edge ten years ago can feel clunky and confusing to modern users. This project tackles the challenge of revitalizing a website burdened by outdated design. The goal? Transform a user experience riddled with dead-ends into a smooth, intuitive journey that resonates with contemporary audiences. This case study dives into the process of analyzing the pain points of the original website, crafting a new information architecture, and developing a user-friendly interface.

OLD DESIGN

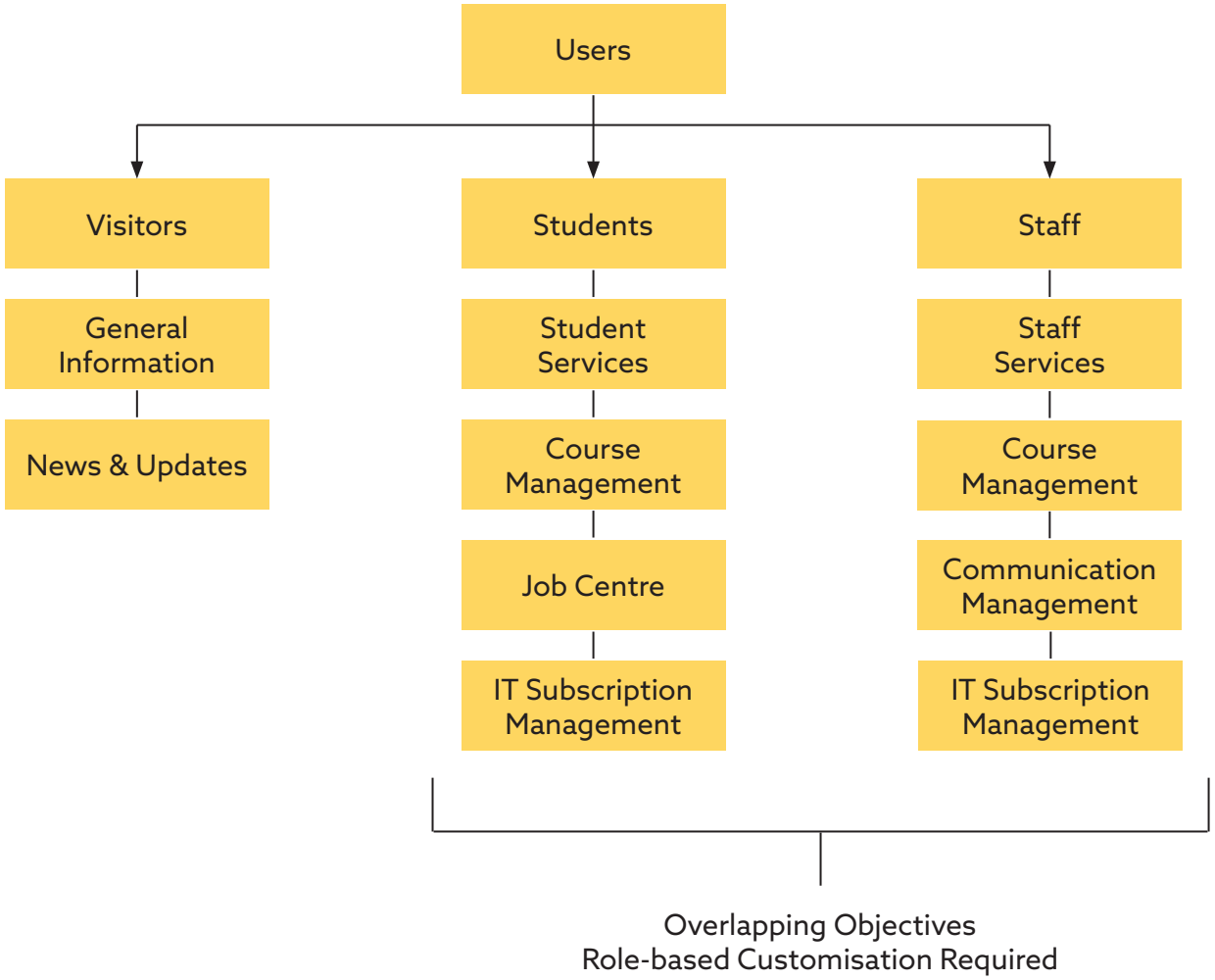




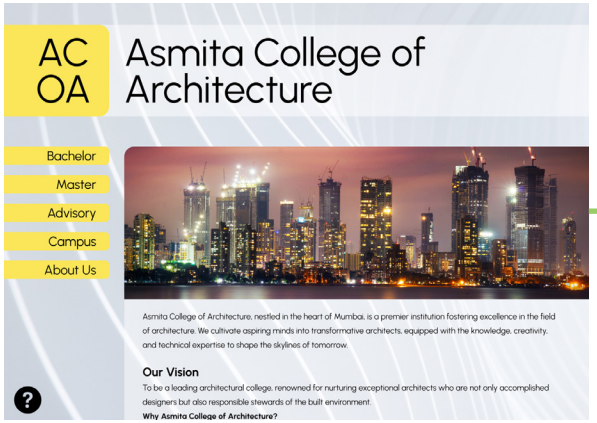


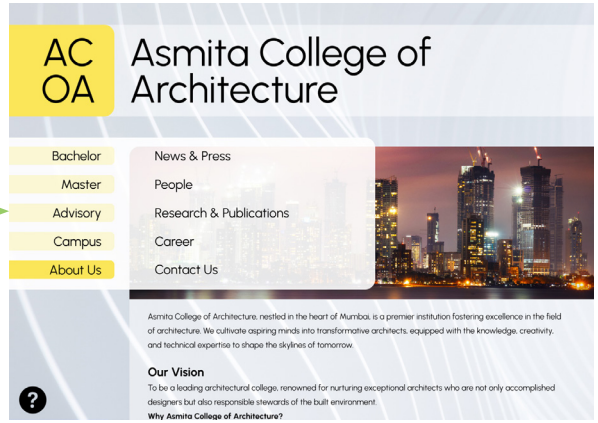
Challenges with Old Design

- **No User Segmentation**: One-size-fits-all approach.
- **Complex Navigation**: Single-page overload.
- **Inefficient User Flow**: Difficult to find needed information.

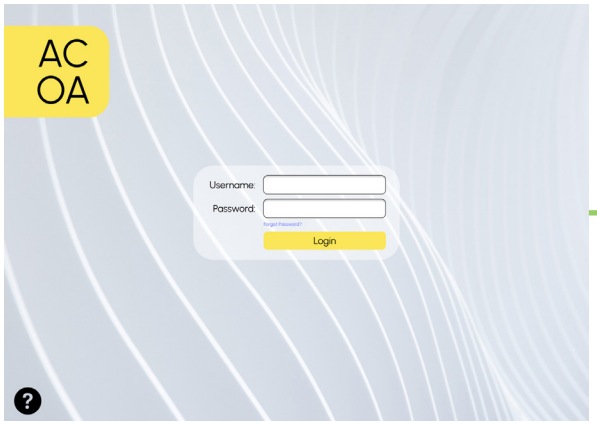


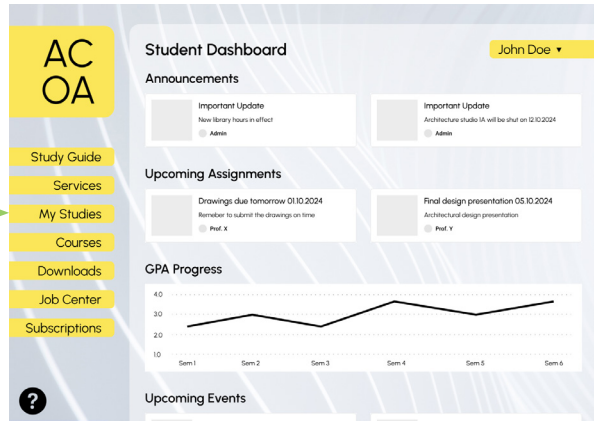
Visitors





Staff & Students





Refreshed Modern Design

Clear Information Architecture

Clear Call to Action

Role-based Customisation

Dynamic Dashboard

Personalised Content

STRATEGY

05 Spork Upgrade: Market-Driven Design

Freelance Project for a Plastic Products Manufacturer in India (Products marketed under brand name MnM)

ABOUT

This project involves design consultation and product development for common disposable cutlery items like spoons, forks, and sporks. It is undertaken for a plastic products manufacturer based in Daman, India. The objective of the project is to identify opportunities to improve these everyday utensils and expand the client's market share in a highly saturated and competitive market. To achieve this, a thorough market research and user interviews are conducted to uncover potential enhancements that resonate with consumers.

RESEARCH INSIGHTS

Competitor & Market Insights

- Cost sensitive market, cut throat margins
- Corner cutting in production is the norm
- Substandard materials and product quality
- Standard cookie cutter designs of products

User Interview Insights

- Existing products look and feel weak and unappealing. They break easily while using and causes injury
- Businesses handing out these cutleries are perceived as being cheap
- Flashing (Sharp edge defect of bad moulds) on these products lead to cuts in their mouths

Expert Interview Insights

- Moulds are not custom designed and tuned to suit the moulding machines and expected production output
- Manufacturers usually don't carry out periodic mould maintenance to save on costs
- Polystyrene is used to make most disposable cutlery because it is dense but it is expensive, brittle, less resistant to heat and not easily recyclable

IDEATION

New Raw Material

The research indicates a need for a new material to improve the product's functionality

New material used is 'filled Polypropylene' which improves the flexibility, heat resistance and recyclability of the products

Improved Aesthetics

User feedback suggests a focus on aesthetics to enhance the user experience

All products are redesigned with a matte texture to give it a more premium look and feel

Sturdier Design

The research highlights the need for a more robust design to increase durability

All products are redesigned and tested by the in-house engineering team to help prevent snapping during use

Custom Mould Design

To improve production efficiency and reduce occurrence of common defects like flashing

The moulds are redesigned to specifically prevent defects like flashing and be durable for the high production output

RESULTS

Further user testing with the original interviewees leads to refined prototype designs that achieve a good balance: ***improved product quality and user experience***, alongside ***reduced selling prices***, ***increased profit margins***, and ***boosted overall sales***.

Before	After
Selling Price ₹0.90/unit	Selling Price ₹0.65/unit
Profit Margin 6-7 %	Profit Margin 10 %
Annual Sales 10 million units	Annual Sales 60 million units