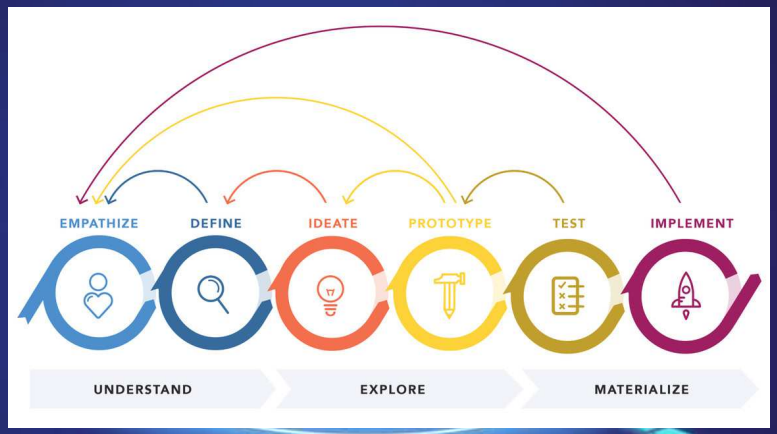
Design Thinking for IT projects

Lecture 07

What is Design Thinking ?

- Design Thinking is a human-centered, iterative process for solving problems and driving innovation.
- It emphasizes empathy with users, collaborative ideation, prototyping, and testing.

Example: Apple uses Design Thinking in product development, ensuring their products meet the needs of the end-user.



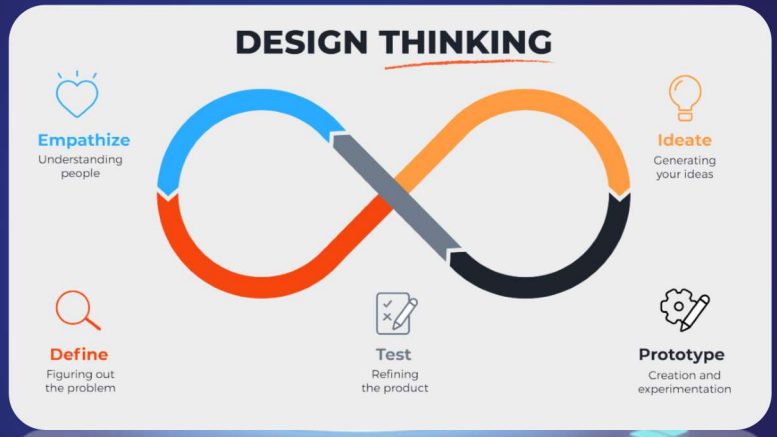
What is Design Thinking ?

https://www.youtube.com/watch?v=_r0VX-aU_T8

The Five Stages of Design Thinking

- Empathize: Understand the user and their needs through research.
- Define: Formulate a clear problem statement.
- Ideate: Brainstorm multiple potential solutions.
- Prototype: Create scaled-down versions or representations of ideas.
- Test: Gather feedback from users to refine solutions.

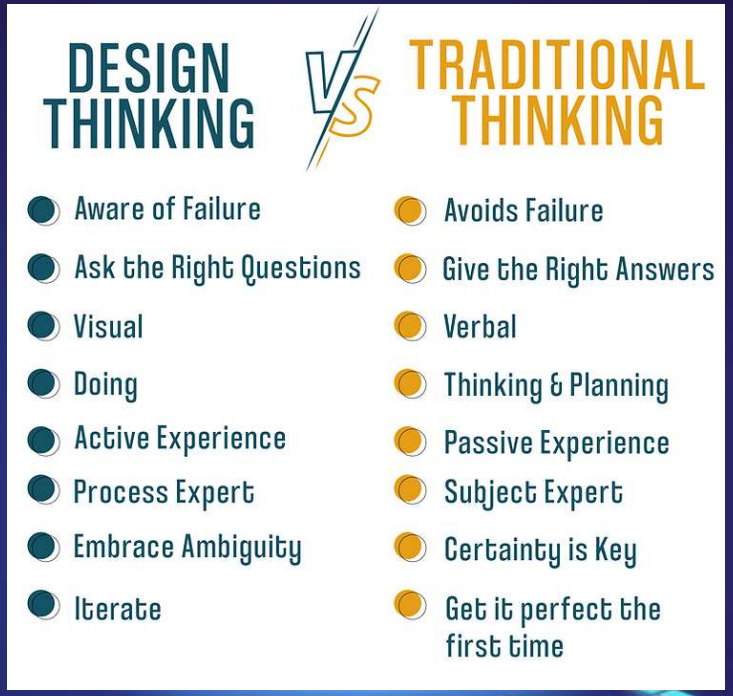
Example: When developing a fitness app, the team first empathized with users to understand their health challenges.



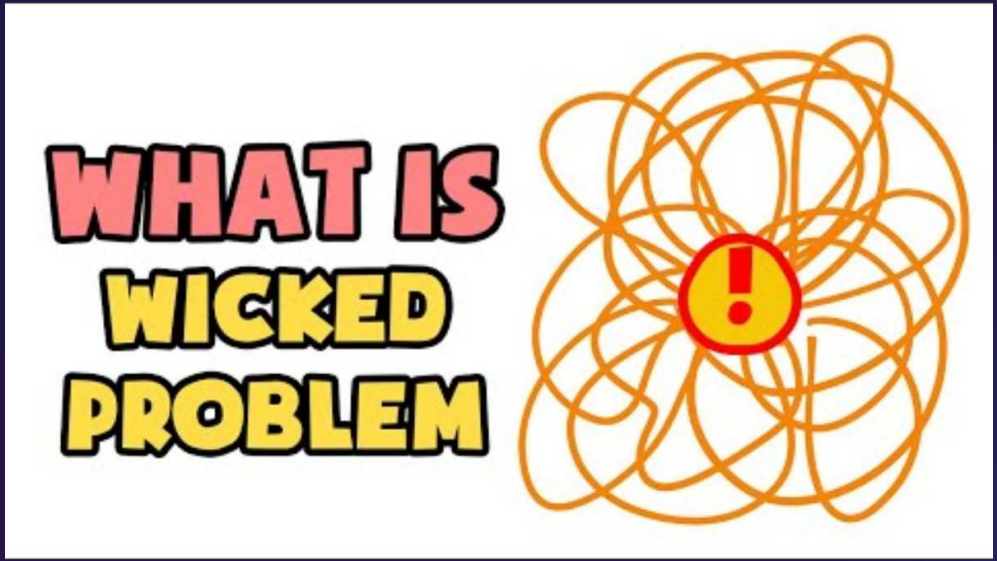
Why Design Thinking matters in IT projects ?

- IT projects are often complex, involving different user needs, technical challenges, and rapid technological change.
- Design Thinking ensures the solution addresses the real problem and provides user-centric solutions.

Example: IBM used Design Thinking to reframe user challenges in their cloud services, improving the customer experience.



What is “Wicked” Problem ?



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Understanding the “Wicked” problems

- "Wicked problems" are complex, with no clear solution, often involving multiple interconnected factors.
- Design Thinking helps break down and address these problems holistically.

Example: Urban transportation systems, where multiple factors like infrastructure, user behavior, and regulations need to be considered.

Empathize: Understanding User Needs

- Begin by deeply understanding the users and their environment.
- Tools include user interviews, surveys, and observations.

Example: AirBnB founders realized their problem was not scalability but the quality of photos, which they fixed by interacting with hosts.

Define: Clarifying the problem

- Synthesize the information gathered during the empathy phase and create a clear problem statement.
- A good problem statement focuses on the user's needs and avoids proposing solutions.

Example: In a website redesign project, the problem was redefined from "improving SEO" to "making it easier for users to navigate and find products."

_____ needs to _____ because _____ .
[user] [user's need] [insight]

Ideate: Generating solutions

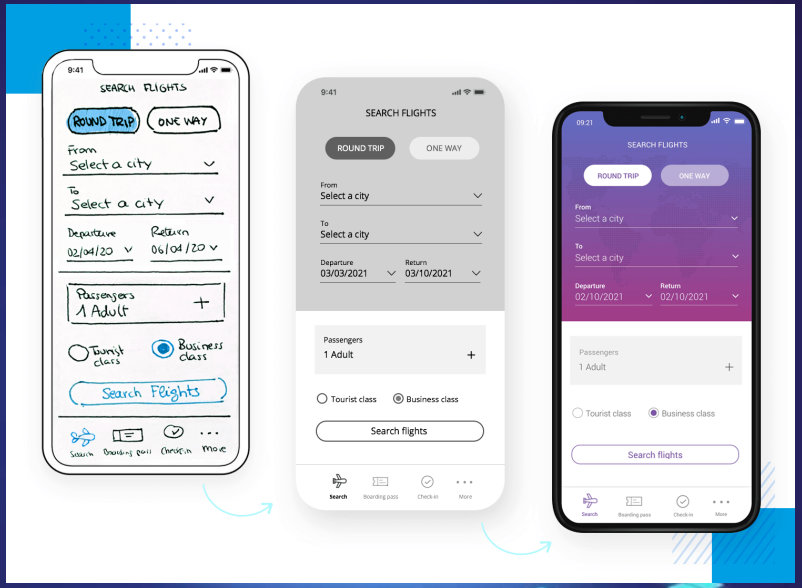
- Encourage open brainstorming and collaboration to come up with creative solutions. Avoid judgment in this phase to foster innovation.
- Tools: Brainstorming sessions, mind maps, collaborative workshops.

Example: Google used ideation techniques to create features like Google Lens, focusing on how users could interact with images to search the web.

Prototype: Building ideas

- A prototype is a scaled-down version of a product that allows teams to explore ideas quickly and cheaply.
- ***Low-fidelity prototypes:*** sketches, wireframes.
- ***High-fidelity prototypes:*** working models.

Example: Tesla frequently uses prototypes in their software development to test new features with real users before rolling them out.



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Test: Refining solutions

- Testing is about learning from users, gathering feedback, and iterating on the solution.
- It's important to be open to feedback and willing to go back to earlier stages.

Example: Before launching Google Maps, Google tested the service with a small group of users to identify usability issues and improve the final product.

Case Study: AirBnB's success with Design Thinking

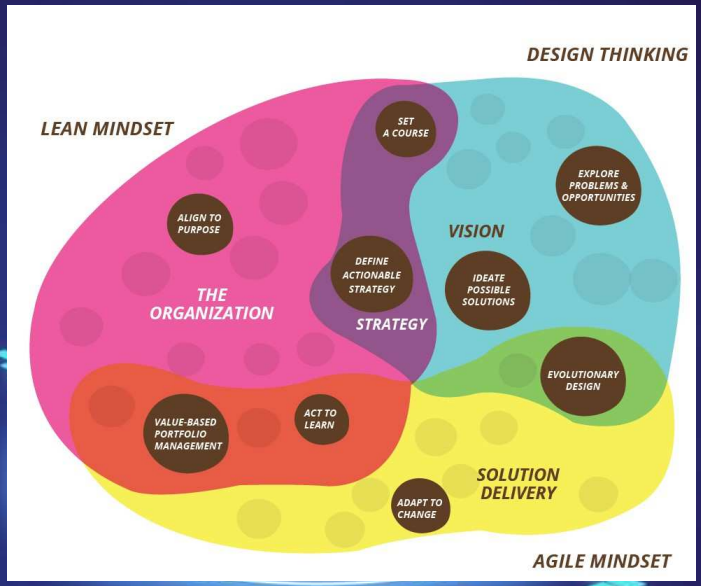
- **Problem:** AirBnB's growth was stagnating due to poor-quality property photos.
- **Solution:** The founders used Design Thinking, flew to New York, took high-quality photos, and improved the listings.
- **Result:** Revenue doubled, and the platform's user base grew.

➪ ***Key Takeaway:*** Understanding the real user issue led to a simple but impactful solution.

Agile vs. Design Thinking

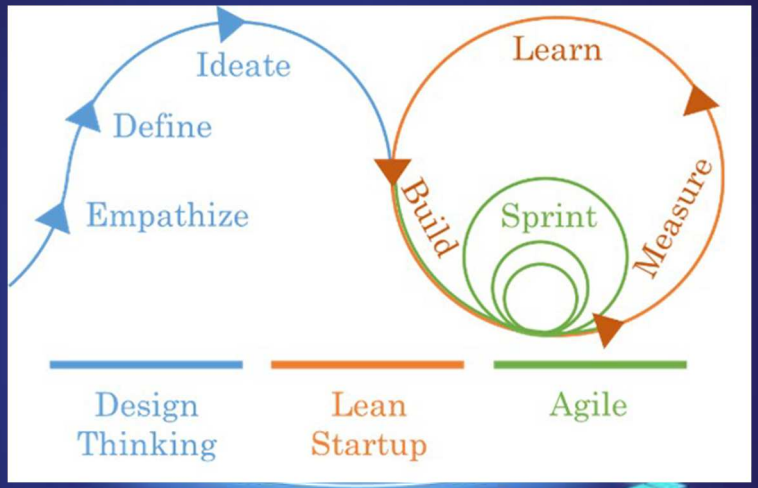
- Agile focuses on iterative development with continuous feedback, while Design Thinking emphasizes problem identification and user experience.
- Both can complement each other, especially in IT projects.

Example: A team can use Design Thinking to define the problem, then use Agile to iteratively develop the solution.



Design Thinking in Agile projects

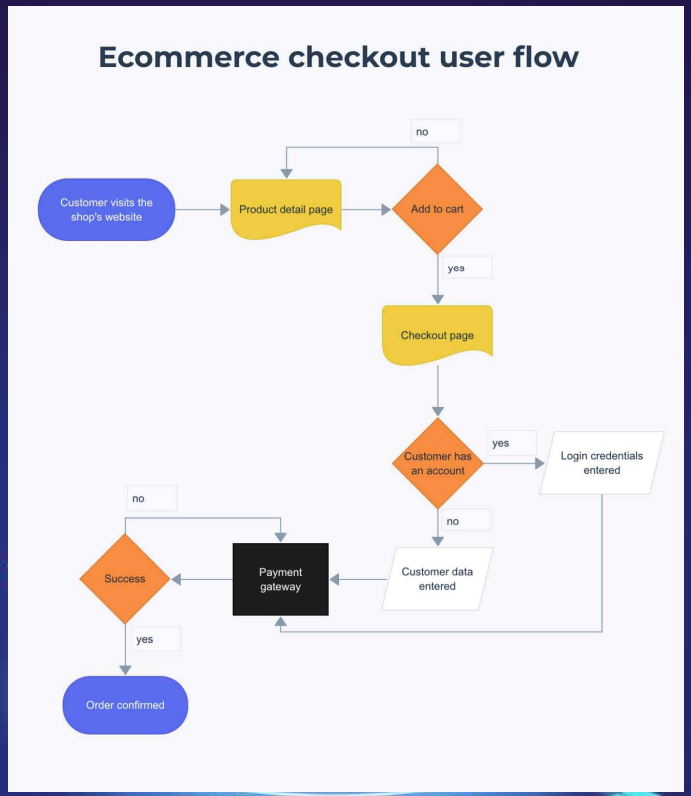
- Design Thinking fits into Agile by acting as a front-end to the iterative sprints of Agile development.
- It helps teams refine their understanding of the user before development begins.
- *Example:* A startup used Design Thinking to frame user problems, followed by Agile sprints to develop a web platform.



Design Thinking for software development

- Design Thinking enhances software development by ensuring that the user's experience is central throughout the design and development process.
- Focus areas: user flows, interfaces, system feedback.

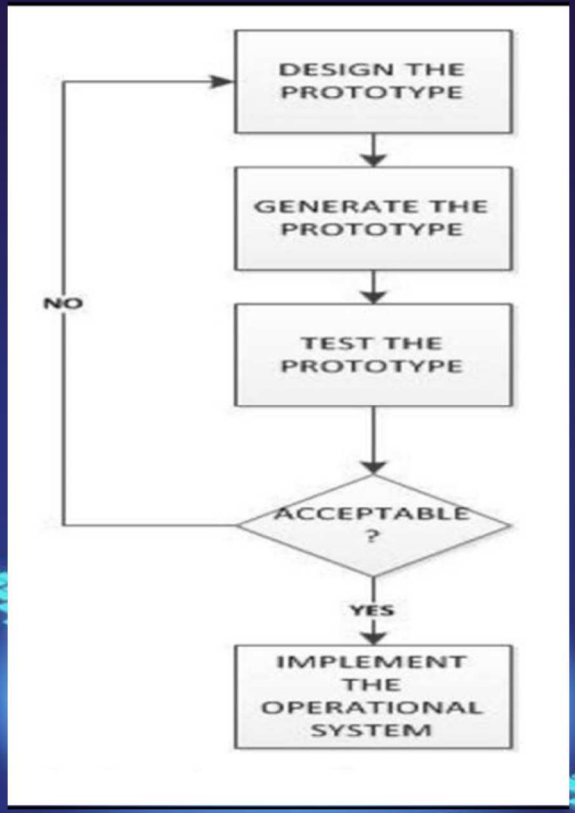
Example: Microsoft applied Design Thinking to improve user interactions in Windows, focusing on simplifying navigation.



Role of prototyping in IT projects

- Prototypes in IT projects help visualize solutions and get early feedback before full-scale development.
- They allow for quick iterations and better alignment with user needs.

Example: Netflix created internal prototypes for its recommendation engine to gather user feedback before launch.



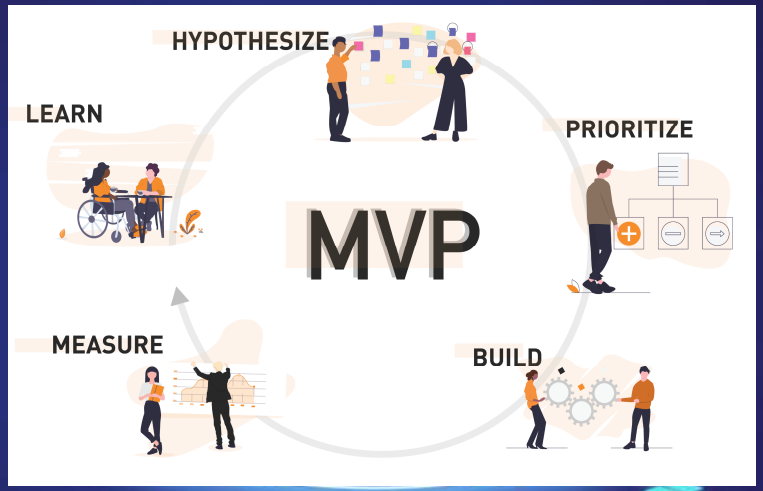
What is MVP ?

https://www.youtube.com/watch?v=3_JCTZxaCkc

Using Design Thinking to build MVPs

- *MVPs: Minimum Viable Products*
- Design Thinking helps teams focus on core user needs, leading to the development of MVPs that meet essential requirements while leaving room for future enhancements.
- MVPs allow teams to validate ideas early with minimal investment.

Example: Dropbox initially launched an MVP based on user feedback collected through a simple explainer video.



Collaborative problem-solving

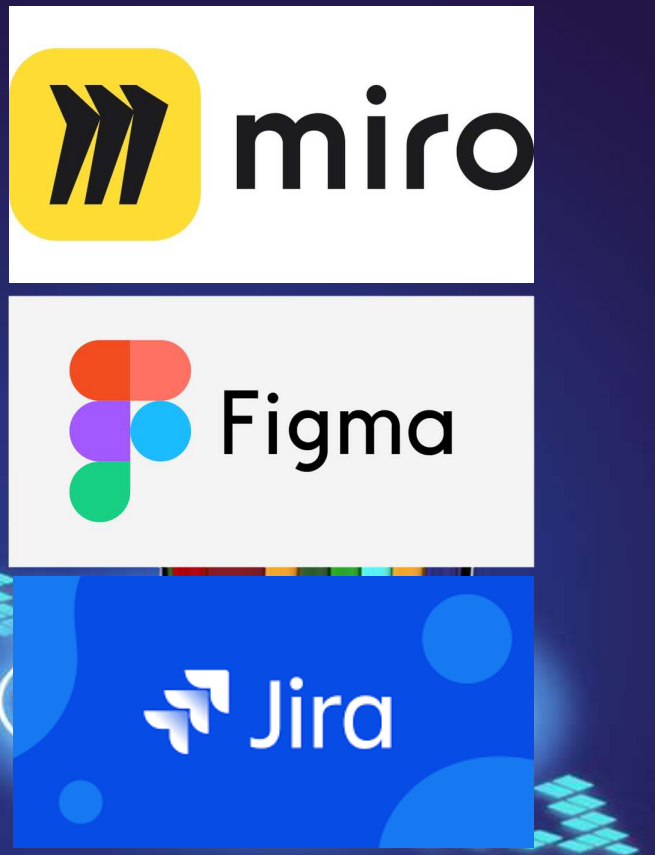
- Design Thinking thrives on cross-functional collaboration, ensuring that all stakeholders contribute to the solution.
- IT projects often require input from developers, designers, and end-users.

Example: IBM brings together cross-functional teams to co-create solutions for enterprise clients.

Tools for Design Thinking in IT

- Key tools include:
  - **Miro** for collaborative brainstorming.
  - **Figma** for prototyping UI/UX.
  - **Jira** for tracking Agile workflows.

Example: Google's design team uses Sketch for prototyping new features in their apps.



Design Thinking in IT risk management

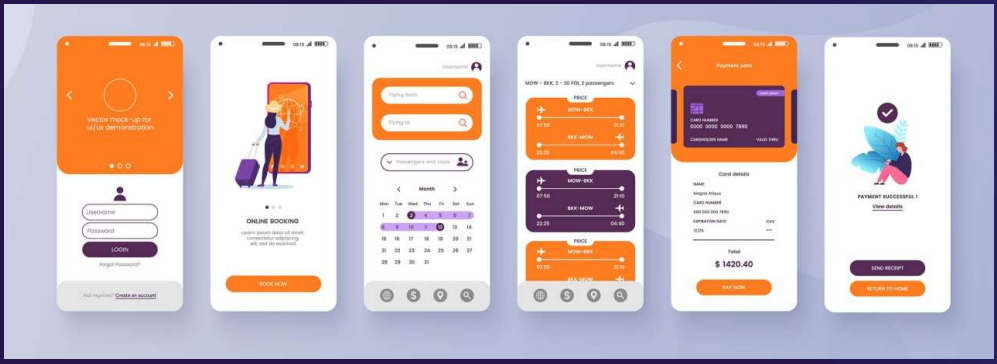
- Apply Design Thinking to IT risk management by understanding user needs and anticipating potential risks.
- Prototyping security solutions early can help mitigate risks before full deployment.

Example: A fintech startup used prototyping to test its security features before launching a financial app.

Design Thinking for UX/UI management

- Focus on the user's behavior and experience to create intuitive interfaces and satisfying interactions.
- Continuous testing with real users is key to refining the design.

Example: Facebook continuously iterates on its UI design to improve engagement and user satisfaction.



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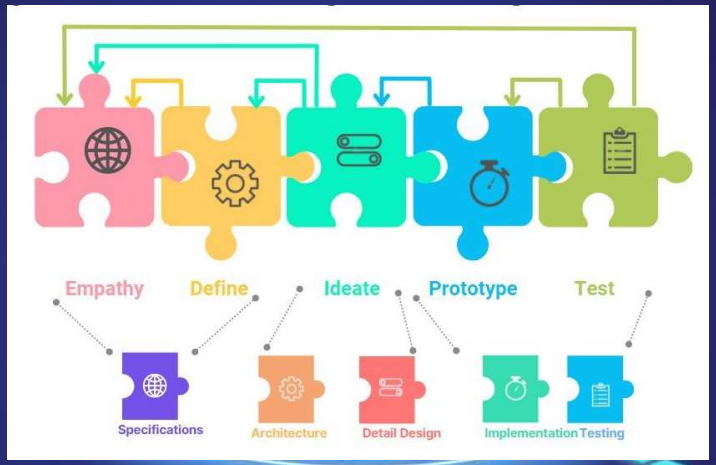
Scaling Design Thinking in large IT projects

- Design Thinking can scale by embedding it into the organizational culture and making it part of the project lifecycle.
- Encourage constant user feedback at every stage of development.

Example: SAP uses Design Thinking across its product teams to ensure alignment with client needs in large ERP projects.



Measuring success in Design Thinking projects

- Metrics to measure success include user satisfaction, speed of iterations, and innovation.
- Regular feedback loops are essential for continuous improvement.

Example: Apple measures success by how users interact with their products, focusing on ease of use and satisfaction.

Common challenges in Design Thinking

- Challenges include resistance to change, difficulty aligning with Agile, and gathering meaningful user feedback.
- Solutions: foster a collaborative culture and integrate Design Thinking with Agile workflows.

Example: A company faced resistance when adopting Design Thinking, but overcame it by training all team members on the process.

The future of Design Thinking in IT

- As technology evolves, Design Thinking will continue to play a critical role in creating user-centered, innovative solutions in IT projects.
- AI and machine learning will further enhance how teams use Design Thinking to develop solutions.

Example: AI-driven applications like ChatGPT are improving through user feedback and Design Thinking principles.

THANK YOU