# SHIFT Methodology Case Study: TATVIKA ECOSYSTEM

**Overview**

*TATVIKA is a groundbreaking immersive reality platform designed to enhance the cognitive, physical, and emotional well-being of individuals with intellectual and physical disabilities, as well as elderly people. This case study demonstrates how the SHIFT methodology was applied to create this innovative solution, addressing the diverse needs of multiple user groups. The ecosystem was developed by Punarjeeva Technology Solutions and Inclusys Neuro Org using SHIFT methodology.*

**The Challenge**

Develop an inclusive and effective digital wellness program tailored to the unique needs of individuals with intellectual and physical disabilities, as well as elderly people, enabling them to access quality rehabilitation, maintain cognitive function, improve physical well-being, and enhance overall quality of life through engaging and adaptive virtual reality experiences.

**SHIFT Methodology Application**

**Sensing Phase**

Objective: Understand the specific needs, aspirations, and barriers faced by individuals with disabilities and elderly people in accessing effective rehabilitation and wellness programs.

Actions Taken:

- Conducted in-depth discussions, brainstorming sessions and individual interations with diverse stakeholders
    - Beneficiaries of Persons with intellectual and physical disabilities
    - Elderly people and their caregivers
    - Occupational therapists and physiotherapists
    - Geriatric care specialists
    - Rehabilitation centers and senior care facilities

Key Insights:

- Identified unique preferences of the target groups
- Uncovered specific barriers to traditional rehabilitation methods for both disabled and elderly individuals
- Recognized the importance of engaging, personalized, and adaptive approaches to therapy
- Identified the need for a solution that addresses cognitive, physical, and emotional well-being holistically for all user groups

Takeaways from some of the discussions:

- Geriatric Specialist: "Many of our elderly patients struggle with maintaining cognitive function and physical activity as they age. We need something that can keep them engaged and active."
- Therapist: "Yes, and for our patients with disabilities, traditional therapy methods often feel repetitive and demotivating."
- Elderly Resident: "I'd love to try new activities, but I'm worried about my physical limitations and safety."
- Researcher: "What if we could create a virtual environment that's both stimulating and safe for all these diverse needs?"

These discussions led to the realization that an immersive, adaptive technology solution could address the challenges faced by both individuals with disabilities and elderly people.

## Harmonizing Phase

Objective: Develop a comprehensive wellness program that bridges the gap between the unique needs of individuals with disabilities and elderly people, providing effective, engaging rehabilitation and cognitive maintenance techniques.

Actions Taken:

- Explored and assessed various digital technologies for relevance and accessibility across all user groups
- Refined and adapted content in areas such as:
  - Virtual reality-based physical therapy and exercise
  - Cognitive stimulation through immersive experiences
  - Emotional regulation and mindfulness practices
  - Social interaction and community building in virtual spaces
- Iteratively designed and prototyped VR experiences suitable for diverse abilities and age groups

Key Outcomes:

- Created TATVIKA, a holistic VR-based wellness platform that balances engagement, therapeutic efficacy, and accessibility for both disabled and elderly users
- Developed adaptive methodologies to accommodate diverse needs, abilities, and age-related constraints
- Integrated a variety of experiences addressing physical, cognitive, and emotional well-being for all user groups

Game Development Example

The team decided to create an immersive VR experience that would address multiple aspects of rehabilitation and cognitive maintenance:

1. Movement and Navigation: Users interact with the virtual environment to promote physical coordination and balance, adaptable for various mobility levels.

2. Cognitive Challenges: A series of engaging mini-games were designed to stimulate cognitive function and potentially slow cognitive decline in elderly users.

3. Physical Activities: Various challenges were incorporated to encourage core stability and spatial awareness, beneficial for both disabled individuals and elderly users at risk of falls.

**Transforming Phase**

Objective: Implement and scale TATVIKA, creating lasting impact for individuals with disabilities and elderly people.

Actions Taken:

- Introduced cutting-edge VR technologies for immersive therapy and cognitive maintenance experiences
- Implemented an adaptive, data-driven approach for personalized wellness journeys suitable for diverse user groups
- Established partnerships with rehabilitation centers, educational institutions, and senior care facilities for program scaling
- Provided comprehensive training to therapists, caregivers, and geriatric care specialists

Impact Highlights:

- Over 3000+ users, including both individuals with disabilities and elderly people, have benefited from TATVIKA across various institutions
- Users reported increased motivation during therapy and daily exercise routines due to gamified scenarios and interactive learning formats
- Measurable improvements observed in mobility, cognitive processing, and self-confidence across all user groups
- Positive feedback from therapists and geriatric specialists on the platform's effectiveness and ease of use for diverse populations

VR Experience Impact:

- Multiple difficulty levels and adjustable settings allowed for personalized experiences suitable for users with varying abilities and age-related constraints
- The integration of cognitive and physical challenges led to more efficient therapy sessions and engaging cognitive maintenance activities
- Therapists reported increased patient engagement and adherence to therapy routines among both disabled and elderly users
- The data recording feature allowed for precise progress tracking, enabling healthcare providers to make data-driven decisions about treatment and care plans

**Key Success Factors**

1. Deep empathy and understanding of the diverse needs of both disabled and elderly users (Sensing)

2. Adaptive and iterative approach to program development, ensuring suitability for all user groups (Harmonizing)

3. Innovative use of VR technology for personalized, engaging experiences across different age groups and abilities (Transforming)

4. Strong partnerships with various care facilities for comprehensive program implementation and scaling (Transforming)

**Testimonial**

Dr. Manju George, Head of Pratheeksha Child Development Centre at Pushpagiri Medical College, Thiruvalla, Kerala India provided a testimonial highlighting the positive impact of TATVIKA:

"TATVIKA, which is a reality based solution provides rehabilitation for the entire body including gross motor and fine motor as well as facilitates cognitive improvement. The gamification aspect encourages children to undergo therapy and have shown significant improvement in children. The solutions have changed the lives of many children in a positive way. "

**Conclusion**

The TATVIKA case study demonstrates the power of the SHIFT methodology in creating transformative solutions for complex social challenges across diverse user groups. By systematically moving through the Sensing, Harmonizing, and Transforming phases, TATVIKA was developed as a truly inclusive and impactful wellness program that leverages virtual reality to improve the lives of both individuals with disabilities and elderly people.

TATVIKA showcases how the SHIFT methodology can guide the development of innovative, technology-driven solutions that address holistic well-being, promote inclusivity, and create lasting positive change in the lives of underserved communities. The success of the VR experiences within the TATVIKA platform illustrates the potential of combining empathetic design, cutting-edge technology, and therapeutic expertise to create truly transformative experiences that cater to the diverse needs of both disabled and elderly users.