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Visualizing system complexities and diverse stakeholder perspectives:

A co-design approach to enhance the wheelchair acquisition and service delivery process

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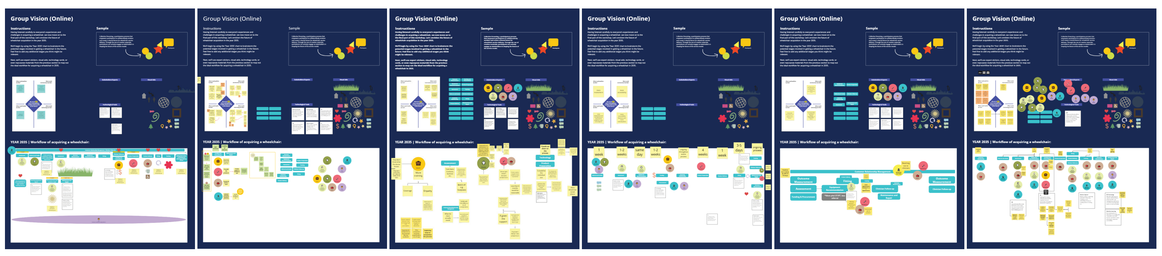
Problem

The wheelchair acquisition process, shaped by complex funding, services, and stakeholder interests, often falls short for users. This study takes a user-centered design approach to visualize stakeholder experiences and identify opportunities for better outcomes.

Research Questions

1. What does the existing CRT SDP look like from the perspectives of the various stakeholders?
2. Should we focus on improving the implementation of the existing model or do we need to change the CRT SDP?

Methods



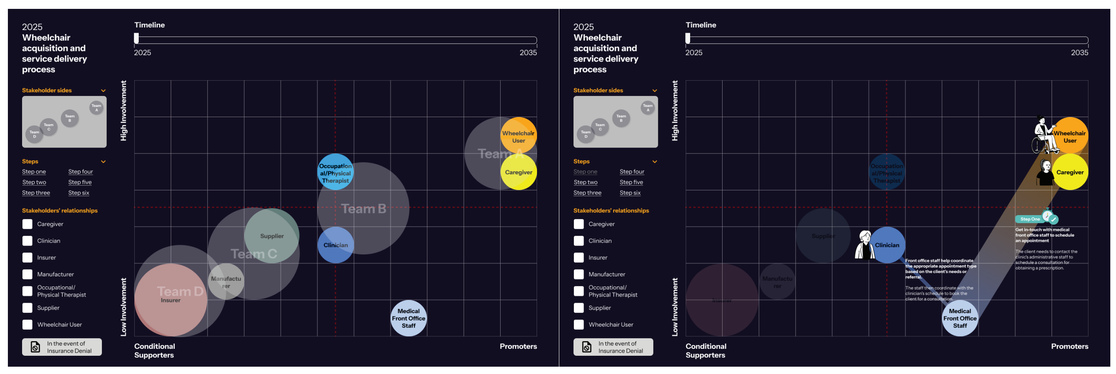
Data were collected through semi-structured interviews and co-design workshops with stakeholders, including wheelchair users, care providers, clinicians, suppliers, and manufacturers. Interviews balanced structure with open-ended questions, capturing nuanced perspectives on wheelchair acquisition. Co-design workshops fostered collaboration across diverse stakeholders, facilitating idea exchange and human-centered solutions (see Table 1).

Table 1. All participants, who were recruited based on personal connections, participated in the workshops voluntarily with a small incentive.

Participant Role	Wheelchair User	Caregiver	Clinician	Manufacturer	Supplier	Insurer
QTY	3	3	3 (+3)*	2	2	1

Three of the workshop participants, who were caregivers, suppliers, and manufacturers, also had clinical backgrounds and chose to identify with the role of a clinician during some part of the workshop.

Discussion



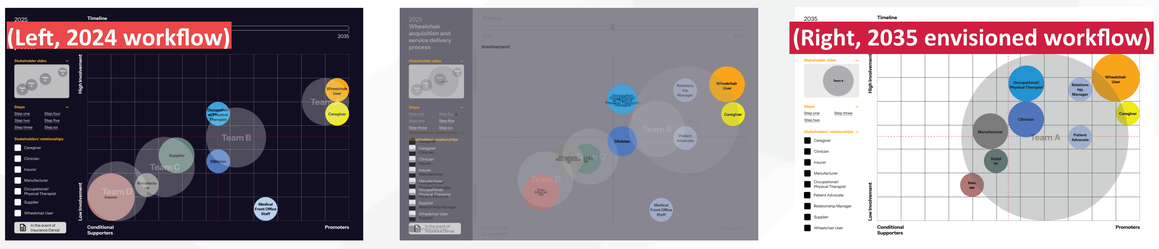
The research highlights the complexities of the wheelchair SDP, where delays and insurance barriers create major challenges.

- Caregivers express frustration:
  - (P5): "It took almost three months just to get someone to measure him."
  - (P8): "Doctors should tell insurance what clients need, not the other way around."
- Participants envision a more collaborative system by 2035:
  - (P2): Advocates for a process "done with me" rather than "done to me."

The interactive visual model illustrates these challenges, identifying gaps and opportunities for improvement.

Results

Figure 2. Screenshots from the interactive visual model (workflow in 2024 on the left to envisioned workflow in 2035 on the right) In the 2024 workflow: Side A: Wheelchair users and caregivers, Side B: Clinicians and Side C: Supplier, manufacturer and Side D: Insurer



- Stakeholder insights informed an interactive visual model (Figure 2) that goes beyond numeric and verbal descriptions.
- The model compares the current fragmented system (Figure 2 Left) with an idealized, user-centered future (Figure 2 Right).

The interactive model dynamically highlights stakeholder relationships, providing deeper insights into their roles.

The model integrates co-design insights to evaluate key questions:

- Are user needs met promptly?
- Are resources allocated effectively?
- How close are we to a human-centered system?

Conclusion

In conclusion, the findings underscore the need to realign the wheelchair SDP with stakeholder needs, enabling more effective service delivery and a better experience for the people involved.

For full paper & citation:
tinyurl.com/9vwfs3yx

Questions?
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