Patient-Centric Innovation: A Roadmap to Transforming Healthcare Systems

Healthcare demands for personalized services to drive digital transformation. Providers are innovating care pathways through mergers but face high failure rates. Two case studies show how a holistic focus on the individual wellbeing journey and interdisciplinary collaboration enable value recognition and co-creation for patient-centric care.

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Consumer demands for personalized, patient-centric healthcare, combined with resource scarcity, pressure healthcare decision-makers to improve clinical and operational processes and accelerate digital transformation (Philips, 2021). To innovate and expand health services, hospitals and healthcare providers recognize the need to extend their limited resources, leading to the growing importance of unbound care models. These models, which integrate diverse services into patients' everyday lives, are increasingly viewed as pivotal to the digital transformation of continuous healthcare delivery (Gandhi et al., 2024). To enable such continuous care, healthcare providers are pursuing entrepreneurial ecosystems through mergers, acquisitions, joint ventures, and alliances (Clark et al., 2022). The growth of more sophisticated digital healthcare also contributes to this trend, with digital fitness and wellbeing, digital treatment and care, and online doctor consultation technologies projected to push global revenues to US\$ 180.68 billion by 2029 (Statista, 2024). Advocates for these innovative models emphasize partnerships and collaborative networks as essential for building a more sustainable and equitable healthcare system, ultimately improving patients' quality of life. However, despite 85% of pharma executives acknowledging the importance of partnerships, over 60% report high failure rates (Solbach et al. 2024). A recent report by Research2Guidance identified the lack of clear partnership strategy as the top reason behind partnership failures, with 55% of surveyed executives citing this as a problem (Jahns, 2023).

While marketing literature offers some guidance on structuring collaborative networks—integrating diverse services into consumers' everyday lives and journeys—it falls short of providing a comprehensive framework for forming, navigating, and managing such networks within healthcare partnerships. Existing research on patient-centric networks and ecosystems focuses on consumer journeys that enable individuals to engage with service providers catering to various needs through the principles of value co-creation (Gallan et al., 2019; McColl-Kennedy et al., 2012; Ramaswamy & Ozcan, 2016; Vargo et al., 2017). Yet, contemporary health services tend to view individuals primarily through the lens of biological needs and the health–disease spectrum, making them very intervention-focused and fragmented (El Khoudary et al., 2019; Patricio et al., 2020).

Healthcare partnership strategy needs to take a more holistic view of an individual, including the health–disease spectrum, daily experiences, social connections, overall outlook on life, and emotional wellbeing. This approach allows for a richer tapestry of connected solutions that can engage patients and specialists. Successful engagement leading to improved health outcomes is likely to drive successful collaborations and networks. To drive

change and support patient-centric innovation, we present two case studies from Denmark and the USA that demonstrate how networks supporting holistic, patient-centric health journeys can be formed to deliver value. We then propose a roadmap to facilitate network and ecosystem building, providing recommendations on how to support the creation of sustainable healthcare partnerships and networks.

Background

Collaborative networks in healthcare

Collaborative networks among service and product providers are crucial for creating touchpoints along wellbeing journeys, enabling patient engagement with healthcare services. Understanding the processes and dynamics of value co-creation is essential for advancing successful networks and partnerships, as it provides insights into how network structure and dynamics impact patient engagement with health behaviors. According to service-dominant (SD) logic (Vargo & Lusch, 2004), value co-creation is the *"benefit realized from the integration of resources through activities and interactions with collaborators in the customers' service network"* (McColl-Kennedy et al., 2012, p. 375). This perspective emphasizes the need to understand consumer or patient experiences that impact desirable behaviors in order to improve digital offerings and support the exchange of resources (e.g., effort, money, time) between consumers and organizations (Lemon & Verhoef, 2016). Research on consumer journeys and services marketing highlights how value networks and interactive touchpoints within a collaborative network facilitate personalized experiences and resource integration, addressing various needs and driving consumer engagement (Patricio et al., 2011; Tueanrat et al., 2021; Vargo & Lusch, 2016).

Due to their highly specialized and risk-associated nature, patient-centric networks and ecosystems in healthcare often focus on specific problems (e.g., related to biology or a specific injury) and have traditionally been fragmented and problem or disease-specific (Patricio et al., 2020). Different interventions tend to focus on tailored solutions to health or disease-related needs, such as supporting healthy weight management or improving healthcare access (Luna Pinzon et al., 2023; Wallerstein et al., 2020). Many solutions lack alignment with the lived experiences of patients. They frequently assume that part of the wellbeing journey will occur at home, without fully considering external environmental factors, social support, or the need to incentivize effort. For instance, participants in a study by Pal et al. (2018) stressed that interventions for diabetes should encompass all aspects of

managing the condition, such as diet, physical activity, medication adherence, collaboration with healthcare professionals, managing difficult emotions, and handling interactions at work, social events, and with friends and family. In another study on virtual consultations, Joughin et al. (2021) found that more than half of the respondents using video consultations needed assistance with accessing the necessary equipment, often relying on family members for support. Participants also faced challenges related to technical issues and digital literacy, with complex user interfaces being significant obstacles.

Value misalignment

Value misalignment can happen when a health intervention fails to fully meet a service user's needs. For instance, if an intervention focuses solely on disease-specific needs and neglects the holistic needs of the individual, the value provided along the wellbeing journey may not resonate with users, leading to reduced engagement and perceived benefit of the recommended health behaviors. From a value co-creation perspective, this misalignment can occur when solutions designed for clinical safety and effectiveness do not adequately address the broader needs of individuals. While clinical effectiveness is essential, this approach often overlooks psychographic factors like lifestyle, demographic aspects such as age-related needs, and behavioral elements like daily habits that influence how individuals use digital health tools. This gap underscores the necessity for more socially supportive and user-centric digital health solutions (Buckingham et al., 2022; Joughin et al., 2021).

This kind of value misalignment can result in varying levels of engagement (e.g., with the recommended health behavior) and differing health outcomes. For example, Moody et al. (2022) highlighted that usability challenges can be a significant barrier, particularly for elderly patients dealing with chronic conditions like diabetes and dementia. Moreover, the lack of inclusivity in design, such as apps available only in English, can alienate ethnic minorities, individuals from lower socio-economic backgrounds, and those with limited digital or literacy skills. When those who most need these services do not use them, it becomes harder for healthcare providers to prove the effectiveness of these technologies, secure funding, and continue offering the services. Since healthcare is highly risk-averse, partnerships and collaborations that are unlikely to lead to desired health outcomes are often seen as risky and thus avoided (Harvey and Powell, 2020). Furthermore, if an intervention or health service is not deemed effective, it is less likely to receive funding or be integrated into the broader healthcare system, setting many service networks and partnerships up for failure.

Innovative care pathways

To advance research and address existing gaps, we present two case studies—one from Denmark and one from the USA. These case studies illustrate how the industry successfully employed patient-centric approaches to build (PsoHappy) and sustain (Day-by-Day) healthcare networks and services that align with individual needs. By adopting patientcentricity in their partnership strategies, these examples demonstrate how to develop collaborative service networks that avoid value misalignment and partnership failures. The case studies highlight practical strategies for engaging diverse populations and integrating necessary services into broader healthcare systems, offering valuable insights into creating sustainable, inclusive, and impactful health interventions.

Case Study 1: PsoHappy

The PsoHappy case study is an example of how a patient-centric approach can be developed in partnership to uncover the holistic needs of a patient group, which can later inform service design for their holistic wellbeing journey.

The PsoHappy initiative, initially led by the LEO Innovation Lab and later, from 2015 to 2019, by the Happiness Research Institute in Copenhagen, pioneered an insights and advocacy technology platform specifically for individuals living with psoriasis. At its core, PsoHappy utilized a digital survey platform to empower psoriasis patients by soliciting their perspectives on what matters most to them. These insights were annually compiled into "The World Psoriasis Happiness Report," now hosted on the <u>website of the</u> International Federation of Psoriasis Associations (IFPA), providing crucial data for global stakeholders advocating for the improved wellbeing of psoriasis patients.

Key activities

The team behind PsoHappy focused on several key activities to address the needs of psoriasis patients, as illustrated in Figure 1.

<image>

Figure 1. Key Activities to Address the Needs of Psoriasis Patients

- The PsoHappy initiative was a collaborative effort that brought together various stakeholders and experts to address the wellbeing of individuals living with psoriasis. Central to its mission was a partnership with <u>The Happiness Research Institute in</u> <u>Copenhagen</u>, renowned for integrating subjective wellbeing into public policy discussions. Together, they meticulously selected validated methodologies and crafted original surveys aimed at uncovering the factors influencing happiness among psoriasis patients. This partnership ensured that PsoHappy's research was grounded in rigorous scientific principles, enhancing the credibility and relevance of its findings.
- 2) To reach a broad audience, PsoHappy developed a sophisticated technological platform capable of delivering secure surveys in 13 languages. This technological capability was crucial in ensuring that the voices and experiences of psoriasis patients from diverse linguistic and cultural backgrounds were heard and included in their annual reports.
- Recognizing the importance of collaboration, PsoHappy actively engaged with the International Federation of Psoriasis Associations (IFPA) and key patient advocates. Together, they co-designed approaches and aligned priorities to more effectively address the needs of the psoriasis community on a global scale. This collaborative effort not only

enriched the insights gathered but also fostered a unified advocacy approach towards improving psoriasis wellbeing worldwide.

- 4) Furthermore, PsoHappy sought guidance from specialists and key opinion leaders such as Prof. Steven Feldman and Prof. Ruut Veenhoven. Their expertise ensured that the data collection methods and insights analyses met the highest academic standards, enhancing the credibility and impact of PsoHappy's reports.
- 5) Beyond research and advocacy, PsoHappy actively advocated for resources and cultivated international partnerships to amplify its platform's visibility and engagement. By securing global visibility, PsoHappy aimed to mobilize the support and resources needed to improve the quality of life for individuals living with psoriasis on a global scale.

Results

Over two years, PsoHappy gathered responses from more than 200,000 individuals selfreporting psoriasis in 184 countries. This extensive dataset provided profound insights into the challenges faced by psoriasis patients worldwide and underscored the critical need for integrating wellbeing measures into public policy and healthcare delivery. These efforts culminated in the publication of "<u>The World Psoriasis Happiness Report</u>" in 2017 and 2018, which became a pivotal resource used across various communication channels, from formal briefings to healthcare providers to impactful social media campaigns. Key findings from the report highlighted significant disparities and challenges faced by psoriasis patients:

- In the United States, individuals with psoriasis were found to be ten times more likely to report living in misery compared to the general population.
- 2) In Denmark, psoriasis patients were twice as likely to experience high stress and eight times more likely to experience loneliness than their counterparts without psoriasis.
- The reports also underscored the link between psoriasis and mental health issues, as well as reduced productivity among affected individuals.
- Alarmingly, only 27% of respondents reported that their healthcare provider had discussed mental health issues with them, emphasizing the need for improved holistic care approaches.

These insights were not only disseminated widely but also actively promoted by 14 patient associations and IFPA. IFPA organized a notable side event at the World Health Assembly in 2018 titled "Happiness and NCDs: Mind the Gap," aimed at raising awareness

about the mental health comorbidities associated with psoriasis. The impact of PsoHappy extended globally, with over 350 media mentions across television, print, radio, and digital platforms, including prominent outlets such as Huffington Post, Reader's Digest, China National Television, and Dr. Hairo Bouer in Brazil. Furthermore, the reports were downloaded over 3,000 times throughout 2017 and 2018, reflecting their broad reach and influence within the healthcare and advocacy communities. In recognition of their academic rigor and relevance, Prof. Steven Feldman co-authored the chapter on happiness and comorbidities in the World Psoriasis Happiness Report 2018, further cementing the report's credibility and impact in academic and clinical circles.

Learnings

The learnings from the PsoHappy project emphasized the following key points:

"Happiness, is that really a serious subject?" Clinical approaches favored by
pharmaceutical and healthcare professionals, while critical to drug development, have
often overlooked wellbeing methodologies and scientific developments from the social
sciences, such as those pioneered by respected institutions like the OECD. This
perspective has created blind spots in understanding and integrating happiness-related
measures into healthcare for conditions like psoriasis.

To tackle this challenge, PsoHappy took several key steps:

- Partnered with established specialists such as The Happiness Research Institute in Copenhagen, leveraging their expertise in subjective wellbeing to inform PsoHappy's research methodologies.
- Incorporated an increasing body of peer-reviewed literature advocating for happinessrelated measures to address health inequalities and enhance patient outcomes.
- Actively sought feedback from thousands of people living with psoriasis to understand their perspectives on happiness and wellbeing, ensuring their voices shaped the initiative's direction.
- 2) "This is not a real study in clinical terms." Criticism arose regarding the validity of PsoHappy's surveys and methodologies, as they diverged from traditional clinical research approaches typically endorsed by pharmaceutical industry norms. Unlike conventional methods that often rely on clinical research organizations and incentives to recruit patients, PsoHappy opted for a human-centric approach, engaging directly with respondents through social media channels without offering financial incentives. This

approach aimed to reach individuals in online communities where they naturally seek information and support for their condition.

To address these concerns, PsoHappy implemented a robust data governance structure that:

- was designed and implemented in collaboration with data analysts, statisticians, technology experts, and medical specialists to ensure rigorous data collection, analysis, and interpretation.
- ensured that insights derived from the collected data were transformative and meaningful, aligning closely with feedback received from partners and key opinion leaders in the field.

Overall, PsoHappy exemplifies the transformative potential of co-creation and human-centric methodologies in shaping patient-centric healthcare initiatives. By integrating diverse perspectives and methodologies, PsoHappy advanced holistic approaches in chronic disease management and informed public health policies that prioritize the wellbeing and happiness of individuals living with psoriasis. This approach not only challenged traditional norms but also underscored the importance of inclusivity and patient empowerment in driving meaningful change in healthcare practices and policies globally.

Case Study 2: Day-by-Day

The Day-by-Day case study exemplifies the activities involved in developing and delivering a comprehensive healthcare service and network to support a holistic patient journey.

One in five people who have experienced a heart attack will suffer a second one within five years. In the United States, this statistic translates to approximately 200,000 individuals annually. Despite this risk, only half of these patients attend cardiac rehabilitation programs, and adoption of necessary lifestyle changes is generally low (American Health Association News, 2019; British Heart Foundation, 2014)

To address these challenges, Day-by-Day was developed as a service focused on the immediate needs of patients following a heart attack, bridging the gap before formal cardiac rehabilitation begins. The project was grounded in a patient-centric approach, starting with ethnographic and qualitative research methods to understand the experiences and requirements of patients and their families. These insights guided the development process, which employed co-participatory methods to prototype solutions.

Day-by-Day was a collaborative effort involving a multidisciplinary team. Partners included a pharmaceutical company/industry leader, a digital health innovation unit, and a startup specializing in digital lifestyle coaching apps. The team brought expertise in treatment pathways, behavioral science, service design, content development, coaching, and habit formation. Later stages of the project involved collaboration with a university hospital in the United States. This partnership aimed to test and validate the Day-by-Day service within a real-world cardiac unit setting, ensuring its effectiveness and relevance in clinical practice.

Key activities

The team behind Day-by-Day focused on several key activities to address the needs of heart attack patients and caregivers.

- 1) To understand patient needs they conducted in-depth research with heart attack patients and caregivers to uncover their needs immediately after the event. They found that responses to a heart attack varied widely: some saw it as a traumatic event, causing anxiety and a strong desire to prevent another occurrence. Others perceived the event as less serious, leading to a lack of motivation to make necessary lifestyle changes. These insights helped to develop patient personas with different needs.
- 2) Using the insights gained, the team mapped a patient journey (see figure 2 below) and developed a service prototype aimed at providing personalized information, motivation, and support. The prototype allowed users, including both patients and their caregivers, to access a variety of resources in multiple formats. These included testimonials, inspirational quotes, music, and animations explaining the importance of cardiac rehabilitation and lifestyle changes. Information about treatments was also provided.

Figure 2. Patient Journey Offered by Day-by-Day



3) The team developed key activities to be deployed along the patient journey to enhance the personalization of service delivery, as illustrated in Figure 3. Central to the service was the inclusion of a coach who personalized the journey for each user. The coach leveraged behavioral science insights to offer tailored guidance, answer questions, provide relevant literature, and offer ongoing support to encourage and facilitate lifestyle changes.

Figure 3. Key Activities to Address the Needs of Heart Attack Patients and Caregivers



Learnings

Lessons learned from the Day-by-Day project emphasized the following key points:

- The team adopted a patient-centric approach, leading to the expansion of content in the consumer health app beyond traditional formats. This included the integration of music, motivational quotes, and bite-sized content co-created with users. These formats were tailored to comprehensively explain various aspects of cardiac recovery, from medication effects to nutrition and sexual activity.
- 2) A key finding was the value of human interaction over purely technological solutions. Users expressed a strong preference for engaging with real coaches who could build personal connections, understand their individual needs, fears, and aspirations. Coaches played a crucial role in guiding users to make informed decisions about their health and treatment, thereby enhancing user confidence and motivation.
- 3) While emphasizing the importance of human interaction, the team recognized technology as an essential tool to facilitate efficient and seamless interactions between users and coaches. It optimized resource usage and supported the delivery of personalized care, ensuring that technology enhanced rather than overshadowed the human element of the service.

Results

In the pilot run conducted in collaboration with a hospital, the results showed that 82% of patients indicated they would attend cardiac rehabilitation. Additionally, there was a 17% improvement in the clinically recognized patient activation measure score, suggesting a 43% increase in medication adherence (based on a previous study).

Recommendations for Industry

In this section, we outline a process that organizations or networks can follow when developing a partnership strategy and building collaborative relationships to deliver value to patients or consumers in healthcare settings. By following this process, organizations can improve alignment between partners, ensuring that shared goals, patient needs, and resource capabilities are clearly understood. This, in turn, will help prevent collaboration failures by fostering stronger partnerships and increasing the likelihood of successful, sustainable service provision that meets the needs of all stakeholders involved.

1. Understand holistic needs of a specific patient group

Understand the problem from the person's perspective, not just the disease. Many health challenges are complex and might require addressing multiple needs. These challenges are interdisciplinary issues that affect population wellbeing and lack clear boundaries and solutions (Anderson et al., 2013; Field et al., 2021). As seen in the PsoHappy case study, they require collaborative efforts to address root causes. To engage stakeholders in value co-creation, you may need to convince them to invest various resources by clearly demonstrating how their involvement directly addresses patient needs and contributes to solving the challenge.

2. Define stakeholders and objectives

Identify key stakeholders such as patients, healthcare providers, third-party payers, and technology partners. Clarify objectives such as improving the patient experience, enhancing care coordination, improving health outcomes, and reducing costs. Determine the benefits each stakeholder gains. Use language appropriate for communicating health and management benefits. Given healthcare's regulatory nature and reliance on scientific evidence, objectives may require contributions from research, education, industry, and policy stakeholders. One objective should be knowledge sharing among stakeholders from diverse backgrounds. Ensure the language used is commonly understood by all involved.

3. Understand stakeholders' needs

Conduct thorough research to understand the needs, preferences, and behaviors of stakeholders, including employees, customers, and partners. Create detailed personas representing different stakeholder groups to capture their diversity and specific needs. Develop user journey maps outlining the various touchpoints and interactions individuals have with your network or ecosystem. Identify pain points, opportunities for engagement, and moments of decision-making throughout the journey. Understand how value could be co-created between different partners and how this value fits patients' or consumers' needs.

4. Map ecosystem dynamics and value exchange

To develop a service blueprint and architecture, analyze the healthcare ecosystem from the patient's perspective. Map stakeholder interactions, including patients, to identify gaps and collaboration opportunities. Assess how resources—such as data, goods, services, and money—are exchanged and their impact on patient experience. Understand the sources and flows of value exchange within the ecosystem to enhance value creation and co-creation for improved patient outcomes.

5. Build collaborative partnerships

Form partnerships through mergers, joint ventures, or alliances to complement existing capabilities. Engage with diverse partners to leverage their strengths in technology, service delivery, and patient engagement. Partner with influencers or advocates who can amplify your message and engage authentically with your target audience. These partners may not always be experts in your discipline. Consider creating the role of partnership lead, responsible for creating and maintaining relationships with diverse stakeholders. The more diverse the network (e.g., in terms of different industries and areas of expertise), the more versatile and interdisciplinary your partnership lead will need to be.

6. Develop content strategy and personalization

Involve stakeholders in co-designing methodologies and tools for communication and interaction, ensuring relevance and buy-in. Develop a content strategy aligned with the needs and preferences of your personas. Include a mix of educational, inspirational, and motivational content. Use personalization techniques to tailor content and communications based on user behavior, preferences, and journey stage. Incorporate elements like personalized recommendations and dynamic content. Establish trust through transparent communication, genuine interactions, and consistently meeting user expectations. Foster community engagement through forums, discussion groups, or social platforms where users can connect, share experiences, and support each other.

7. Integrate technology

Implement digital health solutions that facilitate seamless interaction and data sharing among stakeholders. Ensure these technologies are user-friendly, secure, and compliant with healthcare regulations (e.g., interoperable electronic health records). Use technology to enhance user experience and streamline interactions, including AI-driven recommendations and chatbots for customer support. Implement data-driven marketing automation to deliver timely and relevant communications. Ensure technology interactions support feedback both online and offline. Engage with users through surveys, reviews, and feedback loops. Provide ongoing education and support through webinars, workshops, or educational content.

8. Ensure governance and sustainability

Establish governance structures that facilitate decision-making and conflict resolution within the ecosystem. Ensure sustainability by aligning financial incentives and performance metrics across partners. Broader ecosystem governance, as advocated in mission-based innovation

policies (OECD, 2023), emphasizes collaborative resource mobilization for communitycentered strategies addressing significant societal challenges. Strategic literature recognizes broader innovation ecosystem leadership as a dynamic capability enhancing overall system performance (Foss et al., 2023).

9. Enable continuous improvement

Foster a culture of continuous improvement through feedback loops and performance analytics. In this step, it is crucial to include learning loops that facilitate the wider sharing of insights and lessons learned, including from failures. The fragmentation of the healthcare system, along with the different approaches and gaps between the various research streams, can be addressed through increased transparency and pre-competitive collaboration. By articulating and sharing valuable lessons about what works and what doesn't for patients and consumers, we can enhance the overall effectiveness and efficiency of healthcare delivery.

Conclusion

The key to successful collaborations and advances is understanding the complex and diverse needs a person will have when faced with any health or wellbeing challenge. It is crucial to enable an understanding of needs and potential benefits from both social (e.g., emotional, social, educational needs) and clinical (treatment, prevention, or condition needs) perspectives. For successful network or ecosystem collaboration, it is essential that all partners in the network understand the different sources of value that a person might have. This understanding may require slightly different research focuses and procedures than those typically used in consumer or patient research, with an emphasis on the holistic needs of individuals and the diverse system elements that support them. For an example of early piloting of this approach, see Nieroda et al. (2024, forthcoming).

As collaborative approaches and networks for holistic and patient-centric journeys gain prominence, interdisciplinary research becomes essential for understanding, designing, and optimizing healthcare services. The complexity of healthcare demands insights from diverse fields, including medicine, public health, social sciences, technology, political science, governance, and economics, to address the multifaceted needs of patients and improve care delivery. By studying principles of network and ecosystem development (Vargo et al., 2023), interdisciplinary research can guide the creation and management of healthcare networks that prioritize patient-centric, cost-efficient approaches. This research could explore successful collaboration models across sectors and develop frameworks for managing

partnerships effectively. Additionally, it could analyze stakeholder interactions and resourcesharing dynamics to ensure that healthcare services optimize resource allocation while enhancing patient quality of life.

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Management Summary

Healthcare systems are undergoing digital transformation to meet demands for personalized services and address resource limitations. A successful partnership strategy requires a holistic focus on individual wellbeing journeys to drive effective collaborations across service providers. Case studies from Denmark and the USA demonstrate a roadmap for building healthcare ecosystems that meet holistic needs and facilitate patient engagement in health activities.

Key Propositions

- Personalized healthcare is essential for driving digital transformation.
- Collaboration strategies must prioritize the individual's social, emotional, and health needs.
- Sustainable healthcare networks require patient-centric strategies to guide decisionmaking.
- Interdisciplinary collaboration should be driven by the needs of the person receiving care.

Lessons Learned

- Holistic, patient-centric care boosts sustainability.
- Clear partnerships and interdisciplinary collaboration reduce failures.
- Understanding patient needs and continuous feedback are key to success.