

Business Model Innovation for Integrated Elderly Care Services: A Cross-country Comparison

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Abstract. Population ageing is placing increasing pressure on health and social-care systems, especially in countries experiencing rapid demographic change. Traditional elderly-care models that separate medical and social support have become increasingly unsustainable. This study compares and analyzes the pension systems of the UK and Japan to examine how structural and contextual factors influence the sustainability of business models. The study used BMC to analyse how each system creates, delivers and captures value in activities, financing arrangements and partnerships. The PESTLE is used to examine external sectors, including demographic trends, policy environments, technological capacity and economic constraints. The findings suggest that integrated care systems in the United Kingdom prioritise organisational integration and preventive, community-based care. However, all these are hindered by financial constraints, fragmentation of digital infrastructure, and growing demand for services. Japan's Long-Term Care Insurance System achieves universal coverage through stable, insurance-based financing, but faces sustainability concerns related to rapid population ageing, labour shortages, and slow digitalization. Overall, the comparison shows that internal business model structures of a sustainable elderly-care system must be consistent with external conditions. Coordinated governance, diversified financing, digital transformation and workforce investment are key complementary supports for the pension systems.

Keywords: Elderly Care, Business Model Canvas, PESTLE Analysis, Integrated Care Systems, Long-Term Care Insurance

1. Introduction

Population ageing is accelerating and transforming health and social-care systems globally. It is projected that by 2050, the proportion of the population aged 65 and over will reach 16% of the world's population, which will create a significant demand for long-term comprehensive care services [1]. The United Kingdom already has 19% of its population aged 65 or above, while Japan has the highest ageing rate globally, with 29% aged 65+ and 15% aged 75+ [2,3]. The traditional model of elderly care that separates healthcare from social support has proven inefficient and unsustainable, especially in countries with high rates of care need [4]. As a result, many health systems have begun transitioning toward integrated elderly care arrangements that coordinate actors across sectors to improve continuity, efficiency, and quality of care.

Despite growing attention, limited research examines the business model mechanisms that strengthen these integrated systems. Prior studies have focused mainly on clinical outcomes or policy reforms rather than on how value is created, delivered, and captured across organisational boundaries [5,6]. To address this gap, it is necessary to combine organizational analysis with the assessment of political, economic, social, technological, legal and environmental factors that affect elderly care services.

Therefore, this study examines elderly care systems in the United Kingdom and Japan using two frameworks. The Business Model Canvas (BMC) is used to reflect how each system creates, delivers and captures value across key activities, partnerships, and financing structures. The PESTLE framework is used to examine the external conditions that shape system configurations, including demographic pressures, regulatory environments, and technological developments. Together, these tools can assess the structure and background determinants of the elderly care system.

2. Theoretical framework

2.1. Business model innovation and healthcare systems

A business model describes the mechanisms through which organisations create, deliver and capture value. Business Model Innovation refers to purposeful changes in these mechanisms to improve efficiency, scalability or the ability to respond to users' demands [7]. In healthcare, BMI enables the redesign of service pathways, financing mechanisms and partnerships to meet rising demand and resource constraints [8]. In particular, the elderly care system relies on complex interactions among hospitals, community providers, insurance companies and public authorities. Therefore, business model analysis is particularly important for studying how different countries build comprehensive care.

2.2. Business Model Canvas (BMC)

Developed by Osterwalder and Pigneur, the BMC provides a nine-block structure for visualising business logic: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partners, and cost structure [9]. In elderly care systems, the BMC helps identify how services are coordinated between health and social care providers, how responsibilities are distributed, and how funding flows support long-term sustainability. Given the distinct organisational and financial logics of the UK's ICS and Japan's LTCI, the BMC is particularly useful for mapping structural differences in service integration and value-creation architecture.

2.3. PESTLE framework

The PESTLE framework examines six external factors: political, economic, social, technological, legal and environmental [10]. These factors influence governance arrangements, funding structures, demographic pressures, digital capacity, regulatory rules and community infrastructure. A PESTLE analysis reveals that the UK and Japan have distinct elderly-care models due to their differing wider political, economic, and social conditions. These broader factors shape how each country organises services, funds care and ensures long-term sustainability.

2.4. Analytical strategy: combining BMC and PESTLE

Given their distinct and complementary purposes, the BMC and PESTLE frameworks are applied independently rather than merged into a single model.

In the Comparative Case Analysis, a structured analysis is first provided by applying the BMC and thereafter the PESTLE framework. The BMC maps the organisational and financial logic of each elderly-care system. It is then, through a PESTLE analysis, that we consider the external conditions which define these internal structures. Applying the two frameworks in this order allows the study to connect system design with the broader institutional environment, and the combined insights inform the Comparative Case Analysis and Discussion.

3. Comparative case analysis

3.1. United Kingdom: NHS Integrated Care Systems

The UK has developed an Integrated Care System (ICS) to coordinate healthcare, social care, and community services across regional footprints. ICS structures were formally established in 2022. They were created to support population-health management and more integrated care delivery. The aim was to minimize fragmentation among hospitals, primary care networks, local authorities and voluntary organizations [10]. For the ICS model promotes between disciplines collaboration to elderly populations who often require chronic disease management and social support services. This approach helps improve continuity of care and reduces avoidable hospital admissions.

3.1.1. Business Model Analysis (BMC)

From a business model perspective, ICS's value propositions focus on providing coordinated, person-centred care for aging populations and improving long-term health outcomes. Customer segments include older adults with multiple diseases, caregivers, and elderly individuals living in the community. Key partners in the ICS model include NHS Trusts, General Practitioner (GP) networks, local councils, social care organisations, and voluntary organisations. Key activities include integrated care planning, multidisciplinary team coordination, digital information sharing and community-based preventive interventions. Channels range from GP practices and community health centres to digital triage systems and home care pathways. Revenue streams primarily depend on the grants from NHS England and social care budgets of local governments, which are usually pooled in risk-sharing arrangements. Major cost components include workforce expenditure, primary and community care delivery, and investment in digital integration.

3.1.2. PESTLE analysis

The external environment has a strong influence on the design and performance of the ICS model. Political factors are shaped by the United Kingdom's long-term commitment to publicly funded healthcare, and national legislation requires integration through a statutory ICS structure. The economic condition is characterized by continuous financial pressure on both the NHS and local authorities, prompting people to reduce duplication and enhance the efficiency of the entire system. Social factors include an ageing population with high levels of multimorbidity and widening health inequalities. These trends increase demand for coordinated services. Technological factors present both opportunities and challenges: while digital health tools and analytics can enhance coordination, fragmented electronic health-record systems limit full interoperability across care providers. Legal

factors stem from the Health and Care Act 2022, and this has formalised system-level governance and strengthened requirements for joint planning between NHS and social care bodies. Environmental factors are related to the expansion of community infrastructure and the increasing policy emphasis on prevention and population health management.

3.2. Japan: Long-Term Care Insurance (LTCI) system

Japan introduced the Long-Term Care Insurance system in 2000 as a response to the rapid ageing of its population and increasing demands for formal care services. The system provides universal access to long-term care for individuals aged 65 and above, and it's financed through a combination of mandatory insurance contributions, taxes, and co-payments [11]. The LTCI system aims to address these challenges by establishing a universal, insurance-based mechanism to fund and coordinate long-term care services among public, private and community providers. The system plays a critical role in supporting older adults who require assistance with daily activities and long-term functional support.

3.2.1. Business Model Analysis (BMC)

In terms of business model structure, the LTCI system offers a clear value proposition: guaranteed, equitable access to long-term care, independent of income or family circumstances. Customer segments include individuals aged 65 and above who meet government-defined care-need levels, and adults aged 40–64 with age-related conditions.

The LTCI system's key partners include municipal governments, care management agencies, insurance funds, and an extensive network of private and nonprofit long-term care providers. Key activities include eligibility assessment, care plan development, service coordination, and reimbursement through the insurance system. Service channels extend across certified home-care agencies, community-based integrated care centres, day-care facilities, and long-term residential institutions. Revenue streams are derived from mandatory insurance contributions, national and local government subsidies, and beneficiary co-payments, which range from 10% to 30%. Cost structures are dominated by provider reimbursements, labour-intensive care delivery and administrative expenditure for assessment and insurance management [12].

3.2.2. PESTLE analysis

Political factors include a strong central government commitment to ensuring universal access to long-term care, coupled with decentralisation that grants municipalities authority over service planning and quality oversight. Economic pressures are substantial due to high public expenditure on long-term care and severe labour shortages. Japan's long-term care workforce is projected to face a shortfall of 690,000 workers by 2040 if no reforms are implemented [13]. Social factors are critical, as Japan remains the world's most aged society with 29% of its population aged 65+, compared to an OECD average of 18% [3]. And every 100 working-age individuals support 48 elderly people. The technological conditions present a mixed effect: although Japan has a high capacity for medical technology, digitalisation in long-term care lags behind other sectors, limiting the adoption of integrated care records and remote monitoring tools [14]. Legal factors are defined by the Long-Term Care Insurance Act, which establishes entitlement rules, benefit categories and assessment procedures.

Environmental factors influence the development of community-based integrated care centres and neighbourhood support networks, which aim to promote ageing in place.

4. Cross-national comparison

4.1. Business model structure

The BMC comparison demonstrates that the two systems adopt distinct value propositions and operational logics.

In the United Kingdom, ICS prioritises person-centred, integrated care with a strong emphasis on prevention, community-based delivery and reduction of hospital utilisation. This reflects a health-system orientation driven by NHS integration policies and population-health management. In contrast, Japan's LTCI system is structured around universal access and standardised long-term care, supported by mandatory insurance contributions and decentralised municipal coordination. The Japanese model, therefore, prioritises reliability, equity and formal care availability.

Key partnerships also differ. ICS relies on collaboration between NHS organisations, local authorities and voluntary-sector actors. In contrast, LTCI depends heavily on private and non-profit providers that deliver the majority of long-term care services. Revenue and cost structures reflect these differences: ICS pools NHS and local-authority budgets under shared-risk arrangements, whereas LTCI relies on a mixed financing model that combines insurance premiums, government subsidies, and beneficiary co-payments. These structural distinctions illustrate two divergent business-model logics—one driven by public-sector integration, the other by insurance-based market participation.

4.2. PESTLE comparison

Political and legal contexts provide a strong basis for differentiation. The UK's Health and Care Act 2022 formalises comprehensive planning and collaborative governance, while Japan's Long-Term Care Insurance Act establishes entitlements and standardised assessment procedures. Both countries are under significant economic pressure, but the manifestations differ: ICS faces limited public budgets and gaps in social healthcare funding. In contrast, LTCI is faced with rising insurance expenditures and workforce shortages.

Social and demographic factors have a significant impact on both systems. The United Kingdom is confronted with increasingly serious multiple diseases and expanding health care inequalities, while Japan has the world's highest ageing rate and declining family caregiving capacity. Technological factors reveal a common weakness: the UK's digital infrastructure is fragmented, and the digitalisation process in Japan's long-term care industry is slow. Environmental conditions have further differentiated. The UK has expanded community health hubs, while Japan has invested in community-based integrated care centres.

5. Discussion

The comparative analysis of the United Kingdom's Integrated Care Systems (ICS) and Japan's Long-Term Care Insurance (LTCI) system demonstrates how structural design and external conditions jointly determine the sustainability of elderly-care business models. Using Business Model Canvas and PESTLE frameworks, several overarching themes related to system performance, innovation pathways and long-term viability have emerged.

5.1. Business-model sustainability

Both systems aim to manage rising demand linked to ageing populations, yet they differ in their structural approach. The ICS model offers strong organisational integration across health and social care providers, which improves coordination for older adults with complex needs. However, for the United Kingdom, financial constraints remain a significant barrier. Sustainability is constrained by insufficient financial incentives, variable budgets of local authorities, and an imbalance in digital infrastructure, which collectively restrict the system's ability to expand preventive and community health care. For example, NHS waiting lists reached 7.77 million cases in 2023, placing additional pressure on community and social-care services [15].

In contrast, Japan's LTCI system is stably financed and supported by mandatory insurance contributions and government subsidies. This allows for broad service coverage, as well as decentralally responsive and predictability. However, the country is rapidly aging while there's a perpetual shortage of caregivers-labor supply; hence cost pressure on the system. While it has achieved financial stability, population trends place a long-term risk on the stability of the system.

5.2. Role of institutional and contextual conditions

A PESTLE analysis reveals that external environments have a significant impact on the design of business models. In the United Kingdom, political support for integration and legal reforms provides the foundation for the development of ICS; however, economic pressure and decentralized digital systems have limited its operational capacity. Social inequalities and multiple diseases complicate the provision of services. Technological conditions pose obstacles to data sharing, preventing the ICS from fully realising the benefits of integrated population health management.

In Japan, demographic pressures are the most significant contextual driver. The abnormal increase in the aging population has raised the demand for formal long-term care, while the decline in the fertility rate has reduced the availability of informal caregivers. The technological environment presents challenges. Despite Japan's strong technological foundation in other sectors such as robotics, consumer electronics, and industrial automation, digital tools and integrated care record systems have not been widely applied in LTCI services. Most care providers still rely on paper-based documentation or fragmented stand-alone software. This results in poor information sharing between governments, care managers and service providers.

5.3. Key implications for effective elderly-care models

In these two countries, several factors are crucial to the development of sustainable elderly-care business models. A central requirement is coordinated governance, although this is achieved through different mechanisms in each country. In the UK, the design of ICS mandates collaboration between the NHS, local authorities and community organisations. In contrast, governance in Japan's LTCI system is driven by civic administration. Stable and diversified financing is equally essential: ICS requires greater alignment between NHS and social-care funding, whereas LTCI must address rising costs and workforce shortages.

Digital transformation represents a shared priority. Interoperable care records, data-driven planning, and home-monitoring technologies have the potential to improve efficiency and continuity; however, both systems currently lag in digital integration. Workforce sustainability also influences system resilience. Improving working conditions and training retention will be necessary to meet future demand in both contexts.

6. Conclusion

This study compared the United Kingdom's Integrated Care System (ICS) and Japan's Long-Term Care Insurance (LTCI) system to understand how structural design and external institutional conditions shape the sustainability of elderly-care business models. Using the Business Model Canvas and PESTLE frameworks, the analysis demonstrated that each country's system reflects distinct organisational logics, financing mechanisms, and contextual challenges linked to demographic, economic, and policy environments.

The United Kingdom's ICS demonstrates strengths in organisational integration and coordinated delivery across health and social care, supporting continuity of care for older adults. However, its effectiveness is limited by constrained funding, fragmented digital infrastructure and a lack of financial incentives, which restrict scalability and long-term efficiency. Japan's LTCI provides universal coverage supported by stable insurance financing and decentralised municipal administration. Yet, the system faces rising expenditure, workforce shortages, and slow digitalisation, posing significant risks to its future sustainability.

Overall, the comparison reveals that effective elderly-care systems rely on aligning internal service structures with political, social, and technological conditions. Improving governance, securing diverse funding, accelerating digital transformation, and investing in the care workforce are crucial priorities for both countries as the challenges of ageing population growth intensify.

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