How the Health Insurance Industry Is Uniquely Positioned to Implement Digital Health Interventions and Preventative Care Measures

Bea Franziska Frese[1,2]
[1]School of Medicine, University of St. Gallen, St. Gallen, Switzerland
[2]Future Health Technologies, Singapore-ETH Centre,
Campus for Research Excellence and Technological Enterprise (CREATE), Singapore

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Abstract: Digital Health Interventions (DHIs) provide promising solutions for a variety of use cases, especially mobile DHIs as they leverage readily available technologies. Such solutions have enormous potential for preventative care measures through collecting and analysing data to provide personalized support at scale. This paper looks at one such DHI from the health insurance industry that seeks to engage people continuously with healthy lifestyle behaviours. Referencing learnings from Asian markets and industry professionals, this paper illustrates how health insurance companies are uniquely positioned to fulfil this potential based on their objectives, long-term outlook, and access to health data. It also elaborates on the required skillsets to build impactful DHIs, highlighting gaming theories and how they can be implemented in DHIs to engage users long-term. Further, the paper illustrates how the impact of these DHIs can be quantified through Key Performance Indicators (KPIs) in the short- and long-term for health insurance companies. Finally, the paper suggests how these learnings can inform future DHI approaches, including a need for flexible offerings, the integration of mini-DHIs, and the continuous evaluation based on KPIs, as well as relevant research directions.

1 INTRODUCTION

Digital Health Technologies have a wide variety of application areas in the health insurance industry, creating opportunities for time and cost savings, ranging from optimizing claims management to leveraging Digital Health Interventions (DHIs) (Asian Development Bank, 2021). DHIs "include any health service or treatment delivered using technology that aims to facilitate, capture or exchange knowledge" (Soobiah et al., 2020). In this position paper, we will exclusively refer to DHIs that are based on mobile applications. These DHIs use readily available technologies, specifically smartphones, to provide healthcare services in a scalable way. Mobile solutions represent a unique opportunity for insurers to leverage digital direct-to-customer pathways, create customer insights through data analysis and thereby inform product innovations as well as differentiation compared to competitors (Chung et al., 2023).

Regulation in the field of DHIs is upcoming worldwide and reimbursement guidelines are still unclear. In Asia-Pacific, policymakers believe the reimbursement pathway to be at a beginner to intermediate stage, demonstrating a need for a fit-for-purpose framework. In Singapore for example, the reimbursement pathway for digital health solutions and medical devices is the same; further, many approved technologies either need to be paid private or are not subject to reimbursement at all (Eversana & APACMed, 2023). The diversity of DHI categories further contributes to the complexity of regulatory frameworks. According to the Digital Therapeutics Alliance, such technologies can be categorized into five broad categories. One category focusses on systems and support for enterprises, one on clinicians, and three categories are most relevant to patient-facing DHIs: wellness and support, diagnostics and monitoring, and therapeutic interventions (Digital Therapeutics Alliance, 2023). The target group for DHIs thereby varies from specific patient populations to DHIs that can be adapted by the mass market for

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areas such as prevention. In mass markets, DHIs benefit from their ability to provide scalable and tailored services. In the area of prevention, they can for example support efforts to coordinate vaccinations or prevent overmedicalization at scale, translating into significant improvements in primary care settings (Willis et al., 2022). Based on these differences and local regulations, a variety of business models have been developed to solve healthcare challenges with DHIs.

In this environment, health insurance players have been uniquely positioned to be at the forefront of offering DHIs. To give further insights, this position paper showcases the experience of one such example from the insurance industry, the global insurance consultancy ReMark. ReMark is SCOR Digital Solutions' provider and has a focus on developing digital products and services. SCOR itself is among the world's largest reinsurers with 4,000+ clients and operations in 80+ countries (ReMark, 2023a). One of its core InsurTech solutions is the health and wellness DHI Good Life (see appendix, figure 1). The app helps users make healthier lifestyle choices in the short-term and reduce disease in the long-term as a preventative measure by combining five pillars: physical activity, sleep habits, mental health, social health, and nutrition (ReMark, 2023e). Good Life has been chosen as a focus in this paper due to its large user base in Asia of more than half a million users (V. Shi, personal communication, January 9th, 2024) and the international recognition it has received through winning the iF Design Award for its app interface in 2023 (ReMark, 2023c).

ReMark offers Good Life as a white label solution to companies, primarily health insurers, who in turn can decide how to configure the solution and offer it to their customers and the public in general (ReMark, 2023b). Users interact with the app by setting up a profile and connecting their health data (including physical activity, sleep duration, calories burned). Based on this information and the specific configuration of the solution, Good Life provides users with insights into their health lifestyle and access to a variety of insurance protection tailored to their health risk profile. Users can also gain access to a portfolio of healthcare services tailored to their needs.

This position paper has been written in collaboration with Vincent Shi, Head of Greater China and SEA for ReMark. The objective is to share experience from Asian markets on the use of DHIs, including further information from the Singaporean market, and give an insight into the development and deployment of the Good Life DHI.

2 DISCUSSION

The future role of the health insurance industry arises from the challenges faced by the healthcare system today. In Singapore, for example, the healthcare system is under pressure to manage the ever-growing cost attributed to several factors: aging population, increasing health insurance costs with age, increase in chronic diseases, and burden on families to cover medical expenses. To counteract these factors, Singapore has published the Healthier SG initiative. As part of this initiative, proactively preventing diseases has become one of the major objectives to reduce the burden on individuals, their families, improve quality of life, and slow down the increase of healthcare expenditure over time (Ministry of Health Singapore, 2022). These efforts are being translated into a range of policies as for example reimbursing healthcare providers for preventative measures (Lee, 2022). Generally, preventative measures involve behavioural change, a process that needs engagement over a prolonged period to ensure sustainable, healthy behaviours replace less healthy ones.

2.1 Positioning of Health Insurance Industry

In such a system, that is focused on offering effective prevention measures, the role of health insurance providers will be re-defined. This shift presents a key opportunity, as health insurers are uniquely positioned:

- **Aligned Objectives:** The health insurance industry is incentivized to keep the number of insurance claims low, which in turn relates to lower healthcare costs. The link between upfront healthcare investments and downstream savings has been clearly established, even if savings can only be seen in the long-term (Agana et al., 2019; Friedberg et al., 2010).
- **Long-term Outlook:** Insurers are following a sustainable business model which is currently not reliant on prevention measures. This is a clear benefit as long-term follow-ups are needed to understand how each preventative care measure affects health outcomes. In other words, they can survive in the market long-term while simultaneously taking investments to trial preventative care measures that might benefit them in the long run and prepare them for market changes in the future.

- **Data Access:** Insurers can collect data directly from customers via their DHIs and have access to important Key Performance Indicators (KPIs) like claims filed to investigate the effectiveness of measures on different aspects of a customer's life. This also enables them to investigate which short-term KPIs can be correlated with long-term health outcomes.

To further showcase how these three aspects make health insurance players stand out, one can consider the case of healthcare providers and start-ups. Healthcare providers might have a long-term outlook, but they do not have comprehensive data access to the public outside the healthcare setting; once people from the public interact with healthcare providers, it is often too late for preventative measures. Another example is start-ups, who might be aligned in objectives and are able to create systems to gain data access, but they do not have the long-term breath needed to see changes in real-world health outcomes.

2.2 Creating Engaging Offerings

While health insurers therefore can create impact with preventative measures, especially when leveraging DHIs to increase data accessibility, it is also important to consider what additional skillsets are needed to establish a sensible offering in their ecosystem. In the Singaporean context, both public and private healthcare providers have included DHIs into their offering to digitize processes such as booking appointments or distributing test results (Fullerton Health, 2023; SingHealth, 2023). However, digitizing traditional healthcare processes which happen periodically does not translate into engaging the public with preventative measures continuously. Healthcare providers and health insurers have limited experience with creating an engaging offering that supports behavioural change in the long-term.

Service providers such as ReMark with years of experience in developing DHIs can bridge this gap by using engagement approaches that achieve long-term adherence for users, allowing for continuous data collection, and the opportunity to provide feedback as well as create tailored offerings. To reach this point, ReMark has translated features that are proven to engage users from the world of gaming into Good Life. The two overarching theories in Good Life are the Flow Theory and Hook Theory:

- **Flow Theory:** Based on Csikszentmihalyi (1975), the difficulty of an activity needs to increase over time to achieve habit formation; thereby, challenging users just enough to keep them interested instead of challenging them too little so they get bored or challenging them too much so they get too anxious. In Good Life, the app's response is tailored to a user's activity and engagement level. When users level up, the app gradually sets more tasks and goals, resulting in steady and realistic lifestyle improvements, which primarily focus on users' activities outside the app in the real world.
- **Hook Theory:** Based on Eyal and Hoover (2014), habit formation can be achieved through a four-step ever-repeating process: trigger, action, reward, and investment. In Good Life, users are triggered by the app for certain lifestyle behaviours, which results in an action for the users to complete the tasks and challenges. The app then provides users with rewards which can be redeemed through a partner marketplace. This results in users realizing the value of their investment and creating a self-perpetuating cycle of behavioural change. The theory mainly targets users' engagement in the app and motivates them to continue using it long-term.

In combination, these theories help to create behavioural change in the real world while engaging users simultaneously with the app itself. This approach is further supported by features that are dominant in gaming. For example, Good Life includes features to configure avatars and level up. There are also different elements of social play that have been integrated, leveraging external relationships like family and friends and allowing users to interact and compete through Good Life (Campbell et al., 2008). Through this combination of rewards, challenges, feedback, competition, levels, and avatars, the DHI covers the most common game features found in the health domain. (Hammady & Arnab, 2022).

2.3 Making Long-Term Benefits Visible Short-Term

Even if health insurance companies can create engaging solutions for preventative care by leveraging DHIs, such initiatives start out being investments for the companies. The key question is how KPIs can be used to quantify DHIs' positive impact on the bottom line in the short-term to motivate insurers to invest in and reach long-term health outcomes. Based on experience in Asian

markets, health insurance companies have four ways to increase their bottom line: improve policy persistence, sell more policies, reduce claims, and reduce operational cost (V. Shi, personal communication, January 9th, 2024). With Good Life, health insurers can track the first three as KPIs to evaluate their impact; here ranked from short- to long-term impact:

- **Improved Insurance Policy Persistence Ratio:** Customers who find Good Life useful and enjoy using it are more engaged with the app. They are also more likely to persist with their insurance policy instead of switching to a different provider. Thereby, creating sustainable revenue for the health insurer in the short-term.
- **Increased Business from Upselling, Cross-Selling Opportunities, and Lead Generation:** Customers who engage with Good Life are more likely to purchase additional policies from the same insurance providers, resulting in increased overall revenue, as well as a strong financial incentive for users to engage with Good Life. In certain geographies in Asia, Good Life is also open to the public. This way, potential customers can engage with the app, and experience has shown that when customers learn about the offering this way, they are more likely to sign up for insurance policies.
- **Reduced Number of Insurance Claims:** In the long-term, the higher engagement with the app and the resulting positive lifestyle changes will show in a reduction of insurance claims. When an insurer reaches this point, it is financially more sustainable for them to continue offering Good Life.

2.4 Outlook on Future Offerings

The potential of DHIs such as Good Life goes beyond the current offering. Rather, ReMark is seeking to develop Good Life into a comprehensive solution for customers; a platform that leverages highly engaging mechanisms, while working with partners to curate an array of effective mini-DHIs that can be integrated on the platform. The app's tile-based design (see appendix, figure 1) can be flexible adapted and expanded with mini-DHIs spanning from preventative care to health literacy content, chronic disease management, and beyond. To achieve this long-term vision, Good Life seeks to become the "most inviting" lobby that offers insurers flexibility and personalization on one side and can integrate the most novel mini-DHIs on the other site. Some mini-DHIs have been developed by ReMark itself, and due to the platform's modular design, further integrations of mini-DHIs by third parties can be done (V. Shi, personal communication, October 17th, 2023).

In addition, engaging with health insurance customers via Good Life opens opportunities for ReMark to create insights from data that can be useful for different stakeholders. In fact, ReMark has been publishing an annual global consumer study, sharing their insights on insurance consumers' behaviour for ten years (ReMark, 2023d).

ReMark is not alone in this strategic positioning, leveraging the trend of increasing digitization in the health insurance industry. As Pauch and Bera (2022) illustrate, "the greatest source of value creation through the digitization of insurance lies in the ability to develop new and more customer-oriented products and solutions to reduce costs" (p. 1682). Along these lines, tools such as big data and mobile devices are helpful to provide personalized experiences and create additional sales channels, with insurance distribution channels shifting gradually more to include mobile channels (Pauch & Bera, 2022). Asia is well-suited for these digitization efforts as around half of consumers are open to buying policies via insurers' apps and a large majority of consumers is open to sharing data, especially in exchange for rewards or discounts (Ning, 2022).

2.5 Lessons Learned

Finally, ReMark and Good Life have many lessons learned along the way. Highlighted in the following are specifically the lessons learned based on Vincent Shi's experience in nine markets (personal communication, October 17th, 2023).:

- **Be Open to Trial-and-Error:** Implementing technologies that are innovative and outside of stakeholders' traditional business processes will come with errors, especially for application areas like preventative care which are themselves fast developing. To be successful, stakeholders must look out for the right KPIs and be conscious of positive weak signals in the short-term to encourage long-term commitment.
- **Be Willing to Quickly Iterate:** DHIs provide an opportunity for companies to understand what is engaging to which users through data analysis. With this information, companies need to be open-minded to develop solutions on-the-go and incorporate as much customer feedback as possible.
- **Respect Local Culture Fit:** Culture plays a significant role in the uptake and engagement with DHIs. One well-known example is mental

health, for which acceptance between cultures varies greatly. To take culture fit into account, companies can collaborate with a market's local ecosystem, including for example healthcare providers or start-ups, to better understand the level of cultural adaptation required. In Good Life, ReMark collaborates for example with local non-governmental organizations that users can donate their rewards to. This creates a win-win, as users can contribute to causes that they are connected to, and ReMark can recognise the positive impact that users' healthy actions have on their community.

Through these lessons learned, ReMark has continuously improved its offering. They and similar service providers can bring in the lessons learned to new projects, helping organisations to minimize errors and reduce the number of required iterations.

3 CONCLUSIONS

ReMark is one example of how players in the health insurance industry adapt to market realities and provide value. In this case, the value extends beyond the individual consumer to the healthcare system at large by offering preventative care and leveraging readily available technology with their Good Life DHI. In Asian markets, specifically Singapore, they are well positioned to fill out this role. They profit from health insurers' unique positioning on one side and from bringing in expertise on engagement on the other side. Based on ReMark's experience, they are further able to identify the right KPIs to convincingly showcase the DHI's monetary benefit in the short- and long-term. They do so by understanding how consumers engage with insurers and how to increase both revenue per consumer as well as number of consumers overall.

However, market realties vary, as exemplified by diverse DHI categories and reimbursement guidelines. There is no one-size-fits-all solution, and the approach needs to be reconsidered when entering new markets. This consideration ranges from local culture fit to business model solutions. If health insurers' positioning varies regarding their objectives, long-term outlook, or data access, they might not be in the best position to support such solutions either. It is therefore important that offerings are flexible and can be quickly adapted. Players in the health insurance industry should be especially mindful when considering which technologies to implement. Good Life's tile-based design provides an example of how a DHI's offering fits into this suggestion, focusing on the integration of mini-DHIs. Integrating a variety of mini-DHIs gives insurers the opportunity to adapt to different market realities and personalize the offering to individual users. Just as for the overall DHI, relevant KPIs can be defined and tracked via a comprehensive evaluation and adaptation process before and after integration of mini-DHIs. The KPIs can then be used to systematically investigate the effectiveness of mini-DHIs as well as their impact on the overall DHI and different user groups.

The differences related to market dynamics, regulations, and the variety of upcoming DHIs and mini-DHIs all lend themselves to be explored as future research directions. It would be beneficial to further investigate and contrast the role of health insurance companies along these differences. Similarly, there continue to be open questions around how to set up the most effective DHIs for preventative health. Good Life and the theories implemented in the app are only one example that can be further explored to understand the impact of individual features on different configurations. Research could investigate the inclusion of additional features and theories to optimize the offering for long-term engagement and health outcomes. In this context, it is also important to understand to what extent the findings from the Good Life app are transferrable to other DHIs in the field.

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APPENDIX

Figure 1: Screenshots of the Good Life app's user interface.