

Market Analysis for “Cloud-Based Sleep Quality Monitoring System Using Pressure Sensor Grid”

1. Market Demand

1.1 Market Need

Sleep quality is a part of the quality of life. Besides affecting mental health, sleep quality can affect lifestyle, diet, concentration, productivity, athletic performance, emotions, social interactions, immune functions and so on. According to Malaysia Health Survey conducted in March 2020, Malaysians were living their best health lifestyle. Malaysians rated their health 3.7 out of 5. And 48% use a health/fitness tracker. However, Covid-19 has raised the health conscious among Malaysians. The recent Movement Control Order (MCO) has changed the behavior among Malaysians. There is a 90% increase in online search for home workouts. Before the MCO, 41% of the respondents allocated less than RM 100 a month on health-related spending. The spending on home equipment had been increased by 200% during MCO. The rise of the health conscious among Malaysians has enlarged the market for domestic healthcare products.

In hospitals, there are many patients with different seriousness of ills. There are patients needing intensive cares. Meanwhile, there are patients needing only normal cares. The conditions of patients are important to be recorded frequently, based on the types of cares. During the fight with Covid-19, the world has now understood that the facility and caregivers are the bottleneck in the fight. An online sleep quality monitoring system that analyzes the sleep quality and detects of the patients on the bed is coming in handy in managing and monitoring the patients. It is foreseeable that telehealth is critical to fight the pandemic and for the post-pandemic, in which automation and artificial intelligent can solve the bottleneck.

Often, the patients in rehabilitation centers have mental health issue and sometimes depression. Different patients may need different time duration to recover from depression. Sometimes, it is difficult to physically observe the symptoms of depression from a patient. However, depression can be observable through the monitoring the sleep behavior or quality. Thus, it is good to monitor the sleep condition of the patients.

Besides the domestic, medical and rehabilitation applications, sleep quality monitoring system can also be applied in hospitality services. The system allows the guests and the service providers to understand the quality of service (whether the guests sleep well or not).

1.2 Market Size

The total healthcare industry spending in Malaysia, which stood at RM52 billion at end-2017, is expected to reach about RM80 billion by 2020, fueled by increasing demand for healthcare services, and emergence of new care models beyond traditional hospital settings, according to business consulting firm Frost & Sullivan.

1.3 Market Growth

The healthcare sector in Malaysia operates on a two-tier system: a government-based universal healthcare system and a highly effective private healthcare system. The sector is expected to grow to

127 billion ringgit by 2027, fueled by increasing demand for healthcare services from an ageing population, rising affluence, and increasing life expectancy.

1.4 Target Market

The target market for sleep quality system can be divided into the following 3 groups:

- Healthcare / Elderly Care / Special Care Products
- Medical and Rehabilitation
- Hospitality

2. Market Capability/Capacity

2.1 Financial Resources

Research grants are the resources used to support research works related to development and the analysis of sleep quality monitoring system. Collaborations with the experts in the medication and rehabilitation centres can be formed during the development of the project. The advice and the interpretation of data from experts will be gathered.

Meanwhile, Seed Fund can be considered after the completion of the research and analysis. After the research phase, the algorithm for the sleep quality monitoring system will be ready. The Funding is mainly used to produce the sensors for sale.

2.2 Market Strategy

The project can be started by engaging the potential customers such as medication, rehabilitation, and hospitality service providers to participate in the research phase. In this way, the advices and from the potential customers can be considered at the early stage of the project. This method can also increase the conversion rate.

To further alleviate the chance of success in selling the product, special price can be offered to the stakeholders who have participated in the research phase.

2.3 Distribution Network

There are 3 types of product packages can be developed from the technology. They are domestic health care, medication & rehabilitation, and hospitality. Domestic products will be produced as stand-alone units, where software licensing and subscription fees are not needed. This allow the products to be promoted through online platform at large.

Meanwhile, product for hospitality can be distributed through sales agent. This is because it is more likely for the consumer in the hospitality industry to purchase to the product in bulk. In this case, the agent can be paid with commissions.

Similar to hospitality industry, the product package for medication and rehabilitation industry can be distributed through sales agent. However, the software licensing fee are needed due to the research

costing in developing the specialized analysis tools. Special offer can be consider per negotiation if the customer agrees to participate in the research works.

2.4 Strategy Alliance

The research and development project will be mainly carried in Melaka. The following are the potential stakeholders.

- i. Multimedia University – Providing seed fund for product marketing after the completion of research phase. The university also provide the facilities for the research works. The students can be engaged to participate in research works and testing the product.
- ii. PERKESO and Hospital Melaka – Collaborate with the experts in medication and rehabilitation for professional advices and data collections from the patients.