Business opportunity analysis of Point-of-care (POC) Testing using NEWS system

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1. Introduction

The trend of next generation healthcare is to measure the state of human health in real-time and to treat with proactive actions before the onset of a substantial disease. In which, the core point is the change of perspective from cure to care. Various business opportunities are expected in the future healthcare field. Point-of-care (POC) Testing is one of the major fields in these opportunities. POC is a small diagnostic device that enables in-vitro diagnose, which can also be used in medical fields such as emergency rooms or utilized in a patient's daily life. It is concept of substitute large, complex, expensive medical equipment for a small, simple, low-cost system. POC is mainly utilized in glucose test, blood gas analysis, electrolyte analysis, coagulation test, cardiac marker diagnostic, drug abuse examination, urine strip test, pregnancy test, infection test through food, hemoglobin diagnostic, disease test, cholesterol test and etc. Examining the site of usage, POC has a higher frequency of usage in emergency rooms and intensive care units of hospitals rather than at home by an individual.

2. POC Web media exposure frequency

Korea Institute of Science and Technology Information is developing NEWS(New, Emerging, Well-extracted items Suggestion system) System, which informs hot business items regarding the latest trend of emerging technology or industry. This system was established according to a principle that contents often referred in web-based articles such as daily or Naver news reflect the latest trend of major industry or technology. Utilizing the database used in NEWS, the study mainly analyzed POC(point-of-care). Following is the result of analyzing the trend of POC related articles using Naver news and major 11 daily newspapers since 2012 as database:
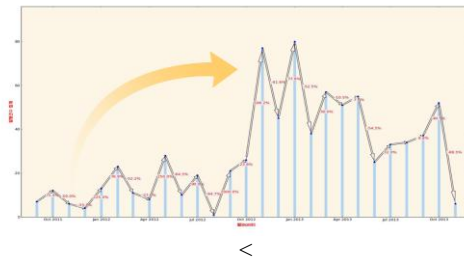

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Figure 1. number of related articles in time series (using NEWS system)

The graph is a flow of the number of POC articles in web database and newspaper articles from September 2011 to October 2013. The graph shows that the number of articles increased significantly in 2011 compared to 2012. The study analyzed major POC related issues using commonly appearing keywords' co-word analysis and network analysis. First, keywords that concurrently appear with POC were drawn using the NEWS system. Then "Pajek", a network analysis tool, was used to configure network. Finally, a network visualization tool, "VOSviewer," was used to visualize. After September of 2011, main issues that appeared in POC related newspaper articles were health care, blood glucose measurement, real-time, medical records, prevention, glucose strips, Samsung, licensing, autoimmune diagnosis, myocardium, and chronic disease. This analysis shows that POC is used to prevent diseases in the healthcare industry. Although blood sugar measurement field takes large proportion from the entire field, POC is also expanding towards immune diagnosis, myocardium, and chronic disease measurement.
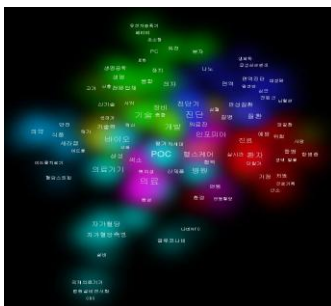
Figure 2. POC related major issues (NEWS development program)

3. POC market attractiveness

The global market size of POC is expected to grow from 10-16.4 billion U.S. dollars in 2012 to approximately 13.6-24 billion U.S. dollars in 2016. The expected annual average growth is 7.7% and the scale is expected to grow continuously in the future. According to the market rate of utilization of POC (2011), blood glucose testing takes more than 43.8% of the market. In fact, blood glucose testing is expected to form the largest market in the future. However, the actual growth rate in the future is 5.3%. This rate is relatively low and the attractiveness of the cardiac biomarkers or infectious disease measuring devices can be considered rather high. According to the size of regional market (based on 2011), North American market is accounted for 55.1% followed by Europe accounting for 29.7 %. In North American market, the United States accounts for 93.7% and Canada for 5% share. The POC market is formed with the United States as the center. In addition, an analysis of the market, reviewing market attractiveness as a market size, growth potential, competitive intensity, shows that cardiac biomarkers, drug tests, and infectious disease diagnostics markets have high degree of attractiveness.

4. Conclusion

As entry to Health 3.0, which considers preventive diagnostic as important, this research focused on newspaper database, size of global market, and trend analysis about the importance of POC. POC market is expected to achieve solid growth in market size and expansion of various applications. For technology commercialization, however, it is necessary to examine the business closely before entering the market. Due to characteristic of medical devices, competitive prices resulting from excellent production technology may not lead to a substantial competitive edge. If a company lacks brand power or is newly entering the virtual market, it should understand that the change in technology-centered is appreciated rather than covering previous value chain. Moreover, in the case of developing product and service for export, each of the regional cultural differences should be considered first. Thus, actively deal with each country's regulations and should be able to react flexibly in market development through securing adequate funding and attracting investment during long-term approval process.

5. References

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