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This research was aimed at analyzing the technological cycle in the semiconductor industry. The main objective of this analysis was to analyse the concept of product life cycle theory in order to explain the invention, marketing and movement of production base of semiconductor industry. The results will lead us to understand the movement of high technology commodity production base in the future.

The scope of this research is limited to DRAM (Dynamic Random Access Memory) as the representative of semiconductors. DRAM is classified into 3 groups according to marketing reasons. The first group is 1Kbit, 4Kbit, 16 Kbit and 64 Kbit. The second one is 256 Kbit, 1 Mbit and 4Mbit. The last one is 16 Mbit, 64 Mbit and 256 Mbit. It is confirmed from this research that the product life cycle is able to explain what has happened in the first group quite well. The movement of production base for gain the benefit from cheap labour still occur. But in the second and third group, DRAMS are much more complicated. They must be produced by highly complicated machines with sufficiently high technology environment. In such a case, the product life cycle theory cannot explain the movement of production base to gain benefit from low wage in developing countries.

In the summary, Innovators are able to move production base in 3 forms. The first is to decrease production cost by using cheap labour in developing countries according to the concept of product life cycle theory. The product in this form is technologically mature and easy to imitate. The second form of the movement is to decrease the problems of marketing and trade barriers. The products in this form is more modern and more difficult to imitate. The final form of the movement is a joint venture in research and development with other manufacturers among developed countries. This is the case when products are still not mass produced and technology is still in the state of development.

The possible opportunity for Thailand's semiconductor industry is ASIC (Application Specific Integrated Circuit) design. This is because not only Thailand has qualified manpower but also investment cost involved is relatively low. Moreover, ASIC production is known to require less investment, unnecessary to mass produced, able to design according to needs, and more difficult to imitate. If properly designed and produced, ASIC would allow domestic downstream industries, such as electronic industry, to produce differentiated products and to launch their products to the market faster.