A System Dynamics Model of Multi-Generation Diffusion within Innovation Product-Example of T.V Game Industry

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ABSTRACT

Along with the evolution of the age, the technologies also evolve progressively. When the twenty first century coming, that technologies show we an all new world. All of these owe to scientists ’ innovative sprits. And, consumers also play the important role, because of those like new products. Old products always continuously replaced by new products in the market just explain this situation, and also remind manufacturers must pay more attention to innovate and improve their products. At present, technology ’s application must be used more frequently and more advances, because of people would like to live more convenience. Therefore, in the competitive business environment, manufactures must more carefully think about their new products ’ strategy, else they will be eliminated by other competitors. The main purpose of this research expected to use the tool of " system dynamics" help the manufacture make the right decision, through building the model of multi-generation diffusion. Using system dynamics as the research tool, because of it ’s good at dealing with the dynamic complexity problem of “ higher-order, multi-loop and non-linear. This model also can help the competitor to understand the dynamics of market, then making the right decision for competition. In the process of modeling, the history case of the competition between SONY and SEGA television entertainment equipments also will be tested and examined. Through the results of simulation, some suggestions will be discussed as following : 1.Getting rid of the pursuing for raising the market share: the strategy will make the manufactures ’ policy imbalncing then causing it collapse. 2.It ’s not proper to use attractive policy for consumers too much and simultaneously. These policy have their own side-effect and unintended consequences for the firm. 3.Notice the effect of network externality; it can make success to successful. 4.Consider the innovation coefficient and imitative coefficient of the adoption of new products, different coefficients will influence on the right time to enter the market. Finally, we also propose some managerial implications and research guidelines for further study. Key words ：System dynamics, Innovation product, Multi-generation diffusions, Dynamic complexity, Network externality

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