Executive DBA, Université Paris-Dauphine, PSL

PSL·巴黎九大高级工商管理博士学位项目

Intelligent Marketing Model: Multi-Case Empirical Study of Spinning Top (AARRR^2) Model

(Thesis submitted for the degree of Executive Doctorate in Business Administration)

Cohort: 2017

Applicant: YANG Bo

Supervisor: ZHU Wuxiang

November 16, 2021

CONFIDENTIALITY AND AUTHORIZATION

The information provided by the respondent and its authority will be kept confidential. For this reason, measures have been taken for all information and other materials included herein, to protect interests of the participants. This dissertation is considered confidential and will be treated with under the privacy policy of Paris Dauphine University.

In addition, I declare that I fully understand the provisions of Paris Dauphine University on reservation and application of academic degree dissertations, that is the university is entitled to reserve copies of academic degree dissertations and allow the dissertation to be consulted and borrowed; it may publish whole or part of the dissertation and preserve it by means of photocopy, microcopy or other copy methods.

Signature:_____Signature of the supervisor:_____Date:_____

ABSTRACT

As the Internet, computer, and wireless communication technologies continuously develop, digital media represented by mobile phones and computers are gradually replacing traditional media channels including newspapers, magazines, broadcasting and televisions. The way people consume and the logic behind it are also influenced and experiencing a quiet transition. For a long time in the advertising marketing field, classic marketing models represented by AIDMA (EImo Lewis，1898), AISAS (Dentsu Group，2005), and AARRR (Dave McClure，2007) have guided the dissemination and promotion of countless brands and products. With the current prevalence of mobile Internet, the classic models can no longer fully meet the companies' needs and effectively guide them to carry out marketing and promotion campaign, even though they are still in use. Hence, the market is in desperate need of a more flexible and highly targeted marketing model that adapts to the dynamic development of the market and meets the complex needs of enterprises to guide the making of advertising and marketing strategies

Through literature review, this dissertation reviews theories including advertisement science, marketing (marketing development phases, integrated marketing, and precision marketing), and social psychology. Combining the development of modern mobile Internet and previous understandings on intelligent marketing, this dissertation first puts forward the intelligent marketing model framework with smart technology as the basis, link model as the main-body, and classification category as the driving factor.

By conducting in-depth analyses on the classic marketing models and the practical problems encountered when applying these models in daily work, the author finds out that with the development of mobile Internet and science and technology, the classic marketing models are unable to meet the more diverse user needs or adapt to the fiercer market competition, and are insufficient in pointing out the direction for companies to implement precision marketing. In order to improve the applicability of the classic marketing models, the author proposes a refined link model $AARRR^2$ (acronym) on the basis of the classic marketing model AARRR (Dave McClure，2007). To study factors driving the marketing model in application, 28 real

advertising cases that the author participated in are summarized in this dissertation using the programmatic grounded theory, and 12 driving factors have been obtained and classified through deductive reasoning into 3 classification categories of advertising and marketing in the field of mobile Internet, i.e., ad features, consuming scenarios and user experience.

Therefore, by combining the link model with grounded theory results, the author first puts forward the intelligent marketing model AARRR^2 with big data, cloud computing, and artificial intelligence as the smart technological basis, link model AARRR^2 as its main body, as well as ad features, consuming scenes, and user experience as the driving forces. In order to facilitate communication and memory, the model is also named as the spinning-top (AARRR^2) model. Smart technologies serve as a platform to lay a solid foundation, the main body in the shape of a spinning top looks wide at the top and narrow at the bottom, and the driving factors on the side provide power for the rotation of the top, vividly illustrating the relationship between the three main components of the AARRR^2 model and their respective roles. Theoretically, the model compensates the deficiency of classic marketing models in terms of data analysis framework and driving factor segmentation for mobile Internet advertising; in practice, it guides enterprises to transform the endpoint of marketing from single to continuous consumption behaviors, thus realizing long-term benign development. The 3 classification categories and 12 driving factors help to solve the problem of ambiguity in the direction of classic marketing models in actual ads serving, facilitating the effective achievement of precision marketing. The intelligent marketing model is of both practical and theoretical significance.

Keywords: Intelligent Marketing, Marketing Model, Precision Marketing, Artificial Intelligence

ACKNOWLEDGEMENT

I started my studies at Université Paris-Dauphine with a problem that I always wanted to solve, and after that I have experienced a lot of thoughts and changes along the way. It has been over two years since the research topic of this dissertation was proposed, and now I can say some outcomes have been achieved. I have quite a few years of working experience in management and administration, but I have never really thought about turning them into a paper or presenting my practical experiences in such an academic form. It was 15 years ago when I first knew Université Paris-Dauphine, thanks to my wife, who studied in France since 2006 and finished her Masters and PhD at Université Paris-Dauphine. I visited her a lot back during her stay in France and have been to the campus of Université Paris-Dauphine for many times. One day, I came across an advertisement for Tsinghua-Université Paris-Dauphine Executive DBA PhD program – "Attaining Executive Scholar", which immediately made me feel close. This seemed to have been predestined, and then I decided to embark on my PhD journey at Université Paris-Dauphine!

First of all, I would like to thank my PhD supervisor, Mr. Zhu Wuxiang. He encouraged me to write my dissertation based on my professional experiences and cases from my company. He also mentioned many times that in the digital era, changes in marketing were inevitable, and empirical research on intelligent marketing would a very meaningful thing to do. Mr. Zhu provided me with many well-sorted research perspectives and ideas, as well as basic research methods and writing skills. During the writing process, I found it difficult to make enough time and energy for the dissertation due high pressure at work; hence, in the first six months, I was afraid to take the initiative to communicate with my supervisor and teachers because I made no substantial progress. While I was anxious and irritated, the Project Leader Zhang Yingjun and the Class Teacher Niu Liqun followed up on my dissertation progress and always positively encouraged me to communicate more with my supervisor, providing me with very practical guidance when my dissertation was taking shape step by step. This helped me further consolidate my dissertation framework, and I then had some in-depth communication with my supervisor before handing in my proposal and deciding on the

general direction of the whole dissertation. The guidance from Mr. Zhu and Mr. Zhang completely opened up my mind and reinforced my confidence. The whole process of writing was kind of a torture to me. The first draft I submitted for pre-defense lacked basic academic logics, and the research topic of my dissertation was rather emanative. Subsequently, I kept summarizing daily work cases, and gradually found the ideas and methods of research, which enabled me to train myself more strictly through logic, rationality, and speculation. This led to a big leap forward in my cognitive approach and mental model. My supervisor played a significant role in this process, like a beacon navigating me out of the confusions and pointing out a clear direction and goal for me. Secondly, I would like to thank my wife Zhou Le, who encouraged me when I was very much not confident about the dissertation writing after I started it and I even though about giving up. But my wife used her own experience of writing her dissertation to tell me not to rush but to start patiently with literature review by reading more literature and excellent papers to build up the framework of the dissertation. She also suggested me to record a little bit of ideas and words every day, which really helped me a lot when I was sorting out the overall framework of my dissertation. Thirdly, I would like to thank my colleagues, as most of the cases used in this dissertation have been actual cases from my company, which are also a review and summary of our daily marketing work. In a sense, this dissertation can be seen as a process of guiding marketing practice with the marketing model, and also of reverse verification of the marketing model with marketing practice. My colleague Li Xin and Chang Leilei provided me with a wealth of material and cases in practice, and they were also directly involved in the discussion on the marketing model and offered a lot of valuable ideas. Fourthly, I would like to give special thanks to Shi Shang, who assisted me in collecting and organizing literature, helping me a lot to make up my shortcomings in the literature field. We basically had bi-weekly meetings in person or on telephone to discuss in detail about my dissertation, so that I could focus more on the main direction of the dissertation, shifting from the initial divergence to the later-on convergence of my writing, and she helped me polish and proofread the whole dissertation, which was a lot of hard work. Finally, I would like to express my sincere gratitude to all the teachers and students, as my study at Université Paris-Dauphine has not only enriched my knowledge

structure, but also gained me affection and friendship from my teachers and classmates. This is definitely an invaluable spiritual treasure in my life. I have learned a lot from each and every of my classmates, who showed their unique personality and outstanding performance. And this is a great blessing in life that I could get my vision broadened by learning from them. In conclusion, I would like to dedicate this dissertation, the result of my hard work yet still with many shortcomings and flaws, to my supervisor, my teachers and classmates, my colleagues, my family and friends!

TABLE OF CONTENT

ABSTRACT I

ACKNOWLEDGEMENT III

TABLE OF CONTENT VI

TABLE OF TABLES X

TABLE OF FIGURES XI

Chapter I Introduction 1

1.1 Research Background 1

1.1.1 The Development of Mobile Internet 1

1.1.2 Technical Means in Advertising Marketing 3

1.2 Raising Problems 5

1.3 Research Significance 6

1.3.1 Theoretical Significance 6

1.2.2 Practical Significance 6

1.4 Research Method 7

1.4.1 Research Method Overview 7

1.4.2 Research Technology Roadmap 7

1.4.3 Paper Structure 8

Chapter II Related Theories and Literature Review 10

2.1 Advertisement Background and Development 10

2.1.1 Advertisement Evolution History 10

2.1.2 Typical Mobile Internet Advertisement Types 15

2.1.3 Advertisement Performance Evaluation Tools 17

2.2 Marketing Theories and Literature Review 25

2.2.1 Marketing Development Stages 25

2.2.2 Marketing Theory 28

2.2.3 Precision Positioning....32
2.2.4 Integrated Marketing and link Marketing....35
2.3 Social Psychology and Related Theories....38
2.3.1 Social Cognitive Theory....38
2.3.2 Theory of Planned Behavior....39
2.3.3 Flow Theory....41
2.4 Traditional Marketing Theoretical Model....43
2.4.1 AIDMA Model....43
2.4.2 AISAS Model....44
2.4.3 AARRR Model....45
2.5 Modern Marketing Theory Models....47
2.5.1 SIPS model....47
2.5.2 TTB Model....49
2.5.3 AIPL Model....51
Chapter III Research Design....56
3.1 Model Framework Construction....56
3.2 Research Methods....57
3.2.1 Multi-Case Study Method and Case Selection....58
3.2.2 Grounded Theory....58
3.2.3 Data collection....60
3.2.4 Data Processing....62
3.3 Research Quality Evaluation....62
Chapter IV Research Process and Findings....64
4.1 Smart Technological Foundation....64
4.1.1 Smart Features....64
4.1.2 Fundamental Applications of Smart Technology....66
4.2 Main Body of Intelligent Marketing Model....71

4.2.1 Analyses of Classic Marketing Model AARRR....71
4.2.2 Main Body of Intelligent Marketing Model....73
4.3 Analysis of Driving Factors for Intelligent Marketing Model....75
4.3.1 Research Process of Grounded Theory....75
4.3.2 Grounded Theory Study Results....87
4.4 Spinning Top (AARRR^2) Intelligent Marketing Model....88
4.4.1 Differences Between Spinning Top(AARRR^2) Model and Traditional Marketing Model....89
4.4.2 The Connection Between AARRR^2 and Classic Marketing Models....91
Chapter V Case Study....93
5.1 Case 1: The Case of the Advertisement of Lucky Wang Tiger Skin Chicken Feet....93
5.1.1 Introduction to the Brand/Industry....93
5.1.2 Advertisement Launch Strategies....94
5.1.3 Summary of Ad Serving....101
5.2 Case 2: Huawei Advertisement on Secoo Luxury APP....104
5.2.1 Introduction to the Brand/Industry....104
5.2.2 Ad Serving Strategies....107
5.2.3 Data analysis....114
5.2.4 Summary of the Ad Serving....120
5.3 Case 3: Dongman App ad serving strategy....121
5.3.1 Brand/industry background....121
5.3.2 Ad Serving Strategies....123
5.3.3 Data Prediction....128
Chapter VI Conclusions and Prospects....130
6.1 Main Conclusions....130
6.2 Main Research Innovations....131
6.3 Research Limitations....133
6.3.1 Cyber security and privacy....133

6.3.2 Big Data-enabled Price Discrimination to Existing Consumers 135

6.4 Prospect and Trends of Intelligent Marketing 139

6.4.1 Intelligent Marketing, the Inevitable Trend 139

6.4.2 Multi-Channel Competitions 140

6.4.3 Improvement of Laws and Regulations 142

6.5 Conclusion 145

APPENDIX 147

BIBLIOGRAPHY 149

DECLARATION 156

RESUME 157

TABLE OF TABLES

Table 2.1 Three Stages of Immersion Generation.....42

Table 2.2 Algorithm Logic of Alibaba's AIPL Model.....53

Table 3.1 Summary of Cases.....61

Table 4.1 Grounded Theory Study Results 88

Table 5.1 The Brand Advertisement Launch Strategy of Lucky Wang in the First Stage 100

TABLE OF FIGURES

Figure 1.1 Technology Roadmap 8
Figure 2.1 Map of Advertisement Performance Evaluation Tools 18
Figure 2.2 Social Cognitive Theory 39
Figure 2.3 Cognitive Behavior Theory 41
Figure 2.4 Skill-Balance Relationship in The Flow Theory 42
Figure 2.5 Eight Combinations of Flow Theory 43
Figure 2.6 AIDMA Model 44
Figure 2.7 AISAS Model 44
Figure 2.8 AARRR Model 46
Figure 2.9 The SIPS Model 48
Figure 2.10 Conversion Among The 4 Groups in AIPL Model 52
Figure 3.1 Concept Model of Intelligent marketing 57
Figure 4.1 Purchase Process of Programmatic Advertising 66
Figure 4.2 Ways of Advertising Bidding 67
Figure 4.3 Yahoo's Similar User Model Algorithm 69
Figure 4.4 AARRR Model 71
Figure 4.5 The Wheel of Meaningless Growth 72
Figure 4.6 Global APP Retention Data of 2019 73
Figure 4.7 Main Body of Link Model $AARRR^2$ 74
Figure 4.8 Spinning Top ($AARRR^2$) Marketing Model 88
Figure 5.1 Market Size and Growth Rate of The Leisure Marinated Product Industry in China From 2010 to 2019 95
Figure 5.2 Changes of Brand Concentration in the Leisure Marinated Product Industry 96
Figure 5.3 Pictures of the Packaging of Lucky Wang Tiger Skin Chicken Feet 97
Figure 5.4 Main Consumption Time of Marinated Products 99
Figure 5.5 Main Consumption Motives of Marinated Products 99
Figure 5.6 Comparison of the ROI Curve on IOS and Android End 102

Figure 5.7 Comparison of Store Visit Cost and Purchase Rate on IOS and Android End 103

Figure 5.8 Comparison of ROI on Tik Tok, Toutiao and Xihuo Video 103

Figure 6.1 Intelligent Marketing Model-Spinning Top (AARRR^2) Model 130