

CONSUMER BEHAVIOR OF TAMAGOTCHI KEEPERS

by

CHEUNG SUET-YIN ANITA

LO CHUI-YUK MICHELLE

張雪燕

盧翠玉

MBA PROJECT REPORT

Presented to

The Graduate School

In Partial Fulfilment

of the Requirements for the Degree of

MASTER OF BUSINESS ADMINISTRATION

TWO-YEAR MBA PROGRAMME

THE CHINESE UNIVERSITY OF HONG KONG

May 1998





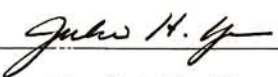
The Chinese University of Hong Kong holds the copyright of this project submitted in partial fulfilment of requirements for the Degree of Master of Business Administration. Any person or persons intending to use a part or whole of the materials in this project in a proposed publication must seek copyright release from the Dean of the Graduate School.

APPROVAL

Name : Cheung Suet-yin Anita
Lo Chui-yuk Michelle

Degree : Master of Business Administration

Title of Project : Consumer Behavior of Tamagotchi Keepers


Prof. Julie Yu

Date Approved: 6 May 1998

ABSTRACT

The Tamagotchi has been described as the world's most popular toy. It has been featured on CNN, the *Washington Post*, and *Daily Telegraph*. These 'adorable' pets were first launched on 4 April 1997 in Hong Kong. They were wildly popular among high school students and rapidly won the hearts of office workers and business people. They were sold out within a matter of hours in most places and were in such demand that a black market emerged at up to 20 times the list price. They have spurred the creation of a myriad of mailing lists, websites, and discussion groups.

This study examined the consumer behavior of Tamagotchi keepers in Hong Kong. The scope of this research was twofold: 1) to study the motivation for nurturing Tamagotchi and level of involvement of Tamagotchi keepers; and 2) to use the research results to develop and fine-tune marketing strategies to extend the product life cycle of Tamagotchi. Eight focus groups were first conducted to gain insights into the motivation for nurturing Tamagotchi and the level of involvement of Tamagotchi keepers. Undisguised, structured personal questionnaires were used in the second stage of descriptive research. Data collection was undertaken in four different shopping malls, representing demographically distinct population segments. A convenience sample of 100 individuals was used for the survey. The major limitation of the research was the time lag between the craze for Tamagotchi and the period of conducting this research.

The study concluded that curiosity was the key motivator in the process of nurturing a Tamagotchi. Moreover, children and teenagers were found to have higher levels of involvement and stronger motivation in nurturing a Tamagotchi than adults.

Managerial implications with regard to extending the product life cycle of Tamagotchi were discussed. Segmentation strategy targeting at children and teenagers and marketing strategies for developing a new version of Tamagotchi were recommended to the Bandai Corporation.

TABLE OF CONTENTS

ABSTRACT.....	i
TABLE OF CONTENTS.....	iii
LIST OF TABLES.....	v
ACKNOWLEDGMENTS.....	vi
Chapter	
I. INTRODUCTION.....	1
II. LITERATURE REVIEW.....	4
Product Life Cycle.....	4
Motivation.....	6
Level of Involvement.....	8
III. METHODOLOGY.....	10
Management Objectives.....	10
Research Objectives.....	10
Research Design.....	11
Hypothesis Testing.....	16
Motivation.....	16
Level of Involvement.....	17
Miscellaneous.....	17
Data Collection Method.....	19
Sampling.....	20

IV. RESULTS.....	22
Findings of Focus Groups.....	22
Survey Sample.....	25
Motivation.....	26
Level of Involvement.....	30
Other Findings.....	33
Concept of Electronic Pets.....	33
The Liking for Keeping Pets.....	33
Duration of Nurturing a Tamagotchi.....	34
Habit of Buying Cartoon Character Merchandise.....	35
V. LIMITATIONS.....	37
Sampling Bias.....	37
Reliability.....	37
Validity.....	39
VI. CONCLUSIONS AND RECOMMENDATIONS.....	40
APPENDICES.....	46
BIBLIOGRAPHY.....	59

LIST OF TABLES

Table 1	Record to be Kept by Focus Group Participants.....	12
Table 2	Schedule for Conducting the Questionnaires.....	20
Table 3	Time Distribution for the Project.....	21
Table 4	Hypothesis Testing Related to Motivation.....	28
Table 5	Hypothesis Testing Related to the Level of Involvement.....	31
Table 6	Hypothesis Testing Related to the Concept of Electronic Pets.....	33
Table 7	Hypothesis Testing Related to the Liking for Keeping Pets.....	34
Table 8	Hypothesis Testing Related to the Duration of Nurturing a Tamagotchi.....	35
Table 9	Hypothesis Testing Related to the Habit of Buying Cartoon Character Merchandise.....	36

ACKNOWLEDGMENTS

Our most profound thanks go to Prof. Julie Yu, our project supervisor, who has been gracious with her time and helped us in brainstorming, giving valuable suggestions on the questionnaire design, taking the effort to critique draft materials and advising on suggested changes. This report could not have been finished without her guidance.

In particular we would like to thank June Mak for her enthusiastic support of this project.

Among those who shared their insights with us, and to whom we owe great thanks, are Rebecca Chan, Alvina Cheung, Pauline Ip, Peggy Chan, Thomas Wong, Tang Ying Wa, Vincent Lou, Ada Man, Hung Hing Kwan, John Tang, Mak Ho Tung, May Ng, and Sue Chaiko.

CHAPTER I

INTRODUCTION

Tamagotchi was first introduced in November 1996 by the Japanese toy maker Bandai Corporation and it was marketed as "the original virtual reality pet." The Tamagotchi has been described as the world's most popular toy. Since Bandai launched it, more than 10 million of the little creatures have been sold in Japan and overseas, and that does not include the millions of imitations and knock-offs which have flooded international markets. The company turns out 4 million units of Tamagotchi a month in its plant in China's Fujian province. In March 1997, the manufacturer announced that the toy and its associated merchandise had resulted in about \$31 million in revenues.

Tamagotchi might be described as a tiny hand-held LCD video game that comes attached to a key chain or bracelet. The objective of the game is to simulate the proper care and maintenance of a "virtual chicken," which is accomplished through performing the digital analog of certain "parental" responsibilities, including feeding, playing games, scolding, medicating, and cleaning up after the ersatz pet. This is done by pressing small buttons below the LCD screen on which the Tamagotchi is depicted.

Legends say that it hatches from tiny eggs after traveling millions of light-years through cyberspace. One day on earth is the equivalent of one year in Tamagotchi land. The longest life span ever reported was 99 years, but the average is 15. The Asian version shows the pet's demise with a gravestone and a cross; Americans see angel wings. The owner, after a proper period of mourning, can restart with a new pet by pressing a button on the back of the gadget. But after three to six months, when the battery runs down, the game is over.

By the beginning of this year, some 50 home pages dedicated to the Tamagotchi had sprouted on the Internet. Today they offer all kinds of services, including home remedies and adoption advice. There is even a virtual graveyard where grieving owners can pay tribute to their dearly departed pets. Bandai is cashing in with everything like Tamagotchi shirts, hats, and underwear to stationery, stuffed animals, candies, cookies, and bed sheets.

Actually Tamagotchi is a hybrid computer virtual pet/physical virtual pet. It is a physical unit that contains a computer display of a pet. Tamagotchi will be replaced in the future by more complex physical virtual pets which are physical units themselves (not displays). This "becoming the pet" concept could open a whole new realm of pet ownership in the future.

In this research, the motivation for keeping Tamagotchi and the level of involvement of Tamagotchi keepers are the key areas of investigation. Based on the research results,

strategies to extend the product life cycle of Tamagotchi and to set the trend of keeping electronic pets are also suggested to the Bandai Corporation.

CHAPTER II

LITERATURE REVIEW

Product Life Cycle

Like individuals, products go through a series of stages. There are four basic stages: introductory, growth, maturity, and decline. This progression is called the product life cycle.

In the introductory stage, the marketer needs to stimulate demand for the new market entry. Since consumers know nothing about the new product, the promotional campaigns stress information about the product's features. In this stage, consumers begin to accept the new product. Due to the heavy promotion and extensive research and development expenditures, losses are common during this stage. The marketer expects to recover his/her costs and begin earning profits when the new product moves into the growth stage of its life cycle.

During the growth stage, sales volumes rise rapidly as new consumers make initial purchases and early buyers repurchase the products. As the firm begins to realize

substantial profits from its investment during this stage, the product attracts competitors. In fact, many competitive products enter the market at this stage.

In the maturity stage, industry sales continue to grow during the early part of the stage, but eventually they reach a plateau as the backlog of potential customers decreases. By this time, a large number of competitors have entered the market, and the firm's profits decline as competition intensifies. Heavy promotional campaigns emphasize differences among competing products, and brand competition intensifies. Some firms differentiate their products by focusing on attributes such as quality, reliability, and service. At this stage in the product life cycle, available products exceed industry demand for the first time. Companies attempting to increase their sales and market share must do so at the expense of competitors. As competition intensifies, competitors tend to cut prices in order to attract new buyers.

Innovations or shifting consumer preferences bring about an absolute decline in industry sales during the last stage of the product life cycle. Industry profits decline and in some cases actually become negative as sales fall, and firms often cut prices to sustain sales levels. Manufacturers gradually begin to leave the industry in search of more profitable products.

The product life cycle concept applies to products or product categories within an industry, not to individual product brands. It is a very useful organizing device to demonstrate the process of buyers and sellers changing their behavior while interacting

in the market. As the process evolves, major changes are necessary in the marketing strategies and mix (i.e., product, price, distribution, and promotion). For instance, profits may not necessarily assume a predictable pattern through the stages, but promotional emphasis should shift from product information in the early stages to brand promotion in the later ones. It should allow the marketing decision maker to expand sales and profits in each stage of the product life cycle through appropriate marketing efforts.

A frequently used marketing strategy involves taking steps to extend the product life cycle as long as possible. Marketing managers usually take this action early in the maturity stage. Product life cycles can be extended indefinitely through actions designed to increase the frequency of use by current consumers, add new users, find new uses for the product, and/or change package sizes, labels, or product quality.

Motivation

The term "motivation" itself is derived from the Latin verb *movere*, meaning "to move." In other words, motivation refers to the processes that move a person to behave in certain ways. Motivation deals with how behavior gets started, is energized, is sustained, is directed, and is stopped. Motivation is the basis for all consumer activities.

Energy and direction are the two major components of motivation. Energy refers to

the fact that all behavior – thinking, moving, looking, and so on – requires us to expend an internal supply of energy. Direction, on the other hand, is needed to channel our inner energies into productive, attractive behaviors and to allow us to behave efficiently. Both energy and direction are components of all consumer behavior.

The energy dimension often refers to physiological measures of the body's arousal, e.g., a consumer's pulse rate, blood pressure, brain waves, and skin chemistry. In consumer research, these measures are used to estimate individual reactions to advertising, brand names, and other marketing appeals.

The direction component refers to exactly which behavior is chosen from all those possible, and why. In general, motivation theory asserts that the direction taken in a behavior is mostly determined by the particular purposes we are trying to achieve with that behavior (this is technically termed purposive behavior). If consumer behavior is purposive, it should be possible to understand why a particular direction was chosen. The directional component emphasizes all consumer decisions to purchase a product at all and to choose a particular alternative from that product class. These are the driving forces of consumer demand in the marketplace and are of crucial importance to the marketing field. The better that marketers are able to understand the purposes being served through consumption, the better they are able to serve consumers' interests well.

However, researchers have found that much of a person's actions are determined by

influences of which he or she is, at the time, completely unaware. That means consumers are unaware of many of their motivations. The kinds of motives that exist at the unconscious level can in some cases only be uncovered or revealed by specially trained psychologists and psychiatrists.

Level of Involvement

The degree of personal involvement is the most salient factor that determines the type of decision-process behavior which will be used. Following the definition of John Antil, "Involvement is the level of perceived personal importance and/or interest evoked by a stimulus (or stimuli) within a specific situation."¹

Involvement is a reflection of strong motivation in the form of high perceived personal relevance of a product in a particular circumstance, and it also takes the form of a continuum ranging from low to high. Involvement becomes activated and felt when intrinsic personal characteristics (e.g., needs, values, self-concept) are confronted with appropriate marketing stimuli within a given situation.

Behavioral researchers have identified two types of involvement with products: situational and enduring. Situational involvement occurs only in specific situations and is temporary, whereas enduring involvement is continuous and is more permanent.

¹ "Factors Influencing the Extend of Problem Solving." *Consumer Behavior International Edition* (pp. 161).

The primary conditions for situational involvement in a product are perceived risk and badge value to the reference group. The basic conditions for enduring involvement are the product's importance to the consumer's self-image, continuous interest in the product, the product's emotional appeal, and its badge value to the consumer's reference group.

CHAPTER III

METHODOLOGY

Management Objectives

This research aims to develop strategies to extend the product life cycle of Tamagotchi for the Bandai Corporation. Moreover, recommendations in line with the development of electronic pets or strategies to set the trend for electronic pets will also be made for the Bandai Corporation to ensure its long-term sustainability in the industry.

Research Objectives

The research project aims to study the motivation for nurturing a Tamagotchi, and to determine the level of involvement of Tamagotchi keepers. The research focuses on how the motivation and the level of involvement vary among different groups which are segmented by two demographic variables, age and gender. The results of the research will help the Bandai Corporation to better understand consumer needs and to adjust its strategy to sustain in the future electronic pets industry.

Research Design

Background information about the development of Tamagotchi and the electronic pets industry was found through secondary data search. Focus groups were also used as a means to get some ideas about the motivation for keeping Tamagotchi and the level of involvement of Tamagotchi keepers. The respondents were divided into two age groups. One group included primary and secondary students aged 6 - 20, and the other group included tertiary students, working people, housewives, and other people aged 21 - 35. Then each age group was divided into groups of males and females. Each of these four groups of people convened twice, so a total of eight focus groups were conducted. In the first meeting with the respondents, a Tamagotchi was given to each of them and they were asked to raise the Tamagotchi for one week. They were asked to keep daily records of the weight increase, time involved in feeding and playing with the Tamagotchi, etc. These records, in the form of a standardized table, were collected during the second follow-up meeting (see Appendix 1), and was analyzed as follows:

Table 1 Record to be Kept by Focus Group Participants

					Health Condition		Degree of Satisfaction		
Day	Feeding	Games	Medicine	Clean up	Age	Weight	Food	Fun	Discipline
1	F1	G1	M1	P1	A1	W1	O1	U1	D1
2	F2	G2	M2	P2	A2	W2	O2	U2	D2
3	F3	G3	M3	P3	A3	W3	O3	U3	D3
4	F4	G4	M4	P4	A4	W4	O4	U4	D4
5	F5	G5	M5	P5	A5	W5	O5	U5	D5
6	F6	G6	M6	P6	A6	W6	O6	U6	D6
7	F7	G7	M7	P7	A7	W7	O7	U7	D7
Total	Ft	Gt	Mt	Pt	At	Wa	Ot	Ut	Dt

F_n = number of times the respondent fed the Tamagotchi on Day n

G_n = number of times the respondent played with the Tamagotchi on Day n

M_n = number of times the respondent medicated the Tamagotchi on Day n

P_n = number of times the respondent cleaned up after the Tamagotchi on Day n

A_n = age of the Tamagotchi on Day n

W_n = weight of the Tamagotchi on Day n

O_n = degree of satisfaction of the Tamagotchi with having enough food on Day n

U_n = degree of satisfaction of the Tamagotchi with having fun on Day n

D_n = rating of the behavior of the Tamagotchi on Day n

where $n = 1 - 7$

It is assumed that it takes the respondent 0.5 minutes each to feed, play with, medicate, and clean up after the Tamagotchi.

$$F_t = 0.5 \sum_{n=1}^7 F_n = \text{Total time spent on feeding the Tamagotchi}$$

$$G_t = 0.5 \sum_{n=1}^7 G_n = \text{Total time spent on playing with the Tamagotchi}$$

$$M_t = 0.5 \sum_{n=1}^7 M_n = \text{Total time spent on medicating the Tamagotchi}$$

$$P_t = 0.5 \sum_{n=1}^7 P_n = \text{Total time spent on cleaning up after the Tamagotchi}$$

$$\Rightarrow \text{Time involved in taking care of the Tamagotchi} = F_t + G_t + M_t + P_t$$

A_t = age of the Tamagotchi at the end of nurturing period

W_a = average weight of the Tamagotchi each day during nurturing period

$$\text{where } W_a = \frac{\sum_{n=1}^7 W_n}{7}$$

The degree of satisfaction at having enough food and fun and the discipline of the Tamagotchi reflect the performance of the respondent in taking care of the Tamagotchi. A scale of four hearts is used for each of the aspects, the degree of satisfaction at having enough food, the degree of satisfaction at having fun, and the discipline of the Tamagotchi. For example, if the Tamagotchi is greatly satisfied at having enough food, four full hearts are shown on the scale. If the Tamagotchi is not having any fun at all, four empty hearts are shown. If the respondent has done a fair job in disciplining the Tamagotchi, only two hearts are filled in. So, a total of 12 hearts would be filled if the respondent did a very good job in taking care of the Tamagotchi.

Accordingly, the highest number of points which the respondent could get in 7 days would be 84. Hence, the performance of the respondent in taking care of the Tamagotchi would be assessed as follows:

Performance of the respondent in taking care of the Tamagotchi

$$= \frac{O_t + U_t + D_t}{\text{maximum number of points achievable in 7 days}} \times 100\%$$

$$= \frac{O_t + U_t + D_t}{84} \times 100\%$$

After getting some basic ideas from this exploratory research, descriptive research was conducted.

The literature review on motivation revealed that energy and direction are the two major components of motivation. Energy refers to the fact that all behavior required us to expend an internal supply of energy and it is often based on physiological measures of the body's arousal such as a consumer's pulse rate, blood pressure, brain waves, etc. However, due to time and cost, physiological measurements were not possible, so the direction component was the focus of this research. The researchers would like to understand why a particular direction, nurturing a Tamagotchi, was chosen by the respondents and also the driving forces of consumer demand for Tamagotchi. Moreover, the two types of involvement with products, situational and enduring, identified in the literature review were not specifically studied in this research. The researchers assumed that Tamagotchi is a product with enduring involvement

which is continuous and more permanent. Tamagotchi contributed to the consumer's self-image, since the appearance and health condition of the Tamagotchi depends on how well the consumer nurtured it. In addition, consumers have continuous interest in Tamagotchi because they would pay attention to the development of Tamagotchi and electronic pets. Lastly, Tamagotchi has a badge value to the consumer's reference group as this could be observed from the craze for Tamagotchi. All these are the basic conditions for enduring involvement as stated in the literature review.

This research required individuals to disclose motivational factors which led them to nurture their Tamagotchis. In these cases, observation alone as a data collection tool did not suffice. Telephone calls could not reach our target respondents, aged 6 - 35, because they were usually at school or at work and could not be reached by phone on most weekdays. By considering cost and effectiveness, collecting data through the method of a personal questionnaire was thought to be optimal.

The questionnaire was a structured one (see Appendix 2). Since the target respondents were aged from 6 to 35, some of them were too young to read the questionnaire and fill it out by themselves. In these cases, the questionnaire was filled out by the researchers. It was also decided not to disguise the questionnaire. The first page of the questionnaire stated that the researchers were CUHK MBA students who were conducting a survey on electronic pets.

The researchers decided to limit the questionnaire to 31 questions. Through the use of a pretest, it was found that full completion of the 31 questions took 9 - 12 minutes. Closed-ended, multichotomous questions were primarily used. For questions #7, 10 and 11, equal-appearing interval scales of 1 to 6 were used to assess the level of involvement of Tamagotchi keepers. Questions #8 and 9 were also concerned with their involvement. Questions #6, 12, 13 and 16 examined the factors which motivated the Tamagotchi keepers to start, continue, and stop the process of nurturing the Tamagotchi. Question #21 asked about the ways which could make Tamagotchi more fun.

The last section consisted of six multichotomous questions related to personal particulars.

Hypothesis Testing

Motivation

The researchers were interested in determining if respondents of different ages and gender have different motivations in the process of nurturing a Tamagotchi. Thus, six hypotheses were used to test how the factors that motivated a respondent to start, continue, and stop nurturing a Tamagotchi vary among different age and gender groups. Moreover, the researchers were also interested in determining if there are differences in the level of motivation for different age and gender groups. The level of motivation

was measured through the fun in nurturing a Tamagotchi, as rated by the respondents themselves. Therefore, two hypotheses were used to test whether there are differences in the average ratings of fun in nurturing the Tamagotchi for different age and gender groups.

Level of Involvement

The level of involvement was measured through three dimensions, the average amount of time spent in nurturing a Tamagotchi, the degree of upset upon the death of the Tamagotchi, and the ratings of how the respondents were involved, as given by themselves. Therefore, based on the findings of the focus groups, six hypotheses were made to test whether there are differences in the three dimensions for different age and gender groups.

Miscellaneous

According to the findings of the focus groups, a respondent aged 6 - 20 was more likely to like the concept of electronic pets than a respondent aged 21 - 35. A hypothesis was set to test the relationship between the liking of a respondent for the concept of electronic pets and his age.

The researchers were interested in determining if it is more likely that females show more preference for keeping pets than do males, and if this in turn implies that females

are more likely to treat their Tamagotchis as pets. Hence, two hypotheses were used to test if the liking of a respondent for keeping pets and the likelihood that a respondent treats his/her Tamagotchi as a pet are related to gender.

In addition, respondents were asked if they are still nurturing a Tamagotchi. The researchers would like to determine whether a respondent who treats Tamagotchi as a pet is more likely to continue nurturing a Tamagotchi than a respondent who treats Tamagotchi as a video game. Thus, a hypothesis was set to test if the likelihood that a respondent is still nurturing a Tamagotchi is related to his thinking of what Tamagotchi represents (i.e., toy, video game, etc.).

The researchers would also like to decide if a respondent aged 6 - 20 is more likely to nurture a Tamagotchi for a longer period. Therefore, a hypothesis was used to test if the likelihood that a respondent nurtures a Tamagotchi for a longer period is related to his age.

According to the findings of the focus groups, females were more likely to buy and spend more on cartoon character merchandise than were males. Moreover, respondents aged 6 - 20 were more likely to buy the new version of Tamagotchi than those aged 21 - 35. Thus, one hypothesis tested whether the likelihood that a respondent buys cartoon character merchandise is related to gender, and another hypothesis tested whether the likelihood that a respondent would buy the new version of Tamagotchi is related to his age.

Data Collection Method

This study focused on the Hong Kong market. In order to include a broad spectrum of Hong Kong's population, the group identified four geographic locations which can sample four groups that differed significantly in their age and socio-economic status. The means of identifying these four areas were non-scientific in nature, and based upon personal experience and observation. The four areas are: Kwai Fong, Tsim Sha Tsui, Causeway Bay, and Shatin. It is well-known that the Metroplaza in Kwai Fong, Ocean Terminal in Tsim Sha Tsui, Times Square in Causeway Bay, and New Town Plaza in Shatin are four popular places for shopping. These shopping malls house almost all popular fashion chain stores such as G2000, U2, Fornari, Cour Carre, etc., restaurants such as Ruby Tuesday, Spaghetti House, etc. and fast-food stores such as McDonald's, Fairwood, etc. On weekdays, people working near these shopping malls can be captured right after business hours. On weekends, families and people from different areas in Hong Kong can be found there. Convenience sampling is used; Table (2) shows the time slots and places where the questionnaires were conducted.

Table 2 Schedule for Conducting the Questionnaires

Index	Geographic area	Shopping Mall	Date	Time
1	Kwai Fong	Metroplaza	01/03/98 (Sun)	3:00 - 4:30p.m.
2	Kwai Fong	Metroplaza	04/03/98 (Wed)	5:30 - 7:00p.m.
3	Causeway Bay	Times Square	28/02/98 (Sat)	4:00 - 5:30p.m.
4	Causeway Bay	Times Square	06/03/98 (Fri)	5:15 - 6:45p.m.
5	Shatin	New Town Plaza	07/03/98 (Sat)	3:30 - 5:00p.m.
6	Shatin	New Town Plaza	16/03/98 (Mon)	6:00 - 7:30p.m.
7	Tsim Sha Tsui	Ocean Terminal	08/03/98 (Sun)	2:00 - 3:30p.m.
8	Tsim Sha Tsui	Ocean Terminal	12/03/98 (Thur)	5:00 - 6:30p.m.

Sampling

As the MBA term project is equivalent to one term course (three term units) out of 18 term courses (54 term units) towards the graduation requirements, each student is required to participate at least 120 hours in this project. Based on this requirement, the time distribution for the project is as follows:

Table 3 Time Distribution for the Project

Content	Percentage Allocated	Hours
Proposal	3%	4
Secondary information search	12%	14
Focus groups	15%	18
Questionnaire design	10%	12
Data collection	10%	12
Data analysis	20%	24
Report writing	30%	36
Total:	100%	120 hours

Given the researchers' status as students and the monetary constraints, all the questionnaires were conducted by the two members in the group only. The group allocated 12 hours, or 10% of the total 120 hours, to collect data. According to the group's estimation, four questionnaires can be completed in one hour by one interviewer. Thus, the sample size was stipulated as 100.

CHAPTER IV

RESULTS

Findings of Focus Groups

The following is a summary of the findings of the 8 focus groups conducted. Please refer to Appendix 3 for details.

1. Females are found to like pets very much, but they usually cannot keep them because of the restrictions of their living environments or objections from their family members. On the contrary, males do not like pets and they do not want to keep any.
2. Respondents aged 21 - 35 mostly began to keep a Tamagotchi out of curiosity.
3. Respondents aged 21 - 35 said that they had no interest any more after they had experienced all the growing stages of Tamagotchi.

For males aged 6 - 20, the nurturing process is boring. They were motivated to

nurture the Tamagotchi because they liked to make the Tamagotchi gain as much weight as possible and see what it looked like when it died.

In general, females aged 6 - 20 liked Tamagotchi and they liked to chat with their friends about the growing conditions of their Tamagotchis. According to them, some of their classmates were still nurturing Tamagotchis and they did not care whether Tamagotchi was outdated. Although they thought the nurturing process was repetitive, they still liked to nurture one during their holidays.

4. For respondents aged 6 - 20, their parents did not like them nurturing the Tamagotchi because they thought it would affect their studies at school.
5. Respondents aged 21 - 35 liked the concept of electronic pets because they thought the living conditions in Hong Kong were not suitable for keeping pets. Moreover, they thought electronic pets could be an educational tool for parents to teach their children to be responsible and could be an indicator of whether their children were suited to have real pets.

For those aged 6 - 20, males thought Tamagotchi was not exciting, while females liked Tamagotchi and they thought it would be better if the Tamagotchi could not be reset.

6. For males, making the Tamagotchi interactive was a way to make it more fun. For instance, the Tamagotchi they nurtured could fight, marry, and play football with their friends' Tamagotchis.

Females have made the following suggestions to make Tamagotchi more fun:

- 6.1. They could talk to their Tamagotchis and teach them to speak, sing, dance, etc.
 - 6.2. It would be nice if Tamagotchi could be made to be more like a pet such as making it 3-dimensional so that they could pet them, give them a higher body temperature, etc.
 - 6.3. They liked the possibility of changing Tamagotchi from a chicken into the cartoon characters that they like.
7. Based on the records of their nurturing of Tamagotchi, the following conclusions were drawn:
 - 7.1. Females aged 6 - 20 spent the most time on average in nurturing their Tamagotchis, as compared with the other three groups.
 - 7.2. In both age groups, 6 - 20 and 21 - 35, the expectation of life span of the Tamagotchi nurtured by females was higher than that by males.
 - 7.3. When judging only the average weights, the degree of satisfaction, and discipline of Tamagotchi nurtured by the four groups, males seemed to spend

more or less the same amount of effort as females did. This could be explained by the rationale that males saw the weight and filled hearts as points and they liked to get as many points as possible, just like playing video games. The only exception is group A, males aged 21 - 35. They got extremely low points in the reading on the degree of satisfaction and the discipline of their Tamagotchis. This was because these respondents were really uninterested in nurturing the Tamagotchis. They did not care whether their Tamagotchis were satisfied or they behaved well. That was why respondent 1 and 2 got zero points on these aspects. Some revealed that this was not the case when they nurtured a Tamagotchi in the past, or when Tamagotchi was still very popular and hard to obtain.

Survey Sample

A total of one hundred questionnaires were completed. The respondents were composed of an equal number of people from the two age groups as defined in the research design, i.e., 50 respondents each from the age groups of 6 - 20 and 21 - 35. There were an equal number of males and females in the sample. Nearly half of the respondents (54%) were students, and the other half were working people. Among them, 49% had personal monthly incomes less than \$4,000, 26% fell within the \$4,001 - \$12,000 range, and 25% had monthly personal incomes over \$12,001. The educational level distribution was 38% primary education or below, 30% secondary education, and 32% tertiary education or above. Most of them (89%) were singles;

10% were married and only 1% were divorced. Seventy-three percent of the respondents have played with a Tamagotchi before.

The four age groups classified in the questionnaire were collapsed into two age groups, 6 - 20 and 21 - 35, for the sake of performing cross-tabulations.

Motivation

Most of the respondents did not buy their own Tamagotchis; only 21.6% of them had bought one for themselves. In most cases, their Tamagotchis were gifts from someone (39.2%), while others got the Tamagotchi because of helping others to take care of them for a period of time (23.0%) or adopting it when someone discarded it (16.2%).

More than half of the respondents admitted that they first started keeping Tamagotchi due to curiosity (56.8%). Less than eighteen percent started because they treated Tamagotchi as a pet, and 12.2% started because the Tamagotchi was a gift from someone. Only a few (10.8%) were influenced by trends.

Curiosity was not just a factor in initiating the respondents to nurture a Tamagotchi. Over seventy percent of them said that curiosity also motivated them to continue the process of nurturing the Tamagotchi, as they wanted to know how the Tamagotchi looked in each growth stage. Other factors, like competing with friends, having

affection, still trendy, etc., had insignificant effects in motivating them in the process.

From the cross-tabulation (see Appendix 4), it was found that at a 95% level of confidence, the factors that motivated a respondent to start nurturing a Tamagotchi were independent of his gender, yet related to his age. Approximately seventy-eight percent of the respondents aged 21 - 35 claimed that curiosity motivated them to start nurturing a Tamagotchi, while only thirty-nine percent of those aged 6 - 20 claimed that curiosity motivated them to start nurturing a Tamagotchi.

As shown in Table 4, factors that motivated a respondent to continue in the process of nurturing a Tamagotchi was found to be independent of both his age and gender.

In addition, the reasons that a respondent stops nurturing a Tamagotchi was also found to be independent of his age and gender.

When the respondents were asked to rate the fun of nurturing Tamagotchi on a scale with 1 being "not fun at all" to 6 being "much fun," different age groups had different opinions. From the independent t-tests (see Appendix 5 and Table 4), it was found that at a 95% level of confidence, there was no gender difference in the average ratings of fun in nurturing the Tamagotchi, while there were differences in the mean ratings of the fun associated with nurturing a Tamagotchi for the age groups of 6 - 20 and 21 - 35. For those aged 6 - 20, who were regarded as teenagers and children, the mean rate was 4.56. And for the adult group aged 21 - 35, the mean rate was 2.45. One may

therefore conclude that teenagers and children are highly motivated in the process of nurturing a Tamagotchi, as reflected in their rating of 4.56.

Table 4 Hypothesis Testing Related to Motivation

Hypothesis		p-value
H ₀₁ :	Factors that motivated a respondent to start nurturing a Tamagotchi are independent of his age.	0.00082*
H _{a1} :	Factors that motivated a respondent to start nurturing a Tamagotchi are related to his age.	
H ₀₂ :	Factors that motivated a respondent to start nurturing a Tamagotchi are independent of his gender.	n. s.
H _{a2} :	Factors that motivated a respondent to start nurturing a Tamagotchi are related to his gender.	
H ₀₃ :	Factors that motivated the respondent to continue in the process of nurturing a Tamagotchi are independent of his age.	n. s.
H _{a3} :	Factors that motivated the respondent to continue in the process of nurturing a Tamagotchi are related to his age.	
H ₀₄ :	Factors that motivated the respondent to continue in the process of nurturing a Tamagotchi are independent of his gender.	n. s.
H _{a4} :	Factors that motivated the respondent to continue in the process of nurturing a Tamagotchi are related to his gender.	

*p < 0.05

n. s. = not significant

H ₀₅ :	The reasons that a respondent stops nurturing a Tamagotchi are independent of his age.	n. s.
H _{a5} :	The reasons that a respondent stops nurturing a Tamagotchi are related to his age.	
H ₀₆ :	The reasons that a respondent stops nurturing a Tamagotchi are independent of his gender.	n. s.
H _{a6} :	The reasons that a respondent stops nurturing a Tamagotchi are related to his gender.	
H ₀₇ :	There is no difference in the average ratings of fun in nurturing the Tamagotchi for the age groups of 6 - 20 and 21 - 35.	0.022*
H _{a7} :	There are differences in the average ratings of fun in nurturing the Tamagotchi for the age groups of 6 - 20 and 21 - 35.	
H ₀₈ :	There is no gender difference in the average ratings of fun in nurturing the Tamagotchi.	n. s.
H _{a8} :	There are gender differences in the average ratings of fun in nurturing the Tamagotchi.	

*p < 0.05

n. s. = not significant

Level of Involvement

When the respondents were asked how much time they spent on nurturing their Tamagotchis on a scale with 1 being "very little time" to 6 being "a lot of time," it was found that different age groups gave different ratings. The mean rating of the group aged 6 - 20 was 1.83, while that of the group aged 21 - 35 was 3.37 (see Appendix 5). As shown in Table 5, there is no gender difference in the average amount of time spent in nurturing the Tamagotchi; however, there were differences in the average amount of time spent in nurturing a Tamagotchi for the age groups of 6 - 20 and 21 - 35. This may be explained as follows. Those aged 6 - 20 were probably students. Teachers did not allow them to play at school and parents did not let them play until they had finished their homework. Thus, they had less free time to nurture their Tamagotchis than did those aged 21 - 35.

Level of involvement can also be measured by investigating how upset the respondents were when their Tamagotchis died. This was done by asking the respondents to rate on a scale with 1 being "not upset" to 6 being "very upset." Results showed that there was no gender difference in the level of involvement. On the other hand, different age groups were found to have different levels of involvement. For the respondents aged 6 - 20, the mean rating was 2.73, and for the respondents aged 21 - 35, the mean rating was 1.66. This indicated that teenagers and children were more involved in nurturing a Tamagotchi.

The differences in the levels of involvement for the different age groups were further justified by asking the respondents to give ratings on how involved they were when nurturing their Tamagotchis. On a scale with 1 being "not involved" to 6 being "highly involved," different age groups had different levels of involvement.

From the independent t-tests, it was concluded that at a 95% level of confidence, there was no gender difference in the mean ratings of the levels of involvement, yet there were differences in the mean ratings of the levels of involvement for the age groups of 6 - 20 and 21 - 35. Respondents aged 6 - 20 had a mean of 3.89, and those aged 21 - 35 had a mean of 2.29. This again showed that teenagers and children were more involved (see Appendix 5).

Table 5 Hypothesis Testing Related to the Level of Involvement

Hypotheses		p-value
H ₀₉ :	There is no difference in the average amount of time spent in nurturing the Tamagotchi for the age groups of 6 - 20 and 21 - 35.	0.002*
H _{a9} :	There are differences in the average amount of time spent in nurturing the Tamagotchi for the age groups of 6 - 20 and 21 - 35.	
H ₀₁₀ :	There is no gender difference in the average amount of time spent in nurturing the Tamagotchi.	n. s.
H _{a10} :	There are gender differences in the average amount of time spent in nurturing the Tamagotchi.	

H ₀₁₁ :	There is no difference in how upset respondents were when their Tamagotchis died for the age groups of 6 - 20 and 21 - 35.	0.000*
H _{a11} :	There are differences in how upset respondents were when their Tamagotchis died for the age groups of 6 - 20 and 21 - 35.	
H ₀₁₂ :	There is no gender difference in how upset respondents were when their Tamagotchis died.	n. s.
H _{a12} :	There are gender differences in how upset respondents were when their Tamagotchis died.	
H ₀₁₃ :	There is no difference in the average ratings of the level of involvement for the age groups of 6 - 20 and 21 - 35.	0.026*
H _{a13} :	There are differences in the average ratings of the level of involvement for the age groups of 6 - 20 and 21 - 35.	
H ₀₁₄ :	There is no gender difference in the average ratings of the level of involvement.	n. s.
H _{a14} :	There are gender differences in the average ratings of the level of involvement.	

*p < 0.05

n. s. = not significant

Other Findings

Concept of Electronic Pets

Table 6 shows that the likelihood that a respondent likes the concept of electronic pets is related to his age. Sixty-two percent of the respondents aged 6 - 20 like the concept of electronic pets, while only thirty-eight percent of those aged 21 - 35 like the concept of electronic pets (see Appendix 6).

Table 6 Hypothesis Testing Related to the Concept of Electronic Pets

Hypothesis		p-value
H ₀₁₅ :	The likelihood that a respondent likes the concept of electronic pets is independent of his age.	0.0164*
H _{a15} :	The likelihood that a respondent likes the concept of electronic pets is related to his age.	

*p < 0.05

n. s. = not significant

The Liking for Keeping Pets

As shown in Table 7, the likelihood that a respondent likes pets or treats his/her Tamagotchi as a pet is independent of gender.

Table 7 Hypothesis Testing Related to the Liking for Keeping Pets

Hypothesis		p-value
H ₀₁₆ :	The likelihood that a respondent likes pets is independent of gender.	n. s.
H _{a16} :	The likelihood that a respondent likes pets is related to gender.	
H ₀₁₇ :	The likelihood that a respondent treats his/her Tamagotchi as a pet is independent of gender.	n. s.
H _{a17} :	The likelihood that a respondent treats his/her Tamagotchi as a pet is related to gender.	

*p < 0.05

n. s. = not significant

Duration of Nurturing a Tamagotchi

About 77.8% of the respondents treated Tamagotchi as a video game, while only 22.2% treated it as a pet. As shown in Table 8, the likelihood that a respondent was still nurturing a Tamagotchi was related to his thinking about what Tamagotchi represented. Over thirty-seven percent of the respondents who treated Tamagotchi as a pet were still nurturing a Tamagotchi, while only 8.9% of those who treated Tamagotchi as a video game were still nurturing a Tamagotchi (see Appendix 7).

Nearly half of the respondents have kept their Tamagotchi for 1 - 4 weeks (48.6%), 27% have kept it for less than 1 week, while only a few (10.8 %) have kept it for over 12 weeks.

As shown in Table 8, it was concluded that the likelihood that a respondent nurtured a Tamagotchi for a longer period was related to his age. Over thirty-six percent of the respondents aged 6 - 20 had nurtured a Tamagotchi for 5 weeks or more, while only thirteen percent of those aged 21 - 35 had nurtured a Tamagotchi for 5 weeks or more (see Appendix 8).

Table 8 Hypothesis Testing Related to the Duration of Nurturing a Tamagotchi

Hypothesis		p-value
H ₀₁₈ :	The likelihood that a respondent is still nurturing a Tamagotchi is independent of his thinking of what Tamagotchi represents (i.e., toy, video game, etc.).	0.00509*
H _{a18} :	The likelihood that a respondent is still nurturing a Tamagotchi is related to his thinking of what Tamagotchi represents.	
H ₀₁₉ :	The likelihood that a respondent nurtures a Tamagotchi for a longer period is independent of his age.	0.02143*
H _{a19} :	The likelihood that a respondent nurtures a Tamagotchi for a longer period is related to his age.	

*p < 0.05

n. s. = not significant

Habit of Buying Cartoon Character Merchandise

From Table 9, it was shown that the likelihood that a respondent bought cartoon character merchandise was related to gender. Eighty-eight percent of the female respondents bought cartoon character merchandise, while only 60% of the male respondents bought cartoon character merchandise (see Appendix 9).

Table 9 also showed that the likelihood that a respondent would buy the new version of Tamagotchi was related to his age. Fifty-four percent of the respondents aged 6 - 20 claimed that they would buy the new version of Tamagotchi, while only thirty-four percent of those aged 21 - 35 would buy the new version of Tamagotchi (see Appendix 10).

Table 9 Hypothesis Testing Related to the Habit of Buying Cartoon Character Merchandise

Hypothesis		p-value
H ₀₂₀ :	The likelihood that a respondent buys cartoon character merchandise is independent of gender.	0.00141*
H _{a20} :	The likelihood that a respondent buys cartoon character merchandise is related to gender.	
H ₀₂₁ :	The likelihood that a respondent would buy the new version of Tamagotchi is independent of his age.	0.04395*
H _{a21} :	The likelihood that a respondent would buy the new version of Tamagotchi is related to his age.	

*p < 0.05

n. s. = not significant

CHAPTER V

LIMITATIONS

Sampling Bias

Consumers aged 6 - 35 have been chosen as the target respondents at the very beginning of this research. Based on the latest census data, they compose around 44.4% of the population in Hong Kong. Due to time and cost constraints, convenience sampling was used for conducting the focus groups and survey. This was one major limitation of the current study because convenience sampling has some potential sources of selection bias, including respondent self-selection.

Reliability

Nonresponse error arose when some of the respondents included in the sample refused to participate in the survey. They might have different consumer behavior in the nurturing of a Tamagotchi. This may, to a certain extent, affect the results and implications of this research.

Since there was a time lag between the craze for Tamagotchi and the period of conducting this research, response error might arise if respondents could not give accurate answers. Respondents might provide inaccurate answers because of unfamiliarity or faulty recall. For example, a respondent could not recall exactly how long he had nurtured the Tamagotchi. Inability error might then result.

Due to the generation gap between the interviewers and the young respondents, sometimes it was hard for the interviewers to understand the comments made by the young respondents, and vice versa. Recording error might then arise due to errors in interpreting the questions given by the interviewers and the answers given by the respondents, especially those aged 6 - 20.

Since the two focus group's moderators were inexperienced, the quality of the results might not be that high.

The statistical inference in this study will be reliable if the population ratings lie in a normal distribution and have a common variance. However, there is no historical evidence to support these assumptions.

Due to the lack of incentives for the adult focus groups, it was difficult to enhance their involvement and seriousness throughout the process. Thus, their results might not truly reflect their behaviour and thinking, which would in turn affect the results of this study.

Validity

This study aims to measure the level of involvement and the strength of motivation of a Tamagotchi keeper in nurturing a Tamagotchi. The level of involvement is measured through the average amount of time spent in nurturing a Tamagotchi, the degree of upset brought by the death of the Tamagotchi, and the ratings of how the respondents are involved, as reported by themselves. These three dimensions are derived by the researchers based on the definition of the level of involvement found in the secondary sources. Construct validity is concerned with whether these three dimensions do a good job of representing the level of involvement of the respondents in nurturing a Tamagotchi. For instance, respondents aged 21 - 35 spent more time in nurturing a Tamagotchi than do those aged 6 - 20, but this does not mean that those aged 21 - 35 are more highly involved in the process of nurturing a Tamagotchi. According to the respondents, the main factor that motivated them in the process of nurturing a Tamagotchi was curiosity. However, curiosity cannot be measured. The only motivation that can be measured is the amount of fun which the respondents have during the process of nurturing a Tamagotchi. Thus, the ratings of fun in nurturing a Tamagotchi given by the respondents may not represent the strength of motivation very accurately. Due to time and cost constraints, this limitation of validity cannot be avoided.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The findings of the current study show that the majority of the respondents liked the concept of electronic pets. Tamagotchi are ideally suited to the busy lives of contemporary Hong Kong people, who lack the space and time to raise real pets, yet need and benefit from this emotional outlet.

"Tamagotchi is sold on the street at 20 times its retail price of nearly \$2000."

"Tamagotchi has spurred the creation of a myriad of mailing lists, websites, and discussion groups."²

"Tamagotchi is wildly popular among primary and secondary school students, and rapidly winning the hearts of office workers and business people."³

"The latest guide book for nurturing a Tamagotchi has been published. Keychains,

² "Enter Tamagocchi (tah-mah-goh-chee)." <http://www.virtualpet.com/vp/farm/lleg/neotam/htm>.

³ "Addicted to Electronic Pets in Order to Kill Time." *South China Morning Post* (22 December, 1997).

candies and many other merchandise of Tamagotchi are also available now."⁴

All the above statements reported in secondary sources show that Tamagotchi has been a craze in Hong Kong. However, the attitude of respondents and their level of involvement in nurturing a Tamagotchi revealed in the current study is greatly different from that reported in the secondary sources, as Tamagotchi has probably already reached the maturity stage of the product life cycle. This could be explained by the findings that curiosity was the greatest motivator in the process of nurturing a Tamagotchi. Thus, their interest in nurturing a Tamagotchi decreased substantially after they have experienced all the growing stages of Tamagotchi and found that the process was repetitive. In addition to the fact that toys have a very short product life cycle, Hong Kong people are always the quickest to pick up a trendy thing and also the quickest to discard it. As they say, the Chinese are crazy about one thing only for three minutes. This phenomenon is always happening in Hong Kong, for instance, the craze for the Rubic cube, yo-yo, Cabbage Patch Doll, etc. only lasted for a short while. This gives an implication to marketers that being the first-mover is an essential advantage in the Hong Kong market.

One point to note is that children and teenagers are found to have higher levels of involvement and stronger motivations in nurturing a Tamagotchi. Although they are also motivated by curiosity in nurturing a Tamagotchi and they also find the process repetitive, they still like to nurture a Tamagotchi during the holidays. They stop

⁴ "Craze for Tamagotchi." *Yes!* (March 1997), p. 90-96.

nurturing a Tamagotchi mainly because they are too busy with their studies at school. In addition, Hong Kong children and teenagers do not have many choices for entertainment because of the limited space. Watching television and playing video games are the only entertainment for most Hong Kong children and teenagers. Therefore, Tamagotchi is not merely a toy for them, but also serves as an emotional outlet and occupies their leisure time.

According to the observation of the researchers, cartoon character merchandise are so popular among Hong Kong people that more and more shops selling cartoon character merchandise such as Kalms, Yes Station, etc., are being opened. Moreover, the findings of the current study also showed that three-quarters of the respondents buy cartoon character merchandise, and they spend more than \$51 a month. Consequently, a new version of Tamagotchi, being changed from a chicken to different cartoon characters, is also found to appeal to the respondents.

The following strategies may be considered for the Bandai Corporation. Although it is hard to maintain the interest of Hong Kong people in a past plaything such as the Rubic cube, yo-yo, Cabbage Patch Doll, etc., the findings of the current study suggests that concentrated marketing targeted at the segment of children and teenagers may be a segmentation strategy to extend the product life cycle of Tamagotchi. The Bandai Corporation is recommended to target at children and teenagers by changing and adding some product features of Tamagotchi. The findings of this research echo the forecasts stated in secondary sources that the "becoming the pet" concept could open a

whole new realm of pet ownership in the future. Thus, Bandai is recommended to make Tamagotchi into more complex physical virtual pets that are physical units themselves (not displays). Improved Tamagotchis should have body temperature and their own personalities, and be able to interact, learn, and communicate with their owners and other Tamagotchis. Gender differences should be taken into consideration in the design of the improved Tamagotchis. For instance, based on the findings of the focus groups, girls may like to have a female Tamagotchi, e.g., Tamabeauty, which could be taught to sing and dance, and whose appearance is determined by diet, skin care, and the number of hours of sleep, while boys may like to have a male Tamagotchi, e.g., TamaNBA, which could be taught to play basketball.

The Bandai Corporation could also adopt the product strategy of developing a completely new version of Tamagotchi, being changed from a chicken to cartoon characters in order to set the trend of electronic pets. This new version not only appeals to children and teenagers, but also appeals to those who like collecting merchandise related to specific cartoon characters. Given that Hong Kong people change their interests and tastes very rapidly, the cartoon characters which are popular among Hong Kong children and teenagers are observed to change almost every two months, as indicated by the programs shown on television. As a result, Bandai should keep pace with the popular cartoon characters or even forecast the cartoon characters that are likely to be popular so as to be the first-mover in producing the new version based on the popular cartoon characters.

However, the timing of launching these new products and matching with other marketing strategies in the marketing mix are very important. Bandai is recommended to launch a promotional campaign to make the target group, children and teenagers, aware of the new products and also in the hope of spurring another craze for electronic pets. This could be done by organizing a beauty contest and a basketball match for the girls and boys, respectively. Incentives are given to attract more candidates in the recruitment. Girls are given a Tamabeauty and asked to raise it for one month. They could use their own way to nurture it and make it as beautiful and intelligent as they could in order to win the contest. Boys are given a TamaNBA and asked to join with others to form a team. They have to train their TamaNBAs and form a basketball team to compete with other teams in a basketball match after one month. Bandai is recommended to set the price of the new products, Tamabeauty and TamaNBA, at the same level as that of the past Tamagotchi, but offer them in limited supplies. This is because Hong Kong people like things that are hard to get, and they would speculate on the price. This in turn could then help to boost the craze for the new products. This was exactly the case for the Tamagotchi in the past. Meanwhile, the new version of Tamagotchi, being changed from a chicken to cartoon characters, could then be launched.

In order to reach the target group, children and teenagers, Bandai should use Internet as the distribution channel for the new products. Nowadays, children and teenagers learn to use computers in primary school. They are accustomed to use a computer for doing homework, playing video games and chatting with their friends. They also

spend much of their time on the Internet. Moreover, the use of electronic shopping has been on the increase. Therefore, using Internet as the distribution channel and promotional medium enables Bandai to reach a wide coverage of the target group and also to continuously update the information about new products.

In conclusion, Tamagotchi has been wildly popular among Hong Kong people, but it has probably already reached the maturity stage of the product life cycle. Curiosity was found to be the key motivator in the process of nurturing a Tamagotchi. In addition, children and teenagers were found to have higher levels of involvement and stronger motivation in nurturing a Tamagotchi than adults. Bandai is recommended to target the segment, children and teenagers, by incorporating the "becoming the pet" concept in the design of new products. Internet is recommended to be the distribution channel and promotional medium so as to reach the target segment. The price of the new products should be set at the same level as that of the past Tamagotchi and offered in limited supplies. Finally, a new version of Tamagotchi, being changed from a chicken to cartoon characters, is recommended for Bandai to set the trend of electronic pets.

APPENDIX 2

問卷調查 Survey

我們是香港中文大學工商管理系研究院的學生，現正在進行一項市場調查，敬希閣下能抽出數分鐘寶貴的時間填寫以下的問卷。 We are MBA students of The Chinese University of Hong Kong. We are now conducting a survey on electronic pets and would greatly appreciate if you could spend a few minutes to fill in the questionnaire.

1. 你喜歡飼養寵物嗎？ 喜歡 不喜歡
Do you like keeping pets? yes no

2. 你有無飼養寵物嗎？ 有 (請回答第 4 條問題) 無
Do you have any pets? yes (please go to question no. 4) no

3. 你無飼養寵物是因爲: The reason(s) that you do not have a pet is/are:
沒有地方 沒有時間照顧 居住的地方不允許 同住的人反對 不喜歡 其他原因_____
- no space no time to take care of it not allowed in my apartment objections of household members
- I don't like keeping pets other reasons, please specify_____

4. 你以前有玩過「他媽哥池」嗎？ 有 沒有(請回答第 20 條問題)
Have you ever kept a Tamagotchi before? yes no (please go to question no. 20)

5. 你怎樣獲得「他媽哥池」？ How did you get the Tamagotchi?
別人送給我 自己購買 別人玩罷我拿來玩 我替別人看管一段時間 其他_____
- a gift from someone I bought it myself someone discarded it and I took it
- I helped others to take care of it others, please specify_____

6. 你開始玩「他媽哥池」是基於什麼原因？ What motivated you to start keeping the Tamagotchi?
出於好奇心 潮流興 當作飼養寵物 別人送給我 其他_____
- curiosity trendy substitute for pets a gift from someone other reasons, please specify_____

7. 你覺得你玩「他媽哥池」時用得唔多時間？ 非常少 1 2 3 4 5 6 非常多
How much time did you spend on keeping the Tamagotchi? very little time 1 2 3 4 5 6 a lot of time

8. 你有沒有隨身攜帶「他媽哥池」以便照顧他？ 有 無
Did you bring along the Tamagotchi with you most of the time so that you could take care of it? yes no

9. 在你玩的過程中，你的「他媽哥池」有否死過？ 有 無(請回答第 11 條問題)
Did your Tamagotchi die? yes no(please go to question no. 11)
10. 當你發覺他死了，你有多傷心？ 非常不傷心 1 2 3 4 5 6 非常傷心
When it died, how upset were you? not upset 1 2 3 4 5 6 very upset
11. 你玩「他媽哥池」時，你的投入程度有多大？ 非常不投入 1 2 3 4 5 6 非常投入
How involved are/ were you in the keeping of Tamagotchi? not involved 1 2 3 4 5 6 highly involved
12. 在你玩的過程中，是什麼原因推動你繼續玩？
What motivated you to continue in the process of keeping the Tamagotchi?
好奇心，想知道他生長過程中的變化 他仍時興 別人送的，所以要玩
curiosity; I wanted to know its life cycle it was still trendy I have to play since it was a gift from someone
與他產生感情 和朋友比賽鬥養得耐 其他_____
- I had affection for it competing with friends to see whose Tamagotchi has a longer life others, please specify_____
13. 你覺得「他媽哥池」好不好玩？ 非常不好玩 1 2 3 4 5 6 非常好玩
Did you have fun in the keeping of the Tamagotchi? not fun at all 1 2 3 4 5 6 much fun
14. 你覺得「他媽哥池」似什麼？ 寵物 電子遊戲機 其他_____
- I treat Tamagotchi as a: pet video game others, please specify_____
15. 你現在還有沒有玩「他媽哥池」？ 有(請回答第 17 條問題) 沒有
Are you now still keeping a Tamagotchi? yes (please go to question no. 17) no
16. 你停止玩「他媽哥池」是因為： The reason(s) that I stopped keeping Tamagotchi is/are:
已過時 我已知道他生長過程中的變化 太過機械化 很悶 沒有時間 其他_____
- it is outdated it is not novel anymore since I have already known its life cycle
too mechanical very boring no time other reasons, please specify_____
17. 在你玩「他媽哥池」的過程中，有沒有人反對你玩？ 沒有(請回答第 19 條問題) 有
Does anyone have objections to your keeping of a Tamagotchi? no (please go to question no. 19) yes
18. 反對你玩的人是： 父母 男/女朋友 朋友 老師 其他_____
Who objected to your keeping of a Tamagotchi? parents boy/girl friend friend
teacher others, please specify_____

19. 你玩「他媽哥池」大約有多久？ How long have you kept the Tamagotchi?

- 少過一星期 一至四個星期 五至八個星期 九至十二個星期 多過十二個星期
 less than 1 week 1 - 4 weeks 5 - 8 weeks 9 - 12 weeks over 12 weeks

20. 你喜歡電子寵物這種概念嗎？

- 喜歡 不喜歡

Do you like the concept of electronic pets? yes no

21. 你覺得怎樣改良「他媽哥池」可使它更有趣？ What do you think can be done to make Tamagotchi more fun?

- 互動; 我的「他媽哥池」可以和我朋友的「他媽哥池」連接在一起, 讓它們有一起的活動
 interactive; my Tamagotchi can link with my friend's Tamagotchi and have some activities together
 我可以和「他媽哥池」有雙向的溝通
 I can have bi-directional communication with my Tamagotchi
 我可以教/訓練「他媽哥池」做某些東西, 例如: 打架, 唱歌, 跳舞等...
 I can teach/train my Tamagotchi to do something, e.g., fighting, singing, dancing, etc.
 把「他媽哥池」做得更似真動物, 例如立體, 有體溫等..., 使我可以捉摸和覺感它
 make Tamagotchi more like a real pet, e.g., 3-dimensional, with body temperature, etc., so I can touch and feel it
 「他媽哥池」的主角由現在的雞改爲我喜歡的卡通人物, 例如: 我可以同叮噹玩, 又可以餵叮噹食豆沙餅等...
 change the character of Tamagotchi from a chicken to a cartoon character that I like

22. 你會買卡通人物的貨品嗎？

- 會 不會(請回答第 24 條問題)

Do you usually buy cartoon character merchandise? yes no (please go to question no. 24)

23. 你每月花多少錢在卡通人物貨品上？

- 少過\$50 \$51 - \$100 \$101 - \$150 \$151 或以上

How much do you spend monthly on cartoon character merchandise?

- less than \$50 \$51 - \$100 \$101 - \$150 more than \$151

24. 若把「他媽哥池」變成你喜歡的卡通人物, 你會買它來玩嗎？ 會 不會

If the character of Tamagotchi were changed into a cartoon character that you like, will you purchase this new version of Tamagotchi? yes no

25. 誰會買玩具給你？

- 自己 父母 男/女朋友 朋友 其他人_____

Who buys toys for you? myself parents boy/girl friend friends others, please specify_____

個人資料 Personal information

1. 你的年齡: 6 歲或以下 7 - 13 歲 14 - 20 歲 21 - 27 歲 28 - 34 歲 35 歲或以上
 How old are you? 6 or below 7 - 13 14 - 20 21 - 27 28 - 34 35 or above
2. 你的職業是: 學生 藍領 白領 家庭主婦 代業 其他_____
- What is your occupation? student blue-collar white-collar housewife unemployed others, please specify
3. 你的個人平均每月收入: To which monthly personal income group do you belong?
- \$4,000 或以下 \$4,001 - \$8,000 \$8,001 - \$12,000 \$12,001 - \$16,000 \$16,001 - \$20,000 \$20,000 或以上
 \$4,000 or below \$4,001 - \$8,000 \$8,001 - \$12,000 \$12,001 - \$16,000 \$16,001 - \$20,000 \$20,000 or above
4. 你的教育程度: 小學或以下 中學 大專或以上
- What is your educational level? primary education or below secondary education tertiary education or above
5. 你的性別: 男 女
- Gender: male female
6. 你的婚姻狀況: 未婚 已婚 同居 離婚 喪失配偶 其他_____
- Marital Status: single married cohabitation divorced widow/er others, please specify_____

問卷調查完成，多謝合作！

THANK YOU VERY MUCH!

APPENDIX 3
Summary of Focus Groups

GROUP A - Males Aged 21 - 35

Respondent	Time Spent (feeding, games, medicine, clean up)	Health Condition		Degree of Satisfaction (food, fun) & Discipline
		Age	Weight	
1	4	7	7	0
2	3	0	0	0
3	26	7	12	61.9
4	21.5	3	28	21.4
5	28.5	6	7	61.9
6	39.5	7	42	66.7
TOTAL	122.5	30	96	211.9
AVERAGE	20	5	16	35

GROUP B - Females Aged 21 - 35

Respondent	Time Spent (feeding, games, medicine, clean up)	Health Condition		Degree of Satisfaction (food, fun) & Discipline
		Age	Weight	
1	42	7	34	86.9
2	44.5	2	12	73.8
3	25.5	7	15	32.1
4	12	8	2	79.8
5	41.5	7	13	10.7
6	15.5	6	3	56
TOTAL	181	37	79	339.3
AVERAGE	30	6	13	57

GROUP C - Males Aged 6 - 20

Respondent	Time Spent (feeding, games, medicine, clean up)	Health Condition		Degree of Satisfaction (food, fun) & Discipline
		Age	Weight	
1	44.5	5	22	71.4
2	53	3	15	71.4
3	32.5	3	12	50
4	27	4	21	48.8
5	33.5	4	24	69
6	31.5	2	14	84.5
TOTAL	222	21	108	395.1
AVERAGE	37	4	18	66

Group D - Females Aged 6 - 20

Respondent	Time Spent (feeding, games, medicine, clean up)	Health Condition		Degree of Satisfaction (food, fun) & Discipline
		Age	Weight	
1	83	3	12	71.4
2	31.5	4	24	32.1
3	33	8	12	44
4	52	4	4	18
5	42	4	21	57.1
6	32	6	20	8.3
TOTAL	273.5	29	93	230.9
AVERAGE	46	5	16	38

Factors Motivating Respondents of Different Age and Gender Groups to Start
Nurturing a Tamagotchi

	age 6 - 20		age 21 - 35	
	frequency	%	frequency	%
Curiosity motivated the respondent to start nurturing a Tamagotchi	14	38.9	28	77.8
Other reasons motivated the respondent to start nurturing a Tamagotchi	22	61.1	8	22.2
	(100%)		(100%)	

Pearson significance

0.0082*

	Male		Female	
	frequency	%	frequency	%
Curiosity motivated the respondent to start nurturing a Tamagotchi	19	55.9	23	60.5
Other reasons motivated the respondent to start nurturing a Tamagotchi	15	44.1	15	39.5
	(100%)		(100%)	

Pearson significance

n. s.

*p < 0.05

n. s. = not significant

Measurement Related to the Level of Involvement and Motivation for Different Age
and Gender Groups

	Mean		t-value	degrees of freedom
	age 6 - 20	age 21 - 35		
(1) average amount of time spent in nurturing a Tamagotchi	1.83	3.37	-5.31*	64
(2) the degree of upset caused by the death of the Tamagotchi	2.73	1.66	2.81*	43
(3) the level of involvement	3.89	2.29	4.44*	62
(4) the fun of nurturing a Tamagotchi	4.56	2.45	6.58*	64

	Mean		t-value	degrees of freedom
	Male	Female		
(1) average amount of time spent in nurturing a Tamagotchi	2.46	2.77	n. s.	72
(2) the degree of upset caused by the death of the Tamagotchi	2.19	2.21	n. s.	72
(3) the level of involvement	3.06	3.08	n. s.	72
(4) the fun of nurturing a Tamagotchi	3.51	3.44	n. s.	64

* $p < 0.05$

n. s. = not significant

Concept of Electronic Pets

	age 6 - 20		age 21 - 35	
	frequency	%	frequency	%
Like the concept of electronic pets	31	62.0	19	38.0
Do not like the concept of electronic pets	19	38.0	31	62.0
	(100%)		(100%)	

Pearson significance

0.01640*

*p < 0.05

The Relationship Between the Likelihood that a Respondent was Still Nurturing a
Tamagotchi and His Thinking of What Tamagotchi Represented

	I treat Tamagotchi as a pet		I treat Tamagotchi as a video game	
	frequency	%	frequency	%
I am still nurturing a Tamagotchi	6	37.5	5	8.9
I have stopped nurturing a Tamagotchi	10	62.5	51	91.1
	(100%)		(100%)	

Pearson significance

0.00509*

*p < 0.05

Duration of Nurturing a Tamagotchi

	age 6 - 20		age 21 - 35	
	frequency	%	frequency	%
Duration: 4 weeks or less	23	63.9	33	86.8
Duration: 5 weeks or more	13	36.1	5	13.2
	(100%)		(100%)	

Pearson significance

0.02143*

*p < 0.05

Habit of Buying Cartoon Character Merchandise

	Male		Female	
	frequency	%	frequency	%
Buy cartoon character merchandise	30	60.0	44	88.0
Do not buy cartoon character merchandise	20	40.0	6	12.0
	(100%)		(100%)	

Pearson significance

0.00141*

*p < 0.05

The New Version of Tamagotchi

	age 6 - 20		age 21 - 35	
	frequency	%	frequency	%
Will buy the new version of Tamagotchi	27	54.0	17	34.0
Will not buy the new version of Tamagotchi	23	46.0	33	66.0
	(100%)		(100%)	

Pearson significance

0.04395*

*p < 0.05

BIBLIOGRAPHY

Books

Engel James F., Blackwell Roger D., and Miniard Paul W. Consumer Behavior International Edition. 8th ed. Harcourt Brace College: The Dryden Press, 1995.

Boone Louis E. and Kurtz David L. Contemporary Marketing. 7th ed. Harcourt Brace College: The Dryden Press, 1992.

Periodicals

Asiaweek, Asia Intelligence Wire, "Asia: People - Tamagotchi Madness - Has Asia Taken Collective Leave of its Senses?," 25/7/97.

Internet

Future of the Virtual Pet Industry. <http://www.virtualpet.com/vp/future/future.htm>, (08/19/97).

Gangster Keychain Pet Page. <http://www.virtualpet.com/vp/farm/gangster/gangster.htm> (08/19/97).

Critical Thoughts About Tamagotchi - Background. <http://www.sims.berkeley.edu/~jef/Identity/FINAL/bac.htm> (08/08/97).

CUHK Libraries



003638237