

# Case Study of Drone Related Ideas from IDEAMARU

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**Abstract**—For the successful business, the strategic plan could be critical. Especially start-ups have not enough knowledge and information about Business Models among various strategic plans. Through a study of Business Models of Drone related ideas in the public idea platform, IDEAMARU, it is found that most of them are about hardware. One of the 8 incubating ideas about drone was software BM classified to Platform Trade Pattern-Collective-Mediate form. Software areas of drone start-ups are blue ocean and have more competitiveness because the drones could be a role of mediator.

## I. INTRODUCTION

A Business Model (BM) is a strategic plan for business success through analysis of customers, products, and financing sources and so forth. There are various BM analysis tools such as Four-Box Model [1], STOF Model [2], RCOA Model [3], and 9 Building Block Model [4]. Traditional BMs are mainly focused on existing businesses, and start-ups started to be considered on applying processes of business [5]. The BM concept influenced by Johnson model [1] expanded for start-ups and arranged 101 case studies by Nam et al. [6].

## II. DRONE RELATED IDEAS OF IDEAMARU

### A. Public Start-ups Assistance Platform, IDEAMARU

IDEAMARU [7] is one of idea platforms collecting ideas from public and assists selected ideas to become commercialized forms. The main website service of IDEAMAU is online mentoring and it was started from 1:1 mentoring on 30. Sep. 2013. The number of visitors was 6,058,679, collected ideas was 46,057, and cumulative mentoring was 31,587 in Dec. 2017.

### B. Types of Mentoring Service

There are three types of online mentoring processes, 1:1 mentoring for 7 days, 1:N mentoring and Team Mentoring for 30 days. Incubating Ideas that were selected excellent ideas through these online mentoring could be qualified to get further professional assistance, Intensive Mentoring process. Brief Evaluation process was not able to get further assistance was serviced until May 2018.

### C. Statistics of Drone Related Ideas

Totally 207 ideas have word of ‘drone’ or ‘드론’ in Korean in their titles. Nearly half of them had chosen to get Brief

Evaluation, 81 ideas of 1:1, 14 ideas of 1:N in the Table I. The Numbers of drone related ideas in 2015 grew abruptly, and diminished after the year gradually shown in the Fig. 1.

TABLE I. COLLECTED DRONE RELATED IDEAS IN IDEAMARU

Year	Brief Evaluation	1:1	1:N	Team	Total
30.Sep.2013~	12	1	0	0	3
2014	11	3	0	0	14
2015	49	29	0	0	78
2016	26	28	2	0	56
2017	23	15	8	0	46
~31. Aug.2018	1	5	4	0	10
<b>Total</b>	112	81	14	0	207

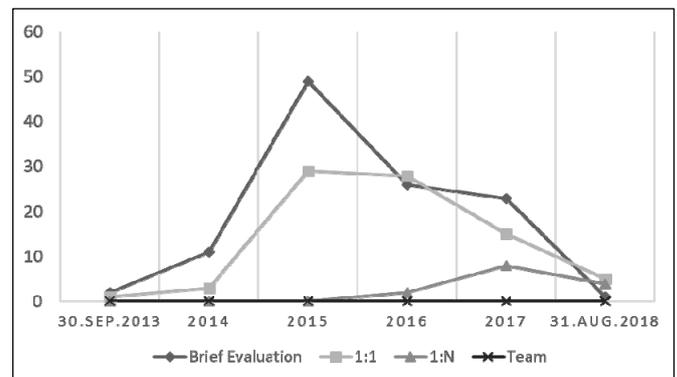


Fig. 1. Drone Related Ideas of IDEAMARU

### D. List of Drone Related Ideas

There are 8 drone related Incubating Ideas. The only one is about service business, and the others are about product improvements in the Table II. Through Intensive Mentoring process, each idea was evaluated 8 categories, excellency, creativity, feasibility, utilization, market size, competitors, competitiveness, future demand. Each idea was advised to get assistances of education for start-ups, intellectual property (IP), R&D (Research and development), prototype production, finance, and commercialization. Most of the ideas classified to pre-matured steps, and none of them are commercialized yet. This result is reasonable considering that setting-up BM is

fulfilled on the commercialization step as a rear part of idea platform.

TABLE II. TITLES OF INCUBATING IDEAS RELATED DRONES

	Titles of Ideas	Idea Type	Advices from Intensive Mentoring	Proposal Year
1	Unmanned Drones using Auto Pilot Functions	Product	-	2013
2	Construction Structural Safety Diagnosis Drones	Product	IP, R&D, Prototype, Finance	2015
3	Precision Safety Diagnosis Drones	Product	IP, Prototype, Finance	2016
4	DIY Available Personal Drones	Product	Education, IP, Prototype	2017
5	Real Estate Video Platform using Drones	Service	Education, IP, R&D, Prototype, Finance	2017
6	Fixed Unmanned Scout Drones	Product	R&D, Prototype, Finance	2017
7	Drone Stabilization Methods	Product	Prototype, Finance, Commercialization	2017
8	Slop Rescue Equipment with Drones	Product	Prototype	2018

III. BUSINESS MODELS FOR DRONES

A. BM frames

In order to analyze drone ideas, BM frames by the study of Nam et al. [6] is used. A tree shaped Structure built from 101 BM cases of start-ups are arranged through four interlocking elements designed by Johnson et al.; customer value proposition (CVP), profit formula, key resources, and key processes shown in Fig. 2 [5]. The Tree Structure is largely categorized to start-ups involved or non-involved to Customer-Market relations. Start-ups are classified to Efficiency Based or Social Value based ones. And the Efficiency Based ones rearranged to forms of Value Chain or Platform. There are three kinds of Value Chain and five kinds of Platforms that classified to detailed categories shown in the Fig. 3. The classification is made with six depths.

B. BM for Drones

1) *Analysis of Drone related Incubating Ideas:* The 7 product type ideas could be classified to Efficiency Based of the second depth and to Value Chain of the third depth. Drones are not intermediate products but end products wholly, and the uses of drones from proposed ideas are related their original characteristics of flying mainly. Thus, BM should be suitable for section of Integrated for the fourth depth. The one idea of service business is about BM of the third depth, Platform, and specifically categorized to Platform Trade Pattern(4th) – Collective(5th) – Mediate(6th).

2) *Suggestion BM for drones:* The main function of drones is as mediators for materials and information by its mobility. Focused on the function, 101 BM cases [6] focused on

Platform(3rd) were analyzed through keywords of platform, mediate, information, mobility, transportation. There are 10 estimated drones related BM, and specific categories and numbers of cases are shown in the Fig 3. The two start-ups of Mediate forms are ‘Wantreez Music’ and ‘배달의 민족’. Wantreez Music gives a music streaming service in department stores or large market chains after a contract with Jamendo which is one of the largest European company possess Creative Commons License. 배달의 민족 is foods delivery platforms gives a service between restaurants and customers. The Multifaceted form start-up is ‘Foursquare’ which gives location based social network service. Users of the service share information where they are through function of check-in. The Rent form corresponds to ‘쏘카’ which is one of the most famous sharing cars platform in South Korea. The case of Information(5th) – Matching(6th) form is ‘모두의 주차장’ which is a service of parking lots. It mediates between drivers and parking places through a navigation application. An example of the Sharing Economy form is ‘Wecab’ is a platform about taxi drivers and customers. ‘Viki’ is a video contents platform based on translator communities categorized for the Customer Participating form. ‘Boxbee’, a sharing service model based on storages of clothing is a case for the Expanding Business form. The form of Commission corresponds to ‘Sound.ly’. It is a software that imposes commission from social commerce companies when customers watch TV programs with related product information using inaudible frequency technologies. Finally, the example of Investment(5th) – Alliance(6th) form is ‘Ryanair’ which gives a service focused on only passenger transportations without additional services like as in-flight meals, the use of lounges, luggage transportation.

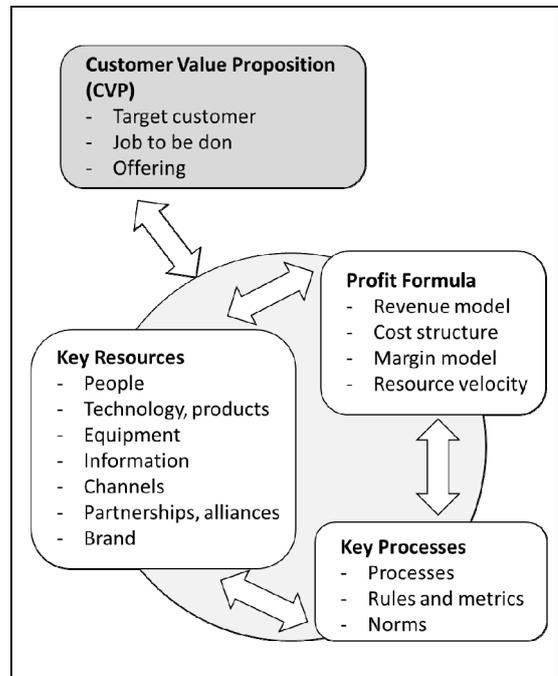


Fig. 2. The four elements of BM (Johnson et al., 2008)

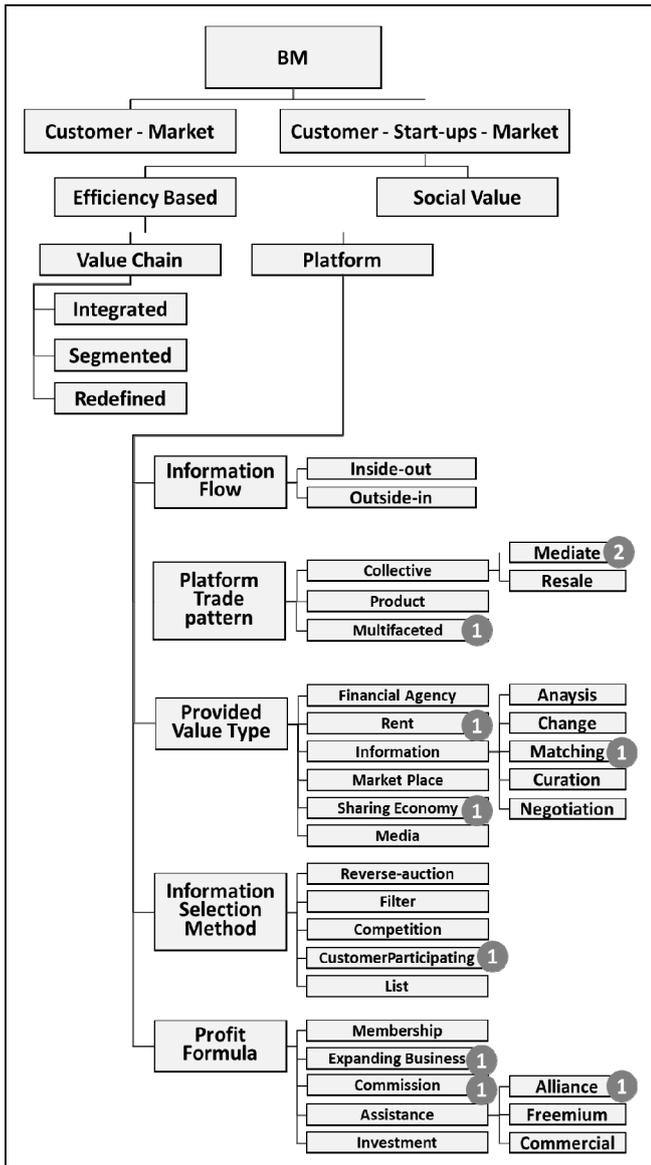


Fig. 3. BM frames (Nam et al., 2017) and categorized numbers of drone ideas

The diagrams of these cases focused on Platform forms are analyzed and rearranged to two example models largely applicable to drone business are shown in the Fig.4. The role of real materials mediators, drones connect each customers and then real materials could be exchanged shown through (a). In the case of information platform, the exchange of something could be done only on platform shown though (b).

IV. CONCLUSION

Hardware based start-ups belong to BM of Value Chain generally. BM of Platform is related software start-ups. Considering drones are products that exists in the real world, available BMs are Platform Trade Pattern, Provided Value Type of the 4<sup>th</sup> depths classification. China is the biggest market for hardware of drones, and software areas are still blue ocean. Platform focused BMs developments will be the

important point of start-ups' competitiveness and business success.

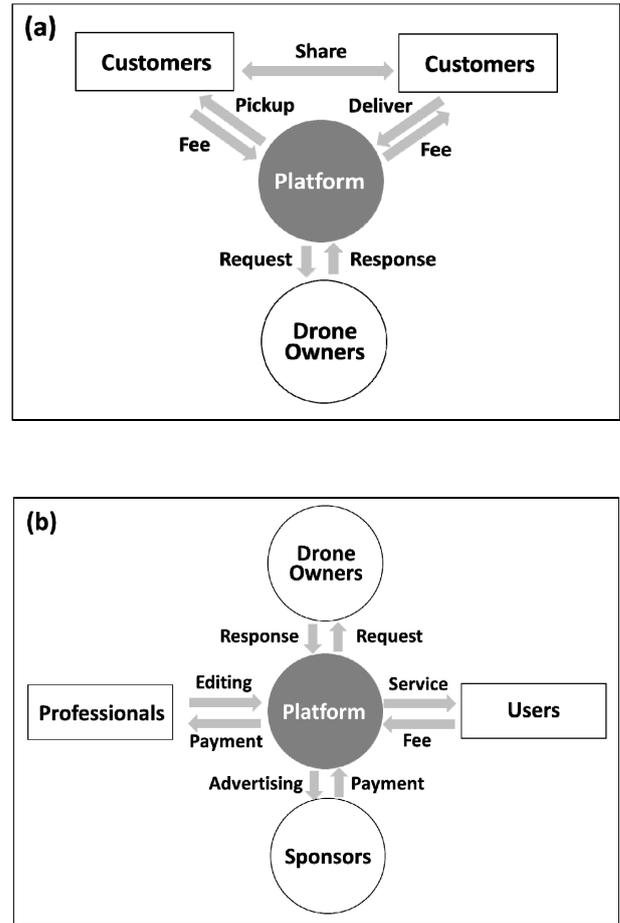


Fig. 4. BM of drones as mediators for (a) materials and (b) information

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