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Market Segmentation of Facebook Users

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Abstract: ***In this paper, I develop afresh a comprehensive approach to market segmentation of Facebook users. The approach considers the implications of Facebook's business model built around its multi-sided platform (MSP). In the first part of the study, I present a series of five propositions that inform the formulation of segmentation and targeting strategies for Facebook and more generally MSPs. These are based on a review and synthesis of extant literature on multi-sided markets and classification of Facebook and social media users. The second part of the study uses empirical survey data from 261 Facebook users to (a) evaluate some of these propositions, and (b) develop a segmentation scheme that may guide the development of marketing strategy for social networking sites (SNS) like Facebook. The empirical analysis makes use of cross-tabs, classification and regression trees, linear discriminant analysis, cluster analysis, and artificial neural networks (ANN). The basis variables of importance to Facebook for market segmentation are frequency of use and level of engagement. Important descriptors that help determine segment membership are: marital status, blogging habits, use of Facebook mobile, general interest in online social networking (OSN), and use of competing OSNs such as LinkedIn and Google +. I conclude with a discussion on future research priorities in strategizing for social networking sites.***

1. Introduction

In recent years, several research studies (Brandtzaeg and Heim 2011; Bernoff 2010; Lorenzo Romero and Alarcon-Del-Amo 2012; Lee, Jarvinen and Sutherland 2011; Foster, West and Francescucci 2011) have tried to classify users of social media including those of social networking sites (SNSs) such as Facebook. These studies offer classifications or typologies of users rather than comprehensive market segmentation*, the objective of this paper. Also, current research ignores the fact that Facebook's business model, based on its multi-sided platform, generates revenue from affiliate marketers and developers of apps/games. Facebook doesn't get any money from users though they make it possible from the marketers and developers. A market segmentation strategy for Facebook cannot be optimal at the platform level unless the interests of marketers and developers are factored in. I address these gaps in this research to arrive at a more comprehensive market segmentation strategy for Facebook.

*Segmentation (Smith 1956) is based upon developments in the demand side of the market and represents a rational and *more precise adjustment of product and marketing effort* to consumer or user requirements. In the language of the economist, segmentation is disaggregative in its effects and tends to bring out recognition of several demand schedules where only one was recognized before (italics added).

Meaningful classification of users of social media or those of SNS is a moving target because social technologies and their usage are evolving at a rapid pace. In view of this fact, I try to distinguish between variables that are likely to endure as determinants of segment structure and those that are likely to change with passage of time. For example, age may cease to associate with low rate of adoption and use of Facebook in future because the share of people who had late exposure to SNS or Facebook is decreasing with time. Similar is the case with subjective norms (Ajzen 1991) and normative beliefs that are changing over time. With continual innovations on functionality and accelerating positive network externality, users are doing an increasing share of instant messaging, chatting and emailing on Facebook in recent years even in a developing country like India (TCS Study 2013). SNS is becoming a multiplex of wide ranging activities with recent additions like social shopping, social care and social search. Perhaps, the biggest of transformations of the social technologies landscape is about to begin with ubiquitous smart phones and wearable computers that not only keep people online anytime anywhere but also provide bountiful apps that seamlessly integrate with social technologies. In this paper, with an extensive empirical analysis of segment structures, I identify and evaluate basis and descriptor variables for market segmentation that are relatively time invariant in usefulness. They are also consistent with the marketing objectives of affiliate marketers and developers, the sources of revenue for the Facebook Company. The approach I propose can be extended to accommodate variations in business model as well.

Considerable research has accumulated on two-sided or multi-sided platform strategy in recent years, but most of it deals with pricing strategy and in my observation, there is none that deals with market segmentation strategy. Similarly, there are several studies on classification/profiling/segmentation of Facebook users. But none goes beyond profiling or clustering users into different groups. These studies fall short of structuring segments in terms of basis and descriptor variables with predictive relations. They also ignore the implications of the MSP based business model of Facebook for market segmentation. A market segmentation strategy for a SNS like Facebook is not straight forward like it is for a conventional service provider because of interdependencies and disparities in the interests of different parties and network effects.

2. Facebook's Business Model

As shown in figure 1 in next page, there are four parties to the use of the multi-sided platform (MSP) provided by Facebook – the Facebook Company, users, affiliate marketers* (of their own products/brands) and affiliate developers (of apps/games). In the current business model, Facebook makes money by enabling direct interactions on the MSP (Hagiu and Wright 2011; Enders et al 2008)) between marketers and users and developers and users. Marketers and developers do get some of the utilities and services for free but pay for others. Users get free

* Though I often use the term affiliate marketer or just marketer, it may be more appropriate to call them businesses because they are increasingly doing activities such as social

care, crowd-sourcing and so on that go beyond marketing/advertising. I also use 'user' for 'personal users' as opposed to business users.

Access to the platform for online social networking (OSN) which is their primary motive for using Facebook. While Facebook offers its facilities to users free of cost today, this need not necessarily continue in the same form in future. It is possible that, like LinkedIn, it may adopt a freemium model offering some premium features for a price.

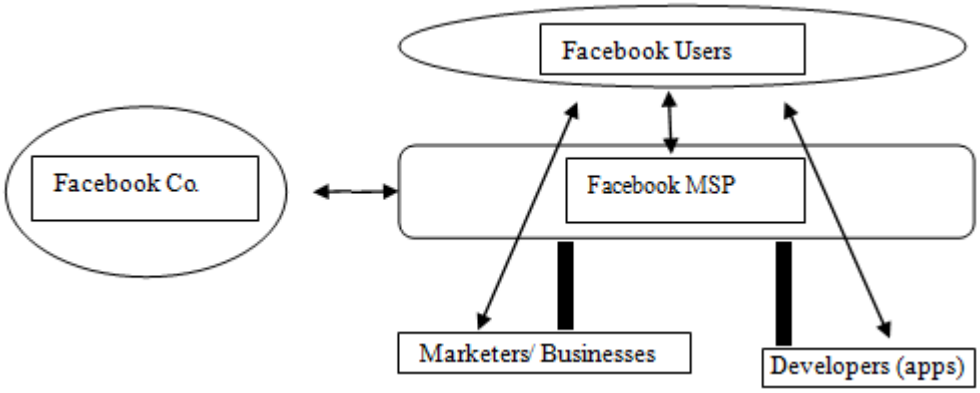

Figure 1: Facebook's MSP and Business Model

Facebook users may choose to interact with affiliate marketers by responding to advertisements on their own Facebook pages or by connecting to a marketer's business pageon Facebook by 'liking' the brand or the marketer. The latter mode is often used by marketers to drive engagement* (Doorn et al 2010) in addition to more targeted advertisements for sales. Facebook earns fees for advertising and also fees for facilitating posts from marketers to users who have 'liked' them. Targeted advertising is the predominant source of Facebook's revenue and profits. Advertisers may reach users based on the information shared by users such as age, gender, location, education, work history or specific interests. Developers of apps/games reach out to users mainly through the App Centre on user's Facebook page and also through advertisements on the user's page. Facebook makes money from developers mainly through its share of 30% of value transacted between developers and users. Most of the money from developers is based on purchase of virtual goods and services that accompany the use of apps/games.

As a MSP, Facebook has two types of network effects (Eisenmann, Parker and Van Alstyne 2006). Same-side (also called direct) and cross-side (indirect) effects each of which can be positive or negative. Both positive and negative may coexist too. A same-side effect, in which increasing the number of users on one side of the network makes it either more or less

* I measure engagement (p 15) as behavioural as well as attitudinal manifestations beyond the act of purchase. valuable to users on the same side; and a cross-side effect, in which increasing the number of users on one side of the network makes it either more or less valuable to the users on the other side. Cross-side network effects are typically positive, but they can be negative. An increase in ads on Facebook pages may repel users. Same-side network effects are positive for SNS users but usually negative for marketers and developers if competitors are added. It is positive when marketers of complementary offerings are added. There are positive crossside network effects between users and marketers, and users and developers. Increase in number of users benefits and attracts more marketers as well as developers. Increase in developers has positive effect on users. The effect may be negative when addition of marketers results in more advertisements. There can be situations when some users benefit from adding a marketer whereas other users find it intrusive. However, when marketers use Facebook as a store front or as a channel of customer care, the cross-side effect on users are clearly positive.

3. Objectives

The key research question I try to answer in the first part of this paper is; how market segmentation for a multi-sided platform (MSP) provider like Facebook is different from that in the conventional single sided case? Based on my review of research literature spanning strategies for multi-sided markets, classification of social media and Facebook users and market segmentation, I put forth a series of five propositions that may inform development of segmentation strategy for a MSP like Facebook. In the second part, I make an empirical investigation into the segment structures existing in this market. I answer the question of how best can we segment the market of Facebook users in terms of basis variables (Lilien and Rangaswamy 2004) that can be accessed via descriptors they are associated with. I select basis variables that can be consistent across the interests of the three business users (or user groups) of the MSP – the Facebook Company, affiliate marketers and affiliate developers. I also evaluate predictive validity of the proposed segmentation model using the basis and descriptor/access variables.

The Facebook Company may segment the users of its social networking site (SNS) or platform for more effective marketing (Smith 1965; Fank, Massy and Wind 1972). The marketing objectives may be to drive penetration, raise share of time spent on SNS, increase rate of use, intensify engagement, decrease price sensitivity, enhance brand equity, and improve revenue or profitability and so on.

Strategies may be tailored for each target segment to optimize at the aggregate level. The company's business model today makes it primarily depend on advertising revenue from product marketers. 85% is ad revenue from marketers and 15% is fees that are mainly from developers. To raise the advertising revenue, Facebook needs to grow the number of active users, their rate of use and if possible their inclination to respond to the advertisements. Advertisers may also be concerned about the relative level of engagement of users with the SNS medium and related opportunity costs. A higher level of engagement of the user with the SNS may raise the chances of response and engagement with marketers in many cases. But it may not make a difference or even lower the chances when the marketer's stimulus is viewed as a distraction. We examine such issues in the section on propositions.

There are obvious constraints in developing an optimal segmentation scheme in the absence of specific information on marketing objectives and other elements of marketing strategy. An optimal segmentation and targeting scheme for a new product launch is likely to be different from that for a new positioning strategy for the same product. So, what is optimal is elusive in the absence of definite information about the context in which such a scheme would be implemented. Marketing strategy is essentially about S-T-P (Segmentation-Targeting Positioning), 4 P's and branding. In the present context, we have the additional consideration of synergizing marketing strategy, including segmentation and targeting, across the three interfaces – Facebook Company – user, marketer – user and developers –user. A further complication is that marketers are a diverse group with activities that are increasingly nonstandardized. The extent to which Facebook can accommodate the interests of this diverse group in its segmentation and targeting strategy is limited. Though there is less diversity in the activities and interests of developers, here again, addressing such interests collectively may not benefit the atypical developer adequately.

Market segmentation is only one element albeit a fundamental one in the strategy document. In the absence of information on the context of objectives and rest of the strategies for Facebook, we may develop only a general guideline with standard assumptions about the context. The empirical analysis may inform rather than prescribe.

4. Literature Review

Social networking sites (SNS) may be defined (Boyd and Ellison 2007) as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. Users come to the Facebook platform primarily for information, social connection and entertainment (Heinonen 2011) and their primary activities on the platform are consumption of content, participation and production of content.

SNS like Facebook constitute a growing segment in the social media space. Below, I review five research studies that classify or segment Facebook/SNS/Social Media users. A common pattern is evident in all these studies. The segments differ on frequency/duration of use and also on types/range of use. A clear pattern is creative use versus responsive or assenting use, social influence versus social surveillance. Demographic variables such as marital status and age and in some cases education level may help access the segments of interest in these studies. However, these studies do not go beyond the task of grouping users on a range of variables.

A very elaborate classification study (Brandtzaeg and Heim 2010) of SNS users is based on an analysis of the survey data from 5,233 respondents in Norway in four major SNSs Facebook, Orkut, LinkedIn, and MySpace. The study found five distinct user types:

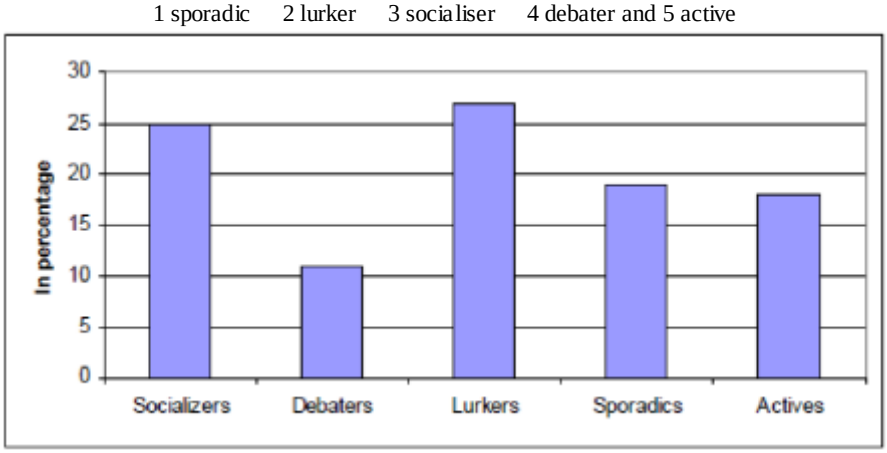

Figure 2A: Typology of SNS users
Source: Brandtzaeg and Heim 2010

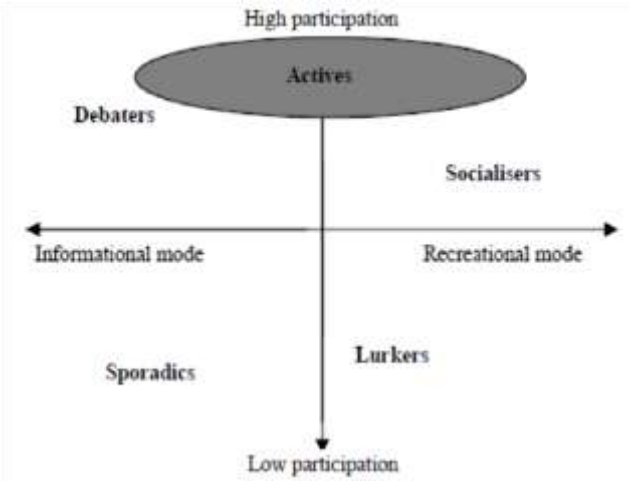

Figure 2B: Typology of SNS users

useful from a marketing point of view than segmenting on the basis of variables such as benefits or demographics or psychographics. In the same analysis, we also observe that a similar pattern of classification may hold good for the developer – user interaction through apps/games. Rate of using apps/games are 1.02^{a}, $.84^{ac}$ and $.44^{c}$– engaged and infrequent users significantly differ on frequency of using apps/games. The difference in frequency of use of apps/games between the frequent and engaged users of Facebook however is not statistically significant. This implies that engaged users of Facebook may not be any more lucrative as a segment for developers than frequent users if we assume that profits generated by users of apps/games is proportional to frequency of using apps/games. Adhering to proposition 2 may not always be useful as it may be redundant in some cases because of inadequate heterogeneity across segments. Proposition 2 may be viewed as a general principle that may not be efficient in some situations. Such situations however may be difficult to tell a priori.

Proposition 3d on multi-homing can also be evaluated here to an extent. We see from the tree diagram for f_24 in figure X that variable l_24 (whether used LinkedIn in last 24hrs, a measure of multihoming) makes a substantial difference – a jump from 85% to 100% to f_24, whether used Facebook in last 24 hrs. Very likely, there are complementarities or positive association. In the event of such positive association, multi-homing is likely to lead to convergence rather than divergence. Multi-homing is unlikely to lead to divergence if the user views the concerned offerings as complements.

5. Comprehensive Market Segmentation

Next, we consider the comprehensive approach to market segmentation of Facebook users. Conventional wisdom says that we should go for not more than 8 segments. But Facebook has more than a billion users. One need not persist with the norm. Theoretically, we can extend Table 1 (p 13) to make room for 3 groups each for Facebook Company, marketers as a group and developers as a group. A priori, the segments may be infrequent, frequent and engaged. In case of developer, 'engaged' may include purchase and attitudes/behaviours in relation to apps/games/developers beyond purchase. We may introduce a customer value index based on the average purchase or lower quartile of purchase as an alternative or in addition to engagement. In case of the Facebook Company, the response variables are use and engagement or change in response with stimulus such as change in price. Similarly, for marketers also, we can find 3 groups. Depending on how many independent segments we divide the user base into for each party; we may have 3^3 to 4^3 or 27 to 64 theoretical combinatorial groups/segments instead of the 8 (2^2) groups we got in Table 1 .

On the lines of Table 1, if we divide users into 3 groups (see Figure 8) each (F1, F2 & F3 for SNS users, M1, M2 & M3 for marketers and D1, D2 & D3 for Developers), we would have a range of 27 theoretical groups –a Rubik's cube (let's call it F Cube for our purpose here) of segments. Imagine a vertex of this F cube sitting on (x,y,z) axes at (0,0,0). If F1, F2 and F3 are on X axis, M1, M2 and M3 on Y and D1, D2 and D3 on Z and each small cube out of the

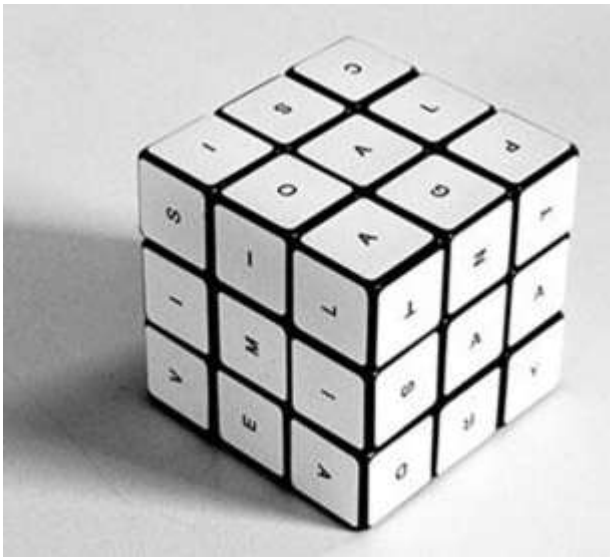

Figure 8: F Cube Segmentation Solution

27 has sides representing F, M and D, we have a 3 D scheme that is an extension of the scheme in Table 1. The No. 1 segment is F3 M3 D3 (the cube in the corner opposite to the reference (0,0,0) instead of F2 M2 D2 in Table 1. Out of 27 cubes, 9 cubes have F1 or infrequent users of the SNS only. These are very likely to be sparse in population of users and unlikely to have many M2/M3 or D2/D3. These 9 can be combined to form 1 segment of infrequent users of the MSP. Out of the remaining 18 cubes, only 12 cubes (those with M2 or M3) have high use (or response) or engagement with marketers/businesses. 6 of these with M3 form the lucrative marketing segments. Similarly 6 with D3 form the lucrative apps/games segments. 6 with M2 and 6 with D2 form the frequent segments for marketers/businesses and developers respectively.

Then the task is to identify those small cubes (sparse ones with F1 are already clubbed together) that can be clubbed together because of adequate homogeneity or low share of members. Such consolidation may be informed by empirical analysis for better results. For an internet player like Facebook, it may not be difficult to identify adequate sample of users in each of the 27 (or even 64) groups and

experiment with them using marketing stimuli under field conditions to find out their response level to current stimulus and sensitivity to changes in stimulus. Group descriptor data (demographic, behavioural and psychographic and so on) may be gathered to augment information on segment structure and access to basis variables. Such a procedure can be expected to yield a segmentation solution or scheme that is close to optimum. A comprehensive approach to market segmentation for Facebook must consider all same side and cross-side network effects and the key interactions the user has with the three key players – Facebook Company and its affiliate marketers and developers.

As discussed earlier in the section on propositions, a key understanding, theoretical as well as empirical, that is of value in order to develop an effective segmentation strategy for a MSP like Facebook is the factors that lead to convergence and divergence of response at user level for the 3 different business players – Facebook Company, marketers and developers. Such factors can be wide ranging and theoretical as well as contextual. Future research may identify the key factors that would influence segmentation strategy and their extent of influence on outcomes of strategy.

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