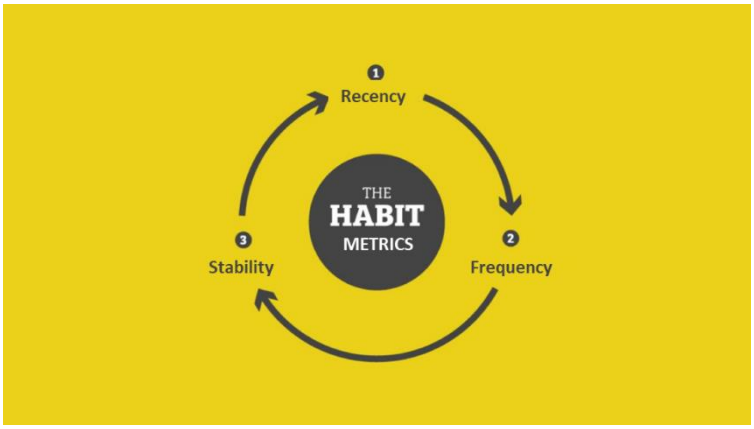
How to segment customers based on their Consumption Habit Metrics: Recency – Frequency - Stability

In this document I will explain the model behind marketing segmentation model, the application of the model and the technical requirement to bring the model into action.



Why Consumption Habit Metrics?

Eating is a daily activity so one big challenge of food delivery service is to educate consumer to use the product routinely. The Consumption Habit Metrics helps to cluster our 2.4M user base into different segment based on their current stickiness and their level of purchase habits. Using this metrics, BAEMIN can define different media & promotion strategy as well as different level of investment to nurture and/or maintain different group of consumers.

Three Key Components of Habit Metrics

Habit is an action that is frequently repeated under the same situations, and once a habit is stop it can be broken. If we break the habit concept down, there are three main components to Habit Metrics:

- **Recency:** What is the last time does someone take that action (e.g., 1 week – he still maintains his habit, 3 months – maybe he quit or stop this habit)?

- **Frequency:** how frequently does someone take that action – and in what time frame (e.g., number of time order food per week)?

- **Stability:** when the person engages in the action, is it often under the same occasion, is it following a pattern (e.g., every lunch on weekdays, order food every w days,…etc)?

To measure how strong a customer's habit is, we need to be able to quantify these three ingredients. For BAEMIN's case, the lower the recency, the higher chance that the app usage habit can be nurtured; the higher the frequency and the higher the stability, the stronger the app usage habit is.

How to Measure Recency

The more recently a customer has been active, the more likely he or she will continue to keep the habit to use our business service for subsequent purchases. Compared with customers who have not active/not order from our platform in months or even longer periods, the likelihood of engaging in future transactions with recent customers is arguably higher.

Recency is the number of days that have passed since the last day a consumer is active in BAEMIN till the day we chose for analysis. In this document, the analysis date is 30 June 2020.

Example: User A last active date in BAEMIN is on 01 June 2020 -> Recency value is 29 days (30/06/2020 - 01/06/2020)

Apply to BAEMIN users:

At the beginning of every month, we can use **Recency** to divide all BAEMIN users into 4 main groups:

1. **M-0 Future New User:** User who will install and will try BAEMIN for the first time this upcoming month (no Recency data yet)
2. **M-1 Last Month User:** User who used BAEMIN in the previous month (Recency <= 30)
3. **M-2&3 Sleeping User:** User who used BAEMIN in month -2 or month -3 but do not comeback in M-1 (30 < Recency <= 60)
4. **M-Other Churn User:** User who used BAEMIN in the past but do not comeback in last 3 months (Recency > 60)

How to Measure Frequency

Measuring frequency is relatively straightforward. For purchase frequency, it is the number of times consumer made order in a given time window (e.g., per week, per month, per year, etc.).

In optimal case, food delivery could be used daily, but at this early stage of the industry in Vietnam, we will use the weekly time window to calculate frequency.

Example: User B made 8 order in BAEMIN in June, so his Frequency is 8/4 = 2/week (using a standard number of 4 weeks per every month).

How to Measure Stability

Identifying the Stability Components to Capture

To measure how stable people's behaviors are, we need to first decide what we consider as stable context in food delivery business. Overall there are four typical types of contextual cues:

1. Time: e.g., time often make order – Lunch, afternoon, dinner…
2. Time span: e.g., order every day, every 3 days,…
3. Location: e.g., order from district, work/home…
4. Social context: e.g., single order/ group order

At more sophisticated level, we can also consider stability in purchase patterns, such as:

5. How consumer habit is impacted by events: e.g., only purchase when have sport event, holiday, flash sales vs no difference…etc
6. How often he/she buys a specific category of product: rice, milk tea
7. How much does he/she often spent for an order: e.g., AOV

Considering the behavior of current consumers (main TA is office workers who use food delivery for single order) and the current priority of business (main target is number of order not value), we choose **component 1 and 2** as the two main stability components, because for current BAEMIN business an ideal consumer is someone who:

- Routinely place order – stability in Time span between order

- Routinely use BAEMIN for one/few of his/her meal – stability in Time placing order

Calculating the Stability Score

1. **For dimension no 1 – time:**
   - We assume that our strongly habitual customers typically buy or use the product at the same time of the day. Based on our business, we segment time of the day into five sections: breakfast time, lunch time, afternoon time, dinner time, late night time.
   - For each customer, we'll want to see what percentage of that customer's purchases fall into each segment. Let's say a customer's purchase distribution is 80% at lunch, 10% at afternoon, 8% dinner time, 2% breakfast, 0% for late night. **Then the time stability for this customer would be the highest of the percentages (in this case 80%).** The rationale for this is fairly straightforward. If a customer buys at random times throughout the day, you would see 20% of the customer's purchases fall into each of the time segments. As a result, that customer's stability would be 20% instead, much lower than the more habitual one with a 80% stability score.

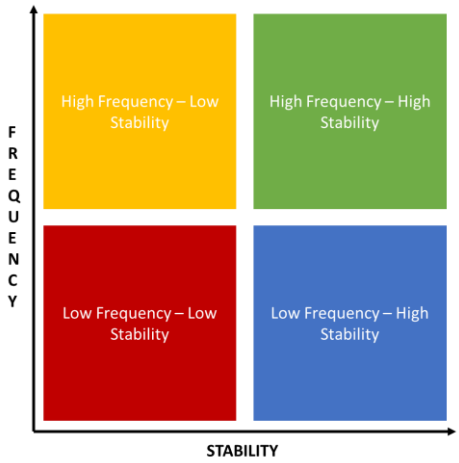
2. **For dimension no 2 – time span:**
   - We assume that our strongly habitual customers typically make order every day/every few days, at a stable time span: e.g., a loyal office worker user may order BAEMIN everyday, so his most frequent time span is 1.
   - For each customer, we will summarize the list of time gap between his/her order, and the frequency of each time gap value. Let's say a customer make 11 order with time gap distribution: 50% - 1 day, 40%-2 days, 10% - other.

Then the time span stability for this customer would be the highest of the percentages (in this case 50%).

3. **Stability score**

Once we have a stability score for each stability dimension, we can create an overall stability score for each customer by averaging the customer's stability scores across all dimensions. In this case, we think that both 2 a types of stability (time & time span) are equally important in our business, so we can use simple average, don't have to use a weighted average.

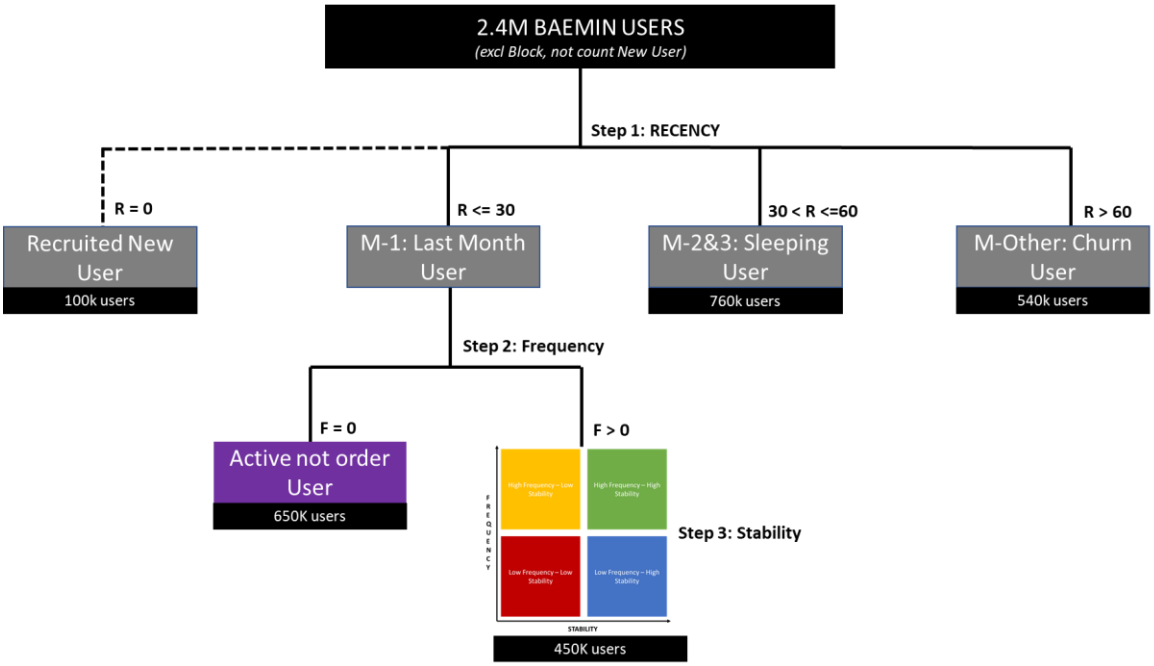
Combining Frequency and Stability to Create a Habit Matrix



We will calculate Frequency & Stability of **M-1 Last Month User** and use the result to segment this group into a Frequency – Stability matrix in order to design a suitable package (media + promotion) to target each sub-segment. For other group (M-2&3, M-other), the priority is to make the users to re-awake, so we don't need to classify them into too detail level.

Final Segmentation & volume of each segment

After applying 3 steps segmentation with R-F-S model, at the beginning of the month, we can have the segmentation data as below, with number of users in each segment. (data at end June 2020)



For each segment, we can design customized marketing approach to offer the most relevant message and benefits that are suitable for each group. In overall, the customized marketing approach is the combination of 4 factors:
Message – Media – Promotion – In app Experience

Segment	Message	Media	Promotion	In app Exp
Recruited New User	-Try first order - App function education	All channels Heavier weight on awareness to build TOM	New User package	See Sign Up first – must sign in to use app
M-1: Active nor Order	-Remind user abt new this month	All channels	1 unique voucher at average CPO	Receive welcome back message + voucher
M-1: High Frequency – High Stability	-Update new/flash sales this month	In-app channel only, excl from paid channels	No/ only low value personalized voucher	Show favorite merchants depend on their consumption habit

M-1: High Frequency – Low Stability	-Update new/flash sales this month	-In-app channel - Awareness ads highlight new promo	Offer personalized voucher to build routine habits	
M-1: Low Frequency – High Stability	-Frequency – Meo Map program - Encourage to order more to get special benefit of loyal/high frequent user	In-app channel only, excl from paid channels	Offer personalized voucher to build frequency	
M-1: Low Frequency – low Stability	-Frequency program - Benefit of loyal user - Info of hottest unique promo	All channels Heavy focus on conversion funnel	Offer personalized voucher to build both routine & frequency	Suggested list of hot merchants with hot promo
M-2&3: Sleeping	-Highlight new function of app/ new hot promotion	All channels Heavy focus on paid channels	Offer higher than average CPO voucher to get user re-awake	
M-Other: Churn	-Re-install ads highlight new news/ update special promo	Paid Channels. Focus on: -Install ads - Awareness ads	Welcome back voucher	