MARKET SIZING OVERVIEW

Market sizing is traditionally defined as estimating the number of buyers of a particular product, or users of a service. Because of the relative newness of mobile money, sizing the potential market is a necessary and valuable exercise for a MFSP in the early stages of new product development.

When a MFSP plans to introduce a mobile money service, the company will need to forecast the number of users and active users of the product using the market sizing techniques described below.[1] Sizing needs to be considered along a time dimension, enabling the MFSP to arrive at a number of "Prospective Buyers" of the service. It then calculates what percent of the prospective buyers it hopes to capture.

A simplified example might be a mid-size bank with 500,000 savings customers and which acquires new customers at a constant 10% annual rate, assuming no attrition. The bank plans to offer mobile money services, such as bill payment, to its existing customers, and calculates that the number of active users of the service would be approximately 5%, 10%, and 20% of its growing customer base after 1, 2, and 3 years, respectively. (In this case, the bank can assume that it will capture all prospective buyers, since they are part of its existing customer base).

Table 1. Active User Projections for Planned M-Banking Service

	Year 0	Year 1	Year 2	Year 3
Savings Customers	500,000	550,000	605,000	666,500
Active User Rate for Service	*N/A*	5%	10%	20%
Active Customers using Service	*N/A*	27,500	60,500	133,100

At the business planning stage, it is also important to estimate the market sales potential, which is simply the product of prospective buyers, quantity sold, and price.

> **Market Sales Potential (MSP) = Prospective Buyers (B) * Quantity Sold (Q) * Price (P)**

Continuing with the same example, assume the bank charges a very small fixed fee of $0.10 for a bill payment through the mobile phone. If it estimates that the average user makes 2 bill payments per month, the bank can estimate the total sales for the bill payment service over a three-year business cycle.

Table 2. Market Sales Potential Projections for Planned M-Banking Service

	Year 0	Year 1	Year 2	Year 3
Prospective Buyer of services (B)	0	27,500	60,500	133,100
Transactions Per Year (Q)		24	24	24
Price Per Transaction (P)	*N/A*	$0.10	$0.10	$0.10

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[1] These parameters become important again during financial modeling in Section 9.

Market Sales Potential Per Year (MSP)	N/A	$66,000	$145,200	$319,400
Total Sales Potential over 3 Years				$530,640

It should be noted that depending on the service being offered, the profit potential may not be based on direct revenue alone, because there may also be indirect benefits to the MFSP. For example, when a mobile network operator (MNO) offers a person-to-person money transfer service, it accrues benefits through decreased churn and higher adoption rates. These translate into reduced costs and increased revenues through the company's data and voice services. However, it is still a useful exercise to approximate total expected revenue – even in the overly simplified example above –because this evaluation provides a *directional* sense to the firm's managers whether they should pursue the project over alternative priorities.

In short, the main purpose of market sizing is used to inform business viability, specifically go/no-go decisions, as well as key marketing decisions, such as pricing of the service or marketing tactics to increase usage.   It also provides a preliminary estimate of the level of operational and technological capabilities required to service the expected market. Depending on the total potential market, for example, the firm may need to consider upgrading call-center staff to respond to forecasted customer service inquiries.

There are two main market sizing methods: bottom-up and top-down. Each method has unique benefits, although the top-down approach is more common in practice. Most firms will also find the top-down approach to be the simpler method in terms of mobile money services.

Bottom-Up Approach

The bottom-up approach sizes a market using projections of individual clusters. A firm must first identify the customer segments it intends to reach, and then make estimates of their size and growth.
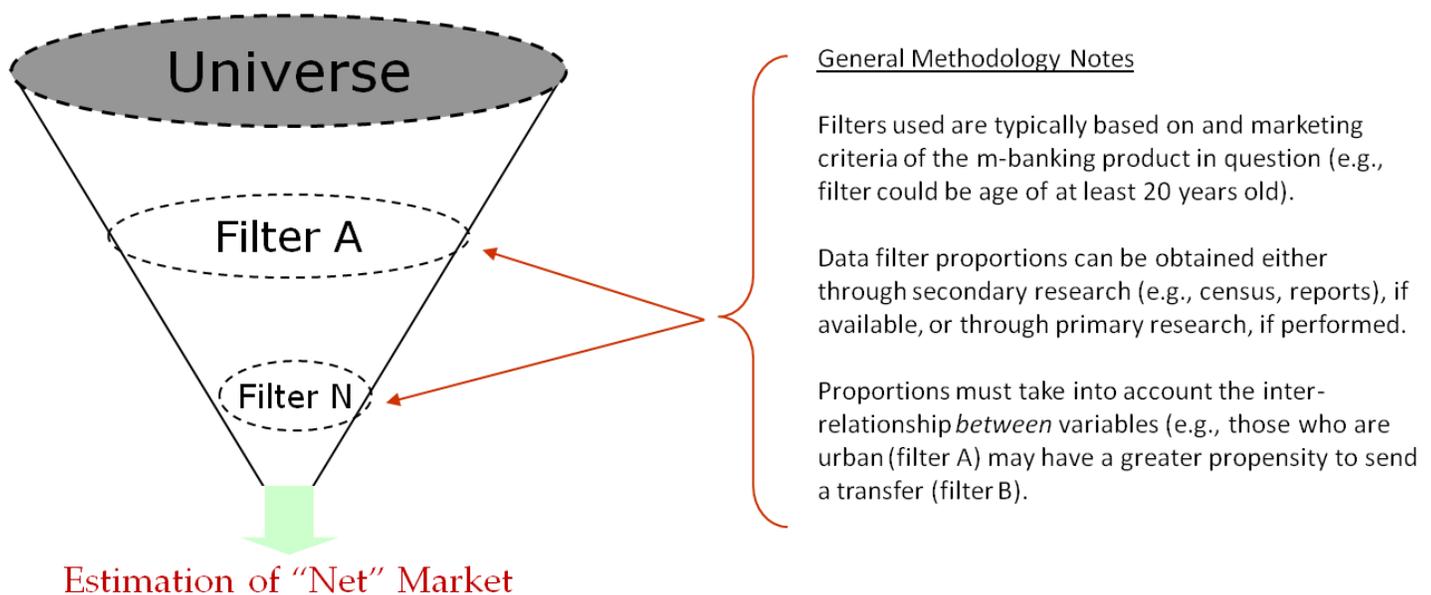
As an example, assume a MFSP is entering a new market to provide money transfer services. Through a combination of primary and secondary research, the company determines that there are two customer segments that are most likely to use the service: women over 40 years old in rural areas, and younger males between 25 and 39 years old who are high school educated and live in urban centers.

In this case, the company may be able to work with a microfinance or banking partner to craft a relatively accurate potential size of the market using the partner's customer database of socio-demographic data (address, age, type of business) and performance behavior (repeat borrowers, low delinquency) for the two segments. It can project growth rates and attrition based on historical data.

While relatively straightforward, this approach may not always be as accurate, especially in markets where detailed data is not readily available, because it is often difficult to size individual segments. If, for example, a constraint were that the two segments be literate, the firm may have difficulty obtaining a reliable estimate.

Top-Down Approach

The top-down approach, also called the chain ratio method, involves defining a "universe" target market and applying various filters that continually reduces the figure to an estimation of the "net" market. Put another way, unlike to the bottom-up approach, the firm starts with an estimate of the overall market and then evaluates the (limited) successive proportions that it intends to reach.

Universe

Filter A

Filter N

Estimation of "Net" Market

General Methodology Notes

Filters used are typically based on and marketing criteria of the m-banking product in question (e.g., filter could be age of at least 20 years old).

Data filter proportions can be obtained either through secondary research (e.g., census, reports), if available, or through primary research, if performed.

Proportions must take into account the inter-relationship *between* variables (e.g., those who are urban (filter A) may have a greater propensity to send a transfer (filter B).

For example, suppose a government plans to distribute social payments to rural farmers through mobile phones and wants to use the top-down approach to size the market. It first defines the universe as any adult in a rural area, and finds from its own government statistics that there are 20 million adults. Out of these, 20% are farmers. The transfer solution will only work for people who have mobile phones. Based on estimates provided by sales representatives of the MNOs, it is determined that this equates to 70% of rural adult farmers. Finally, based on phone interviews with rural farmers from a representative area, the MFSP further estimates that about 40% qualify for the government transfer program, which is based on crop revenues.

The market potential is simply the overall universe multiplied by these individual proportions, or:

20,000,000 adults * 20% farmers * 70% (mobile) * 40% (qualify) = 1,120,000 market potential

Naturally, it makes no difference in what order the proportions are calculated, as they will all be multiplied in the end. The decision is usually based on which data is more readily available. It may be easier, for example, to obtain the proportion of farmers who are rural adults than that of mobile phones in rural areas.

A more detailed scenario with comments is presented in the Case Example at the end of this section.

Firms can draw on a number of sources to obtain data for market sizing. Four of the most common are:

Statistics: Data that is typically available publicly. This includes information from government statistics departments, central banks, and trade associations. For example, to size an unbanked market, a government might track the country's population as well as the number of people served by all formal and regulated financial institutions. Central banks usually publish average retail interest rates, number of savings accounts, international transfer volumes, and other useful information. Annual reports of local MNOs typically provides valuable data in terms of mobile phone penetration rate and customer projections.

Data Mining: Seeking information from the MFSP and its partners' customer bases is an often overlooked, but valuable, exercise to arrive at market size, especially since mobile money services often targets an existing based of mobile phone users and individuals with bank accounts. Due to Know-Your-Customer regulations, most, if not all, regulated financial institutions capture a wealth of data on consumers, including age, region, gender, education level, income level, and type of business. Those that offer loans capture additional information, such as disposable income, home ownership, and sources of income, necessary to make underwriting decisions. Combined with customer's performance data, a bank may even be able to estimate, the cash-in/cash-out needs for specific consumer segments over time.

Competitive Intelligence: Can be used to make market sizing or profit estimates more accurate.   If a MNO publicly claims that mobile money has reduced churn by a certain percentage, or if its advertising outlines is pricing scheme, a MFSP can use set these values as initial estimates in its calculations. Competitive intelligence can be obtained through public sources, such as websites, annual reports, and conference presentations, or, increasingly, through third-party research firms that compile information. For example, FSD Kenya's analysis of M-Pesa is available for free download. Other research firms, such as Juniper Research, provide an analysis of mobile money businesses for a fee.

Market Research: Primary research that engages existing or prospective customers directly, should be used after the MFSP has performed some of the other data gathering techniques just described.   Although such research is usually used in the product development phase to design a service that meets the needs of customers, it can also be used to refine market sizing projections. A MFSP may reduce its estimates if some market segments have unfavorable views of the proposed service in focus group interviews, or, as the case below demonstrates, to gauge money transfer frequency.

Market sizing, particularly for mobile money where data is sparse, is an important but ultimately challenging exercise to conduct. MFSPs should be aware of three key realities in estimating market potential.

Uptake for Innovative Products is Difficult to Forecast

In the majority of markets, mobile money is still be considered "new-to-world", since most potential users have no experience, and little or no exposure, to the concepts. Thus, unlike offering a new version of a phone, or offering a different type of existing product, it is difficult to gauge how customers will react and ultimately sign up for the service.

This "newness", of course, is rapidly changing; new mobile money deployments are being launched every month. MFSPs can thus approximate the market size by using available growth curves for similar services in the same market, or even comparable markets. For example, a mobile operator seeking to launch a "new" money transfer service for the Burundi market could project uptake and usage based on existing deployments by mobile operators in neighboring Kenya, Uganda, Tanzania, and Rwanda. However, these comparisons have to be complete enough to take all the macro-influencers in each region into consideration.[2]

Forecasting Usage is Difficult and Never Constant

A more complex but no less relevant challenge is to define, and forecast, "usage". Because mobile money is a service, usage rates change over time, and patterns may or may not be frequent; an electricity bill payment may be every month, but a transfer to a family member may be more sporadic. The amount of the transfer may also vary considerably.

Current examples of mobile money services, such as WIZZIT in South Africa, G-Cash in the Philippines, and M-PESA in Kenya, also point to a sizeable differences in registered and active users of the service – with the latter often comprising just 20-25% of the registered user base. Since most, if not all, mobile money services are priced on a per transaction basis, registered customers who do not use the service yield no direct revenue to the firm while still incurring costs[3].

Buyer Behavior Among the Unbanked is Hard to Predict

A special note should be made for mobile money services that target the unbanked. Poor consumers have more volatile cash-flows and different financial needs than other potential customers. There is less available data on their buying behavior compared to higher-income segments, and in market research they may not express their opinions and preferences as strongly as others.

This does not mean that MFSPs should not attempt to forecast uptake among the poorer market segments. Rather, based on greater uncertainty, it would be wise to introduce a greater range in the final market size estimates.

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[2] Refer to section 1 for a description of influences on mobile money businesses
[3] It should be noted that some firms, notably mobile operators, derive considerable indirect revenue from mobile financial services, such as decreased churn for their voice and data business line.

1. **Make sure to ask the right question to size the market as accurately as possible**

   It appears simplistic, but the key to getting market sizing right is to ensure that the calculations are done with the right questions in mind. It is not enough for a bank to expect 10% of its customers will use mobile money or for MNO to expect to capture 20% of the high-income market.

   The interested MFSP must first ask what service it plans to offer for each service is very different and will engender a different uptake pattern. If the MFSP is planning to introduce several services, it would be prudent to calculate the market sizes for each service separately, and ideally over several years.

2. **Estimates are only as good as the quality of the information**

   For some countries, there are reliable sources to estimate market segments by region, disposable income per segment, and percentage who access to mobile phone or financial services. As discussed above, existing firms can mine their own customer data to make further extrapolations, such as customer growth rate, usage rate for its existing services, and customer attrition.

   Where data is not available, firms may need to conduct their own quantitative or qualitative market research. For example, most countries have little information on the domestic remittance market, which is a valuable input to develop mobile transfer services. MFSPs could quantify the size of key corridors and volume of transactions by conducting quantitative surveys. In other cases, the MFSP might use qualitative market research such as focus groups to gauge which mobile financial services customers react most positively to.

3. **Willingness to purchase and competitor moves are highly subjective**

   It is extremely difficult to quantify the extent to which customer prospects would be willing to purchase a mobile money service – and how much they would be willing to pay for it. If the mobile money service is truly new-to-world, traditional quantitative surveys may provide misleading data (usually biased upwards) on the size of the market. One mechanism to reduce the error is called "information acceleration", which involves exposing the market research participant to the service so as to help them make a more informed prediction if they would use the service or not. It should be noted that is not recommended to ask participants about their pricing preferences if they have no similar alternative to compare it to.

   MFSPs must anticipate competitive forces and rival offers. In most markets, first-movers should expect similar services from competitors with little delay. Similarly, fast followers should expect the dominant firm to retaliate, usually with better pricing, stronger marketing, or wider distribution channels. This means that the market share the MFSP hopes to capture should account for competitor moves. While there is no formula to quantify the competitor effect, MFSPs must take into account, however subjectively, how rivals will affect their projected market share and revenue.

4. **Offer ranges rather than point estimates.**

   Estimating market size involves the multiplication of several data points, some of which are highly subjective and thus contain significant uncertainties. As a result, MFSPs should present ranges, rather than point estimates, when determining market sizes and expected profit. Calculating conservative, likely, and

optimistic profits allows senior management to make informed decisions based on worst-case and best-case scenarios. Data points, which have lower confidence intervals, should be noted. Over time, some of the points, such as price points or operational costs, should be refined with more accurate information, improving the accuracy of the final projected ranges.

Case Example: Start-up launching a domestic money transfer service

An MFSP is planning to introduce a money transfer services in partnership with the country's largest MNO. The marketing manager thinks that the domestic migrants who come to the country's largest city make an attractive target for the service because they frequently send part of their earnings to two northern states.   This is especially the case for those migrants who are unbanked, who must deal with slow and expensive informal services to send money.

The marketing manager would really like to know how much the MFSP could expect in terms of market size and revenue potential for its first year of operations. Using the top-down approach, she makes the following calculations:

	Factor	Worst-Case	Best-Case	Source	Notes
A	Migrant Population in Capital City from 2 Northern States	800,000	1,100,000	Government Statistics; Academic Reports	Difficult to assess migrant population #; range is wide.
B	% of A who have mobile phone with partner MNO	55%	60%	Partner MNO	Partner MNO estimate based on KYC forms
C	% of B who send money per month	85%	90%	Central Bank	Research based on central bank (highly reliable).
D	% of C who are unbanked	60%	80%	National Association of Microfinance Institutions	Interview with Head of Microfinance Association, though his data is several years old.
E	% of D who are early adopters	5%	15%	Socio-Demographic Data from Partner MNO and National Association of Microfinance Institutions	Only a small portion, the early adopters, will use the service in the first year. They are usually under-30 and high-school educated, which are used as a proxy for early adopters and indicated by the percentages here.
F	% of E whose recipients have phones with MNO	45%	65%	Primary Survey	We conducted a small survey to determine this number, which came to 55% (+/- 10% error rate). Many recipients keep in touch with the migrant through the mobile phone, and they tend to have the same carrier because rates

					are cheaper between the same operator.
G	1st Year Prospective Buyers	5,049	46,332		

The prospective buyers in 1st year are thus between 5,049 and 73,008. This is not only a sizeable range, but significantly less than what the Marketing Manager had originally assumed when she thought of the potential of "800,000 to 1,100,000 migrants" that could be reached.

The manager also wants to calculate the market sales potential. The primary survey she had administered indicated the half the migrants send about 1 transfer per month, and the other half about 2 transfers per month.

She is not sure what price to set, given that she does not know the prospects' sensitivity to price, and it is too early in the business planning phase to do any detailed price elasticity analysis. But thinks that if she sets it at about 75% of the alternative that they are using with the informal system (currently 4$ fixed per transfer), she can capture at least half of the prospective buyers. But if she sets at $2, or half, she estimates she could capture perhaps 70% . She continues her analysis in the table below.

		Worst-Case	Best-Case
G	Prospective Buyers	5,049	46,332
H	Quantity of Transactions Per Year	12	24
I	Price Per Transaction	$2	$3
J	% of prospects who would buy service	70%	50%
	1st Year Sales Potential	$84,823	$1,667,952

Again, she sees a wide range of expected sales potential, with the best-case estimate nearly 20 times the worst-case estimate. (This range is not as uncommon as it may appear for a new product.). Ideally she would project these numbers over several years to have a better idea of whether to move ahead with the project or not.

Furthermore, she may decide that she needs to broader the product suite (i.e., other types of services) or customer segments (e.g., all migrants) to increase both the overall prospective buyers and revenue. She could consider offering different incentives to boost the number of transactions conducted per month. Furthermore, she sees that the sales potential hinges on the market penetration of its partner MNO; if growth rates for the industry remain modest while the partner MNO's market share starts to erode, it might greatly reduce the available prospect pool from the proposed P2P service.