PT Rekan Usaha Mikro Anda:
Improved Business Understanding Through Data Analytics

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To learn more about PT Ruma, visit their website www.ruma.co.id.

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Improved Business Understanding through Data Analytics at PT Ruma

Overview
Effective data analytics is essential for meeting the bottom line, and is even more critical when you are trying to meet a double bottom line. Whether at a for-profit company or a social enterprise, managers must ensure that the use of data analytics becomes deeply-rooted in both daily decision-making and the business's long-term operation. Data management requires accurate data collection, effective reporting structures, and a wholly integrated system in which the data can be utilized to best meet the needs of the clients.

Data analytics and effective reporting structures provide room for decision makers to be nimble. This flexibility and freedom allows them to tackle short-term and long-term goals and answer important questions about strategy, operations and business development. Most importantly, clients benefit directly from the organization's enhanced use of data when it is used to improve product design and delivery. Improved services that better meet the client’s needs ensure a faster, more direct route out of poverty.

A data analytics framework is needed to address these important challenges. The data generated by customer interactions enables the institution to understand and serve them better by improving the product design and execution to meet real customer needs. For many reasons, organizations may not have robust data collection, reporting, or analysis tools in place to inform their decision-making.

This case study is an example of how data analytics changed one organization’s product execution strategy and preconceptions about its clients. The information analyzed by Grameen Foundation and PT Ruma – a social business operating in Indonesia – was used to make tangible changes in Ruma's business processes and to improve its ability to serve its entrepreneurs. The study documents Grameen Foundation’s work with Ruma, demonstrating how data can reinforce or challenge management expectations about their clientele, strategy, and the social and financial bottom line, as well as how this approach can lead to better management decisions.

Background
PT Rekan Usaha Mikro Anda (Ruma) is an Indonesian for-profit social enterprise that was founded in 2009 with the mission of empowering poor people through mobile technology and
Ruma’s social mission is rooted in its business model. It offers a solution that is specifically targeted to underserved communities and provides them with the support needed to be successful. These microfranchises meet the demands of the daily lives of the poor: they have the potential for income growth, offer flexibility, and can easily complement an existing micro-business or grow into a full-time business of its own.

There are unique challenges to reaching the poor, especially the poorest people living on less than $1.25 a day. They are particularly vulnerable to income shocks, such as the loss of a job, illness, or natural disasters. That vulnerability is compounded by the fact that poor people have unpredictable and insecure income-generating opportunities. The poorest are often stuck in a poverty trap with few opportunities of getting out. It is these people that Ruma wants most to help.

The most unique aspect of Ruma is the connection between its social and financial missions. Its articles of association include a clause stipulating that shareholders cannot receive dividends unless the company meets its social mission. That mission is measured by the percentage of poor and very poor clients it serves. Ruma’s clients (also referred to as entrepreneurs) must have an 80 percent likelihood of being poor (defined as living on less than $2.50 a day) and a 15 percent likelihood of being very poor (those living on less than $1.25 a day) when starting the business. If Ruma does not meet these social targets, dividends will be put back into the company to allow them to double their efforts to meet the social mission. Each year, the board reevaluates the social mission to ensure that the social target is sufficient. If, for example, the target was met, the board could decide to raise the percentage of the poor and poorest to be served the following year. This allows Ruma to strive to serve a greater share of the poor and

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1 http://www.Ruma.co.id/
2 Population below $1.25 a day is the percentage of the population living on less than $1.25 a day at 2005 international prices. http://data.worldbank.org
3 Ruma relies on the Progress out of Poverty Index® (PPI®) to measure the poverty level of potential and existing clients. The PPI uses 10 simple indicators that field workers can quickly collect and verify. Scores can be computed by hand on paper in real time. The PPI score can then be matched against various poverty likelihood tables to show the probability of a given household falling below a particular poverty line.
poorest. Ruma’s leadership is adamant that an organization’s social mission should be measured, not assumed, and encourages others entering the social enterprise sector to follow this principle.

Grameen Foundation and Qualcomm, through its Wireless Reach™ initiative, incubated Ruma to support the growing network of micro entrepreneurs in the Village Phone microfranchise program. Wireless Reach works with partners to bring wireless technology to underserved communities globally. In addition to providing early-stage investment funds, Grameen Foundation has given Ruma technical assistance and support to better utilize the data it was collecting. This collaboration focused mainly on improving data analytics and infusing social performance metrics into a comprehensive reporting structure that would allow Ruma to segment and track its clients’ performance and progress by poverty level. Additionally, Ruma wanted to track its profitability and return on investment trends by segments.

The Service
Ruma's pre-packaged “business-in-a-box” provides its entrepreneurs with a business opportunity to meet the needs of their underserved communities and tools to alleviate the daunting task of becoming an entrepreneur. Inspired by the success of Grameen Foundation’s Village Phone initiative in Uganda, Ruma’s initial pre-packaged microfranchise businesses enables households living below the poverty line to own and operate a simple mobile phone airtime sales service. Ruma’s microfranchise includes:

- Phone (if required)
- Marketing materials
- Working capital assistance (to those identified as poorest)
- Training
- Ongoing mentoring
- Access to an efficient supply chain of airtime from all 11 mobile operators in Indonesia

To purchase a business kit, potential entrepreneurs make a deposit of roughly $12 for the kit. This deposit pays for airtime on the phone that the entrepreneur can sell immediately. After purchasing a kit from Ruma, the entrepreneur receives training from a Ruma field officer on how to run the new business. When the Ruma entrepreneur’s deposit is close to zero, the same Ruma field officer that administered the training will collect the cash to replenish her working capital deposit.

The way it works
- the customer pre-pays the Ruma entrepreneur for airtime,
- the Ruma entrepreneur sends a message through her mobile phone to the Ruma airtime server,
- her deposit is checked for sufficient balance,
- then if sufficient balance exists, the airtime is transferred to customer’s personal phone via the Ruma airtime server.
Ruma’s Use of Data
The transactions conducted by Ruma entrepreneurs on their mobile phones are also collected on Ruma’s network server. This allows Ruma to have a large amount of data on the performance of each entrepreneur, which would not be possible without the use of the mobile phone as part of delivering the business.

In addition, Ruma has information on the poverty level of its entrepreneurs because of its use of the Progress out of Poverty Index (PPI). Data from both the transactional server and the PPI are used to monitor their business operations. Below is further detail about these two main tools.

- **Ruma Transactional Server**
The server data allows Ruma to track all transactions made by the entrepreneurs in their network. Each transaction is recorded in real time. This data includes:
  - Amount of revenue each entrepreneur generated for Ruma
  - Number of new customers each entrepreneur added over specific time periods (day, week, etc)
  - Number of minutes sold by each entrepreneur and to which customer
  - Number of minutes each customer bought from the entrepreneur

- **Progress out of Poverty Index® (PPI)**
The PPI (see sidebar) serves two purposes at Ruma: (1) as a data collection tool to measure the poverty level of each entrepreneur when they enter the portfolio and (2) as a tool to measure progress out of poverty. During the initial assessment, Ruma uses the PPI to determine the household poverty level of clients, as well as their level of education, occupation, income level and assets.

Ruma collects the PPI annually, which allows it to build a baseline poverty score that helps them track the impact of the business and capture additional data that helps them segment and target specific clientele.

Prior to this data analytics collaboration, Ruma generated two types of reports with its data. The first was an institution-wide report that tracked the company’s daily earnings. The second report specifically tracked the number of daily transactions made by each entrepreneur. In addition, Ruma used the PPI data to track the overall poverty levels of their portfolio. However, these reports did not enable Ruma to maximize its unique opportunity to track its entrepreneurs by geographic location or to capture entrepreneur activity (customer uptake, etc). Importantly, the

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**What is the PPI?**
The Progress out of Poverty Index® (PPI®) is a simple and accurate tool that measures poverty levels of groups and individuals. Using the PPI, pro-poor organizations focused on understanding their clients’ needs, which programs are most effective, how quickly clients leave poverty, and what helps them to move out.
reports did not help Ruma meet their social bottom line. When further developed, the information collected by Ruma would position it to conduct analysis on the causes of success or failure of each entrepreneur’s business. Understanding the entrepreneur’s challenges would be crucial for Ruma to reach those who have a 15 percent likelihood of being very poor.

**Analytical Framework**

At the time of the collaboration, Ruma achieved a 69 percent likelihood of serving the poor and 12 percent likelihood of serving the poorest. This was below their social bottom line goals of 80 percent poor households and 15 percent of the poorest households. While the information Ruma needed to improve its outreach existed, it needed to enhance its analysis and make better use of that data. Grameen Foundation wanted to create a process through which this information could be effectively funneled to ensure management and operational decisions helped Ruma increase poverty outreach.

The main strategic and operational objectives of this collaboration were:

- To enable strategic use of information to achieve the double bottom line mission
- To improve Ruma’s use of existing data in order to make better informed management decisions
- To create reporting structures at high and lower management levels to help achieve ongoing targets
- To understand segment characteristics of Ruma entrepreneurs
- To understand trends to make business processes as efficient as possible
- To assess the viability of microfranchising (especially Ruma’s product) as an income-generating strategy for the very poor

Ultimately, Ruma wanted to build a sustainable system to ensure the rich data it was collecting would inform management and operational decisions. The subsequent reporting structure, which included an array of reports, would be critical to sustaining long-term targets. Ideally, the reporting structure needed to clearly segment Ruma clientele, for instance, by geography and household income, to meet these broader goals.

Another important goal was to establish that microfranchising could effectively enable the poor to grow by supplementing their income. While it is true that creating a business idea is difficult, providing an opportunity in a box might give a poor entrepreneur enough leverage to be successful. Tracking the successes and failures among its entrepreneurs, Ruma would be able to establish where their product failed and where the entrepreneur simply needed more attention.
Grameen Foundation and Ruma took many steps, described below, to create a reporting structure that could facilitate the goals. The process is detailed in Appendix I. The following is a high-level view of the process.

**Steps in the Analytical Framework**

Grameen Foundation spoke with various stakeholders within Ruma to establish how each was currently using data and how they might benefit from the available data in different forms. Since Ruma did not have the capacity to use its data to the fullest extent, Grameen Foundation assessed the various ways Ruma utilized the data and then facilitated the transition to a reporting structure that gave Ruma’s management increased control over its strategic and operational goals. The reports needed to enhance management’s decision making while transforming the data into information to meet the needs of the entrepreneurs. Grameen Foundation helped Ruma analyze the trends and patterns emerging from the data to improve their management decision-making.

### Findings from Data Analysis

Looking at the scores from the Ruma PPI collection, we begin to see a picture of the typical Ruma entrepreneur. While it is impossible to give PPI levels an exact dollar per day estimate as they vary from country to country, the PPI questions provide a more specific understanding of the level of poverty among Ruma’s entrepreneurs. Ruma’s data covered 1,550 entrepreneurs.
from August 2009 until February 2010, the first six months of Ruma’s establishment. About 85 percent of the entrepreneurs fell into the PPI range of 35-70\(^4\). The average household size was seven people for all 1,550 entrepreneurs. Almost half the households (635) said that no one in that household held a job. Almost 40 percent of households lived in homes with dirt floors and bamboo ceilings. The other 60 percent of households had floors other than soil and ceilings made of concrete, gypsum (a soft calcium-based mineral also known as plaster of Paris), or wood. About half of the 1,550 entrepreneurs got their water from a local well, spring or river while the other half had indoor plumbing. A majority, 63 percent, of them did not have access to a refrigerator or motorcycle, while the same amount did have access to a television.

What emerges from these data is a broad picture of the household characteristics (big families, low employment and poor housing materials) of Ruma’s entrepreneurs. Grameen Foundation and Ruma utilized this information to make tangible changes in Ruma’s business processes and improve its ability to serve its entrepreneurs better while strengthening its own business, as shown in the below examples.

1. **PPI level does not predict business activity level**

**Hypothesis:** Ruma assumed that the poorest entrepreneurs would struggle to build a strong customer base and make sales, and have the highest dropout rate. This assumption was based on the fact that the poor tend to have smaller networks, be less knowledgeable about marketing their business and thus would be more likely to leave the business in frustration. While Ruma provided marketing material, such as banners, in its business box to address some of this concern, this assumption meant that it felt there was an inherent tension between meeting both its financial and social goals. By assuming that activity level was related to PPI level, a natural incentive emerged to grow their business through working with more entrepreneurs with higher PPI levels and with fewer entrepreneurs with low PPI levels.

**Findings:** When Ruma and Grameen Foundation examined the data, this assumption turned out not to be true. The data found no correlation between PPI level and activity level, meaning that poverty level had nothing to do with how many customers an entrepreneur acquired. The poorest entrepreneurs’ businesses were just as active as the less poor entrepreneurs’.

\(^4\) Each PPI is scored from 0-100. The PPI score falls into a range that determines the percentage likelihood that a household is above or below a poverty line.
Implications: This finding informed Ruma management that attracting more entrepreneurs from the poorest segment would not necessarily have a negative impact on its revenue model – and thus, that the assumed financial and social tension did not exist. This allowed Ruma to identify a strategy to recruit more entrepreneurs falling into the very poor category, thus more effectively achieving its social mission. It also illustrates the versatility of its product – no matter the poverty level of the person selling them, there is a large market for cell phone minutes.

2. The size of the initial deposit is related to the dropout rate

Hypothesis: It was assumed that entrepreneurs who started the business with higher deposits would be less likely to drop out due to higher revenue generation potential in the initial months of the business.

Findings: While poverty level isn’t an indicator of success, the initial deposit is. One of the more interesting findings was a link between the size of the initial deposit and the success rate of the entrepreneur. The average deposit is approximately $12. Those entrepreneurs who deposited approximately $22 tended to stay with the business twice as long as those who deposited less than approximately $11. While it is easy to assume that the poorest entrepreneurs would be among the latter group, in fact, deposit size varied among all PPI levels. The median deposit size for PPI levels 30 through 50 and above was approximately $11 (100,000 rupiah). In fact, even the maximum deposit across the same PPI levels did not vary extensively. The maximum deposit
among entrepreneurs at the 30-34 PPI level was approximately $109 (974,000 rupiah) and the maximum for entrepreneurs at the 50-54 PPI level was approximately $118 (1,050,000 rupiah). The entrepreneurs that deposit a smaller amount tended to dropout before their first top-up, or refill of minutes.

**Implications:** Now that Ruma is able to identify an optimum initial deposit size that would increase the likelihood of entrepreneurs remaining in the business, they can now focus efforts on enabling new entrepreneurs to start with this amount. This could be done through a variety of strategies including better information dissemination, trust building or providing start-up financing for those who cannot afford to start at this level.

Ultimately, it is important for Ruma to recognize that it is risky for a poor person to invest money in a business that they might not trust yet. Certainly, Ruma officers can wear official badges, leverage the well-known brand of their telecom operator partner, have official flyers with information and testimonials from current entrepreneurs, and bring their business-in-a-box to demonstrate it to potential entrepreneurs. But for the very poor, making these deposits is risky; they are parting with a sum of money that, due to their unpredictable income, they could need the following day or week. The trust between the potential entrepreneur and Ruma has not yet been established so the entrepreneur may not want to invest a large sum of money. Ruma needs to find a way to establish trust quickly in order to encourage potential entrepreneurs to deposit more. Another explanation for the initial deposit size and longevity of the entrepreneur is the obvious
fact that the more quickly airtime is sold, the more quickly money is made. If the entrepreneur is unable to sell airtime or didn’t sell minutes quickly enough, then they are more likely to dropout, especially if they do not have another business to help sustain the dip in their income.

3. **The first two weeks of the business are the most critical**
Ruma was interested in understanding the different factors that affected dropout rates.

**Findings:** One fact Ruma wasn’t aware of was how critical the first two weeks were for the entrepreneurs. According to the data, half of all entrepreneurs dropped out in their first two weeks. In fact, more than 25 percent of those who dropped out did so in the first six days. Median transaction amounts in the first two weeks were more than double for active entrepreneurs than for less active entrepreneurs. Entrepreneurs that dropped out in the first two weeks made 42 percent fewer transactions and 61 percent less income than the active entrepreneurs. To be successful, an entrepreneur needed to make 25 transactions in the first two weeks, or less than two a day. If the entrepreneur had more than two transactions per day, they were less likely to drop out. In order to remain with Ruma, the entrepreneur must see that their business is growing.

**Implications:** This illustrates the fact that the more quickly airtime is sold, the less likely the entrepreneurs are to drop out. As previously discussed, one reason for the short time horizon is the relationship between initial deposit size and longevity. Knowing that the first two weeks are so critical, Ruma could then set operating policies that target their newest entrepreneurs. Running regular reports will give Ruma time to see which of its new entrepreneurs are not selling enough minutes in the first week and provide them with extra help to ensure survival. This support could be in the form of daily visits from field officers, business and marketing training, business incentives such as free minutes, or other types of educational programs.
4. **Level of activity in the first month must be maintained to avoid dropouts**

**Findings:** The final point follows logically from the previous three: the level of activity in the first month is directly related to the longevity of the entrepreneur. The entrepreneurs who stay past the first month have transaction activity that is 25 percent higher than that of those who dropped out in the first month. In addition, high numbers of repeat customers lead to increased transactions.

**Implications:** For Ruma, this is a key finding for their business operations – encouraging entrepreneurs to cultivate relationships with their customers will increase their activity and increase the likelihood of success past the first month. Ruma could also give business incentives for entrepreneurs to pass along to their customers – for example, extra minutes for a repeat customer. A separate action for Ruma management is to track individual entrepreneur performances against averages in the first month, giving Ruma a clear picture of who is struggling and where there might be an opportunity for intervention.

**Lessons Learned**

The results of Ruma’s data analysis confirm that microfranchising can work both for the poor and the poorest households. The work has also provided key insights into where Ruma can improve upon past successes and areas in which they can expand. By analyzing the data, Ruma discovered that they could target the very poor and that very poor entrepreneurs could succeed. By segmenting the entrepreneurs by poverty level, Ruma will now be able to target them to help them achieve their social mission, and, more broadly, better support all of its entrepreneurs, while reducing dropout rates.
The high dropout rate is part of Ruma’s business and cuts across all poverty levels. Overall, Ruma has a 50 percent dropout rate. Of the 50 percent that stay, approximately 18 percent drop out and then come back (dropping out is defined as over 30 days with no transaction). While this rate of turnover is part of the business, cultivating successful entrepreneurs is an integral part of reaching its social mission and reaching the very poor in Indonesia. Entrepreneurs drop out for a wide variety of reasons, as illustrated above.

Another explanation for the high dropout rate is poaching from other mobile phone companies. In Indonesia, there is fierce competition among telecommunications companies. Like much of the developing world, Indonesian cell phones are not sold as part of bundled contracts, as is done in the U.S. Individuals buy their phones and their airtime separately. Until Indonesians have widespread access to credit services, including credit cards, which facilitate the easy payment of airtime and mobile technology, the competition among those selling airtime will continue. Ruma is unique among companies selling airtime because, unlike most others, its target market for resellers of airtime is the poor and very poor. Included in its product are marketing materials and training to ensure the success of their entrepreneurs. But these services, which its competitors do not provide, come at high cost. Instead, they poach Ruma entrepreneurs with the lure of higher profits, which they can offer due to their lower operating costs. These entrepreneurs then take their marketing material and training with them to a different company. As the data shows, creating customer loyalty by providing dedicated assistance and training in the first two weeks is Ruma’s best chance of decreasing its dropout rate.

In addition to the important findings from the data that will help Ruma go further toward serving the poor, Grameen Foundation learned from the challenges and unexpected outcomes of this process. Below are some of the key lessons learned:

1. **Partner organizations must have back office capabilities**
   It is essential to have sufficient capacity in any organization’s management information system (MIS). While Grameen Foundation created a data analysis process for Ruma, it has not been able to increase its MIS capacity to support it. Partnering organizations implementing a data analytics process must ensure that there is an actionable and prioritized set of steps for management. These steps must include sensitivity to the business priorities and if the management has the capabilities to execute, their ability to take on additional targets, and the areas where external help is needed to follow through on the action plan. Costs must be taken into account and the process needs to be modified to fit the short-term and long-term budget of any organization.
2. **Plans and reality aren't always in sync**

During the planning stages of this collaboration, both Ruma and Grameen Foundation expected Ruma to have the necessary MIS (management information system) capabilities to implement the reporting structure when Grameen Foundation completed its work. Up until this point, Ruma had been using software that was not built to run such large reports. This software made it arduous and time consuming to run the reports. The expectation was that Ruma’s MIS would have acquired a new data system and that their management would be able to focus efforts on refining decision processes in response to the findings, by the time the reports were ready to be implemented. Unfortunately, the plans did not sync with reality. As Grameen Foundation and Ruma completed developing the reports, it became clear that Ruma was still technologically unable to run or interpret them regularly and management focus was on core operational issues. As Ruma grows, fundraises and expands, it will begin to reap the benefits of the new reporting structure.

3. **Customer segmentation is crucial to long-term growth**

Segmentation helped Ruma answer its primary questions:

1. How could it increase its business and decrease its dropout rate?
2. Could it run a successful business that focused on the very poor?
3. How could it maximize its data to better inform its social and financial mission?

By developing products that better meet the needs of the specific customer segments, Ruma will be able to deliver to its target markets, discover and correct issues that constrain the entrepreneurs from establishing or growing their businesses, and enable the organization's resources to focus on particular activities that will help them meet their social bottom line.

4. **Make the return on investment clear from the start**

Even if Ruma had the back office capabilities to immediately implement the data analytics reporting process, its management would still need to see how the long-term benefits outweighed the short-term costs. Certainly, investing technology, staff and time in creating a new business process is costly in the short-term. However, the ultimate goals are to meet the needs of the entrepreneurs and the social bottom line and to reach as many of the poor as possible. These goals should not compete with meeting the financial bottom line. It is this coordination that needs to happen at a management level before a new reporting structure can be implemented.
5. **Always test assumptions about the poorest**

General assumptions about the potential revenue from the poorest clients can be misleading. Ruma assumed its poorest clients were also its least profitable. However, the data proved this assumption false. The poorest were as capable of operating a business and generating revenue as the poor, but the product needed to be delivered in a different manner (with more training and with liquidity financing) in order for more of the poorest to meet their potential. Before targeting a product or service to a segment of the population, it is important to understand their capabilities, strengths and weaknesses.

**Concluding Remarks**

Using data effectively has important implications for a business that wishes to serve its clients successfully, especially a social business with double-bottom line goals of maximizing opportunities and impact on clients. Mobile technology-based businesses provide an important opportunity as they make client level data, easier to gather than ever before. With more information available, the more important it becomes to gather, analyze, and respond to the data in a way that suits the needs of the clients. This case study provides one example of how useful data analytics can be, and how it ultimately leads to a better organization and a better product.

The fundamental goal of any service focused on the poor is to help the poor move out of poverty. To achieve this goal, the products and services must respond to the realities they face: volatile incomes, vulnerable livelihoods, and income constraints. These issues manifest themselves in many ways and social and financial data that an institution gathers will help them create better services for the poor if a robust analytical process can be developed. Institutions that seek to effectively meet their social and financial bottom lines must set up a data analytics process and clear reporting mechanisms to serve its entrepreneurs better. Applying its new reporting structure to the daily business operations, Ruma is now more nimble and responsive to the needs of its entrepreneurs and is better positioned to meet, and ultimately surpass, its social and financial double-bottom line.
Appendix I - Definitions

**Period under analysis:** August 2009 through February 2010

**Total number of cases:** 1550 cases (entrepreneurs) under analysis

**Currency:** IDR Indonesian Rupiah

**Top-up:** The field officer visits each entrepreneur on a weekly basis. When the entrepreneur needs to add minutes to their account, the field officer collects the currency and then uploads the credit onto the Ruma server. The entrepreneur can instantly begin selling minutes.

**Initial Deposits Categories (in IDR):** Less than 100,000; 100,000 to 199,999; and 200,000 and up

**Tenure of the entrepreneur:** Calculated as the time between the first and last transaction

**Dropout:** Defined by the entrepreneur’s inactivity (30+ consecutive days without any transaction)

**Dropout lifetime:** Calculated as time between first and last transaction

**Repeat customer:** A customer of the entrepreneur who returns to that entrepreneur to purchase additional minutes.