

Rajkumar Venkatesan • Paul Farris • Ronald T. Wilcox



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# CUTTING-EDGE MARKETING ANALYTICS

Real World Cases and Data Sets  
for Hands On Learning

## Praise for *Cutting-Edge Marketing Analytics*

“*Cutting-Edge Marketing Analytics* presents managers with an excellent roadmap for marketing resource allocation. Based on my experience advising firms, I believe that the material presented in the book strikes the right balance of rigorous analysis and strategic relevance. Case studies presented in the book provide the necessary context for the application of statistical tools and allow managers and MBA students to learn the challenges in implementing analytics.”

—**V. Kumar**, Executive Director, Center for Excellence in Brand and Customer Management,  
and Director of the Ph.D. Program in Marketing, J. Mack Robinson College of Business,  
Georgia State University

“This is exactly the book I have been looking for to teach customer analytics! It will fill an important gap in the market as it teaches practical approaches to gain customer insights based on big data that is increasingly available to organizations.”

—**Harald J. van Heerde**, MSc, Ph.D., Research Professor of Marketing, Massey University, School of  
Communication, Journalism, and Marketing

“Retail’s transformation is still in the early innings. The Internet and mobile have combined to create unprecedented insight into consumer behavior and customer preferences unbound by time or space. Mastery of marketing and customer analytics has become ‘table stakes’ for understanding and pleasing the customer—job one in retail. Practitioners looking for real world applications with a balanced overview of the underlying theory would be well served by reading this book.”

—**Matt Kaness**, Chief Strategy Officer, Urban Outfitters

“I strongly recommend *Cutting-Edge Marketing Analytics* for managers seeking to build an analytics-driven marketing function. In this book, the authors have struck the right balance of analytical sophistication and managerial relevance. The case studies provide a good opportunity for applying the analytics techniques to real problems.”

—**Nino Ninov**, Vice President, Strategic Research and Analysis, Rosetta Stone

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# Cutting-Edge Marketing Analytics

Real World Cases and Data Sets for  
Hands On Learning

**Rajkumar Venkatesan**

Bank of America Research Professor of Business Administration,  
Darden Graduate School of Business Administration,  
University of Virginia

**Paul Farris**

Landmark Communications Professor of Business Administration,  
Darden Graduate School of Business Administration,  
University of Virginia

**Ronald T. Wilcox**

Ethyl Corporation Professor of Business Administration,  
Darden Graduate School of Business Administration,  
University of Virginia

Associate Publisher: Amy Neidlinger  
Executive Editor: Jeanne Glasser Levine  
Operations Specialist: Jodi Kemper  
Cover Designer: Alan Clements  
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Indexer: Tim Wright  
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Manufacturing Buyer: Dan Uhrig

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*We dedicate this book to our students for being  
a constant source of inspiration.*

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# Foreword

My first boss once told me, “Data is your friend,” meaning that good data could help a brand manager support his or her recommendations and help get things done.

Thirty plus years later, data is more than friendly—it’s cool. *Moneyball* concepts are applied beyond baseball. Nate Silver’s analyses inform everything from presidential elections to weather forecasting. And powered by ever bigger data sets and the digitization of everything, nowhere is analytics more important than in marketing. For almost all marketers, analytics has become a strategic imperative: not whether, but what and how?

It is in this data-driven environment that we should ask: What do business school students really need to know about marketing analytics? And how should they learn it?

Years removed from the MBA classroom, I have some ideas on this topic. I’ve worked in global marketing companies spanning everything from FMCG to financial services to advertising analytics. To put it bluntly, I’ve pretty much seen it all—what’s useful, what’s not, and all of the various methodologies and metrics that go with them.

Professors Raj Venkatesan, Paul Farris, and Ron Wilcox’s gem of a new book, *Cutting-Edge Marketing Analytics*, finds just the right balance. It covers virtually all of the most important research and analytics methods but does so with just the right amount of detail and depth. They put their years of experience in teaching, research, and consulting to good use here. They hit the right analytic topics—the ones that add real value in the real world—with enough detail to move students beyond the conceptual to the practical.

Importantly, *Cutting-Edge Marketing Analytics* aims to do several things that not enough MBA texts should. First, it explains in clear and cogent terms each of the major analytical tools that are critical to the marketer. Second, the real world case studies provide realistic business situations and opportunities for students to learn by doing. Third, the book has a strong decision focus: not just “what have we learned?” but “what should we do?” Marketing analytics is shown to be exactly what it should be: a strategic and tactically important tool in the hands of the action-oriented marketing decision maker.

Students who use this book will enter the business world with a much greater appreciation for the power of marketing analytics—not just what tools to use when, but greater insight into how these insights are used to make practical real world decisions. As my old boss would say, data will be their friend, and with *Cutting-Edge Marketing Analytics*, this friendship should translate into real world insights, decisions, and, ultimately, business success.

—**Randall Beard**, Global Head of Advertiser Solutions, Nielsen



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We hope this book takes a step toward bringing advanced analytics to the marketing process. We owe thanks to several people who have made this endeavor possible.

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# About the Authors

## **Rajkumar Venkatesan**

Bank of America Research Professor of Business Administration Rajkumar Venkatesan teaches “Marketing Strategy” and “Big Data in Marketing” in the MBA, Executive MBA, and Global Executive MBA programs at Darden. Venkatesan’s research focuses on developing customer-centric marketing strategies that provide measurable financial results. Venkatesan’s research has appeared in several journals, including the *Harvard Business Review*, *Journal of Marketing*, *Journal of Marketing Research*, *Marketing Science*, *Journal of Retailing*, *Decision Support Systems*, *Marketing Letters*, and *Journal of Service Research*. He serves as an Area Editor of the *Journal of Marketing*. Many of his research publications have been recognized with prestigious awards, such as the Don Lehmann Award and the MSI Alden G. Clayton Award. He has been selected as one of the top 20 rising young scholars in marketing by the Marketing Science Institute and as one of the top 40 professors of business administration under 40 by *Poets and Quants* magazine.

Professor Venkatesan has consulted and taught in executive education programs on marketing analytics for global firms in the technology, retailing, media, consumer packaged goods, and pharmaceutical industries. For his work with IBM, he was recognized as one of the three finalists worldwide for the Informs Practice Prize Competition.

Before coming to Darden, Venkatesan taught database marketing, marketing research, and quantitative marketing models to graduate students at the University of Connecticut. There, he was the recipient of the MBA Teacher of the Year Award. He received his PhD in marketing from the University of Houston and his BE in computer engineering from the University of Madras.

## **Paul Farris**

Landmark Communications Professor Paul Farris taught at the Harvard Business School before his appointment at the University of Virginia Darden School of Business Administration. He has worked in marketing management for UNILEVER, Germany, and in account management for the LINTAS advertising agency.

Farris's general research focus is in the area of marketing productivity and measurement. His work has been published in 10 books and more than 70 articles, appearing in professional journals and publications such as the *Wall Street Journal*, *Harvard Business Review*, *Journal of Marketing*, *Marketing Science*, *Management Science*, *Decision Sciences*, *Journal of Interactive Marketing*, *Journal of Advertising Research*, *Journal of Retailing*, *Journal of the Academy of Marketing Science*, and the *Sloan Management Review*. Farris has coauthored award-winning articles on retailer power, marketing strategy, and advertising testing. He has served as an academic trustee of the Marketing Science Institute and is a current or past member of the editorial boards for the *Journal of Marketing*, the *Journal of Retailing*, the *International Journal of Advertising*, *Marketing—Journal of Research and Management*, and the *Journal of Advertising Research*. His current research is on channel conflict and building coherent systems of marketing metrics. His coauthored book, *Marketing Metrics: 50+ Metrics Every Executive Should Master*, was selected by *Strategy + Business* as the 2006 Marketing Book of the Year.

Farris has consulted and taught executive education programs for many international companies. He has served on the boards of retailers, manufacturers, and software companies. Currently, he is on the board of directors of Sto Corp., a building materials company. Farris has also provided expert testimony in a number of marketing-related legal cases.

### **Ronald T. Wilcox**

Ronald T. Wilcox, Ethyl Corporation Professor of Business Administration and Associate Dean of the MBA for Executives Program at the University of Virginia Darden School of Business Administration, teaches the required Marketing course in the MBA and Executive MBA programs as well as the elective "Pricing." He also teaches in numerous Executive Education programs.

His research, focused on the marketing of financial services and its interface with public policy, has appeared in leading marketing and finance journals such as the *Journal of Marketing Research*, *Management Science*, *Marketing Science*, and the *Journal of Business*. His research and writing have also appeared in the *Wall Street Journal*, *Washington Post*, *BusinessWeek*, *Fortune*, *Forbes*, and the *Weekly Standard*. He is a frequent contributor to *Forbes*. He is the author of the book *Whatever Happened*

*to Thrift? Why Americans Don't Save and What to Do About It*, published by Yale University Press.

Wilcox joined the Darden faculty in 2001. He was formerly an assistant professor at the Carnegie Mellon Graduate School of Industrial Administration and an economist for the U.S. Securities and Exchange Commission.

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# Introduction

Your friend has sent you on a treasure hunt. She has given you clues about how to find the treasure, but you'll be left to draw on your own treasure-hunting skills to put the clues to good use.

Who is this friend of yours? It's your boss, the owner of the company for which you are the marketing manager. What is the treasure you seek? It's a business advantage that will allow your company to allocate its marketing dollars optimally and come out ahead of the competition. Those clues? That's data your company has gathered about the past behavior of customers. And what are your treasure-hunting skills? They are the tools you will find in this book—the techniques needed to analyze past marketing performance and discover unknowns that will allow you to predict the future.

The broad view of how this is done is the discipline of marketing analytics—the process of creating models helpful in understanding consumer behaviors. It is the systematic use of empirical data about customers, companies, their competition and collaborators, and industry context to inform strategic marketing decisions. The function of marketing analytics can range from reports on regular marketing activities—such as paid search advertising click-through rates—to allocating marketing resources to maximize future performance of a company's digital presence.

You have a lot to learn, and there's no time to waste. You've got treasure to find.

## Why Marketing Analytics?

Dunia Finance LLC is a mid-sized financial services firm that operates in a unique financial market. Unlike similar institutions in the Western world, the Abu Dhabi-based company does not have the benefit of a reliable credit bureau to provide information on consumers' risk scores. Still, the company believes such scores are necessary to help it quantify decisions on product offerings. For example, risk scores indicate the interest rate Dunia should charge for a personal loan, as well as whether

a personal loan customer is a good target for cross-selling credit cards. So instead of operating in the dark, the company has developed an internal system of tracking customer behavior and stores its data in a data warehouse. (For more information on Dunia Finance LLC, see Chapter 2, “Dunia Finance LLC.”)<sup>1</sup>

Dunia is not the only company that places a high value on customer data these days. As technology has allowed firms to link customer behaviors more closely with the drivers behind those behaviors, an increasing number of companies are becoming comfortable using marketing analytics to gain a business advantage.

A 2013 report in *Forbes* magazine covered a survey of 211 senior marketers that showed that most large companies have had success using big data to understand customer behaviors. More than half (60%) of organizations that used big data a majority of the time reportedly exceeded their goals, whereas companies that used such data only occasionally reported significantly less success. Almost three quarters of companies that used big data a majority of the time were able to understand the effects of multichannel campaigns, and 70% of that group of companies said they were able to target their marketing efforts optimally.

Consider the effect of advertising. In the past, when television and print advertisements were the predominant form of pushing a firm’s message, the relationship between the ads and customers’ willingness to purchase the item advertised was not entirely clear. The firm rarely knew whether a customer bought the item because he or she had seen a television advertisement or because he or she had heard about it through some other channel. Collecting data about the success of the advertisements was indeed difficult.

With the advent of e-mail and web-based advertising, all that has changed. Firms are now able to closely connect their inputs (for example, ad placements) and outputs (for example, whether the target of the advertisement made a purchase). This produces a large amount of behavioral data. This data, in turn, allows companies to model existing customer behaviors and predict future behaviors more precisely. (It is important, however, to note that with big data comes a big problem—namely, the risk of false positives, or seeing patterns among chance events.)<sup>2</sup>

To avoid making mistakes with big data, business intuition is critical. Intuition allows the savvy marketing manager to select the correct inputs and outputs for a model. Analytics allows a company to take this traditional static dashboard of metrics or measurables and turn it into a predictive and dynamic entity.

Marketing analytics is not a new field. It simply allows companies to move beyond reports about what is happening in their businesses—and alerts about what needs to be done in response—to actually understand why something is happening based on

regressions, experiments, testing, prediction, and optimization.<sup>3</sup> What is new is how skilled companies have become at using marketing analytics. The availability of granular customer data has transformed firms' marketing-spending decisions. Sophisticated econometrics combined with rich customer and marketing-mix data allow firms to bring science into a field that has traditionally relied on managers' intuition.<sup>4</sup>

## What Is in This Book?

This book functions as a how-to guide on practical and sensible marketing analytics. It focuses on the application of analytics for strategic decision making in marketing and presents analytics as the engine that provides a forward-looking and predictive perspective for marketing dashboards. The emphasis is on connecting marketing inputs to customer behavior and then using the predictive models (developed using historic information, experiments, or heuristics) to develop forward-looking, what-if scenarios.

After reading this book, you will be able to (1) understand the importance of marketing analytics for forward-looking and systematic allocation of marketing resources; (2) know how to use analytics to develop predictive marketing dashboards for an organization; (3) understand the biases inherent to analytics that derive from secondary data, the cost-benefit trade-offs in analytics, and the balance between analysis and intuition; and (4) learn how to conduct data analysis through linear regression, logistic regression, or cluster analysis to address strategic marketing challenges.

This text places a big emphasis on practical guidance and striking the right balance between technical sophistication and managerial relevance. This is accomplished by real-life cases and real-life data connected to the cases that allow you to take a hands-on approach to the analysis. The book emphasizes all three aspects of marketing analytics: statistical analysis, experiments, and managerial intuition. The website <http://dmanalytics.org> provides videos on implementing the analytics techniques discussed in this book using commonly available statistical analysis software.

This book emphasizes that (1) analytics needs to support broader strategy; (2) inferences are inherently biased by available data, information, and techniques; (3) managers constantly make cost-benefit trade-offs in analytics; and (4) not every strategic question is answered by analytics—smart managers know to balance analysis and intuition.



## Organization of the Book

This book is a reflection of the authors' experience of teaching graduate-level business students and executives, insights from academic research, and exposure to the practical aspects of marketing analytics through consulting engagements. The topics covered in this book represent the authors' impressions of the analytics techniques that are widely used in practice. This book is not intended to be an exhaustive review of marketing analytics techniques, but instead is intended to provide you exposure to how marketing analytics relates to strategic business issues.

Resource allocation provides a strategic and unifying framework for the wide-ranging purposes of marketing analytics within an organization; we therefore build marketing analytics around the resource-allocation framework. You can view analytics as the engine that provides a forward-looking perspective for marketing dashboards. The chapters in this book are organized around primary marketing functions. Section II, "Product Analytics," starts with analytics that relate to product management decisions, such as market segmentation and pricing. Section III, "Marketing-Mix Analytics," then moves to media or marketing-mix management decisions where the focus is on obtaining reliable estimates for price and advertising elasticity. Customer lifetime value is then presented as an organizing framework for customer analytics in Section IV, "Customer Analytics." Here you learn about tools to predict customer retention and profits. The emerging and popular field of analytics related to digital marketing is the focus of Section V, "Digital Analytics." It introduces design of experiments, search engine marketing, and mobile marketing. The book concludes by revisiting resource allocation and ties the different analytics tools with a case study that deals with allocating marketing resources for cross-selling products. Section VI, "Resource Allocation Revisited," then presents a forward-looking perspective on marketing analytics and provides an action plan for implementing marketing analytics in organizations and developing a learning organization that systematically includes insights gained from analytics in their strategic decisions.

## Endnotes

1. Gerry Yemen, Rajkumar Venkatesan, and Samuel E. Bodily, "Dunia Finance LLC (A)," UVA-M-0842 (Charlottesville, VA: Darden Business Publishing, 2012).
2. Wes Nichols, "Advertising Analytics 2.0," *Harvard Business Review* (March 2013).
3. Thomas Davenport, *Competing on Analytics: The New Science of Winning* (Boston, MA: Harvard Business School Press, 2007).
4. Nichols.

# Section I

## Resource Allocation

In this section, Chapter 1, “A Resource-Allocation Perspective for Marketing Analytics,” presents the resource-allocation framework that ties together the various marketing analytics techniques to a firm’s strategic decisions. Marketing managers are often faced with the decision of the level of investment in different marketing activities. This chapter presents a framework for making the resource-allocation process more data-driven. Chapter 2, “Dunia Finance LLC,” presents the case study of Dunia Finance LLC, a midsized financial services firm in the United Arab Emirates (UAE). The case study presents Dunia’s journey toward building a data-driven organization where marketing analytics is a critical contributor to its customer relationship efforts. Near the end of this book in Chapter 21, “Dunia Finance LLC Revisited,” you’ll revisit Dunia Finance to develop a cross-sell strategy that is informed by the analysis of customer transaction data.

# 1

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## A Resource-Allocation Perspective for Marketing Analytics

### **Introduction**

Dunia Finance LLC, the midsize financial services firm in the United Arab Emirates (UAE), gains most of its customers through door-to-door sales. This makes the cost of obtaining new customers high. So the company needed to look at new ways of allocating its resources to improve its results. It decided to focus on cross-selling to existing customers to increase their customer lifetime value (CLV).

It was up to Dunia to apply a resource-allocation framework to pinpoint the best groups of customers for cross-selling. Any customer who had opted out of promotional offers was excluded. Customers close to reaching their credit card limit would be targeted for a loan. For those who had personal loans, Dunia could offer solutions based on loan type for problems the customers didn't even recognize they had.

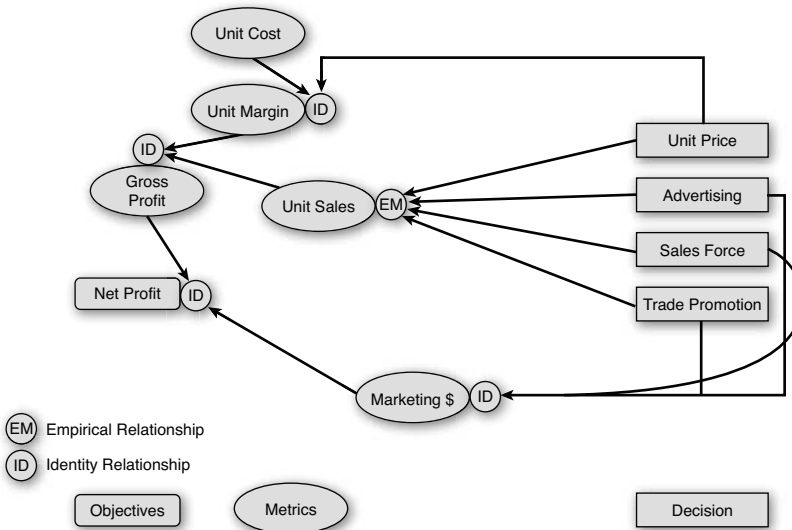
Resource allocation is the endgame of analytics for any company. Using marketing analytics properly, any firm (not just financial services providers such as Dunia) should be able to determine the optimal level of spending it should make on each of its marketing channels to maximize success.

### **The Resource-Allocation Framework**

Resource allocation is a four-step process. The first step is to determine the objective function. What is the metric the company wants to set as its goal for optimization? This may be one of any number of methods of assessing business success, including conversion rates to sales, incremental margins and profits, CLV, near-term sales lift,

new buyers, repeat sales, market share, retention rates, cross-sell rates, future growth potential, balance sheet equity, and business valuation.

The second step is to connect the marketing inputs of a firm to the objective of resource allocation. Business managers' intuition is of paramount importance in this step, as it allows the marketer to correctly decompose a metric. For example, if a company is examining gross profits, what are the attributes of the business that contribute to those profits, and are the relationships between the various components empirical or computational (such as identity relationships)? Figure 1-1 shows one way in which gross profits might be broken down. Sales is a function of price, advertising, sales force, and trade promotions. Because gross profits minus marketing yields net profits, manipulating marketing channels can improve sales, but the different channels are also cost centers.



**Figure 1-1** A system-of-metrics framework for net profits

Source: Created by case writer and adapted from *Marketing Metrics*.<sup>1</sup>

Once the marketing inputs are mapped to the objective, as shown in Figure 1-1, the marketing manager must determine the relationships that are accounting identities versus those that are empirical. An accounting identity can be computed without any unknowns. For example, in Figure 1-1, net profit is gross profit minus marketing costs. If both gross profit and marketing costs are known, net profit can be computed easily. On the other hand, the relationship between marketing costs and unit sales is more complex and driven by numerous unknowns. You cannot directly sum

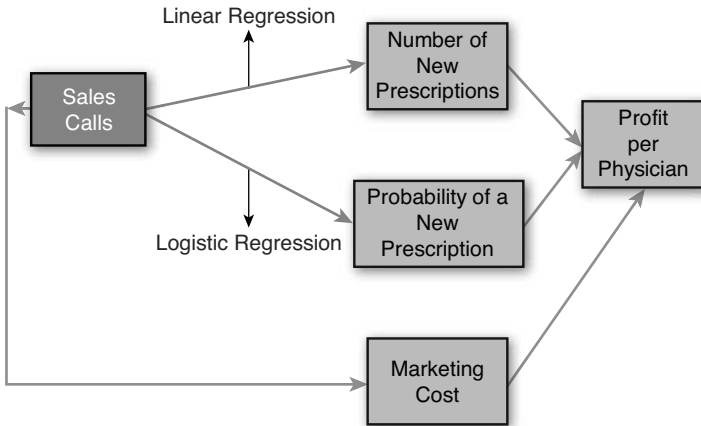
the investments in marketing (for example, price, advertising, sales force, and trade promotion) to obtain sales. The relationship is termed *empirical* because the manager must analyze historical data to develop a function that transforms the marketing inputs into sales (for example, a function that describes the relationship between price and sales). The transformation function ideally develops a weight that translates a product's price into sales. These weights do not provide a perfect transformation, but rather a best guess based on historical data, wherein several factors in addition to price also affect sales. This is the main difference between an identity relationship and an empirical relationship: Empirical implies a best guess or prediction; identities are certain.

The third step in the resource-allocation process is to estimate the best weights for the empirical relationships identified in the second step. A common method for identifying these weights is to build an econometric (regression) model. Which marketing inputs of interest (for example, price, advertising, sales calls) should be considered as having an effect on the dependent variable? Once this regression model is obtained, the marketing manager can predict the precise shape of the objective function. This is the mathematical model that describes the relationship between the independent variables (for example, price, advertising, sales calls) and the dependent variable (for example, market share, profits, CLV).

In the last step of the resource-allocation process, a firm can reverse the process to identify the optimal value of the marketing inputs to maximize the objective function. This gives a detailed picture of what the company's precise marketing spend should be on each channel it uses to market its product.

## **An Illustration of the Resource-Allocation Framework**

Consider a pharmaceutical company in which the marketing department wants to determine the effects of sales calls on the profits it makes per customer (in this example, physicians are customers). In Figure 1-2, profits are broken down into number of new prescriptions and probability of new prescriptions. Both can be represented using a linear or logistic regression as a function of sales calls.



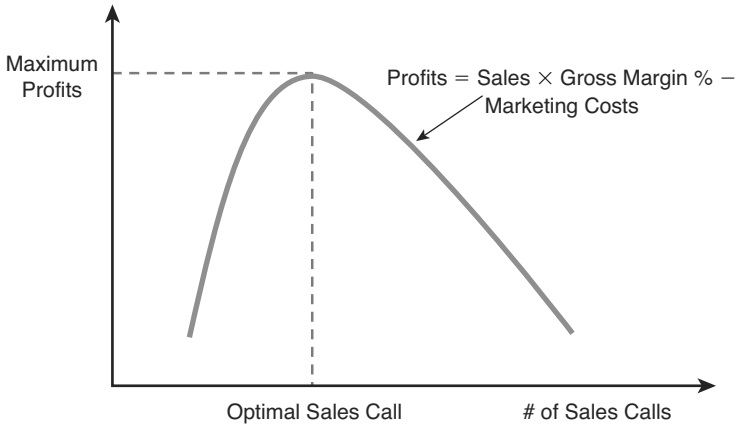
**Figure 1-2** An example of the system of metrics in the pharmaceutical industry

Source: Created by case writer.

Because sales calls also represent a marketing cost, the goal is to balance their effect on the top and bottom lines to maximize profits. The marketing manager can express the relationship between sales calls and profits mathematically and perform both linear and logistic regressions<sup>2</sup> as follows (Equation 1):

$$\begin{aligned}
 \text{Profit per Physician} &= \text{New Prescriptions} \times \text{prob}(\text{New Prescriptions}) \\
 &\times \text{Gross Margin}\% - \# \text{ of Sales Calls} \times \text{Unit Cost of Sales Calls} \\
 \# \text{ of New Prescriptions} &= a + b1 \times \ln(\# \text{ of Sales Calls}) \\
 \text{prob}(\text{New Prescriptions}) &= \exp(u) \div [1 + \exp(u)], \text{ where } u = c + d1 \\
 &\times \ln(\# \text{ of Sales Calls})
 \end{aligned} \tag{1}$$

Performing the regression analyses will determine the value of  $a$ ,  $b1$ ,  $c$ , and  $d1$ , giving the marketing manager a mathematical way to value sales calls with respect to their ability to increase the number of prescriptions written by physicians and the probability of a new prescription. And because sales calls are a cost center, the pharmaceutical company can maximize total profits by weighting its number of sales calls subject to optimal spending under its budget limit (see Figure 1-3).



**Figure 1-3** Optimal allocation of marketing spend

Source: Created by case writer.

Table 1-1 provides hypothetical data describing the effects of sales calls on profits per physician. Say the values for *a*, *b1*, *c*, and *d1* turn out to be 0.05, 1.5, 0.006, and 1.2 based on the regression analysis.

**Table 1-1** Numeric Example of Optimal Allocation of Marketing Spend

<i>a</i>	<i>b1</i>	<i>c</i>	<i>d1</i>	Price	Cost of Sales Calls
0.05	1.5	0.006	1.2	300	50

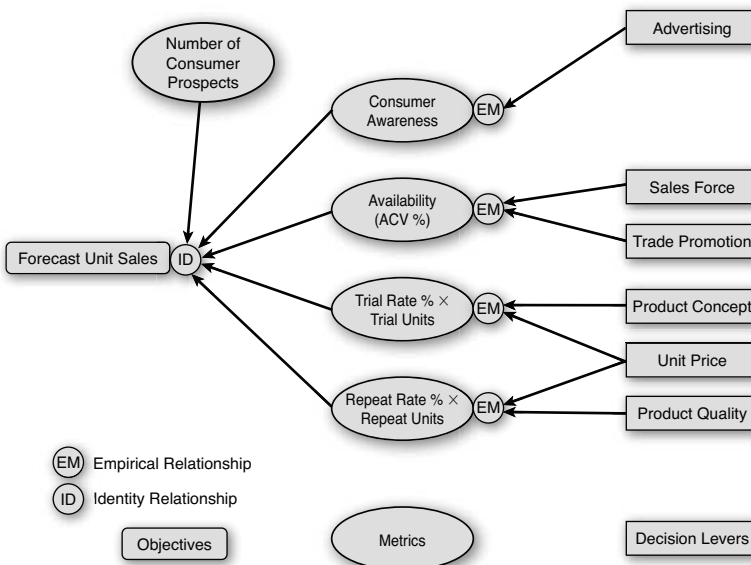
  

Sales Calls	Sales	<i>u</i>	<i>p</i> (Sales)	Profit	
1	1.09	0.84	0.70	109.73	
2	1.70	1.32	0.79	181.65	Current
3	2.13	1.67	0.84	226.31	
4	2.46	1.94	0.87	252.30	
5	2.74	2.16	0.90	265.25	
6	2.97	2.34	0.91	268.74	Optimal
7	3.17	2.50	0.92	265.10	
8	3.35	2.64	0.93	255.94	
9	3.50	2.77	0.94	242.39	
10	3.65	2.88	0.95	225.27	

Source: Created by case writer.

The price of a unit (a prescription drug) is \$300, and the cost of a single sales call is \$50. The drug company currently calls its physicians an average of twice per month (which means that, in this example, the number of sales calls is two). Based on the estimated weights for each unknown in the described relationships, this strategy yields a profit of \$181.65. If the company were to increase sales calls to six per month, the expected profits would be \$268.74. Increasing sales calls beyond six per month, however, makes the cost of the sales calls higher than their incremental benefits, meaning profits start declining for sales calls of seven per month and above. In this example, six is the optimal level of sales calls because it maximizes the expected profit (\$268.74) from each physician. As the example illustrates, the optimal number of sales calls that maximizes profits is critically dependent on the unknown weights of the empirical relationship.

Figure 1-4 shows a decomposition commonly used by consumer-goods companies to forecast the performance of new products. Using this model, a company can study how advertising leads to awareness and how the sales force leads to availability, among other things. Once the company understands the empirical relationships mathematically, it can calculate expected sales using simple arithmetic.

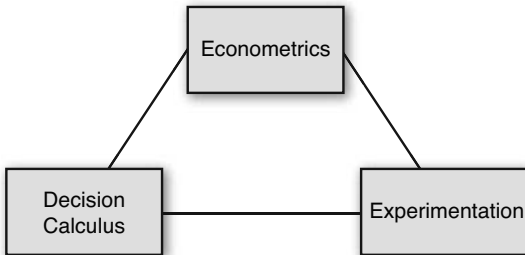


**Figure 1-4** System of metrics to forecast new product sales

Source: Created by case writer adapted from Farris, Pfeifer, Bendle, and Reibstein.



Marketing analytics relies on three pillars: econometrics, experimentation, and decision calculus (Figure 1-5).



**Figure 1-5** Three pillars of marketing resource allocation

Source: Created by case writer.

Managers can use econometrics when they need to make hypotheses about their business and test them by using experiments. Where the decision calculus comes down to individual companies introducing their own intuition into the equation, marketing analytics as a whole allows firms to identify best estimates for how to weight the effects of marketing activities. Intuitively, these weights should provide the best relationship between marketing inputs and consumer response. Looking at past cases wherein a firm has tried different levels of marketing inputs and observed consumer response reveals this relationship.

In the case of Dunia, if a customer purchased a service, such as a loan or credit card, the bank would track the channel through which he or she was reached, as well as behaviors such as delinquencies, and incorporate those results into its cross-selling criteria. The results would then be used to develop new models to indicate how it should introduce future offers. According to Ali Hurbas, head of Dunia's Strategic Analytics Unit, "It is not just about quantitative techniques but also business sense."<sup>3</sup>

## Measuring ROI: Did the Resource Allocation Work?

The goal of marketing analytics is to determine the effectiveness of a company's various marketing strategies (such as its marketing mix). For each strategy, the company is looking to assess its return on investment (ROI).

Financial ROI is equal to profit over investment value. This is a yearly rate that is comparable to rate of return. Marketing ROI, on the other hand, is equal to profits

related to marketing measures divided by the value of the marketing investment—which is actually money risked, not invested (Equation 2):

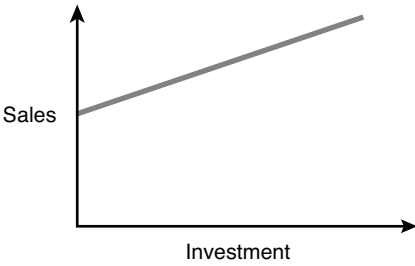
$$\text{Marketing ROI} = [\text{Incremental Sales} \times \text{Gross Margin} - \text{Marketing Investment}] \div \text{Marketing Investment} \quad (2)$$

Determining ROI is simple arithmetic; however, estimating and defining the effects of ROI is difficult. Imagine that Powerful Powertools spends \$2 million on search engine marketing in 2012 and generates \$10 million in incremental sales that year with marketing contribution margins of 50%. The company would determine its marketing ROI as follows (Equation 3):

$$\text{ROI} = (\$10\text{M} \times 0.5 - \$2\text{M}) \div \$2\text{M} = 1.5 \quad (3)$$

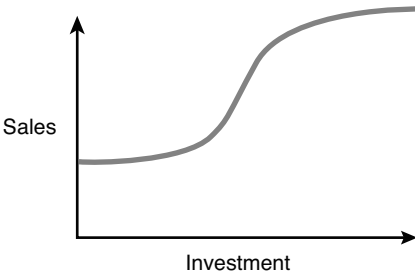
A marketing manager or chief financial officer (CFO) would have therefore determined that his or her return is 150% on the marketing investment. But the manager will likely still have questions. Will the investment in 2012 also pay dividends in 2013 (for example, should some new customer acquisitions in 2013 be attributed to the investment in 2012)? How was incremental gross margin determined? What is the baseline without the search engine marketing? Will doubling the investment to \$4 million double the returns to \$20 million in incremental sales, or are there diminishing returns to marketing? What are the longer-term effects, and what is the CLV of the customers acquired through this campaign? The goal of analytics is to accommodate these nuances of marketing's influence on sales so that the estimate of incremental sales is an accurate reflection of reality.

One major decision regarding marketing ROI concerns the choice of average versus marginal ROI. Average ROI represents the returns for any given level of marketing investment. If an executive is interested in how total returns to marketing spending have changed over the previous two years, average ROI is the right measure. Marginal ROI, on the other hand, is the return for an additional dollar spent on marketing relative to existing investment levels. The choice between marginal and average ROI relies to a large extent on whether a marketing measure may yield diminishing returns. For linear models, average and incremental returns are the same because regardless of the current level of spending, the returns will be identical (Figure 1-6). As shown in Figure 1-7, however, the current level of investment matters when calculating incremental returns in the presence of diminishing returns.



**Figure 1-6** A linear sales response curve

Source: Created by case writer.



**Figure 1-7** Sales response curve with diminishing returns

Source: Created by case writer.

## Working with Econometrics: IBM and Others

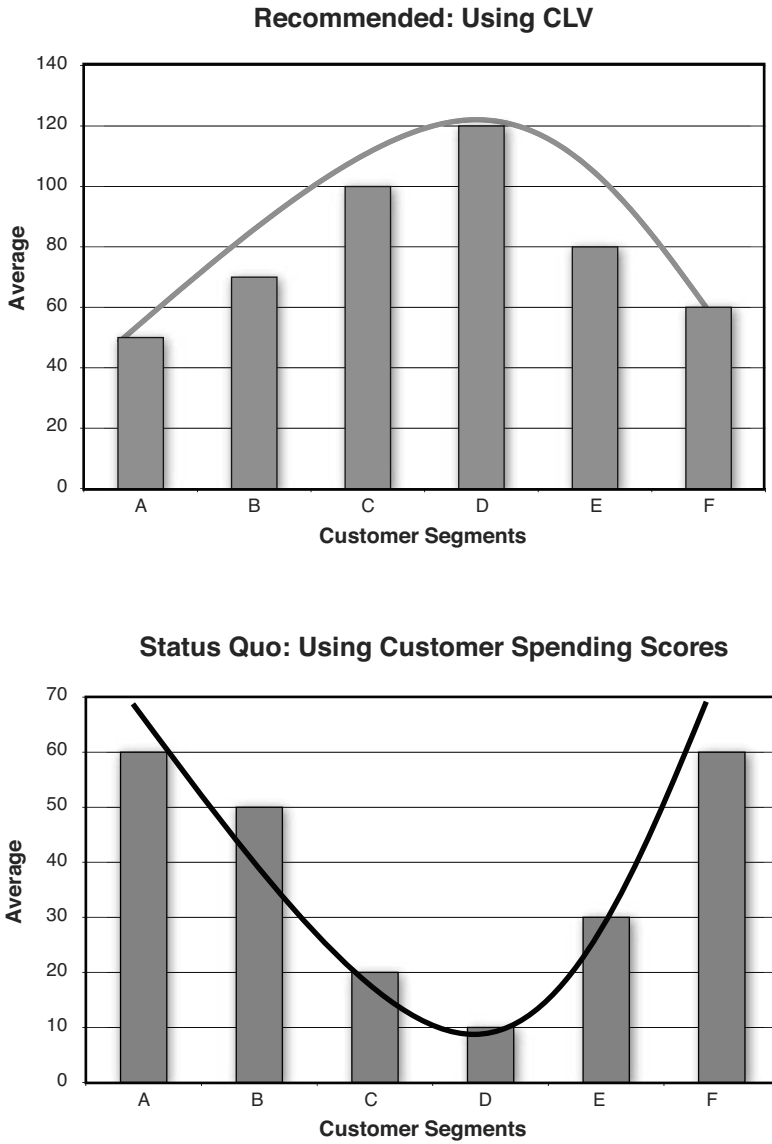
To improve marketing success, companies must consistently make good decisions about which customers to select for targeting, the level of resources to be allocated to the selected customers, and nurturing the selected customers to increase future profitability. One example of a company that has successfully used CLV as an indicator of customer profitability and allocated marketing resources accordingly is IBM. In 2005, the computer and technology company used CLV as a criterion for determining the level of marketing contacts through direct mail, telesales, e-mail, and catalogs. An overview of the CLV management framework is shown in Table 1-2.

**Table 1-2** Customer Lifetime Value Management Framework

<b>Process</b>	<b>Purpose</b>
Measure CLV	Obtain a measure of the potential value of IBM customers
Identify the drivers of CLV	Allow managers to influence CLV
Determine optimal level of contacts for each customer that would maximize his or her respective CLV	Guide managers about the level of investment required for each customer
Develop propensity models to predict which product(s) a customer is likely to purchase	Develop a product message when contacting a customer
Reallocate marketing contacts from low-CLV customers to high-CLV customers	Maximize marketing productivity

Source: Created by case writer and adapted from Kumar et al (2005).<sup>4</sup>

In a pilot study implemented for approximately 35,000 customers, this approach led to reallocation of resources for about 14% of the customers as compared with allocation based on past spending history, the metric IBM had previously used to target customers and allocate resources (see Figure 1-8). The CLV-based resource reallocation led to a tenfold increase in revenue (amounting to about \$20 million) without any changes in the level of marketing investment.



**Figure 1-8** Benefits from CLV-based resource allocation

Source: Created by case writer.

## Conclusion

Managers must understand their marketing efforts as precisely as possible to determine how much to spend on each marketing channel. If paid search advertising is the most effective way of getting a firm's message in front of the right customer, why would the company spend more on print advertising? If sales calls are profitable only up to a point, the marketing manager must know at which point the calls start costing his or her company money instead of making it.

The only way to measure the effects of marketing efforts on profitability is through the best-guess relationships revealed through marketing analytics. By using statistical analysis techniques, firms can use past customer behaviors to predict how customers will react to different marketing channels; managers can then optimize spending on each channel.

## Endnotes

1. Paul Farris, Phillip Pfeifer, Neil Bendle, and David Reibstein, *Marketing Metrics: The Definitive Guide for Measuring Marketing Performance* (Upper Saddle River, NJ: FT Press, 2010).
2. See Shea Gibbs and Rajkumar Venkatesan, "Multiple Regression in Marketing-Mix Models," UVA-M-0855 (Charlottesville, VA: Darden Business Publishing, 2013) for a discussion of linear regressions; see Shea Gibbs and Rajkumar Venkatesan, "Logistic Regression," UVA-M-0859 (Charlottesville, VA: Darden Business Publishing, 2013) for more on logistic regression analyses.
3. Gerry Yemen, Rajkumar Venkatesan, and Samuel E. Bodily, "Dunia Finance LLC (A)," UVA-M-0842 (Charlottesville, VA: Darden Business Publishing, 2012).
4. V. Kumar, Rajkumar Venkatesan, Tim Bohling, and Dennis Beckmen, "The Power of CLV: Managing Customer Lifetime Value at IBM," *Marketing Science*, 27, no. 4 (2008): 585–599.

# 2

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## Dunia Finance LLC

*Analytics function has been a true franchise builder for Dunia since our launch, driving targeted cross-sell by focusing on all three Rs of consumer banking: risk, revenue, response.*

—Ali Hurbas

### Introduction

Ali Hurbas, head of the Strategic Analytics Unit (SAU) at Dunia Finance LLC (Dunia), the Abu Dhabi–based financial services company, was in an emergency meeting in Dunia’s Dubai office with Rajeev Kakar and his management team in early October 2012. Kakar, executive director and founding CEO of Dunia and, concurrently, executive vice president and regional CEO for central and eastern Europe, the Middle East, and Africa for Fullerton Financial Holdings, was a veteran of the banking industry, with more than 25 years of experience in multiple markets as regional head and CEO for Citibank’s Turkey, Middle East, Pakistan, and Africa consumer businesses. With investor pressure growing, Kakar told his management team, “We are facing a severe challenge. We need to quickly increase volumes and reward our good customers. And there is a need for speed to get this done!” He had put together a SWAT team, led by Hurbas, to perform this critical task of doubling business growth. (Exhibit 2-1 lists all members of the Dunia teams mentioned in the case.)

Hurbas had spent most of his career analyzing customers around the globe, so he knew there was a fine line between pitching new products to customers and alienating them. Given his experience, Hurbas appreciated Dunia’s approach to marketing products: cross-selling. Executives believed their cross-selling framework had helped the organization launch into the center of the competitive Emirati financial services

industry in 2008 and turn a profit by 2011—an event made even more notable for its occurrence during the global financial crisis. Just as Dunia was starting out, many others, due to involvement in debt-fueled real estate investments, were crumbling.

Working closely with his team, Hurbas had to figure out how analytics could be leveraged. Did it make sense to focus on bringing in new customers, or would ramping up cross-selling efforts to existing customers offer the volume Kakar needed to satisfy investors?

## Dunia: Into the World

As Lehman Brothers, the U.S.-based financial services company, collapsed in the fall of 2008, another financial services firm called Dunia<sup>1</sup> launched nearly 11,000 km (~7,000 miles) away. Dunia started as a joint venture between Singapore-based Fullerton Financial Holdings (a wholly owned subsidiary of Temasek Holdings in Singapore), Abu Dhabi's Mubadala Development Company, and Waha Capital. The new firm's business model focused on offering financial services to underserved clients in four customer segments: mass affluent market, affluent customers, mass self-employed clients, and mass salaried customers in small and midsize markets. Customer needs drove product offerings (see Table 2-1 for sub-brands and Exhibit 2-2 for market segment percentage).

**Table 2-1** Dunia Sub-Brands and United Arab Emirate (UAE) Banking Population

Sub-Brand	Customer Segment	% of Total UAE Banking Population
Duniamoney	Salaried mass market	40%
Dunia	Mass affluent	30%
Duniagold	Affluent	15%
Duniatrade	Self-employed mass market	15%

Source: Dunia. Used with permission.

Springing to life in the midst of a global financial meltdown seemed to motivate Dunia executives to create opportunity from crisis. As other financial firms reduced employee numbers, Dunia hired; as others closed branches, Dunia opened offices; as others drew back lending, Dunia sensibly grew.

At its core, Dunia did seem different. The diversity of its staff—25 nationalities and 31 languages represented, with many employees who had worked outside their



respective home countries' banks for extended periods—seemed to promise that Dunia would be more mindful where other institutions had made mistakes. Indeed, Dunia promised a measured approach, with a focus on basic values and sustainable business practices. It would be customer-centric, only without the excessive risk-taking that seemed to have brought about the 2008 economic meltdown.

As the world's financial structures continued to change and geopolitical events—the tsunami and nuclear reactor crisis in Fukushima, Japan, and the Arab Spring—continued to shape its environment, Dunia became profitable within 30 months. That accomplishment, among others, had Dunia leaders convinced that their business model was working. By 2012, the company had 800 employees, 19 branches, a 24-hour call center, and a sophisticated online service (see Exhibit 2-3 for financials).

## Dunia: How Its World Worked

The UAE, a confederation of seven emirates,<sup>2</sup> had one of the most developed and technologically efficient banking sectors in the Middle East.<sup>3</sup> An increase in population (roughly 5.5 million) and high wealth levels had created much demand for financial services, so by 2012, the country was heavily banked; there were 24 local and 28 foreign banks with full operating licenses and 70 other financial institutions.<sup>4</sup>

The Central Bank of the United Arab Emirates (Central Bank), created in the 1980s to license companies for investment and specialized financing activities, also worked with the UAE government to set policies and act as a supervisor. Although the Central Bank did not have a federal credit bureau, there was a separate independent credit bureau called Emcredit based out of the Dubai International Financial Center (DIFC), which was founded in January 2006. The extent to which banks shared customer credit information with the central credit database (which stored an individual's negative and positive credit history) was unclear. Emcredit had another product called Embounce. The source of Embounce data was not individual banks but public prosecution in Dubai. As a criminal offense, any bounced check reported to police was recorded and submitted to Embounce. The database covered 100% of Dubai's population, but the data only included infractions, so it was not as rich as Emcredit's credit database. Moreover, check-bounce information of emirates other than Dubai (such as Abu Dhabi) was not included.

The Central Bank licensed Dunia to offer credit cards, personal and auto loans, simple insurance products linked to all of these, and corporate deposit services and financial guarantees for companies. In 2009, a new government policy offered Dunia

another market opportunity: the Wage Protection System. This government regulatory system required private-sector employers to pay wages monthly through approved financial institutions. After gaining government approval, Dunia signed up companies to facilitate these transactions. “Liquidity is key to the success of any financial institution,” Venu Parameshwar, Dunia CFO, said. “One of Dunia’s key priorities is to ensure that our balance sheet reflects the highest degree of liquidity.”

Revenue was generated through fees from originating and servicing loans, commissions, interest on credit card and loan balances, and services such as credit card protection plans and loan insurance. Dunia needed customers who carried loans but did not default, or who maintained revolving credit card balances and still made a card payment each month. In addition, the longer Dunia held a customer, the more profitable the relationship became; therefore, ensuring customer loyalty was very important. In addition, the firm needed new customers to grow and had to spend more to keep the pool a healthy size. Hurbas described a few differences between the U.S. and UAE markets:

In a developing market like the UAE, there would be higher costs of doing business, including credit and operational cost. In the U.S., a company like ours could get 10 million names from the credit bureau and a half-percent response rate, with which you would be happy because it gives you about 30,000 or 40,000 customers. If you do that twice a month, that gives you pretty good numbers. Whereas over here, in a good month, we may still book a fraction of this kind of volume partly because UAE’s population is far lower than the U.S.’s, and we don’t have full-blown credit bureaus, so you can’t say, “I want the customers with xyz criteria” and know exactly what type of risk you are taking. You have to rely on internal data in a developing market in order to grow prudently, which is a bigger risk challenge. Moreover, while UAE is a market full of growth opportunities, we should also be cognizant of, and factor in, several macro event risks surrounding us. The Middle East is a region going through significant changes, which bring about many risks, as well.

Another difference between the U.S. and a developing market is the human capital required across all functions, not only in strategic analytics. A manager in a large U.S. bank typically controls a much narrower area but can afford to dig far deeper, so can be a true specialist within his/her function. On the other hand, a developing market banking associate must have broader coverage in his/her function and also needs to have a strong understanding of several other functions in order to be effective.

Another variable that increased the risk lenders faced in the UAE was its transient, expatriate work force population. When non-nationals lost their jobs, their

residence visas were canceled and they had to leave the country within 30 days; by leaving the UAE for their home countries, customers could run out on loan and credit card payments, leaving banks with large credit losses. Raman Krishnan, the chief risk officer, had a tough job ensuring that the right credit policies were put in place and were dynamically assessed based on portfolio experience and market conditions. He worked closely with Hurbas to analyze the portfolio and make certain that the right metrics were in place for managing risk and reward simultaneously. Raman Krishnan explained, “Data is our most important tool in risk management. In an environment where risks are plenty, not having accurate data could lead to significant financial losses, while understanding and using data could give us a significant competitive edge.”

## **New Customers and a Dunia Credit Bureau of Sorts**

Each new customer was assigned a Dunia customer identification number (CIN) when onboarded. In the UAE, there was no identification number comparable to a U.S. Social Security number that could be used to gather data on each person. The government had introduced an Emirates ID number, but it was still a relatively new concept in 2012. The lack of a viable credit bureau put pressure on Dunia executives to generate their own reliable statistics to help them quantify decisions on product offerings and customer value. The data to generate these statistics were kept in Dunia’s data warehouse (DWH). This included static demographic data (such as age and income) captured at the time of acquisition and performance data, which was refreshed dynamically.

Each customer’s CIN would be the same on all products he or she purchased, thus providing Dunia with reliable and consistent customer data. Accurate data was the key ingredient for Dunia’s “customer-centric” approach. Customer centricity was at the core of Dunia. The entire organization was structured around fulfilling the needs of the customer. Processes, people, and business functions were designed with each customer segment in mind. In contrast to a product-centric approach, Dunia’s customer-centric approach identified the various life stage and lifestyle needs of the customer and aimed to fulfill them using customized financial solutions. Once a customer demonstrated acceptable usage patterns and history, Dunia would consider increasing the credit granted to the customer.

All behavioral and demographic data available were captured, addressing the five Cs of credit (capacity, character, capital, collateral, and covenant) and collected within the DWH. The DWH was a multipurpose database that captured all categories of data

from Dunia’s several systems. These individual systems running at Dunia were chosen or designed with painstaking detail by the IT team. The DWH was completely home-grown by the Strategic Analytics Unit team and a key tool in its business. The various IT systems from front and back offices—including customer relationship management (CRM), the application processing system, the loan system, the credit card system, and the collection system—fed data into the DWH daily. As part of each system’s batch update process, daily output files were produced and stored in the DWH. As a management information system (MIS), the DWH was used for list management, business analytics, statistical scoring, propensity modeling, test-versus-control design and tracking, business KPI generation, sales productivity analysis, incentive management, and limit increases.

## New Customer Acquisition

As in most consumer-lending organizations, portfolio growth was driven by a combination of “new-to-bank” customer acquisitions (direct sales-led) and deepening relationships through cross-selling. The majority of new customers were gained through door-to-door sales, a model similar to the one insurance agents or financial planners used in the United States when they invited people to meet at a coffee shop or office for an information session. Several departments worked together to ensure that the right strategy was put in place for new-to-bank customer acquisitions. The team managed a very sizable group of relationship managers whose core focus was acquiring new customers.

The cost structure for booking a new loan, credit card, or insurance policy depended on the channel used to gain the business. There was a one-time booking cost for each customer. If the service was booked through a relationship officer in a Dunia branch or through a door-to-door sale by one of Dunia’s 1,000 salespeople, the cost included a salesperson incentive of AED (United Arab Emirates dirhams) 400 (in U.S. dollars, USD 109); if booked through the call center, the incentive decreased by half, to AED 200 (USD 55).<sup>5</sup> Table 2-2 shows the effect of adding additional call center agents to the 100 already in place. The profit per agent was AED 37,000. In addition to sales incentives, there were approval costs for the various stages of application processing, such as data entry, verification, underwriting, wages/salaries, and calling costs. That figure was approximately AED 100 (USD 27) per transaction. If the booked product was a credit card, additional costs included card embossing, printing, and production, and the accompanying letter and card carrier, which totaled AED 50 (USD 14). The cost for courier delivery was another AED 50. Booking loans was

less costly and had a higher probability of being collected. The UAE had a dim view of borrowers who failed to pay back loans—bouncing a check could result in a prison sentence. At Dunia, borrowers were required to provide postdated checks for each monthly installment at the time the loan was obtained.

**Table 2-2** Call Center Capacity

<b>Number of Call Agents Added</b>	<b>Number of Calls per Day</b>	<b>Employee Cost</b>	<b>Space</b>
1–25	100 each	AED 6,000 per agent	35 sq. ft./agent
26+	100 each	AED 3,000 per agent	120/sq. ft./year

Source: Dunia. Used with permission.

For a product to succeed, the deciding factor was profitability. The focus on profitability was one of the leading-edge practices adopted by the Dunia SAU team, ensuring that a holistic assessment was done on the relationship’s overall value, rather than on one-dimensional metrics. The profit and loss statement incorporated all relevant revenue and expense items associated with the product. Dunia measured ROA on an annualized basis.

## The Strategic Analytics Unit and Customer Retention

Dunia was active in customer reward and progression and relationship deepening with activities such as credit card limit increases and cross-selling of other financial products. The cross-selling approach was used for existing customers and was similar to the frequently heard “Would you like fries with that?” at fast-food restaurants in the United States. Essentially, cross-selling was the strategy of selling multiple products to existing customers so that their balances (and Dunia’s earnings) increased. The strategy was beneficial in two ways: The opportunity to cross-sell increased the lifetime value of the customer, and known customers were less risky because Dunia had data on their behavior. The Dunia system was set up to identify customers it could generate a profit from yet be nimble enough to take appropriate corrective actions if actual performance varied from expectations. Overall, cross-selling was less risky than acquiring new customers, required less investment to maintain, and increased probability of customer retention.

From a risk management perspective, determining which customers were eligible for cross-selling was the credit department's responsibility; once customers were cleared by that group, SAU could target them. SAU had the technical tools and historical performance, and DWH could therefore perform robust targeting.

To facilitate this approach, strong analytical capabilities were required in the form of three key elements: people, system infrastructure/technical tools, and accurate data. Dunia SAU scored high on all three counts.

Hurbas reported to Kakar (see Exhibit 2-4), ensuring independence of the critical analytics function. In most other banks and financial institutions, analytics would be a part of the credit function and called "Credit MIS," or would exist partly within marketing, finance, or IT. All analytics team members who dealt with data were gathered under one roof at Dunia, ensuring not only a single source of data—or "source of truth"—but also a broad exposure to the same team of people who handled data across all aspects of the business, as opposed to preparing reports on a one-dimensional basis within a narrow focus on a single functional area. Kakar and the rest of Dunia's senior management were the biggest supporters of analytics and promoted a culture of analytics-based decision-making throughout the organization, making analytics a part of Dunia's DNA.

To ensure that the SAU stayed sharp, Hurbas hired the team carefully. He looked for individuals who were either fresh from top schools around the world or who only had a few years' experience—always with a strong programming foundation and quantitative abilities—who also demonstrated in-depth business, financial, product, and process understanding. Because individuals bearing all of those skills were scarce, talent was incubated through senior-level, cross-functional interaction with many other departments, where training cut across various disciplines, such as finance, marketing, operations, IT, and sales.

Nesimi Monur, an industrial engineer, was Hurbas's first hire. Gauri Sawant and Ram Naveen joined the SAU team later on with IT and consumer finance backgrounds, respectively. More recently, Hurbas hired Maksym Gadomsky, who had an applied mathematics degree; Cagatay Dagistan, who had a master's in industrial engineering; and Sahil Kumar, a computer engineer with an MBA. This diverse and eclectic team helped bring added breadth, which made analytics-based decision-making more meaningful.

Parallel to Dunia's growth, the analytics function, which was one of the firm's key growth engines, was expanding. By 2012, the core SAU team was seasoned, scalable, and ready to take on more people and train them on the analytics tools and techniques, as well as on the business processes such as cross-selling.

Any customer who had previously opted out of all promotional offers was excluded from cross-sell efforts. For each product, a list of eligible customers would be extracted using behavioral criteria (for example, past delinquency incidence). Pricing and loan quantum would also be driven by SAU segmentation.

Credit card usage patterns, for example, provided a wealth of information. Every instance of a customer's credit card swipe could provide valuable insights about the customer's lifestyle and life stage and offer pointers for understanding customer needs and preferences. That way, Dunia could tailor appropriate products to meet these needs and preferences, in line with the principle of customer centricity. Dunia SAU was instrumental in taking this volume of data and extracting meaningful intelligence about the client. Dunia could offer solutions for problems customers did not know they had (for example, a new home loan may coincide with moving expenses, a hotel stay, or household furnishing purchases).

The process of contacting customers was a strategic decision, and each combination carried a different cost (Table 2-3). Efforts were made to maximize the customer response, yet Dunia was mindful not to contact a customer too frequently. Telesales calls did not exceed three per customer. SAU would give the validated list to call center agents for action.

**Table 2-3** Channel Choice Cost Sample

Channel Choice	Cost (UAE Dirhams)	Cost (U.S. Dollars)
E-mail only	0	0
E-mail + 1 call	0.75	0.20
E-mail + 2 calls	1.50	0.40
E-mail + 3 calls	2.25	0.61

Source: Dunia. Used with permission.

## Booking a Cross-Sell

Regardless of the cross-sell product, the front-end channel would initiate a cross-sell offer action through CRM. An offer action included electronic mailers specifying the loan or credit card amounts being sent to customers through the centralized marketing team and outbound telephone calls from the call center.

The company relied heavily on Dunia’s outbound telesales team to contact eligible customers and ensure cross-sell would happen. While the outbound team ensured that call-out would happen, the marketing and product team ensured that customer communications were sent out via all channels (such as e-mail, text message, and direct mail) for the broadest reach possible. The process worked seamlessly across all units—SAU, credit, outbound calling, marketing, and operations. The analytics team played a pivotal role in ensuring well-orchestrated coordination across all involved units. This called for significant soft skills over and above the technical skills expected of analytics.

Customer responses were recorded in the CRM database, and if the customer was uninterested, the reasons for the rejection would be recorded. If the customer was interested, the new product application was created and the transaction booked. The operations team was responsible for processing applications in a cost- and time-efficient manner.

If a service such as a loan or credit card was accepted, the SAU would immediately and rigorously start tracking for delinquencies; those results would be incorporated into the criteria, and the credit and SAU departments would review results. The SAU engaged with all of Dunia’s functional units and was empowered to make decisions and implement them. Cross-sell response results would be used to develop new models for predicting propensity to respond to similar future offers, and risk results were used to model and recalibrate existing behavior scores and other rule-based criteria. “It is not just about quantitative techniques, but also business sense,” Hurbas said. “One must know what to analyze depending on the problem at hand versus blindly repeating analyst reports at some frequency—then it becomes MIS and not analytics, which is really actionable MIS.”

## Cross-Selling and Growth Strategy

To meet this challenge, Hurbas thought he had to ensure the 10 *Ps* of successful analytics:

- People—Hire top-tier *people* with specialized talent.
- Passion—The team needs to display *passion* through creativity and innovation.
- Predictability—*Predictability* of results leads to profitability.
- Profitability—*Profitability* is required for investing in good times and sustainability in stressful times.



- Proactive—Be *proactive* in identifying potential issues.
- Precision—The solution needs to be executed with *precision*.
- Power—Computing *power* has to be at the highest degree. In this case, Kakar allowed Hurbas to make maximum necessary investment into systems and hardware.
- Partnership—*Partnership* across all functional teams is a critical success factor.
- Progression—Customer *progression* has to be in line with their needs and life stage.
- Pragmatism—The solution has to be *pragmatic* for simplicity of implementation.

To form the right partnerships, Hurbas worked closely with Mariam El Samny, head of marketing and products; Barlas Balabaner, operations and technology director; Guru Balakrishna, credit policy head; Raed Shomali, contact center head; Muzaffer Hamid, operations head; Pankaj Kundra, segment distribution head; Sanjay Kao, consumer business head; Shankar Balasubramania, collections head; Venu Parameshwar, CFO; and Raman Krishnan, chief risk officer. Dunia believed that without cross-functional participation, the best solutions would fail.

There would be no sitting still in the UAE market for Dunia. In the emergency meeting, Hurbas heard loud and clear that the CEO wanted volumes increased. Hurbas was keenly aware that success relied on new ways of thinking. He believed the firm's cross-sell model offered a competitive edge, but he wondered whether Dunia should explore providing credit cards to personal loan customers. Or would increasing efforts to gain new customers be a better plan? In either event, would the company need to double the size of its call center?

## Endnotes

1. *Dunia* is Arabic for *world*, in particular the earthly world, distinct from the spiritual world or hereafter. Several other languages have retained the word and at least part of its meaning, including Bengali, Hindi, Persian, Punjabi, Turkish, and Urdu.
2. What distinguishes an emirate from other territorial units is its governance by a hereditary ruling class.
3. Economist Intelligence Unit, "United Arab Emirates: Financial Services Industry Report," June 2010, 9.
4. Banks were licensed to accept individual depositors, but financial institutions could only accept deposits from corporations.
5. All exchange rates are approximate.

# Exhibits

## Exhibit 2-1 Dunia Finance LLC: Teams

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### Strategic Analytics Team

Ali Hurbas	Head, Strategic Analytics
Nesimi Monur	Industrial engineering background and Hurbas's first hire
Ram Naveen	Finance background
Gauri Sawant	IT background
Maksym Gadomsky	Applied mathematics degree
Cagatay Dagistan	Master's in industrial engineering
Sahil Kumar	Computer engineering and MBA background

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### Technology Team

Nihad Nazir	IT Solutions Head
Sameer Tomar	IT Systems Manager

---

### Marketing Team

Mariam El Samny	Marketing and Products Head
Mohan Prasannakumar	Asset Products Head

---

### Credit and Collections Team

Raman Krishnan	Chief Risk Officer
Guru Balakrishna	Credit Policy Head
Shankar Balasubramania	Collections Head

---

### New Customer Acquisition Team

Sanjay Kao	Consumer Business Head
Neeraj Sehgal	Sales Head, Abu Dhabi
Pankaj Kundra	Segment Distribution Head
Sunil Mathews	Segment Head, Self-Employed Mass Market
Rishi Tandon	Segment Head, Dunia Gold (Affluent)

---

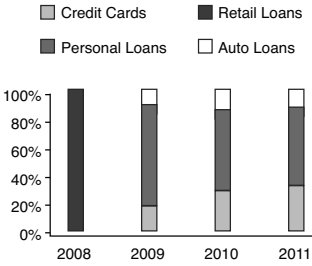
### Operations Team

Barlas Balabaner	Operations and Technology Director
Muzaffer Hamid	Operations Head
Owais Qazi	Unit Head, Credit Operations
Rajat Srivastav	Unit Head, Operations
Vinod Thomas	Unit Head, Operations
Raed Shomali	Contact Center Head

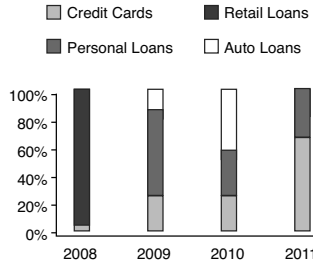
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Source: Dunia. Used with permission.

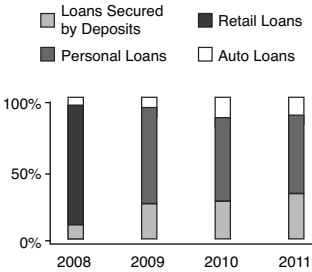
**Duniamoney (Salaried Mass Market)**



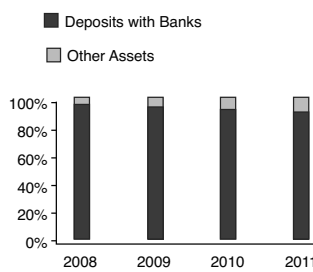
**Duniatrade (Self-Employed Mass Market)**



**Dunia (Salaried Mass Affluent Market)**



**Duniagold and Others (Affluent Market)**



**Exhibit 2-2** Dunia Finance LLC: Monies lent by market segment in the United Arab Emirates (2008–2011)

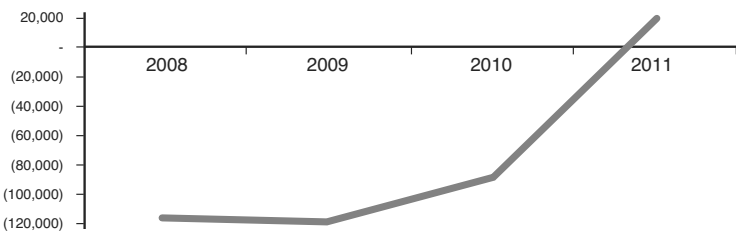
Data source: Dunia annual reports, 2008–2012.

**Exhibit 2-3** Dunia Finance LLC: Income Statements 2008–2011 (In Thousands of UAE Dirhams)

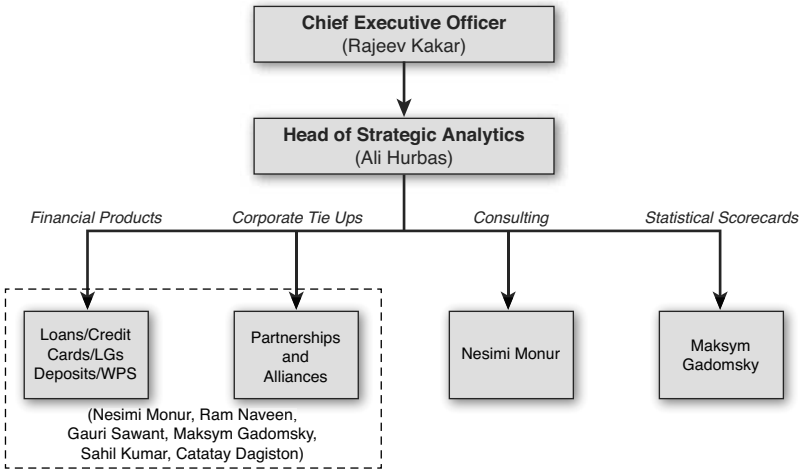
	Nov. 1, 2006 to Dec. 31, 2008	Twelve Months Ended Dec. 31, 2009	Twelve Months Ended Dec. 31, 2010	Twelve Months Ended Dec. 31, 2011
Interest income	5,956	39,131	86,282	153,397
Interest expense	(54)	(1,227)	(3,386)	(12,728)
Net interest income	5,902	37,904	82,896	140,669
Commission and fee income	62	7,176	23,152	64,811
Other operating income	194	554	-	-
Operating income	6,158	45,634	106,048	205,480
Impairment charge, net	(336)	(25,482)	(42,174)	(54,310)

	<b>Nov. 1, 2006 to Dec. 31, 2008</b>	<b>Twelve Months Ended Dec. 31, 2009</b>	<b>Twelve Months Ended Dec. 31, 2010</b>	<b>Twelve Months Ended Dec. 31, 2011</b>
General and administrative expenses	(115,046)	(123,040)	(140,057)	(125,655)
Amortization and depreciation	(5,037)	(13,594)	(11,641)	(7,398)
<b>Net Profit (Loss)</b>	<b>(114,261)</b>	<b>(116,482)</b>	<b>(87,824)</b>	<b>18,117</b>
<i>(In Thousands of U.S. Dollars)</i>				
	<b>Nov. 1, 2006 to Dec. 31, 2008</b>	<b>Twelve Months Ended Dec. 31, 2009</b>	<b>Twelve Months Ended Dec. 31, 2010</b>	<b>Twelve Months Ended Dec. 31, 2011</b>
Interest income	1,621	10,651	23,486	41,755
Interest expense	(15)	(334)	(922)	(3,465)
Net interest income	1,606	10,317	22,564	38,290
Commission and fee income	17	1,953	6,302	17,642
Other operating income	53	151	-	-
Operating income	1,676	12,422	28,866	55,932
Impairment charge, net	(91)	(6,936)	(11,480)	(14,783)
General and administrative expenses	(31,304)	(33,491)	(38,124)	(34,203)
Amortization and depreciation	(1,371)	(3,700)	(3,169)	(2,014)
<b>Net Profit (Loss)</b>	<b>(31,090)</b>	<b>(31,706)</b>	<b>(23,906)</b>	<b>4,931</b>

**Net Income**  
**(In Thousands of UAE Dirhams)**



Source: Dunia directors' reports, 2008–2012.



**Exhibit 2-4** Dunia Finance LLC: SAU organizational chart

Source: Dunia company documents. Used with permission.

## Assignment Questions

1. What are the differences in banking between the United States and the UAE?
2. How does analytics affect customer relationship management at Dunia?
3. How would Dunia affect customer lifetime value?
4. Is it the right time for Hurbas to focus on cross-selling or should he focus on new customer acquisition?

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