

# Understand “Customer Tempo” to Improve Marketing Results

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Factoring customer behavior and buying patterns into marketing strategies to gain a competitive edge

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## Introduction

You’re looking at a photograph. You can make certain inferences about the subject in the picture, based on her gender, her facial expression, the background of the photo and the clothes she’s wearing. Compare that snapshot to a full-length movie in which the woman is the main character. In the movie, you learn that she is 26 years old, about to graduate from business school. She accepted a job on Wall Street and is moving to New York City after having spent her entire life in Jacksonville, Florida. Without the character dimensions revealed through the sequences in the movie, you could not have known that her life is changing dramatically and quickly—and that her purchasing behavior is shifting just as rapidly.

Knowing a customer’s needs, what she values and her spending habits are critical to successful marketing for every business. Imagine how much more effective your marketing could be if you understood your customers according to an evolving timeline *based upon actual purchasing behavior*—the “customer tempo”—rather than through limited data captured at a single point in time. Targeting specific customer groups would become easier and the results would be more valuable.

This paper introduces the concept of customer tempo analytics as a way to achieve better customer insight and to improve marketing campaigns. We’ll discuss consumer behavior as it unfolds using consumer spending data to create campaigns that deliver results.

Companies marketing to consumers are constantly challenged with sustaining revenue growth in existing products. For the past decade, traditional direct marketing methods have had deteriorating response rates, making them less economical than in the past. Across all channels, the disintegration of the mass market into increasingly fragmented audiences requires marketers to address specific target groups with their own messages while keeping a cohesive brand presence. Keeping pace with changes in consumer spending behavior and demographics allows marketers to redirect the emphasis within a campaign to target faster growing groups and address specific event-driven behavior. While traditional segmentation analysis or predictive modeling produces a snapshot using minimal data input, customer tempo analysis creates a movie. If you pay attention as the characters develop, you discover information that influences and perhaps even significantly changes your marketing strategies.

Customer tempo is a concept that applies to both individual consumers and market segments, measuring the flow of customer activity as it relates to the purchase of products or services. This methodology harnesses insights from transaction data over time to illuminate the dynamics of individual consumer behavior and specific market segments. Adding this dimension to current demographics, purchase value data and channel characteristics gives marketers better information to generate superior campaign results.

Customer tempo measurements provide clear advantages to companies using them. This type of analysis is useful to:

- Identify promising areas of growth
- Enhance direct marketing response rates
- Improve retention of existing customers

How is the magic of customer tempo analytics accomplished? Let’s take a closer look.

## Transaction Data: The Key to Customer Tempo Analysis

Many companies have access to tremendous quantities of transactional data for their customers—how much, how often and what they spend their money on. This is especially true for credit and debit card issuers, but any retailer that captures information on its customers’ purchases possesses potentially invaluable transaction data. This data is the cornerstone of customer tempo analytics. Although companies often do not have the tools to properly analyze this data, data analysis software is available that can help uncover valuable insights for defining individual customer tempo and recasting customer segments. Using company-specific transaction data gives you a proprietary asset to support a sustainable competitive advantage. Traditional methods of consumer analysis segment customers according to the following, all of which produce only a snapshot of customers:

- Recency, frequency and monetary value (RFM) analysis
- Score band for a predictive score such as *response score* or *attrition score*
- Demographic cohort (e.g., age 25 to 34, unmarried)

Adding the dimension of transaction data allows the marketer to incorporate additional concepts into strategic decision making:

- Velocity: normal intervals of purchase for this customer
- Product affinities: whether purchases fall in a narrow range of products (vertical) or across a broad spectrum (horizontal)
- Trigger events: incidents occurring outside the “normal” pattern

Analyzing the transaction data gives greater insight into each customer, allowing a more targeted set of offers to accomplish the following:

- Tailor messaging, incentives and partnerships to reach each target segment
- Find trigger-event opportunities in each market segment that result in increased offer acceptance and customer retention
- Maximize response rates with the appropriate message and channel for each customer

Let's see how this would work in practice. Below are sample monthly transaction details of purchases made by six credit cardholders of a regional bank.

Customer #1			
\$27.00	8/1	HOLLAND OIL	NORTHFIELD OH
\$15.00	8/3	BP OIL	BRCKSVLLE OH
\$20.00	8/8	SUNOCO	N ROYALTN OH
\$19.72	8/9	SHELL OIL	NORTHFIELD OH
\$18.95	8/17	LOWE'S	MACEDONIA OH
\$32.42	8/17	BP OIL	BROADVIEW OH
\$22.42	8/19	BP OIL	BROADVIEW OH
\$11.74	8/26	MARATHON	BRCKSVLLE OH

  

Customer #2			
\$14.20	8/6	DON PABLOS	CHICO CA
\$33.64	8/10	WM SUPERCENTER	CNTRVLLE CA
\$36.35	8/13	MAX & ERMA'S	CHICO CA
\$5.43	8/20	PAYPAL *LIL PMPKN	CA
\$9.08	8/22	PAYPAL *NUBSG	CA
\$25.00	8/27	BRIDAL OUTLET	CHICO CA

  

Customer #3			
\$58.59	8/3	ACME GROCERY	FAIRLANE VA
\$58.82	8/10	ACME GROCERY	FAIRLANE VA
\$56.68	8/17	ACME GROCERY	FAIRLANE VA
\$54.60	8/29	ACME GROCERY	FAIRLANE VA

  

Customer #4			
\$23.07	8/1	AMZ.COM	WA
\$115.34	8/9	VERIZON WRLS	MTOWN NJ
\$208.30	8/9	BARGAINS.COM	MA
\$325.01	8/31	WALDENBOOKS	UNIV IL

  

Customer #5			
\$188.40	8/2	BUDGET RENTAL	CLEVELAND OH
\$120.00	8/5	UNO MOBILE PCS	CHICAGO IL
\$59.99	8/6	DETROIT PHNE CDS	DEARBORN IL
\$180.07	8/8	SAM ASH MUSIC	SPRNGDLE OH
\$54.18	8/11	A1 FOOTWEAR	NEW YORK NY
\$54.19	8/11	SUPER RECORDS	BROOKLYN NY
\$194.00	8/11	NYC PARKING FINE	NEW YORK NY
\$318.30	8/15	NWA AIR	SN ANTONIO TX
\$5.00	8/15	AOL.COM TRAVEL	TX
\$15.95	8/15	AOL.COM TRAVEL	TX
\$46.58	8/16	SHELL OIL	CRST SPGS KY
\$311.61	8/17	HERTZ RENTAL	SHRNVLLE OH
\$37.10	8/18	SUNOCO	COLUMBUS OH
\$43.87	8/18	ASF*FITWORKS	CO
\$120.00	8/24	SPL CLLNG CDS	CHICAGO IL
\$59.99	8/24	DETROIT PHNE CDS	DEARBORN IL

  

Customer #6			
\$5.19	8/1	SUBWAY	SPRINGFLD MA
\$35.10	8/1	KMART	SPRINGFLD MA
\$199.99	8/1	WALGREEN	SPRINGFLD MA
\$21.14	8/1	DONATOS PIZZA	SPRINGFLD MA
\$63.07	8/3	TARGET	SPRINGFLD MA
\$152.99	8/3	WALGREEN	SPRINGFLD MA
\$19.26	8/3	BEST NAILS	SPRINGFLD MA
\$58.00	8/5	DR. S CALEN	SPRINGFLD MA
\$27.59	8/6	SPEEDWAY	SPRINGFLD MA
\$52.64	8/6	TGI FRIDAYS	SPRINGFLD MA
\$5.87	8/8	MCDONALDS	SPRINGFLD MA
\$115.34	8/9	VERIZON WRLS	MTOWN NJ
\$15.36	8/10	MCDONALDS	SPRINGFLD MA
\$38.36	8/10	KMART	SPRINGFLD MA
\$7.92	8/16	MCDONALDS	HARTFORD CT
\$14.25	8/16	SNST THEATERS	HARTFORD CT
\$3.49	8/17	KMART	SPRINGFLD MA
\$184.85	8/20	TW CABLE	MA
\$10.00	8/20	GREAT CLIPS	SPRINGFLD MA
\$24.07	8/20	CATHERINES	SPRINGFLD MA
\$170.13	8/23	MATTRESS KING	SPRINGFLD MA
\$7.54	8/24	STEAK-N-ALE	SPRINGFLD MA
\$135.25	8/25	KMART	SPRINGFLD MA
\$12.00	8/25	GREAT CLIPS	SPRINGFLD MA
\$12.18	8/25	BLOCKBUSTER	SPRINGFLD MA
\$171.14	8/26	DRCT INSURANCE	BTN ROUGE LA
\$17.99	8/26	WALGREEN	SPRINGFLD MA
\$90.16	8/26	RADIO SHACK	SPRINGFLD MA
\$28.09	8/27	RYANS STK HSE	SPRINGFLD MA
\$13.51	8/27	BIG-BOY	SPRINGFLD MA
\$14.64	8/27	LEE'S	SPRINGFLD MA
\$26.74	8/27	BLOCKBUSTER	SPRINGFLD MA
\$5.94	8/29	MCDONALDS	SPRINGFLD MA
\$5.26	8/29	RALLY	SPRINGFLD MA
\$117.62	8/30	TNS	SPRINGFLD MA
\$64.09	8/30	PACTSUN	SPRINGFLD MA
\$30.48	8/30	STEAK-N-ALE	SPRINGFLD MA
\$33.68	8/30	SEARS	SPRINGFLD MA
\$12.29	8/31	SPEEDWAY	SPRINGFLD MA
\$28.85	8/31	MOBIL OIL	SPRINGFLD MA

Figure 1. Sample transaction data for six customers during one month.

## Marketing Insights Yielded by Transaction Data

Analyzing transaction data—the key to customer tempo—harvests much more customer-specific detail than traditional marketing measurement tools alone. For example, based on the sample data in Figure 1, Customers #5 and #6 appear to be the most valuable to both the card issuer and its retail merchant partners due to high activity and total dollars spent. Because these customers are so valuable, the card issuer should focus on retention as the number one goal—engaging with merchants in co-sponsored marketing campaigns to these customers to support this goal. This can create conflict among marketing managers at the issuer because these customers likely are desirable for many campaigns. However, the customer relationship with the issuer is stronger if offers are tailored to customers’ interests as a way of maintaining an agreeable and profitable relationship. Additionally, merchants enjoy greater success by partnering with card issuers that use transaction data effectively to develop co-sponsored campaigns to cardholders.

Customers #1, #2 and #3 have the lowest total spend for the month, and a close look at the credit card data shows that two of these have spending patterns within one spending category. The first customer is almost exclusively spending on gas and automobile services, while the third is spending only at Acme Grocery within a very narrow range (\$54 to \$59) each week. Customer #2 has a more varied set of purchases but is similar to Customer #1 in average spend with an average transaction amount of about \$20. However, the challenge of increasing spending by Customer #1 and Customer #2 takes different paths because of their unique purchasing habits and product affinities.

Customer tempo analyses, made possible by the use of transaction data, enable marketers to tailor incentives for growth and retention specific to each customer (or customer segment) as described in the following table.

Customer Segment	Total Spent	# of Purchases	Marketing Priority	Loyalty Marketing	Stimulation Marketing	General Marketing
Customer 1 Gas & Car Care	\$167.25	8	Stimulate higher usage	Any gas station, seasonal car care	Add a category – Fast food or grocery	Vertical purchases in gas/auto
Customer 2 Light Retail	\$123.70	6	Stimulate higher usage	Women’s retail, small \$ incentive	Add fast food – small \$ incentive	Budget buyer, small \$ spend, note “event” of formal wear (a trigger?)
Customer 3 Weekly Groceries	\$228.69	4	Stimulate usage	Grocery coupon at Acme (same store only)	Add a category; fast food, big box retail or gas. Small incentives may work	Rigid vertical spend in grocery, all same store, with little variance
Customer 4 Collegiate	\$671.72	4	Maintain preference, stay alert for graduation	Internet coupons or telecom incentive	Internet retail	Needs-based spending now, high on telecom, internet spend, low on home, other retail
Customer 5 Travel & Entertainment	\$1,809.23	16	Retain relationship	Travel loyalty programs, esp. car based or phone card	Incentive to add hotel category	Lots of 800# (remote) and Internet spending, calling card. Shop on internet
Customer 6 Card as Cash	\$2,052.06	40	Retain relationship	Fast food, Kmart or Walgreens incentives	Mid-price restaurant, entertainment, incent to add grocery or clothing	Many small purchases, esp. meals out, discount stores and movie/ video

**Figure 2. Strategies to manage relationships with six sample customer tempo segments based on sample transaction records over a period of one month.**

## Creating a Customer Tempo Analysis

Customer tempo analysis consists of transaction data and much more. In order to conduct an effective customer tempo analysis, it is helpful to have as much information about the customer as possible among the data types shown below in Figure 3. Marketers then need to develop the data and analyses in the following ways:

- Create a centralized marketing database with a unique record per individual for observation and measurement
- Maintain snapshots of individual transaction behavior over time, ideally for at least 24 months on a rolling basis
- Add to this database all channels of consumer contacts possible, even if they are only available for some consumers. This might include Web site behavior, response to promotions, media viewing preferences and other lifestyle or spending information
- Use several layers of analytics to understand consumer behavior. Segment clusters and multiple predictive scores for promotion response, attrition risk and future value are different dimensions that give greater insight together than each one alone
- When data is available on only some of the customers, develop an index to the whole group to make use of the richer data you have on that small group
- Track and trend results by segment and in total against competitors

Data Type/Source	Updates	Contents	Use
<b>Demographic data—census (10% sample of actual details years)</b>	10 years, some validation every 3 years	Age, education, income, size of HHD, presence of children, own/rent, length of residence, etc.; assumes people in the same neighborhood have similar characteristics	Media placement, market research, broad customer population estimates, direct mail
<b>Purchase</b>	Monthly or quarterly	Recency, frequency, monetary value of purchases or money spent with company	Segmentation according to value; includes loyalty program participation and use
<b>Media viewing (Scarborough, Nielsen)</b>	Quarterly	1%–2% samples of population on media viewing (TV, outdoor, commuting patterns)	Media placement, ad spending and ad copy; samples too small for predictive modeling
<b>Behavior scores—credit, debit or purchase—from credit bureau data or co-op databases</b>	Monthly or per campaign	Likeliness as a good risk (for credit cards or mortgages), likeliness to respond to a promotion (these are scores; heterogeneous groups, hard to categorize for communications)	Targeted direct mail or interactive promotions (interactive must have registration to identify an individual)
<b>Web site/search behavior</b>	Per Web session	Entry point and search pattern, pages viewed, length of view, number of views, number of clicks	Web page design optimization, placement, search ads, banner ads (usually not identifiable by individual; difficult to match to other data)
<b>Transaction data</b>	Daily	Dollar amount, name of merchant, location of purchase	Customer tempo analysis; segments by product usage; predictive scores for response and retention; trigger event identification for growth opportunity, retention risk or fraud risk

Figure 3. Data sources, typical update periods, what the data contains and how it is typically used.

Let's see how customer tempo data and insight can build better predictive scores to improve the performance of marketing campaigns and better forecast trends in the population.

## Customer Tempo and Predictive Scoring

**Traditional Predictive Analytics.** Traditional predictive analytics generally creates a score that is a snapshot at a point in time of a consumer's likelihood to do something. Using customer tempo measurement to enhance traditional predictive analytics can create a more accurate and detailed score. A predictive analytics score can represent the possibility of a customer's purchasing an item that your company plans to promote or the possibility of a customer's undesirable behavior, such as choosing a competitor's products or services over yours. The scores enable marketers to rank customers within a population and to construct a break-even analysis based on the profitability of the customer and the marketing cost.

The following table shows a typical breakdown of forecasted returns on a marketing campaign based on traditional predictive scoring only. It projects response rates, promotional costs by segment and expected return on the campaign for each segment. The marketer would use this data to decide who should receive the promotion in order to ensure the profitability of the campaign.

Score Range	Number of Customers	Response Rate	Cost per Touch	\$ Per Sale	Marketing Cost	Response per Band	Profit (Loss)
80 - 90	1,227	5.00%	\$2	\$100	\$2,454	\$6,135	\$3,681
70 - 79	1,982	2.00%	\$2	\$100	\$3,964	\$3,964	\$0
50 - 69	1,843	1.00%	\$2	\$100	\$3,686	\$1,843	(\$1,843)
30 - 49	1,973	0.50%	\$2	\$100	\$3,946	\$987	(\$2,960)
1 - 29	1,975	0.20%	\$2	\$100	\$3,950	\$395	(\$3,555)

**Figure 4. Typical breakdown of expected returns on a campaign based on traditional predictive scoring only.**

In the example above, the break-even point for this campaign is at the score of 70. Below that score, the company loses money on the campaign. This is useful in direct marketing, whereby marketers can tag a consumer record with the score and generate a list using this criterion. In this case, the prudent decision would be to send the promotion only to those records whose predictive score is greater than 70.

**Now, Add Customer Tempo Analytics.** A customer tempo analysis goes to the next level by incorporating transaction data into the scoring methodology to create improved scores that are a more accurate prediction of the customer's propensity for certain behavior. These scores provide a better way to decide which offers should be sent to which customer, how much should be spent overall on the customer and when aggressive retention efforts may be warranted. Predictive analytics scores that feature customer tempo measurement often include the following:

- Likelihood to respond with a purchase
- Likelihood to buy other products, which reveals cross-selling and up-selling opportunities
- Likelihood to buy only once or drop from the service—a measure of retention risk
- Likely dollar spend per purchase or campaign

The company can then decide whether to use less expensive marketing pieces to reach a broader customer base or to spend more on the most valuable potential customers. Strategies to foster loyalty and reduce attrition can be compared to those producing new revenue to address each customer appropriately. The behavioral scores combined with the customer tempo analysis of spending patterns also reveal messaging and channels that are most effective at influencing the desired outcomes.

## Case Study: The Right Account, the Right Offer, the Right Time

Facing pressure to reduce escalating customer attrition while conserving scarce marketing resources, a regional bank needed to successfully target the right accounts with the right offers at the right time. To do this, the bank had to accurately identify existing cardholders who were most likely to leave, and then attempt to increase their card usage (and likelihood of remaining customers) by sending them targeted promotional offers and incentives. By focusing its retention efforts on the cardholders with the greatest attrition risk, the bank sought to maximize the return on its marketing investment.

The bank engaged First Data to execute a customer tempo analysis that would enable it to identify which customers to target and then to create customized marketing offers that would be relevant and effective. First Data worked with the bank to construct a predictive model using customer transaction data and demographic information. Analyzing historical transaction data over a two-year period for two million accounts period enabled First Data to assign an attrition score to each current cardholder—specifically, a percentage expressing the probability that a particular customer would cancel or inactivate their account during the next 60 days. This was accomplished by comparing the purchase velocities and product affinities (discussed on page four) of existing accounts with those of canceled or inactive accounts. This analysis produced attrition scores for each cardholder, and yielded valuable insights that could be used to design effective promotional offers to retain customers with the highest risk of attrition.

For instance, it was found that customers with low usage of their cards at gas stations were comparatively more likely cancel their accounts than customers with moderate card usage at gas stations. More interestingly, however, the analysis revealed that cardholders with high usage at gas stations were also comparatively more likely to cancel their accounts—a counterintuitive finding that prompted the bank to target these high-value cardholders with gasoline promotional offers. First Data’s customer tempo analysis also showed that usage of the bank’s card for parking services at least once a quarter was a reliable indicator of decreased attrition likelihood. This remarkable discovery was made possible by First Data’s proprietary text mining capabilities, which enable it to categorize businesses with much greater accuracy and specificity than Standard Industrial Classification (SIC) coding allows. As a commercial category, “Parking” falls under the SIC code “Government Services,” but text mining uses business’ trade names to classify purchases with greater precision, and consequently produces more valuable information for assigning predictive scores and constructing marketing campaigns.

Armed with predictive scores and extensive customer purchasing insights, the bank applied aggressive, highly customized promotional efforts to those accounts most likely to be closed during the following 60 days. The bank placed the strongest focus on the 10 percent of customers with the greatest attrition likelihood, segmenting them into categories based on demographics and spending habits. This enabled the bank to customize promotions according to cardholders’ historical product affinities, resulting in relevant and compelling customer offers. Targeting its most at-risk customers permitted the bank to focus its resources where they mattered most, and segmenting these customers allowed it to develop effective marketing campaigns to increase card usage and reduce the likelihood of attrition. Preliminary results indicated that this approach was a success: the bank expects to increase card usage by eight percent, alongside a six percent reduction in attrition.



## Adding Customer Tempo to Your Marketing Analytics

Successful customer tempo analysis depends on three critical ingredients:

1. Comprehensive data that includes demographic data, behavioral data, media response data and a record of transactional data that is as complete as possible
2. Analytical tools capable of combining all these data sources into one view which can be adjusted for the desired marketing goals
3. Clear strategic and financial objectives

Although your company may already have an abundance of data from a variety of sources, few marketers have a complete, integrated picture that includes data from all sources. Even fewer have the tools to process this enormous volume of transactional data into one single, all-encompassing analysis. Fortunately, there are experienced providers like First Data that specialize in this type of analysis—and can provide the services and expertise to enable you to gain a competitive edge by applying customer tempo analytics to your marketing decision making.

For merchants and financial institutions, these are the key criteria you should address when you choose a service provider to help with customer tempo analytics:

- Ability to understand your company’s individual situation and tailor the analytics to meet your needs, as opposed to providing an out-of-the-box, one-size-fits-all solution
- Expertise with time series data and leading edge analytics using the powerful algorithms available today to analyze large sets of data
- Ability to provide insight developed from the analysis in ways that can be used by your organization’s marketing and management teams—readable, useful and focused reporting

Customer tempo analytics turns static snapshots into full-length movies featuring customers and markets. These moving pictures enable marketers to better anticipate customer behavior and refine campaign messaging in a way that significantly increases the return on marketing investments—sometimes as much as doubling the effectiveness of a campaign. Customer tempo measurement can increase the profitability of marketing programs, breathe new life into stale campaigns and provide a powerful, competitive edge in any outreach to customers.

First Data possesses the technology, services and expertise to enable you to make smart, data-driven marketing decisions with customer tempo analysis. We are setting a new standard in customer analytics and decision management, generating successful outcomes for all types of businesses, throughout the customer lifecycle. We offer an integrated analytics and decision management platform combining analysis, prediction, strategy and reporting capabilities to ensure better informed marketing decisions and better results.



## About the Authors

**Mollie Cameron is Director of Client Services at First Data.**

She came to First Data through the purchase of Intelligent Results in 2007. Mollie has over 19 years of experience in marketing as a product manager in banking, healthcare and merchandising. Before joining Intelligent Results, Mollie held a number of senior management and client engagement positions at Fair Isaac where she oversaw design and implementation of database marketing solutions for banking, retail and travel and entertainment clients such as Fleet Bank, Enterprise Rent-A-Car and DSW Shoe Warehouse. She has a B.A. in Economics from the University of Michigan and an M.B.A. from the University of Chicago.

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**organization at First Data**, where she and her team provide best-practice, pre-sales solution presentations and design services throughout the sales cycle. Her focus is on helping companies apply analytics to real-world marketing challenges, such as acquisition, retention, loyalty and segmentation.

Prior to joining First Data, Leigh held a variety of pre-sales management, pre-sales consulting, and account management positions over her 20-year career, including Intelligent Results, E.piphany and PeopleSoft, where she provided sales support in the Enterprise Performance Management area. Her career started in the statistical model development arena with Management Decision Systems, where she built numerous custom models, as well as generic credit bureau models. Leigh holds a B.S. degree in Industrial Engineering and a M.S. degree in Statistics. Both degrees are from the Georgia Institute of Technology.

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