CUSTOMER ANALYTICS - USE Of ANALYTICS IN CRM

Module 4.1 – CRM
Statistical Approach

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CRM Course Content

Day 1

- CRM Overview
- Customer life cycle
- CRM infrastructure
- Campaign management overview
- CRM developments
- Introduction to Assignments

Day 2

- Customer Lifetime Value
- Customer Loyalty and Demand
- Workshop using XL simulation on CLV

Day 3

- Customer Satisfaction
- Customer Segmentation and Profiling
- R Workshop on RFM analysis
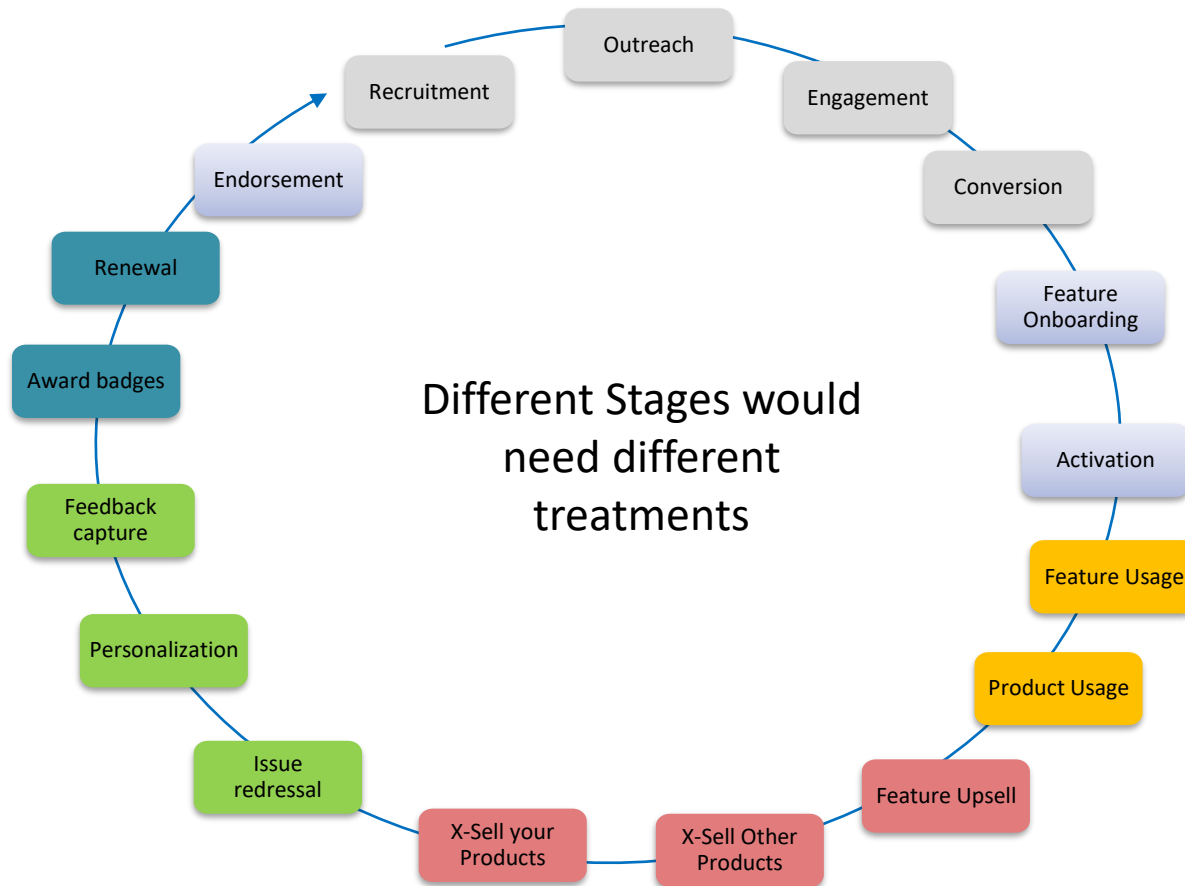- Latest trends in Customer Analytics

Day 4

- Customer Analytics
- Statistical Approach to CRM
- Cross sell/ Up sell / Look-Alike Model
- Attrition Model
- Time To Event Model

Day 5

- Assignment Presentations

Customer Lifecycle

Different Stages would need different treatments

Understanding Customers is Essential for Efficient Customer Management

Customer analytics is a process by which data from **customer** behavior is used to help make key business decisions via market segmentation and predictive **analytics**. This information is used by businesses for direct marketing, site selection, and **customer** relationship management

Statistical Approach to CRM

Top down

Market Size & Growth

Market Adoption Rate	Growth
Market Base Estimates	White Space

- Useful for new product & services
- Useful for growth rates identification
- Pareto analysis to identify large spenders.

- Process : Market Survey / Experiment

- Useful for GTM strategy and database marketing
- Statistical modelling to have deeper understanding of customer behaviour and value.
- Process : Lifetime value, wallet est, likelihood to buy or likelihood to churn.

Retain & growth	Win (back)	Acquire
Own Customer list	Competitors base	Unclaimed territoty

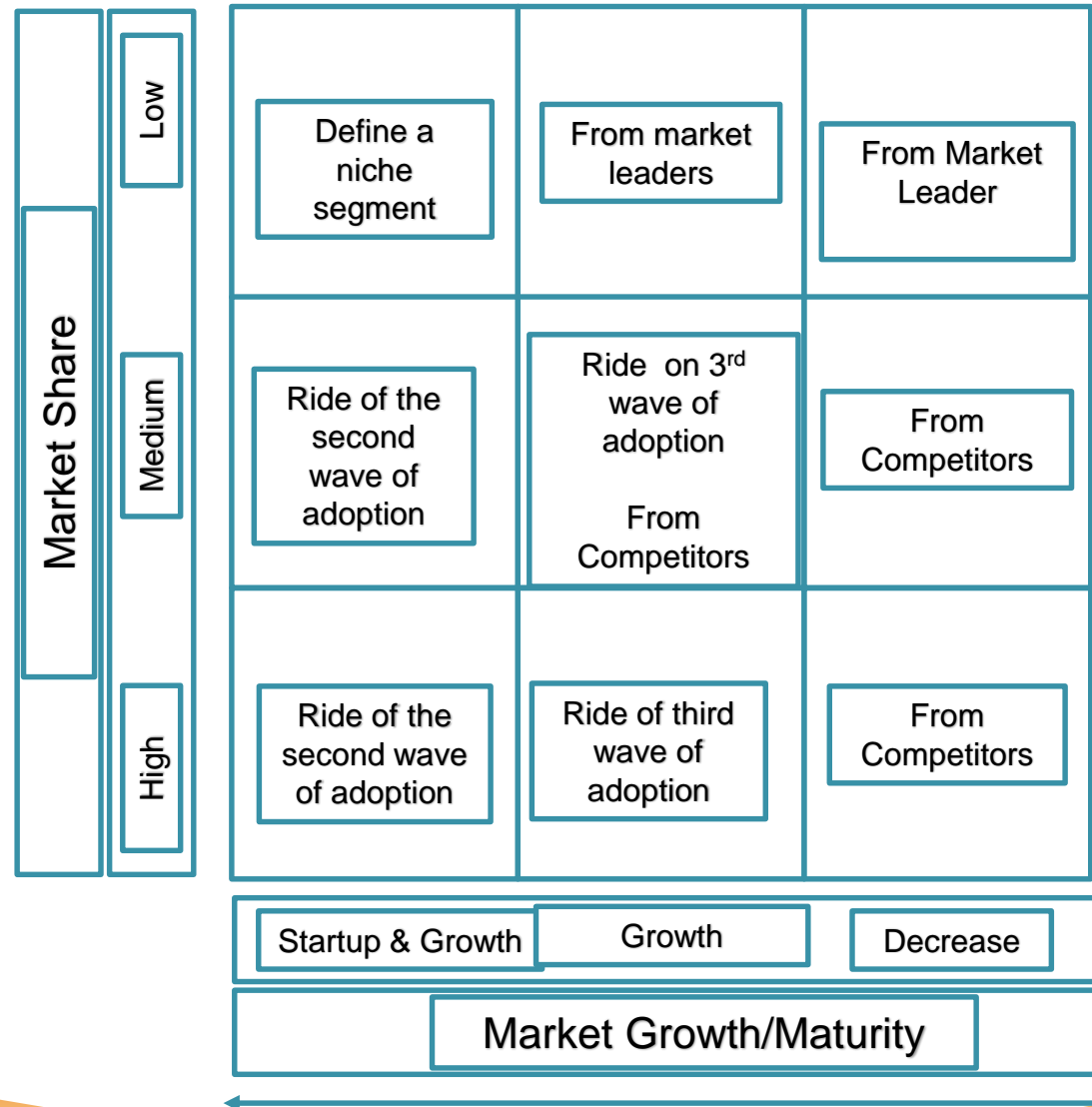Total Market Customer Base

Bottom Up

Where to find customer to acquire?

Since there is a finite number of customers in the market.

To acquire new customers, we can consider the following criteria :

- *Market maturity*
- *Market Share*

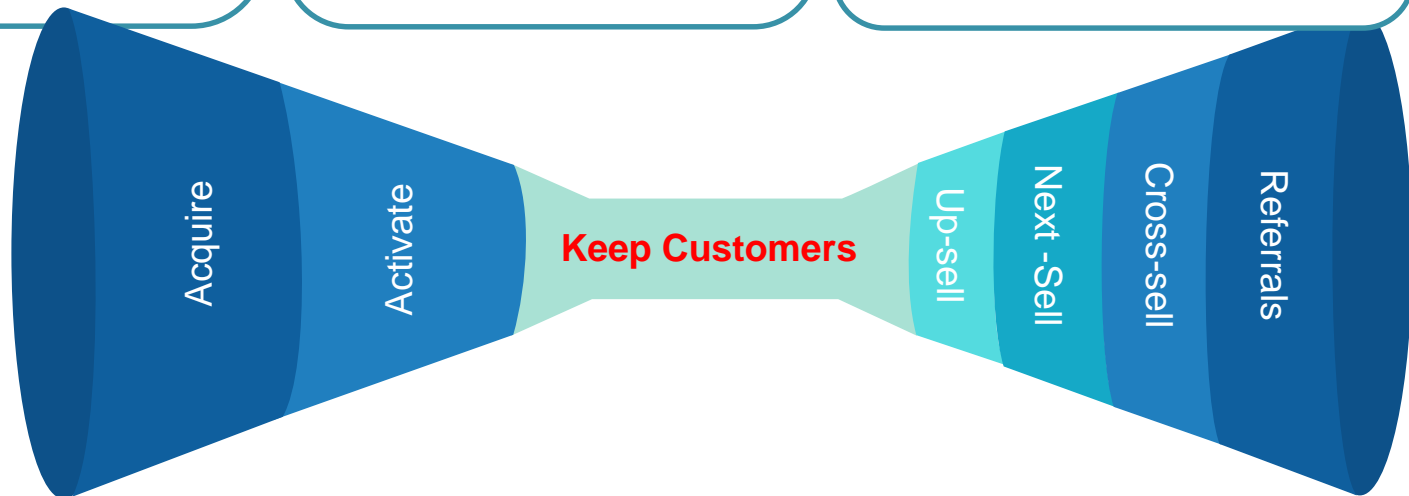| Market Share		Startup & Growth	Growth	Decrease
Low		Define a niche segment	From market leaders	From Market Leader
Medium		Ride of the second wave of adoption	Ride on 3rd wave of adoption From Competitors	From Competitors
High		Ride of the second wave of adoption	Ride of third wave of adoption	From Competitors

Market Growth/Maturity

Popular CRM Metrics

Touch & Response rate
- Web Click
- Email open & click
- Webinar attendance
- Event attendance

- Net new potential customer
- Lead generation
- Lead to opportunity
- Opportunity to sales

- Customer value

Acquire | **Activate** | **Keep Customers** | **Up-sell** | **Next-Sell** | **Cross-sell** | **Referrals**

Customer loyalty

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Marketing's Objective:
Generate Demand Effectively and Efficiently

Customer Acquisition	Customer Development	Customer Retention	Customer Re-Acquisition
Find and attract new, profitable customers	Develop existing customers by increasing share-of-wallet and/or the profitability	Keep the most valuable customers	Regain the business of customers who have defected

Operational Effectiveness

Run an efficient, cost-effective marketing function to maximize the return on marketing expenditures and maximize customer satisfaction

Marketing Objectives

Customer Acquisition	Customer Development	Customer Retention	Customer Re-Acquisition
• Are you meeting your growth targets? • Are you acquiring profitable customers? • Are you gaining share against your competitors? • Has your customer acquisition cost increased over the last year?	• Are you cross-selling / up-selling customers effectively? • How are you stimulating demand? • What is your share of wallet on new customers?	• What is your retention rate on new and existing customers? • How effective are your loyalty programs? • Are your competitors picking up your best customers? • Are you pro-actively re-pricing / re-positioning your best customers? • Do you have a "save team"?	• Do you understand why customers left? • Do you have a reacquisition program in place? • Do you target former customers differently than new customers?

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Capabilities Required to Meet Marketing's Objectives

Successful execution requires an integrated five step process that links customer insight to effective marketing actions

Understand Behavior

- How do I use data to learn about my customers? Who are my best/worst customers?

Predict Behavior

- How are those customers likely to behave in the future? How do they react to the myriad ways I "touch" them?

Recommend Action

- How do I leverage that knowledge to extract maximum value from my marketing investments?

Operationalize

- How do I ensure that my desired actions are successfully executed?

Measure & Improve

- How do I learn from my marketing activities and retain/use that knowledge into the future?

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Customer/Marketing Analytics Provides the Required Capabilities

Tools that increase your understanding of customers and increase your marketing leverage through improved customer targeting

Models/Metrics for Customer Acquisition

- Various model based approach for customer acquisition are available for B2B firms and B2C firms.

- Models differ for **contractual and non-contractual** acquisitions within B2B and B2C respectively.

- Key questions to address:
  i. Respond rate to acquisition promotion and varying respond rate by medium (online, referral, word of mouth, promotion type,..)
  ii. Number of customers to acquire
  iii. Initial order quantity of newly acquired customer
  iv. **Duration of relationship** with newly acquired customer
  v. Financial return (profit/revenue) for this campaign.

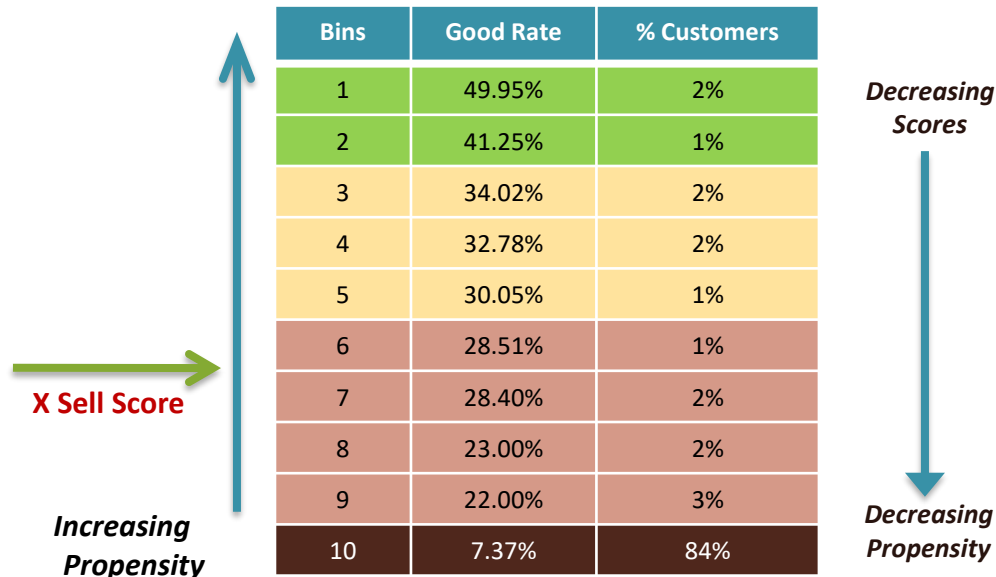| Logit model (logistic regression)	Conversion ratio
Linear regression, VAR (with/without time series)	Conversion ratio
Hazard function, Survival function	
Lifetime value, optimal acquisition spend	

Scorecards – Tools for Marketing Analytics

X-Sell Score/ Propensity Score

Population Take up Rate in a campaign 11.21%

Bins	Good Rate	% Customers
1	49.95%	2%
2	41.25%	1%
3	34.02%	2%
4	32.78%	2%
5	30.05%	1%
6	28.51%	1%
7	28.40%	2%
8	23.00%	2%
9	22.00%	3%
10	7.37%	84%

X Sell Score

Increasing Propensity

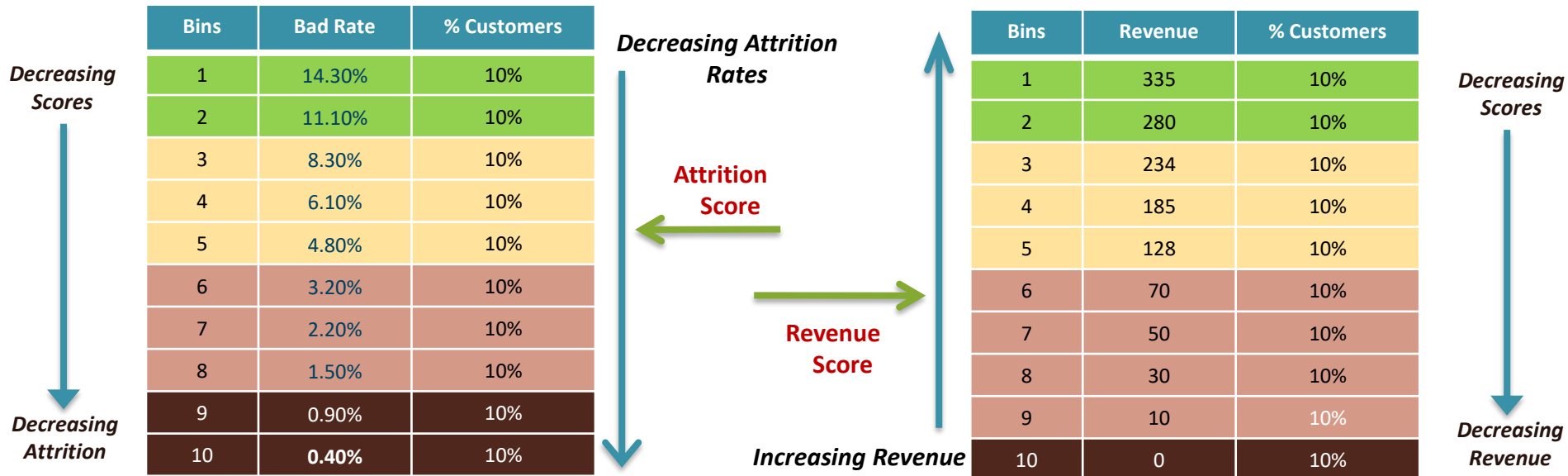**Decreasing Scores**

Decreasing Propensity

Increasing Risk

Scorecards – Tools for Marketing Analytics

Portfolio Attrition Rate 5.28%

Population Avg Revenue 132.2

ATTRITION SCORE

Decreasing Scores

Bins	Bad Rate	% Customers
1	14.30%	10%
2	11.10%	10%
3	8.30%	10%
4	6.10%	10%
5	4.80%	10%
6	3.20%	10%
7	2.20%	10%
8	1.50%	10%
9	0.90%	10%
10	**0.40%**	10%

Decreasing Attrition

Decreasing Attrition Rates

Attrition Score

Revenue Score

Increasing Revenue

REVENUE SCORE

Decreasing Scores

Bins	Revenue	% Customers
1	335	10%
2	280	10%
3	234	10%
4	185	10%
5	128	10%
6	70	10%
7	50	10%
8	30	10%
9	10	10%
10	0	10%

Decreasing Revenue

The various techniques used for score development

Techniques	Target Characteristic	Comments
Logistic Regression (Logit)	**Binary / Multinomial**	• No Normality distributional assumption needed
Ordinary Least Squares Regression (OLS)	Continuous/scale	• Normal distribution assumption* • Out of [0-1] range
Neural Networks	Continuous/scale /Binary/ Multinomial	• Black-box i.e. no explanation • Tend to over-fit the model
Decision Trees	Binary/Multinomial	• Not so stable beyond top few nodes • Nodes of different sizes • Do not have long shelf-life
Discriminant Analysis	Binary / Multinomial	• Normal distribution assumption*
Partial Least Squares Regression (PLS)	Continuous/scale	• An extension of OLS • Models are more abstract, thus more difficult to understand and interpret

* Not typically observed in Bank's data

Customer Acquisition/Re-acquisition Strategy

"Marketing is the science and art of finding, keeping, and growing profitable customers"

Philip Kotler

Prospect Targeting

» Risk Vs Rewards
» Responders
» High Value
» Loyal

Relevant Offers

» Determining the right offer keeping risk and reward in mind
» Campaign Measurement & Analysis
» Test & Learn

Contact Strategy

» Frequency
» Timing
» Channel

Who To Target
Identify the best prospects with acceptable risk & min acquisition costs
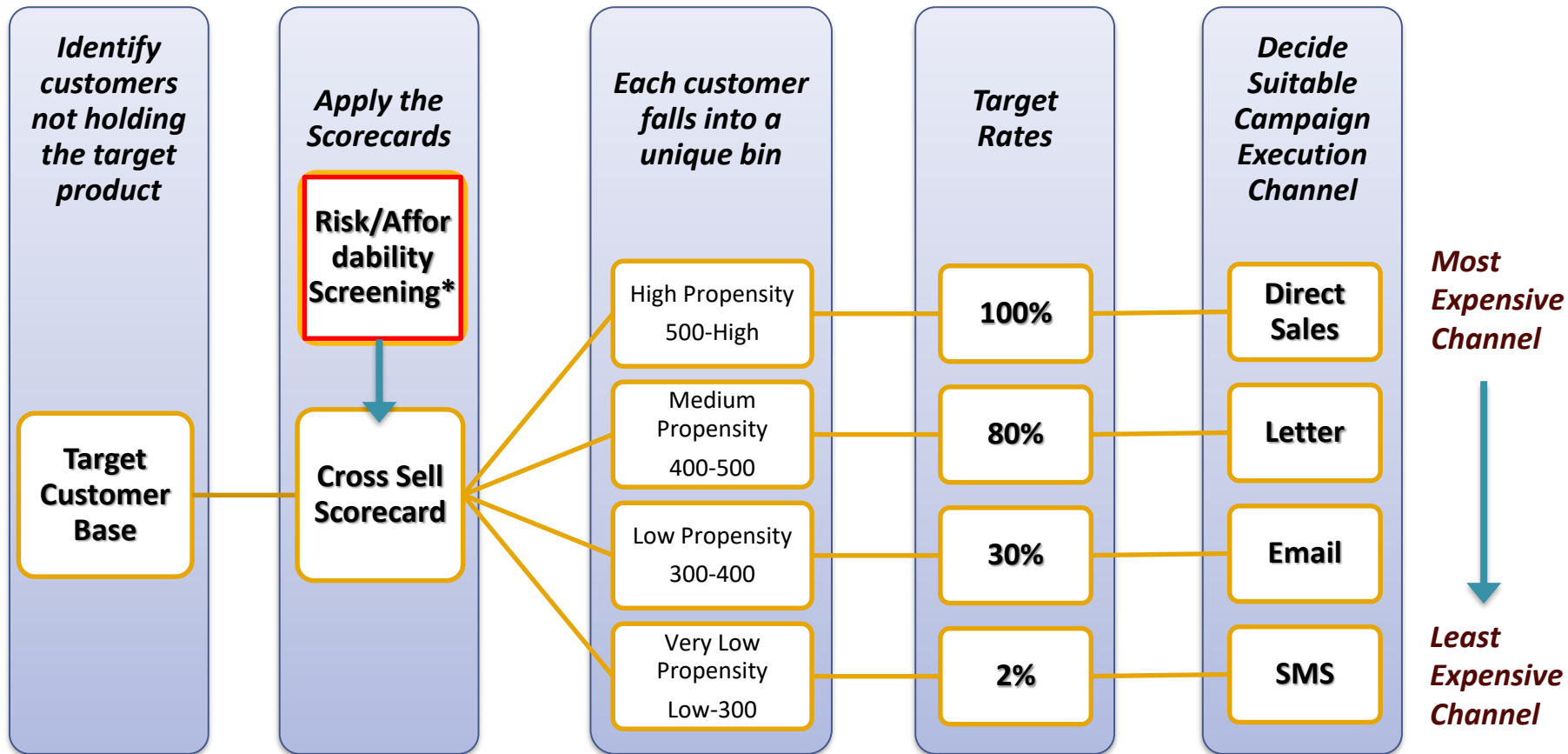
What to Offer
Develop relevant offers & messaging for response

How to Say it
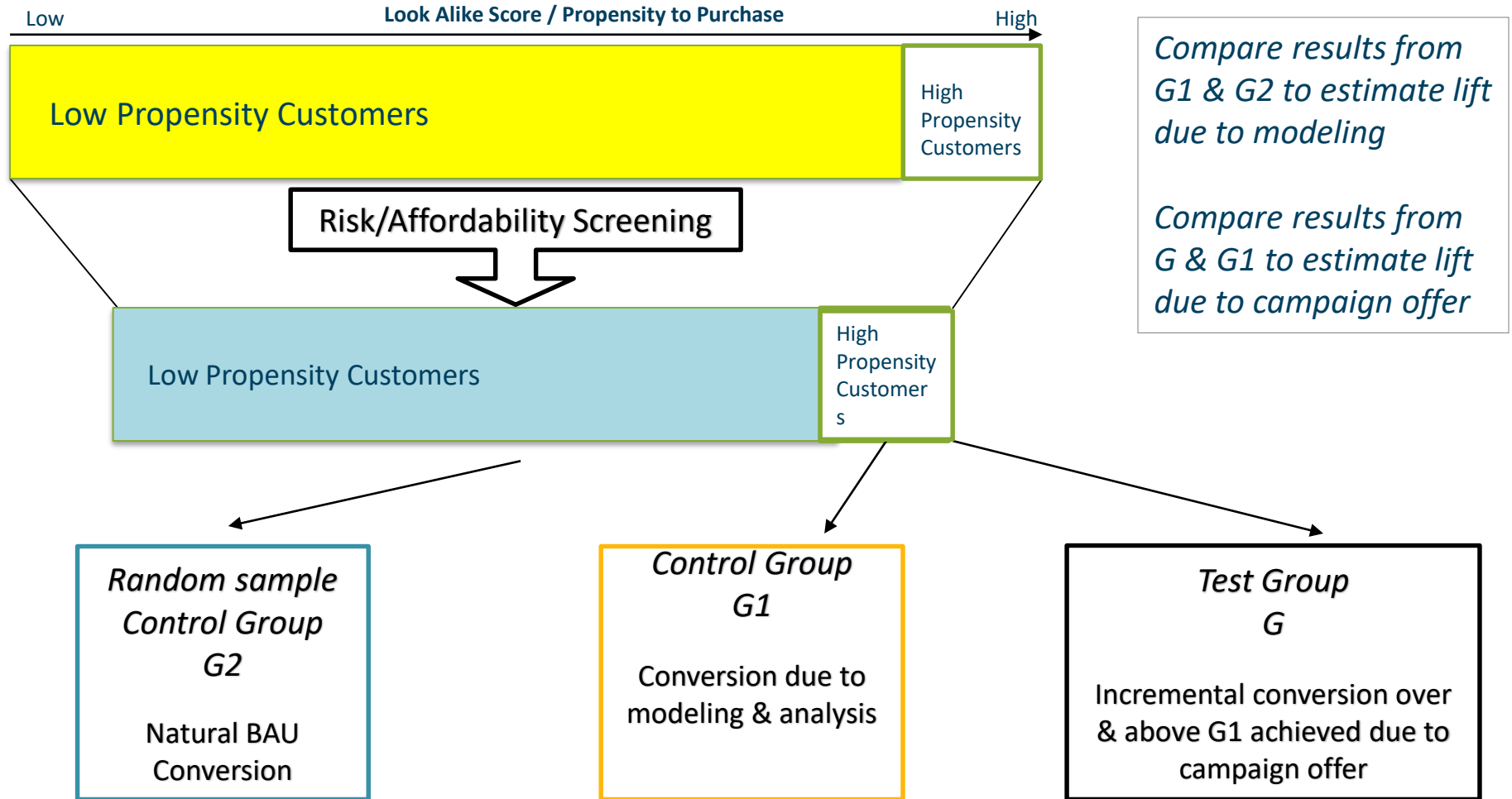Determine the optimal timing and channel for response.

Through a DM Lens

Using X-Sell/Propensity Scores

Identify customers not holding the target product

Apply the Scorecards

Risk/Affordability Screening*

Target Customer Base

Cross Sell Scorecard

Each customer falls into a unique bin

| High Propensity 500-High |
| Medium Propensity 400-500 |
| Low Propensity 300-400 |
| Very Low Propensity Low-300 |

Target Rates

| 100% |
| 80% |
| 30% |
| 2% |

Decide Suitable Campaign Execution Channel

| Direct Sales |
| Letter |
| Email |
| SMS |

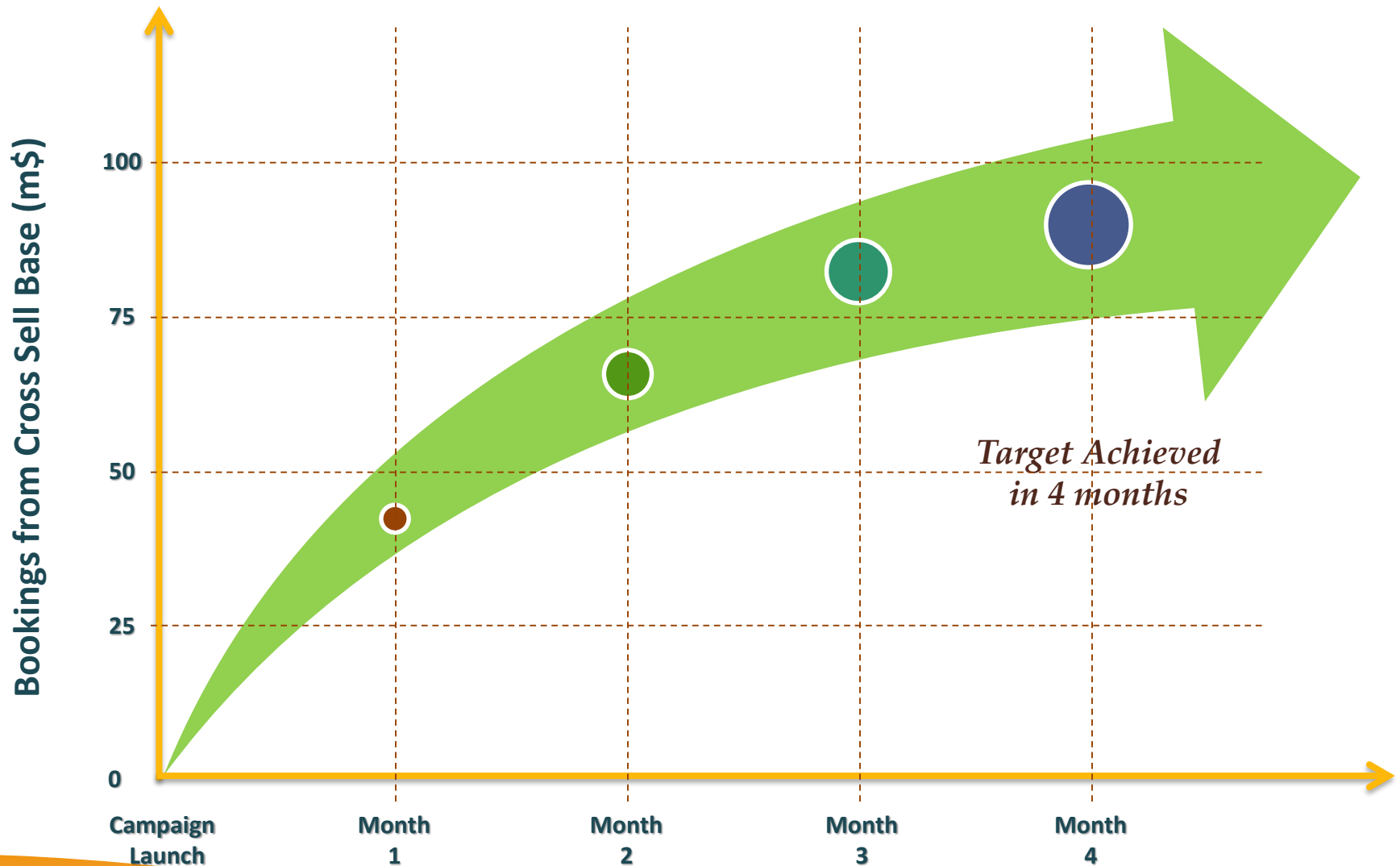*Most Expensive Channel*

Least Expensive Channel

*Applicable only for Banks & loan application

Tracking Cross Sell Scores

Prepare the Control & Test list of customers in order to track the campaign results

Low   **Look Alike Score / Propensity to Purchase**   High

Low Propensity Customers

High Propensity Customers

Risk/Affordability Screening

Low Propensity Customers

High Propensity Customers

Compare results from G1 & G2 to estimate lift due to modeling

Compare results from G & G1 to estimate lift due to campaign offer

Random sample Control Group G2

Natural BAU Conversion

Control Group G1

Conversion due to modeling & analysis

Test Group G

Incremental conversion over & above G1 achieved due to campaign offer

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Sample Campaign Results

Target Achieved in 4 months

Bookings from Cross Sell Base (m$)

100 — 75 — 50 — 25 — 0

Campaign Launch | Month 1 | Month 2 | Month 3 | Month 4

Customer Development Strategy

"The only profit center is the customer"

Peter Drucker

Customer Targeting

- » Multi-Dim Profile
- » New
- » Active
- » Inactive
- » High/Low Value

Understanding Behavior

- » Merchandising Preferences
- » Frequency / timing of visits
- » Promotion and response history
- » Customer Service History
- » Transaction History

Relevant Messaging

- » Age / Gender
- » Family status
- » Attitudes
- » Passions

Who to Develop
Identify customers whose behavior we can most influence and are of greatest value

What to Say
Build relevant offers based on historical and predicted behaviors

How to Say it
Drive tone & treatment based on interests, preferences and demographics

Through a DM Lens

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Segmentation

- ***Pareto's rules*** – On average 80% of your profits comes from 20% of your customers.

- This also means that 80% of your customer only contribute 20% of your profits!

- Make Pareto's Rule actionable by clearly identifying where customer value is concentrated

- Work across your pillars of power (Finance, Marketing, Ops, etc) with a common definition of **customer value**

- Provides a customer-centric view of your business by creating holistic segments highly differentiated by value

An Segmentation allows you to be more relevant with your customers while building & maintaining profitable relationships.

Pareto's Rule

80% of profits comes from these 20% of customers
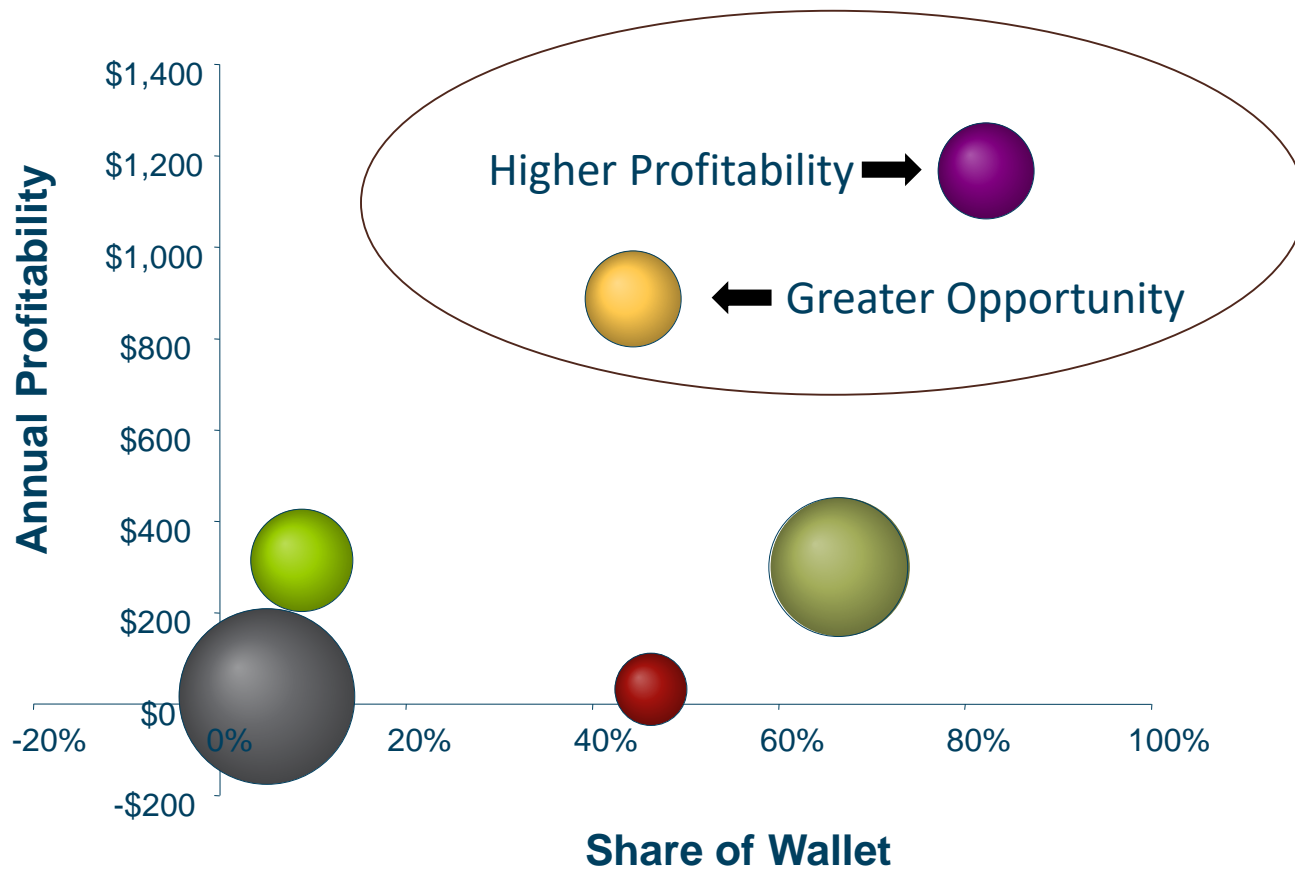
Segmentation Solution Summary

Customer Segment Profiles – Retail Business – cobrand card

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6
Size	5%	7%	8%	5%	8%	9%
Customer Profit Contribution*	50%	28%	21%	-12%	5%	4%
Write-Off Rate	1.2%	0.3%	0.3%	42.0%	0.0%	0.0%
Month Bal Pay	10%	17%	19%	5%	97%	87%
Relationship to Product Portfolio	High	High	High	Low	Low	Med
Retail Relationship	Med	Med	Low	Low	High	High
CTR Spend	Med	Low	Low	Low	High	Med
Unique Spending Preferences	Home, Leisure, & Travel	DIY, Adult Clothing, Discount Shopper	Auto, Travel, Education	Convenience Stores, Package Stores, Service Stations, Fast Food	Gardening, DIY, Big Ticket Purchases	Home, Family Clothing, Grocery
Other	Gender, age, province, responsiveness, call center & IVR activity, tenure, bureau, etc.					

Identify Distinct Clusters and Profile Them to Capture Their Behavioral Tendencies

Illustrative

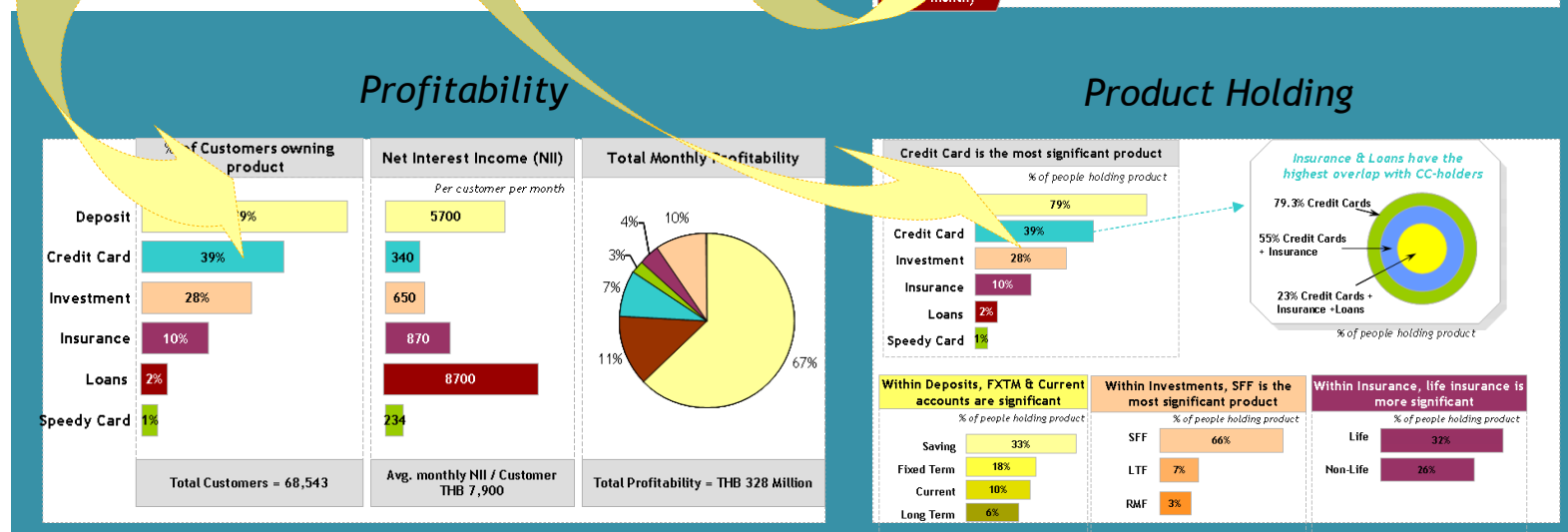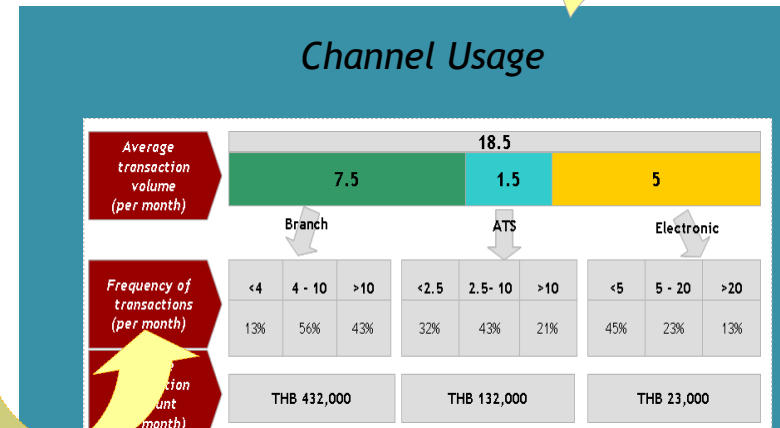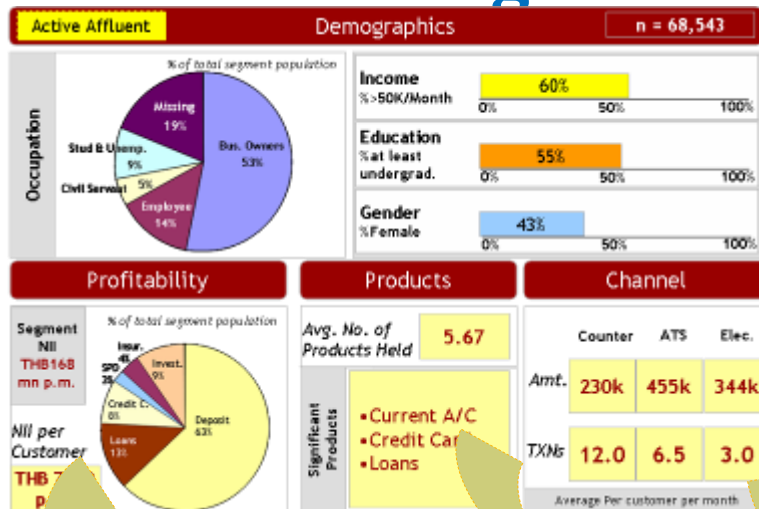4 segments unique across several dimensions…
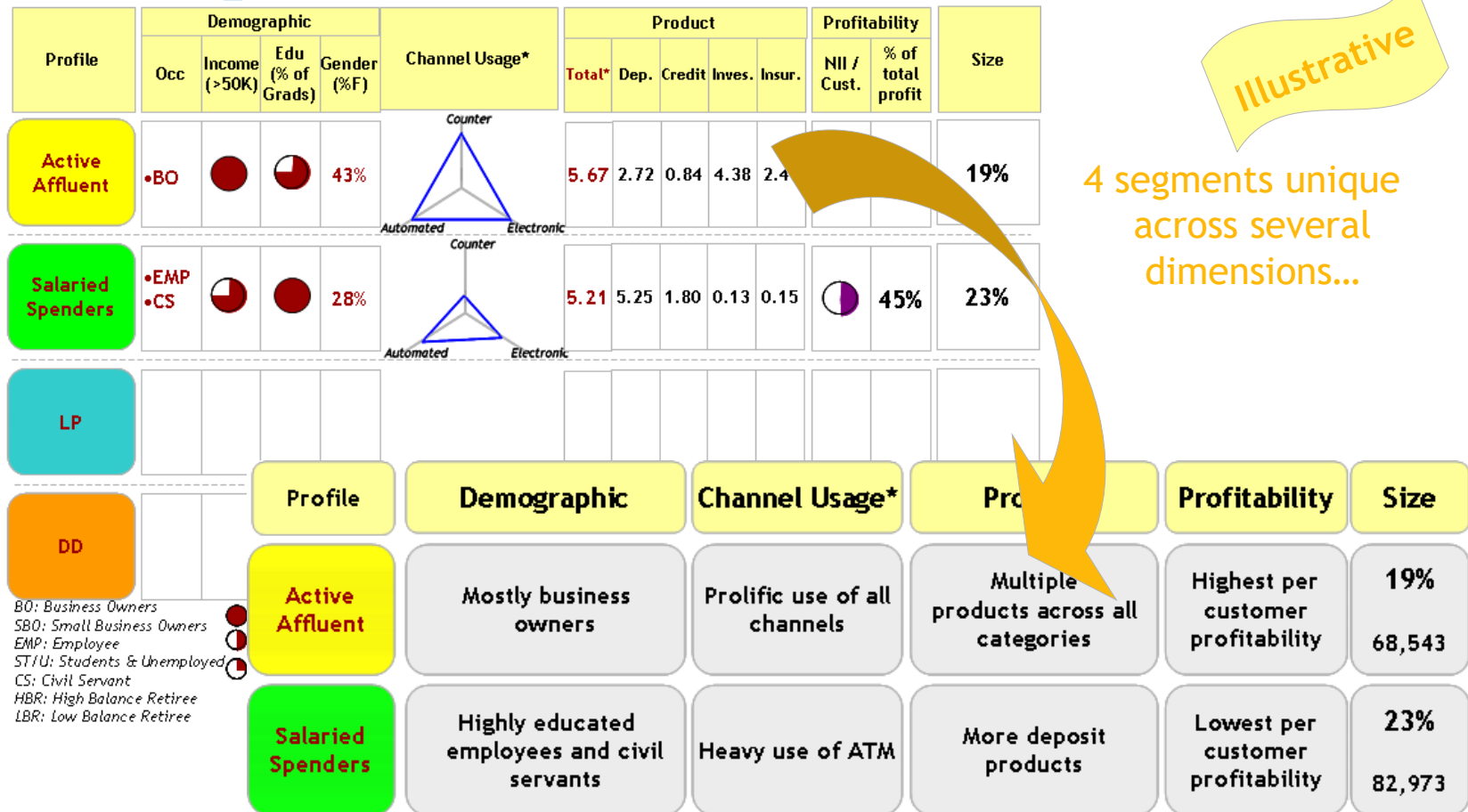
…which were profiled according to their behavior

Amount & transactions per month

Drill Down Into Each of the Segments To Identify Segment Specific Insights

Amount & transactions per month

Post Segmentation Plans

- Develop both short term and long term potential tactics for each segment
  - Targeting select segments for cross sell, upsell
  - Aligning new and existing products to segments
  - Creating new products based on segment and their relationship to the organization
- Potential financial targets associated with tactics
  - Increased sales
  - Improved inventory management
  - Credit management
  - Non-card revenue growth

Customer Retention Strategy

> *"If we're not customer driven, our cars won't be either"*
>
> *Statement by a Ford executive.*

Attriter Targeting

» Poor Service

» Natural Attriters

» Early Warning Signs

Retention Investment

» High / Low Value

» Retention Investment Strategy

Retention Strategy

» Competitive Threats
» Retention Offer / Messaging
» Timing
» Channel

Who is a Risk

Identify customers at risk of attrition

Who to Retain

Prioritize likely attriters to optimize retention investment
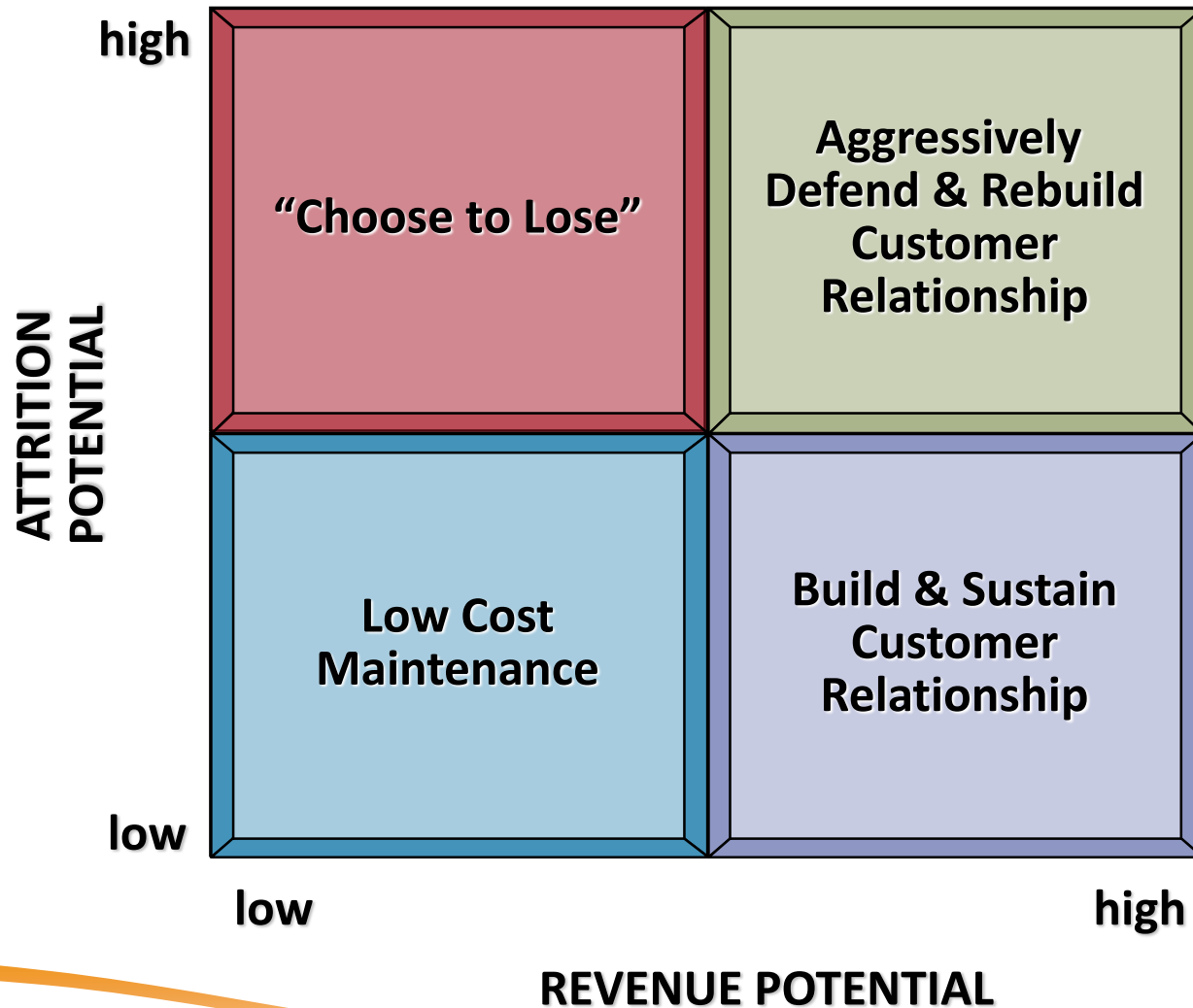
How to Retain

Understand key drivers of attrition and determine messaging / offer to minimize it

Through a DM Lens

Customer Retention Value

- Who is a Risk

  - <u>Attrition Models</u> rank customers by their likelihood to attrite and can be developed for either portfolio or campaign customers.

  - Predictive Analytics tools find the most predictive transactional variables for attrition modeling from the millions of available combinations. One needs leverage purchase transactions, customer service calls, IVR transactions, claims transactions, etc. for which processing can be managed using dimension reduction techniques

- Who to Retain

  - <u>Revenue & LTV Models</u> rank customers by their predicted or LTV value, which is used to drive the reinvestment strategy for a retention campaign

  - A <u>Value Based Segmentation</u> develops business relevant segments that can be used to guide a retention strategy around the reinvestment for each segment and which segments are most valuable to retain.

Example Customer Retention Strategy

ATTRITION POTENTIAL

high

"Choose to Lose"

Aggressively Defend & Rebuild Customer Relationship

Low Cost Maintenance

Build & Sustain Customer Relationship

low

low   high

REVENUE POTENTIAL

Typical Barriers to Customer-Centric View

- Organizational
  - Product silos
  - Multi-dimensional P&Ls, none focused on customer segments
- Technology
  - Enterprise Data Warehouse initiatives
  - Product- or channel-specific decision technologies and core systems
  - Timeliness and structure to customer file updates
  - Customer ID/keying issues
  - IT resource availability and priority
- Process
  - Sequence of offer generation and delivery
  - Efficiencies achieved today at product or channel level
- Analytics
  - Analysts trained on product- or lifecycle-specific analytics
  - Balance between account/product- and customer-level optimization
- Customer perceptions/brand permission

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Question & Answer Session