



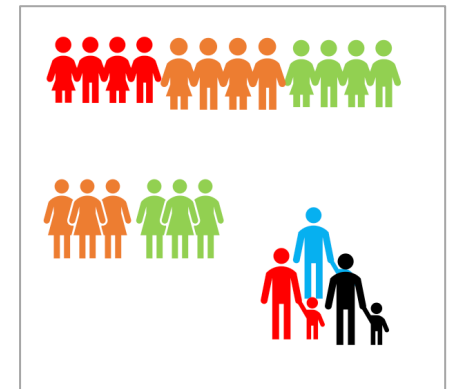
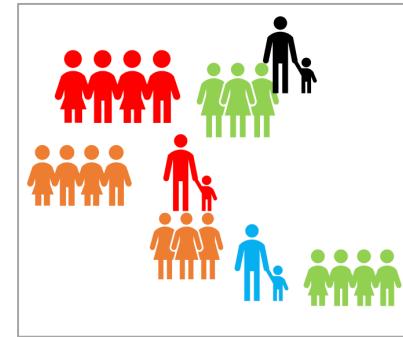
Segmentation

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Segmentation

- Divide the base (e.g. customers) into sub-groups (segments) that are meaningful
- Allow marketers to differentiate their strategic marketing approach by segment to maximize customer value.
- Premise: customized segmented efforts will be more effective than a one-size-fits-all approach.



Persona



Bring customer segments to life. Relatable and memorable



Beyond numbers, a vivid portrait



Generally requires overlay data from other sources

Segmentation is the starting point

Identify Customer Segments

Prioritize Segments and Develop Customer Personas

Customize Products and Features: Product versions, packaging, pricing, or features to cater to diverse customer requirements.

Craft Messaging and Positioning: Customize your marketing communications, branding, and advertising to speak directly to the concerns and desires of each segment, increasing relevance and engagement.

Optimize Distribution Channels

Measure and Analyze Segment Performance

Iterate and Refine: Refine segmentation approach based on changing market dynamics, customer preferences, and competitive landscape to ensure that products remain relevant and competitive.

Benefits



Better product development: Understanding segment preferences informs product features , differentiation, positioning. Opportunity to discover new niche markets



Better revenue: Sharper positioning, Personalized messages resonate better, leading to more conversions and higher customer lifetime value.



Better ROI: Resources are focused on specific segments leading to optimized spends



Enhanced customer satisfaction: Addressing specific needs creates a better customer experience resulting in loyalty and advocacy

Good Segmentation



Measurable: Easy to quantify and track.



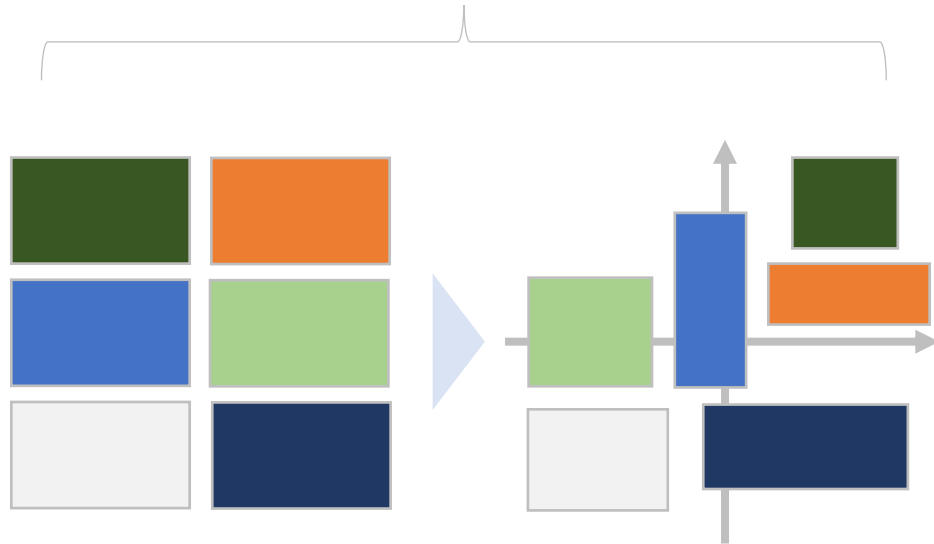
Accessible: Data on the chosen bases should be available.



Actionable: Segments should be large enough to be profitable and distinct enough to justify separate marketing efforts.

Segmentation levels

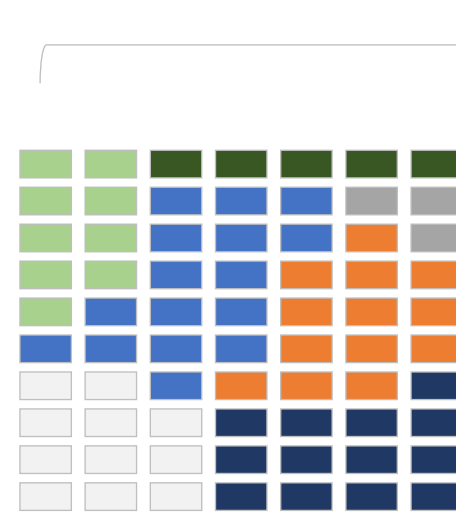
STRATEGIC-PLANNING LENS



Develop and profile
Strategic Segments

Size and prioritize
Strategic Segments

HYPERPERSONALIZATION



Apply **Customer
Identification, Customer
Preference and Behavioral
Signals** to engage

Micro (engagement) segments based on behavioral signals, customer preference, user status, and situational/contextual characteristics (such as emotions, weather, location, etc.).

Personalize each customer's messages based on the micro segments in which that customer resides at the moment.

Types of segmentation

- **Demographics:** Age, income, gender, education, family size, occupation, etc.
- **Firmographic :** Industry, size, location, decision-making process
- **Geographic:** Location, region, climate, urban/rural setting, etc.
- **Psychographics:** Values, lifestyles, personalities, interests, attitudes, etc.
- **Benefits sought:** Specific needs, desired features, price sensitivity, etc.
- **Behavioral:** Purchasing habits, brand loyalty, usage patterns, channels, online behavior, etc.

Data sources

Primary

- Market research
- Internal customer data - CRM, web/app, POS etc.

Secondary

- Syndicated research/ panels
- Media / census / Industry
- Search / Social
- Reviews

Example: Skincare – Needs

Hydration Seekers:

prioritize hydration for their skin. They may have dry or dehydrated skin and are looking for products that provide intense moisture and hydration. They are likely interested in products like moisturizing creams, serums, and hydrating masks.

Acne Fighters:

struggle with acne or oily skin. They are looking for products that help to control oil production, reduce breakouts, and minimize the appearance of blemishes. They might be interested in products like cleansers with salicylic acid, spot treatments, and oil-free moisturizers.

Anti-Aging Enthusiasts:

are concerned about aging signs such as wrinkles, fine lines, and loss of firmness. They are seeking products that target these specific concerns and help to improve the overall appearance of their skin. Products like anti-aging serums, retinol creams, and firming masks would appeal to this segment.

Sensitive Skin Individuals:

struggle with sensitive or easily irritated skin. They are looking for gentle and soothing products that won't cause irritation or allergic reactions. Products formulated with natural ingredients, fragrance-free options, and hypoallergenic skincare lines would be appealing to this segment.

Sun Protection Advocates:

prioritize sun protection and are concerned about sun damage and premature aging caused by UV exposure. They are interested in products with high SPF ratings, broad-spectrum protection, and lightweight textures that are comfortable to wear daily.

Example: Skincare - Behavioral

Example : Insurance

Personas



Detailed segment profiles

Priority segments



Example : Outdoor apparel/gear - Psychographics

Adventure Seekers: have an adventurous and thrill-seeking lifestyle. They are passionate about outdoor activities such as hiking, rock climbing, skiing, and camping. They value products that offer durability, performance, and functionality to withstand rugged outdoor environments. They are likely to be early adopters of new outdoor trends and are interested in products that enable them to push their limits and explore new challenges.

Nature Lovers: have a deep appreciation for nature and the environment. They enjoy spending time outdoors for leisure, relaxation, and rejuvenation. They prefer sustainable and eco-friendly products that minimize environmental impact. They are interested in brands that promote conservation efforts, use recycled materials, and support environmental causes.

Urban Explorers: live in urban areas but seek opportunities to connect with nature and outdoor experiences. They enjoy activities such as urban hiking, biking, picnicking in parks, and attending outdoor events. They value versatile and stylish outdoor apparel and gear that seamlessly transitions between urban and outdoor environments. They are interested in products that offer functionality without compromising on aesthetics.

Family Adventurers: comprises families with children who enjoy outdoor activities together. They seek products that cater to the needs of both parents and children, such as durable and comfortable clothing, kid-friendly gear, and family-friendly outdoor destinations. They value products that promote safety, convenience, and bonding experiences for the whole family.

Outdoor Enthusiasts: consists of customers who are passionate about outdoor hobbies and pursuits but may not engage in extreme or adventurous activities. They enjoy activities such as gardening, birdwatching, nature photography, or leisurely walks in parks. They value products that enhance their outdoor experiences and promote a sense of well-being, relaxation, and connection with nature.

Example: Outdoor gear : Search and online data

Data

Search Keywords: What terms are people searching for? (e.g., "tents for beginners", "lightweight backpacking gear", "waterproof hiking boots")

Filters: What filters do people use on your website? (e.g., price range, brand, features like waterproof, warmth rating)

Content browsed: Which product pages do people click on after searching?

Purchase data: What products do people ultimately buy?

Segments

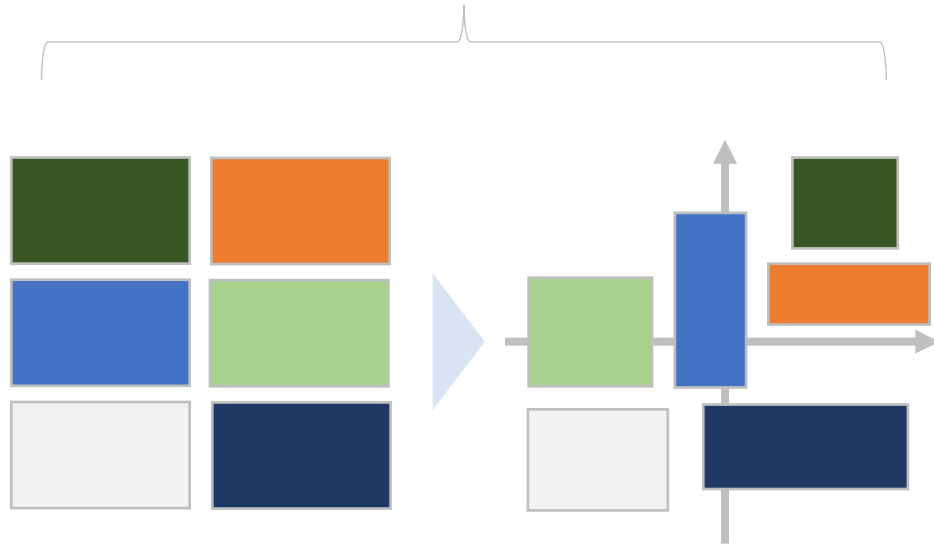
New hikers: Search for beginner-friendly gear, use price filters, click on informational content.

Experienced backpackers: Search for lightweight, high-performance gear, click on specific brands, buy expensive items.

Casual day hikers: Search for comfortable, waterproof boots, use brand filters, focus on price-to-value.

Segmentation levels

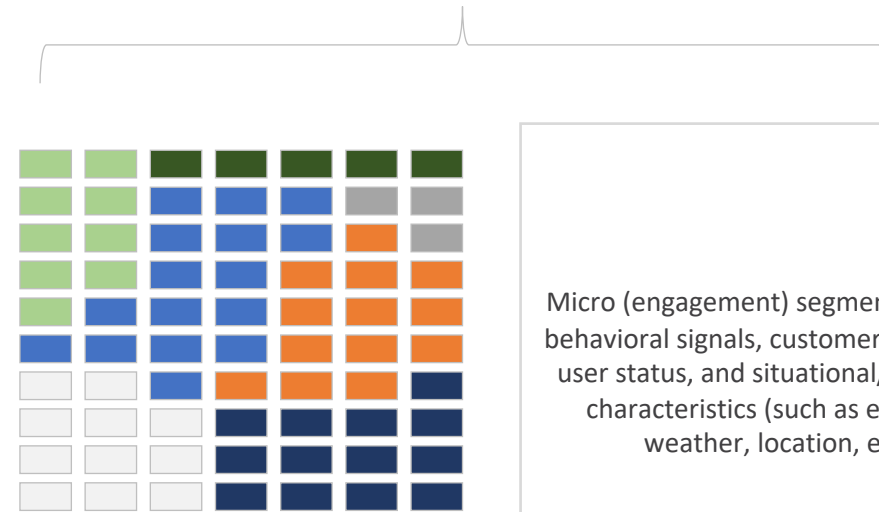
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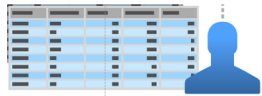
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Behavioral segmentation - Fast food

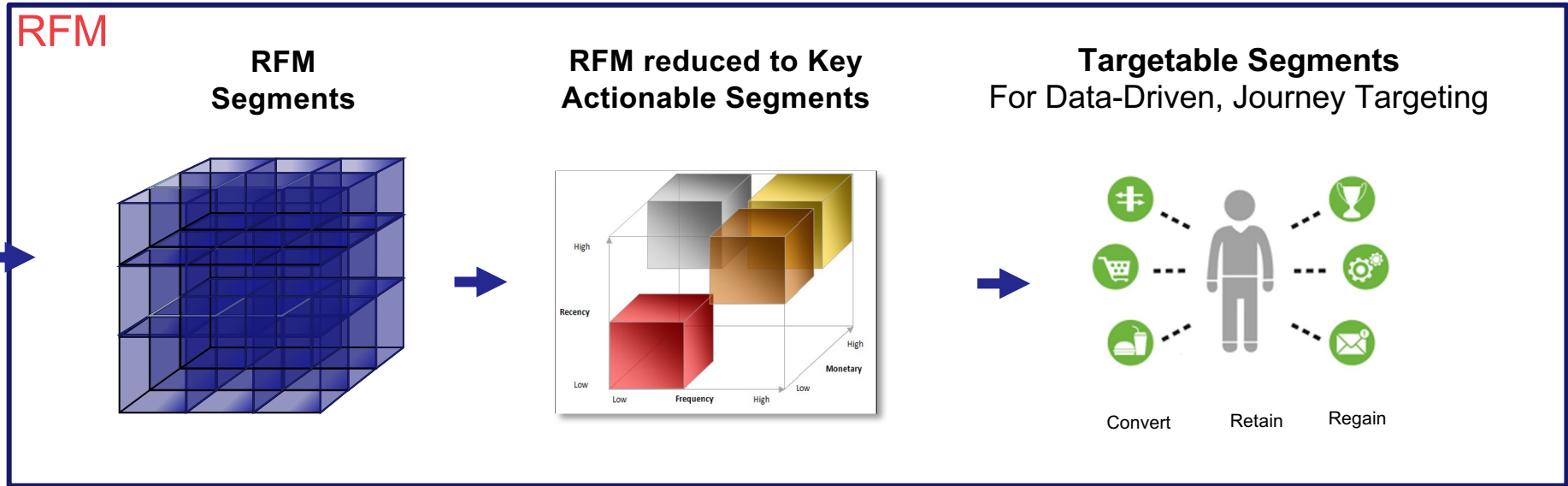
Data Consolidation



Customer, Product, and Channel 360



Exploratory analysis



Micro-Segments

Understand customer preferences

Channel
Product
Meal timing
Opt-ins



Offer
Platform
Timing



Convert to actionable microsegments

SOLD	TWO	ADULT GROUP
CORE	BEVERAGES	BURGERS
LUNCH	LATE LUNCH	EVENING SNACK
CRAVE	PEOPLE	PROMOTIONS
REPEATER	NEW PRODUCT TASTER	VARIETY SEEKER
% OFF	BOGO	SUNDAY SPECIAL
COLD	WARM	WARM
DINE_IN	TAKE_AWAY	DELIVERY
CALL CENTER	APP	WEBSITE

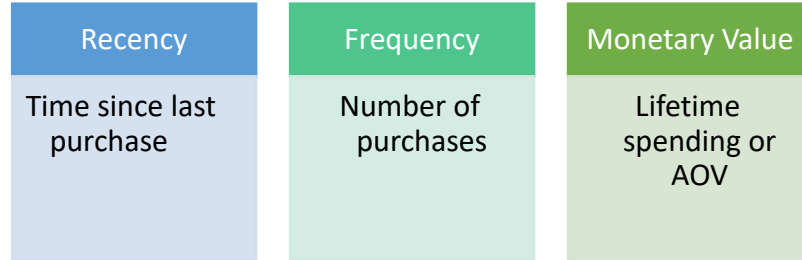


Data driven personalized messaging

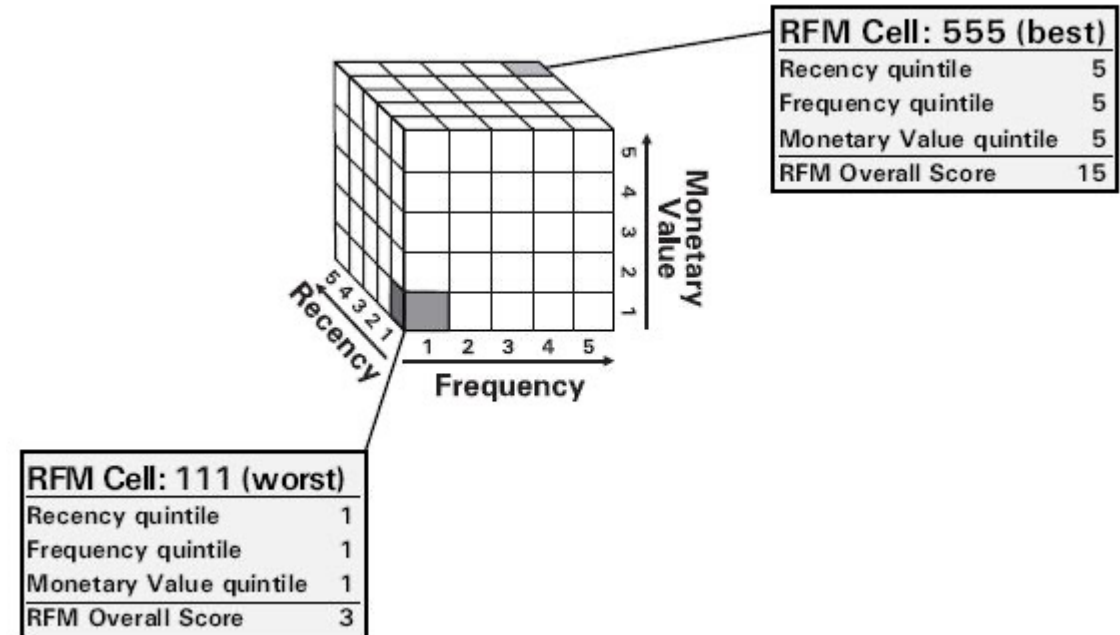


Behavioral : Purchase based (RFM)

- A simple tool originally used by mail order companies to identify best customers. Very popular in Retail.



- To implement RFM segmentation, businesses typically assign a score to each customer based on these three dimensions. Customers with high values on R, F and M are considered best and most profitable



Example

Example only. Actual breakdowns will be determined based on data distributions

REGENCY

Active | New
(<60 days)

Dormant
(60 to 120 days)

Lapsing
(120 to 360 days)

Lapsed
(> 360 days)

FREQUENCY

Loyal
(>20 orders)

Active
(11 to 20 orders)

Light
(2 to 10 orders)

Single
(1 order)

AVG ORDER VALUE

High
($>\$ X$)

Medium High
($\$Y$ to $\$X$)

Medium Low
($\$Z$ to $\$Y$)

Low
($<\$Z$)

RFM segments – Example Outcome



Non-Purchasers

Size:
Tenure:
orders
Avg order value
LTOs
Dine-in/Delivery/



Bronze

Size:
Tenure:
orders
Avg order value
LTOs
Dine-in/Delivery/



Silver

Size:
Tenure:
orders
Avg order value
LTOs
Dine-in/Delivery/



Gold

Size:
Tenure:
orders
Avg order value
LTOs
Dine-in/Delivery/



Platinum

Size:
Tenure:
orders
Avg order value
LTOs
Dine-in/Delivery/

Growth strategy

CONVERT

REGAIN

RETAIN

RETAIN

RETAIN

How (Examples)

Drive 1st purchase

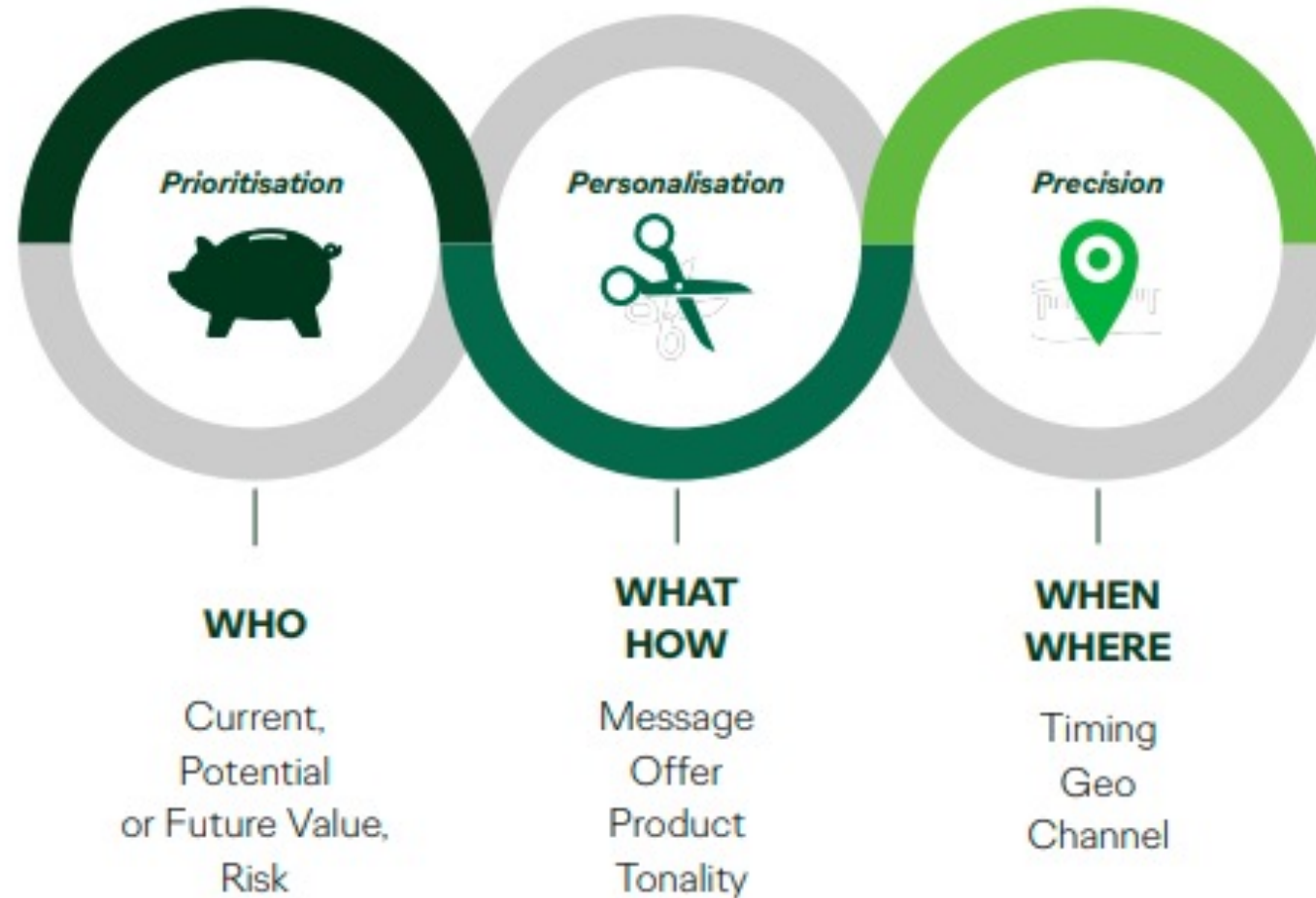
Re-Activate

Increase frequency

Increase basket size, occasions

Maintain frequency

Operationalize microsegments for hyper- personalization



KFC Brainstorm

- Let us evolve a Microsegmentation framework for KFC. They have a data warehouse and the necessary tech with data points on
 - Past purchases (POS data)
 - Responses to ads/ communication
 - Promotions redeemed
 - Browsing behavior on app/ site



What dimensions can we use?

Prioritizing

Recency

Frequency

Spend

tenure

Personalizing

Occasion

Product preferences - Veg/ Non veg, Core/ Core+

Promotions - Deal seekers, BOGO, 50% off, combo

Meals

Group size - Solo, Couple, Family, Large group

Channel - Dine-in, Takeaway, delivery


Precision targeting

Timing - Weekday/ weekend,

Location

Microsegments

EXAMPLE

PRIORITIZATION 	TENURE	NEW	< 1 YEAR	1 – 2 YEARS	> 2 YEARS
	AVERAGE SPEND	HIGH	MEDIUM	LOW	VERY LOW
	LTV	HIGH	MEDIUM	LOW	
	FREQUENCY BIN	1	2	3	4
	ACTIVITY STATUS	NEW	ACTIVE	DORMANT	LAPSED
PERSONALIZATION 	CONSUMPTION MODE	SOLO	TWO	ADULT GROUP	ADULT WITH KIDS
	BASKET COMPOSITION	CORE	BEVERAGES	BURGERS	RICE MEALS
	MEAL PROPENSITY	LUNCH	LATE LUNCH	EVENING SNACK	DINNER
	MESSAGING MOTIVATORS	CRAVE	PEOPLE	PROMOTIONS	OCCASIONS
	VARIETY PROPENSITY	REPEATER	NEW PRODUCT TRIER	VARIETY SEEKER	
	PROMOTION PROPENSITY	% OFF	BOGO	SUNDAY SPECIAL	WEDNESDAY SPECIAL
	WEATHER	COLD	RAINY	WARM	WINDY
	CHANNEL PROPENSITY	DINE_IN	TAKE_AWAY	DELIVERY	AGGREGATOR
	ORDERING MODE	CALL CENTER	APP	WEBSITE	WALK_IN
PRECISION 	COMMS CHANNEL PREFERENCE	SMS	E MAIL	NOTIFICATIONS	IN_APP
	GEO SEGMENT	NORTH	SOUTH	WEST	EAST
	STORE LOYALTY	SINGLE STORE	2-3 STORES	AGNOSTIC	NONE
	DAY OF WEEK	WEEKDAYS	WEEKENDS	SPECIFIC DAYS	
	TIME OF DAY	MORNING	AFTERNOON	EVENING	NIGHT
	TIMING	SPORTS	VACATIONS	HOLIDAYS	

CRICKET Special
KFC

[Placeholder Box]

[Placeholder Box]

[Placeholder Box]

[Placeholder Box]

DELIVERY **Takeaway** **Dine-In**

KFC'S 4X SAFETY
Sanitization Screening Contactless Social Distancing

3 PRODUCT IMAGES



1 PRIMARY MESSAGE

- Score: 69 for 1
- SWING AND A MISS!
- Leg Spin

2 SHORT DESCRIPTOR




- Turn this wonderful opening into a crunchy innings
- Your first order was juicy. Your second one is gonna be juicier
- Where have you been ya? You've been missing out on some juicy chicken.

4 SECONDARY MESSAGE

- With the delicious KFC Value Burgers starting @ just 69/-
- Try KFC's first and only Leg Piece Bucket now
- Get on the KFC app and get back in the game!

5 CTA

- ORDER NOW
- DOWNLOAD NOW
- TRY IT NOW

PRIORITIZATION 	TENURE	NEW
	AVERAGE SPEND	LOW
	LTV	LOW
	FREQUENCY BIN	1
	ACTIVITY STATUS	ACTIVE
PERSONALIZATION 	CONSUMPTION MODE	SOLO
	BASKET COMPOSITION	CORE
	MEAL PROPENSITY	EVENING SNACK
	MESSAGING MOTIVATORS	CRAVE
	VARIETY PROPENSITY	
	PROMOTION PROPENSITY	WEDNESDAY OFFER
	WEATHER	
	CHANNEL PROPENSITY	DELIVERY
	ORDERING MODE	APP
PRECISION 	COMMS CHANNEL PREFERENCE	EMAIL
	GEO SEGMENT	NORTH
	STORE LOYALTY	
	DAY OF WEEK	WEEKENDS
	TIME OF DAY	AFTERNOON
	TIMING	SPORTS






- New solo customer, **low spend**
- Responds Special promos around **sports events**
- Messaging on weekdays in the afternoon



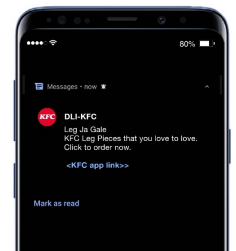
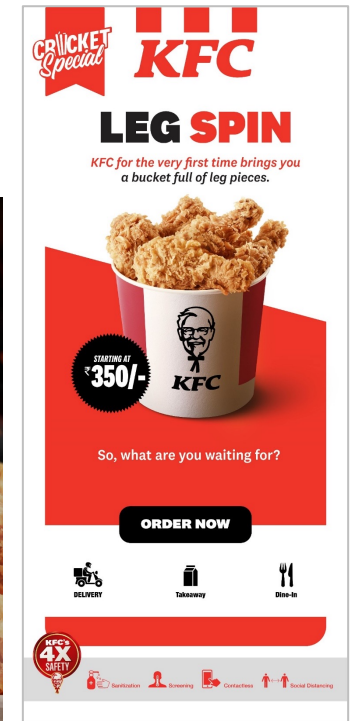
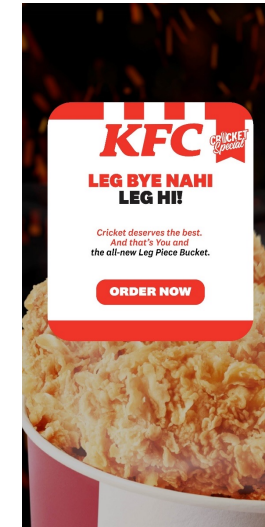
EXAMPLE



PRIORITIZATION 	TENURE	EXISTING
	AVERAGE SPEND	HIGH
	LTV	MEDIUM
	FREQUENCY BIN	1
	ACTIVITY STATUS	ACTIVE
PERSONALIZATION 	CONSUMPTION MODE	ADULT GROUP
	BASKET COMPOSITION	CORE
	MEAL PROPENSITY	EVENING SNACK
	MESSAGING MOTIVATORS	CRAVE
	VARIETY PROPENSITY	
	PROMOTION PROPENSITY	WEDNESDAY OFFER
	WEATHER	
	CHANNEL PROPENSITY	DELIVERY
	ORDERING MODE	APP
PRECISION 	COMMS CHANNEL PREFERENCE	IN-APP
	GEO SEGMENT	NORTH
	STORE LOYALTY	
	DAY OF WEEK	WEEKENDS
	TIME OF DAY	AFTERNOON
	TIMING	SPORTS



- Existing customer, high spend, Group Consumption
- Responds to Special promos around sports events
- Orders only core
- Messaging on weekends in the afternoon



EXAMPLE

Techniques

- Manual - Cross Tabs on multiple levels
- Machine Learning (Algorithmic) - Clustering
 - Useful when we have a rich data set with a large number of features and/or large number of data points

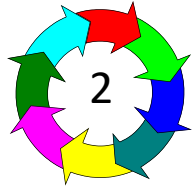
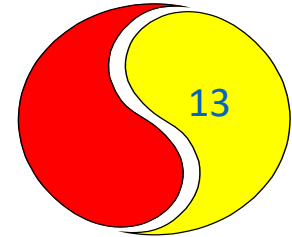
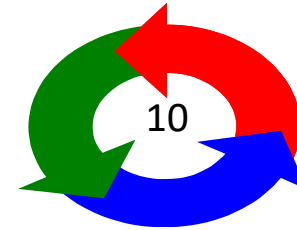
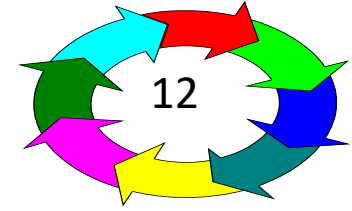
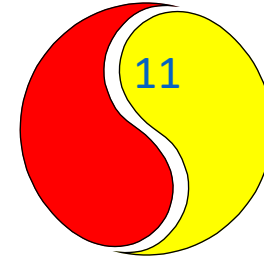
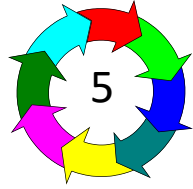
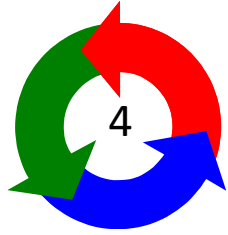
A server rack with blue lighting and bokeh effects in the background. The text "Clustering Techniques" is centered in white.

Clustering Techniques

Clustering

- Clustering is a technique for finding **similarity groups** in data, called **clusters**
 - it groups data instances that are similar to (near) each other in one cluster and data instances that are very different (far away) from each other into different clusters.
- Clustering is often called an **unsupervised learning** task as there is no apriori grouping provided to the algorithm.

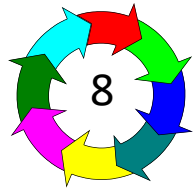
Cluster these



- {1,3,6,7,9}
- {11,13}
- {2,5,8,12}
- {4,10}



- {1,3,6,7,9,11,13}
- {2,5,8,12}
- {4,10}



- {1,3,6,7}
- {11,13}
- {2,5,8}
- {12}
- {4}
- {9}
- {10}

Measuring similarity

- How did we arrive at clusters?
- Assessment based on attribute values that describe the objects (customers)

Clustering methods

Distance based: Distance used as proxy for similarity

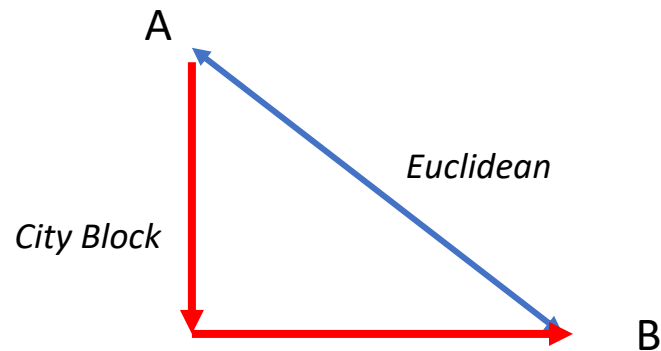
- Hierarchical
- Partitioning methods

Density based: Neighbourhood must contain a minimum number of data points.

- DBScan

Distance functions for numeric attributes

- Most commonly used functions are
 - Euclidean distance and
 - Manhattan (city block) distance





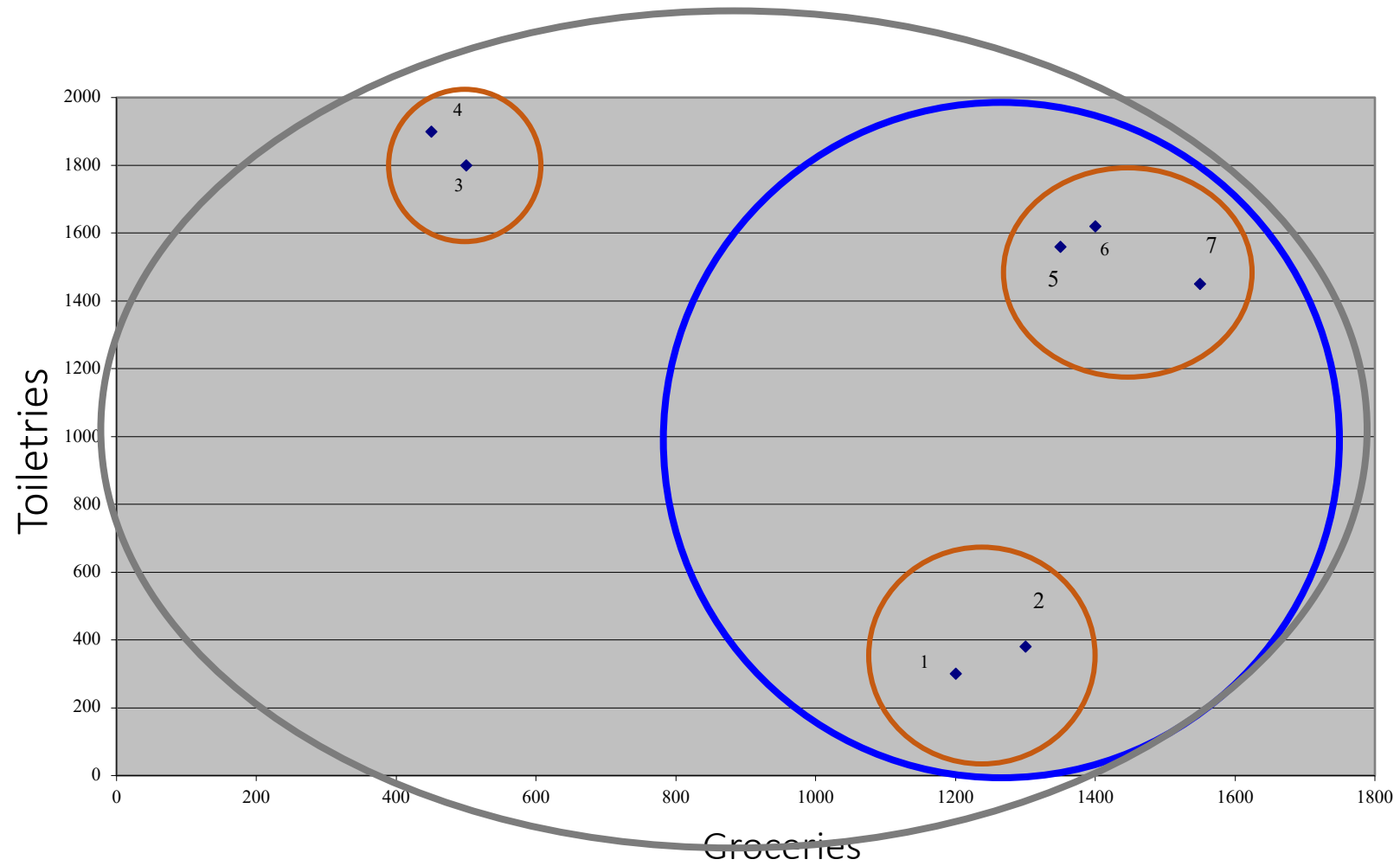
Hierarchical Clustering

Hierarchical methods

- Group into a “tree” of clusters
- Agglomerative – bottom up
 - Start with each object in a separate cluster.
 - Merge close by objects/ clusters successively
- Divisive – Top down
 - Start with all objects in the same cluster
 - Split into smaller clusters successively till each object is in one cluster

Example

Customer	Groceries	Toiletries
1	1200	300
2	1300	380
3	500	1800
4	450	1900
5	1350	1560
6	1400	1620
7	1550	1450



Beer Example

Beer	Calories	Sodium	Alcohol	Cost
Budweiser	144	15	4.7	0.43
Schlitz	151	19	4.9	0.43
Lowenbrau	157	15	4.9	0.48
Kronenbourg	170	7	5.2	0.73
Heineken	152	11	5	0.77
Old Mill	145	23	4.6	0.28
Augsburger	175	24	5.5	0.4
Strohs	149	27	4.7	0.42
Miller Lite	99	10	4.3	0.43
Bud Light	113	8	3.7	0.44
Coors	140	18	4.6	0.44
Coors Lite	102	15	4.1	0.45
Michelob Light	135	11	4.2	0.5
Becks	150	19	4.7	0.76
Kirin	149	6	5	0.79
Pabst	68	15	2.3	0.38
Hamms	136	19	4.4	0.43
Heilemans	144	24	4.9	0.43
Olympia	72	6	2.9	0.46
Schlitz Lite	97	7	4.2	0.47

Hierarchical Clustering

Beer	Calories	Sodium	Alcohol	Cost
Budweiser	144	15	4.7	0.43
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Heineken	152	11	5	0.77

Linear Distances

Beer	Calories	Sodium	Alcohol	Cost
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Kronenbourg	170	7	5.2	0.73
Heineken	152	11	5	0.77

Beer	Calories	Sodium	Alcohol	Cost
Budweiser	0	0	0	0
Schlitz	-7	-4	-0.2	0
Lowenbrau	-13	0	-0.2	-0.05
Kronenbourg	-26	8	-0.5	-0.3
Heineken	-8	4	-0.3	-0.34

Squares of Distances from Budweiser

Beer	Calories	Sodium	Alcohol	Cost
Budweiser	0	0	0	0
Schlitz	-7	-4	-0.2	0
Lowenbrau	-13	0	-0.2	-0.05
Kronenbourg	-26	8	-0.5	-0.3
Heineken	-8	4	-0.3	-0.34

Beer	Calories	Sodium	Alcohol	Cost	Total
Budweiser	0	0	0	0	0
Schlitz	49	16	0.04	0	65
Lowenbrau	169	0	0.04	0.0025	169
Kronenbourg	676	64	0.25	0.09	740
Heineken	64	16	0.09	0.1156	80

Squares of Distances between beers

Beer	Calories	Sodium	Alcohol	Cost	Total
Budweiser	0	0	0	0	0
Schlitz	49	16	0.04	0	65
Lowenbrau	169	0	0.04	0.0025	169
Kronenbourg	676	64	0.25	0.09	740
Heineken	64	16	0.09	0.1156	80

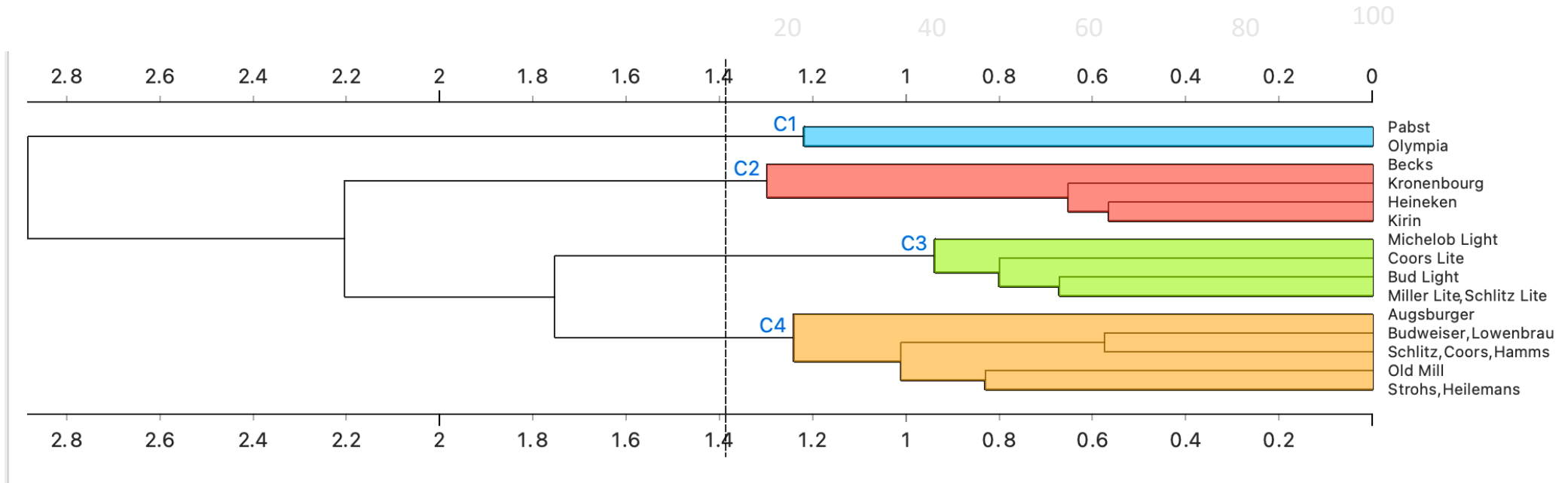
	Budweiser	Schlitz	Lowenbrau	Kronenbourg	Heineken
Budweiser	0	65	169	740	80
Schlitz	65	0	52	505	65
Lowenbrau	169	52	0	233	41
Kronenbourg	740	505	233	0	340
Heineken	80	65	41	340	0

Euclidean distances between beers

	Budweiser	Schlitz	Lowenbrau	Kronenbourg	Heineken
Budweiser	0	65	169	740	80
Schlitz	65	0	52	505	65
Lowenbrau	169	52	0	233	41
Kronenbourg	740	505	233	0	340
Heineken	80	65	41	340	0

	Budweiser	Schlitz	Lowenbrau	Kronenbourg	Heineken
Budweiser	0	8	13	27	9
Schlitz	8	0	7	22	8
Lowenbrau	13	7	0	15	6
Kronenbourg	27	22	15	0	18
Heineken	9	8	6	18	0

Dendrogram (Normalized Euclidean distances)



Actual Clusters

	Beer	Cluster ^	Calories	Sodium	Alcohol	Cost
16	Pabst	C1	68	15	2.3	0.38
19	Olympia	C1	72	6	2.9	0.46
4	Kronenbourg	C2	170	7	5.2	0.73
5	Heineken	C2	152	11	5.0	0.77
14	Becks	C2	150	19	4.7	0.76
15	Kirin	C2	149	6	5.0	0.79
9	Miller Lite	C3	99	10	4.3	0.43
10	Bud Light	C3	113	8	3.7	0.44
12	Coors Lite	C3	102	15	4.1	0.45
13	Michelob Lig...	C3	135	11	4.2	0.50
20	Schlitz Lite	C3	97	7	4.2	0.47
1	Budweiser	C4	144	15	4.7	0.43
2	Schlitz	C4	151	19	4.9	0.43
3	Lowenbrau	C4	157	15	4.9	0.48
6	Old Mill	C4	145	23	4.6	0.28
7	Augsburger	C4	175	24	5.5	0.40
8	Strohs	C4	149	27	4.7	0.42
11	Coors	C4	140	18	4.6	0.44
17	Hamms	C4	136	19	4.4	0.43
18	Heilemans	C4	144	24	4.9	0.43

Interpretation of Clusters

- Naming clusters is an important step. Look at what is common within cluster and what differentiates them from other clusters. The idea is to capture the essence of the characteristics in the name .. Not just one or 2 parameters. Eg Doctors, Banking
- The centroid (average of all columns) provides one definition of a cluster.
- Index analysis - Take average value of each variable within a cluster and compare to the average of the same variable in the overall population. This can help highlight variables that differentiate a cluster

Cluster Characteristics

Name the clusters?

Cluster	Calories - Mean	Sodium - Mean	Alcohol - Mean	Cost - Mean
C1	70	10.5	2.6	0.42
C2	155.25	10.75	4.975	0.7625
C3	109.2	10.2	4.1	0.458
C4	149	20.4444	4.8	0.415556
ALL	132.4	14.95	4.44	0.496

Considerations

Advantages:

All cluster solutions available one shot to the user

Limitations:

Sensitivity to Noise and Outliers: Outliers or noise in the data can have a significant impact on the structure of the dendrogram, leading to the formation of suboptimal clusters.

Computational Complexity: For large datasets, hierarchical clustering can be computationally expensive and may require a significant amount of memory and processing power because all pairwise distances need to be computed

A server rack with blue lights and bokeh background. The server units are stacked vertically, and the background is filled with out-of-focus light spots in shades of blue and yellow.

Hands-on Hierarchical Clustering



Partitioning methods K-Means

K-means

- Define cluster center as the mean of all the points in the cluster (centroid)
- Randomly select k points to represent the mean of k clusters
- Remaining points assigned to the cluster where Euclidian distance from the cluster center is minimum
- New mean for each cluster calculated with each iteration. Data points reassigned based on distance from new mean
- Continue till stable clusters formed

Demo of K-Means

Clustering - Evaluation

1. Intra-cluster cohesion (compactness):

How near the data points in a cluster are to the cluster centroid.

2. Inter-cluster separation (isolation):

Separation means that different cluster centroids should be far away from one another.

3. Business applicability:

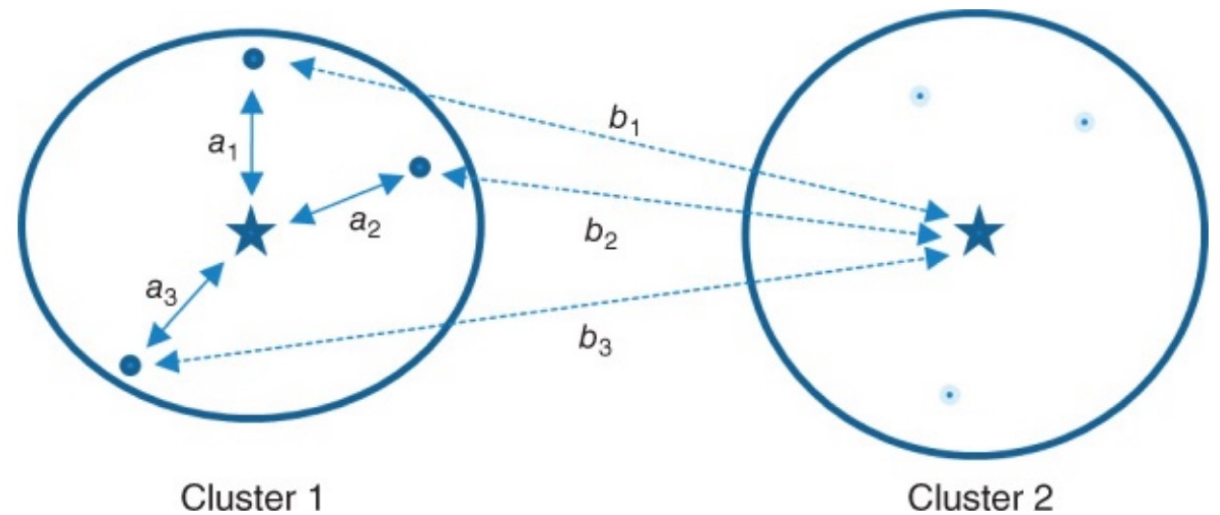
The most important measure is hardest to quantify – the usefulness for business purpose.

Model evaluation

- Silhouette - Measure of cluster goodness. It is a measure of cluster's dispersion. Measured for each point and averaged for clusters.

$$\text{Silhouette}_i = \frac{b_i - a_i}{\max(b_i, a_i)}$$

where a_i is the distance between the data value and its cluster center, and b_i is the distance between the data value and the next closest cluster center.



Model evaluation

- Cluster Silhouette - Measure of cluster goodness. Silhouette score
 - close to 1: the cluster is dense and well-separated from other clusters
 - close to 0: cluster with samples very close to the boundary of the neighboring clusters
- Beyond Silhouette - how useful is the clustering solution in terms of actionability?



Hands-on K-Means

Recap

- Segmentation allows marketers to differentiate their strategic marketing approach by segment to maximize customer value and ROI.
- Segmentation can be based on demographics, psychographics, needs/benefits sought and/or purchase/usage behavior.
- Segmentation is done at a strategic level for overall planning, product development and positioning.
- Micro-segmentation enables hyper-personalized targeting, channels, communication to prioritized segments.
- Data sources for segmentation can be primary or secondary. Techniques can be manual or algorithmic.
- Clustering is a machine learning method to discover segments within a data set with a large number of features.
- Naming of segments with a vivid persona helps socialize the segments in the organization
- Segmentation needs to be reviewed and refined as market conditions, competitors and customers evolve.

