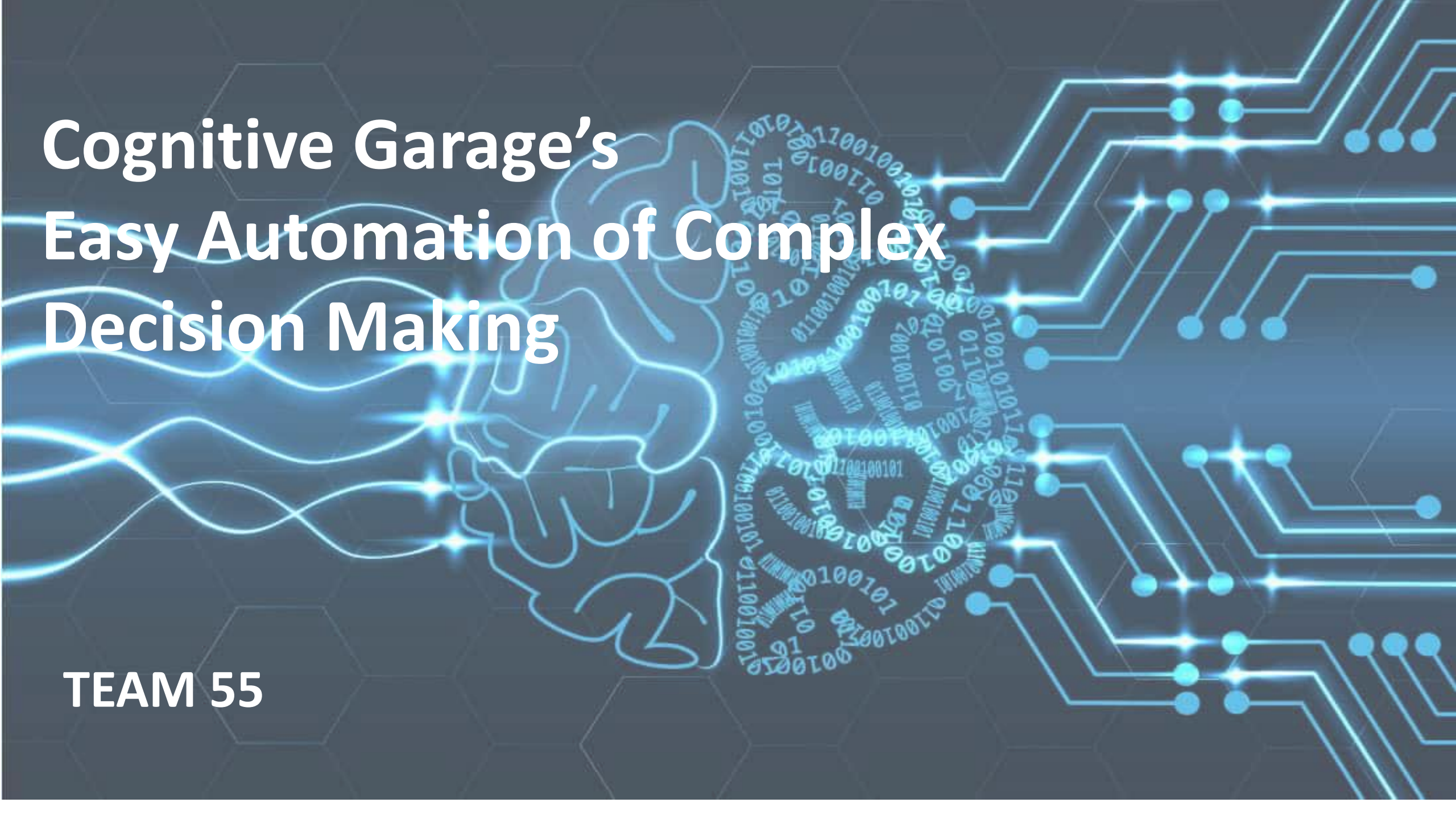
Cognitive Garage's Easy Automation of Complex Decision Making



TEAM 55

Executive Summary

Understanding the use case

- Incentive Design
- Why Consumer Incentive design for digitally native brands
- Market Trends
- Types of Consumer Incentive Designs
- User Journey and Gaps in the current system
- Complex Decisions Involved
- Role of Knowledge model in automation

Knowledge Model

- The Model
- Consumer-Centric Basket and its relation with the outputs
- Product Purchase Basket and its relation with the outputs
- Company Basket and its relation with the outputs
- Output Parameters
- Chains
- Intricacies
- Example of the application of the model

Impact and Pitfalls

- Impact of Automation
- Pitfalls in the model and their workarounds

Future Prospects

Understanding the Use Case: Consumer Incentive Design

What is consumer incentive design?

- Incentive in simple terms is something that **encourages** a person or organization to do or achieve something. It is something that incites or has a tendency to **incite a determination**.
- Incentive design for consumers refers to the creation of financial or non-financial incentives that encourage consumers to make **certain decisions, purchase certain products, or adopt certain behaviors.**
- The goal of incentive design is to **align the interests of consumers and organizations** by providing rewards that incentivize desired behaviors.

Proof of concept: Qwikcilver

- Acquire 2 customers with every Gift Card
- Build your Business
- Uplift your sales by 75% to 200%

What can a gift card do for you?

- Empower your consumers
- Offer Greater Flexibility & Choice
- Deliver a personalized Experience

84%

Of U.S businesses are using **non-cash incentives**

75%

Made another purchase after receiving a brand incentive

Why does designing the right consumer incentive matter?

45%

Of consumers **made one out of three purchases** because of incentives

87%

Of loyal customers don't mind **sharing their personal information** to get better recommendations

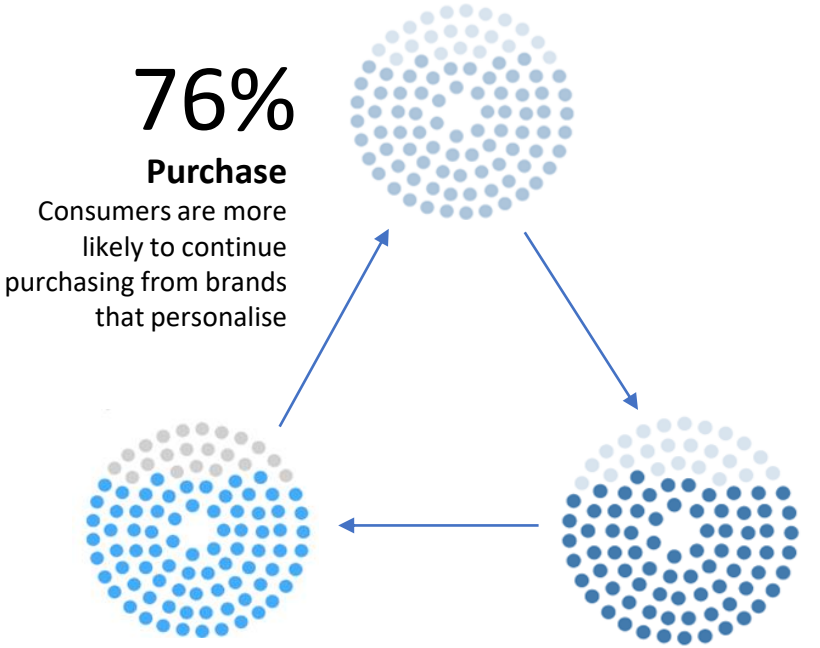
Why consumer incentive design for digitally native brands?

Digitally Native Brands (DNBs)	• A digitally native brand is a business that originated online driven by personalization. • In **contrast** to beginning as **brick-and-mortar businesses**, these brands **started online** and grew their brand through their online store experience.

Digitally Native companies drive revenue from personalization from other company archetype

Company Archetype	Companies without direct relationship	Black and Mortar (eg. Grocery, Apparel)	Digitally Native Brands
	Low	Middle	High
Strength of Customer Relationship	• Typically does not own customer transaction • Limited access to or use of !st party data	• Owns customer transaction, not always product development • 1st-party data captured but mixed	• Owns customer transaction and product development • 1st-party data at heart of decision making
% of revenue driven by personalisation	5-10%	10-20%	25%

Personalisation directly influences buying behaviour across the customer life cycle



76%

Purchase

Consumers are more likely to continue purchasing from brands that personalise

78%

Recommend

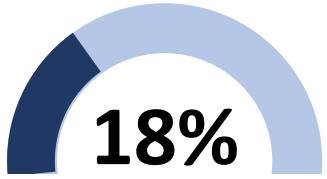
Consumers are more likely to refer friends and family to companies that personalise

78%

Repurchase

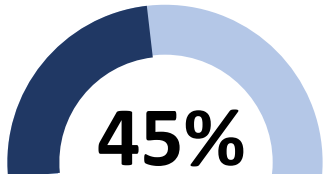
Consumers are more likely to make repeat purchases from companies that personalise

Consumer Incentive Design is a high growing market with 7.6% CAGR



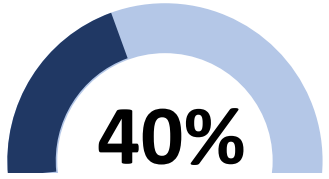
18%

customers said that incentives made them choose one brand over the other



45%

Of the customers who made 1-3 purchases just because of incentives



40%

Increase in ROI generated as compared to other marketing strategies

7.6%

CAGR of incentive design market has been predicted over the coming decade

$16.9 Bn

Of huge Market Size predicted by the end of 2026 for automating incentive design

Potential customers

LIFESTYLE

NYKAA Your Beauty. Our Passion. · lenskart.com · my

FINTECH

Paytm · G Pay · CRED

EDUCATION

BYJU'S · Udemy

FASHION

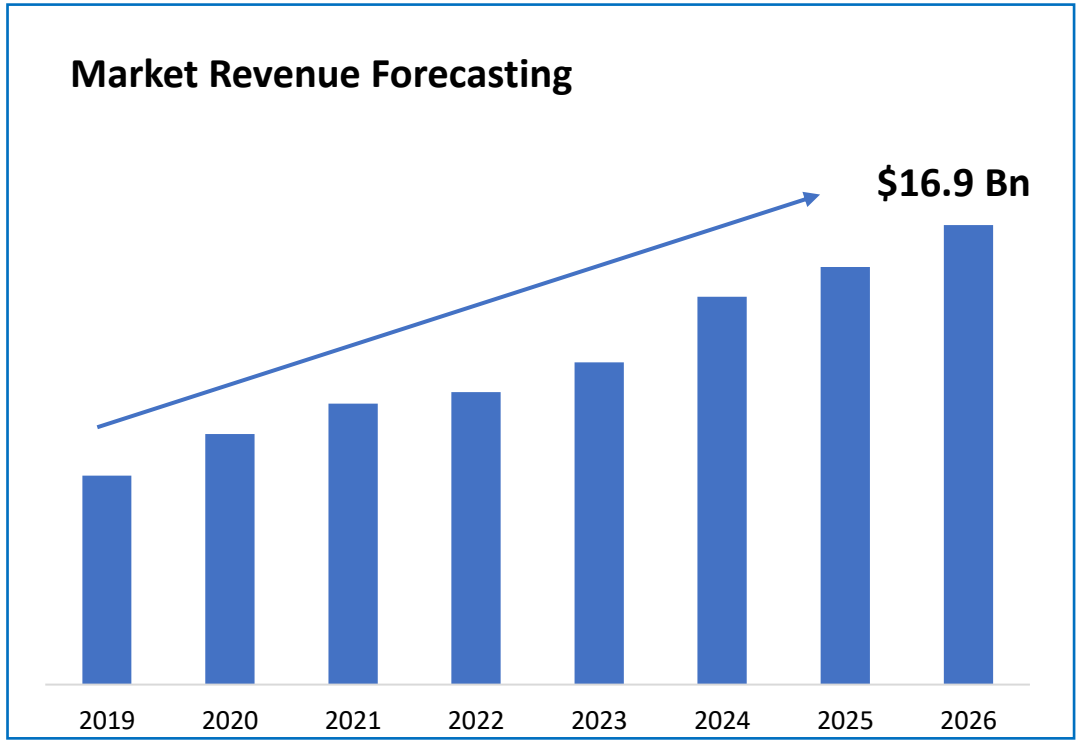
Bewakoof.com · The Souled Store · WROGN

MEDIA

NETFLIX · voot · ZEE5

QUICK COMMERCE

zepto · DUNZO · blinkit



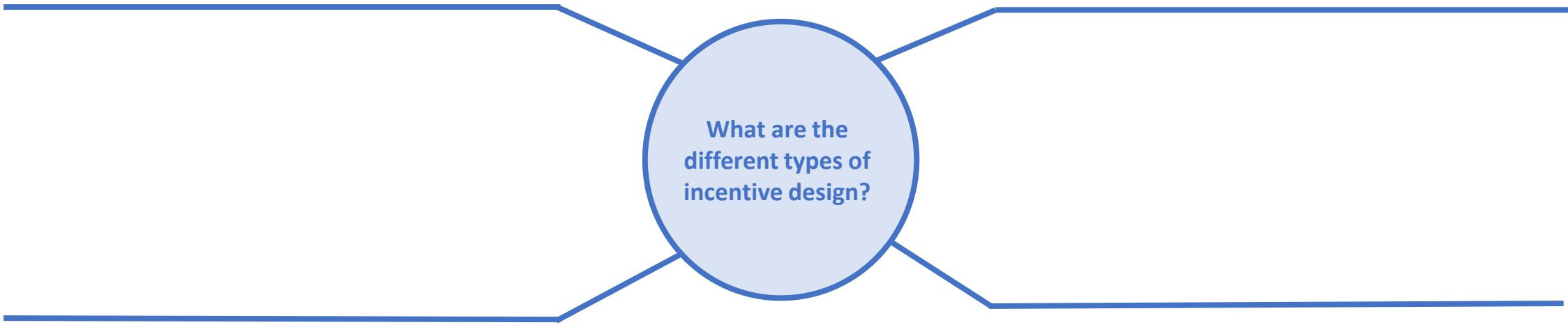
Understanding the existing consumer incentive design systems

Personalized Incentive Design

This approach focuses on **tailoring incentives** to individual customers based on their **unique characteristics**. Personalized incentives are designed to address the **specific needs and motivations** of each customer**.**

Cohort-Based Incentive Design

This approach groups customers into cohorts based on **similar characteristics**, such as **age, location, or purchase history**. Incentives are then designed to **target** the specific **needs and motivations of each cohort**.



Pull incentives

Pull incentives, on the other hand, are designed to **directly encourage consumers** to purchase a product. These can include **Coupons and rebates**, **Loyalty and reward programs**, Contests and sweepstakes, **Referral programs**, etc.

Relevance in customer incentive design

Push incentives

Push incentives are designed to **encourage intermediaries**, such as wholesalers and retailers, to carry and promote a product. These can include **Trade discounts and allowances** Marketing and advertising support**, Point-of-sales,** etc.

Mapping out the user journey to figure out the gaps existing in current incentives

	Discovery	Exploration	Purchases	Loyalty	Advocacy
Company's Offerings	No incentives; **Trials on services** not relevant to consumer	**A one-size-fits-all approach** which may hit its mark with some users but misses it with most	Offerings vary because of industries/brands with **inconsistency** in incentives being provided	**Unstructured and unempathetic** Loyalty programs offered	Provides **referral programs** even from the first stage of the user journey
Unmet Gaps	Not in line with **Company's goals** and **financials**	Lack of **Personalization** (Incentives offered; User Experience)	Improper Incentive **Placement**	Increased **Time Complexity**	Ineffective **Adaptability** to market trends
Consumer's Needs	Expects a **seamless onboarding process** with exclusive rewards for use	Expects personalized incentives on **relevant product categories** based on **personal interest** and needs	Wishes to get **free shipping**, points or cashback during purchase based on user psychology	Expects his loyalty to be rewarded in kind by **preferential offers** and exclusive membership	Longs for rewards for **prolonged association** and promotion of select brands and the company

Understanding the complex decisions being automated through the knowledge model

	Complex Decisions Involved	
	**Company's Goal and Financials**	• Deciding the value of incentives while keeping in mind company's goals and financials • Managing the right balance between inventory and incentives across the product mix • Taking into consideration the profitability across the value chain of providing incentives
	**Personalisation of Incentives**	• Analysing the consumer demography and their needs, basically the consumer profile • Predicting future purchasing trends by tracking consumer buying history and shopping behaviour
	**Ineffective adaptability to Market Trends**	• Understanding dynamic response to product and incentive placement with changing market trends • Capitalising on current market trends to boost sales through incentivising the consumer • Being at par with the incentives provided by competitors
	**Improper Trigger Placements**	• Finding the right trigger points for placing incentives throughout the consumer journey • Identifying right channels for communicating incentives and offers to customers • Tapping into consumer psychology while automating the process of designing incentives

What does our Knowledge Model do to aid with complex-decision making process?

"Automating the complex decision of personalized consumer incentive design for digitally native brands across the consumer funnel."

- Our use case involves building a **knowledge model** that would cater to automating the complex decisions we have identified in the gaps involved in the consumer incentive design process right now.
- It will take into **input 60+ parameters** related to **consumer demographics, company profile, product details, and consumer history** and output probability scores for the following decisions.
- This will thus help automate the **end-to-end process of incentive design** right from choosing what incentive to offer to which consumer to where and when they should offer it.

1. Which incentive and how much?

Firstly we will **rank the best incentive (value** and **category-wise)** for a given consumer based on the **probability score** obtained from the model.

2. When in the user journey?

Next, the model would output **when in the consumer user journey** the identified incentives should be provided to maximize the impact of the output incentive.

3. Mode of offering the incentive?

Further, the model would also output **through what mode the chosen incentive should be offered** to the consumer to ensure it is communicated to him effectively.

Growing need of personalizing incentives with end-to-end automation

Key Questions	Hypothesized Parameters
What is the type and value of incentive given?	Consumer Demographics
	Buying Behaviour
	Internal company factors
When in the user journey is the incentive given?	Time spent in every session
	Cart stagnation rate
	Internal company metrics
What will be the mode of conveying the incentive?	Click through rates
	Time taken before the consumer uses the incentives
	Consumer demographics and buying behavior

*"This is indeed a very good use case for a complex decision that can be automated using a model like a **Bayesian network** as there exist several dependent and independent variables influencing the intermediate and final decisions".*

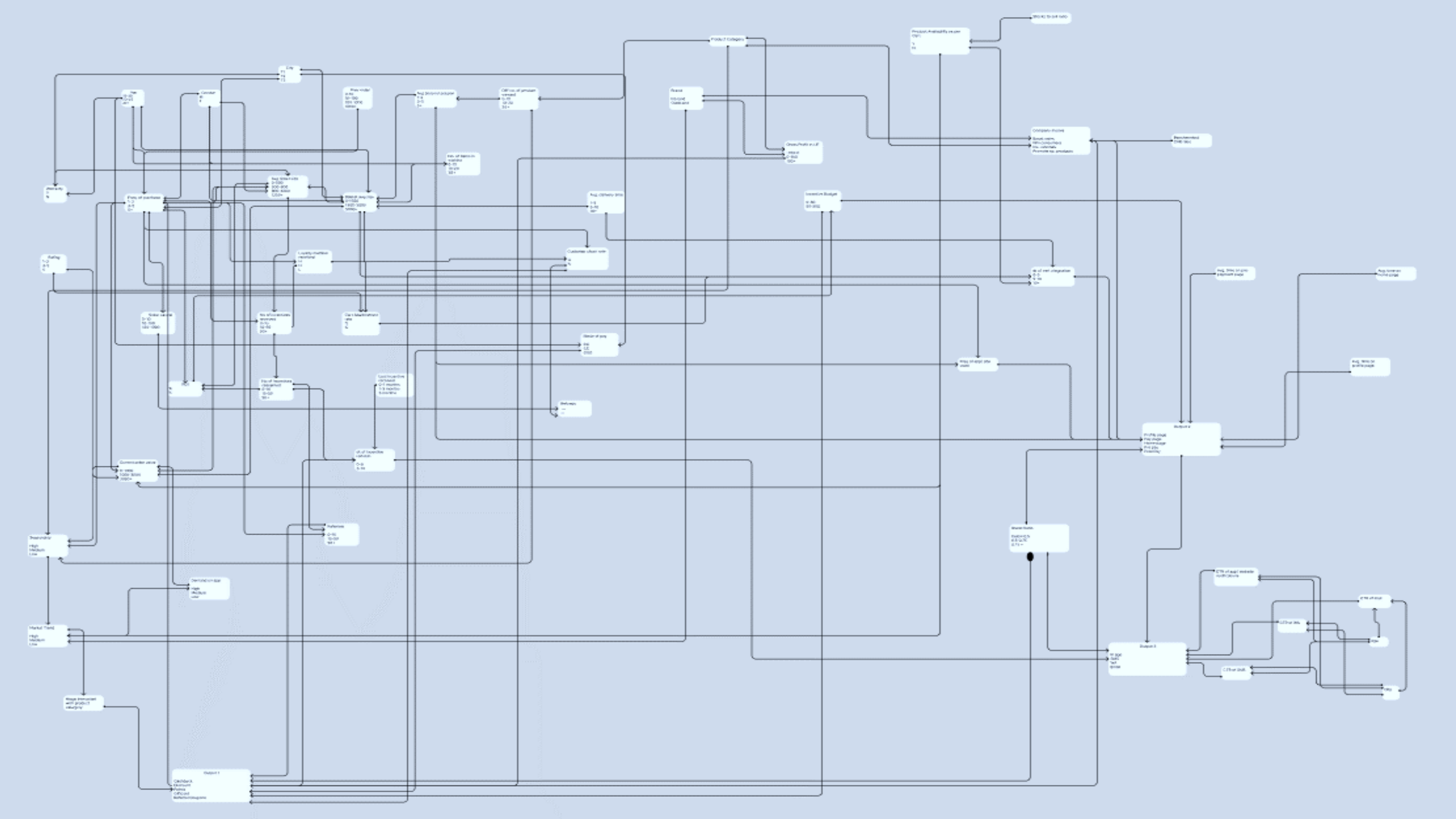
Karthik Shriram
Associate Professor, IIM A. Expert in Bayesian Statistics.

"I really liked the idea of automating the incentive design system and also the list of parameters seems pretty exhaustive. There is a growing need for the personalization of incentives in the industry and if implemented well, it can bring about a significant impact, especially for the retention of customers".

Anuj Kapoor
Associate Professor of Marketing, IIM A.

KEY CONSIDERATIONS IN THE MODEL

- Using **pseudo-variables** and **metrics** that directly affect a lot of parameters.
- Tailoring our model to be **averse to dilution.**
- Analyzing and rewarding **indirect value creation** along with purchases.



Consumer-Centric Bucket: Overview (1/2)

BUCKET'S SIGNIFICANCE

Expert's opinion

"Since incentive design is highly sensitive to the previous reaction of consumer with the brand, all parameters related to consumer data are crucial"

-Bhavik Shah, CRM Expert, ex-Amazon

Dependency on the Bucket

This basket helps us analyse and predict the following:

- Consumer Behaviour
- Consumer buying pattern
- Relevance of an incentive to a consumer

Leverage points for DNB

- This basket fits best especially for digitally native brands
- Since, these brands already collect so much consumer data, it cuts down on the process of data searching

Impact of Parameters

Has an heavy impact on the outputs as 15+ input parameters are present in this bucket

SUB DOMAINS

Demographics

Buying Behaviour

Consumer Incentive History

DATA SOURCING

Consumer Account on company's server

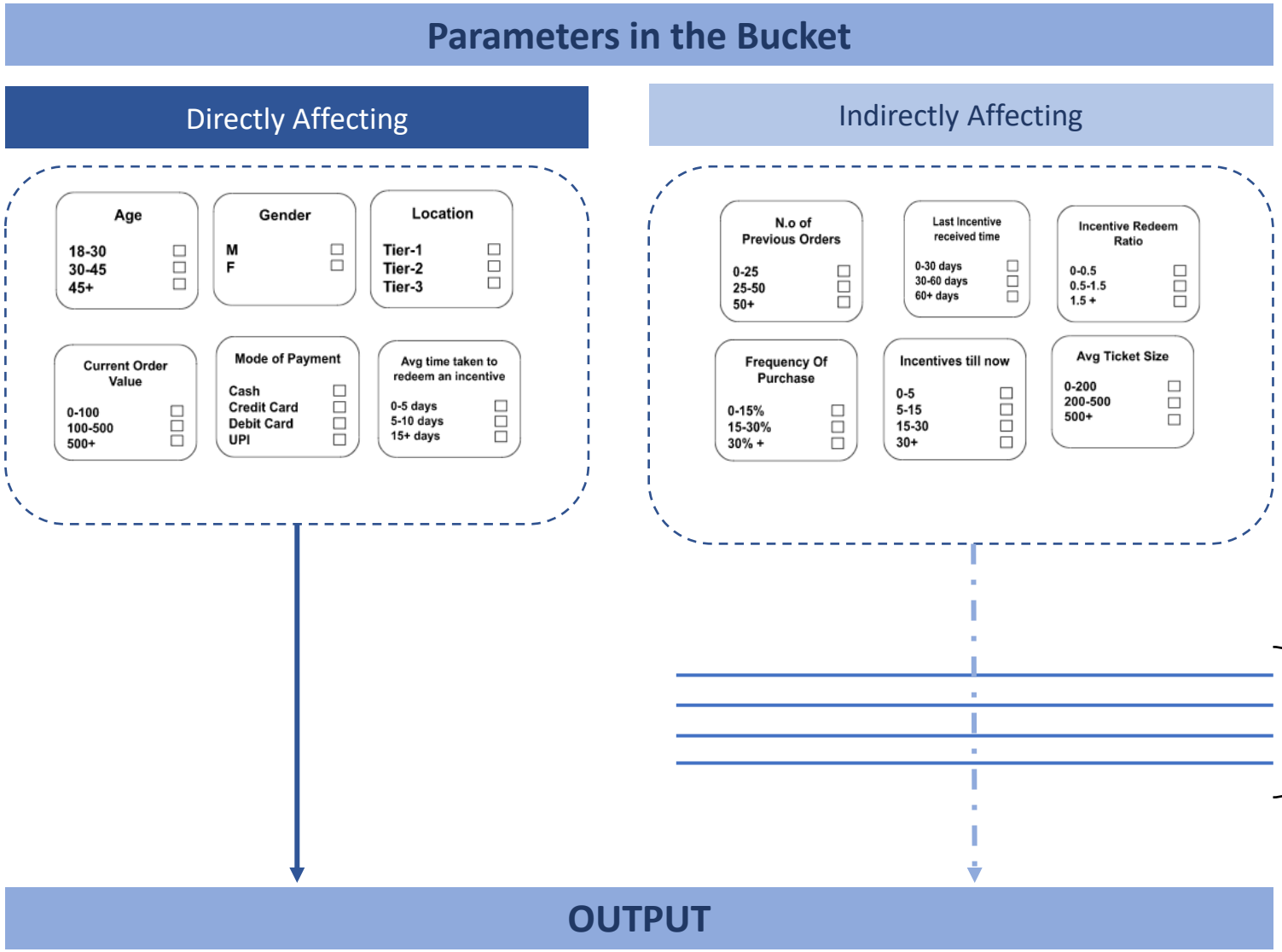
Transaction History

Google Account

IMPORTANT PARAMETERS

Avg Ticket Size	Gender	Location	Current Order Value	Frequency Of Purchase	Age	N.o of Previous Orders	Mode of Payment	Incentives till now	Incentive Redeem Ratio	Avg time taken to redeem an incentive
0-200	M	Tier-1	0-100	0-15%	18-30	0-25	Cash	0-5	0-0.5	0-5 days
200-500	F	Tier-2	100-500	15-30%	30-45	25-50	Credit Card	5-15	0.5-1.5	5-10 days
500+		Tier-3	500+	30% +	45+	50+	Debit Card	15-30	1.5 +	15+ days
							UPI	30+		

Consumer-Centric Bucket: Relationship with Output (2/2)



These parameters directly affect the output

These parameters affect the other parameters, indirectly affecting the output

Multiple layers of parameters in between

Product Purchase Bucket: Overview (1/2)

BUCKET'S SIGNIFICANCE

Expert's opinion

"Given insight into whether a consumer has an intention to make a purchase or not, thus can affect the choice of the distribution network that the incentive needs"

-Rishabh Kohli, PM at Flipkart

Dependency on the Bucket

This basket helps us analyse and predict the following:

- Inventory Management
- Customer engagement with different product categories
- Wow locations in our app/site

Leverage points for DNB

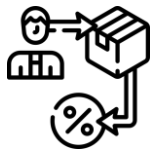
- Digitally native brands have a variety of product categories, hence these parameters will help them in efficient management of those according to consumer needs

Impact of Parameters

Has an heavy impact on the outputs as 17+ input parameters are present in this bucket

SUB DOMAINS

Directly affecting product purchase

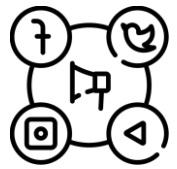


Indirectly affecting product purchase

DATA SOURCING

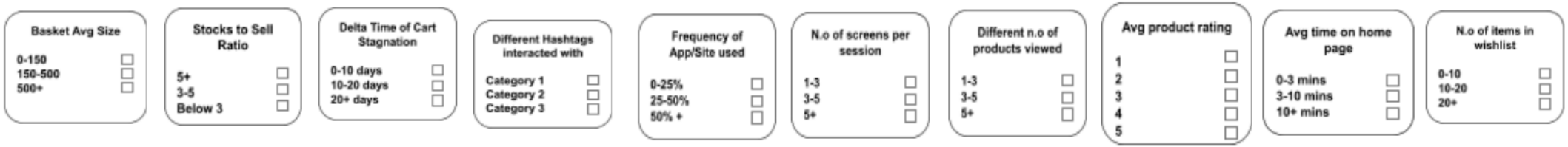
Consumer Account on company's server

Company Data



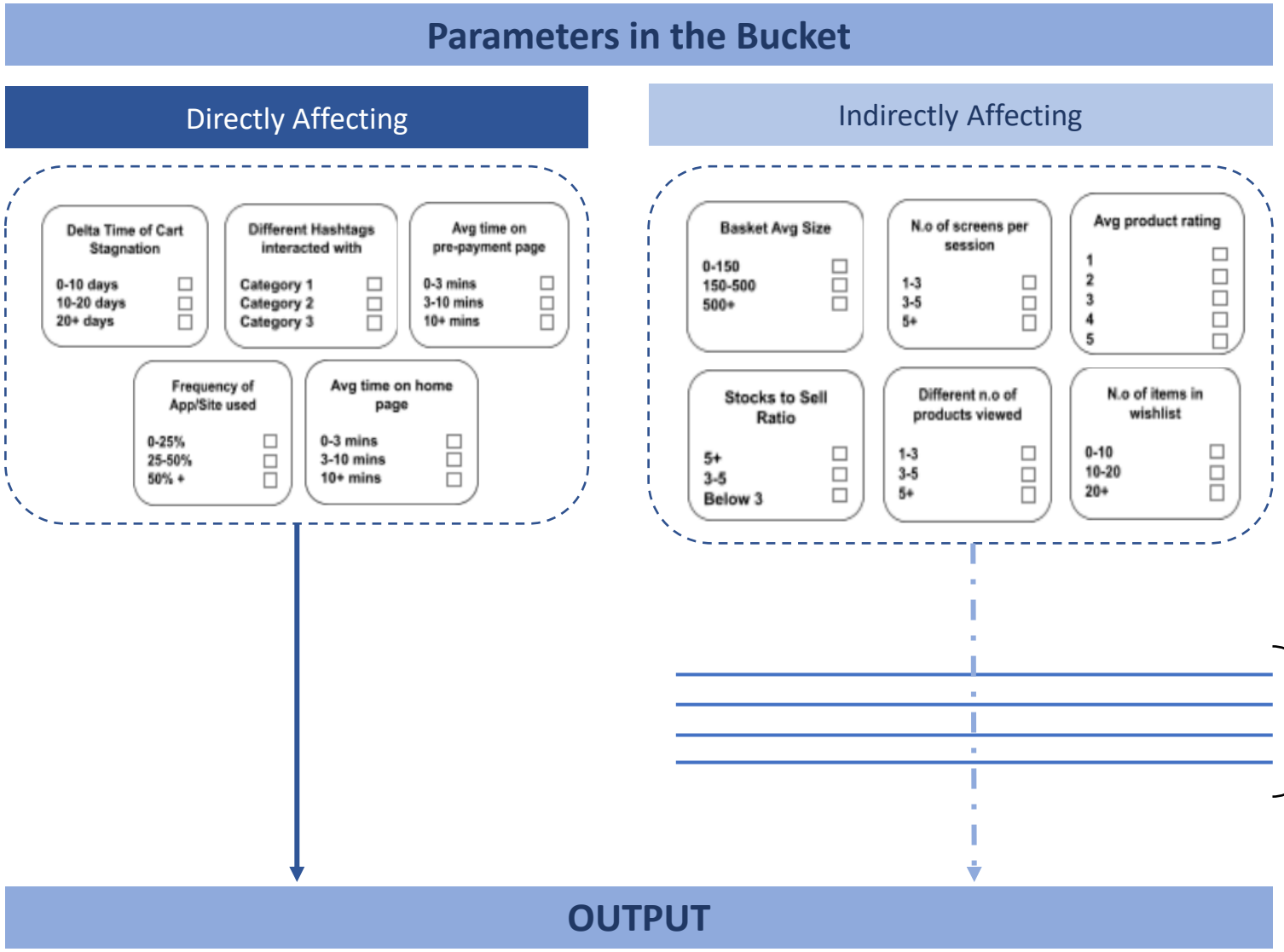
Consumer Social Media Handles

IMPORTANT PARAMETERS



Source: MIT Sloan

Product Purchase Bucket: Relationship with Output (2/2)



These parameters directly affect the output

These parameters affect the other parameters, indirectly affecting the output

Multiple layers of parameters in between

Company-Centric Bucket : Overview (1/2)

BUCKET'S SIGNIFICANCE

Expert's opinion

"Keeping a track of the company's performance compared to their peers is highly required to keep up with market demands"

-Shivam Jalotra, AdTech at Flipkart

Dependency on the Bucket

This basket helps us analyse and predict the following:

- Market Trends
- Performance of Competitors
- Consumer Engagement on different platforms

Leverage points for DNB

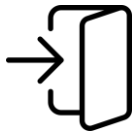
- The competition for DNB is cut-throat and even one move here and there can put them on the backfoot, hence these brands can use tis bucket to their advantage and provide better consumer service

Impact of Parameters

Has an heavy impact on the outputs as 14+ input parameters are present in this bucket

SUB DOMAINS

Surface Metrics

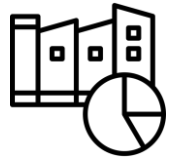


Internal Metrics

DATA SOURCING

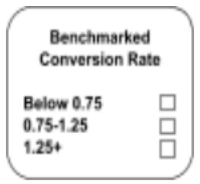
Consumer Account on company's server

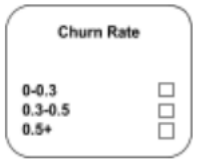
Company Data

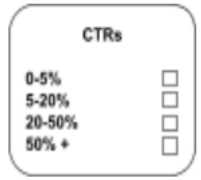


Industry Analysis

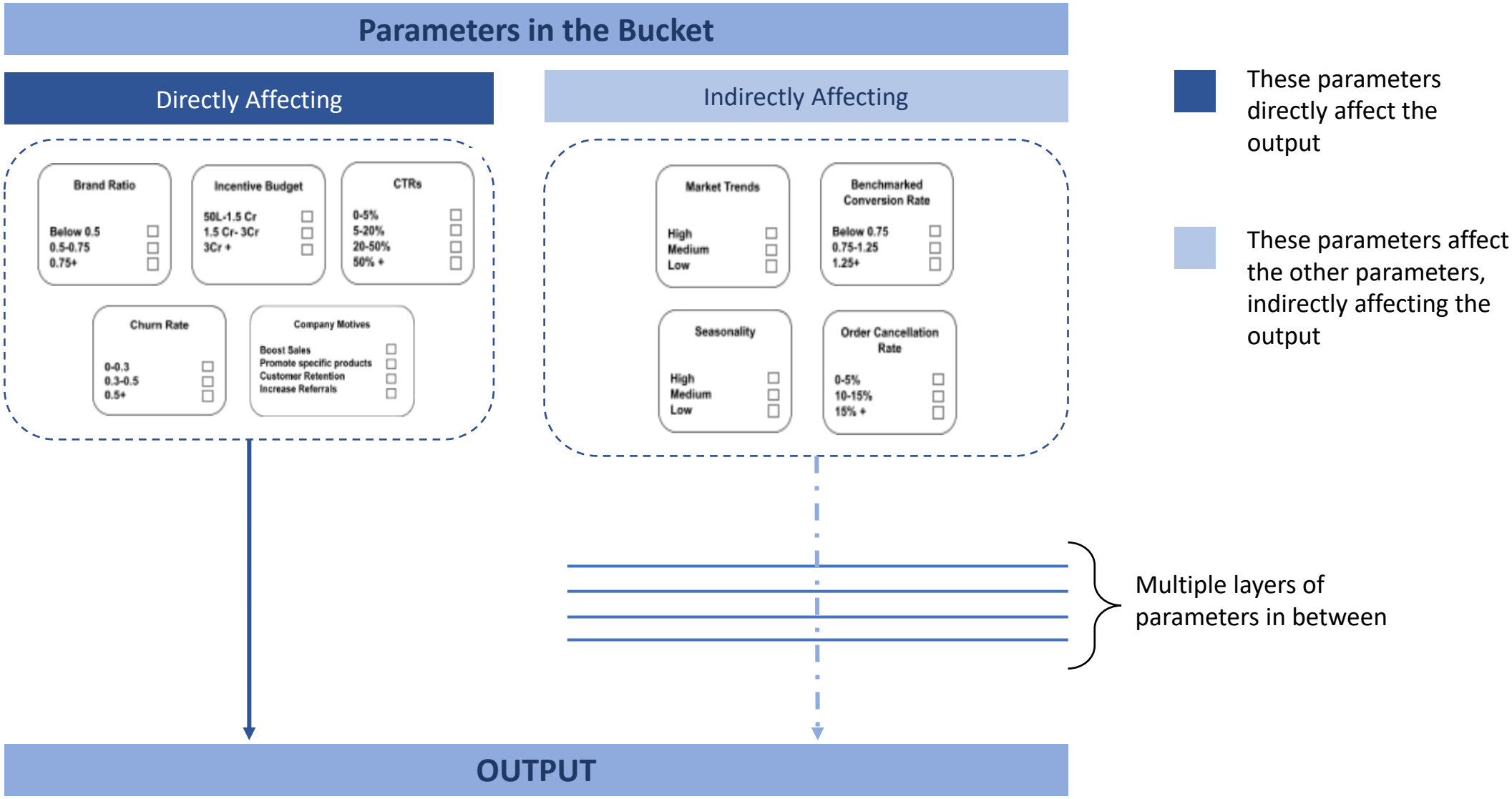
IMPORTANT PARAMETERS







Company-Centric Bucket : Relationship with Output (2/2)



Output Parameters: Overview

WHY THIS STRUCTURE IN PARAMETERS?

Bifurcated Output

- **Break down** of incentive design output into **Type, value, positioning**, and **channel of promotion**

Streamlined dependency

- **25+ primary linkages** and **4 major chains** for simplifying the dependency with the output parameters

Better personalisation

- **60+** Unique parameters to account for every factor in incentive design which **weighs** the interests of both the **stakeholders** in a balanced way.

Noise reduction

- With a collection of variables that are **static and dynamic**, **noise** in consumer data will be **repressed** through **static variables**

Type and Value of incentive

Cash backs, discounts, points coupons etc and the value to the user for the same

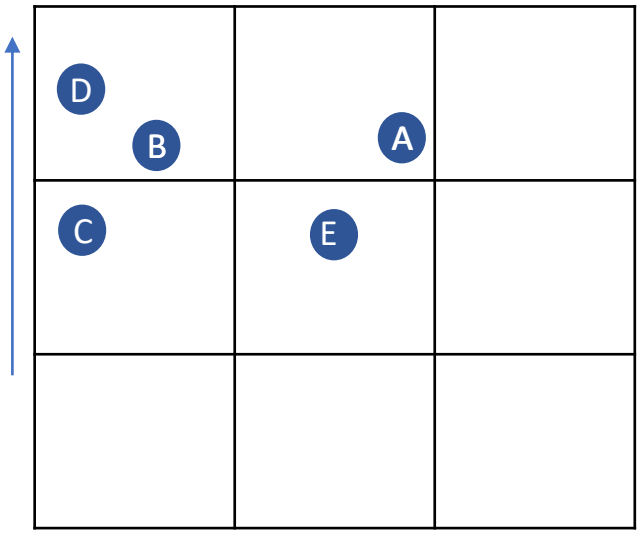
Positioning of incentive

Profile page, home page, pre/post-pay page, and the payment page

Where to promote the incentive

In the app/site, emails, WhatsApp, sms etc

AFFECTED BY



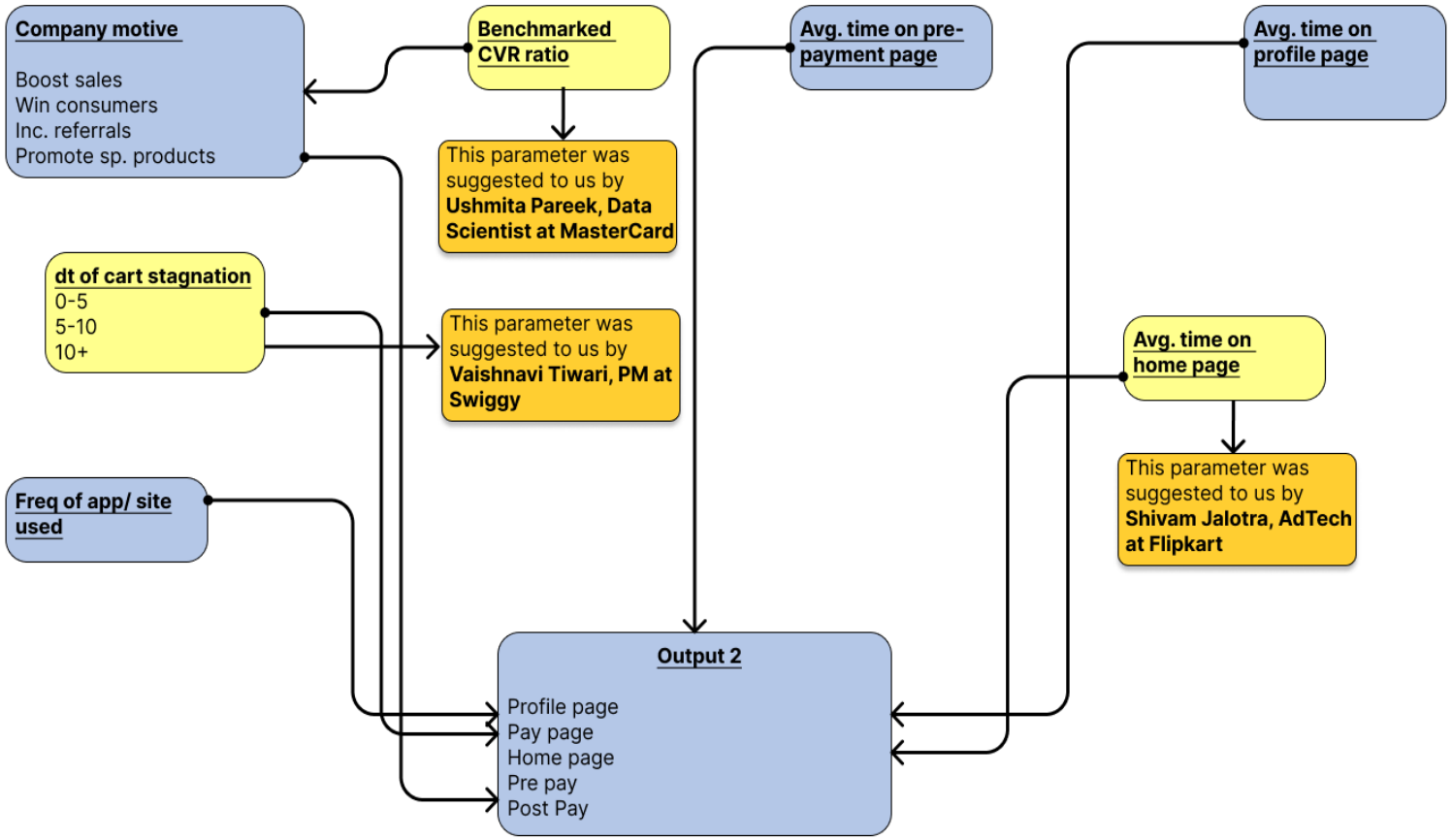
A) Consumer Demography
B) Buying Behaviour
C) Indirect purchase activities
D) Responses to incentive
E) Product purchase variables

Expert's perspectives

Ankita Pathak
PM, Zepto, Ex-Meesho, Ex- Mastercard

1. *"Incentive design industry needs an **end-to-end solution** to **personalize** incentives according to every consumer rather than a **cohort-based** approach"*
2. *"**Noise in consumer data** is a big barrier in automation of incentive design, however, **static variables** can cater it to a large extent"*

Understanding the interactions not leading to purchases



Parameters affecting the Chain

- Product category and Average delivery time
- Product: In-brand or Out-brand
- Consumer demography

Impact of the incentive chain

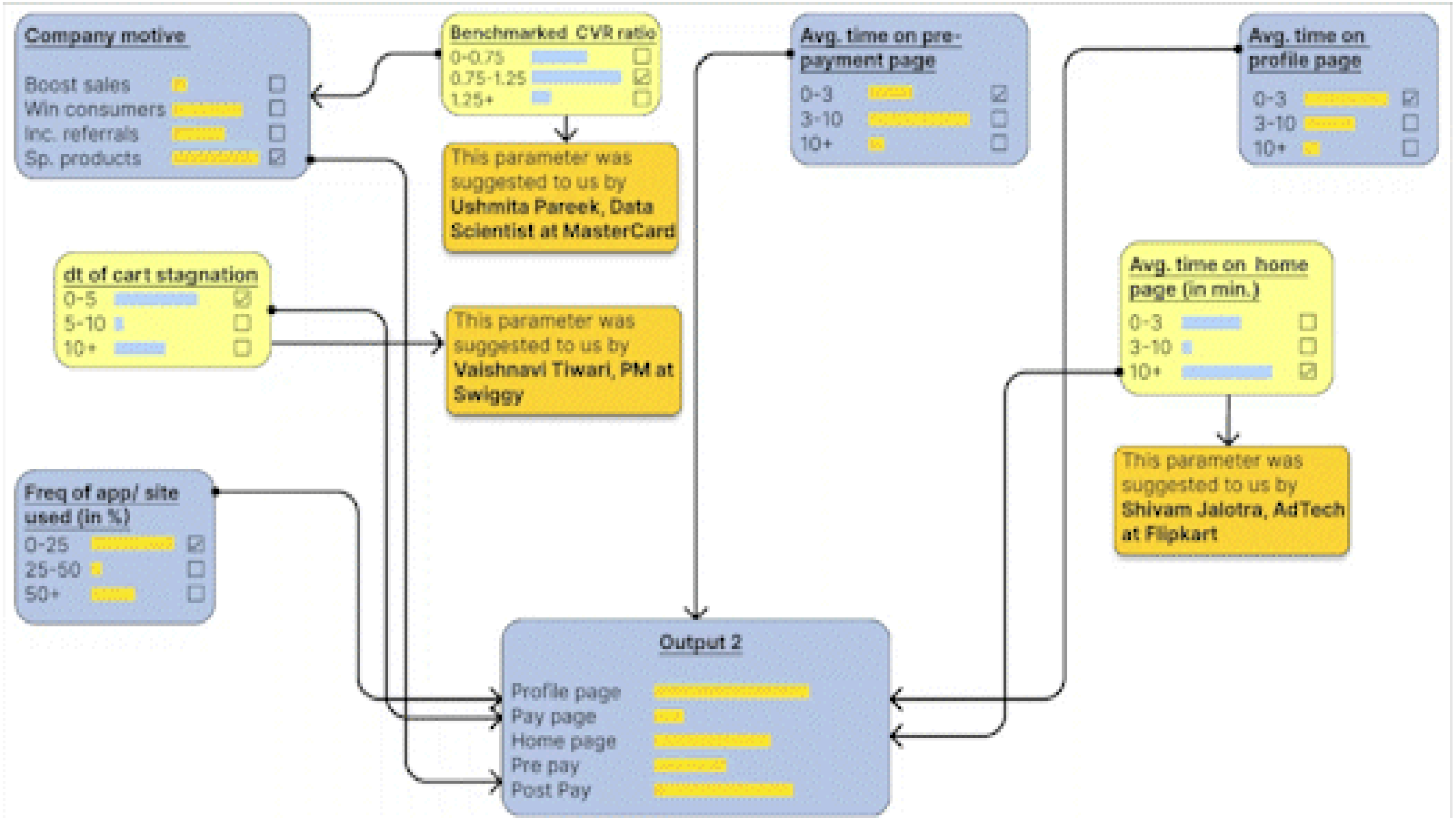
Accounts for activities that **do not directly** lead to the **purchase**

Gives **boundary conditions** for incentive design in form of the **company's internal metrics**

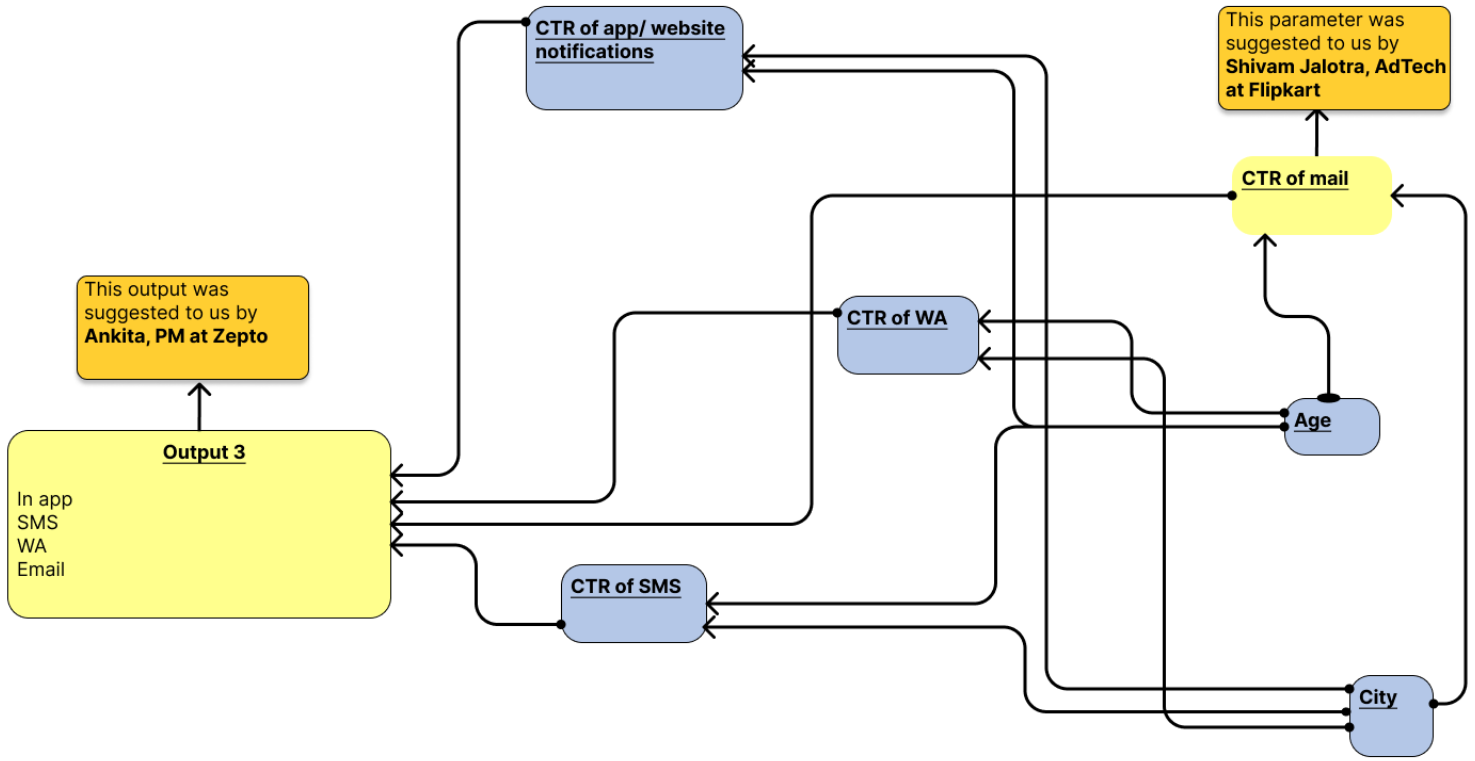
Benchmarking to industry standards to account for **competition**

Success Metrics

- **Stickiness ratio**
- **Average revenue per user**
- **Consumer lifetime value**


Company motive
Boost sales
Win consumers
Inc. referrals
Sp. products
Benchmarked CVR ratio
0-0.75
0.75-1.25
1.25+
This parameter was suggested to us by Ushmita Pareek, Data Scientist at MasterCard
Avg. time on pre-payment page
0-3
3-10
10+
Avg. time on profile page
0-3
3-10
10+
dt of cart stagnation
0-5
5-10
10+
This parameter was suggested to us by Vaishnavi Tiwari, PM at Swiggy
Avg. time on home page (in min.)
0-3
3-10
10+
This parameter was suggested to us by Shivam Jalotra, AdTech at Flipkart
Freq of app/ site used (in %)
0-25
25-50
50+
Output 2
Profile page
Pay page
Home page
Pre pay
Post Pay

Non-payment-related consumer activities, consumer demography and incentive distribution



Impact of the incentive chain

Tracks the **out of site/app** activities of consumer

Increased footfall on **incentive redeem** page

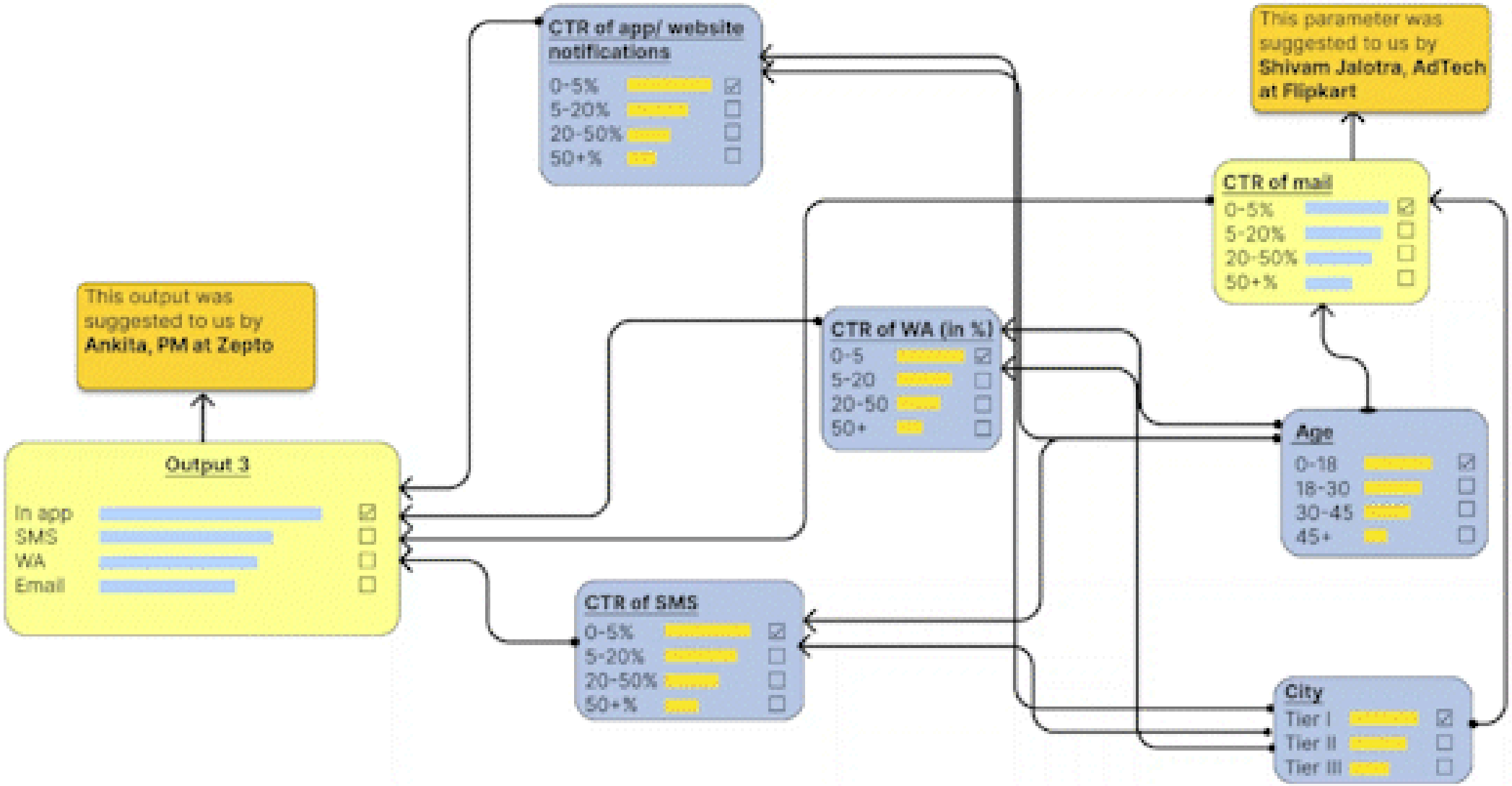
Covers dependance on **type** and **point** where incentive is delivered

Parameters affecting the Chain

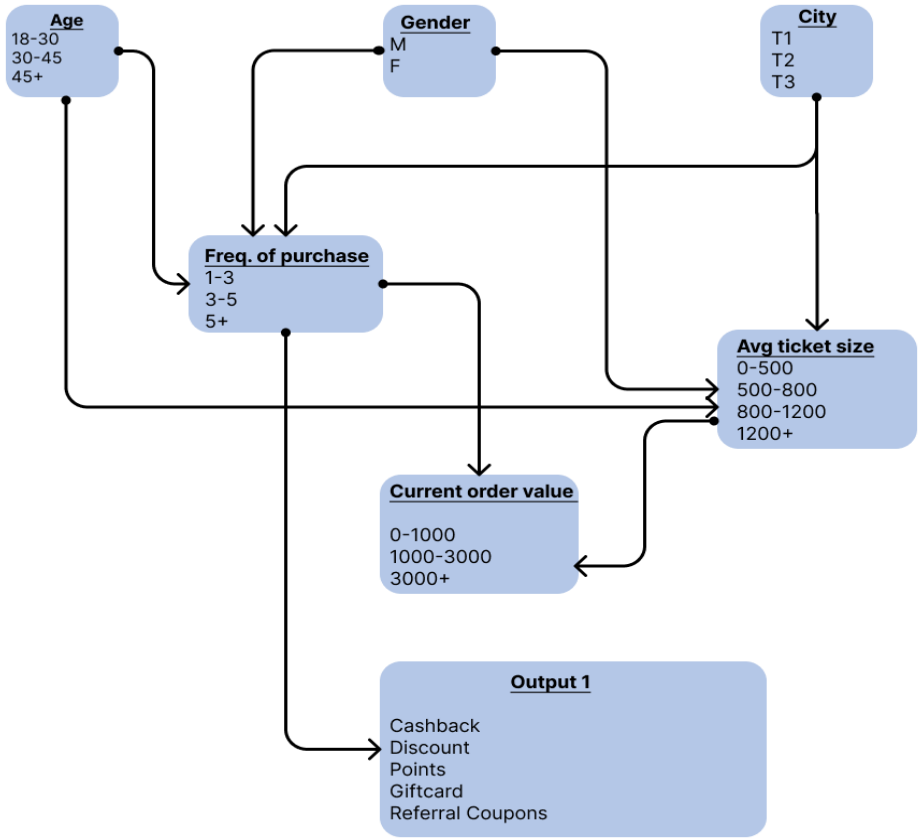
- Previous response to the incentives provided
- Where in consumer journey
- Incentive Budget

Success Metrics

- **Stickiness ratio**
- **Return on Investment**
- **Footfall on app/site**


CTR of app/ website notifications
0-5%
5-20%
20-50%
50+%
This parameter was suggested to us by Shivam Jalotra, AdTech at Flipkart
CTR of mail
0-5%
5-20%
20-50%
50+%
This output was suggested to us by Ankita, PM at Zepto
CTR of WA (in %)
0-5
5-20
20-50
50+
Output 3
In app
SMS
WA
Email
Age
0-18
18-30
30-45
45+
CTR of SMS
0-5%
5-20%
20-50%
50+%
City
Tier I
Tier II
Tier III

Incentive Type: Primary purchasing behaviour of the consumer



Impact of the incentive chain

Maps **buying history** of consumer with current order value properly

Remains **dynamic** throughout the consumer journey

Self aligns in case of change in target audience

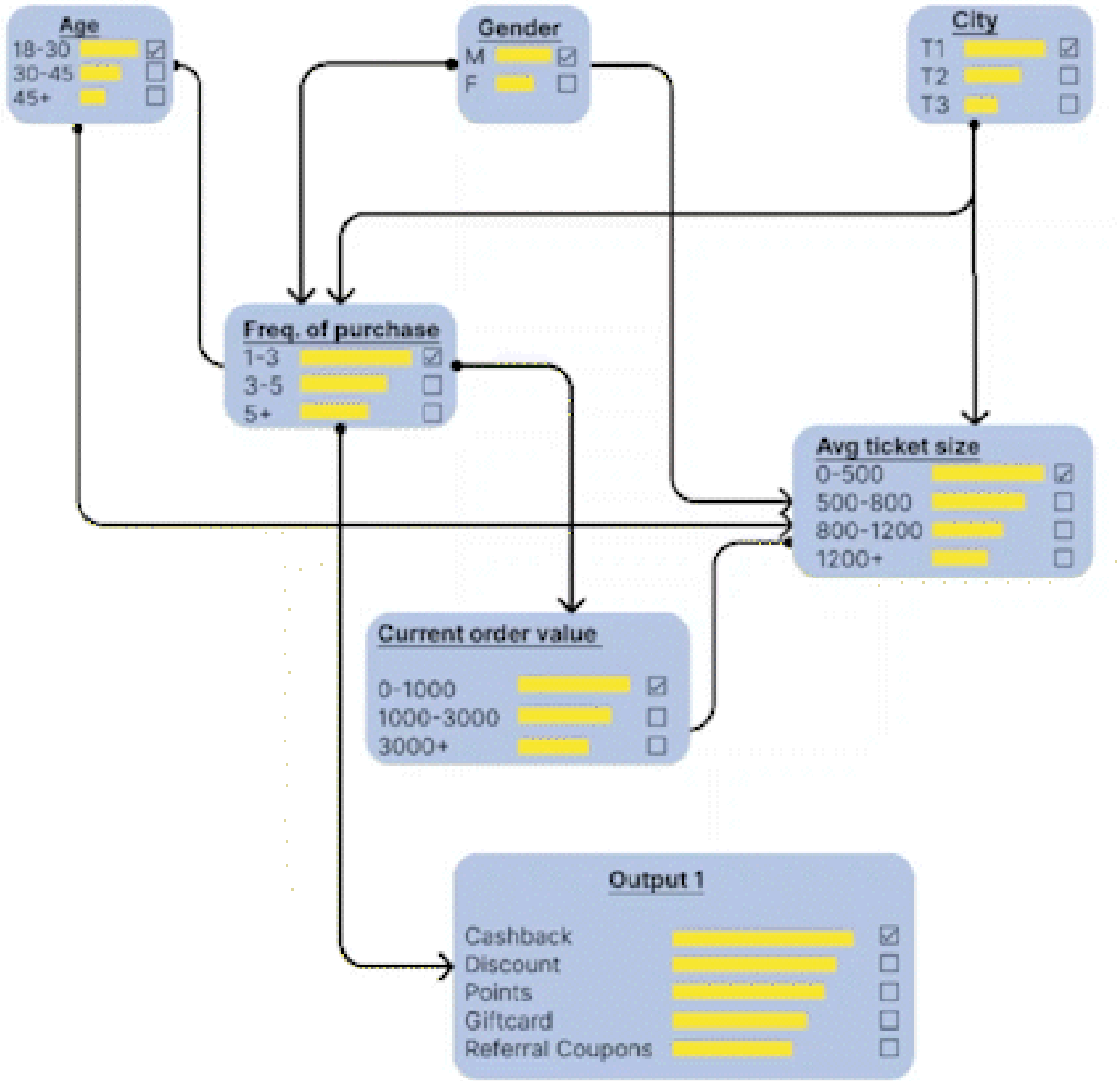
Parameters affecting the Chain

- Product Availability and Category
- Company's Alignments
- Financial Barriers

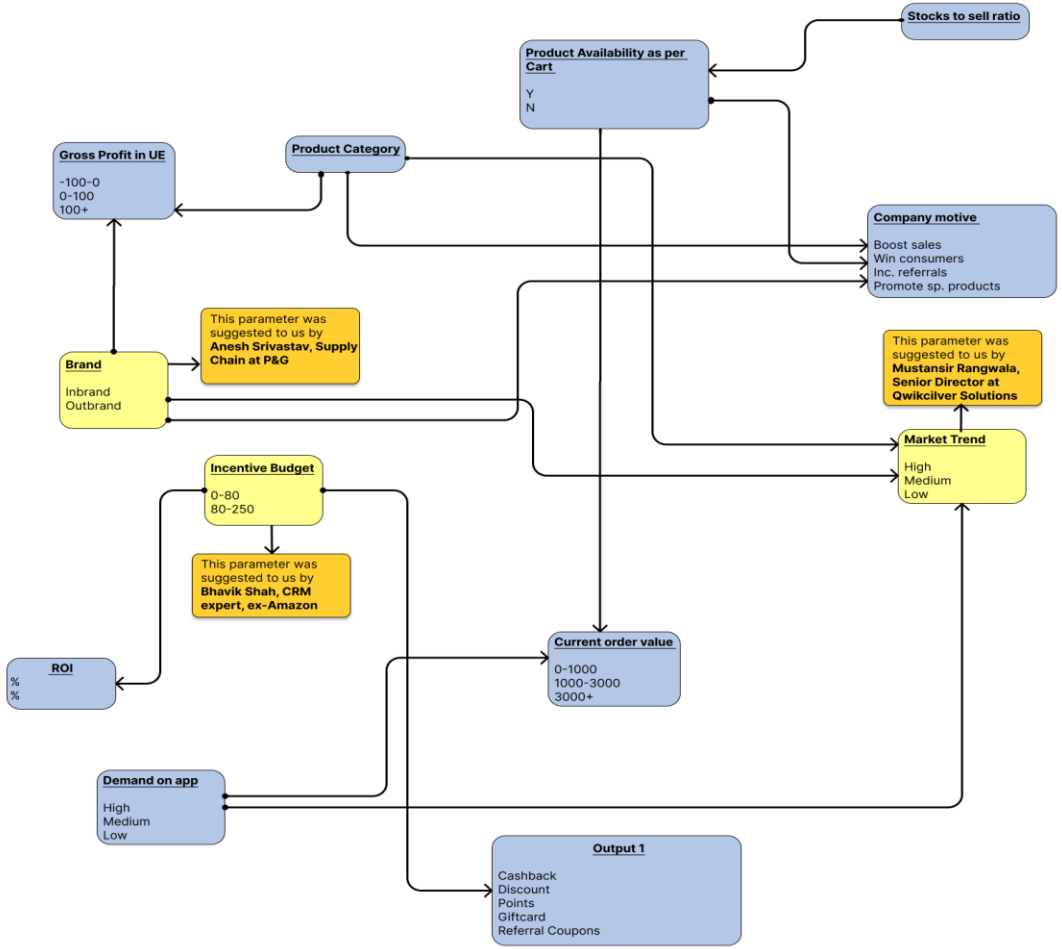
Success Metrics

- **Increase in MAU**
- **Sales of particular product**
- **Increase in ticket size**

Source: ISME Management Journal


Age
18-30
30-45
45+
Gender
M
F
City
T1
T2
T3
Freq. of purchase
1-3
3-5
5+
Avg ticket size
0-500
500-800
800-1200
1200+
Current order value
0-1000
1000-3000
3000+
Output 1
Cashback
Discount
Points
Giftcard
Referral Coupons

Incentive Type: Company-Centric and product purchase parameters



Parameters affecting the Chain

- Seasonality in product trends
- Purchasing Patterns
- Conversion Rate

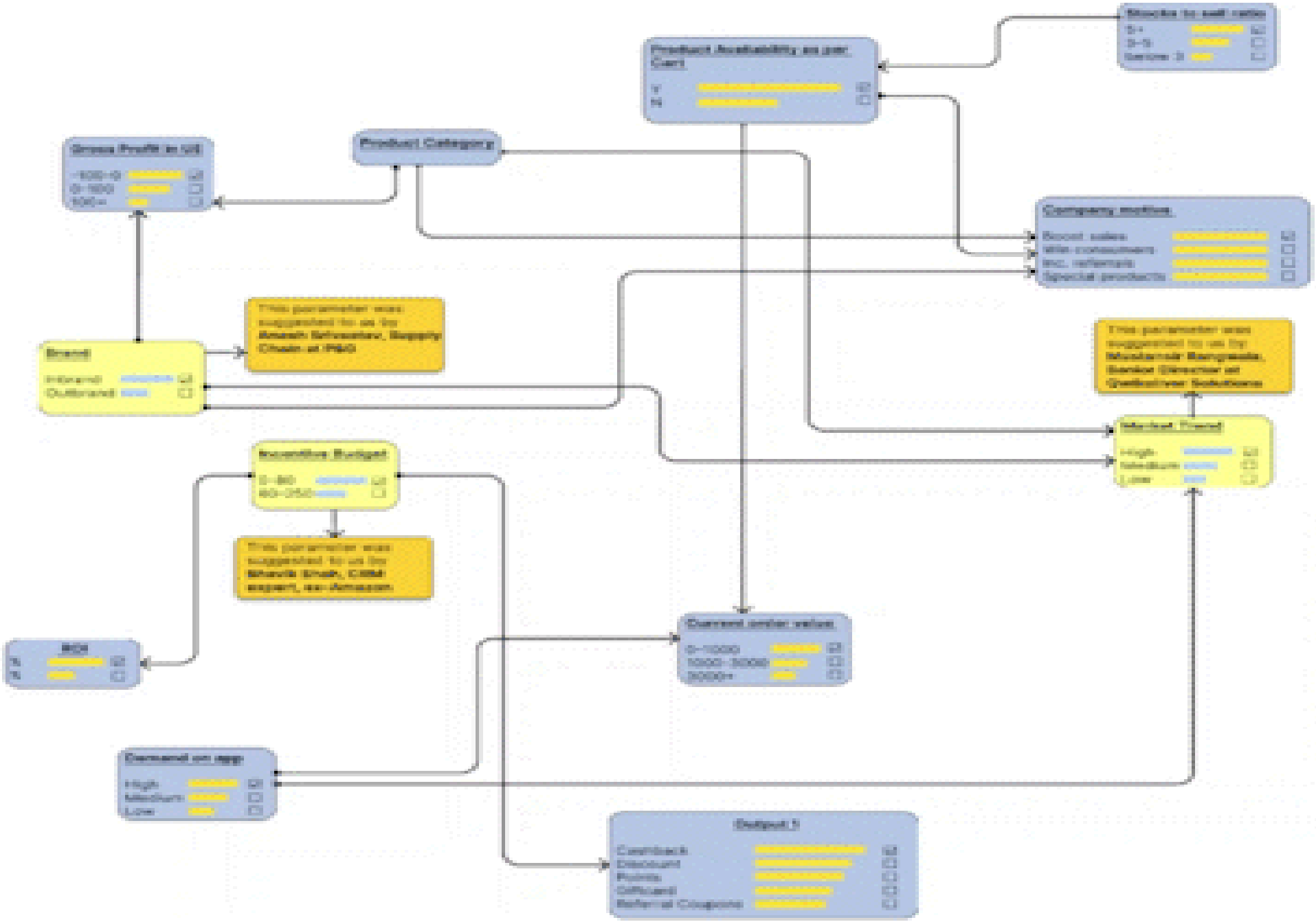
Impact of the incentive chain

- Alignment with **company's motive** and other internal factors
- Accounts for in-app/site **trends** in product
- **Benchmarking** against current order values

Success Metrics

- **Time taken to redeem incentive**
- **Redeem rate of incentive**
- **Footfall increase**

Source: Demographic Analysis


Stocks to sell ratio
Product Availability as per Cart
Product Category
Gross Profit in US
Company motive
This parameter was suggested to us by Amazon Schwantev, Supply Chain at P&G
Brand
This parameter was suggested to us by Shubankar Ramgeeta, Senior Director at Qualitative Solutions
Merchant Trend
Incentive Budget
This parameter was suggested to us by Bharat Shah, CRM expert, ex-Amazon
ROI
Current order value
Demand on app
Output 1

Included Intricacies: Pseudo-Variable, Dilution of Parameters

The use of pseudo-variables:

Understanding:

- It is not feasible to ask for private data like income and personal preferences directly from the customer.
- To account for such parameters in our model, we made use of pseudo-variables which give us an estimate of the value of the required parameter.

Relevance:

- It is important to account for all parameters affecting the final decision to effectively map out the best possible incentive for the consumer given his demographic and spending habits.
- As an example we have used customer demographics and past buying patterns to account for their purchasing power.

Dilution of Parameters:

Understanding:

- Some parameters will be linked to the final output, directly and indirectly, to compensate for the dilution created because of the multifold layering of parameters in the linkages.

Relevance:

- Parameters get diluted as we link through multiple other layers of parameters.
- However, some of them have a significant impact on the final output.
- As an example, Age will be a parameter that will directly affect the method and value of incentivization.

Proof of concept:

Ushmita Pareekh
Data Scientist @ Mastercard

"It is extremely crucial to take in account user data such as income that can't be collected without appropriate surveys. For that, you can look up to other collectible parameters that directly affect the required parameter."

Proof of concept:

Ratnakar Pandey
Head Data Scientist @ Amazon India

"Some parameters in the model need to adjusted in such a way that the parameters existing in the first layer of model must directly connect with the output if required"

Source: Accenture

Analyzing User Interaction indirectly linked to purchases

Understanding

- Companies also try to bring about incentives to **increase engagement** so as to get more information about consumer behavior across the user journey to cater to personalize the incentives effectively.
- To account for the same we have included a number of parameters like the **average time spent on the app homepage and payment page, click-through rate** and the **number of social media posts interacted** with.

Relevance

- Overall, a deep understanding of the consumer journey **enables companies to design incentives** that are tailored to the individual needs and motivations of their target audience, making them **more effective** and efficient in driving desired behaviors and outcomes.

Proof of Concept: Lenskart Virtual AR Experience

We are seeing almost 200-300 percent growth there in terms of people ordering without any assistance. Sales are higher online overall. People are browsing online more, still not stepping out despite the lockdown being lifted at the majority of the geographies

Peyush Bansal
CEO, Lenskart India.

Amazon Mini-Tv

Nykaa Network Community

Google Pay Indihome cashback

Case Study: Applying the knowledge model specifically for Nykaa

About Nykaa:

- Nykaa is an Indian **e-commerce company** that specializes in **beauty and wellness products**.
- The company offers a wide range of products including **makeup, skincare,** and **wellness products** from **all brands**.
- Nykaa operates both an **online store** as well as **physical stores** across India and provides customers with a seamless shopping experience.

What makes Nykaa a good fit for us:

- **Large customer base:** Nykaa has a large and diverse customer base as they operate on an offline and online mode.
- **Wide range of products:** This wide range of products allows the company to offer personalized incentives that cater to different customer needs.
- **Customer data management:** Nykaa has a robust customer data management system that allows it to gather and store customer data, such as purchase history, product reviews, and demographic information.

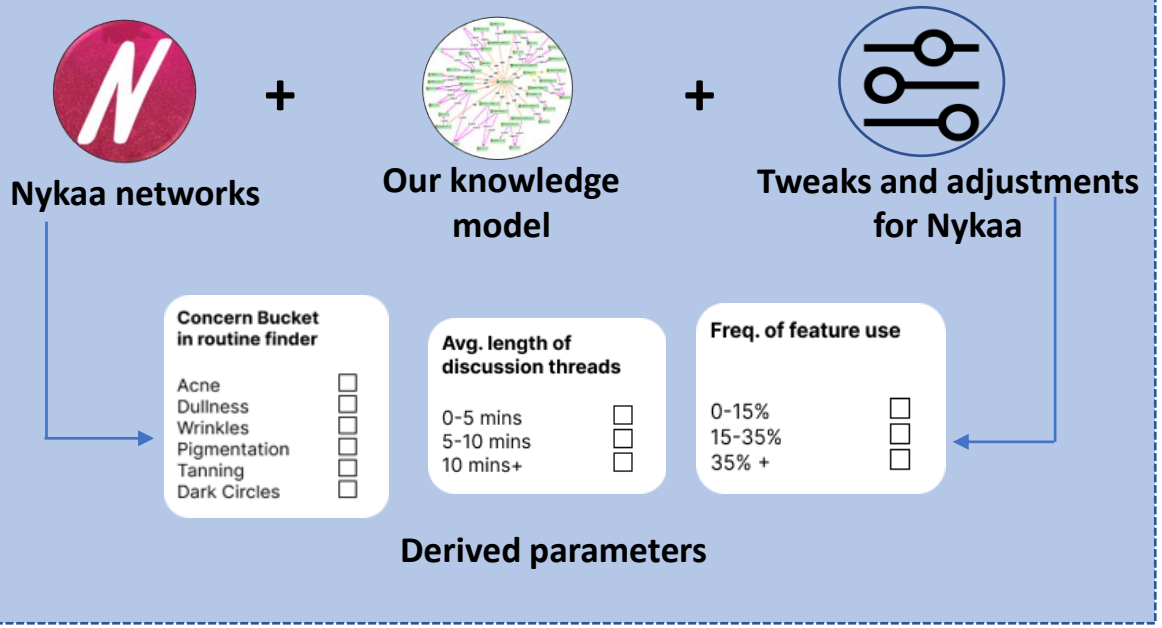
Present Incentives offered by Nykaa:

Seasonal Sale: Nykaa offers large incentives according to seasons and festivals

Generic Discounts: Giving large generic discounts to the masses without for acquisition

Loyalty Points: Awarding loyalty points to customers based on their past purchases to increase retention

Knowledge Model for Nykaa:



How would the outputs of knowledge model vary with different user personas?

Sanjana

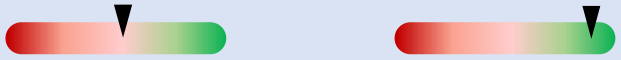
Age: 17 City: Pune

- College student is actively engaged with the latest trends
- Is a part of the Nykaa social network
- Is open to experimenting but has a limited spending capacity

Company motive: Retention

BEFORE	AFTER
• **Product:** Nykaa Kajal • **Priced@** Rs. 200 • **Incentive offered:** Loyalty points • **Mode of delivering Incentive:** SMS and Emails	• **Product:** Nykaa Kajal • **Priced@** Rs. 200 • **Incentive offered:** Buy one get one free • **Mode of delivering Incentive:** Whatsapp

CHANCES OF BUYING



Shivangi

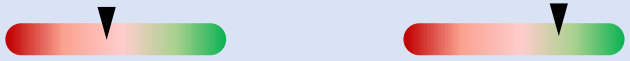
Age: 28 City: Bengaluru

- Working Professional got recently married
- Financially independent
- Brand-specific and won't compromise on quality
- Checks mail regularly.
- Purchases are relatively independent of incentives provided

Company motive: Retention

BEFORE	AFTER
• **Product:** Luxury Perfumes • **Priced@** Rs. 5000 • **Incentive offered:** Flat 20% off • **Mode of delivering Incentive:** SMS	• **Product:** Luxury Perfumes • **Priced@** Rs. 5000 • **Incentive offered:** Loyalty Points • **Mode of delivering Incentive:** Emails

CHANCES OF BUYING



Anupama

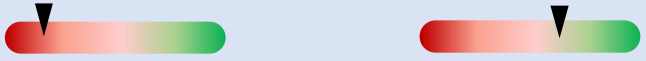
Age: 46 City: Rai Bareli

- Housewife
- Financially dependent on family,
- Follows celebrities
- wants to buy better products
- However apprehensive about buying online

Company motive: Acquisition

BEFORE	AFTER
• **Product:** Nykaa Kajal • **Priced@** Rs. 200 • **Incentive offered:** Buy one get one free • **Mode of delivering Incentive:** SMS	• **Product:** Nykaa Kajal • **Priced@** Rs. 200 • **Incentive offered:** Flat 20% off • **Mode of delivering Incentive:** SMS

CHANCES OF BUYING



"As depicted here, unlike traditional methods of incentive design, personalized consumer incentive design does not adopt a "One size fits all" approach and ensures that customer needs are met while designing incentives profitably"

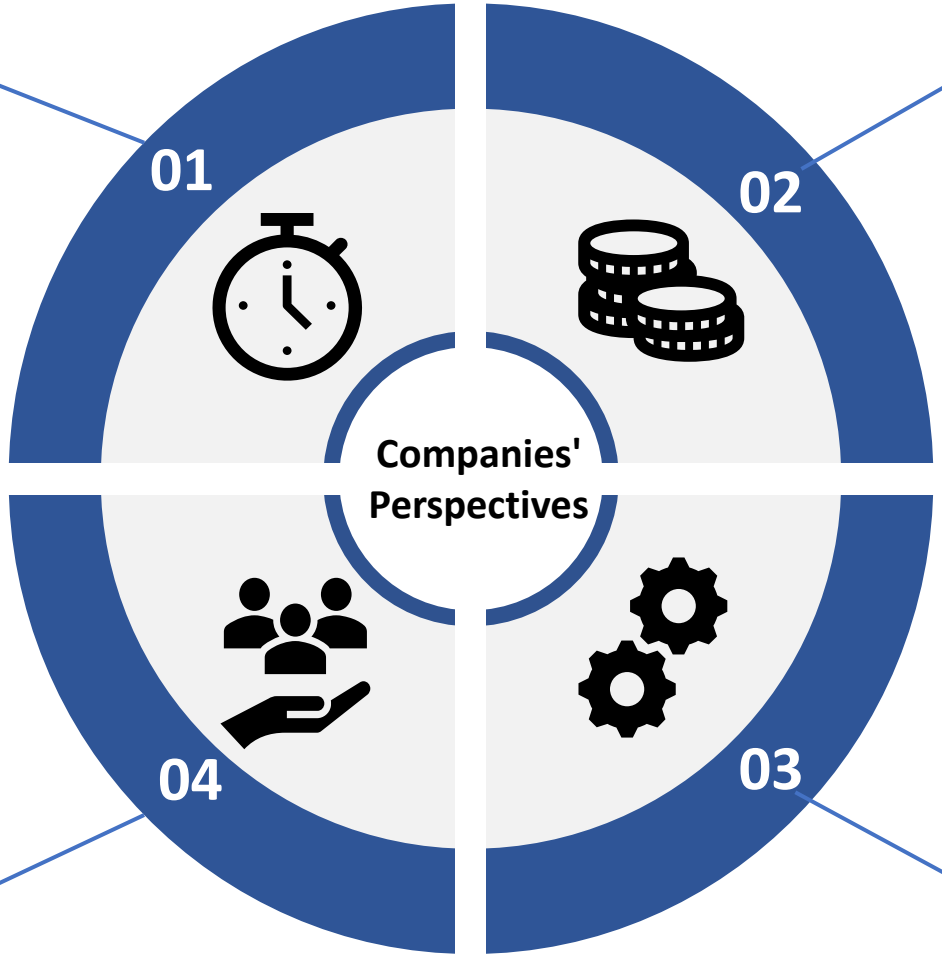
Impact: Automating these complex decisions will help company in an all over growth

Reduced Time Complexity

The average time required to process a consumer incentive **reduces by 70%** through automation

Optimized Resource Utilization

Automation can lead to a **10% to 15% reduction in costs** for consumer incentive design and management. It will help them **avoid wasting their resources** by running multiple promotions.



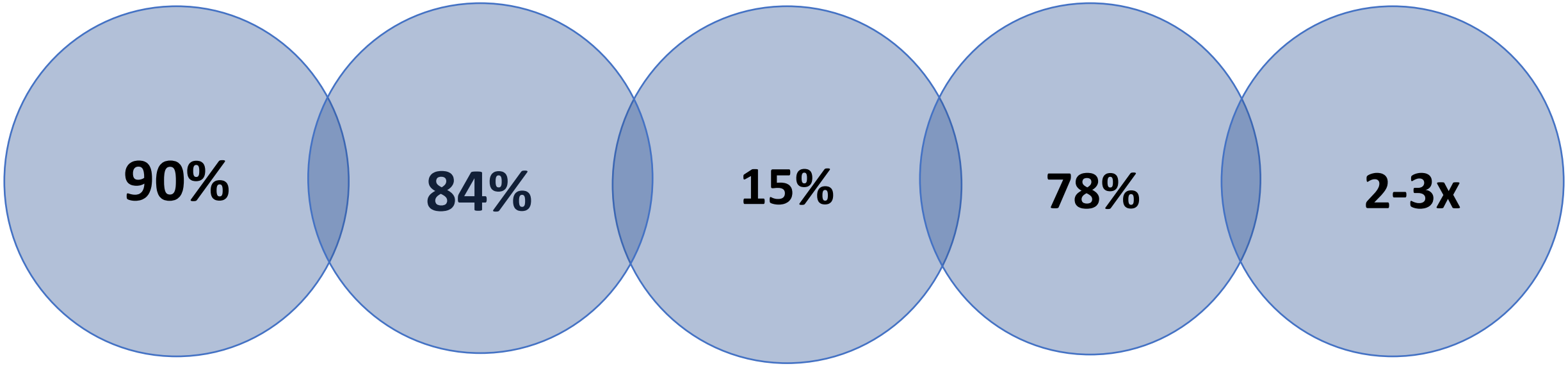
Increased Brand Loyalty

Automating the process **improves customer loyalty** as much as 79% as they get access to better, more personalized incentives.

Increased Efficiency

20% median improvement in **efficiency, accuracy, and speed** was reported by companies that adopted to automation of consumer incentive design

Impact: Automating personalization of incentives will improve user experience significantly



Find **personalized incentives appealing** because it works by tapping into the consumer psychology

Consumers are **more likely to buy** from a retailer that offers personalized experiences as they are tailor-made according to their needs

Increase in **customer lifetime value** as consumers don't find **irrelevant incentives and advertisements** at every point in the user journey and have a more seamless user experience.

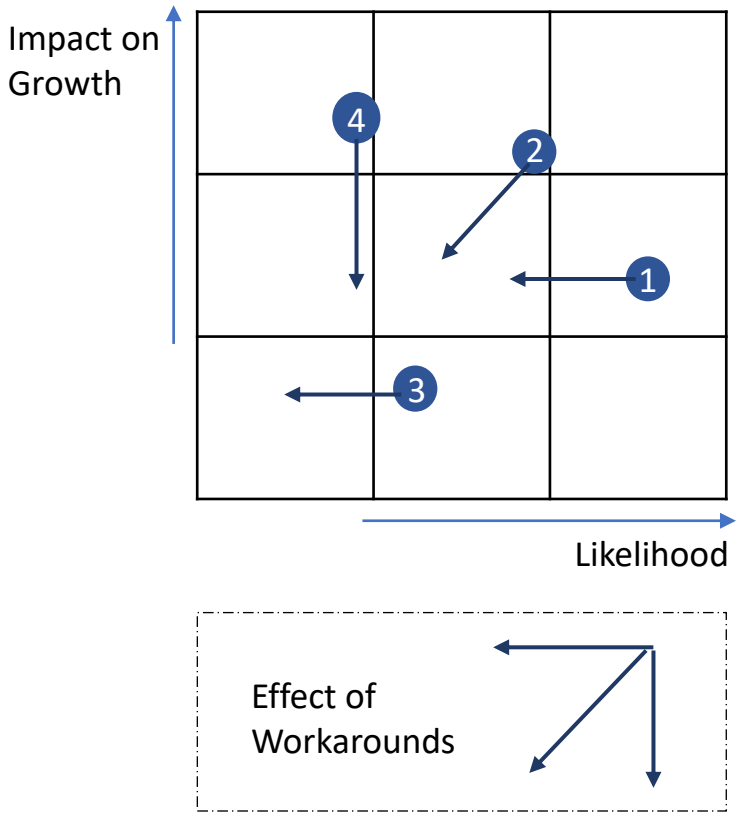
Are more likely to **refer and repurchase** from brands that focus on personalization

Customers get 2-3x times more **value for money** as they get **reward points**, **personalized discounts**, and **offers** apart from **monetary benefits**

Employing the workarounds wrt pitfalls will improve the accuracy of model

Pitfalls	Workarounds
1 Lack of Feedback Mechanism	✓ Companies can incorporate A/B testing method to identify more efficient parameters ✓ Auto-adjustable parameter weights and conditional probabilities
2 Extraneous Noise (Inaccuracy in consumer data)	✓ Incorporating sufficient 60+ parameters divided across 3 funnels
3 Increased Technological Costs	✓ Taking into consideration the incentive budget of the company, complexity of model would be adjusted
4 Barrier for outsourcing incentive design	✓ Providing End-to-end incentivization across product lifecycle ✓ Transitioning to personalized incentives from cohort based system

Pitfall Mapping



Where can this knowledge model be implemented in near future?

Incentive design for employees

- The **scope of automation** in this prospect is much needed as personalized incentive for employees is a key to employee satisfaction, crucial to company's success

Competitive Leverage

- Parameters, in this case, will change significantly
- The good thing is that the **basic structural framework** of the model will remain the same, so we can explore synergies to tap into this market

Incentive design for offline marketplaces

- Choice of digitally native brands, with an innate tendency to move offline will pave the path to design incentives for a system as complex as this

Competitive leverage

- More accurate predictions due to the availability of online data for **consumer buying behaviour**
- **Lesser barrier** for automation and outsourcing due to adaptation by digitally native brands

Incentive design for potential bank partners

- Banking systems closely align with different commerce spaces for incentives which needs to have the major aspect of personalisation

Competitive leverage

- Given, data on the company's alignment and financials we'll have the leverage to base our recommendations on the same
- Dealing with **noise** in data sets would be easily dealt with online data of buying behaviour.

Thank You!