ArMADA - Arvind Made Analytical Digital Assistant

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Arvind Brands: Digital Assistant

Context

- Customer Identification, prioritization and Engagement are the key factors to increase Customer Experience and increasing the Customer Life-Time Value
- In the age of e-commerce where e-retailers record every touch point of their customers and leverage that for personalized customer experience, stores lack behind in that area
- With the advent of new technologies in hardware and software both, stores stand a chance to get a competitive advantage

Objectives

- Analyze past purchasing behavior (in the store) and other activities outside the store (Digital Presence) for identification and prioritization of the customers
- Map the customer journey in the store for better customer service, marketing activities and operational efficiency
- Analyze customer behavior within store by sentiment analysis, feedback etc. for improvement in conversion rates through better customer service

Proposed Solution

Store Level Attributes: Transactions, Store Attributes
Us of sensors, cameras for touchpoint capturing
Store Kiosk Input

Sales Recommendation
Video Analytics
Wi-Fi Data Analytics

Increased Sales
Increased Customer Experience
Better Marketing Effectiveness
Better Operational Efficiency

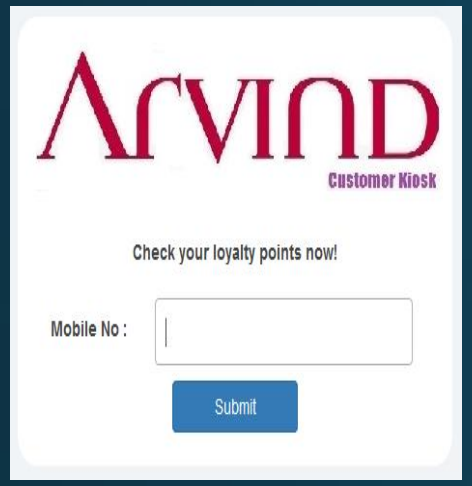
Hackathon Solution Offering

What	Sales Recommendation	In-Store Customer Visit Analysis
Why	Personalized Customer Experience Personalized Sales Recommendation Targeted Sales	In-Store Footfall Sales Conversion Heat Map Customer Tracking Dwell Time
For	Sales Planning Marketing	Sales Planning Sales Execution Marketing

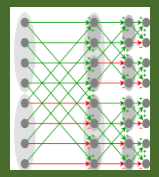
Sales Recommendation:

Customer level personalized recommendation for the sales representative

Sales Recommendation Pipeline

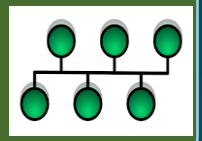


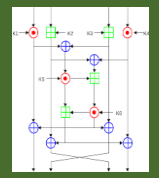
Customer Kiosk



Data Transform layer to move raw data to the data model

Recommendation Data Model built on a distributed, scalable NoSQL database





Recommendation Algorithm pipeline using Hadoop & Spark Clusters

Model Scoring engine using a delivery mechanism to score varied types of models

Business Rule Engine to define how business controls recommendations

Customer Identification Kiosk for triggering recommendation

Analytics Engine

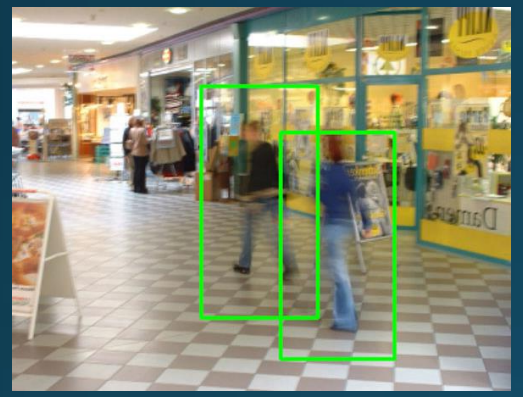
Recommendations on Mobile App

Drive intelligent sales conversations, by recommending personalized products delivered to sales people on their devices

Customer Journey In-Store:

Map customer path to get insightful customer behaviors

Impact of Capturing Customer Touchpoints

Touchpoints for video analytics	Store Entry →	Moving in the store →	At a counter/isle/dispenser →	Point of sale
Video analytics Outcome	**Passer by to entry conversion** 	**Path of customers, most busy zones** 	**Age, Gender Tagging, Behavior Analysis** 	**Identification of loyalty customers** 
Actionable Insights	Measures for increasing entry to store through ads, offers etc.	Use in store marketing for channelling people at desired zones (New Products, Offer Launches)	Customer behaviour at specific counters/zones	Automatic identification of loyal customers Automated billing

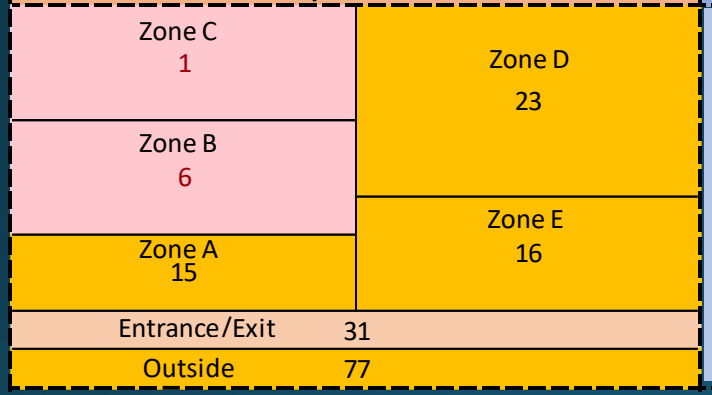
Loyalty Customer Identification, Behaviour Analysis, Dwell Time at different counters

Representation of BI Dashboard

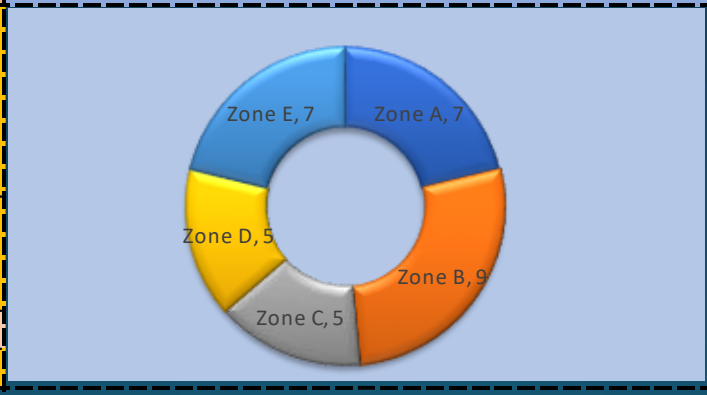
Select Store Name	Select Comparison Level	Select Duartion
Store B	Daily Weekly Monthly	0-10

Date	Outside Opportunity	Store Visitors	Window to Entry: Conversion	Entry to Buyer Conversion	Repeat Visitors	Average Residence Time
08-Nov-17	77	31	41%	39%	16	15 mins
WeekDay	+25% from Average	+2% from Average	+15% from Average	+205% from Average	+35% from Average	+11% from Average
Wednesday	-23% from Last Week	+13% from Last Week	-23% from Last Week	+23% from Last Week	+3% from Last Week	-21% from Last Week

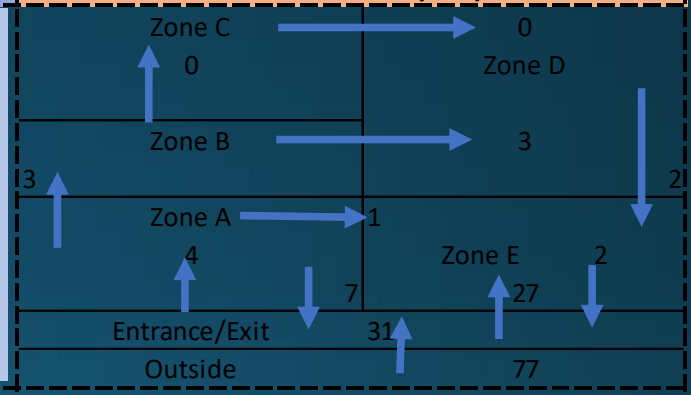
Heat Map/No. of visitors



Dwell Times in Mins

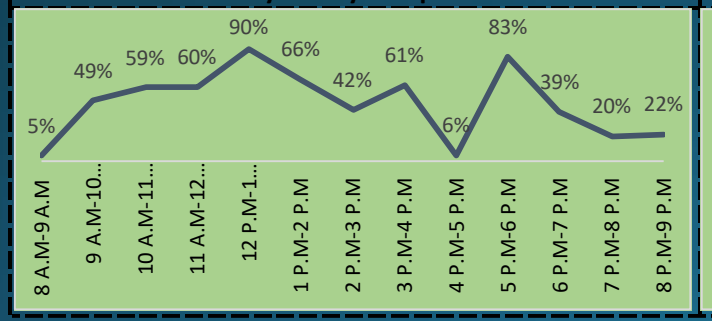


Customer Journey Map

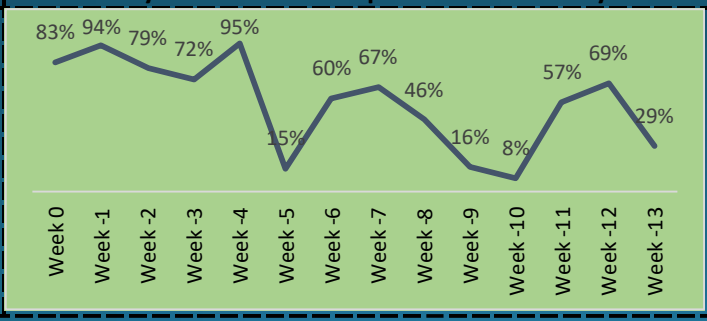


Select Metric: Entry to Buyer Conversion

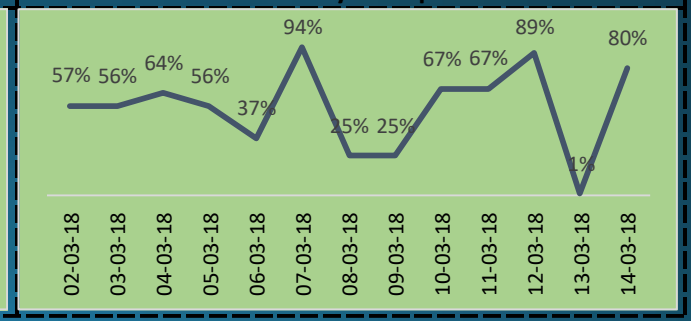
Today Hourly Comparison



Day of the Week Comparison: Wednesday



Last Few Days Comparison



*Numbers are representative

Application Architecture

Sales Recommendation

Customer Kiosk

REST APIs

AWS Lambda

Serverless Architecture

- PoS Transaction Data

MySQL

Data Storage

Real-time Sales Recommendation

Consumption Layer

WiFi Data Analytics

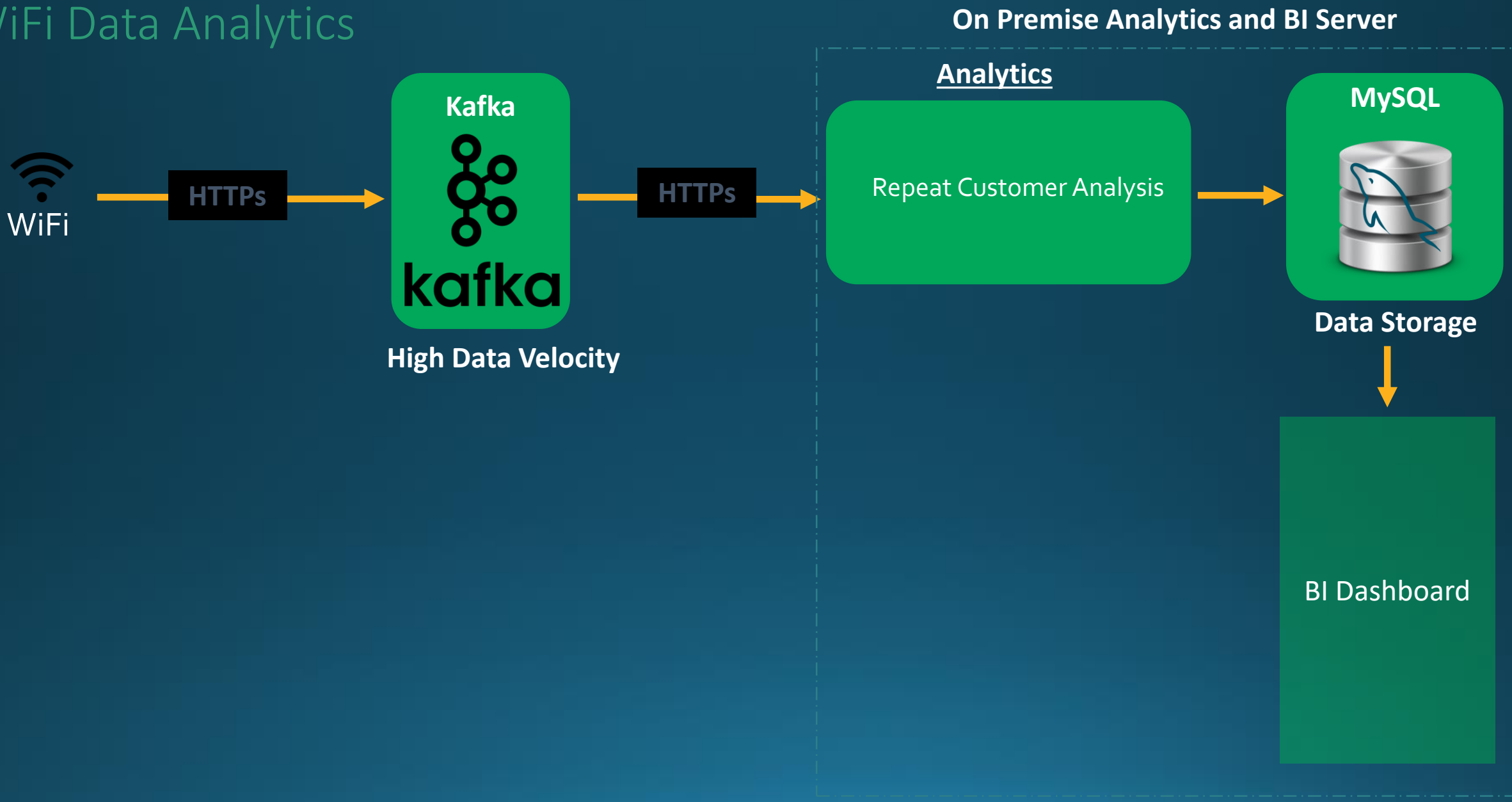


Image & Video Data Analytics

Raspberry Pi w/ Camera

HTTPs

Kafka

kafka

Data Buffer

REST APIs

AWS Lambda

Serverless Architecture

Analytics

- People counting
- Face ID Mapping
- Age, Gender Detection
- Instore customer journey
- Dwell time

* Ra-Pi Model B w/ 5 MP Camera
* Elementz USB Adapter/Charger
* SD Card (128 GB) – 160 mins

Total Cost: $85

MySQL

Output Data Storage

Consumption Layer

tableau

Near Real-time
In-Store Activity Dashboard

Beyond The Hackathon:

Identify & prioritize key customers entering store

Advanced Personalization using competitive information

Data Layer

Analytics Layer

Reporting Layer

Customer Profile

- Demographic Data
- Lifestyle Preference

Campaign Effectiveness

- Total Impression provide
- Impression Viewed/Clicked
- Click through Conversion Rate
- Types of campaigns Viewed/Clicked

App Usage

- Time spent in App
- Browsing History
- Pages Viewed Details
- Time spent/page

Transaction Data

- Total Transactions Made
- Average Order Amount
- Mode of Payment
- Order Returned/ Cancelled
- Products Purchased

In-Store Presence

- Stores Visits Frequency
- Time Spent within Store
- Affinity towards product SKUs
- Proximity from different Beacons
- Path Followed
- Zones Covered
- Day Parting Details

Persona Segmentation

Recommendation System

Promotion Content Design

Campaign 1

Campaign 2

Campaign 3

Measuring campaign effectiveness in terms of

- Store visits Frequency
- Campaign contribution towards revenue
- Sales Lift Analysis
- Post campaign clickstream analysis

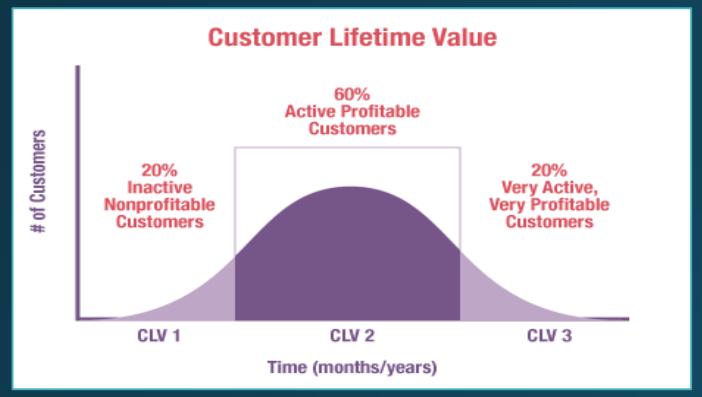
Analysis to be done based on data collected across multiple brands/ stores

Note: In absence of mobile app the lifestyle prediction of consumers will be through hypothesis based on similarity in-store behavioural pattern of existing consumers

Acquiring customers with future potential through DMP

Identifying Potential Customers from 1st Party Base

Estimating future potential customer using first party DMP data and adding monetary value to business through better engagement with them



Location	Total Spend	Customers	CAC	CLV	Revenue	Profit *
Adwords Ocean	$100	100	$1	$10	$1000	$900
Facebook River	$150	50	$3	$30	$1500	$1350
Lake Microsoft	$250	25	$10	$100	$2500	$2250

Understanding the right segment of customers bringing value to business with minimum acquisition cost.

Understanding External Personas for multiple segments

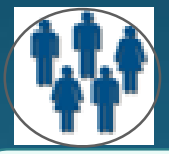
Segmenting target customers and profiling them in homogeneous groups using 2nd and 3rd party data like product usage, demographics, behaviour etc..

Browsing Behaviour Segments

Demographic Segments

-> Deal Hunters
-> Public Transport Users
-> Price sensitive
-> Holds Loyalty cards
-> Prefer offline Store

-> Food Lovers
-> Movie Goers
-> Youth Base
-> Rural Consumers
-> M Wallet users
-> Tech Enthusiast
-> White Collar Employ



-> Smart Phone Users
-> Urban Consumers
-> Credit Card Users
-> Brand Centric
-> International Traveller
-> Fleet Taxi Users
-> Jewellery Buyers

Identifying right target audience based on personas identified

Extrapolating identified persona information for targeted segment and mapping them with universal cookie base through look-alike models

PrecisionMatch 3rd Party Data Set

People who look like Converting Audiences