

**Title:** *Intelligent customer profiling using digital and analytics for enhanced customer experience*

**Idea Overview:**

The solution objective is to have a seamless and convenient way of profiling the customer as they walk into the store to enhance their overall experience. The system would be able to make customized recommendations on the fly and have it notified to the sales representative on the fly to make appropriate suggestions for improved sales, better satisfaction and increase customer retention.

**Solution Overview/Architecture:**

For such an intelligent, dynamic and scalable system with multiple data points to process in a seamless manner, an extensive architecture with well thought out system design principles should be laid out. From a bird's eye view, we can broadly classify the data types as image/video and streaming data which needs separate treatment from an analytical level but a somewhat common technical architecture.

Let's first look at image/video analytics and the golden rule of thumb in this case is "the more the merrier". A typical in store camera installation would be about \$200 and the position would be central which would limit the utility from an in-depth image analytical perspective. Since Arvind brands are mostly retailed from 3<sup>rd</sup> party stores, so there's also the added complexity of getting hold of the camera feeds and hence the solution would be to have customized low-cost video feeds for our purposes. What we're proposing is a \$85 RaspberryPi based system with camera, battery pack and network connectivity which can be deployed as per our need and identified rack locations. This will guarantee us hi-quality feeds on a continuous basis for better understanding of the customer dynamics.

Next up is the streaming data analytics that can be received from WiFi trackers deployed in the store, PoS machines at the time of billing, NFC trackers and RFID beacons kept at shelves that retail Arvind branded merchandises. All this streaming information when clubbed with external DMP (Data Management Platform) data would help stitch an appropriate profiling of the customer as starts walks into the store.

**Technology Aspects:**

The proposed Raspberry Pi system, PoS machines and NFC/RFID beacons will talk to the datacenter in a serverless environment (AWS Lambda). This is the ideal way to get things done at this scale (1300 standalone & 5000 departmental stores) without worrying about compute, storage or memory requirement. Another advantage with this approach is that Arvind Brands need not commit high amount upfront for a very hi-end server without knowing the actual usage statistics. It would also be highly secure since none of the moving parts in this solution will not have any residing data. The whole communication happens over SSL with REST APIs that makes all the required functionality possible.

**Types of Analytics which can be done:**

1. Customer identification
2. People counting
3. Brand identification
4. Emotion detection
5. Customer segmentation
6. Instore customer journey
7. Product affinity and dwell time
8. Customer interaction