**E2E Happy Path , Event Sourcing**

**User Registration:**

**Action**: Customer Service  Registration API call -> generate customerID-> API Call to IAM consumer to pass CustomerID (MobileNumber is unique)

**API** : Customer Registration API, IAM Registration API

**MS Involved**: customer-service, iam-service

**Events:** No Events

**Note**: customerId is the common for all MS for identifyingUser

**User Login**:

**Action**: API call to IAM service to authenticate, ~~API call to get all Product Service(pagination can be done),~~ API call to Get Cart Size(if new user cart id needs to be created), get saved Delivery address and other information for customer

**API**: IAM authenticate API~~, Get Products API (Paging~~), Get Cart Size API

**MS** **Involved**: iam-service, product-service, cart-service

**Events**: No Events

**User** **Logout**:

**Action**: API call to iam-service to Invalidate token

**API**: iam-service logout api

**MS** **Involved**: iam-service

**Events**: No Events

**Product** **Search**:

**Description**: Triggered when a user searches for products on the shopping portal.

**Action** : API call to Search service (then API call to Product service(Product service will do API call inventory for pricing and sku)) ~~(Caching can be discussed)~~

**API**: product search api at search-service, product search api at product-service, product search api at inventory-service

**MS** **Involved**: search-service, product-search, inventory-service

**Events**: No Events

**Note**: (No Auth required) (Need to discuss with Keshav and Bijaya regarding rltnship of invntry and product)

**Adding Item to Cart:**

**Description**: Triggered when a user add item to Cart

**Action**: API Call to Cart API to add item (with cart\_id, product\_id, with ProductMetaData)

**API**: Add item API cart-service

**MS** **Involved** : cart-service

**Events**: cart-service(ItemAddedCart)

**Note**: Only Authenticated user can add item to cart

**Checkout Cart :**

**Action**: generate orderID(cart\_id / old orderID) Order Service API, cartCheckout API,

**API**: generate orderId API order-service

**MS** **Involved**: Order-service, cart-servcer

Events: CheckoutCartEvent, RemoveCartEvent (On Removal), CreateOrderEvent, CancelOrderEvent

**Note**: Only Authenticated user can add item to cart

**Confirming Details After Checkout Cart:** (Payment Method Page with delivery timelines)

**Description**: When user confirm Delivery address and move to next page

**Action**: API call to get Payment Methods from payment-service, API call to validate cart item with Inventory service, API call to get saved payment method from Customer API

**API** : get Payment Methods API payment-service, verify inventory for inventory-service

**MS** **Involved**: payment-service, inventory-service

**Events**: No Events

**Payment** **Initiated** :

**Description**: When user has entered payment details and will be redirected to payment gateway page for verification

**API**: No API Calls

**Event**: PaymentInitated (save details of the payment initiated and generate an event for order In-progress)-> OrderPlacedEvent-> CartCleanup

**MS** **Involved**: Cart-service (Cleanup), order-service (InProgress),payment-service(InProgress)

**Payment Success Update:**

**Event**: PaymentSuccess, ~~OrderCompleted~~, InventoryDeduction, ShippingCreation(Will be fired from Order-service)

**API**: No API Calls

**MS Involved**: ) payment-service(completed status save)-> PaymentSuccess ->[inventory-service(deduction)] ~ [shipping-service(created)] ~ [order-service (completed)] (parallel events)

**Payment Failure Update: same as above**

**Event**: Payment Failed ,- OrderCancelled API-> PaymentRefund, InventoryRestore

**MS Involved:** order-service (Failed),payment-service(Failed),inventory-service(deduction),shipping-service(created)

Order Cancelled API->Payment Refund

**API**: No API Calls

Note: Reconciliation Batch jobs to update Payment Status if any pending till then order status will be In Progress. Order will be marked Cancelled if payment failed.