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UX DESIGN & STRATEGY

**Virgin Atlantic**

User Experience Architecture Guide  
October 2015

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# EXECUTIVE SUMMARY

## Mission

Virgin Atlantic must regain its competitive advantage in the industry by leveraging user experience as its key brand differentiator, which will prove valuable and defensible. Virgin Atlantic can improve passenger satisfaction by streamlining efficiency, offering personalization, and improving the health of passengers during check-in and on board the flight.

## Market

The commercial airline industry has been growing rapidly (\$369 billion revenue in 2004 to \$746 billion revenue in 2014), but profit margins remain small (less than 3 percent overall), according to the International Air Transport Association.

The industry depends on volatile factors like regulation, uncontrollable environmental events, and ongoing price pressure. To remain competitive, airlines must find ways to both reduce costs and enhance passenger experience. The airline industry no longer just provides a means of transportation. There's a new emphasis on hospitality and services, where passengers want quality service and amenities such as in-flight entertainment and convenience. Airlines that invest in improving passenger experience are seeing higher passenger satisfaction, stronger brand loyalty, and subsequently, growing revenue.

Virgin Atlantic's strengths lie in its strong brand image and recognition as well as its innovative services. In 2003, Virgin debuted its award-winning Upper Class suites, consisting of luxury leather armchairs and mattresses. The airline was also the first to provide all passengers with seatback screens for in-flight entertainment. The company has crafted a strong brand image by striking a playful and cheeky tone and forging emotional connections with passengers.

## Problem

In the intensely competitive and commoditized aviation market, it is crucial to differentiate to survive. Virgin has consistently excelled at creating new products and providing stellar passenger experiences, but competitor airlines have adopted many of these innovations and leveled the playing field.

As user experience begins to overtake price and product as the key brand differentiator, Virgin needs to once again raise the bar and create what no one else is creating. Since the market is relatively saturated, even incremental improvements to the status quo will go a long way. Evolving technology and growing passenger needs present an opportunity for Virgin to innovate and differentiate from the pack.

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## EXECUTIVE SUMMARY cont.

### Solution

The following five solutions will improve the Virgin passenger experience in three key areas: efficiency, health, and personalization. Some are incremental improvements to existing Virgin products and services, while others are new creations that embody the company's signature out-of-the-box philosophy.

1. **Wally:** Intelligent and dynamic system to reduce passenger wait time by 50 percent.
2. **Red (existing):** Seatback platform with additional key screens to improve in-flight experience.
3. **In-Flight Team Tablet:** Device to allow the In-Flight team to streamline workflow.
4. **Oxygen Bar:** Innovative and trendy service to provide extra health benefits.
5. **Amenity Kit (existing):** Addition of items to boost passenger health and comfort.

### Initial Rollout

- Wally and oxygen bars to be installed at 10 airport hubs.
- Amenity kits, In-Flight Team Tablets, and improved Red seatbacks to be implemented on 747 and 787 fleet.

### Cost & Finance

Estimated cost of 5 solutions:

- *Hardware:* \$1 million
- *Software, development, deployment:* \$4 million
- *Amenity kits, maintenance, other:* \$2 million (annual)

For calendar year 2014, Virgin Atlantic reported a \$4 billion revenue before tax and exceptional items. Virgin is currently investing an ongoing \$460 million into improving passenger experience until 2018. Virgin Group – which consists of about 80 businesses including Virgin Atlantic, Virgin America, Virgin Cruises, Virgin Hotels – reported \$23 billion in revenue at the end of 2014.

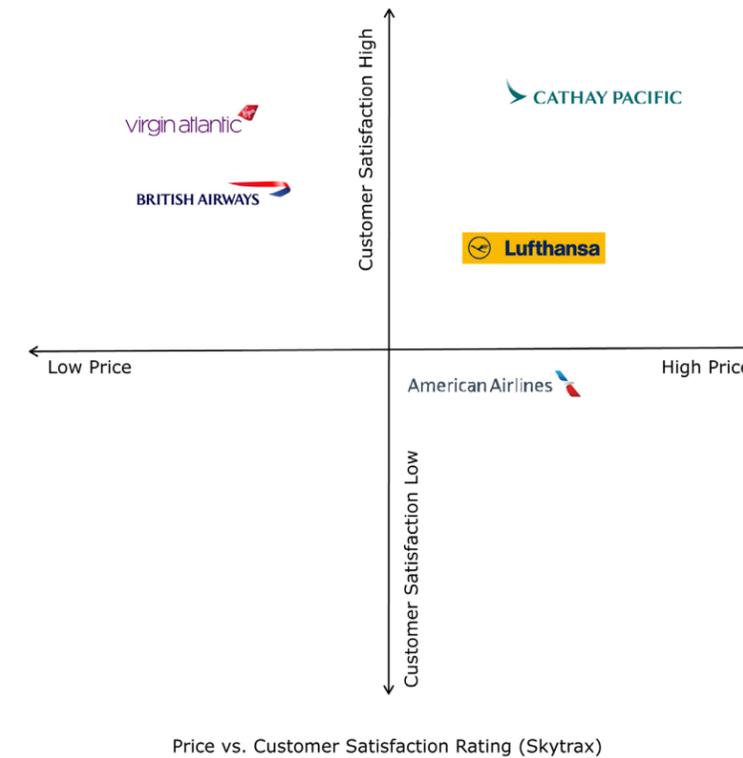
### Team

All work completed by a three-member team: Julie Xie, Lani Burgess, Paige Thompson.

# EXECUTIVE SUMMARY cont.

## Competitive Analysis

The four main competitors to Virgin Atlantic's international market are British Airways, Cathay Pacific, American Airlines, and Lufthansa. According to Skytrax – which runs an airline review and ranking site – Virgin has a competitive advantage in its ability to attain high customer satisfaction while keeping prices low. There is an opportunity to raise Virgin's customer satisfaction ratings even further.



# USERS

### Airport check-in

- Recent industry surveys show that over 50 percent of passengers around the world want self-service options to make their journeys more efficient. ([International Air Transport Association](#))
- According to SITA's 2015 Passenger IT Trends survey, 43 percent of passengers surveyed still used a check-in counter, and 57 percent are using a self-service option (online, mobile, or kiosk). Ninety percent of U.S passengers reported positive emotions when using self-service check-in. ([SITA](#))
- Passengers cite check-in and baggage drop as one of the most stressful parts of their airport experience. ([SITA](#))
- According to a 4,000 customer web-based survey conducted by Deloitte, 40 percent of respondents rated check-in convenience as the most important on a scale of 1 to 5. Thirty-eight percent rated service as most important on the same scale, and 18 percent rated in-flight technology as most important on the same scale. ([Deloitte](#))

### Health on-board

- Methicillin-resistant Staphylococcus aureus (MRSA) lasts for 168 hours on the cloth seatback pockets, where flyers often store personal items such as magazines and iPhones. It lasts 96 hours on armrests, 72 hours on tray tables, and 48 hours on metal buttons used to flush toilets in airplane lavatories. ([Auburn University](#))
- A large travel risk for passengers is deep vein thrombosis, also known as “economy-class syndrome” — a condition brought about during long flights. It is difficult to pinpoint precise statistics on their occurrence, but a 2001 analysis estimates that there are about 1 million DVT cases related to air travel every year. In addition, travellers who take flights frequently for business have a 5 percent risk of contracting DVT in any one year. ([WebMD](#), [YourHealthBase](#))



### KYLE ZURIER

Businessman, on the go

Male, 44

New York, NY

Senior business consultant, earns \$220,000/year

Married, 2 kids

**Goal:** Save time, manage very busy schedule.

- Works at top-tier consulting firm.
- Travels 3-4 times per month. About half of his trips are international.
- Flies mostly business or first class on JetBlue or United Airlines. Has flown Virgin a handful of times for leisure.
- Wants to maximize productivity during flights. Gets frustrated waiting in long check-in and security lines.
- Has not had comfortable flying experience due to flight attendants constantly taking orders, coming around to collect trash, and people going in and out of aisles.

**Solution:**

- Streamlined check-in system will save Kyle time.
- Pre-flight ordering and seatback ordering will decrease clutter in aisles.

“ I’m always on the go, and I hate wasting time in airports. I have to arrive several hours prior to my flight, and check-in lines are always so slow and disorganized.”

**Scenario:**

Kyle is running late due to a client meeting that ran long. He is booked to fly to London, and he’s cutting it close. He rushes to the airport, ready to beg the flight attendant to put him on a later flight. He arrives at the check-in counter to find that the line is moving very quickly because of Wally. He makes his flight with a few minutes to spare to grab a coffee.



### SARAH JIA

Social media power user  
Female, 25  
Hong Kong, China  
Marketing associate, earns equivalent to \$60,000/year  
Single

**Goal:** Appear “cool” and hip among friends online.

- Likes to travel. Going to Europe with friends next month.
- Frequent user of photo-sharing apps, such as Instagram and Snapchat. Loves to share new experiences on those platforms.
- Early to mid adopter of new trends.
- Digital native: She expects technology to improve and enrich her life.

### Solution:

- Oxygen bar, innovative check-in system, and personalization will delight Sarah and entice her to become a Virgin brand ambassador.
- This is the demographic Virgin Atlantic wants to attract – young, up and coming professionals who will be impressed by Virgin and drive viral marketing on social media.

“ I’ve always got my iPhone on me so I can use social media and send photos to my friends so they can see what I’m up to.”

### Scenario:

Sarah is flying Virgin Atlantic for a business trip. Since her company is footing the bill, she decides to upgrade to Upper Class. When she enters the Clubhouse, she is pleasantly surprised to find an oxygen bar. She had heard about recreational oxygen use from her friends, but has hasn’t tried herself. It made her feel revived and alert and ready for her 11-hour flight.



### MICHELLE JONES

Busy single mother  
Female, 33  
London, England  
Dental hygienist, earns equivalent of \$71,000/year  
Divorced

**Goal:** Bring her two energetic young children on a plane ride without causing a commotion.

- Single mother who works hard to stay organized while juggling a full-time job and raising two kids alone.
- Lets her kids get away with more misbehavior than she would like, but is too exhausted to fight every battle.
- Loves to travel and wants to instill that wanderlust in her children.

**Solution:**

- Easy check-in system allows Michelle to seamlessly check in for herself and her kids.
- Amenity kits, in-flight entertainment, and K-iD backpacks will keep her kids occupied and quiet.

“ I’m nervous about bringing Patrick and Eloise on the plane. They have lots of energy, and I don’t want to be a bother to other passengers.”

**Scenario:**

Michelle is taking her two children (4 and 6 years old) on a plane for the first time to Disney World. When they are boarding, her kids start to get antsy and loud. An In-Flight team member brings over cookies and apple juice, which Michelle had ordered for her kids at Wally. Her kids are satisfied.



### JAMES BERG

Hard-working flight attendant

Male, 38

Frankfurt, Germany

International flight attendant, earns equivalent of \$68,000/year

Single

**Goal:** Provide top-quality service and ensure safety and comfort of passengers.

- Loves his job, but finds that his inconsistent sleep schedule is affecting his memory.
- Workaholic and strives to do his best.
- Loves learning about different cultures and interacting with passengers.
- Cares about what passengers think of his customer service skills.

**Solution:**

- In-Flight Team Tablets will help flight attendants keep track of their passengers and frequent flyers more effectively.
- Tablets will enable faster food and beverage service for increased in-flight efficiency.

“ I’m in the air over 100 hours a month, and I see a lot of the same people flying in the Upper Class cabin. I like getting to know my passengers on a more personal level, but I’m pretty bad at remembering names.”

**Scenario:**

On an early morning flight to Japan, James sees a businesswoman who he remembers from a flight last week. He can usually recognize frequent flyers and their beverage preferences, but this passenger’s name is escaping him. James’ co-worker hands him the tablet, and James is able to greet the passenger by name and bring her her favorite beverage and snack.

## KEY DESIGN DECISIONS

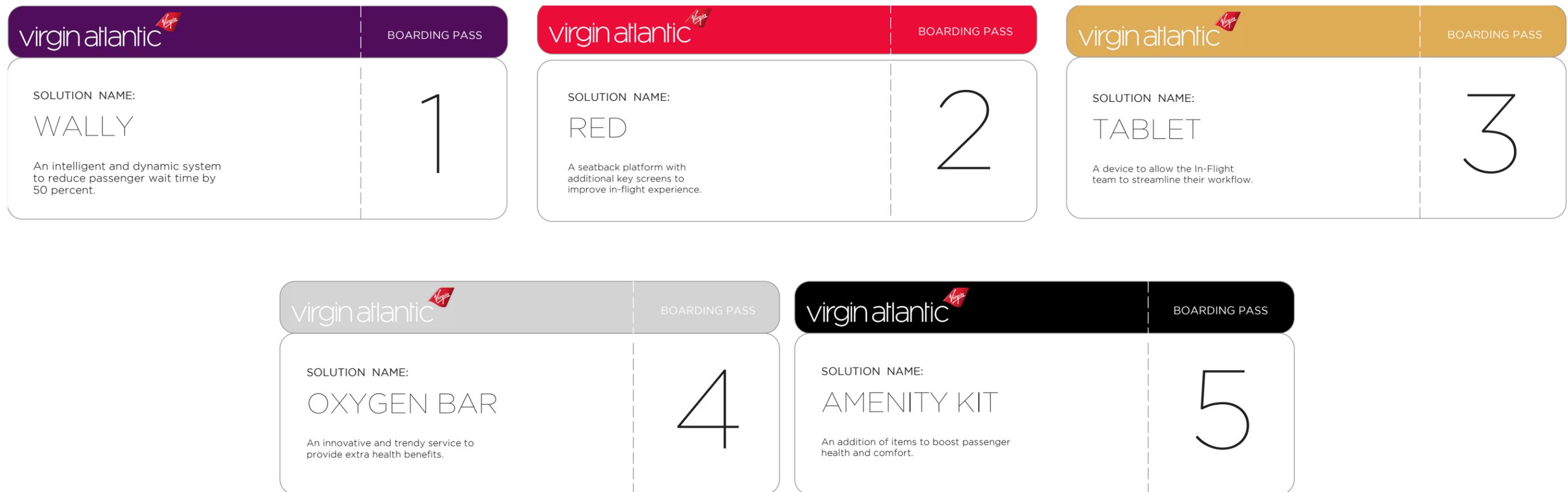
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# KEY DESIGN DECISIONS

1. Efficiency, personalization, health are key areas of improvement to boost user experience.
2. The overarching theme incorporated into the five solutions is Virgin Atlantic's existing brand proposition: "Flying in the face of ordinary." Designs must challenge current industry standards and resist clichéd thinking.
3. Solutions must stay within known airport regulations and municipality restrictions, as well as space limitations aboard the airplane.
4. Visual design style and tone is consistent with Virgin's existing brand guidelines.



## SOLUTIONS OVERVIEW



# SOLUTIONS OVERVIEW

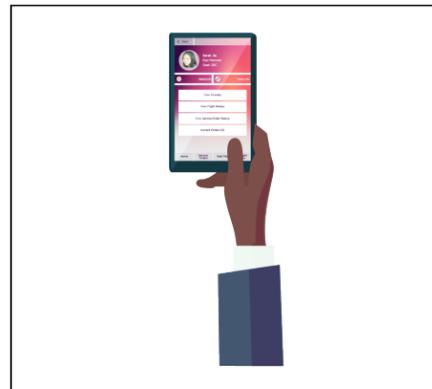
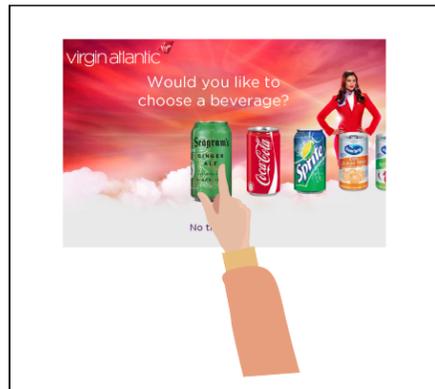
VS206  
LHR ✈️ HKG  
Departs 20:40



Sarah Jia  
Passenger



James Berg  
Flight Attendant



**18:40**  
Passenger Sarah checks in for her flight on **Wally**. She orders Ginger Ale and Pop Chips for her flight.

**18:41**  
Virgin crew member, James, checks his **In-Flight Team Tablet** and is notified of Sarah's order.

**19:20**  
Sarah relaxes at the Upper Class Clubhouse and takes advantage of the newly-installed **oxygen bar**.

**20:00**  
Sarah boards the plane and is greeted by **Red** at her seat. James begins preparing her order.

**20:10**  
Once Sarah is settled in to her seat, James personally delivers Pop Chips and Ginger Ale to her.

**20:40**  
As the plane takes off to Hong Kong, Sarah opens her **amenity kit** and takes an Airborne before falling asleep.

## SOLUTION 1: WALLY

virgin atlantic 	BOARDING PASS
<p>SOLUTION NAME:</p> <p>WALLY</p> <p>An intelligent and dynamic system to reduce passenger wait time by 50 percent.</p>	<p>1</p>

# WALLY / business analysis

## Problem

Passengers on international flights are advised to arrive at the airport at least 2 hours before departure time to check in and go through security. They wait in long lines to arrive at a counter, where agents look up their booking information, scan passports, print boarding passes, and attach luggage tags. These airport lines are often **long, inefficient**, and can **bottleneck** at various points, making the process **unpredictable** and **stressful** for passengers.

## Solution

Wally is designed to reduce check-in time by 50 percent. Passengers will complete most of the check-in process while they are waiting in line. A row of connected anti-reflective screens respond to capacitive touch and will greet passengers as they approach.

- While waiting in line, passenger enters confirmation number, selects number of bags she is checking, and has option to change or upgrade seats.
- If the line is moving slowly, she can order drinks, snacks, and meals to be delivered to her seat.
- When she is done, a screen will direct passenger to the next available counter. When she arrives at the counter, the agent simply needs to scan her passports and affix luggage tags.

Wally is designed to be intelligent and dynamic. To prevent bottlenecks in line, the system strategically layers help along the way. For instance, if Wally detects that a passenger is stuck on a certain step, the system will notify a Virgin employee and the passenger will be directed to the counter. Wally will also recognize when the wait time is long and present the passenger with screens to order food during those times.

## Wally solves:

- Efficiency

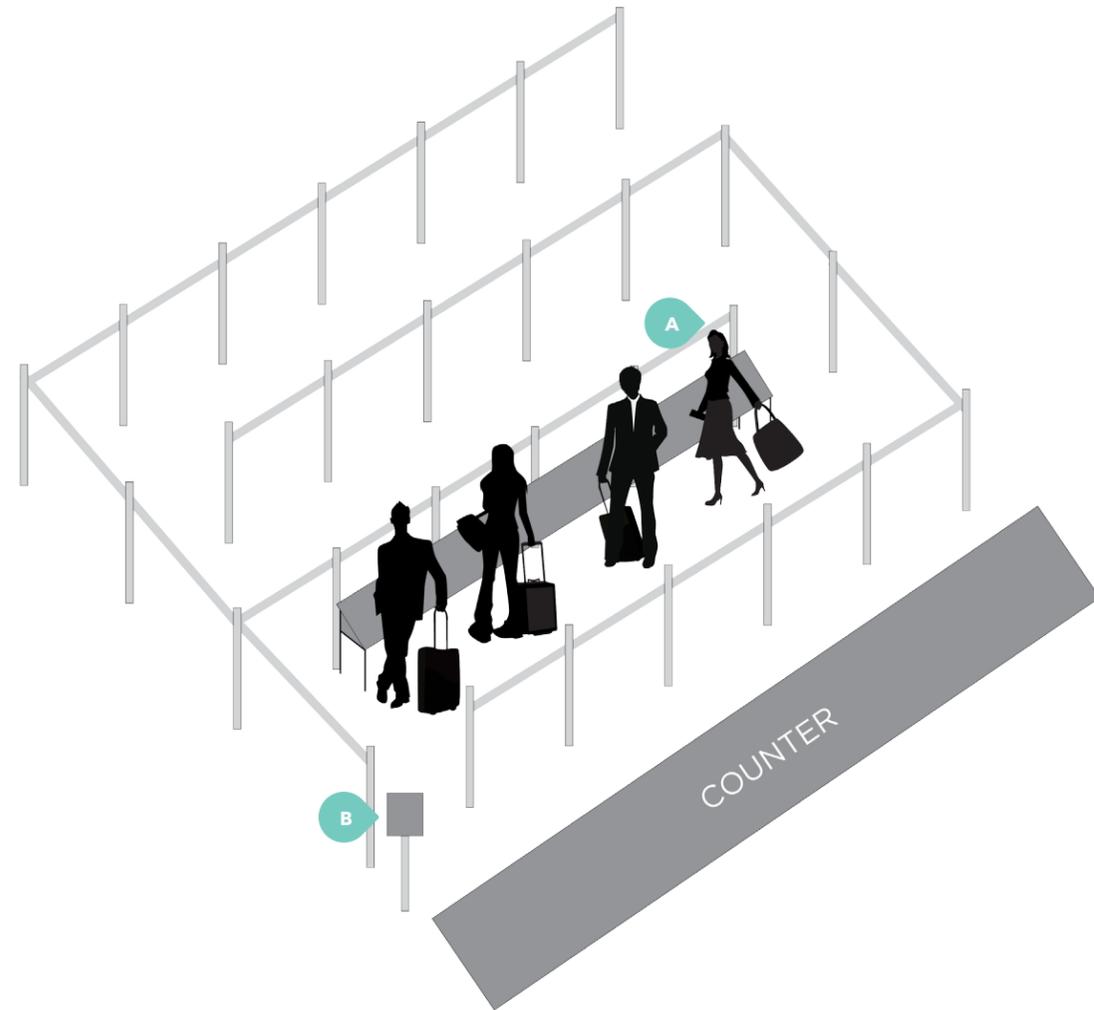
## Hardware

- SI46 kiosks from German-based Kiosk Solutions (2)
- Bubble cameras (8)
- Privacy overlays for screens



In 2013, Virgin Atlantic ran a campaign featuring global traveller, Wally, in honor of its 25th anniversary.

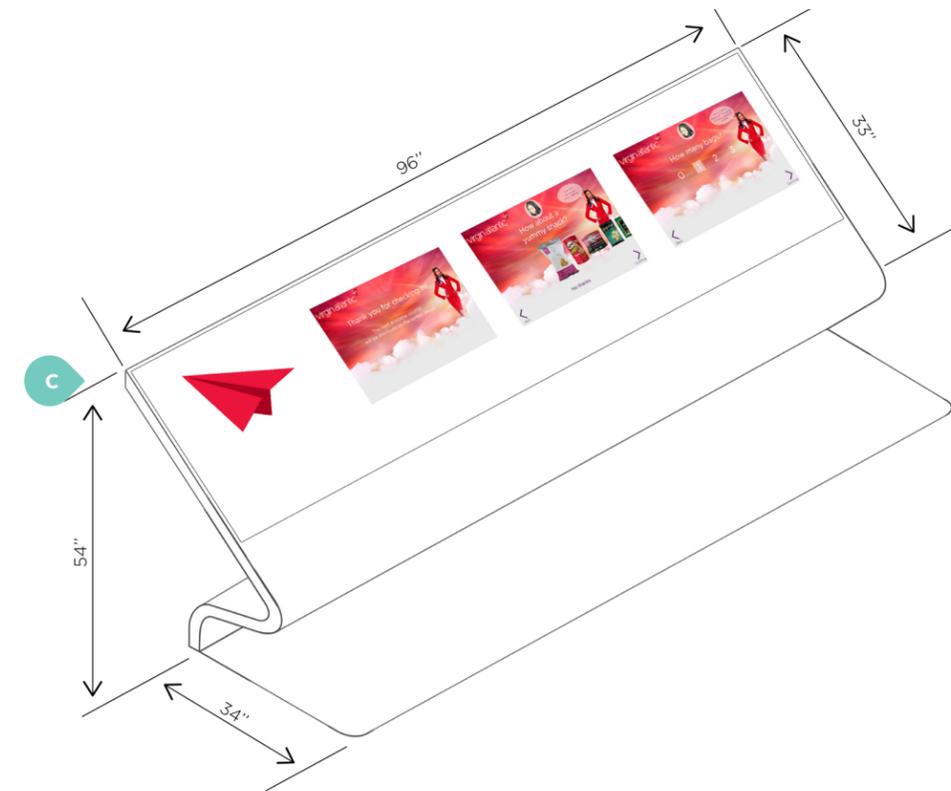
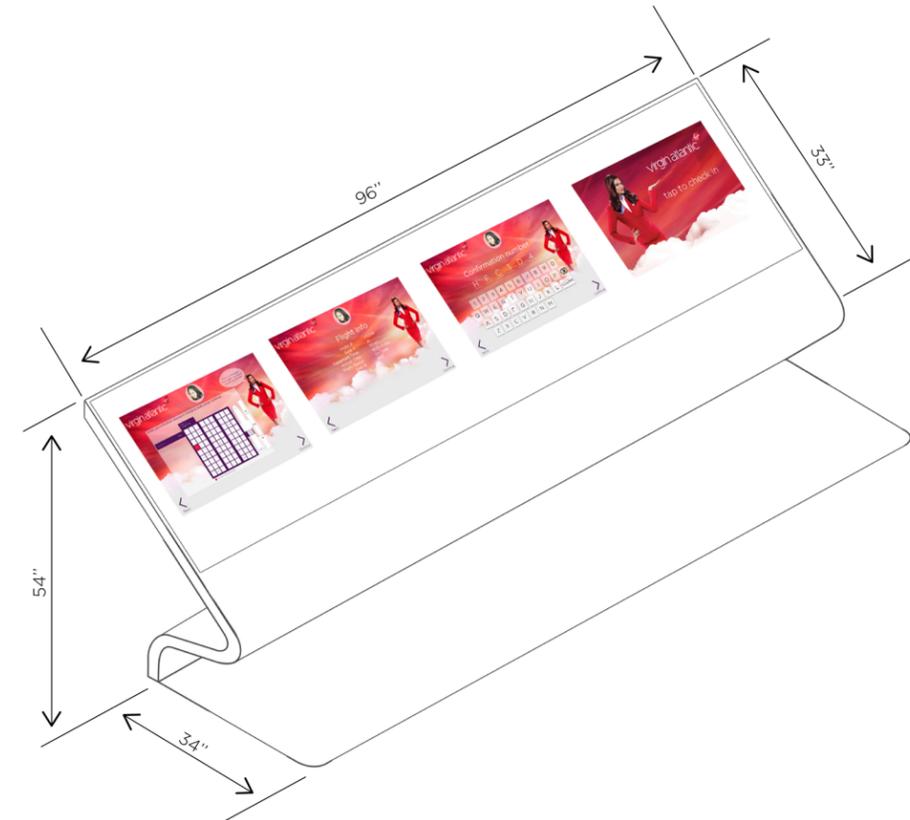
# WALLY / mockup



A. As passengers snake their way through the line and approach Wally, cameras will recognize faces and launch a new window for passengers to begin check-in. The screen will follow them as they move up in the line.

B. When passengers are finished with Wally, their name will display on this screen, directing them to the next available counter.

C. When a passenger finishes check-in on Wally, an animation of a paper airplane will indicate to passengers their information has been delivered to the agent counter, where they will complete the rest of their check-in.



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## WALLY / feature set

### A. Welcome screen. Floating window appears when camera recognizes passenger.

- Passenger headshot is displayed at top center of screen.
- Tap to Check In button.

### B. Select language

- Most common languages based on location of airport displayed as buttons.
- Other languages available as drop down selections.
- Proceeds to next screen when passenger makes selection.

### C. Find your itinerary

- Option to select confirmation number, ticket number, or last 4 digit of credit card.
- Upon selection, proceeds to next screen.
- Option to return to previous page.

### D. Reservation lookup

- Passenger's selection in step 3 is displayed,
- QWERTY keyboard is displayed.
- Once characters are entered, continue button appears.
- Option to return to previous page.

### E. Surname

- Surname is displayed.
- QWERTY keyboard is displayed.
- Once text is entered, continue button appears.
- Option to return to previous page.

### F. Passenger check-in

- Display all passenger names associated with confirmation number/credit card number.
- Tap check box to select passenger to check in.
- Multiple passenger check in: If more than one passenger is scheduled for flight, ability to check in everyone under associated confirmation number.
- Option to tap Continue.
- Option to return to previous page.

### G. Flight Info

#### A. Display Flight #, Gate #, Departure Time, Arrival Time, Flight Status, Seat #.

- Option to tap Continue.
- Option to return to previous page.

### H. Baggage

- Display "Are you checking any bags?" with Yes or No options as buttons.
  - If Yes, display first passenger who is checked in and move down list if there are multiple passengers.
- Display, "How many bags?" with 0, 1, 2, and 3 as options.
  - "1" is selected by default.
  - Help dialog box appears in top right corner, stating, "Any oversized baggage? Your agent will assist you at the counter."
  - Option to pay with credit card used for booking. If selected, button text displays charge confirmation and receipt is emailed to passenger.
  - Option to pay at counter.
- Option to return to previous page.
- Option to tap Continue.

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## WALLY / feature set, cont.

### I. Change Seat

- Display, “Would you like to change your seat?”
- If yes, seat diagram pops up and passenger can select new seat.
- Option to tap on new seat number.
- Dialog box appears in top right that states, “Want to upgrade? Your agent will assist you at the counter.”
- Option to tap Continue.
- If more than one passenger in booking part, names are listed in vertical tabs.
- If itinerary contains multiple stops (i.e. layover), horizontal tabs display associated flights.
- If new seat is selected, flight info screen is displayed with updated seat number in bold.

### J. Choose beverage

- Display, “Would you like to choose a beverage?”
- Images of beverages available are displayed.
- “No thank you” option.
- Dialog box instructs users to swipe left to view all offerings.

### K. Choose snack

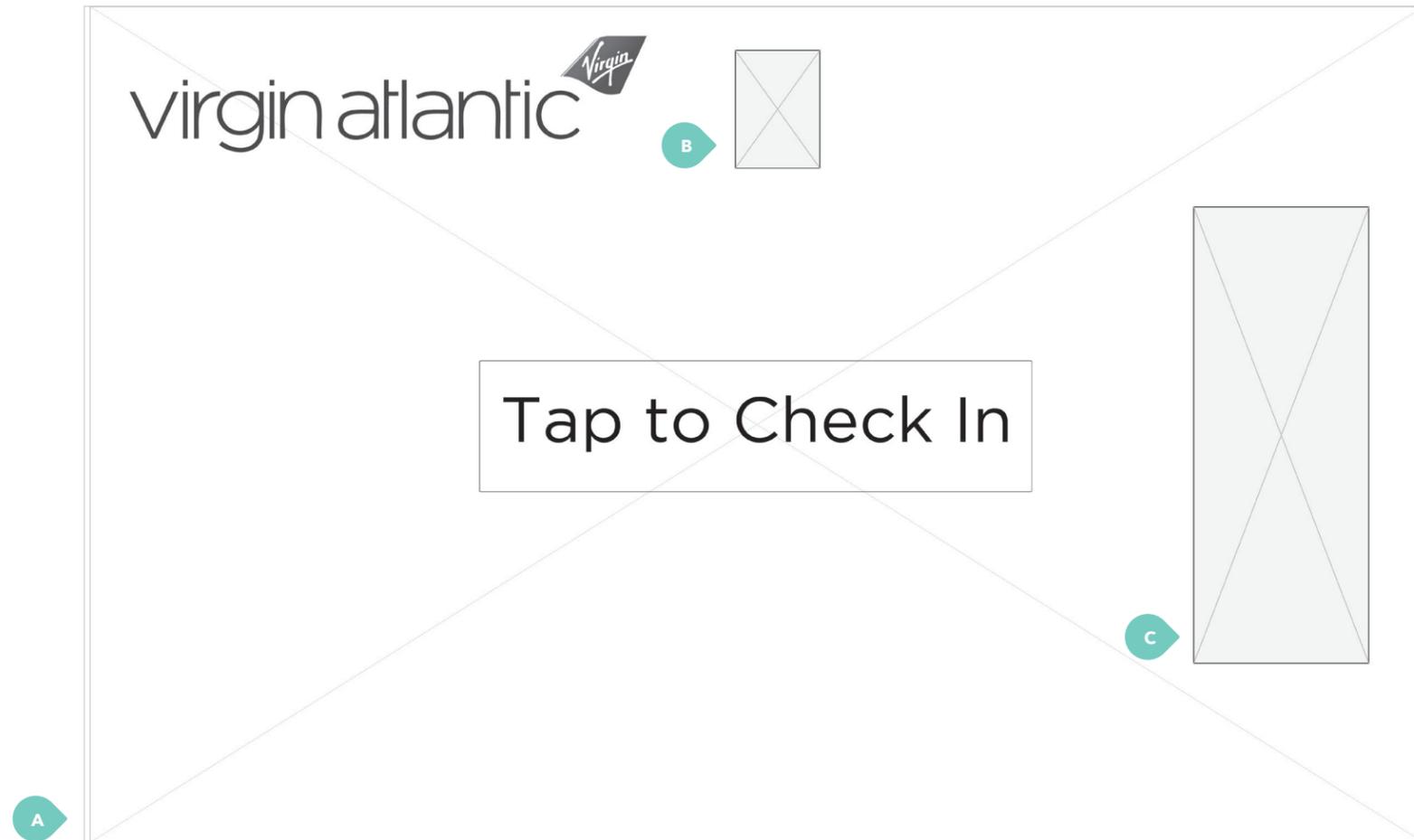
- Display, “How about a yummy snack?”
- Images of snacks available are displayed.
- “No thank you” option.
- Dialog box instructs users to swipe left to view all offerings.

### L. Choose entree

- Display, “Now what about your entree?”
- Images of meal selections are displayed.
- “No thank you” option.
- Dialog box instructs users to swipe left to view all offerings.

### M. Completion

- Display “Thank you for checking in with Virgin Atlantic! The next available counter will be displayed on the screen ahead.”
- Screen at end of the line will direct passenger to counter number, as counters become available.



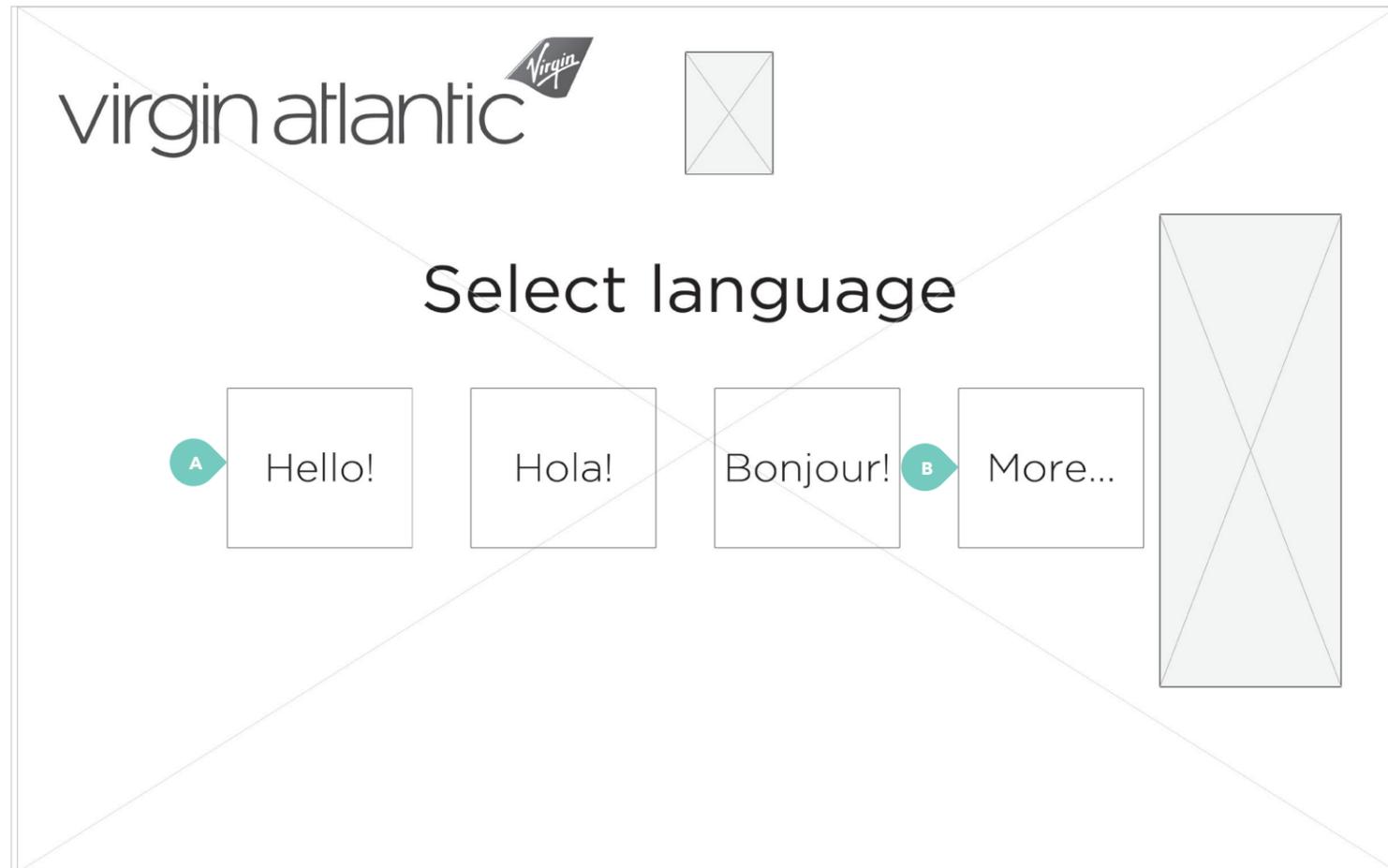
### Welcome/splashscreen (1 of 22)

A. Gradient image is displayed.

B. Top-level camera display image of passenger in top center of screen to acclimate passenger to system.

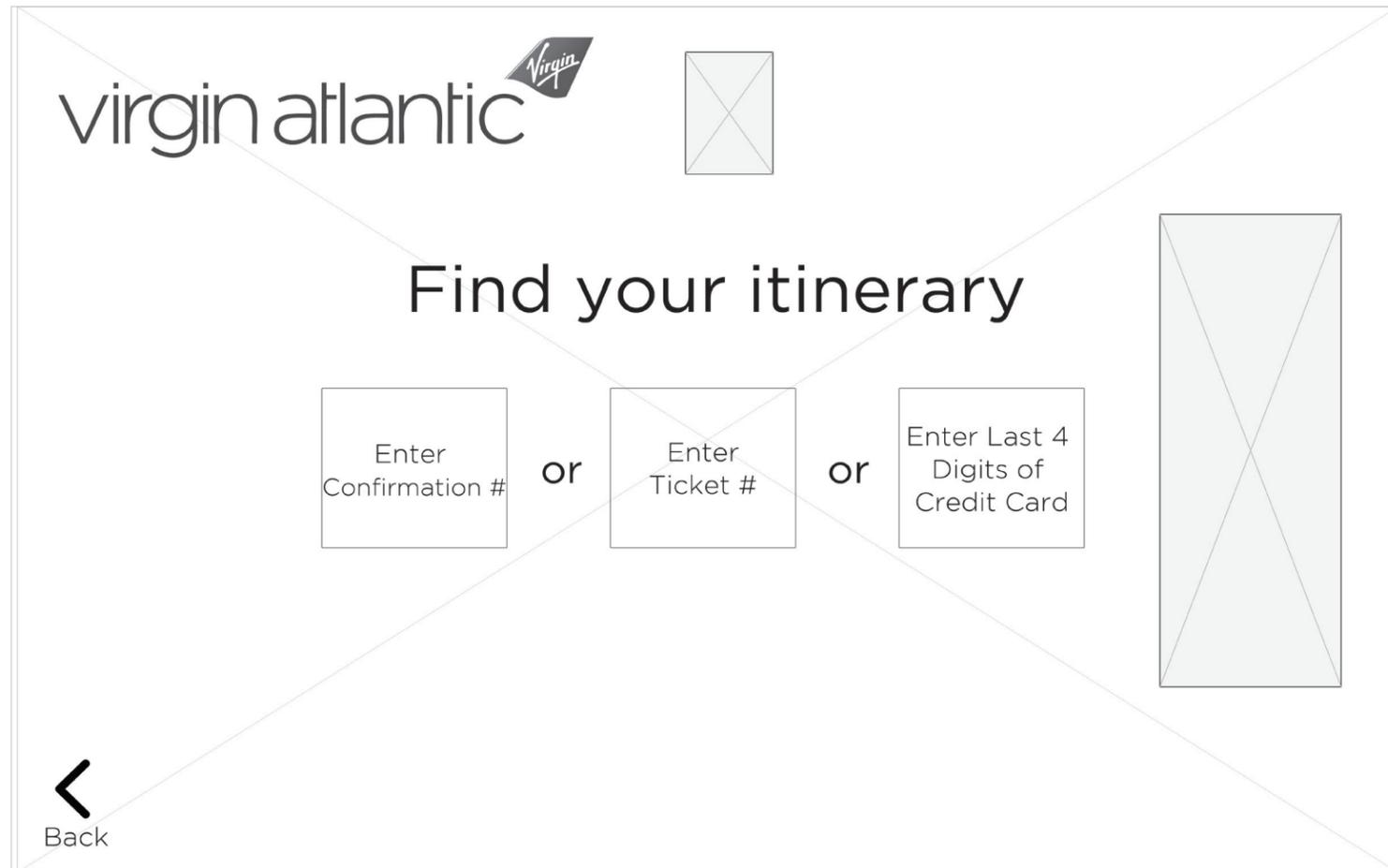
C. Image of an In-Flight team member is located at the right of the screen to provide help and clues to passenger.

Touchscreen has a privacy screen overlay.

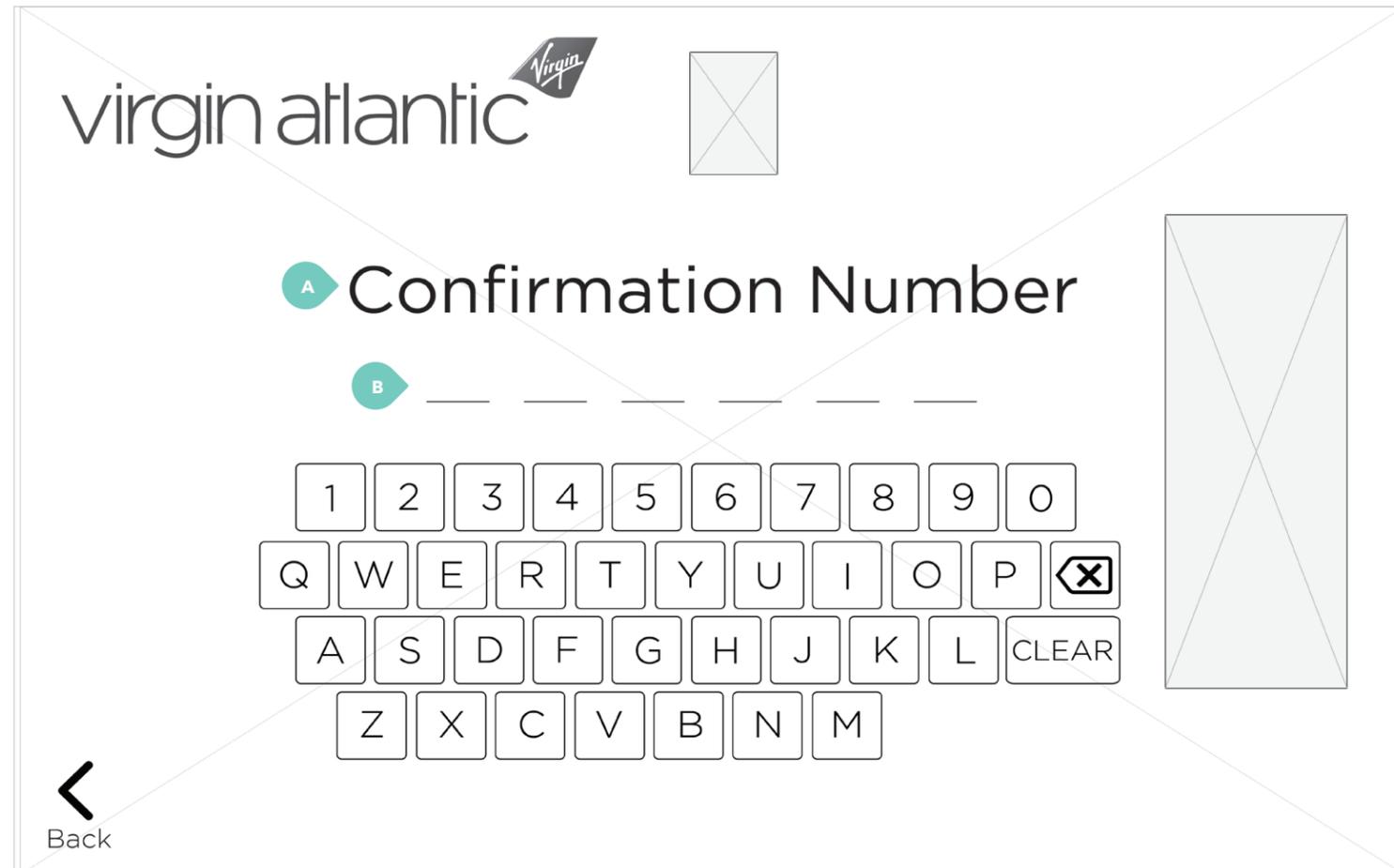


**Select language (2 of 22)**

- A. Three most popular languages are displayed based on airport location.
- B. Option to tap for dropdown of other languages.



Find your itinerary (3 of 22)



**Reservation lookup (confirmation number) (4 of 22)**

A. Heading displayed based on passenger's selection in previous step. Other options include: Confirmation Number, Ticket Number, or Last 4 Digits of Credit Card.

B. The number of dashes displayed depends on the option the passenger selected (i.e. 4 dashes will display if passenger picked Last 4 Digits of Credit Card).

virgin atlantic  

## Confirmation Number

H F C 3 D 4

1 2 3 4 5 6 7 8 9 0  
Q W E R T Y U I O P   
A S D F G H J K L CLEAR  
Z X C V B N M

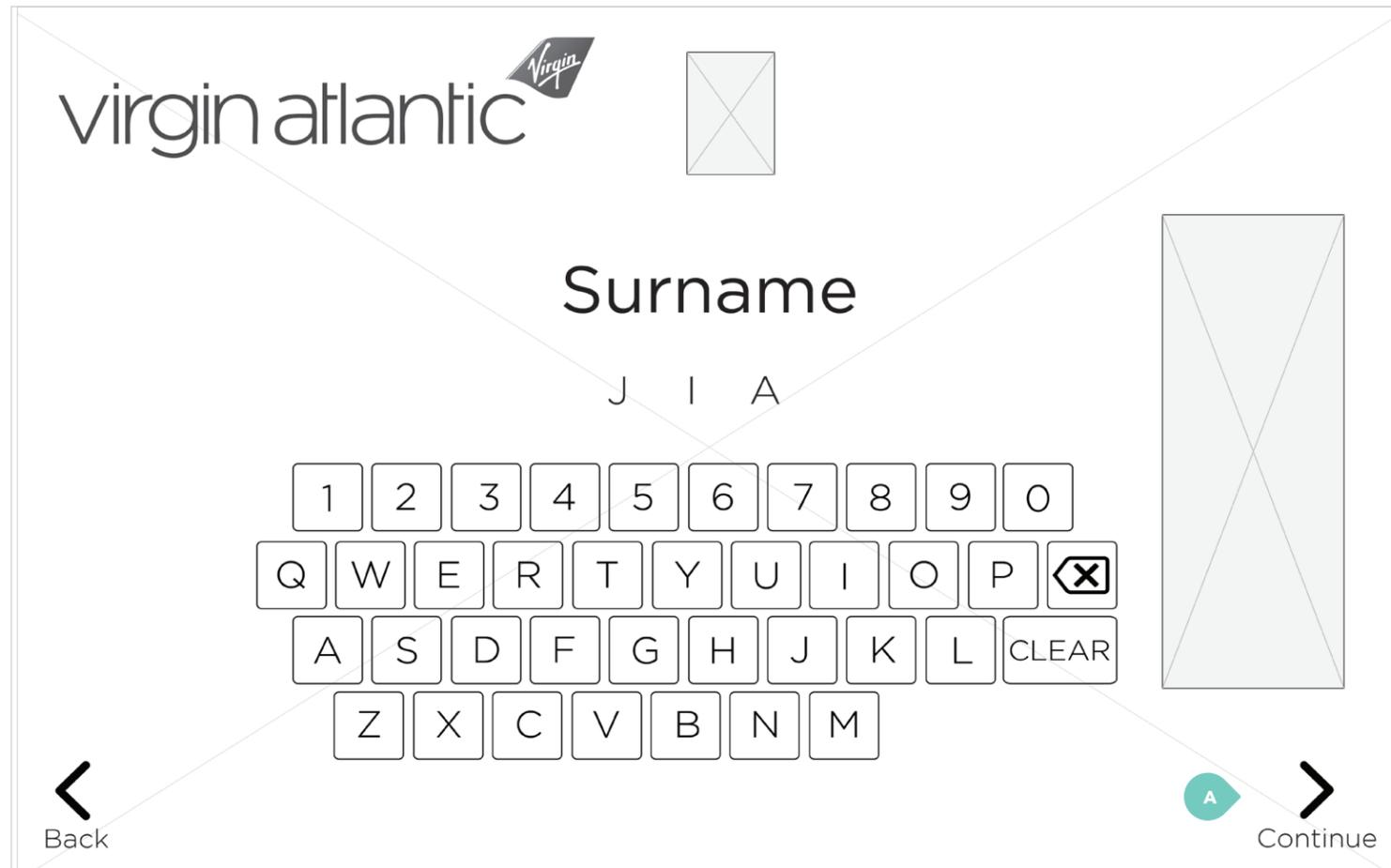
 Back   Continue

**Reservation lookup (confirmation number) (5 of 22)**

A. Continue button appears once passenger has entered in all necessary fields.

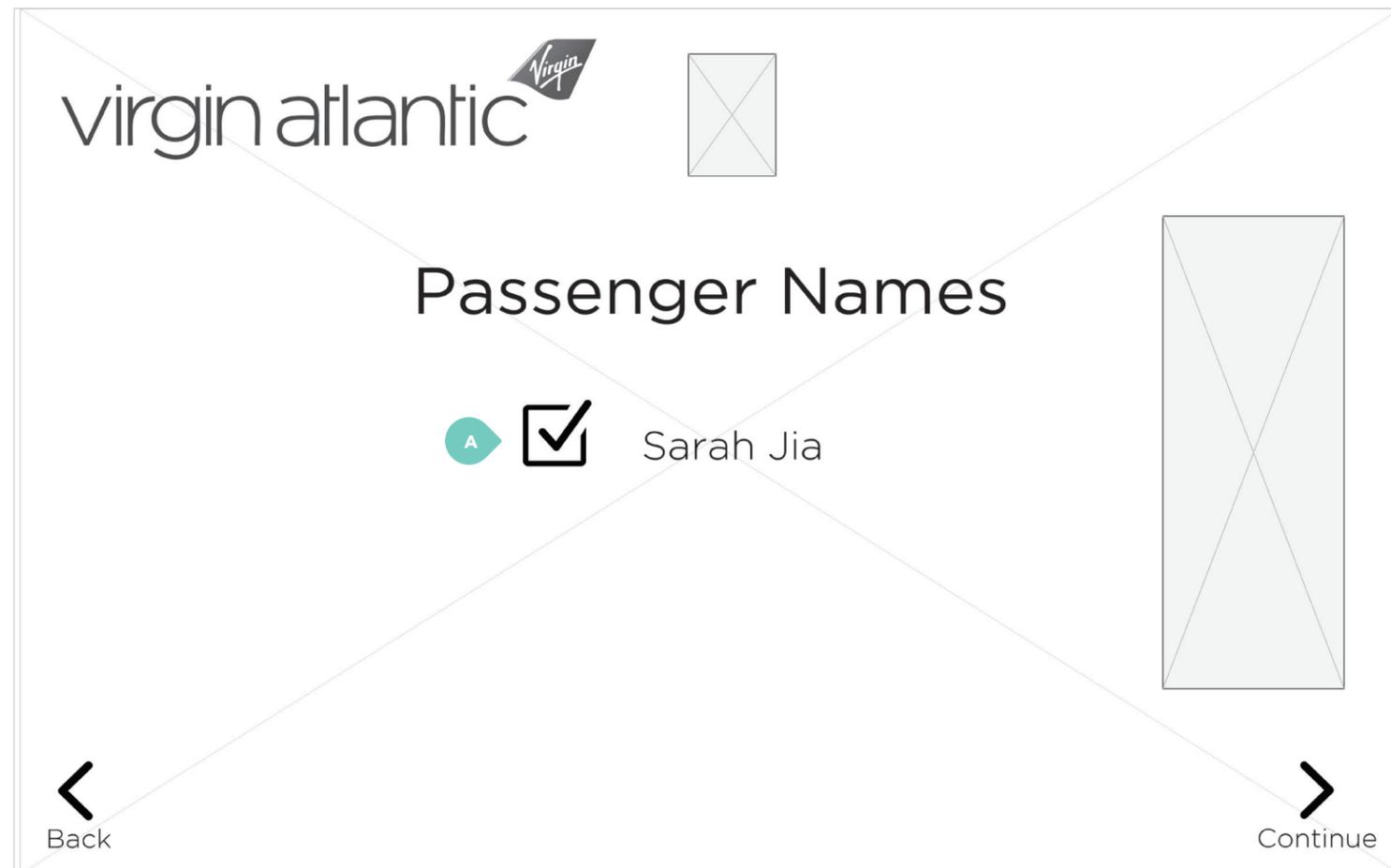


Surname (6 of 22)



**Surname (7 of 22)**

A. Continue button appears once passenger enters text.



### Passenger check-in (8 of 22)

A. Check box appears next to passenger names associated with the reservation.

If there's only one passenger, the checkbox is checked by default.

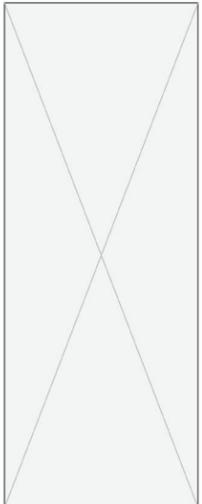
Option to check all boxes if multiple passengers are associated with same reservation.

The wireframe shows a flight information screen for Virgin Atlantic. At the top left is the Virgin Atlantic logo. To its right is a square placeholder with an 'X'. The main heading is "Flight Info". Below this is a list of flight details: Flight #: VS206, Gate #: 31, Departure Time: 20:40, Arrival Time: 16:15 +1 day, Flight Status: On Time, and Seat #: 30A. To the right of the text is a vertical rectangular placeholder with an 'X'. At the bottom left is a left-pointing arrow labeled "Back", and at the bottom right is a right-pointing arrow labeled "Continue".

virgin atlantic  

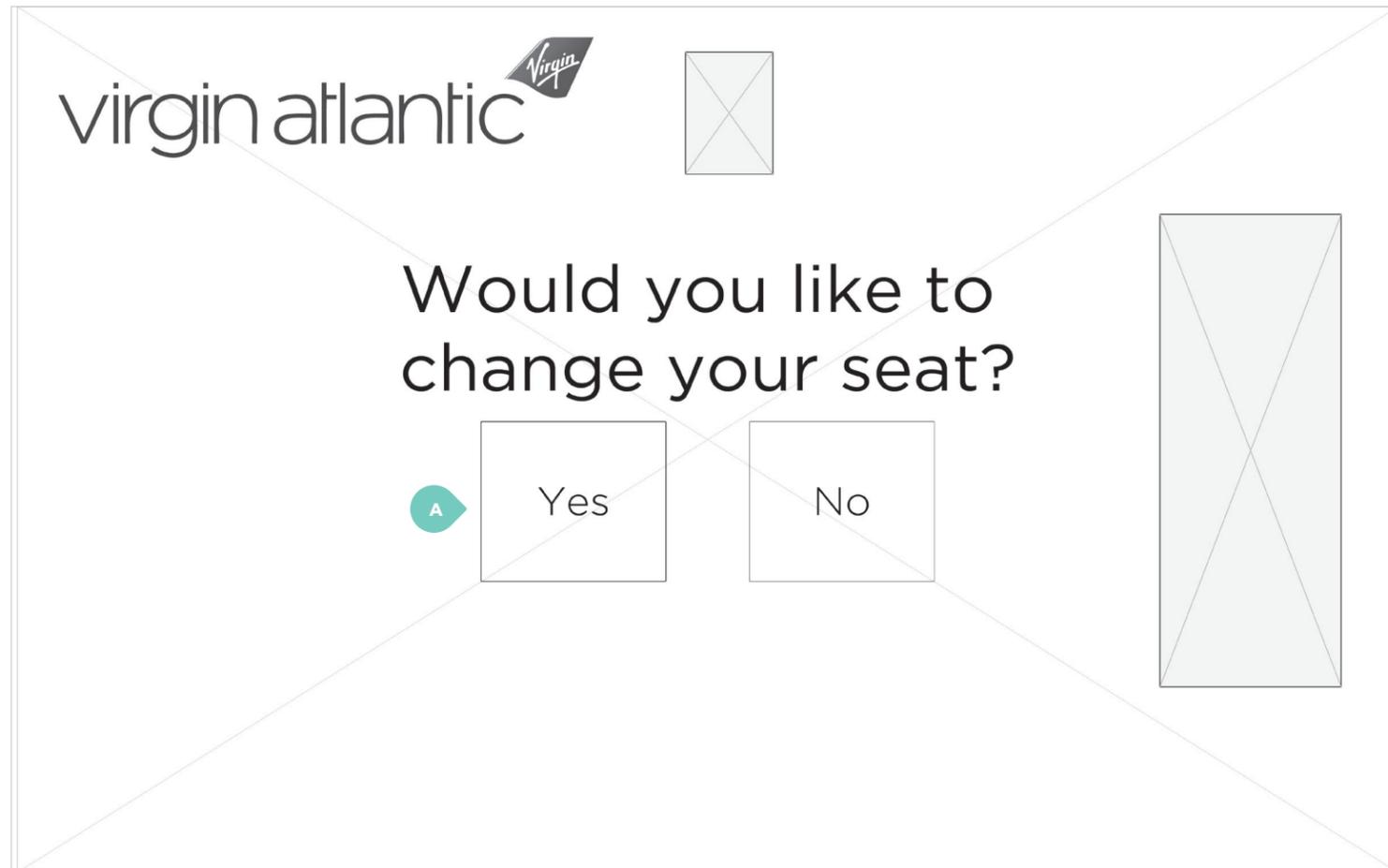
## Flight Info

Flight #: VS206  
Gate #: 31  
Departure Time: 20:40  
Arrival Time: 16:15 +1 day  
Flight Status: On Time  
Seat #: 30A



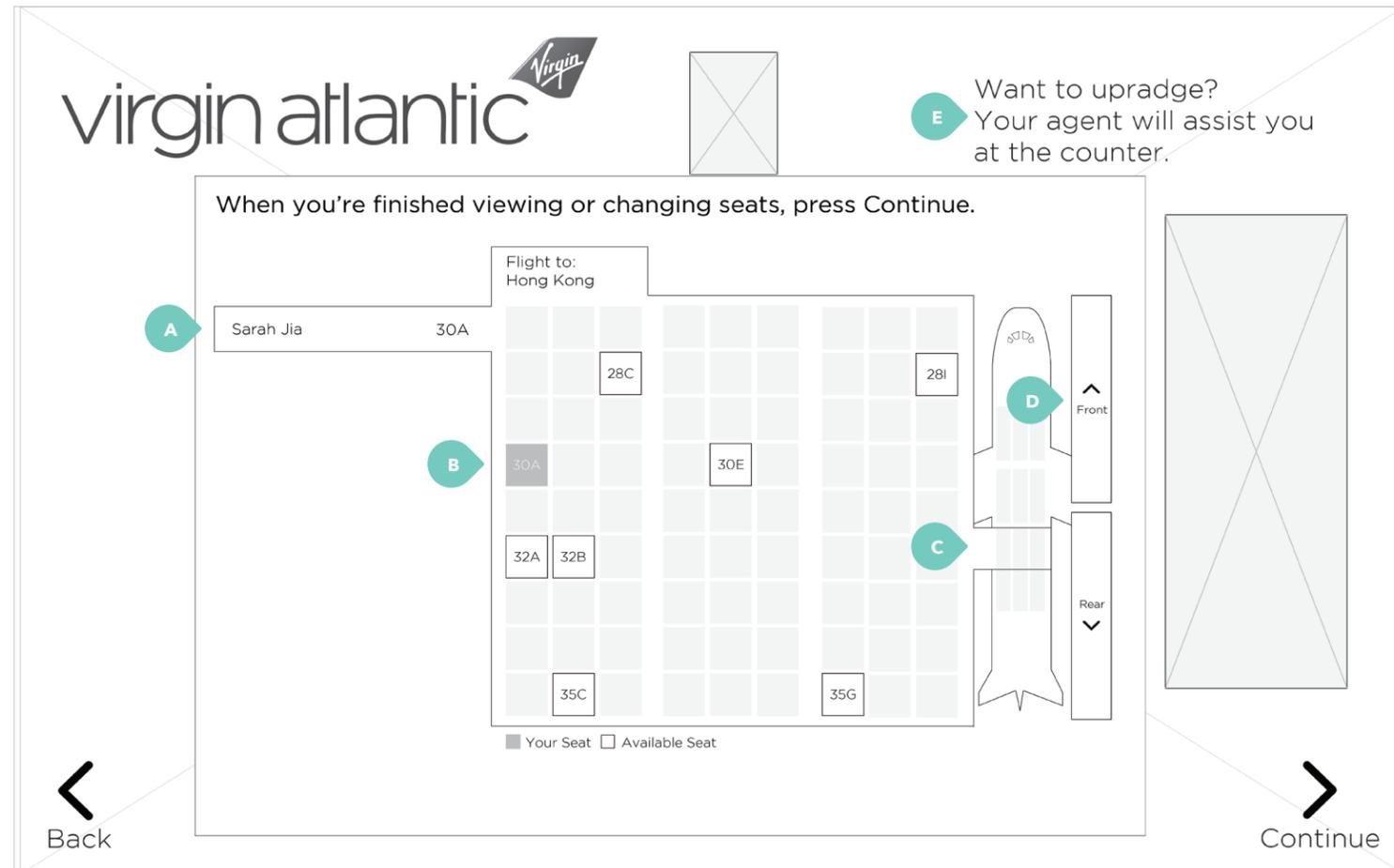
 Back  Continue

Flight info (9 of 22)



**Change seat (10 of 22)**

A. If passenger selects "No", skips to Baggage screen (13 of 22).



## Change seat (11 of 22)

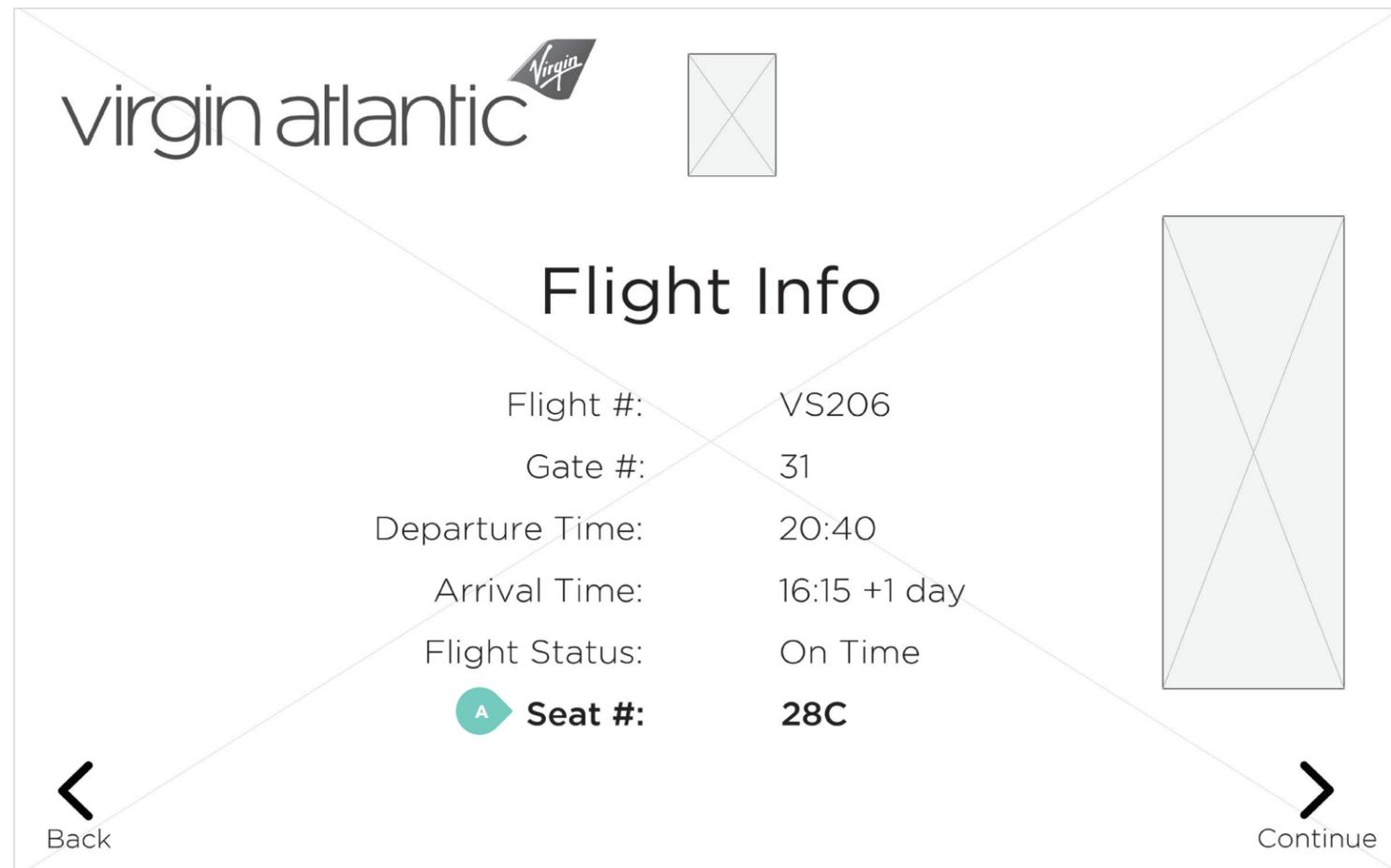
A. Passenger name and seat number are displayed. If multiple passengers, vertical tabs are displayed with each additional person.

B. Passenger seat number is highlighted in box.

C. Section of the airplane that is selected is enlarged.

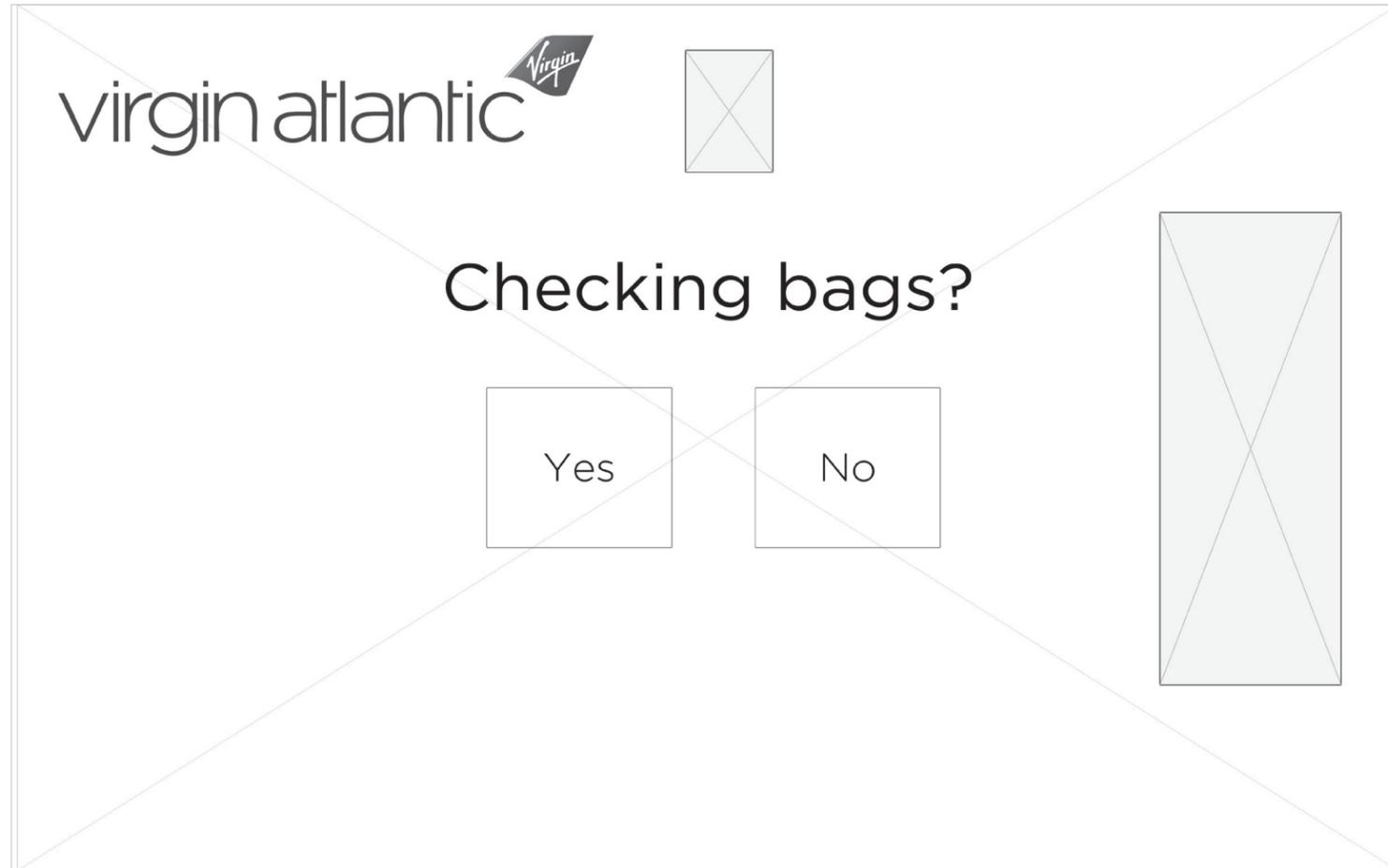
D. Option to tap Up or Down to scroll through different sections of airplane to view all seats available.

E. Help dialog box.

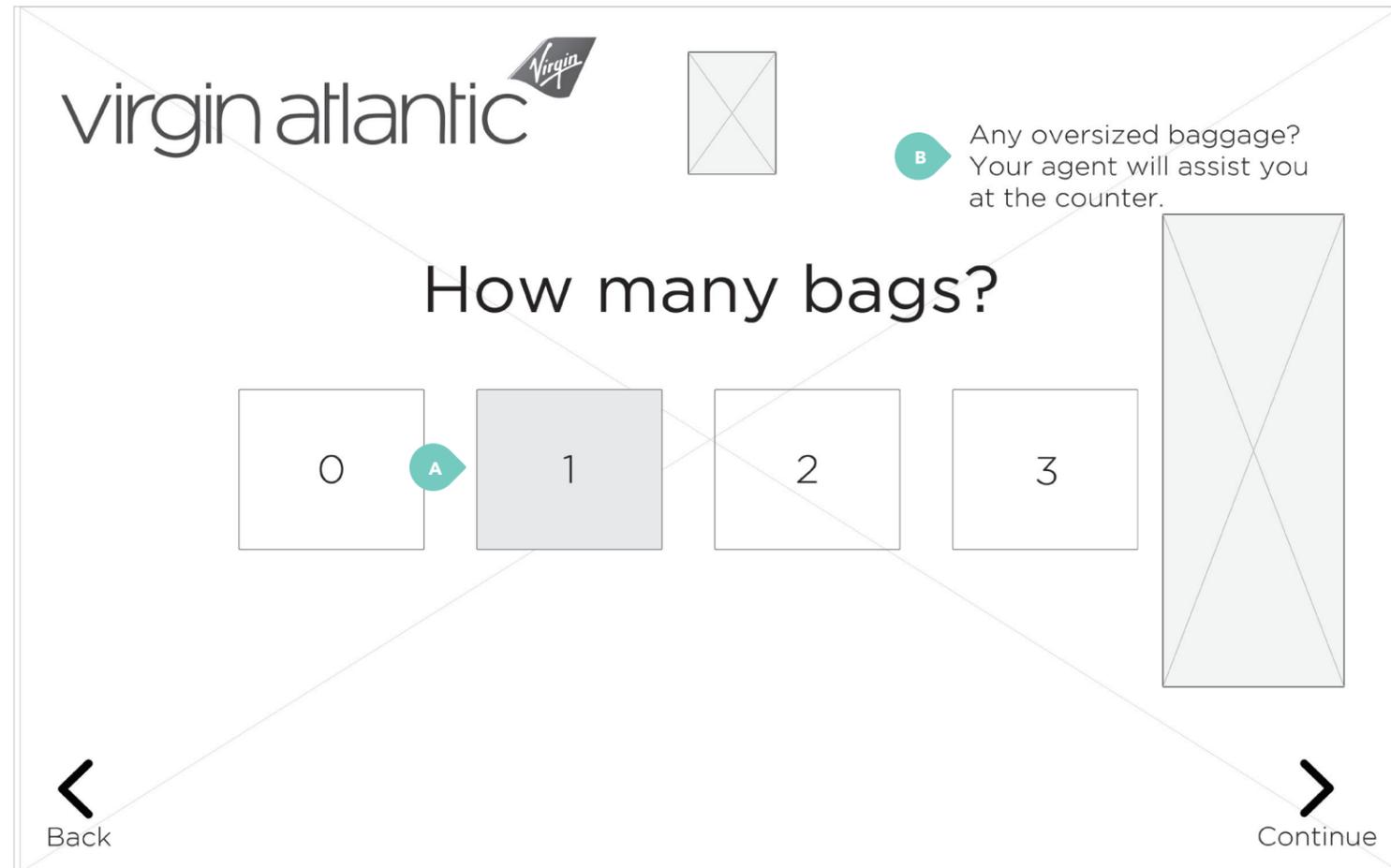


**Change seat (12 of 22)**

A. If passenger changes seat, flight info is re-displayed with seat number change in bold.



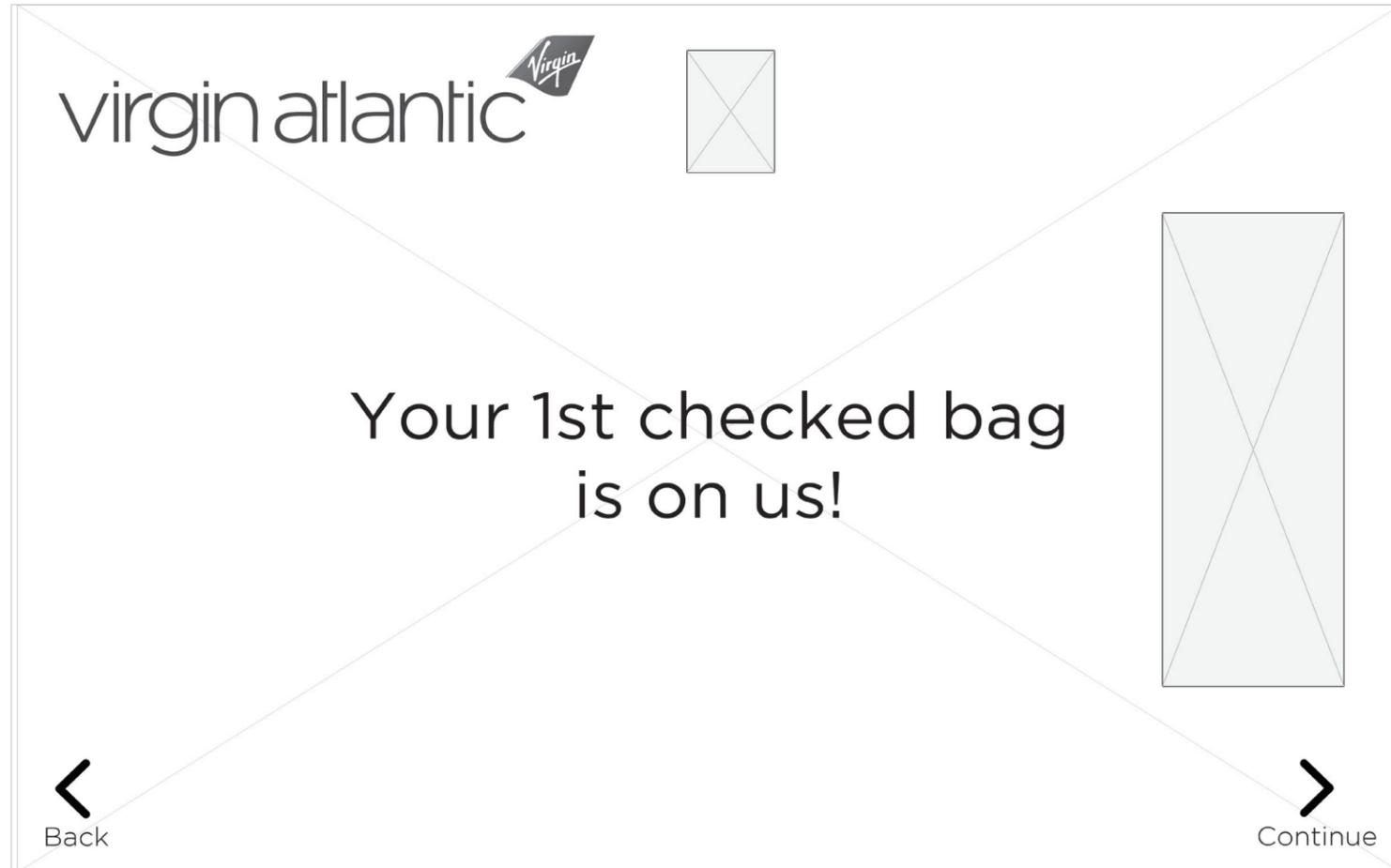
Baggage (13 of 22)



**Baggage (14 of 22)**

A. If there's only one passenger, "1" is selected by default.

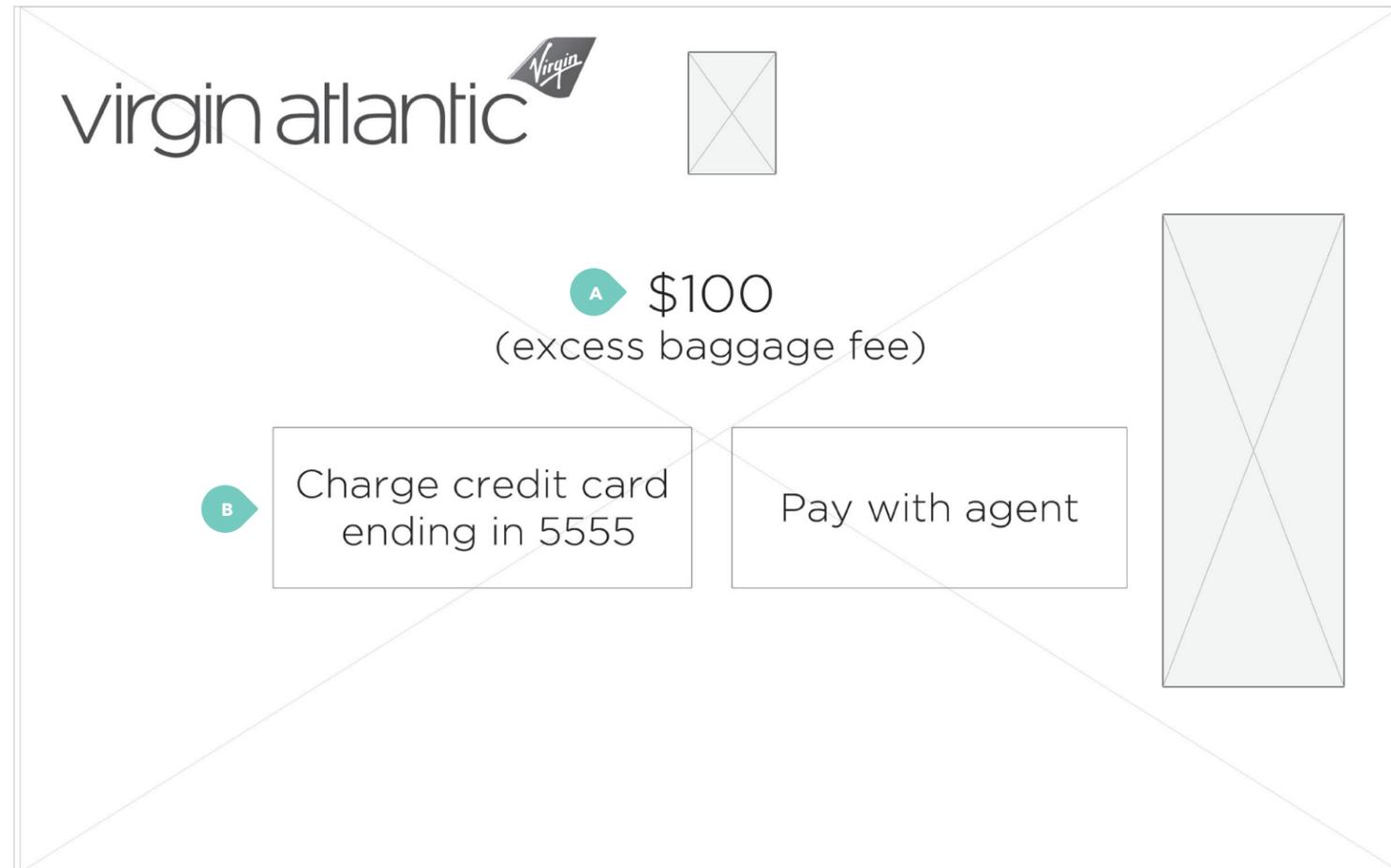
B. Help dialog box.



Baggage (15 of 22)

The wireframe shows a mobile interface for selecting baggage. At the top left is the Virgin Atlantic logo. To its right is a small square icon with an 'X' inside. Below the logo is the text "How many bags?". Underneath this text are four square buttons labeled "0", "1", "2", and "3". The "2" button is highlighted with a grey background. To the right of these buttons is a larger vertical rectangular icon with an 'X' inside. Below the "0" button is a left-pointing chevron icon with the text "Back" below it. Below the "3" button is a right-pointing chevron icon with the text "Continue" below it. In the top right corner of the wireframe, there is a text block: "Any oversized baggage? Your agent will assist you at the counter."

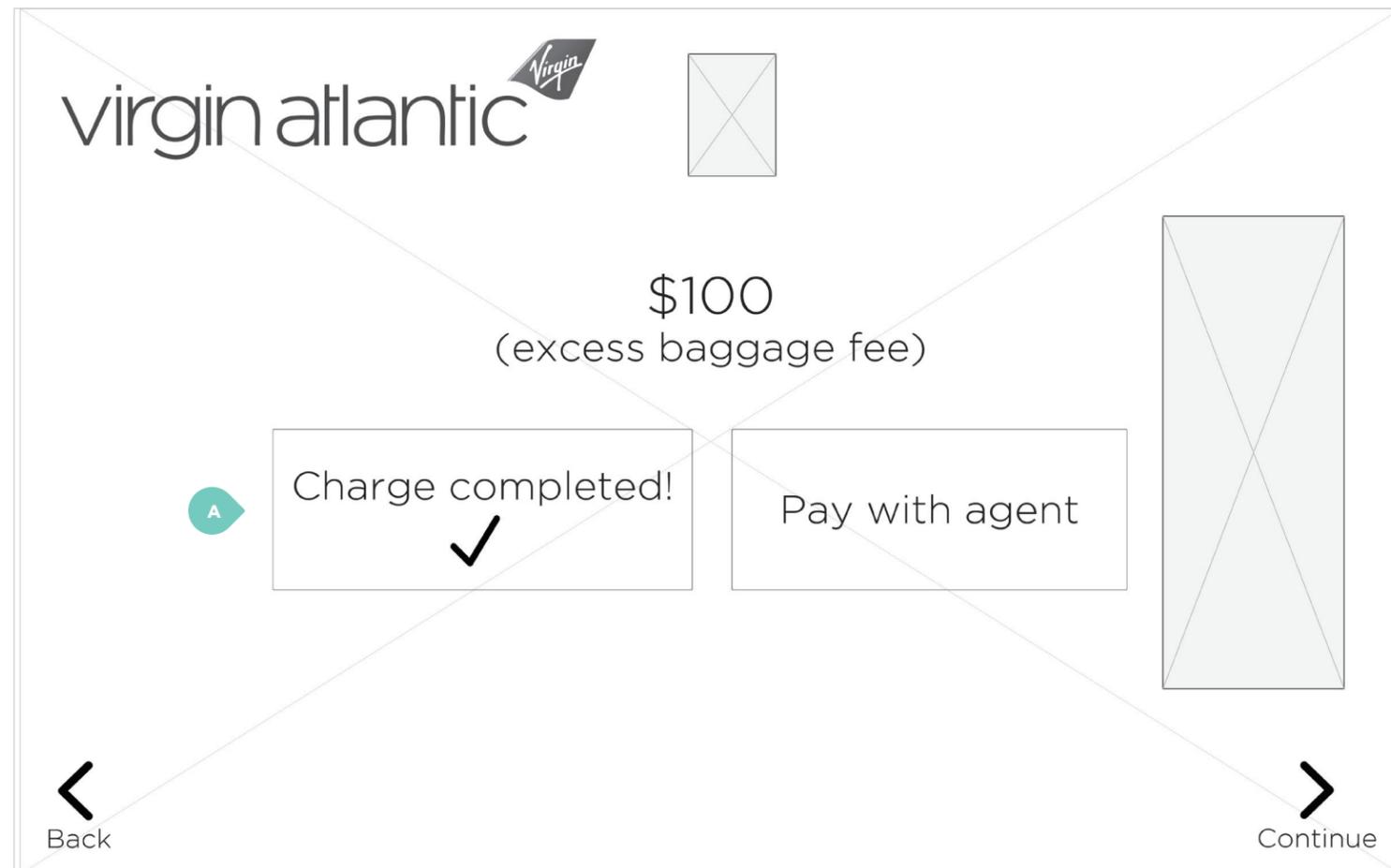
Baggage (16 of 22)



**Baggage (17 of 22)**

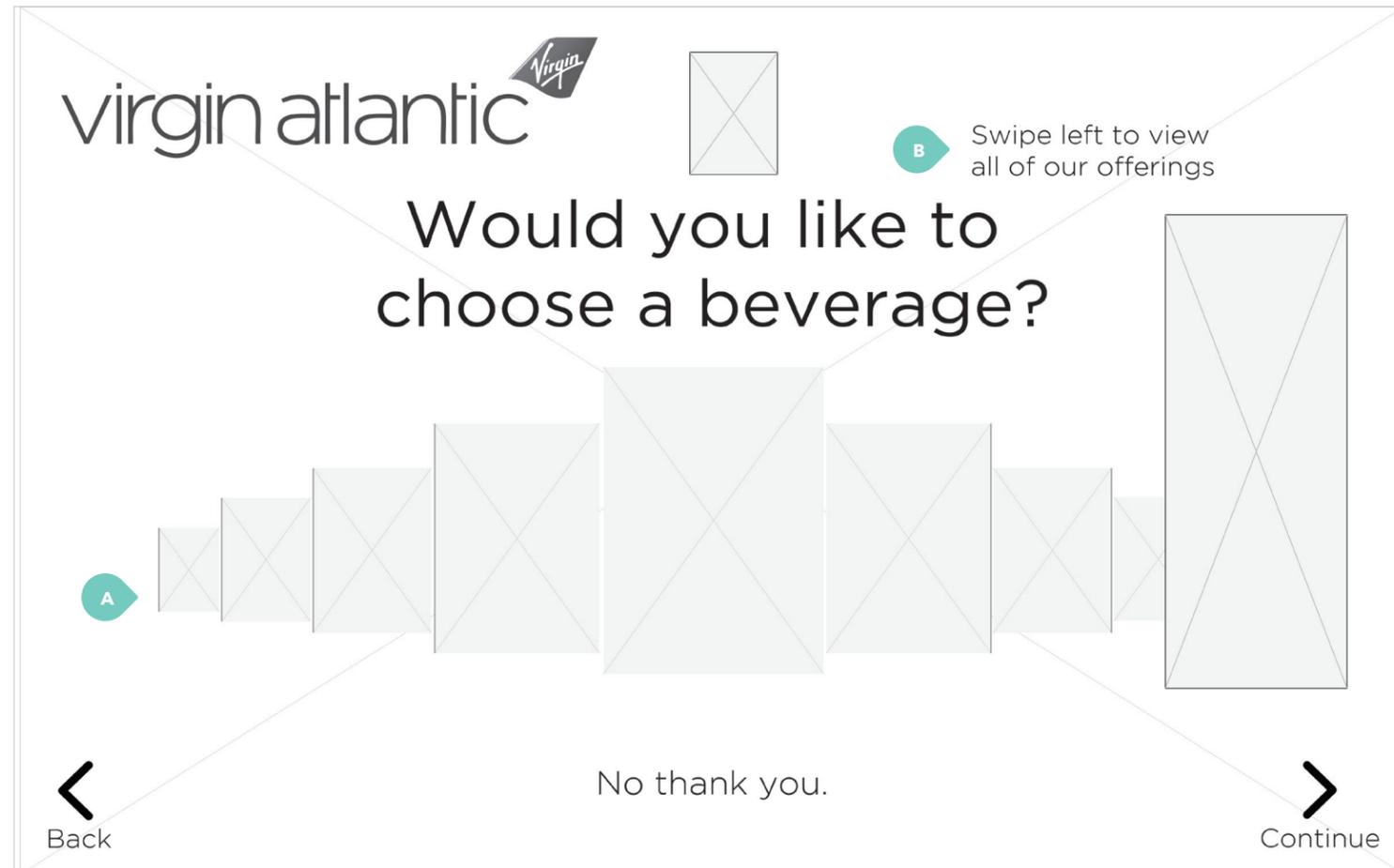
A. Baggage fee is displayed, based on passenger selection on previous page.

B. Last 4 digits of passenger's credit card associated with the reservation is displayed.



**Baggage (18 of 22)**

A. If passenger selects to pay with credit card, the card is charged and receipt is sent to passenger email associated with reservation.



**Choose beverage (19 of 22)**

- A. Images of beverages offered on flight is displayed in slider view.
- B. Help dialog box.

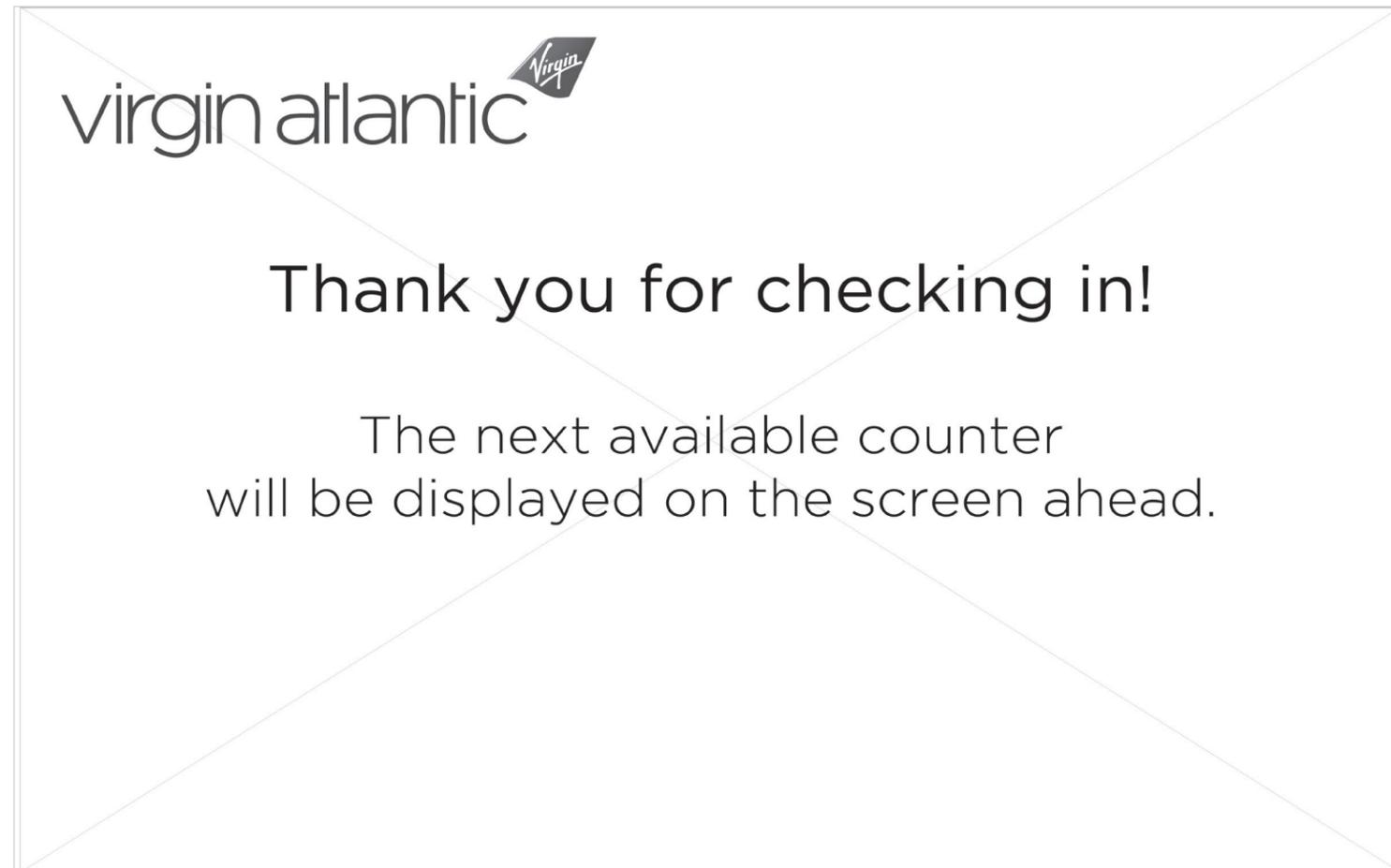
This screen and subsequent two screens are only displayed if wait time exceeds 10 minutes.



Choose beverage (20 of 22)



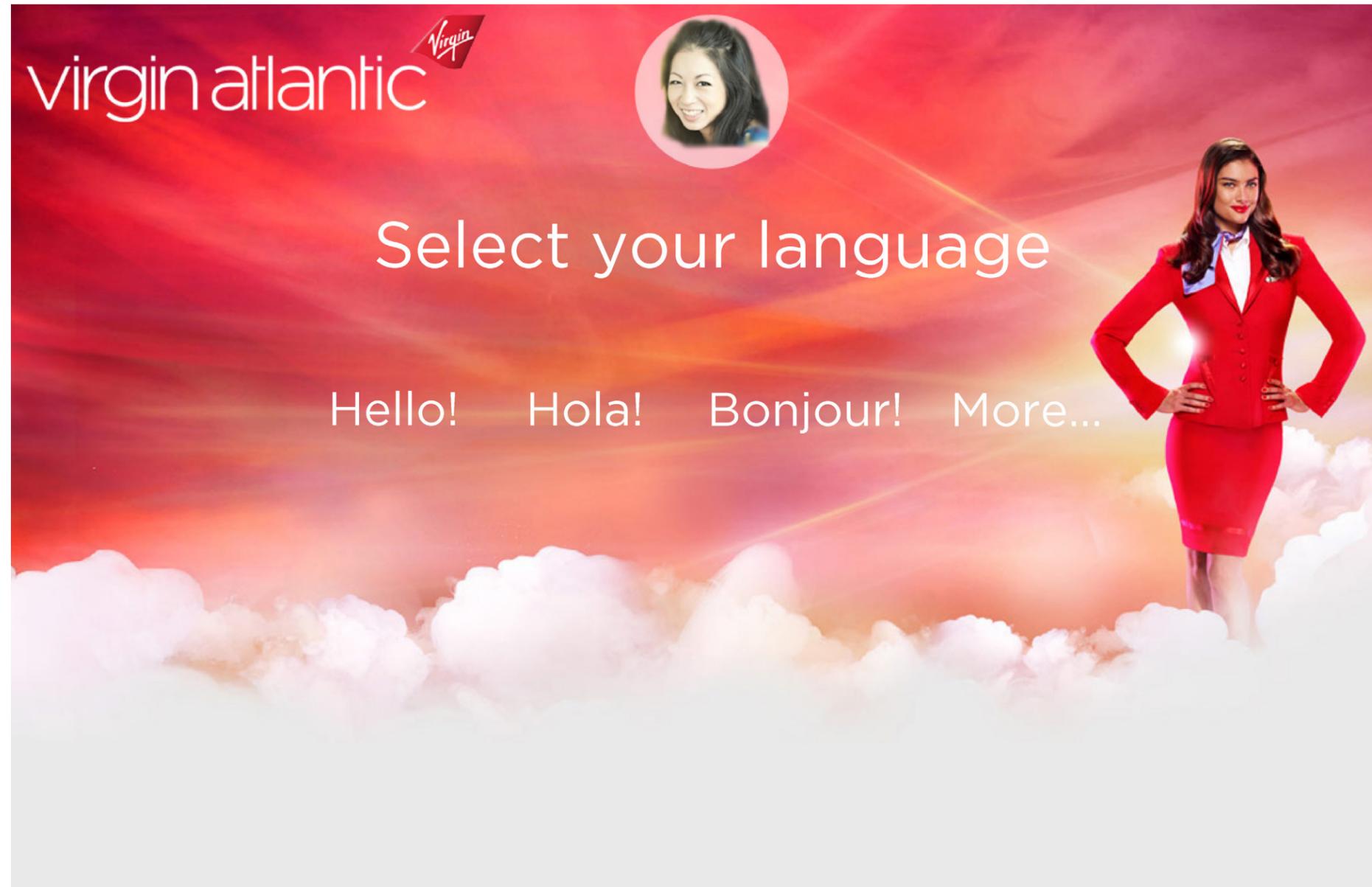
Choose entree (21 of 22)

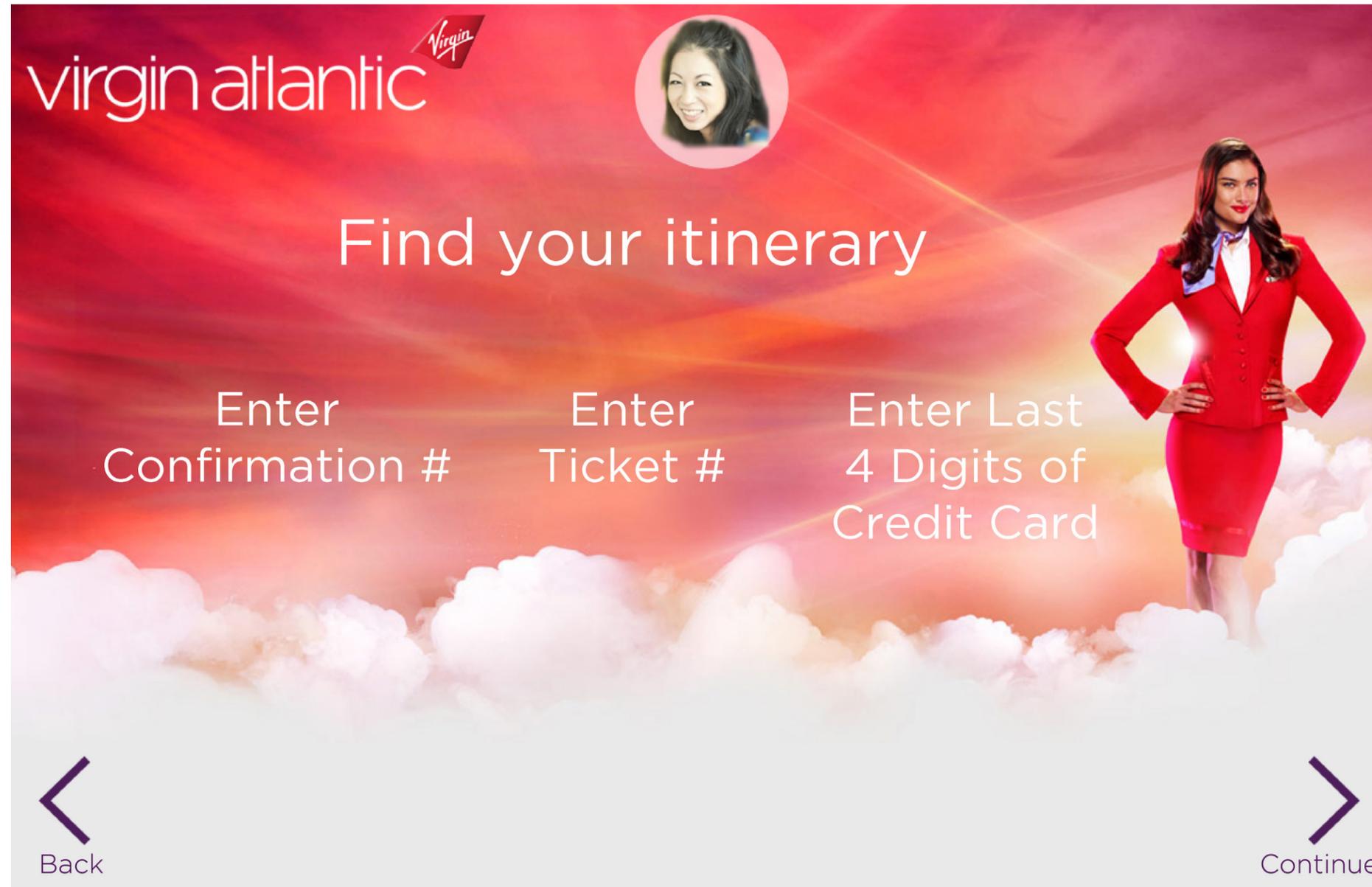


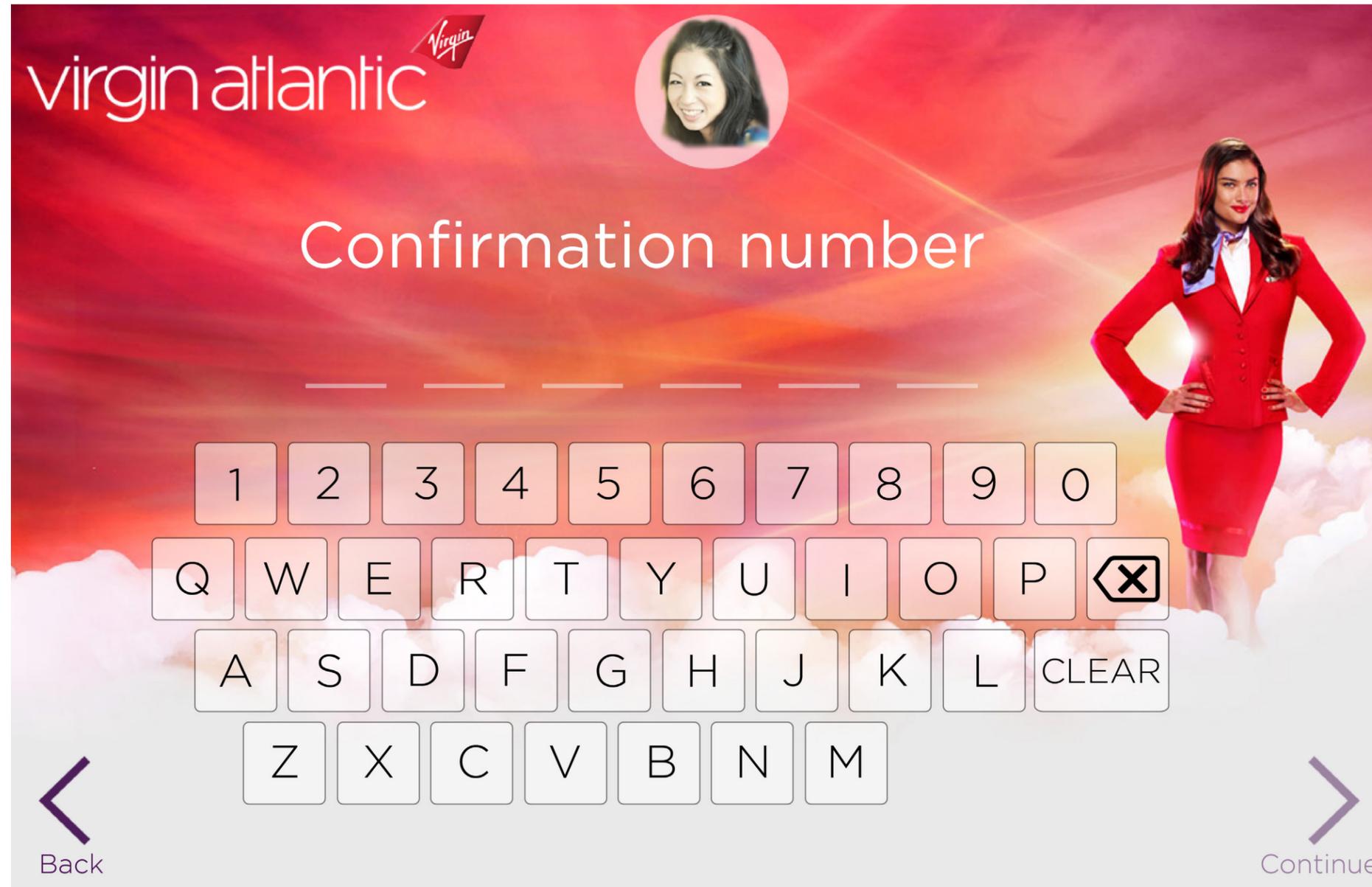
**Completion (22 of 22)**

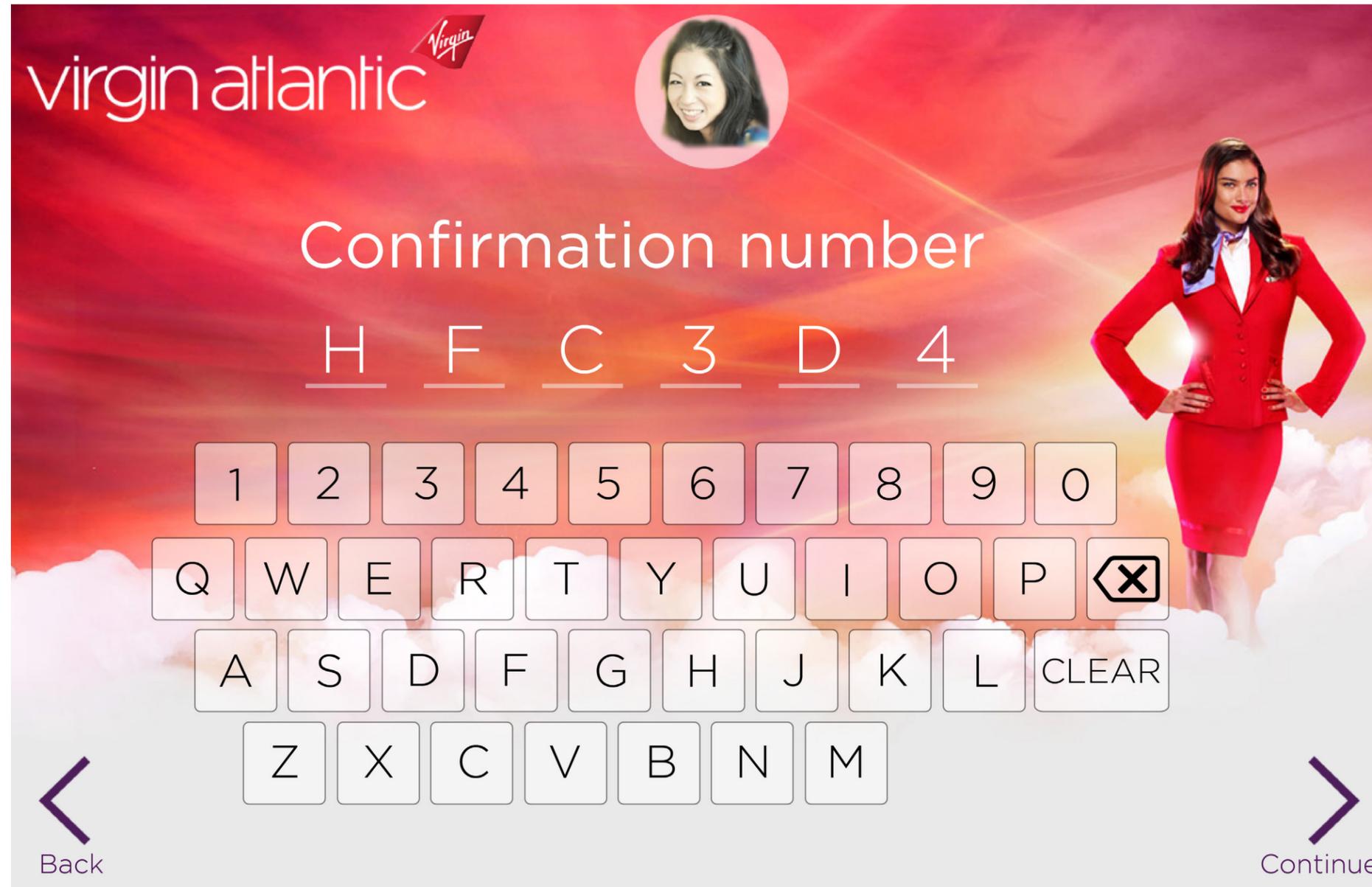
Screen animation: Window folds into paper plane and flies in direction of check-in counter.











virgin atlantic 

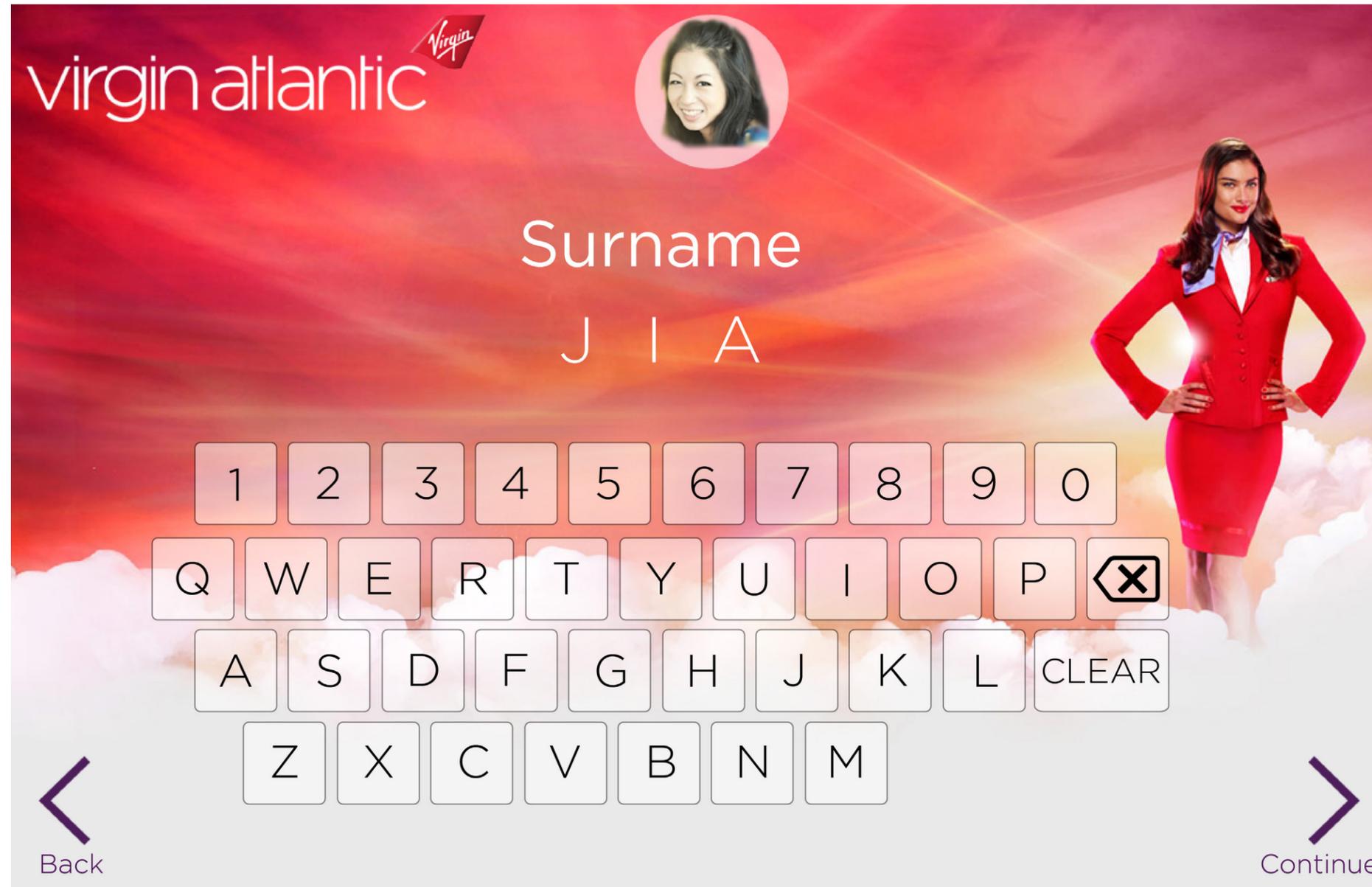


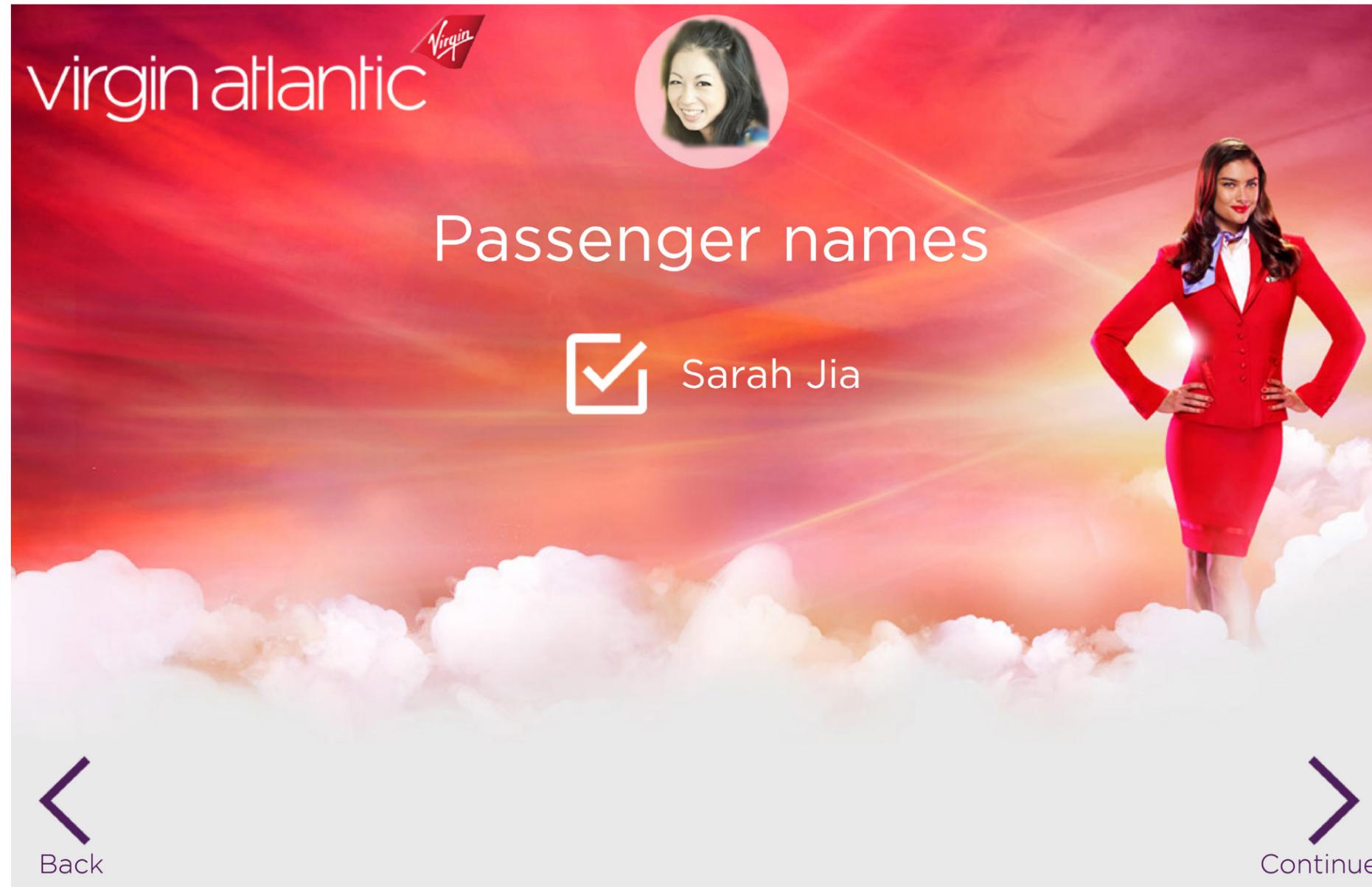
Surname

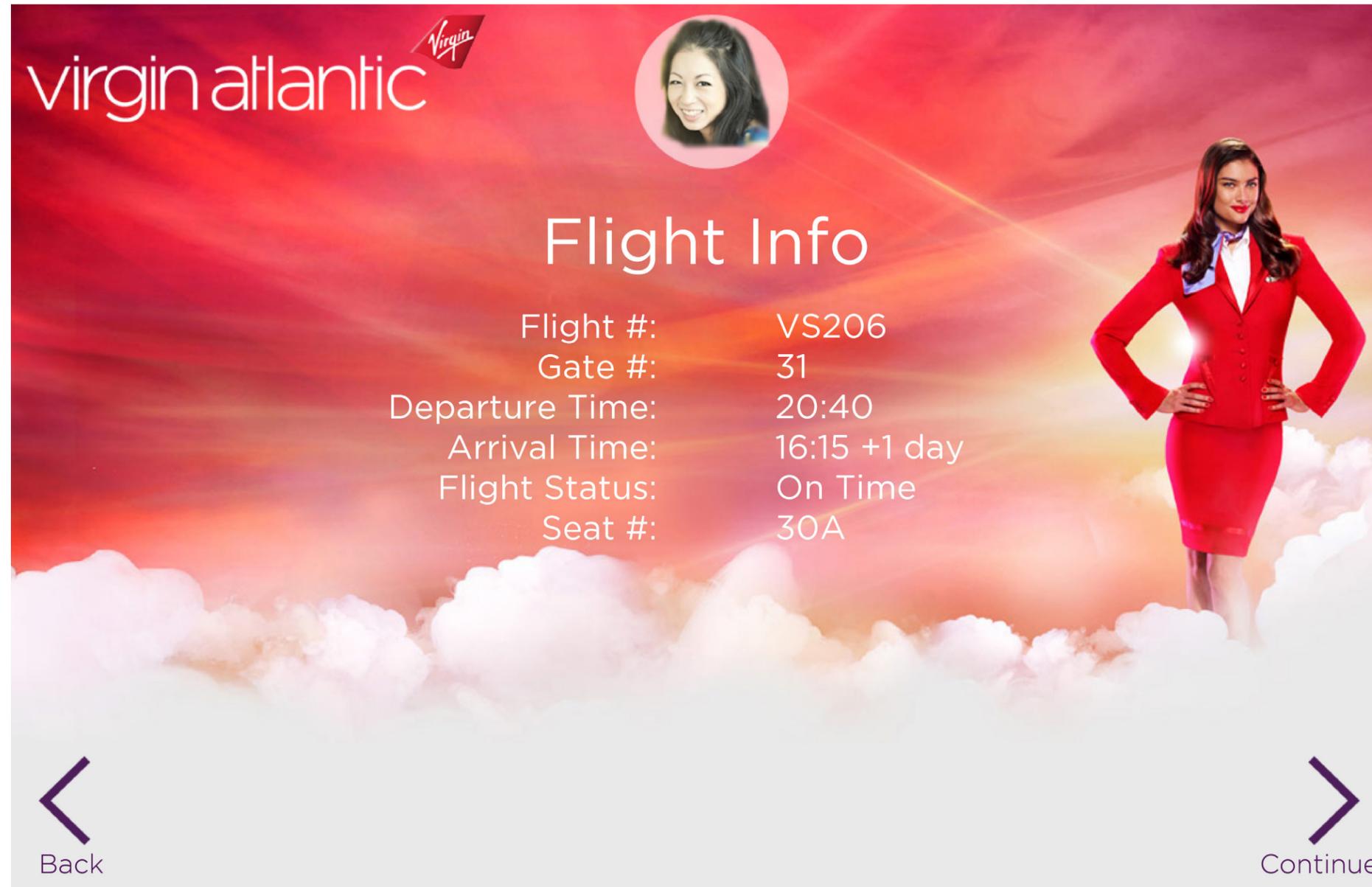


1 2 3 4 5 6 7 8 9 0  
Q W E R T Y U I O P   
A S D F G H J K L CLEAR  
Z X C V B N M

 Back  Continue







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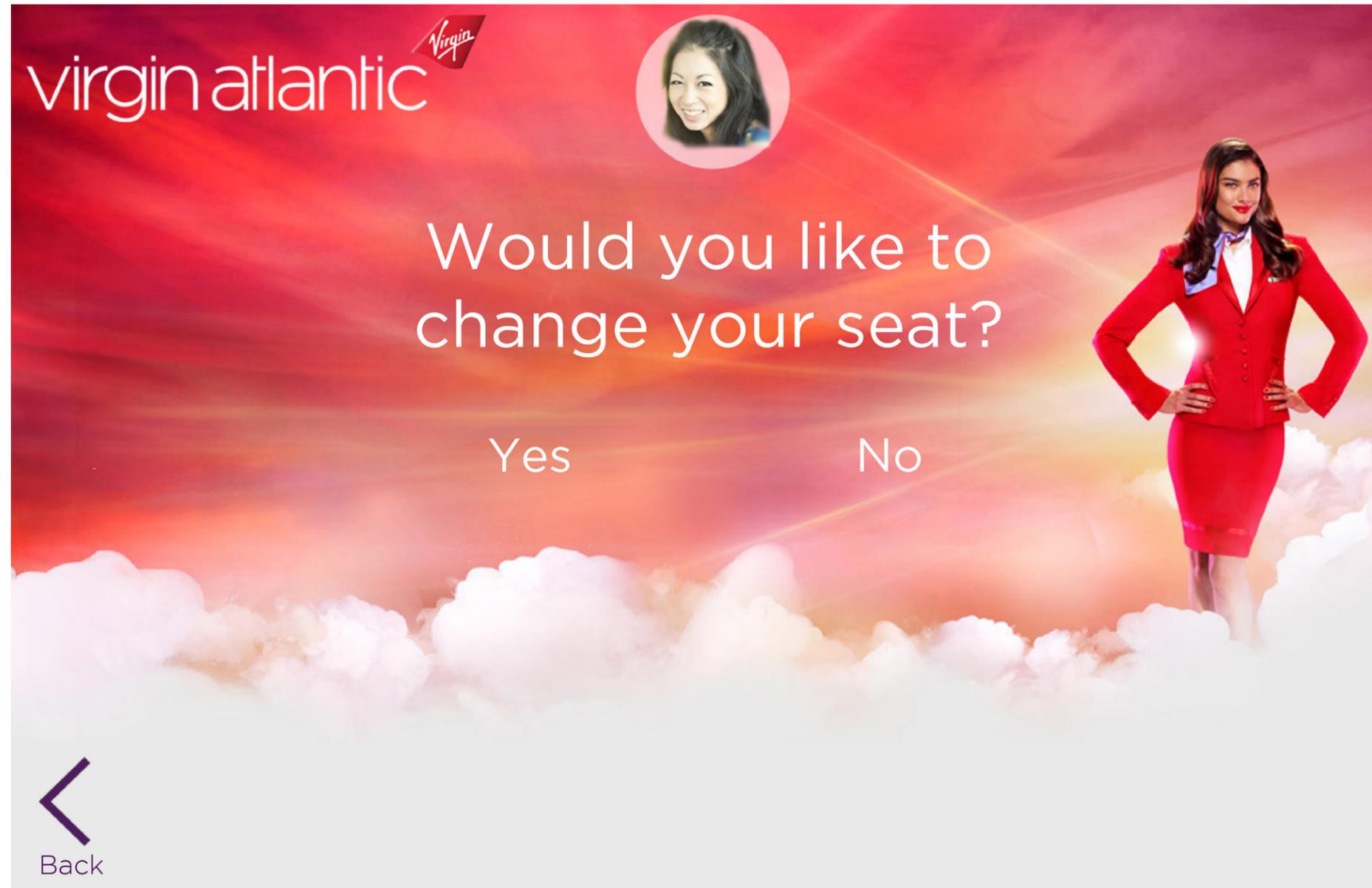


## Flight Info

Flight #:	VS206
Gate #:	31
Departure Time:	20:40
Arrival Time:	16:15 +1 day
Flight Status:	On Time
Seat #:	30A



 Back  Continue



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When you're finished viewing or changing seats, press Continue.

Flight to: Hong Kong

Sarah Jia 30A

28C

29H

30A

31E

32A 32B

35C 35G

Front

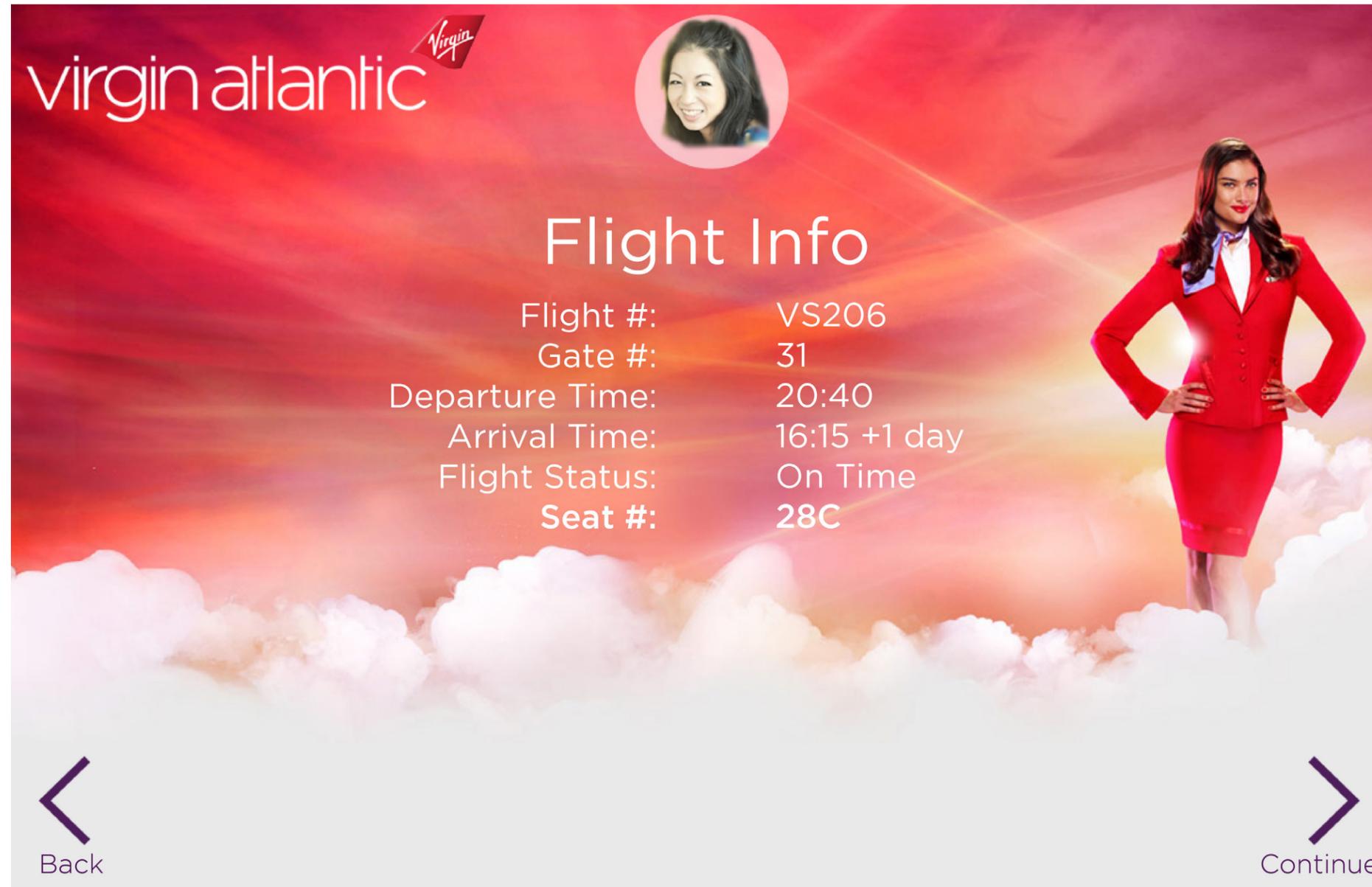
Rear

Want to upgrade? Your agent will assist you at the counter

Back

Continue

■ Your Seat □ Available Seat



virgin atlantic 



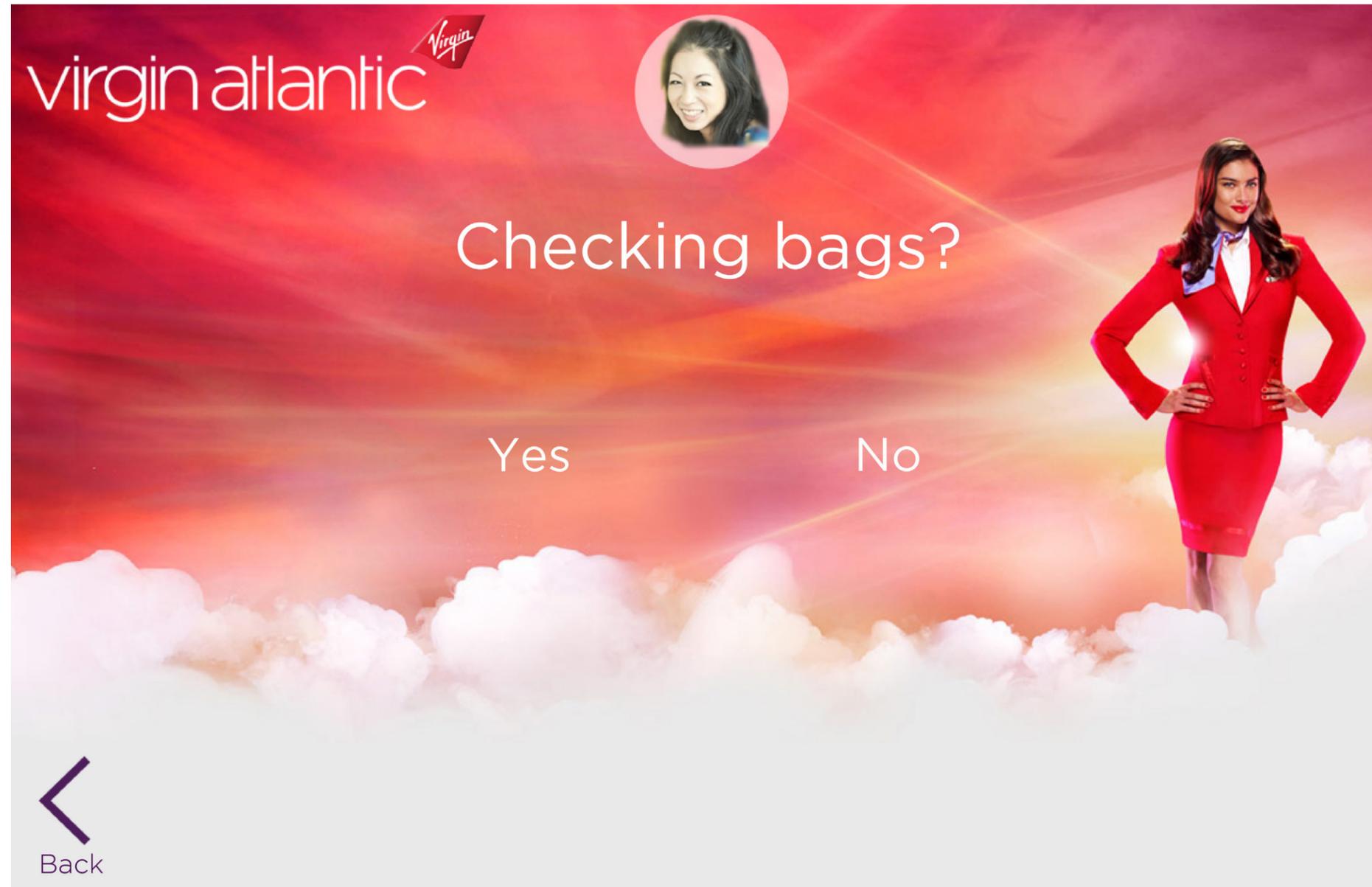
## Flight Info

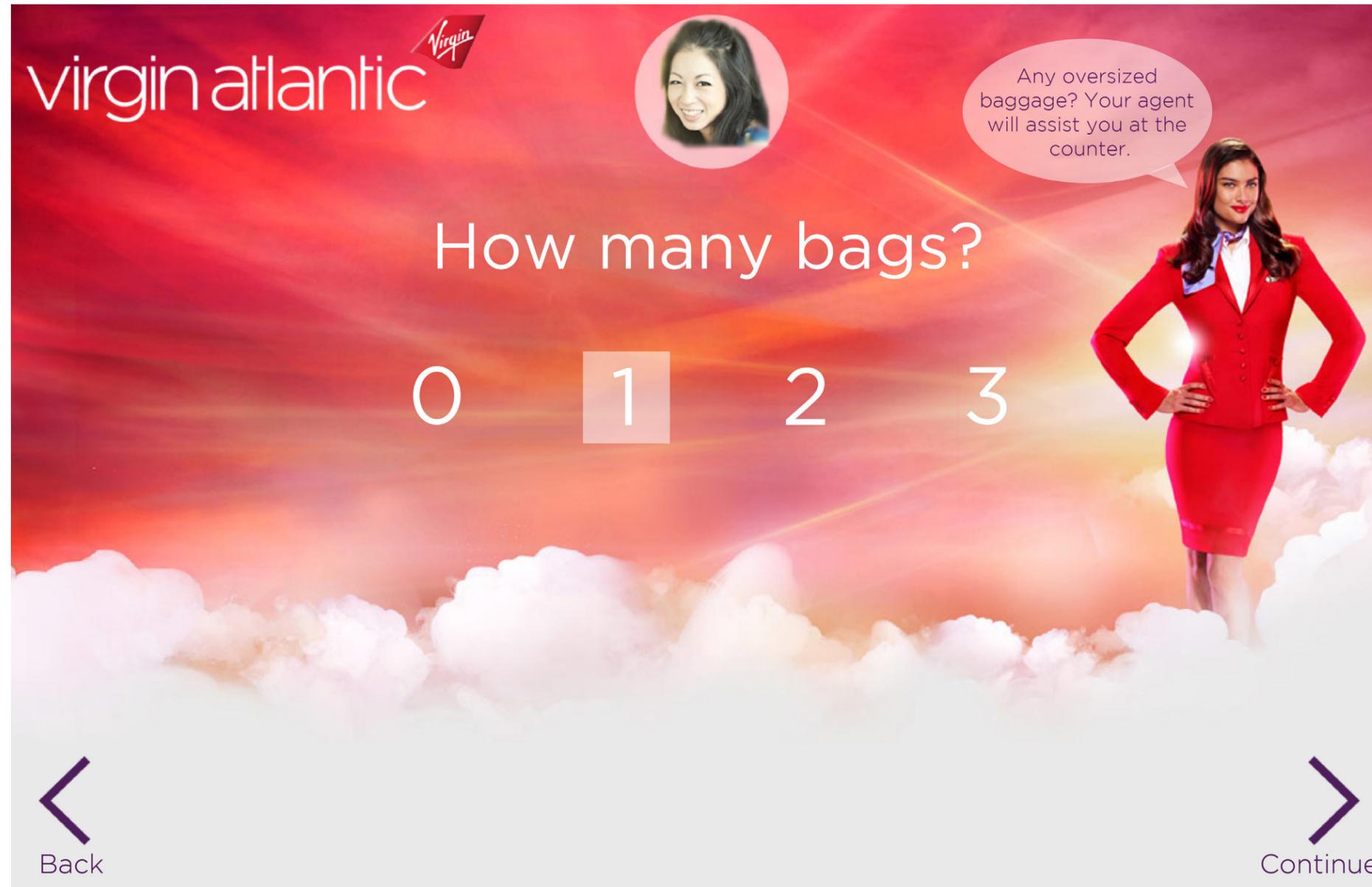
Flight #:	VS206
Gate #:	31
Departure Time:	20:40
Arrival Time:	16:15 +1 day
Flight Status:	On Time
Seat #:	28C

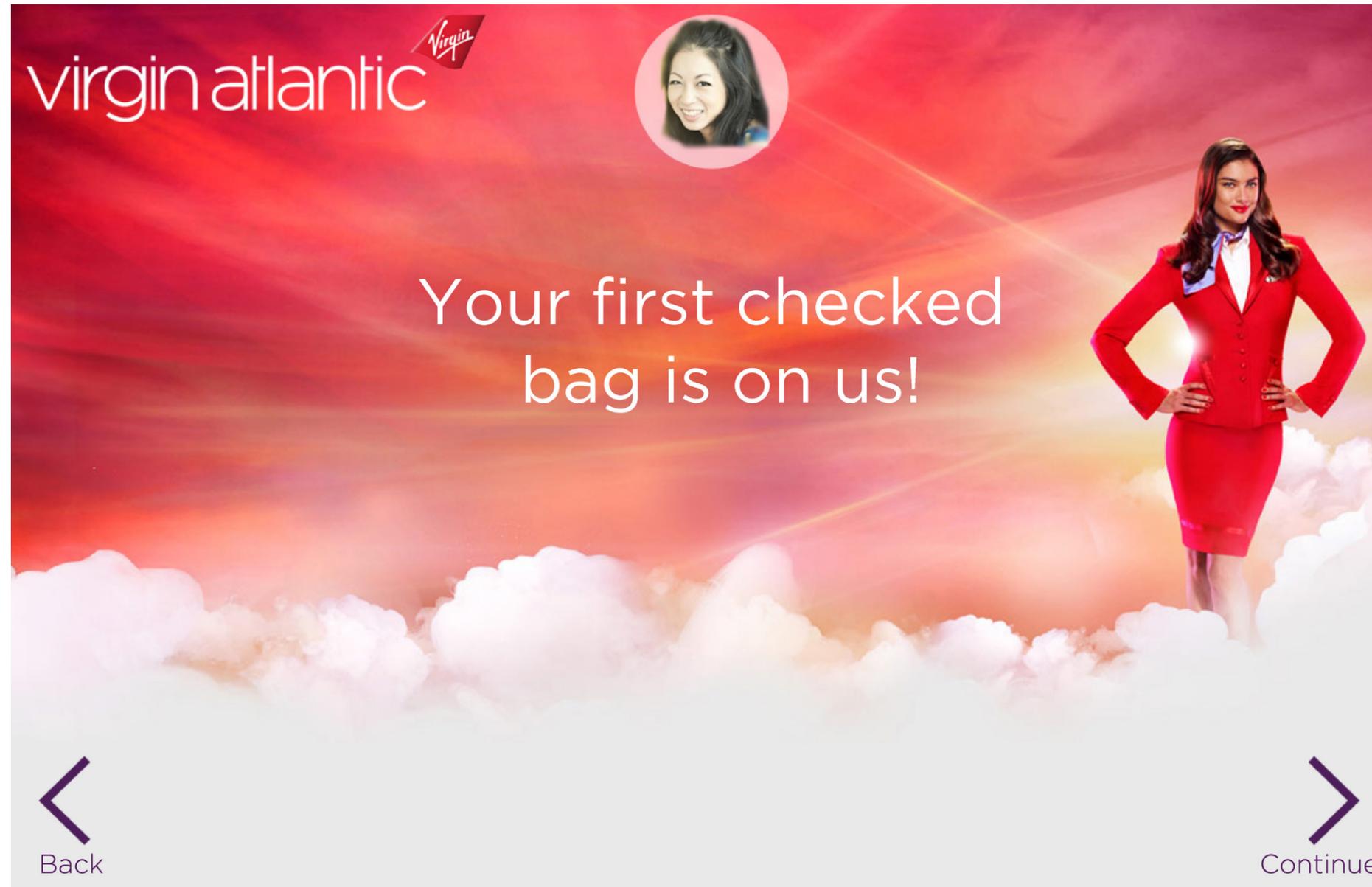


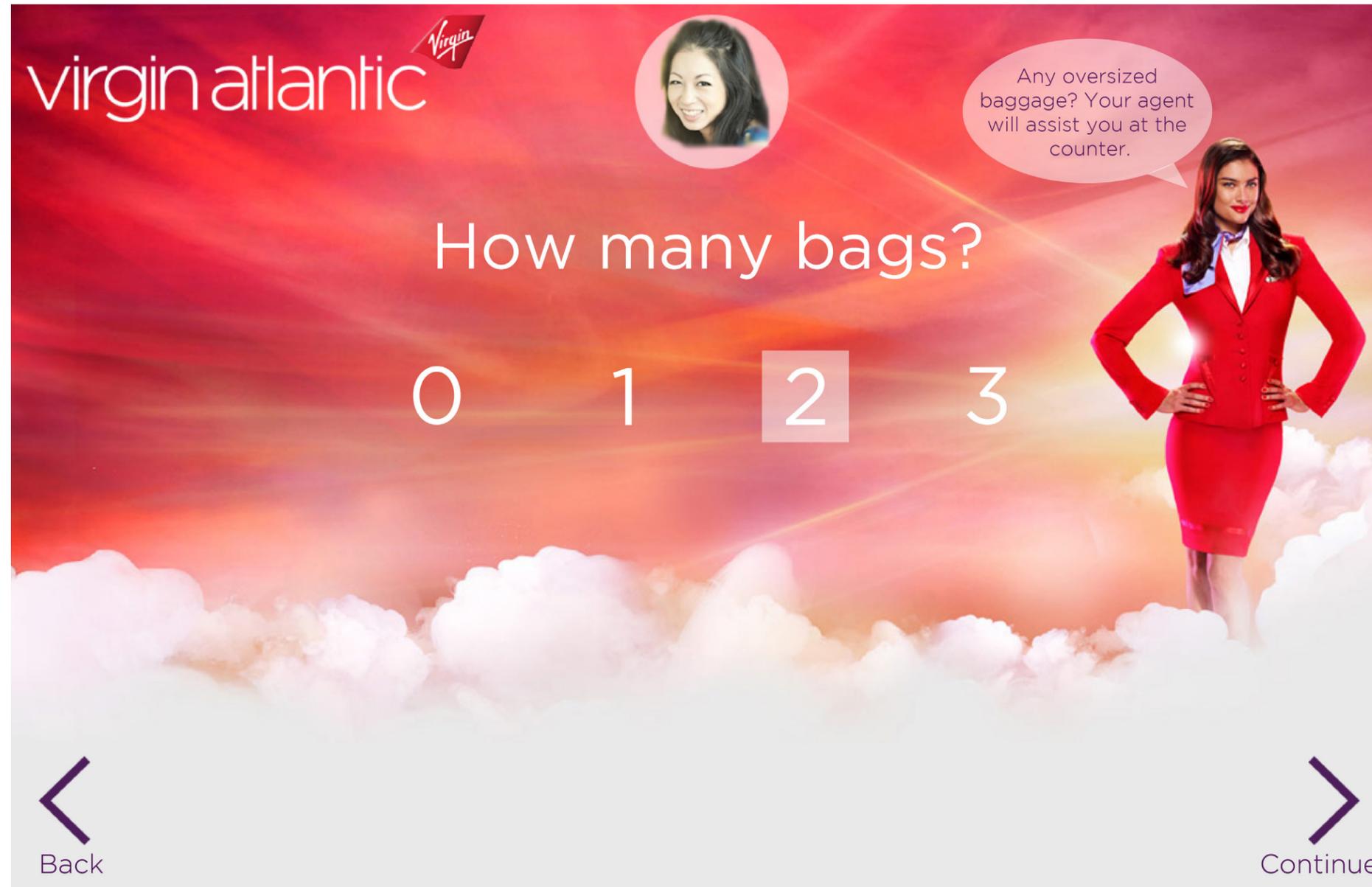
Back Continue

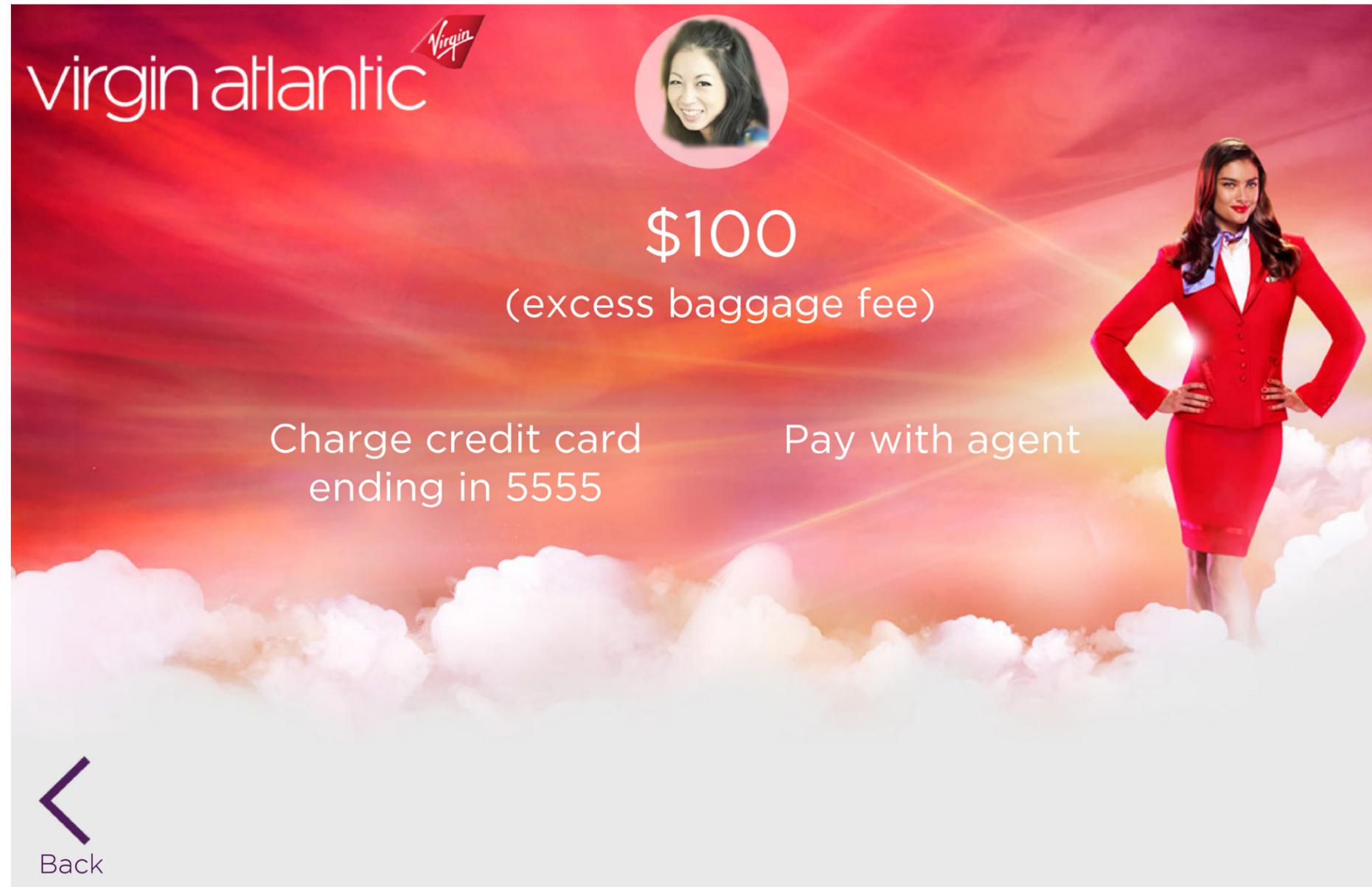
The image shows a mobile app overlay for flight information. It features a red and white color scheme. At the top left is the Virgin Atlantic logo. To its right is a circular profile picture of a woman. The main heading is 'Flight Info'. Below this is a table of flight details. On the right side of the overlay is a full-body image of a Virgin Atlantic flight attendant in a red suit. At the bottom left is a left-pointing arrow labeled 'Back', and at the bottom right is a right-pointing arrow labeled 'Continue'. The background of the overlay is a vibrant red and orange sky with white clouds at the bottom.

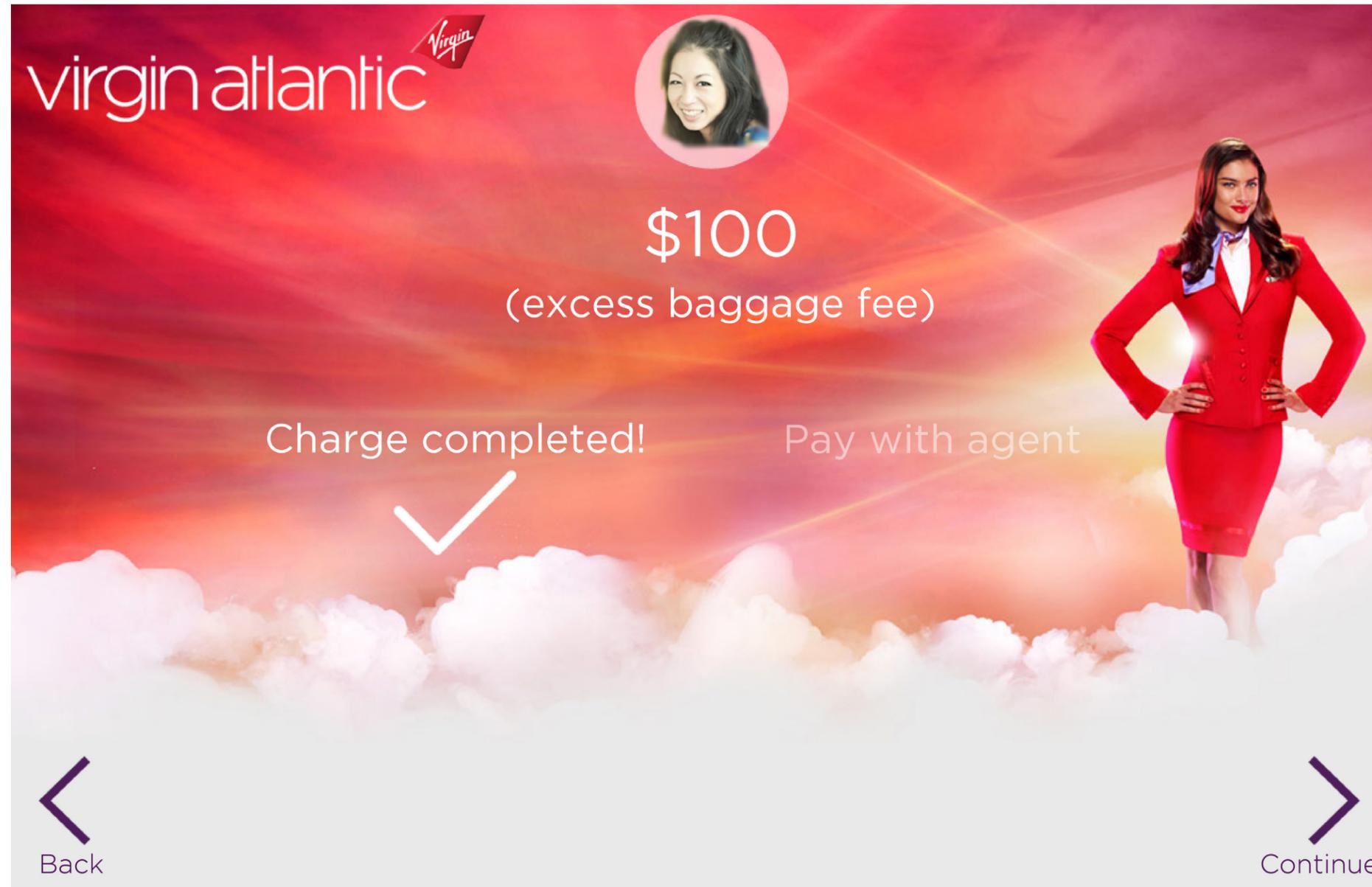


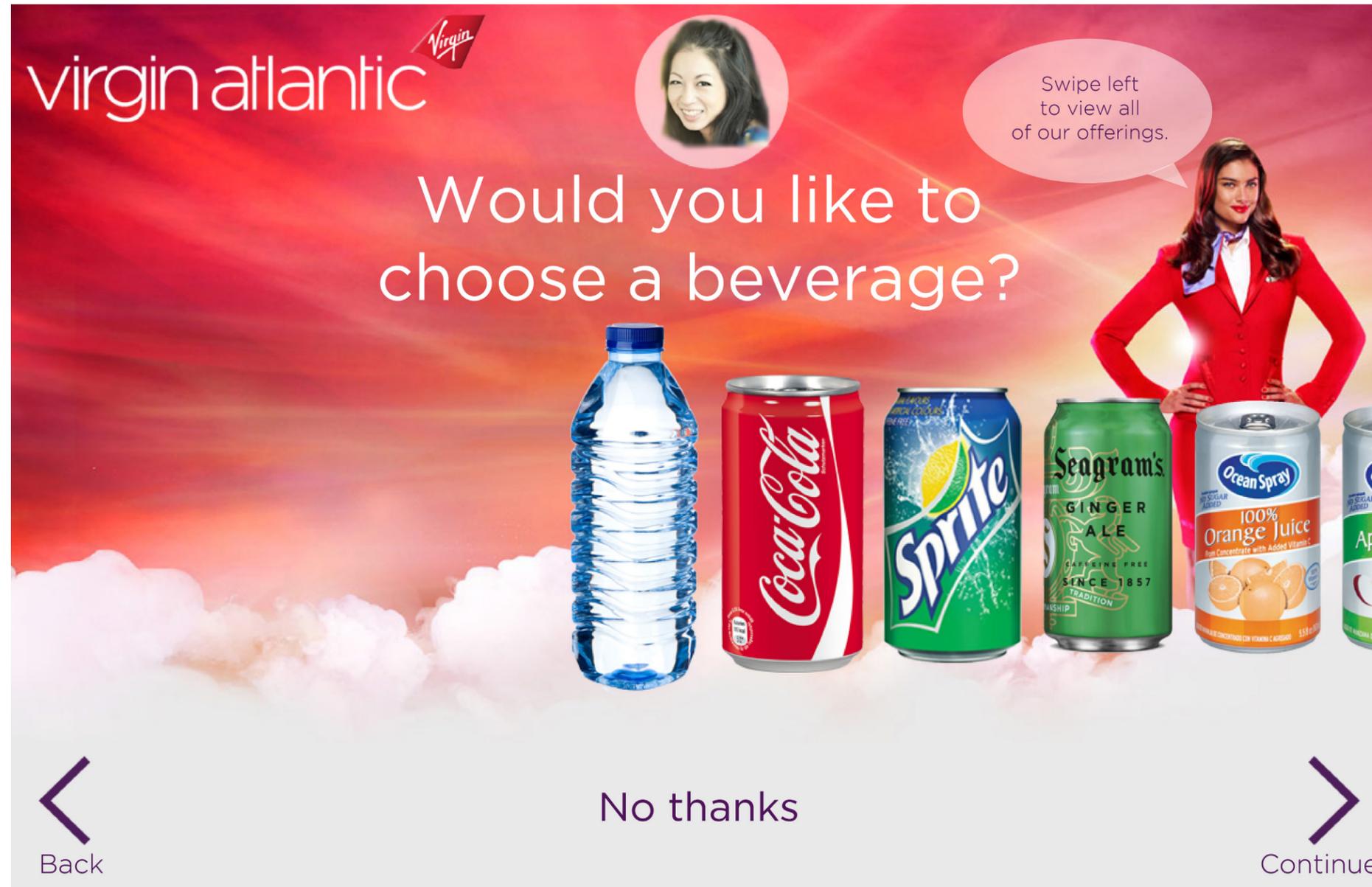


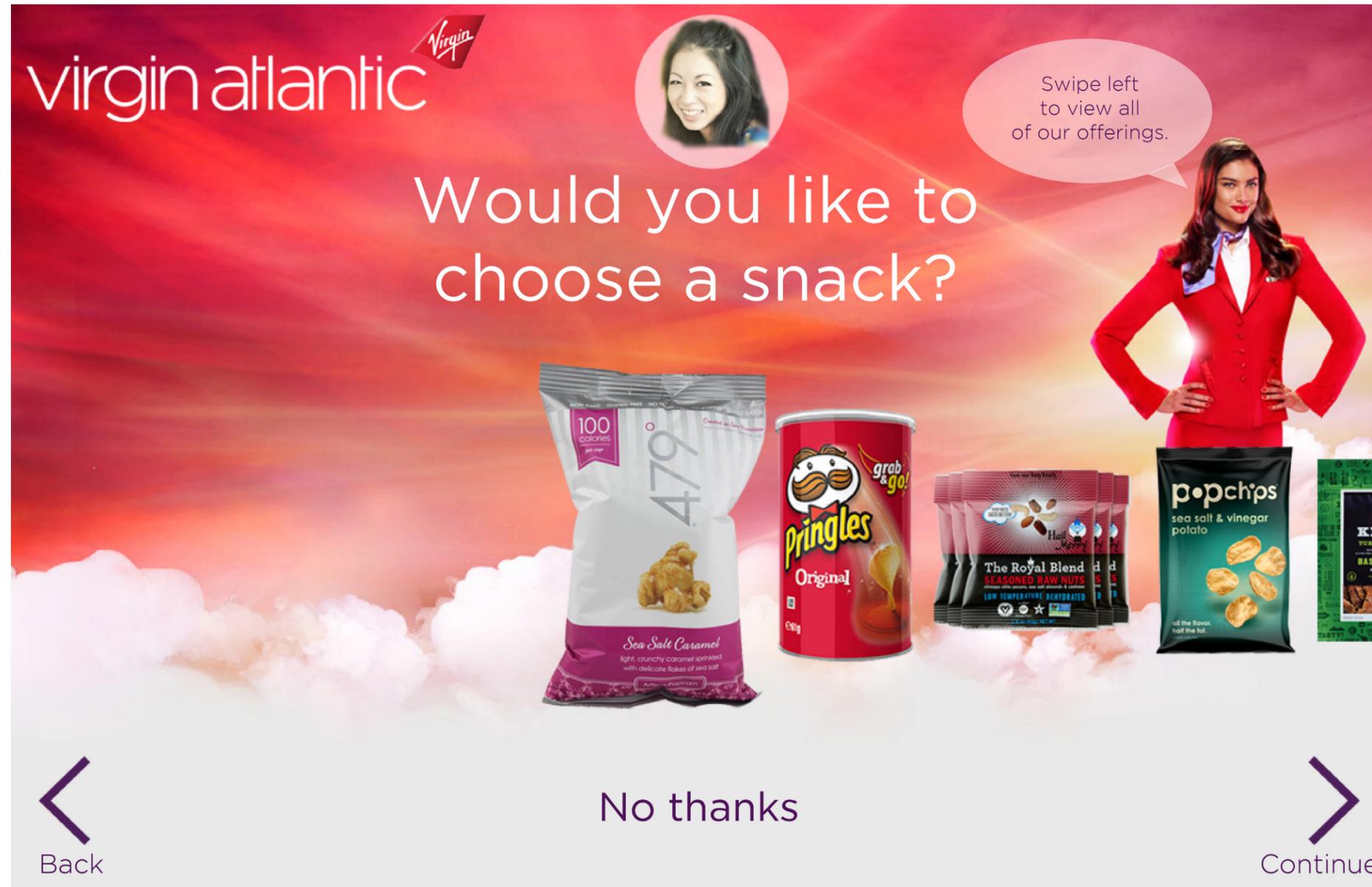












virgin atlantic

Would you like to choose a snack?

Swipe left to view all of our offerings.

Sea Salt Caramel  
100 calories per bag

Pringles  
Original

The Royal Blend  
SEASONED RAW NUTS

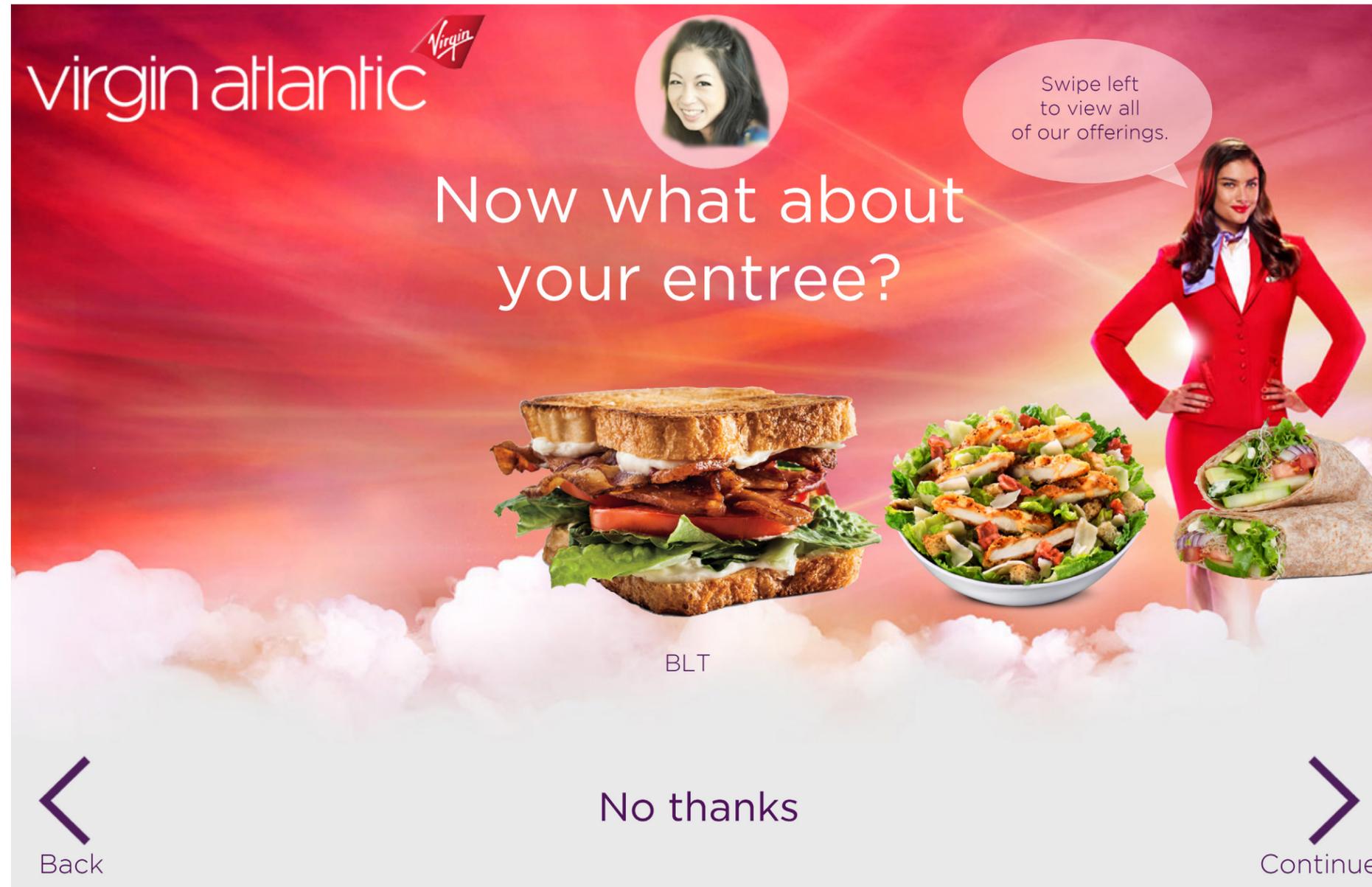
popchips  
sea salt & vinegar potato

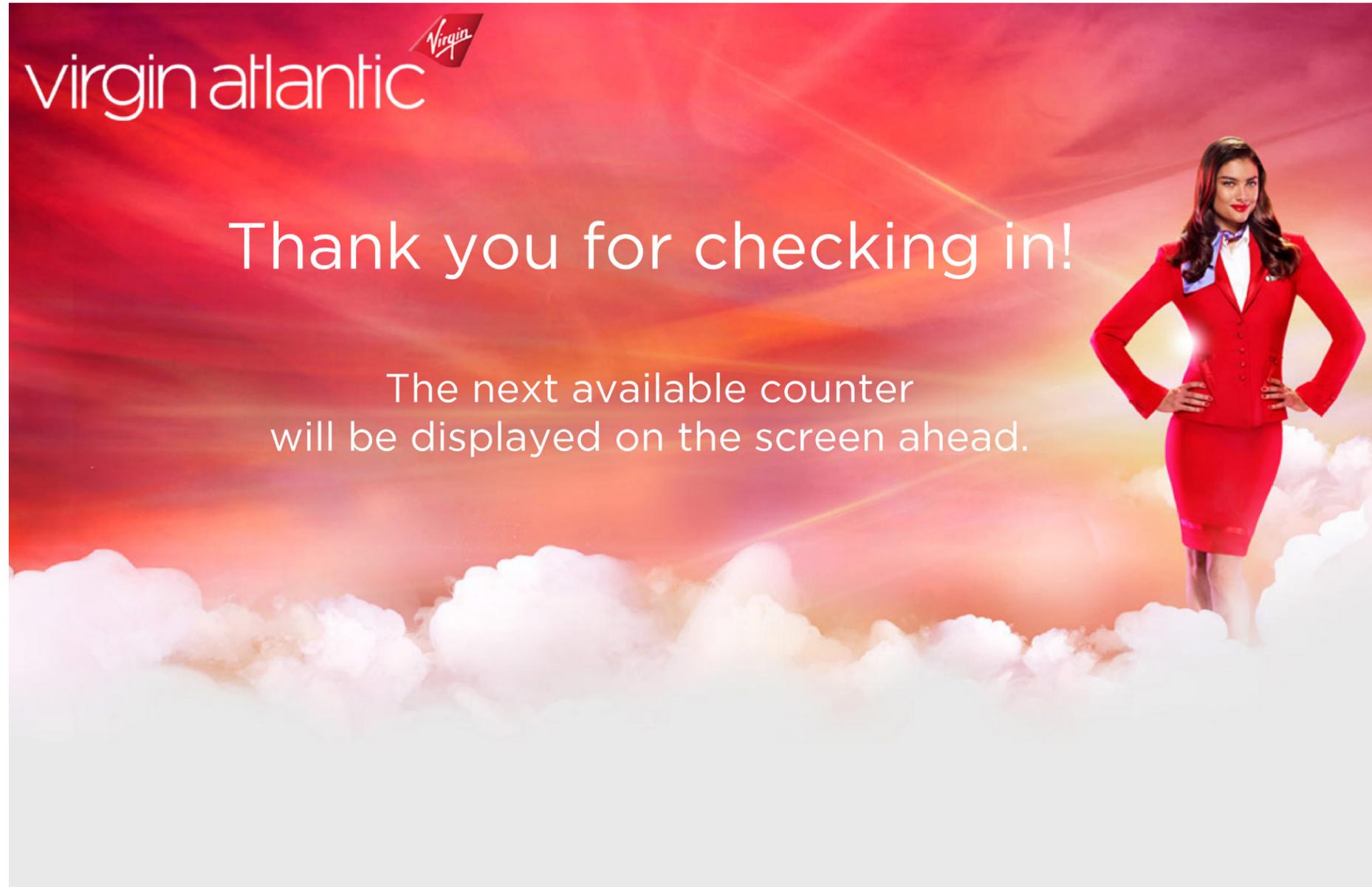
Back

No thanks

Continue

The image shows a mobile app interface for Virgin Atlantic's in-flight snack selection. At the top left is the Virgin Atlantic logo. In the center, a large white question asks, "Would you like to choose a snack?". To the right, a flight attendant in a red uniform stands with her hands on her hips, with a speech bubble that says "Swipe left to view all of our offerings." Below the question, a row of snack products is displayed on a white cloud-like surface against a red and orange sunset background. From left to right, the products are: a white bag of Sea Salt Caramel (100 calories per bag), a red can of Pringles Original, a package of The Royal Blend Seasoned Raw Nuts, a bag of popchips sea salt & vinegar potato, and a partially visible green bag of KR. At the bottom, there are three navigation options: a left-pointing arrow labeled "Back", the text "No thanks" in the center, and a right-pointing arrow labeled "Continue".





## SOLUTION 2: RED

virginatlantic 	BOARDING PASS
SOLUTION NAME: RED  A seatback platform with additional key screens to improve in-flight experience.	2

## RED / business analysis

### Problem

Frequent flyers fall into the habit of ordering the same items on each trip. There is no way to track and remember these orders, which becomes **cumbersome** to the frequent flyer who has to repeatedly tell crew members what they want. Overall, passengers can get very **anxious** during long-distance flights. Irregular sleep schedules also contribute to increased stress levels on the mind and body.

### Solution

Very few seatback systems currently store passenger information. Increased personalization will make passengers feel more comfortable, and build brand loyalty as well. The following wireframes show key screens to add to the existing system.

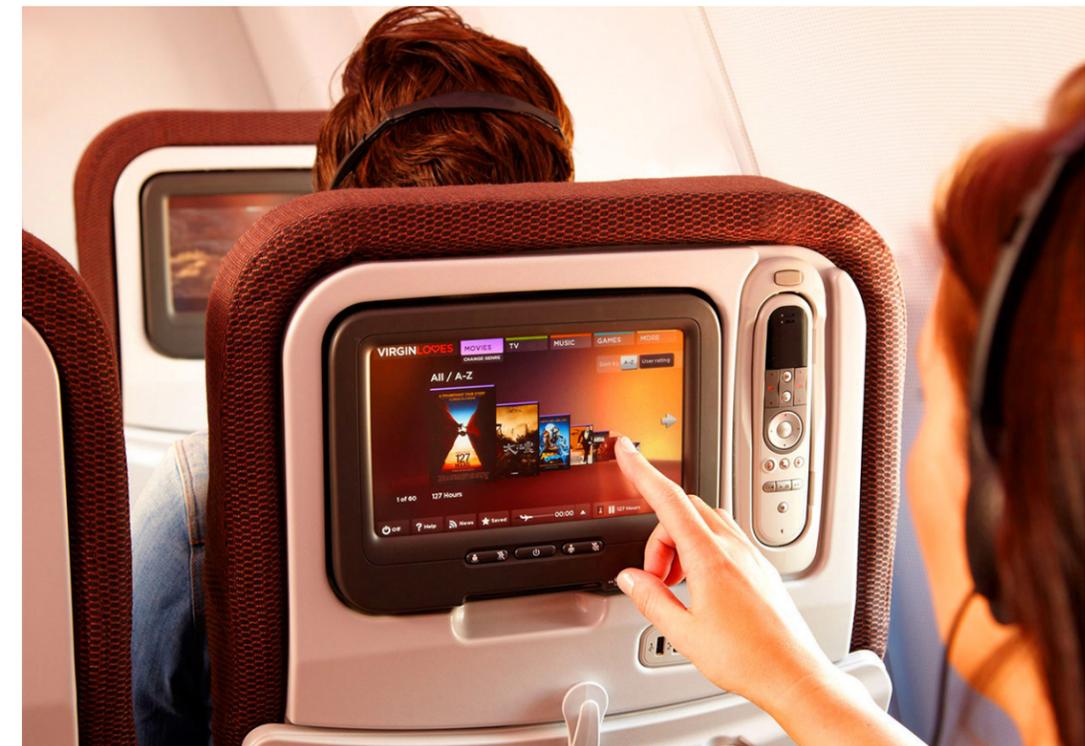
- Red will utilize a fingerprint scanning system for passengers to create accounts and log in. This is quick and easy and precludes passengers from struggling to remember usernames and passwords.
- Red will remember previous food orders and give passengers an easy way to order them again. It will also offer recommendations based on previous orders.
- Red will recommend movies, TV shows, and music based on passenger's taste and preferences.
- Red will use a pulse oximeter and allow passengers to measure biometrics at any time. If any passenger's oxygen levels are too low, the crew member's tablet is pinged with an alert, and a crew member will deliver a personal oxygen tank.
- Red will suggest optimal times to sleep and eat on long flights, in order to minimize the effects of jetlag when flying over multiple time zones.
- Based on the final destination, Red will suggest points of interest and offer a mini language lesson.

### Red solves

- Personalization
- Health

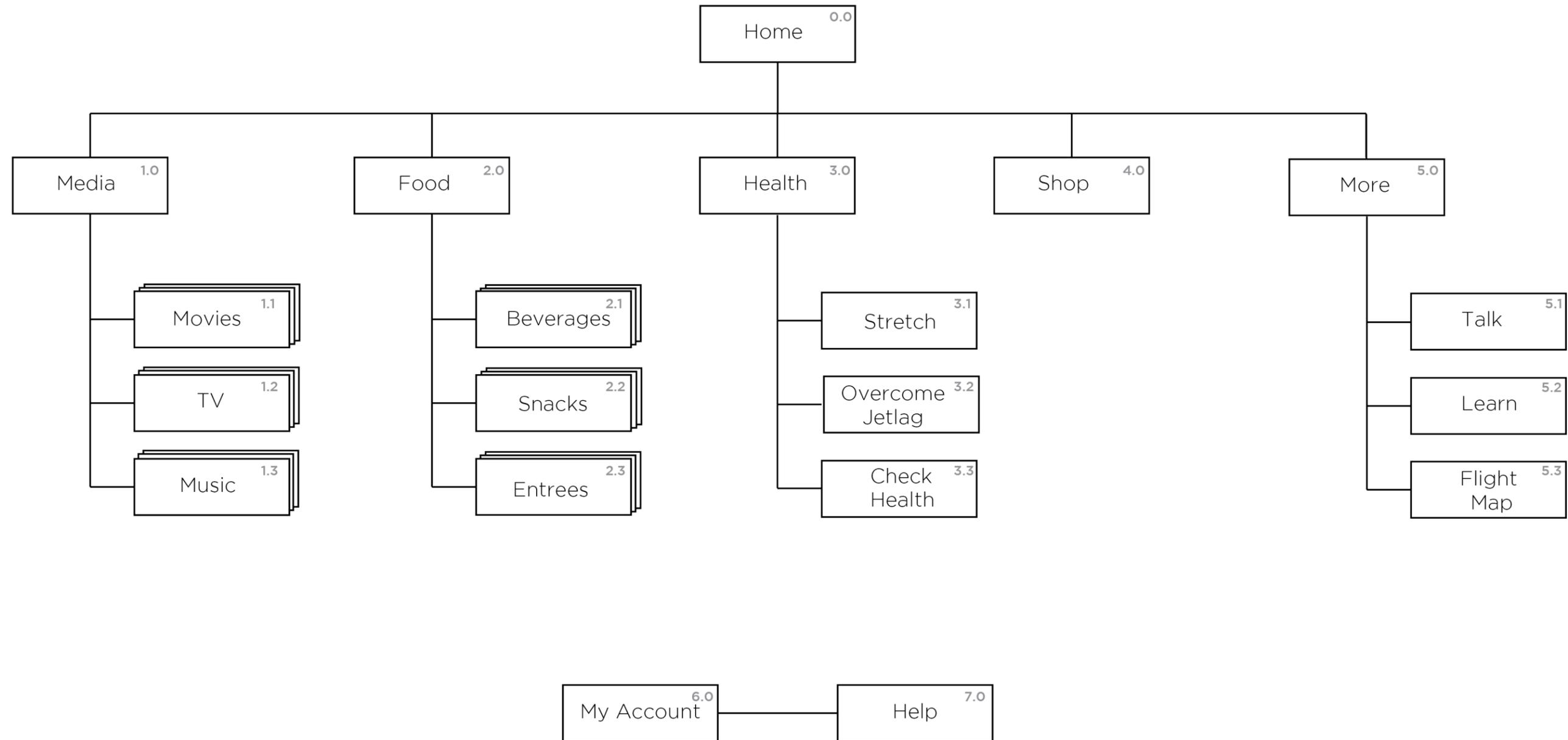
### Hardware

- Existing seatback setup
- Oximeter
- Fingerprint sensor



Current Red seatback system.





---

# RED / feature set

## 0.0 – Welcome

A. For passenger with existing account:

- Screen displays “Welcome, [insert name here]!”
- If passenger ordered items on Wally, display what was ordered and that items on the way.
- If passenger didn’t order items during check in, display link to **Food (1.0)** to place order.
- Select language: Default language is most commonly-used language in departure country.
- If screen is displaying incorrect name, passenger can enter correct information.
- Prompt passenger to scan fingerprint to log in to account.
- Help icon for more information about fingerprint system.

B. For passenger without account:

- Screen displays, “Welcome!”
- If passenger ordered beverages or snacks on Wally, display what was ordered and that items on the way to seat.
- Link to begin account creation.
- Help icon for more information about fingerprint system.

## 0.1 – Account Creation flow

A. As passenger places finger on sensor, animations on screen display progress of fingerprint capture. .

B. When process is completed, display check mark.

C. Link passengers to **My Account (6.0)**.

## 6.0 – My Account

A. Top-level navigation (persistent on all pages)

- Links include **Media (1.0)**, **Food (2.0)**, **Health (3.0)**, **Shop (4.0)**, and **More (5.0)**.
- When passenger taps item on top-level navigation, dropdown list appears. When passenger taps item again, dropdown collapses.

B. Display passenger’s full name and ask passenger to link seatback account with an existing membership number. Modal will appear to enter in membership number.

C. Display passenger’s itinerary and flight time.

D. Display passenger’s dietary restrictions and other health concerns. Passenger can edit.

E. Display beverages, snacks, and entrees ordered by passenger on previous flights. Affordance to edit beverage, snack, and entree preferences.

F. Affordance to order from beverage, snack, and entree list.

G. Display recommended movie, TV show, and album based on what passenger watched in the past. Affordance to begin watching immediately.

H. Bottom-level navigation (persistent on all pages)

- Link to **Help (7.0)**.
- Real-time flight map.
- Media player.
- Link to **My Account (6.0)**.

## 1.1, 1.2, 1.3 – Movies, TV, Music

A. When passenger selects item on top-level navigation, that option is highlighted to show passenger has selected it.

B. Passengers can swipe left and right to browse options.

C. Indicate to passengers how many options are present.

D. Let passenger watch movie and launch into media player.

---

## RED / feature set, cont.

### 2.1, 2.2, 2.3 – Beverages, Snacks, Entrees

- A. When passenger selects option on top-level navigation, that option is highlighted to show passenger has selected it.
- B. Passengers can swipe left and right to browse options.
- C. Indicate to passengers how many options are present.
- D. Affordance to order item.
- E. Order confirmation modal.

### 3.1 – Stretch

- A. Timer counts down in real time.
- B. Image slider displays photos of exercises.
- C. Breadcrumbs help passengers navigate through images.
- D. Passengers have option to set stretch reminder.

### 3.2 – Overcome Jetlag

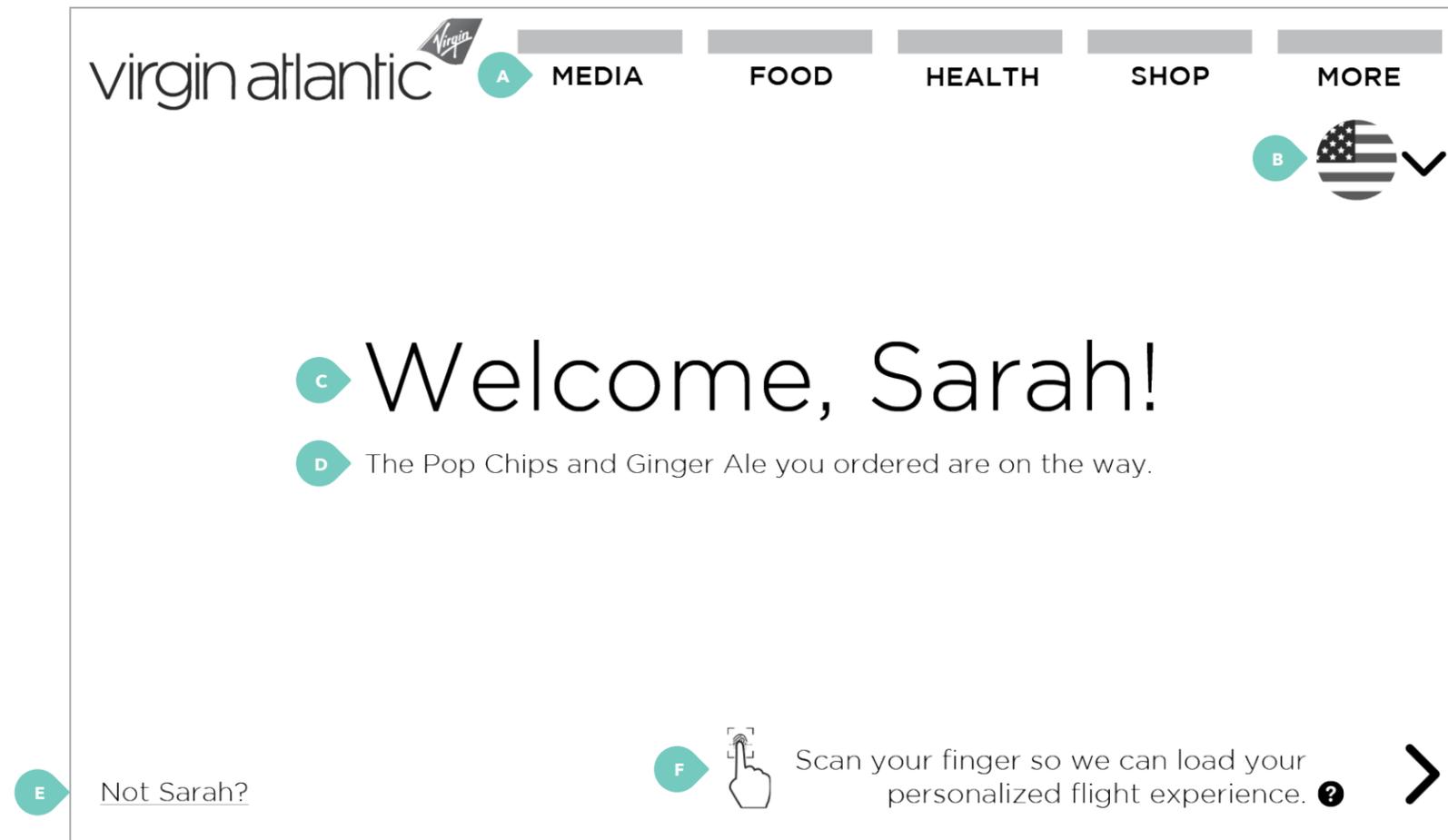
- A. Display flight timeline and suggestions for when to sleep and eat.
- B. Option to set reminders.

### 3.3 – Check Health

- A. Instruct passenger to place finger on oximeter.
- B. Display passenger's oxygen level and heart rate.
- C. If oxygen percentage is below 90%, system pings In-Flight Team Tablet.

### 5.2 – Learn

- A. Image slider displays photos of points of interest at final destination.
- B. Breadcrumbs help passengers navigate through slideshow.
- C. Highlight key phrases a tourist should know at their final destination.
- D. Passengers can press sound icon to hear how phrases are pronounced.



## 0.0 – Welcome (for passenger with account)

A. Top-level navigation.

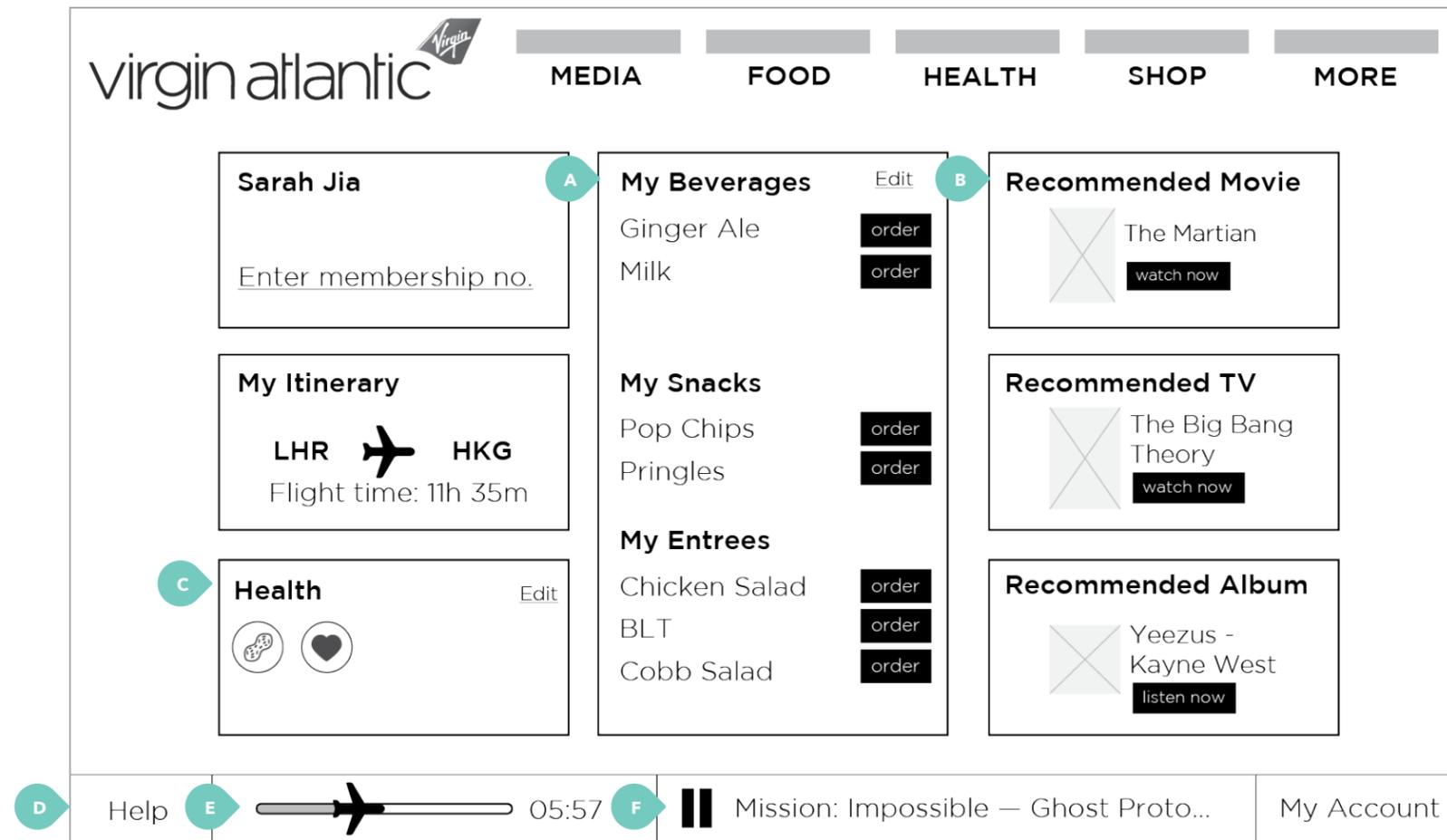
B. Passengers can select language. Default language selected is that of the departure country.

C. If passenger previously created fingerprint account with Virgin, the welcome screen displays his or her name. System knows which passengers have previously created accounts.

D. If passenger ordered food or beverages on Wally, welcome screen will display what was ordered.

E. Option to change account if the incorrect name is displayed (i.e. if the passenger switched seats).

F. Arrow points passengers to the right of the screen, where fingerprint sensor is located. Question icon triggers a modal that explains fingerprint login process.



## 6.0 – My Account

A. This panel displays orders passenger made on previous flights.

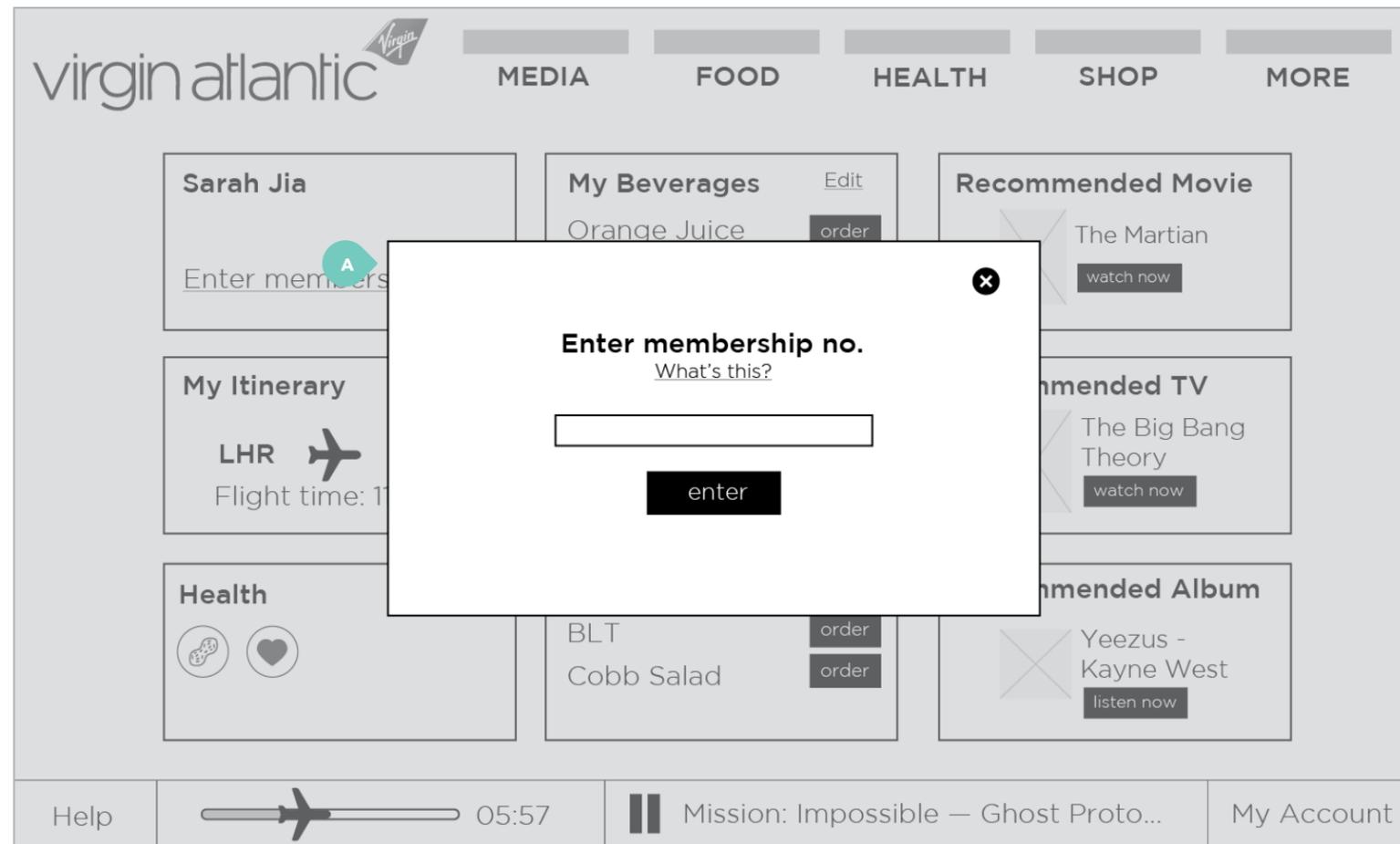
B. Based on media passenger has watched on previous flights, the system will recommend movies, TV, and music of similar genres.

C. Passengers can add health and dietary restrictions (i.e., if they are vegetarian or have food allergies).

D. Links to help page (not shown).

E. Flight map, updates in real time.

F. Displays current movie, TV show, or song playing. When passengers click, it links to full-screen media player.



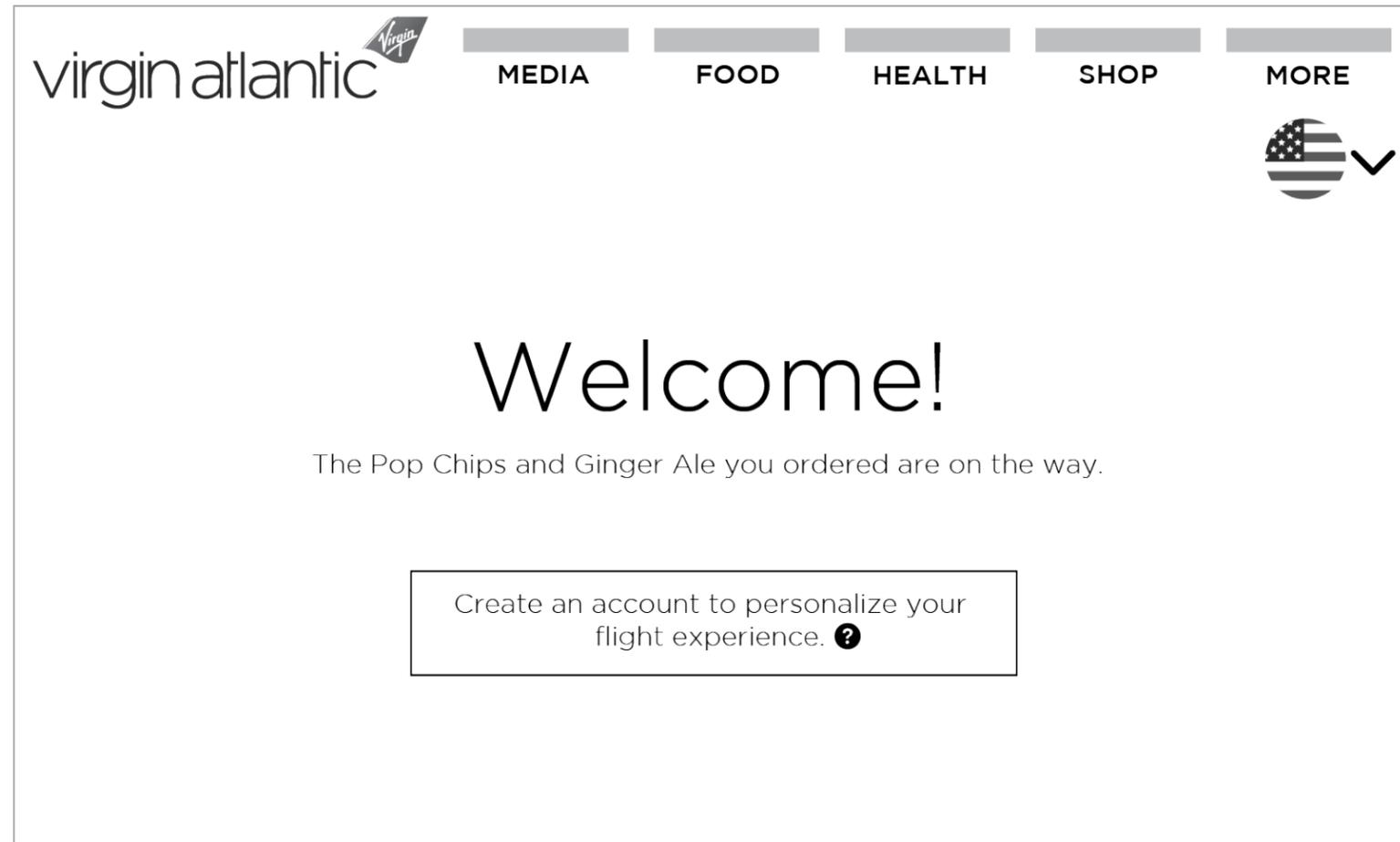
### 6.0 – My Account (enter membership no.)

A. Modal prompts passenger to enter existing Virgin membership number (if applicable), which stores their rewards points and membership status.



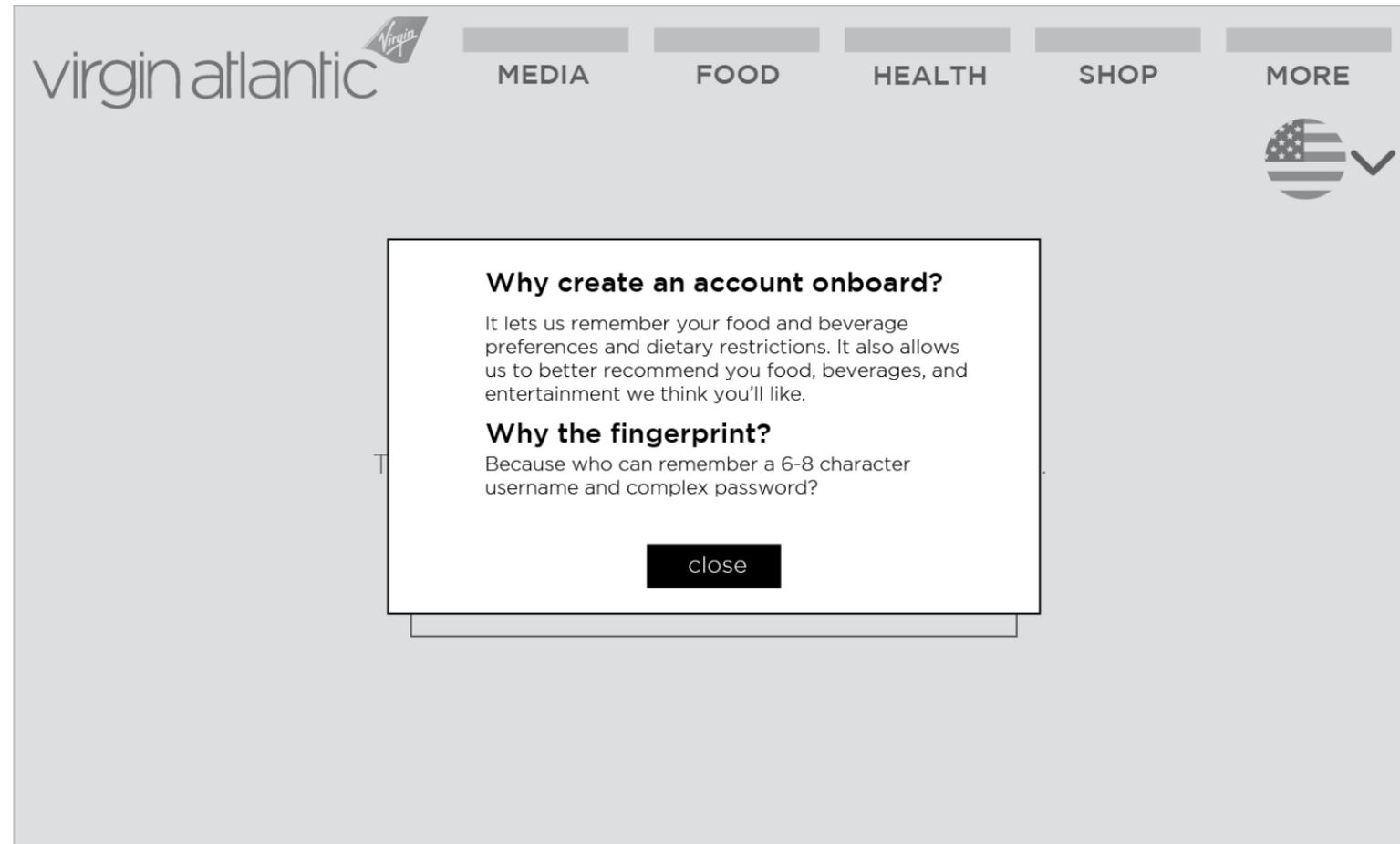
### 6.0 – My Account (with membership no.)

A. After entering number, panel displays passenger's rewards and membership information.

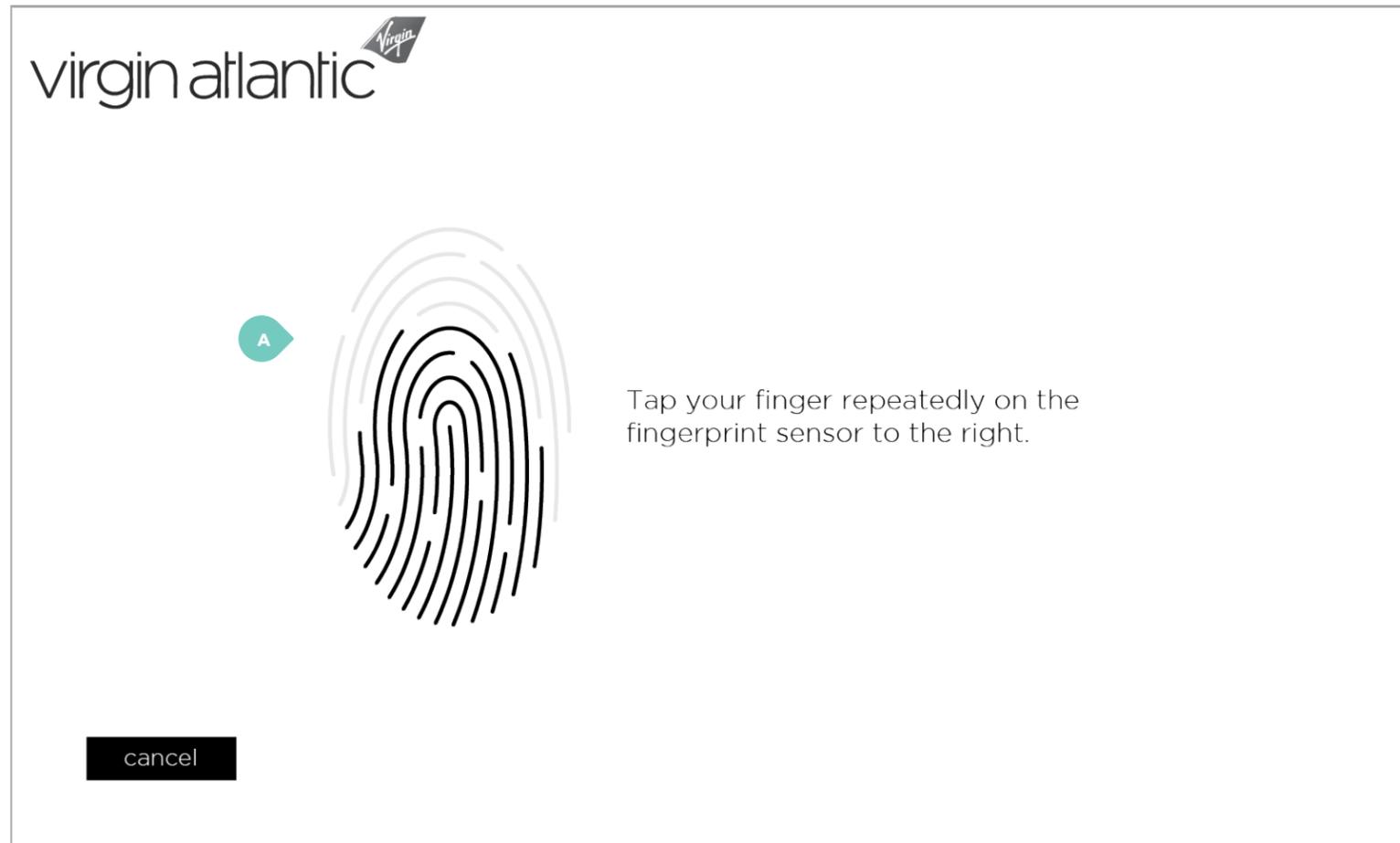


**0.0 – Welcome (for passenger without account)**

Welcome screen for passengers who have not previously created an account.

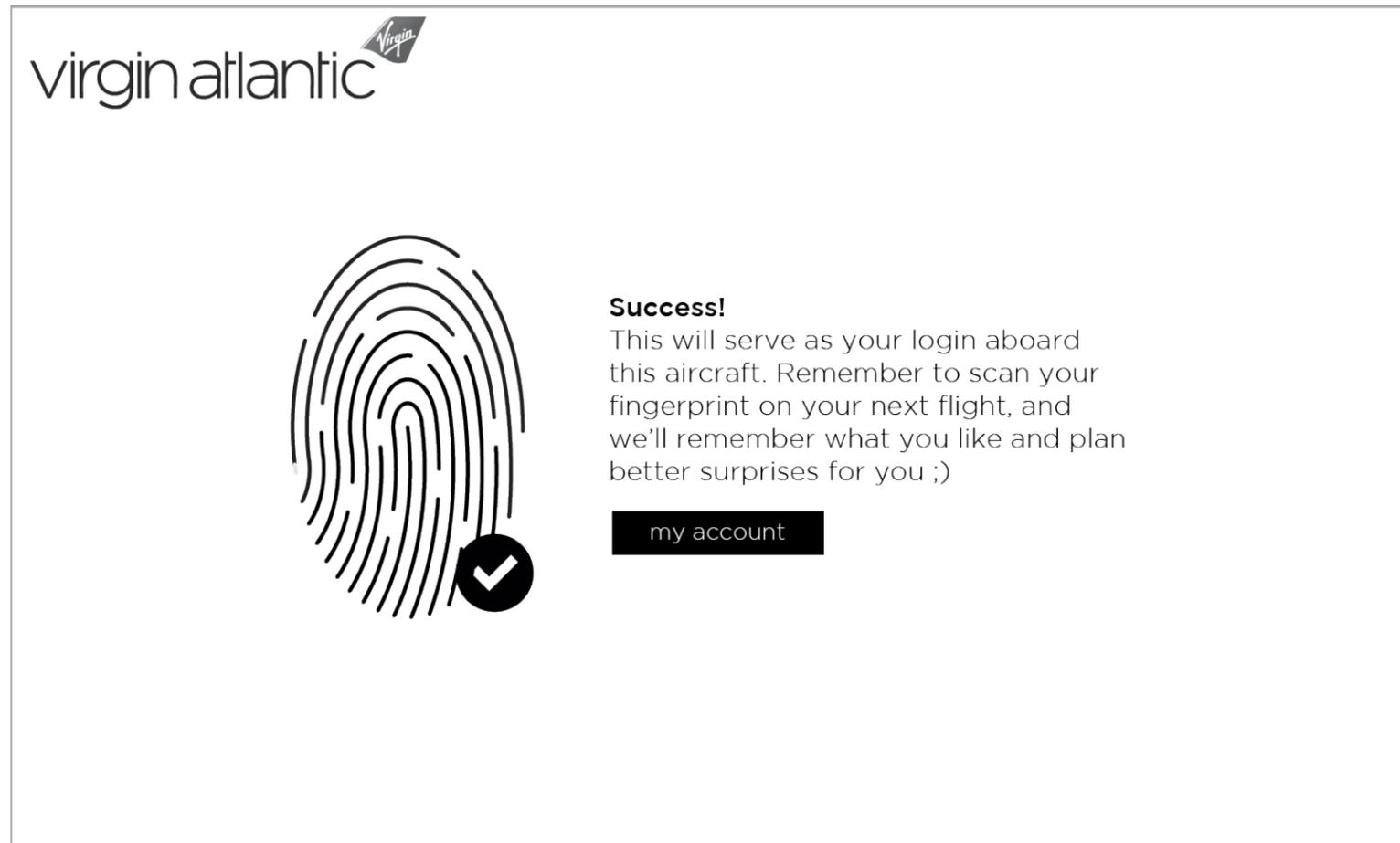


0.0 – Account creation information



**0.1 – Account creation (1 of 2)**

A. Animations update fingerprint scanning process in real time.



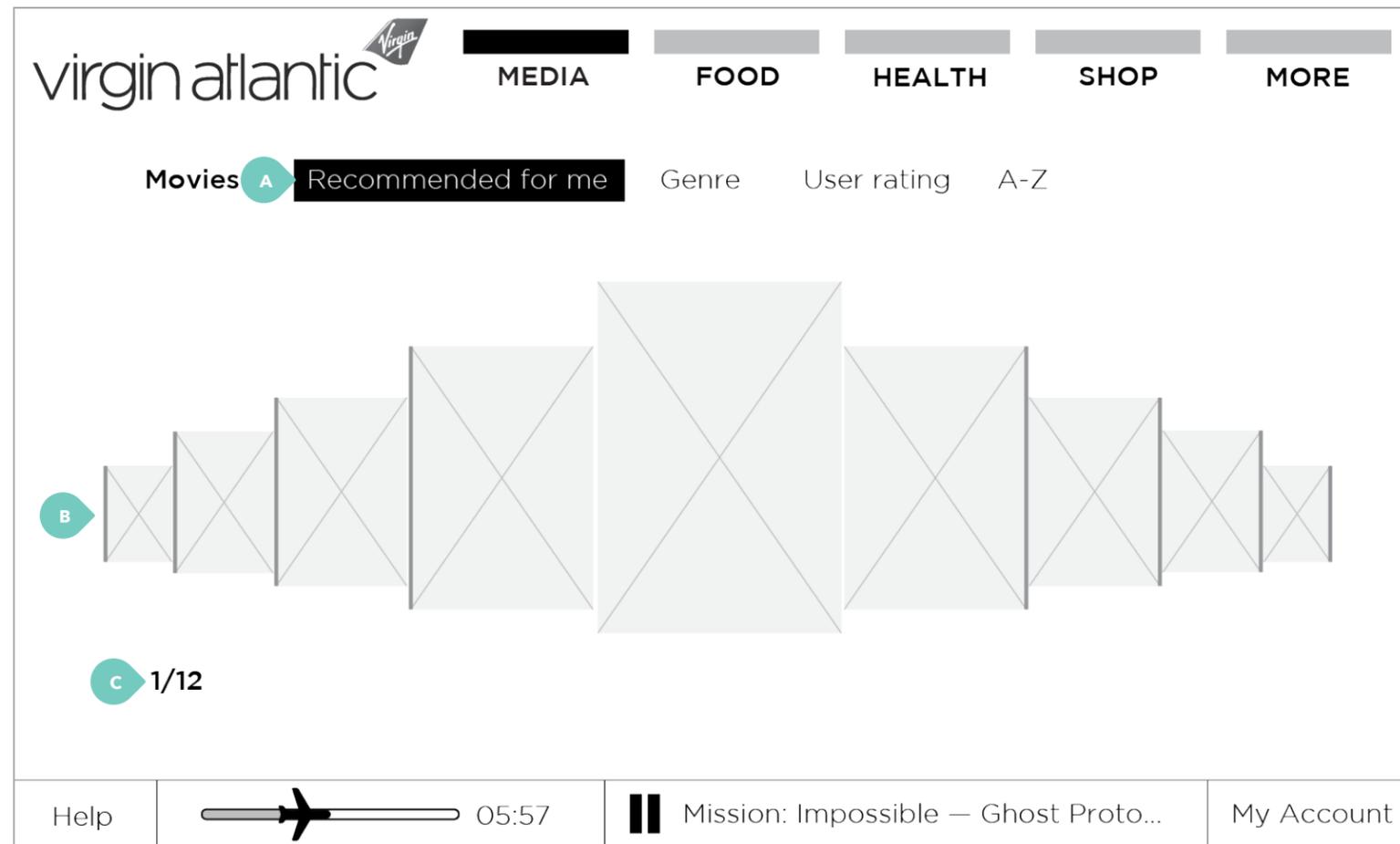
0.1 – Account creation (2 of 2)



### 6.0 – My Account (new passenger)

A. Since this is a new account, panel only shows what the passenger ordered on Wally. System will begin to remember current and future orders.

B. Since this is a new account, system displays popular movies. Once the passenger begins watching, system will display personalized recommendations.

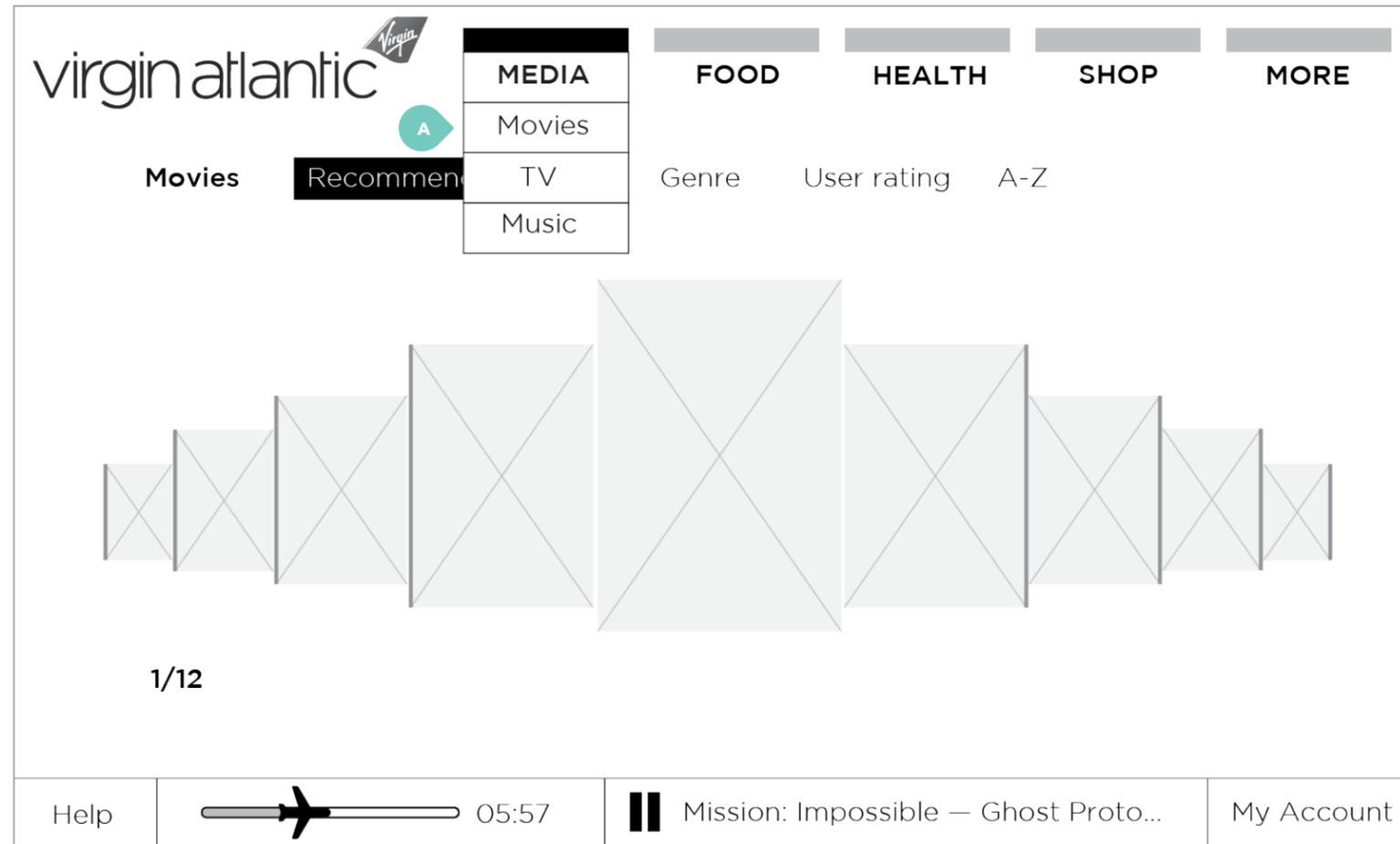


### 1.1 – Movies

A. For returning passengers, system displays recommended titles. Passengers can also toggle to view by genre, user rating, or alphabetically.

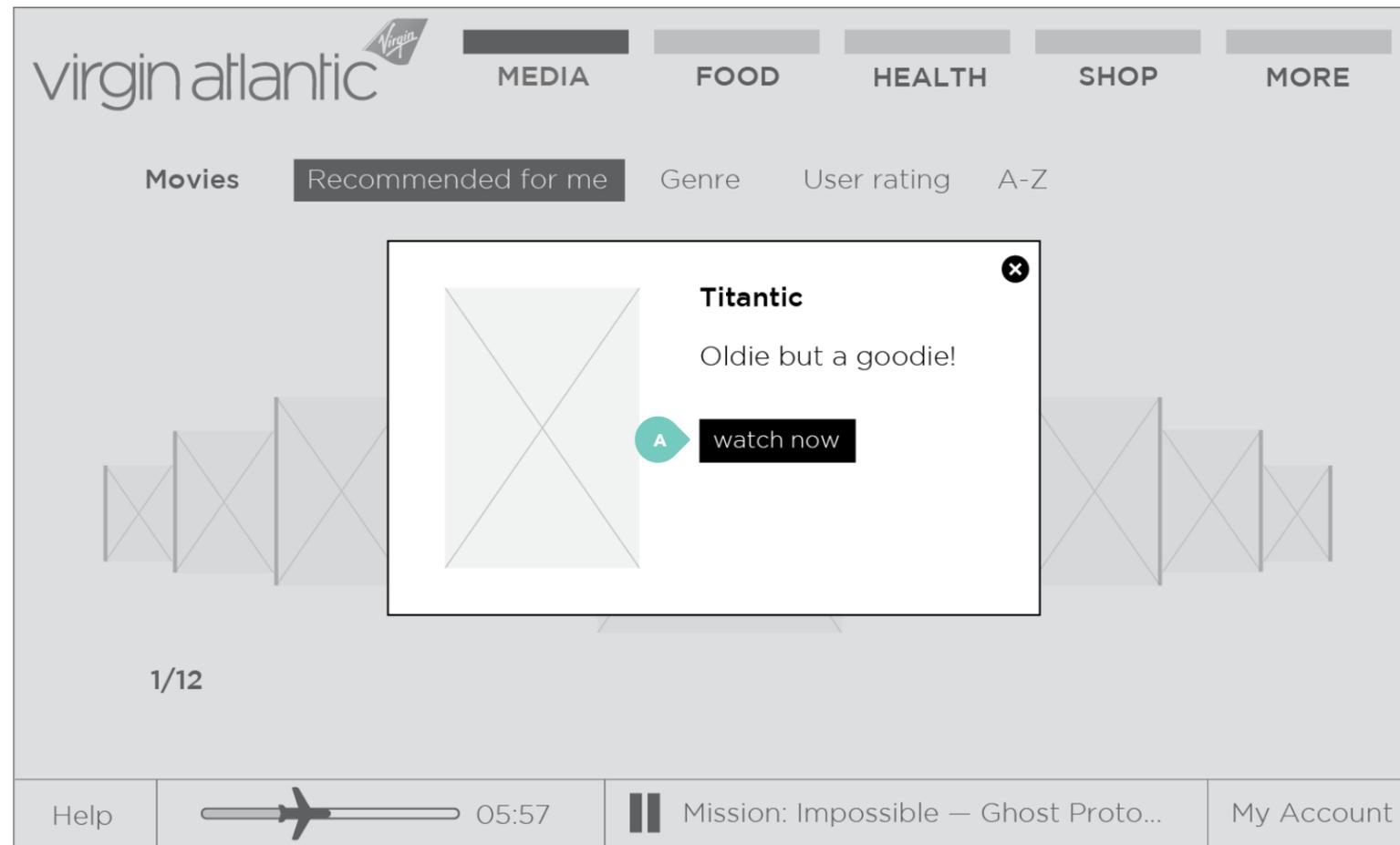
B. Passengers can browse titles by swiping left and right.

C. Displays how many options there are.



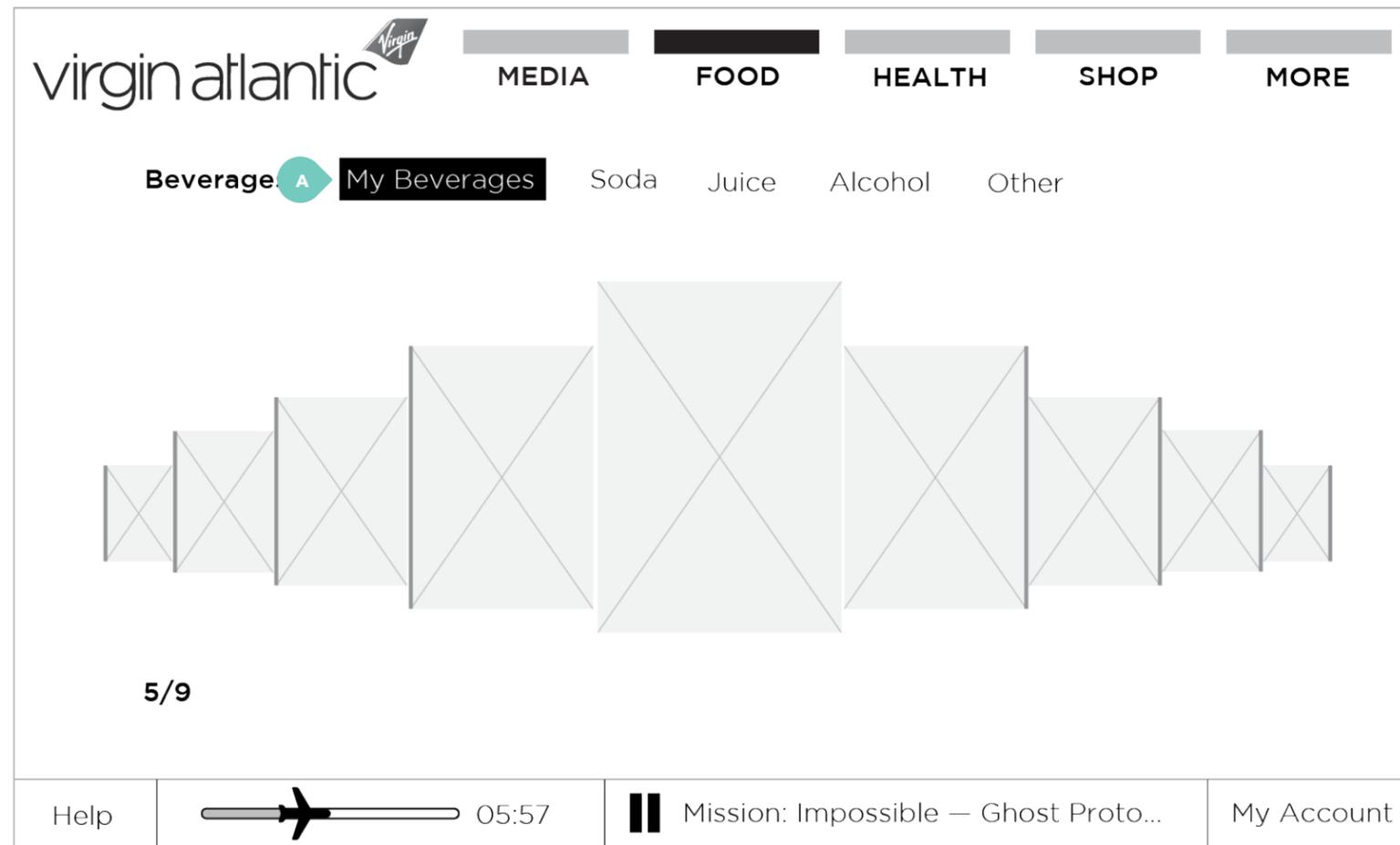
### 1.1 – Movies

A. Tapping an option on the top-level navigation opens dropdown menu. Tapping the option again collapses the menu.



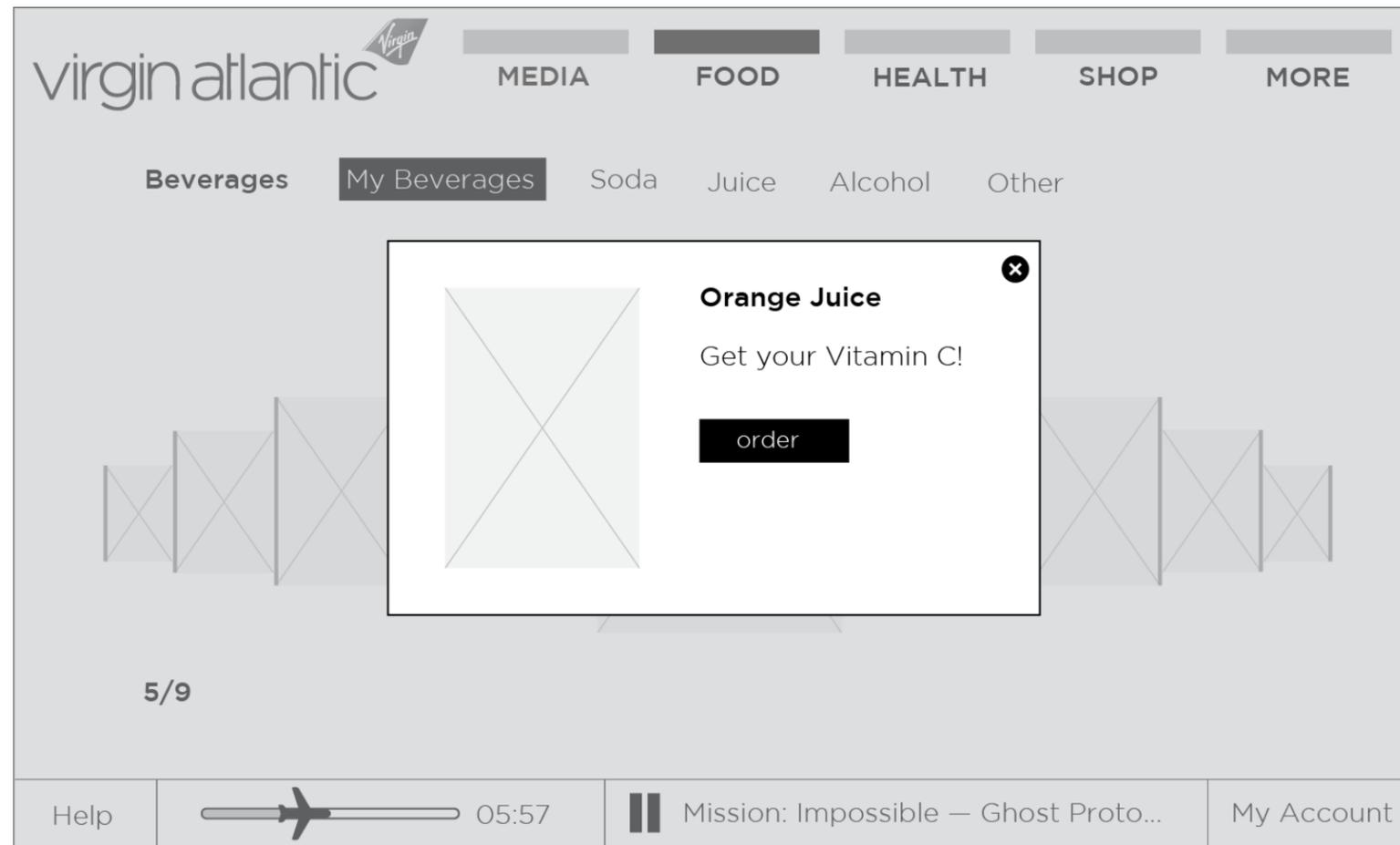
### 1.1 – Movies, detail

A. Tapping button takes passengers to full-screen media player (not shown).



## 2.1 – Beverages

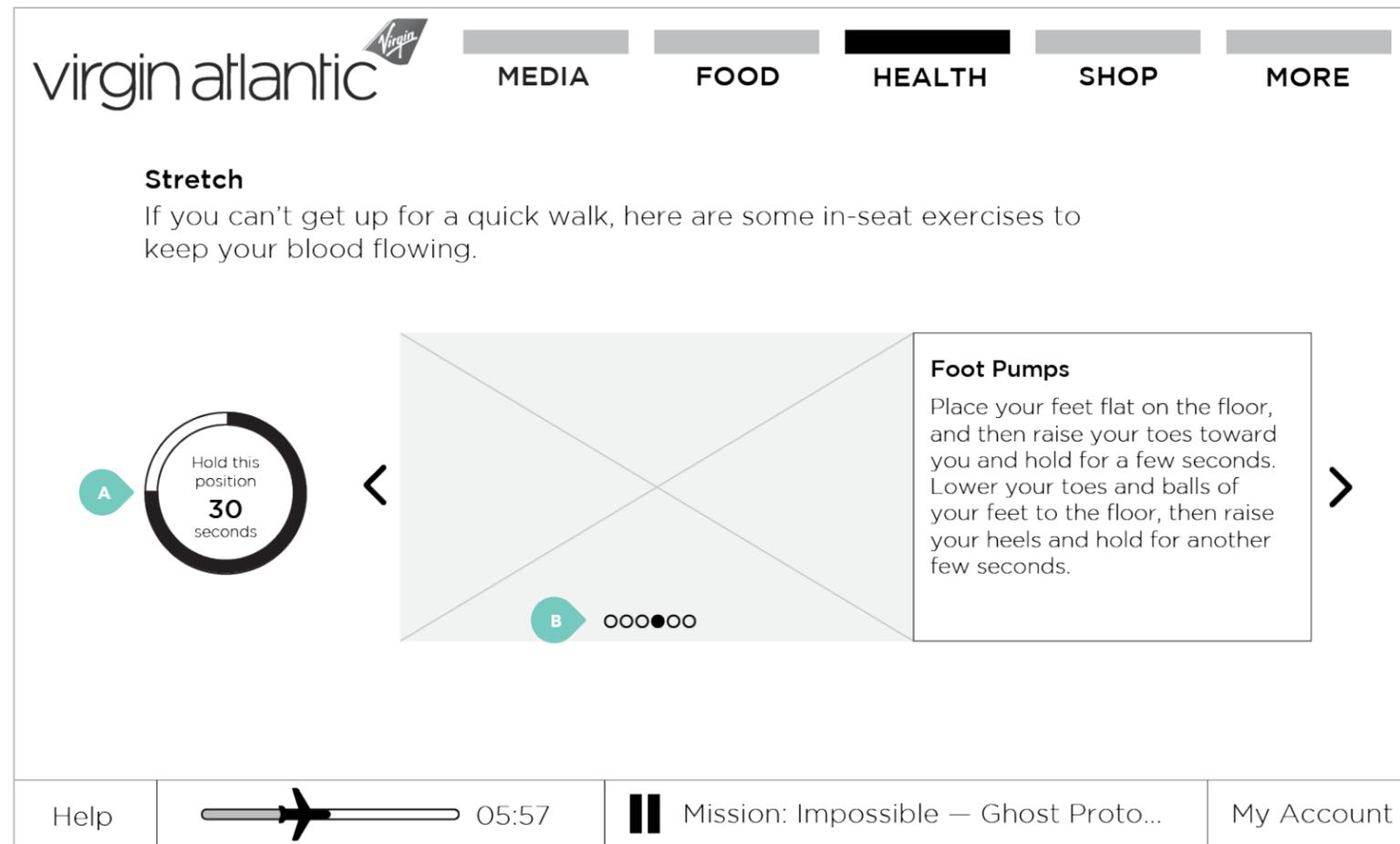
A. Displayed are beverages previously ordered by passenger.



2.1 – Beverages, detail



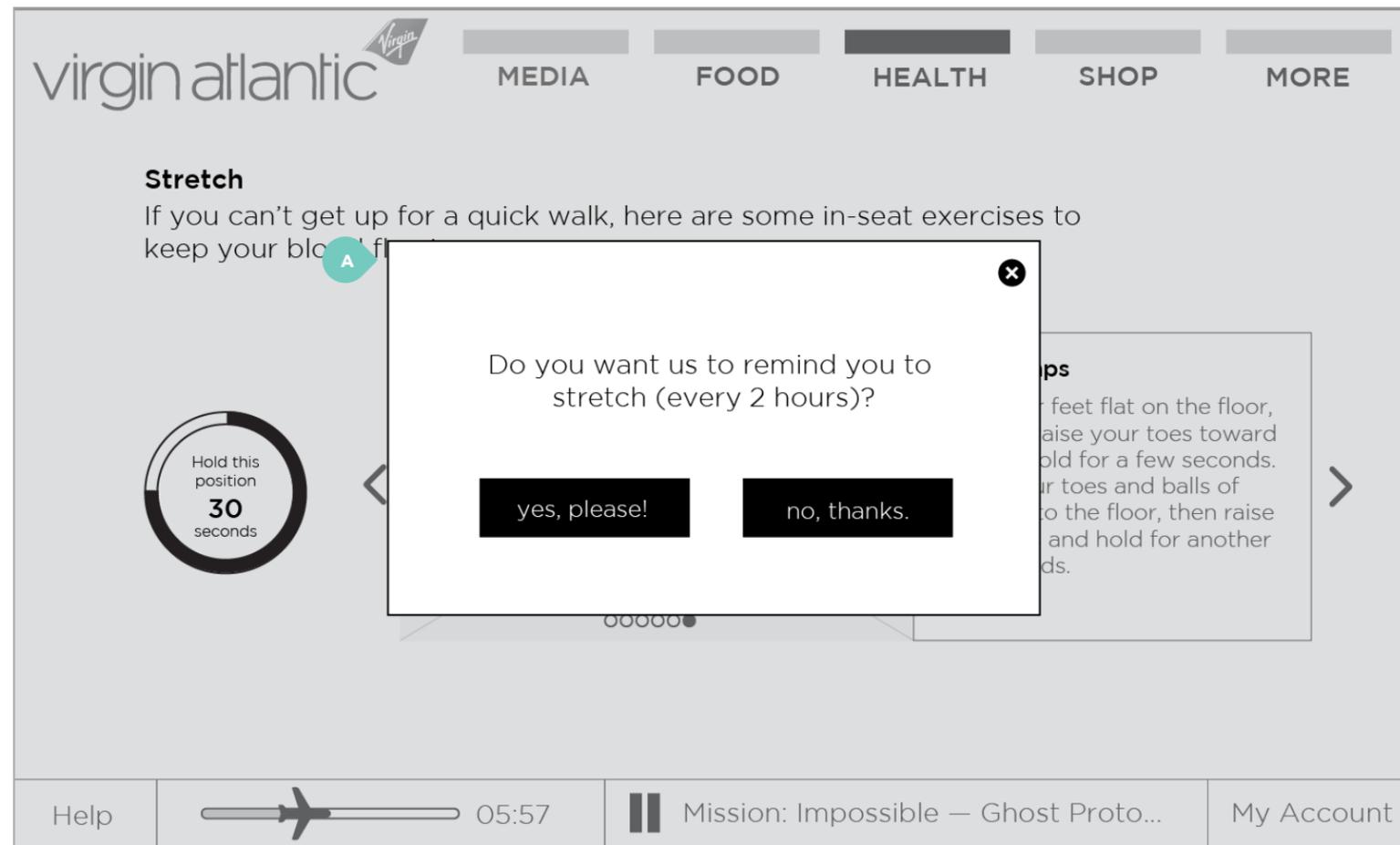
2.1 – Beverages, confirmation



### 3.1 – Stretch

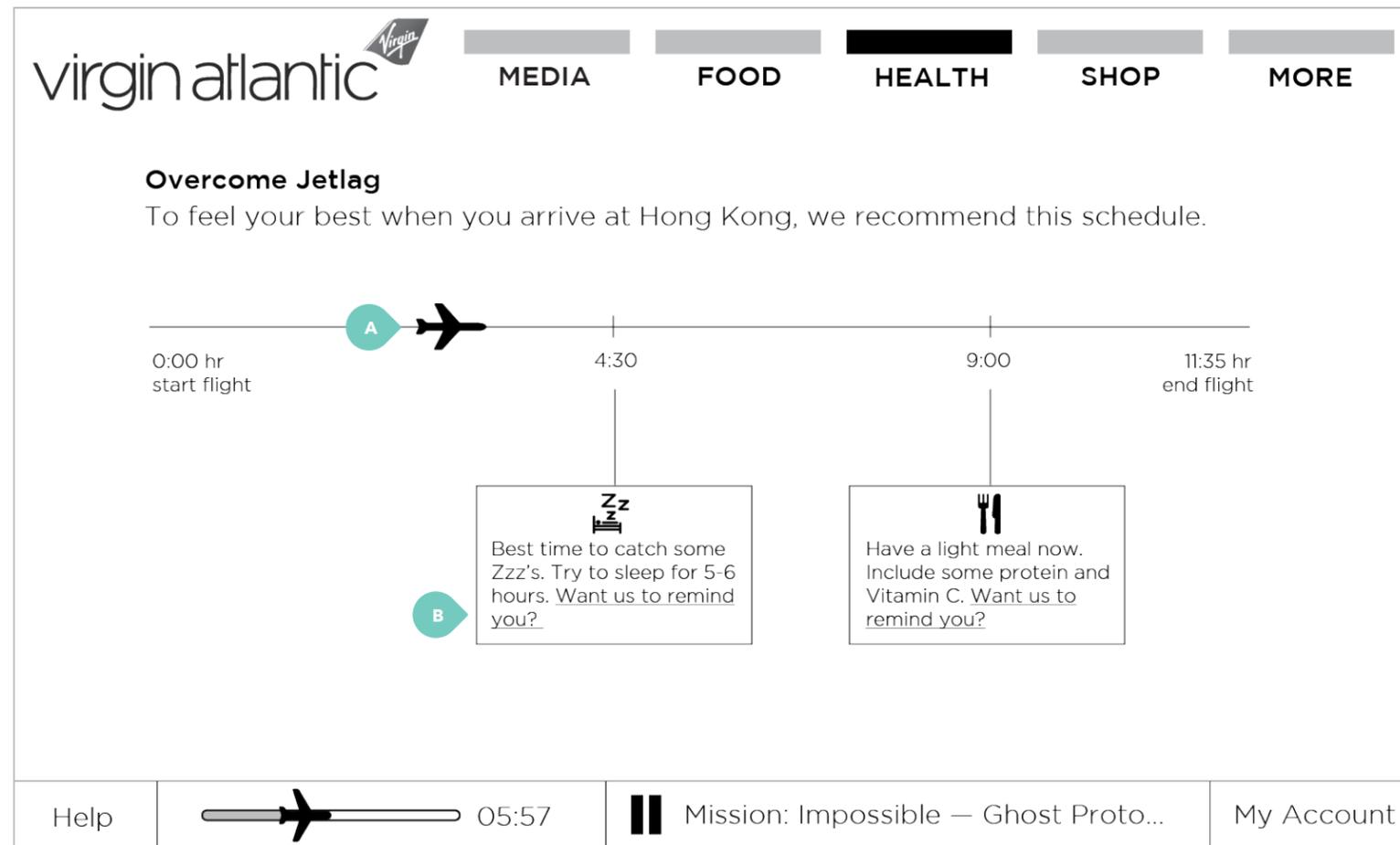
A. Timer counts down in real time.

B. Breadcrumbs display how many stretches are in the set. Stretches are displayed in an image slider.



### 3.1 – Stretch reminder

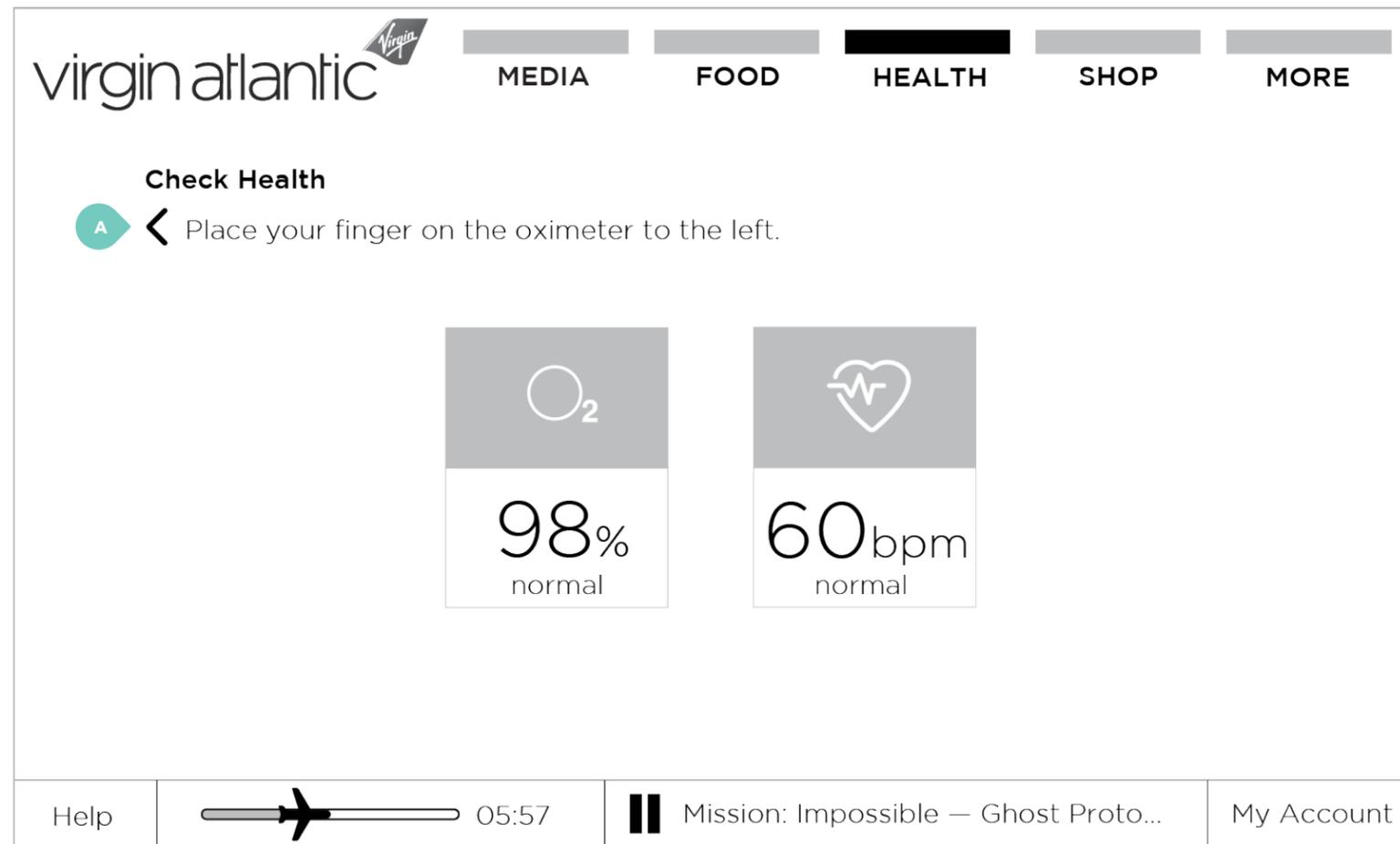
A. When passenger reaches end of image slider, modal appears and asks whether passenger wants to set a reminder.



### 3.2 – Overcome jetlag

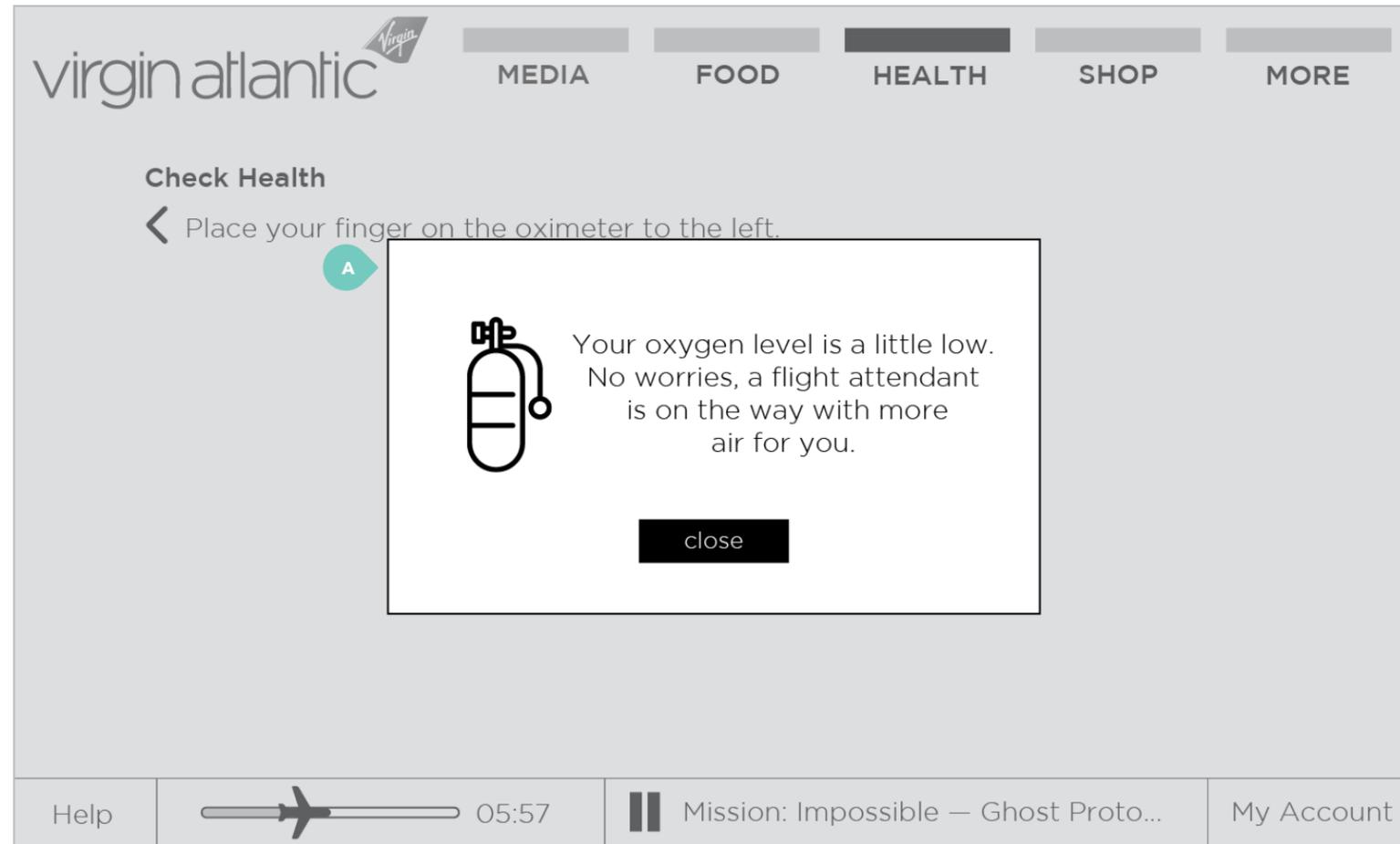
A. Plane moves in real time, representing flight progress. Meal and sleep suggestions are generated based on time zones and human circadian rhythms.

B. If passenger chose to set a reminder, a modal appears on screen with reminder to sleep or order a meal.



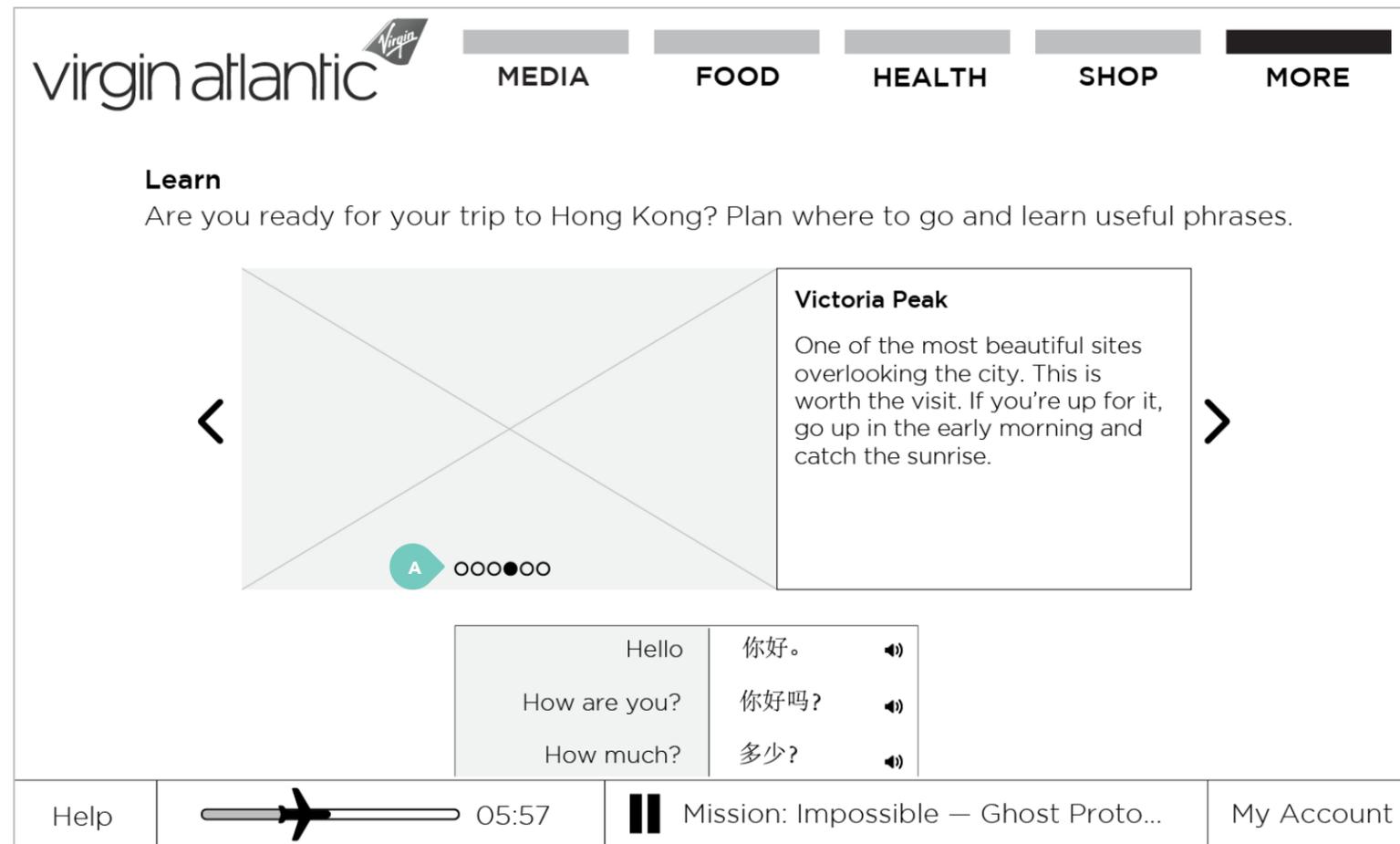
### 3.3 – Check health (1 of 2)

A. Prompt for passenger to place finger on oximeter, which is to the left of the screen.



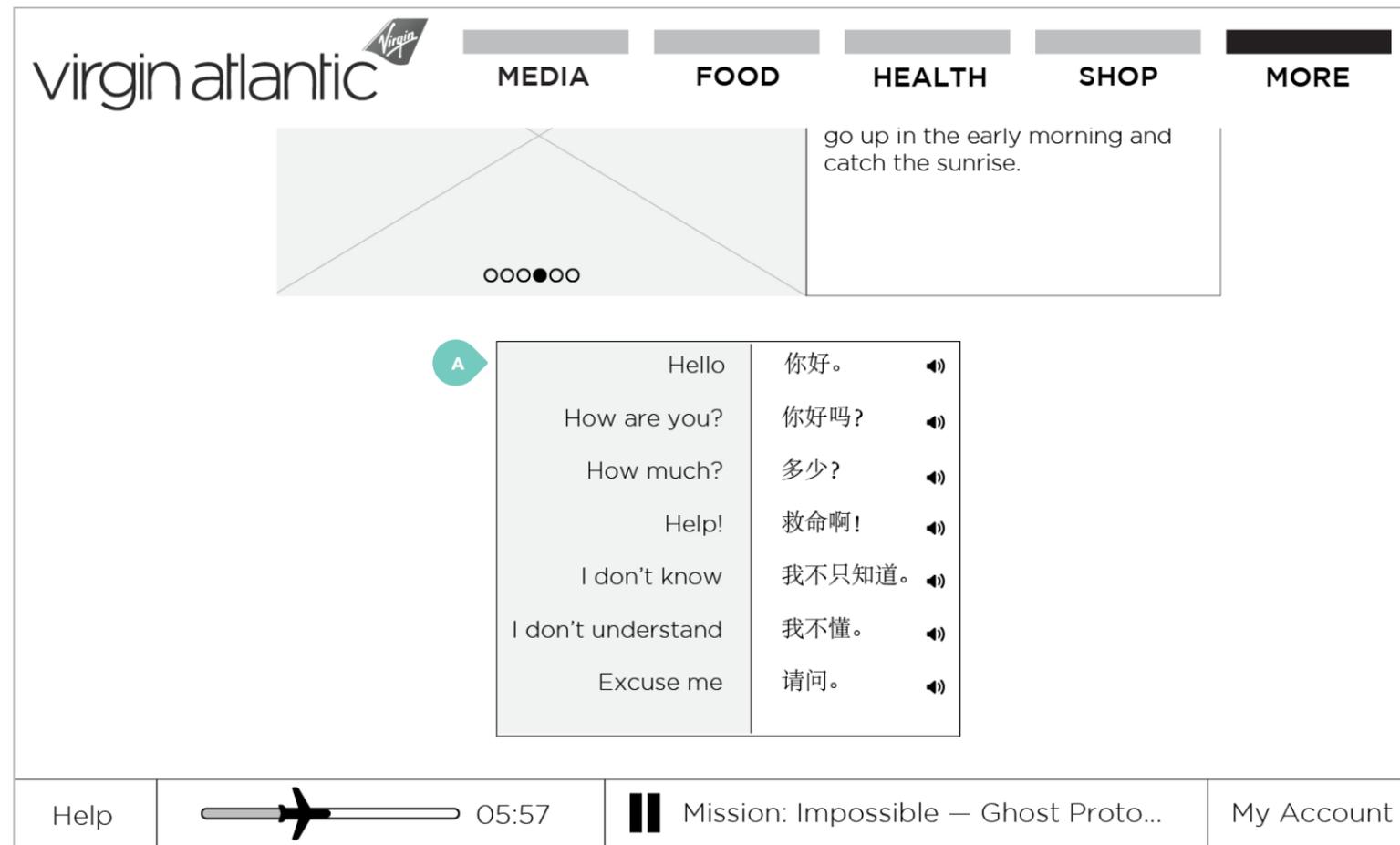
### 3.3 – Check health (2 of 2)

A. If passenger's oxygen level is below 90 percent, the Red system pings the In-Flight Team Tablet. A crew member will deliver a personal oxygen tank. If the crew member does not arrive in five minutes, the overhead oxygen mask will drop.



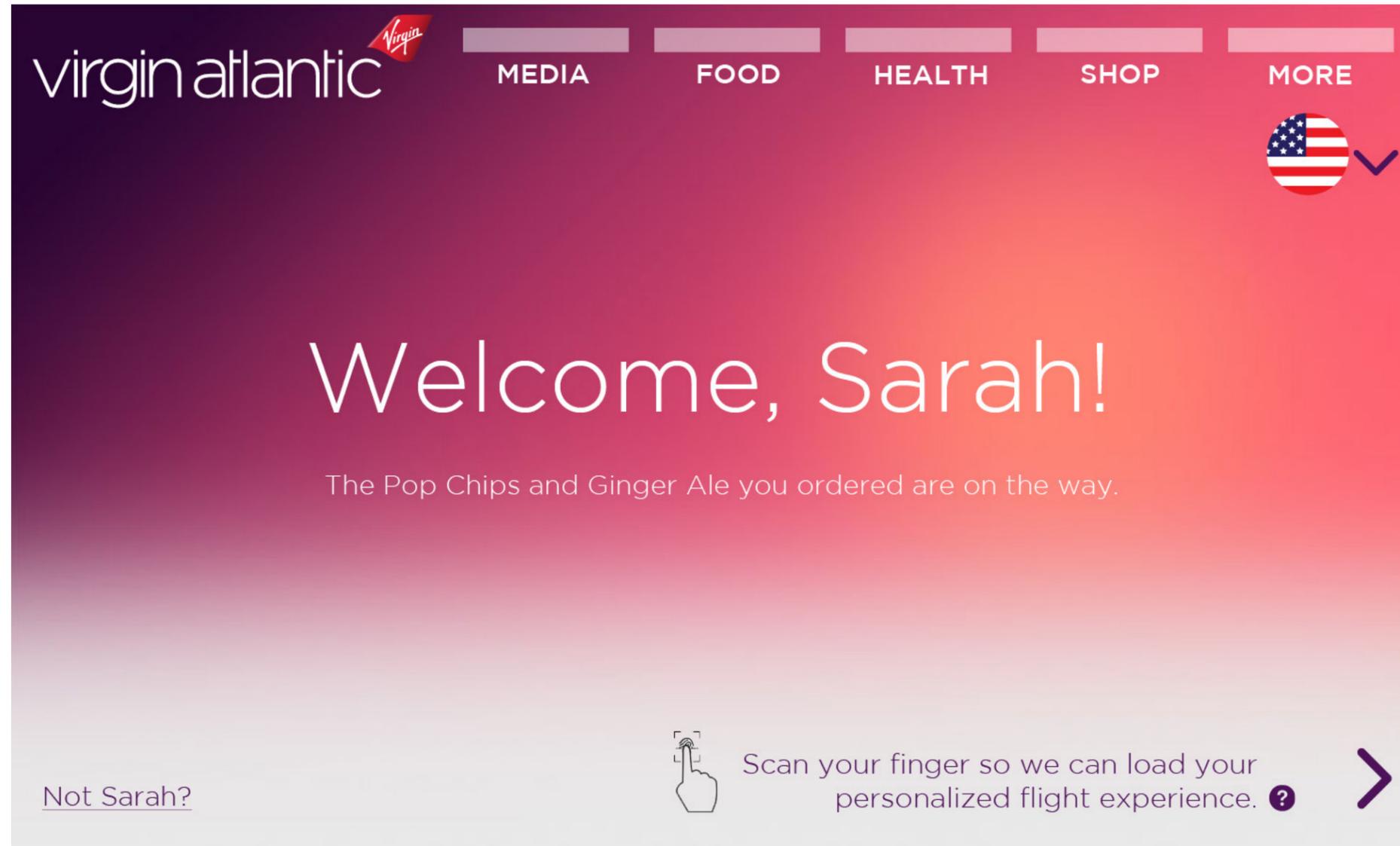
## 5.2 – Learn (1 of 2)

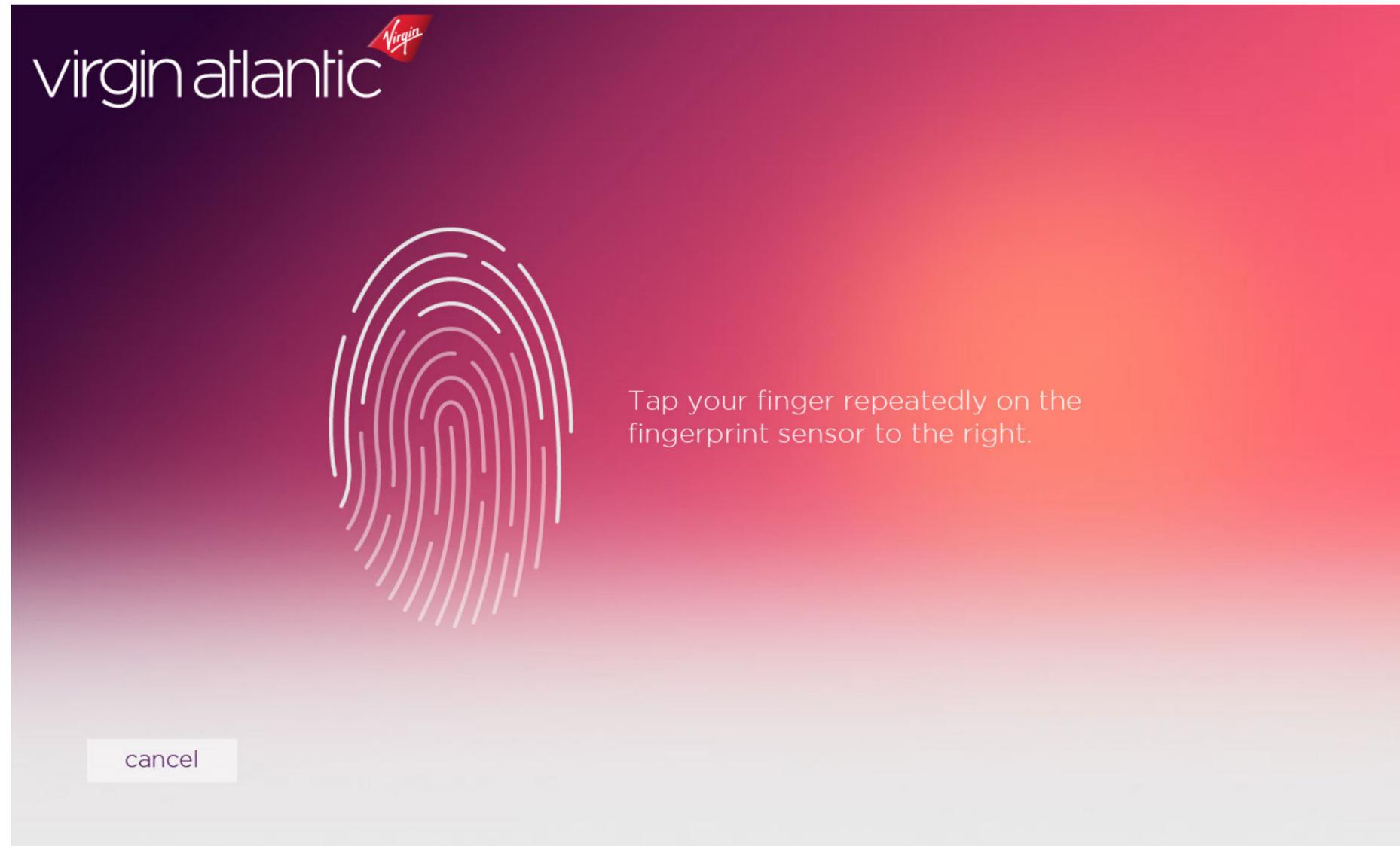
A. Breadcrumbs signal number of items in set. Content displayed is dependent on the final destination of the passenger.



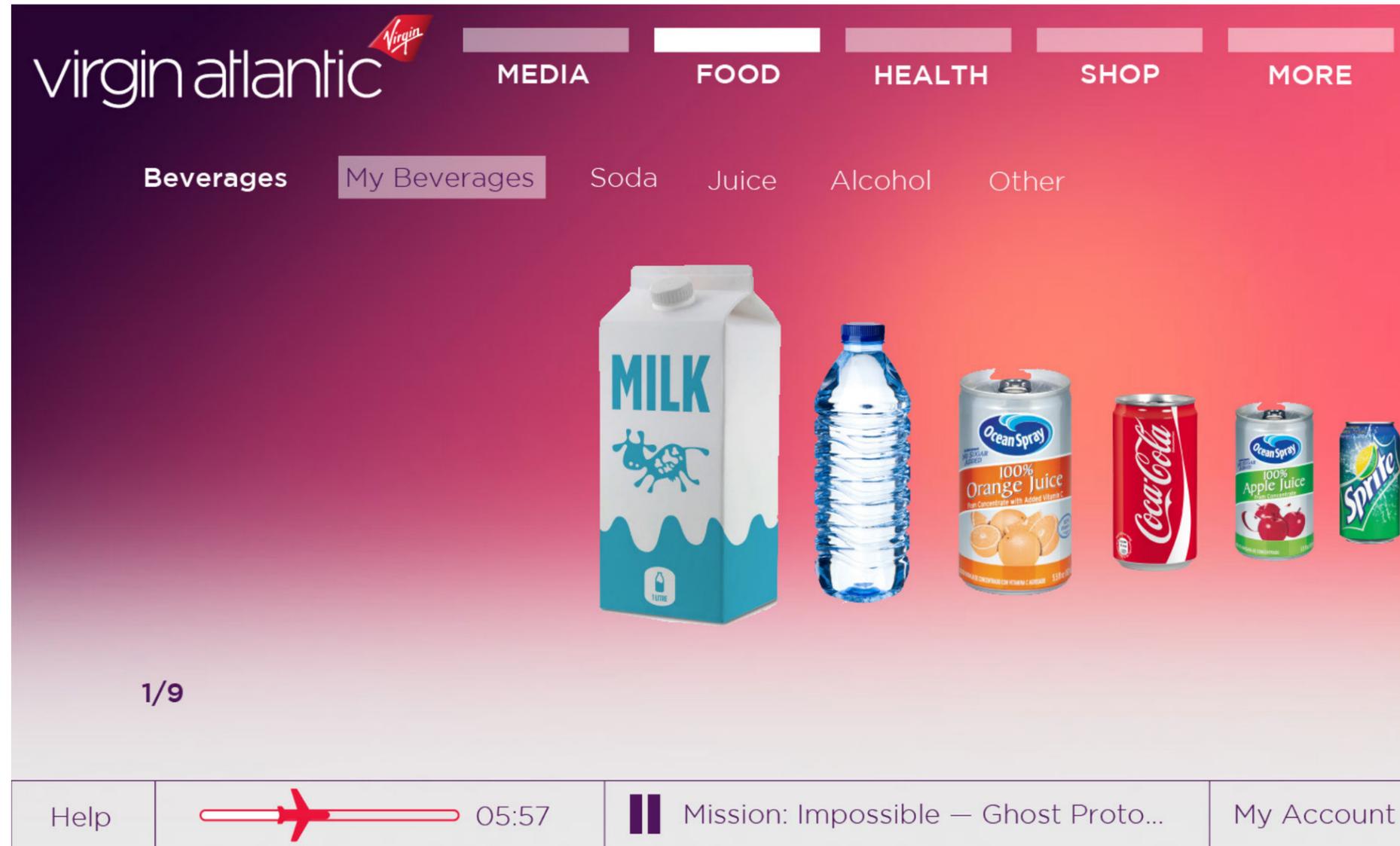
## 5.2 – Learn (2 of 2)

A. Language lesson updates based on passenger's final destination. Passengers can tap sound icon to hear pronunciation.

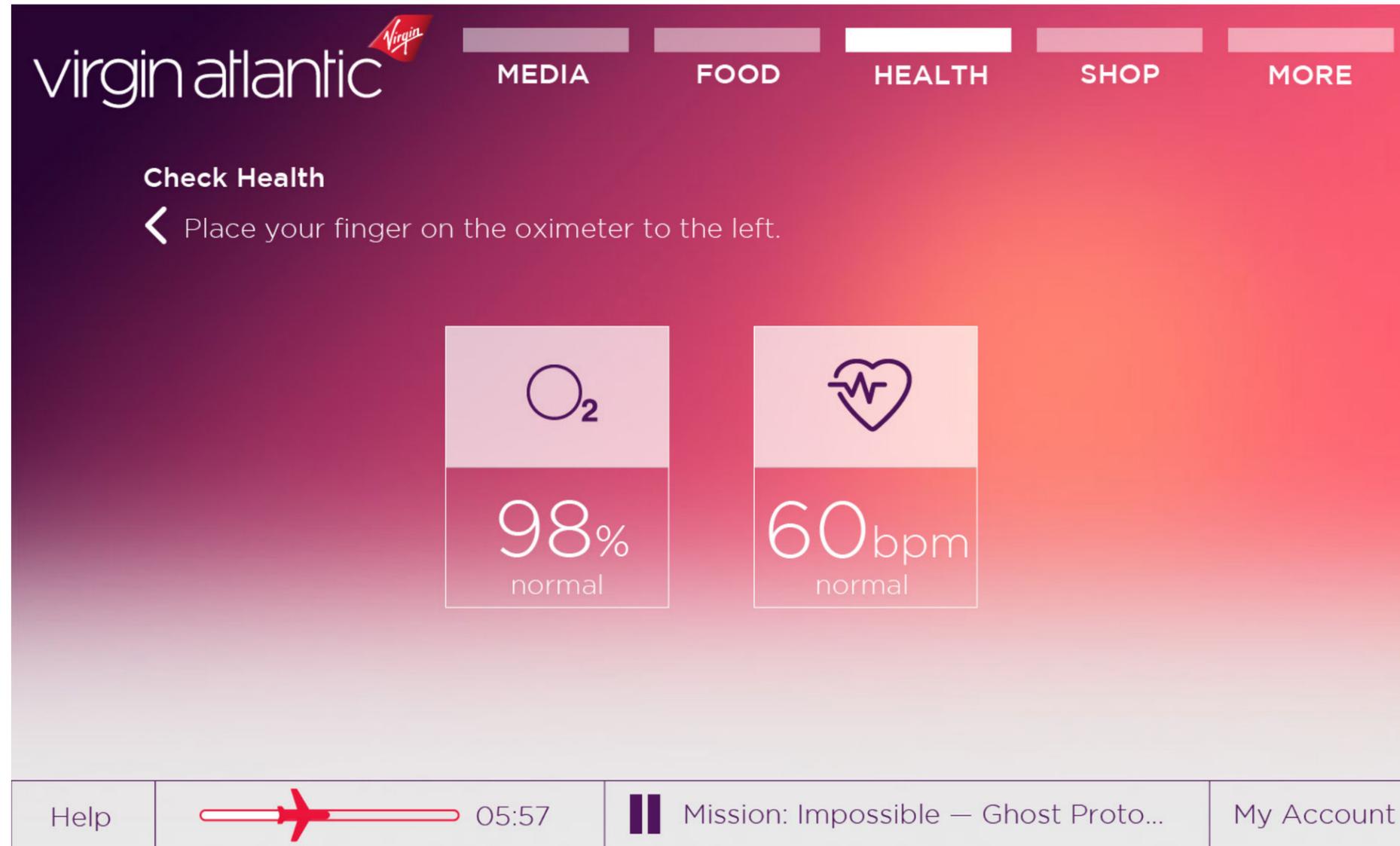




RED / graphic overlays (3 of 5)



RED / graphic overlays (4 of 5)



The screenshot displays the Virgin Atlantic website interface with a dark red gradient background. At the top left is the Virgin Atlantic logo. A navigation bar contains five tabs: MEDIA, FOOD, HEALTH, SHOP, and MORE. The main content area is divided into three columns. The left column features three sections: 'Sarah Jia' (Red Member, 50 points), 'My Itinerary' (LHR to HKG, 11h 35m flight), and 'Health' (with icons for a brain and a heart). The middle column lists 'My Beverages' (Orange Juice, Ginger Ale), 'My Snacks' (Pop Chips, Pringles), and 'My Entrees' (Chicken Salad, BLT, Cobb Salad), each with an 'order' button. The right column shows 'Recommended Movie' (The Martian), 'Recommended TV' (The Big Bang Theory), and 'Recommended Album' (Yeezus - Kayne West), each with a 'watch now' or 'listen now' button. A bottom bar includes a 'Help' link, a progress indicator with a red airplane icon and '05:57' duration, a play button, the text 'Mission: Impossible - Ghost Proto...', and a 'My Account' link.

# SOLUTION 3: IN-FLIGHT TEAM TABLET

virgin atlantic 	BOARDING PASS
SOLUTION NAME: TABLET  A device to allow the In-Flight team to streamline their workflow.	3

# TABLET / business analysis

## Problem

Passengers often complain of poor service on board the flight. But it is difficult for flight attendants and cabin crew members to keep track of all passenger needs and requests. They are bombarded with requests during mealtimes and at the beginning of the flight. This leads to **slower** service and higher chance for **errors**.

## Solution

The In-Flight Team Tablet is a place where the In-Flight team can keep track of all service operations.

When passengers place orders on Wally during check-in, the orders are transmitted to the Tablet, and In-Flight team members are able to prepare orders ahead of time and be able to serve passengers faster and more efficiently.

The Tablet is also linked to the passenger's account on the Red system. The Tablet displays a seat chart and pulls up passenger accounts, previous orders, and itineraries. In addition, if a passenger's oxygen level reads below 90 percent, an alert on the tablet notifies crew members. There's also an alert for when passengers activate the call button.

## In-Flight Team Tablet solves

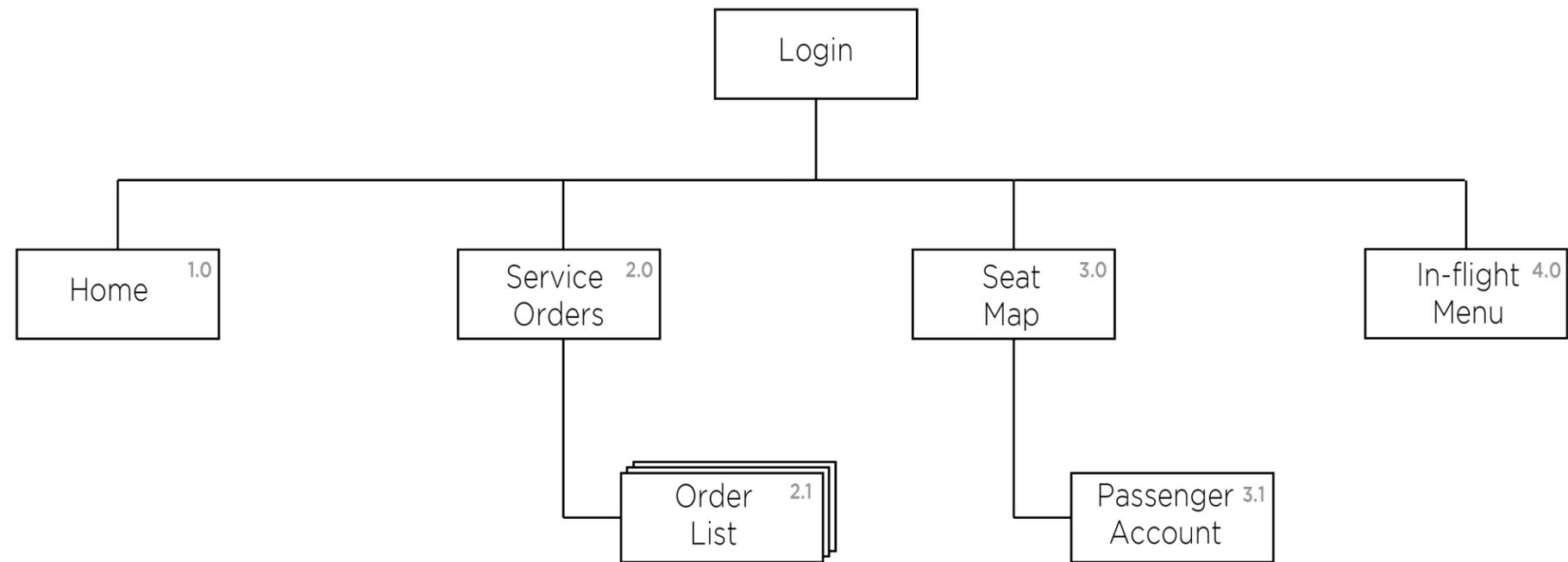
- Personalization
- Health
- Efficiency

## Hardware

- Asus MeMo pad 7 (6 per flight)
- Asus Quick Holster (6 per flight)



There will be six tablets on each international flight. The tablets are meant to be taken on-the-go as the cabin crew serves the passengers.



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# TABLET / feature set

## 0.0 Log In

### 1.0 Home (part of bottom-level navigation)

A. Plane diagram is divided into cabin class sections: Upper Class Premium Economy, and Economy. Users can tap to see more.

B. Current flight information appears in upper left on screen.

### 2.0 Service Orders (part of bottom-level navigation)

A. Pre-flight orders.

- Passengers can pre-order beverages and food when they check in using Wally.
- Pre-flight orders are directly linked to tablet.
- Pre-flight orders appear at top of screen as priority.
- Passenger seat number and image appear with order.
- Once an order is complete, In-Flight team member taps “Served” and order disappears.

B. In-Flight Orders.

- Placed below Pre-Flight Orders.
- Visually organized the same way as Pre-Flight Orders.

C. Top-level navigation allows In-Flight team members to select:

- Upper Class.
- Premium Class.
- Economy Class.

### 3.0 Seat Map (part of bottom-level navigation)

B. For passenger without account:

- Tappable icons representing passengers are shown.

- Tapping on a specific passenger seat takes user to passenger’s account page.
- If passenger provided dietary and medical information, the icons are color coded accordingly.
- Service alerts have a red border.
- Orders pending have a white background.
- Color key displayed above seat map for reference.

### 3.1 Passenger Accounts

A. Non-Established Passenger Account.

- When passenger checks in at Wally, the passenger’s itinerary and general identifying information is pulled into a generic account page.
- Passenger’s name, member status (if applicable), and seat number appear at top of account page.
- View Itinerary button: When tapped, a modal appears with passenger’s current flight information. Option to select Returning, which refreshes modal with passenger’s return flight information.
- Current Orders button will display badge with number of orders passenger has made.
- Current Orders links to Service Orders page.

B. Established Passenger Account.

- Image, name, member status (if applicable), and seat number appear at top of page.
- If passenger gave medical and dietary information during account set up, badges are displayed.
- Links placed next to badges are labeled Medical Info and Dietary Info.
- When links are activated, modal appears with more relevant information provided by passenger.
- Passenger account has both View Itinerary and Current Order buttons, which function the same as for a non-established user account.

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## TABLET / feature set, cont.

- View Previous Flights activates modal with map of passenger's last six itineraries.
- View Service Order History activates modal listing passenger's previous orders. Numbers represent how many times each item was ordered.
- If passenger purchased tickets for multiple people under his/her name, passenger icons appear at bottom linking to their accounts. Passengers' seat numbers are listed below the icon.

### 4.0 In-Flight Menu (part of bottom-level navigation)

A. Button available in the bottom-level navigation and links to menu pages. Top-level navigation includes:

- Beverages
- Snacks
- Entrees

B. Menu items are displayed on the screen

- Menu items are broken up by section.
- Menu items are displayed with image of item, name, and cost (if applicable).

### Alerts

A. Call Button Alert

- When call button is activated at passenger's seat, a banner message appears on top of any active page notifying In-Flight team member.

B. Oximeter Alert

- If passenger measures oxygen level with oximeter on Red seatback system and it reads below 90 percent, an alert will be sent to tablet and interrupt current activity.
- Modal will display passenger's seat number, name, and the oxygen reading.



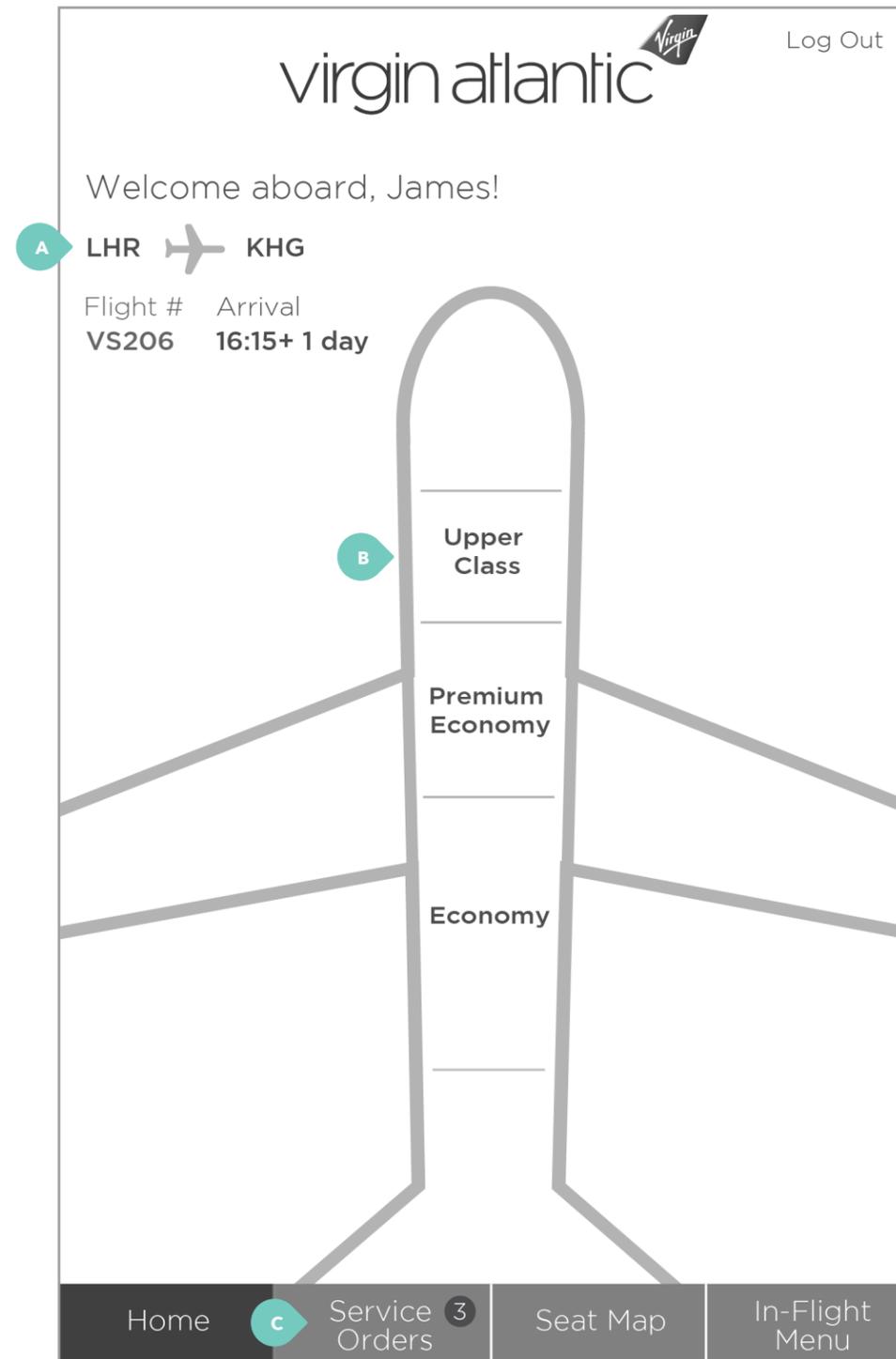
Employee ID:

Password:

Let's Fly!

0.0 – Login

## TABLET / wireframes (2 of 15)



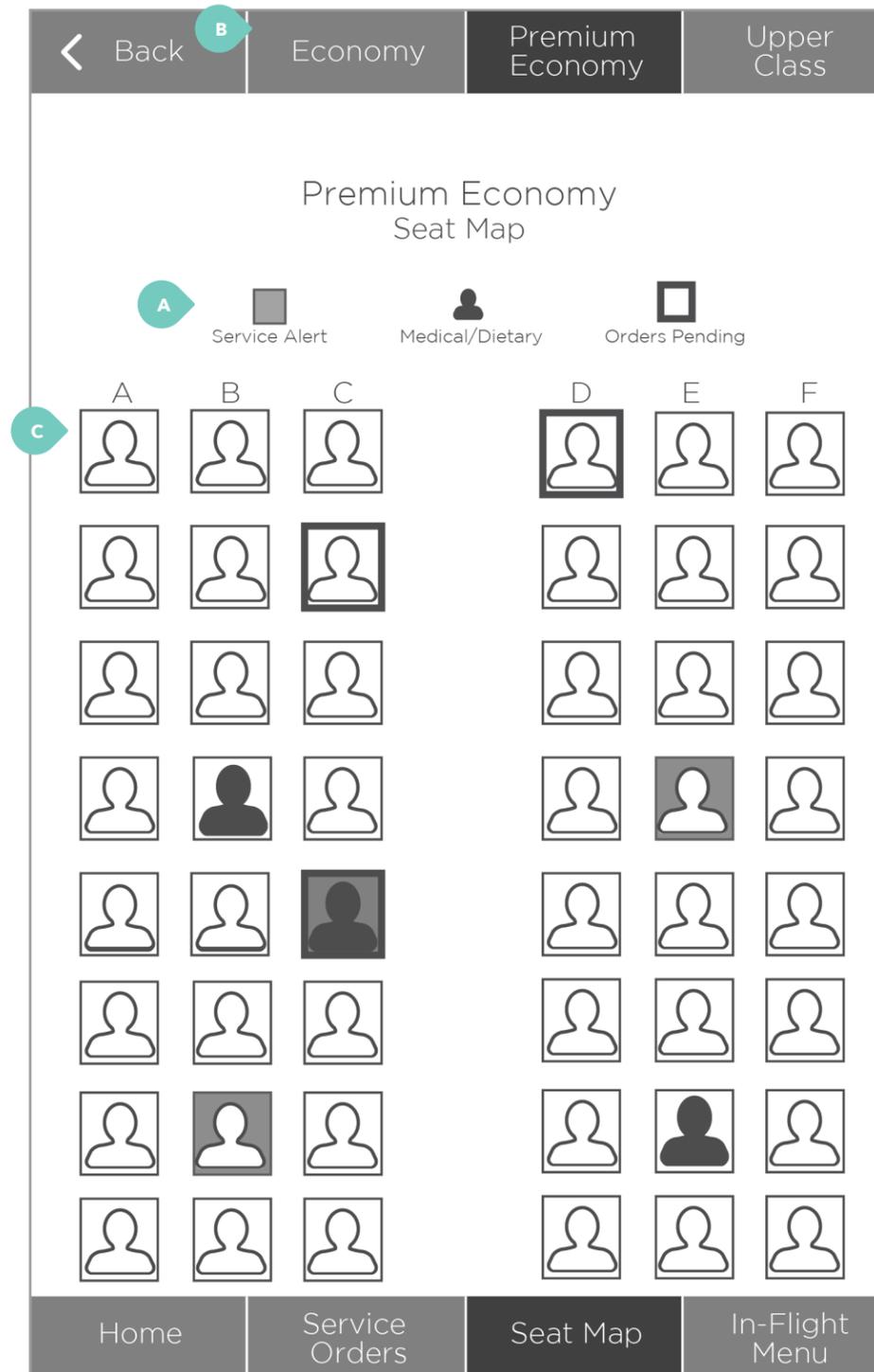
### 1.0 – Home

A. Current flight information.

B. In-Flight team member can tap into a particular cabin for more specific passenger information.

C. “Service Orders” links to passenger’s pre-flight and current orders page. Number badge updates in real time as passengers place orders.

## TABLET / wireframes (3 of 15)



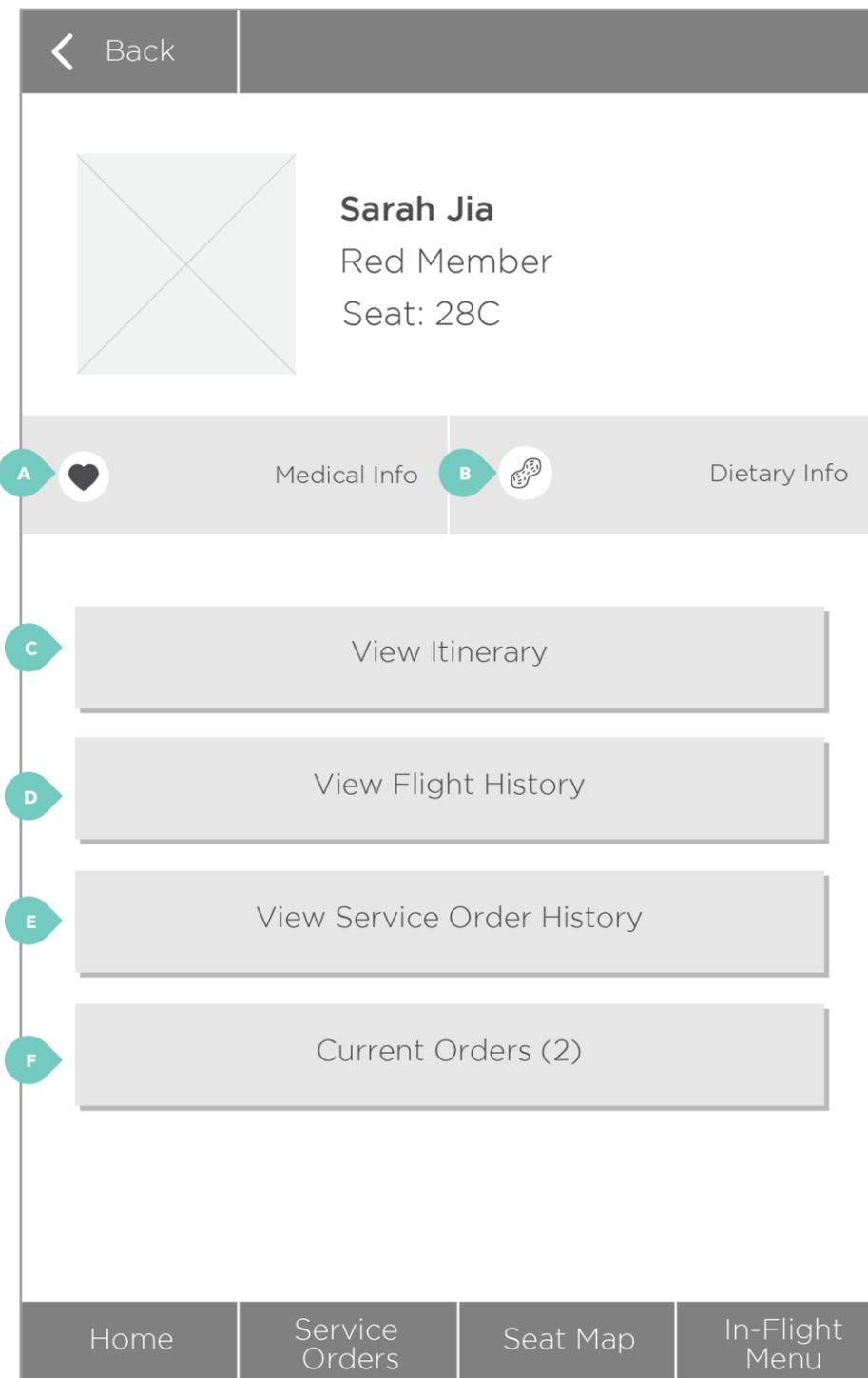
### 3.0 – Seat map

A. Information key.

B. Crew members can toggle between different sections of the airplane to view seat map.

C. Each seat, when tapped, expands to passenger's account page.

## TABLET / wireframes (4 of 15)



### 3.1 – Established passenger account

A. Medical icons appear based on information provided by the passenger when creating the account. In-Flight team member can tap “medical info” link, which will open modal with more information.

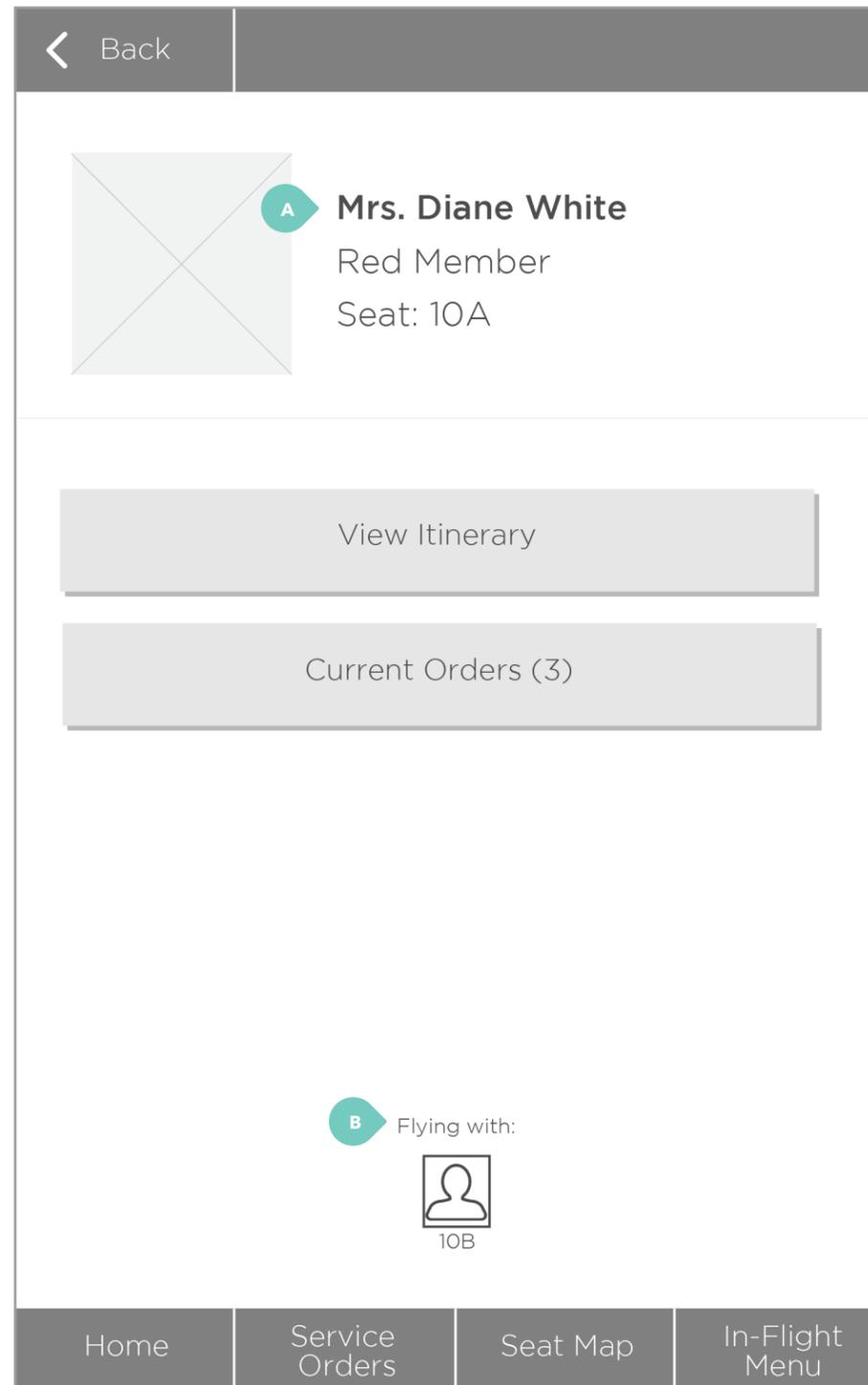
B. Dietary badges and information function the same way as A.

C. Modal appears when button is pressed to display passenger’s current itinerary.

D. Modal appears when button is pressed to display the last 6 flights passenger has been on.

E. Modal appears when button is pressed to display the passenger’s most frequently ordered items.

F. Button displays how many current orders the passenger has open. When clicked, the In-Flight team member is taken to the Service Orders page.

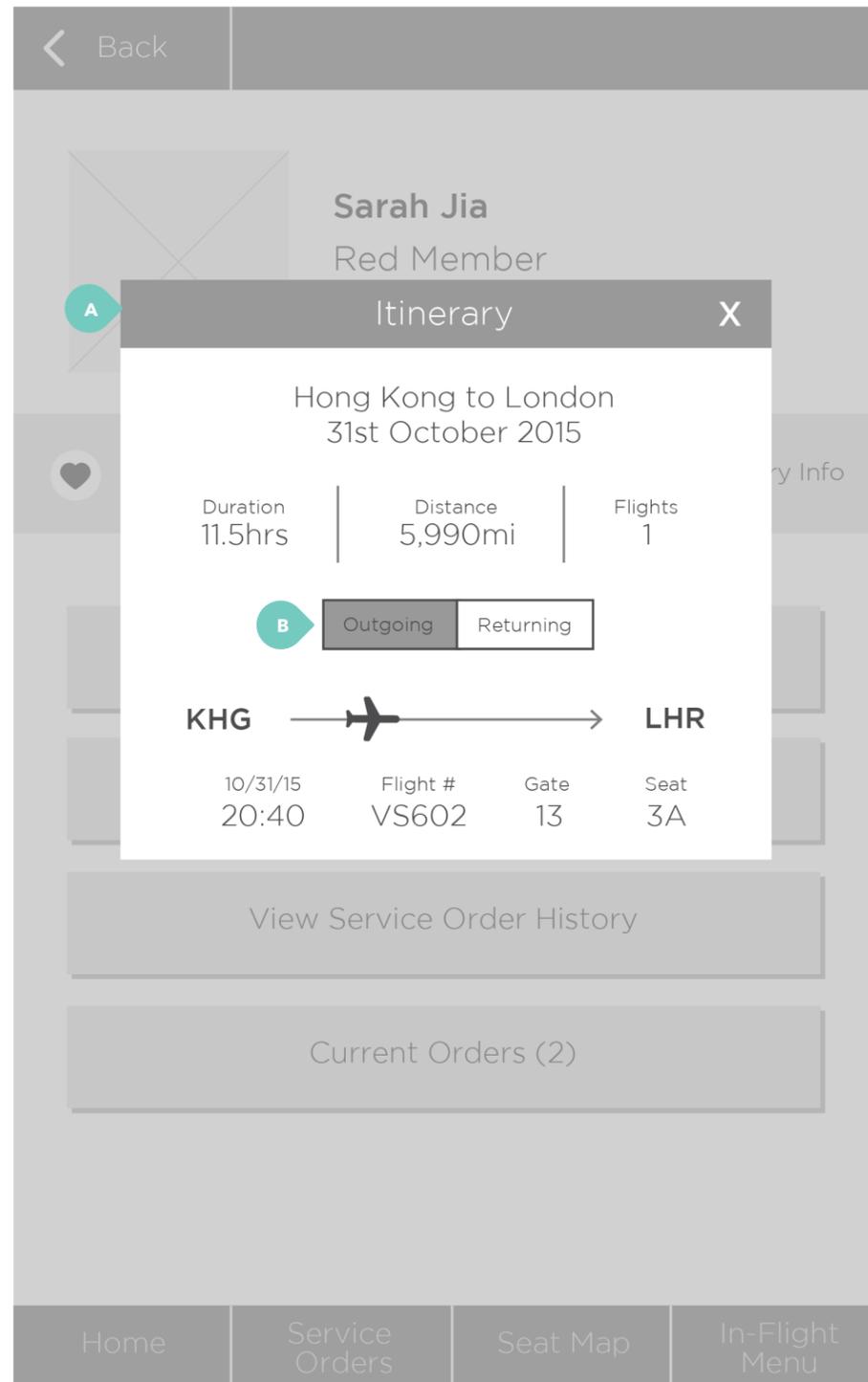


### 3.1 – Non-established passenger account

A. This page represents a user account that has not been set up and personalized by the passenger.

B. If the passenger has other members in their reservation party, the other passengers in their party appear at the bottom of their account page. When tapped, link to their accounts.

## TABLET / wireframes (6 of 15)

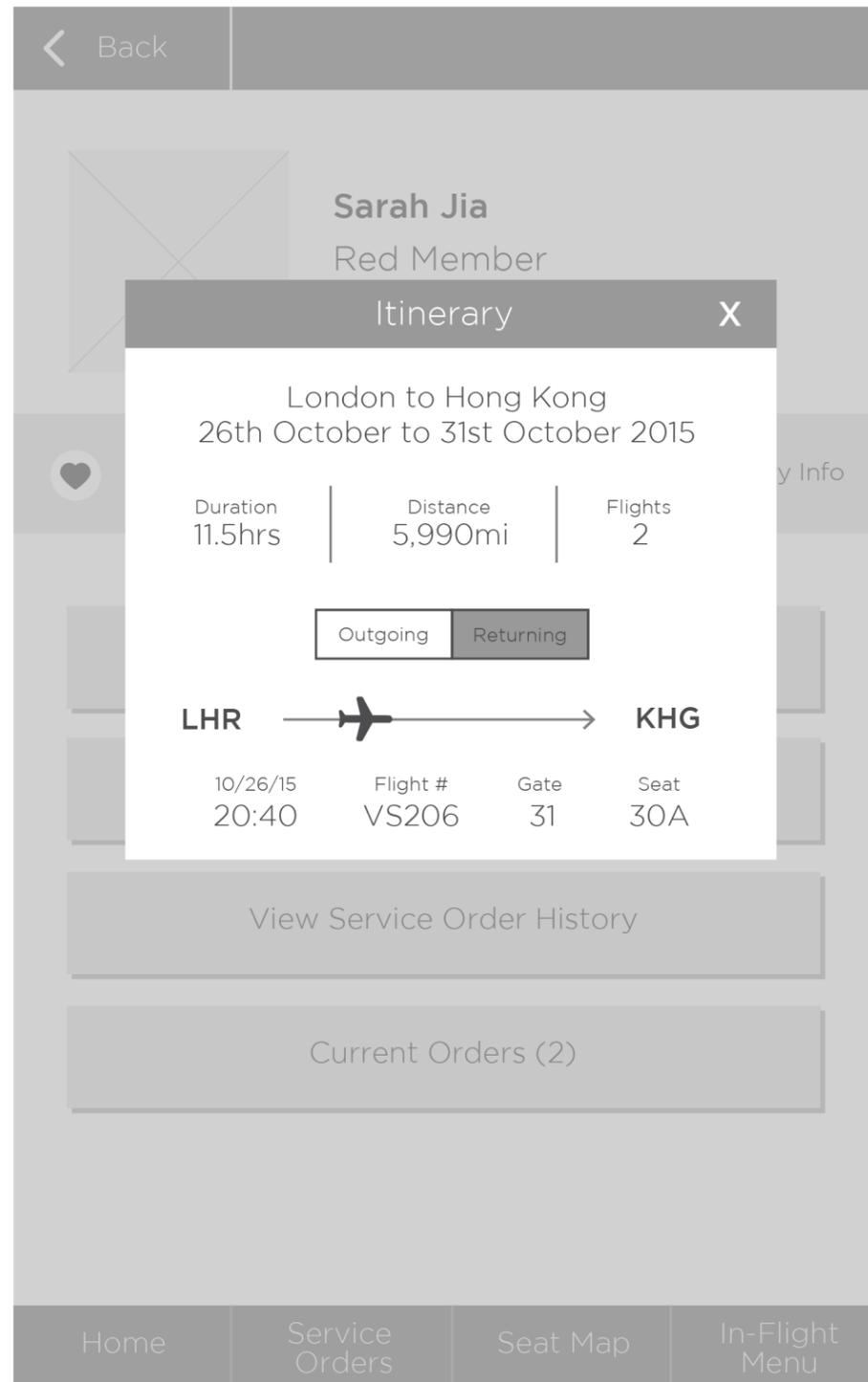


### 3.1 – Outgoing itinerary

A. Modal appears when the “View Itinerary” button is tapped on a passenger’s account page.

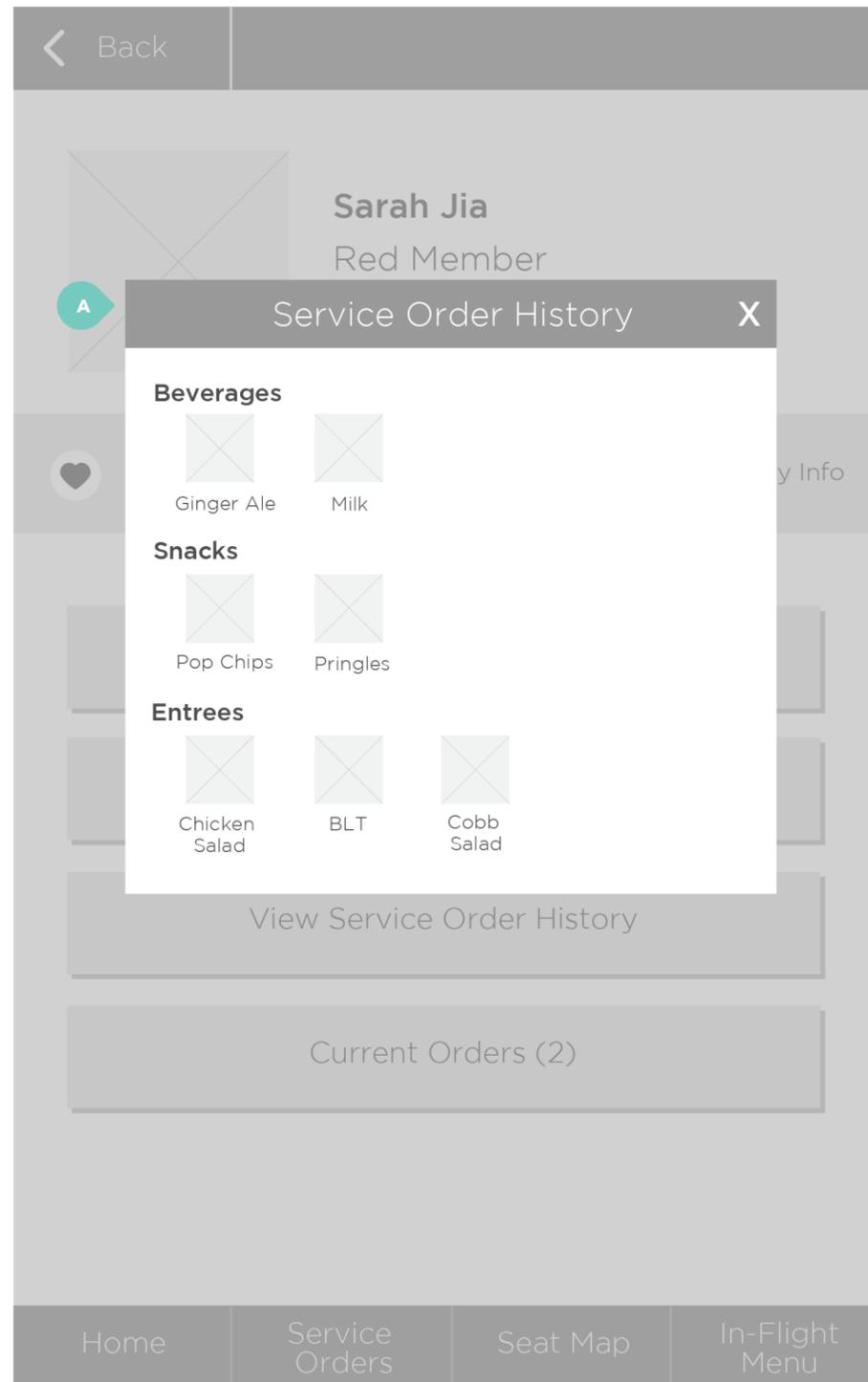
B. Toggle button.

# TABLET / wireframes (7 of 15)



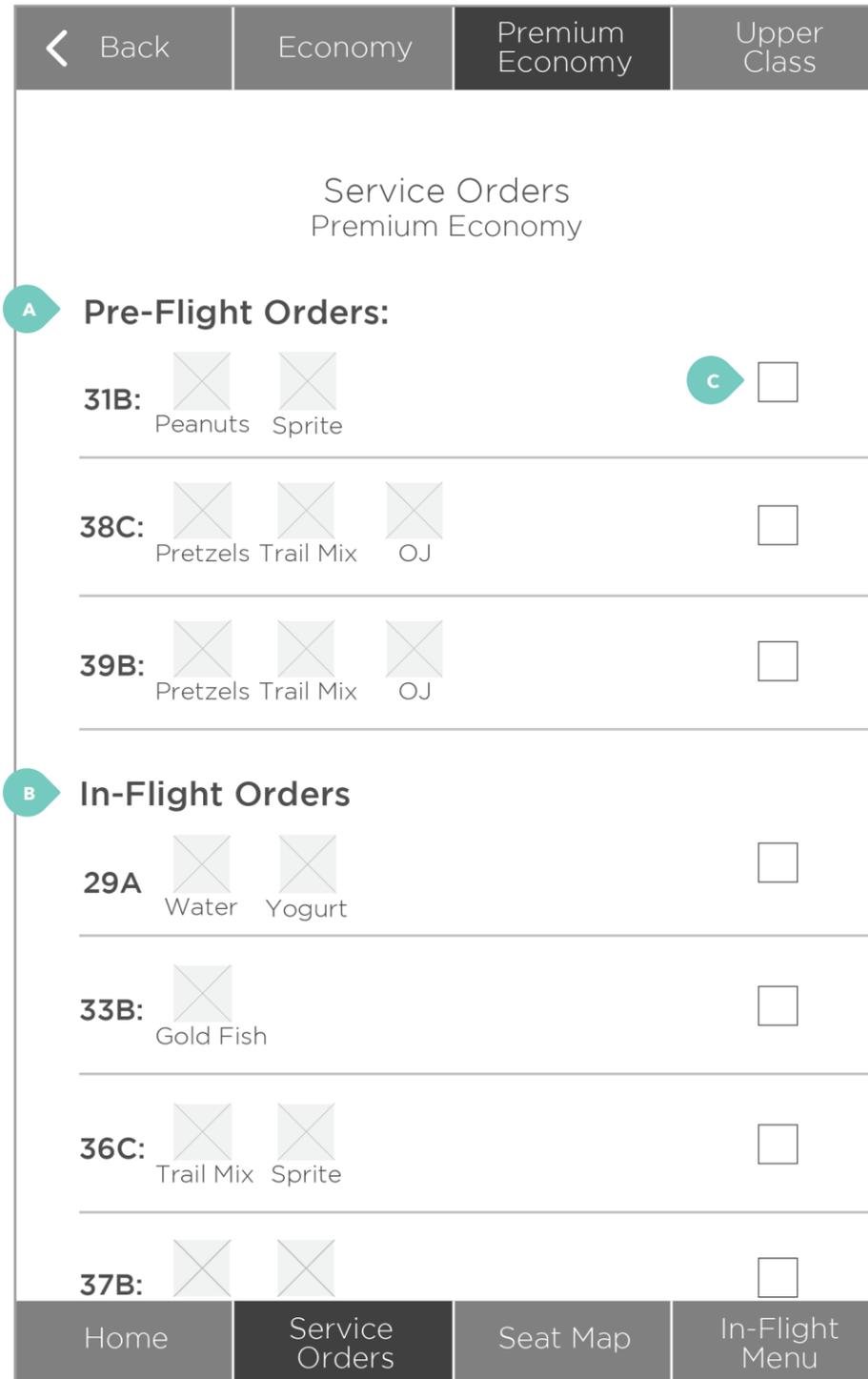
## 3.1 – Returning itinerary

## TABLET / wireframes (8 of 15)



### 3.1 – Order history

A. Modal appears when Order History is tapped on a passenger's account page. System tracks how many times a passenger has ordered items.



## 2.0 – Service orders

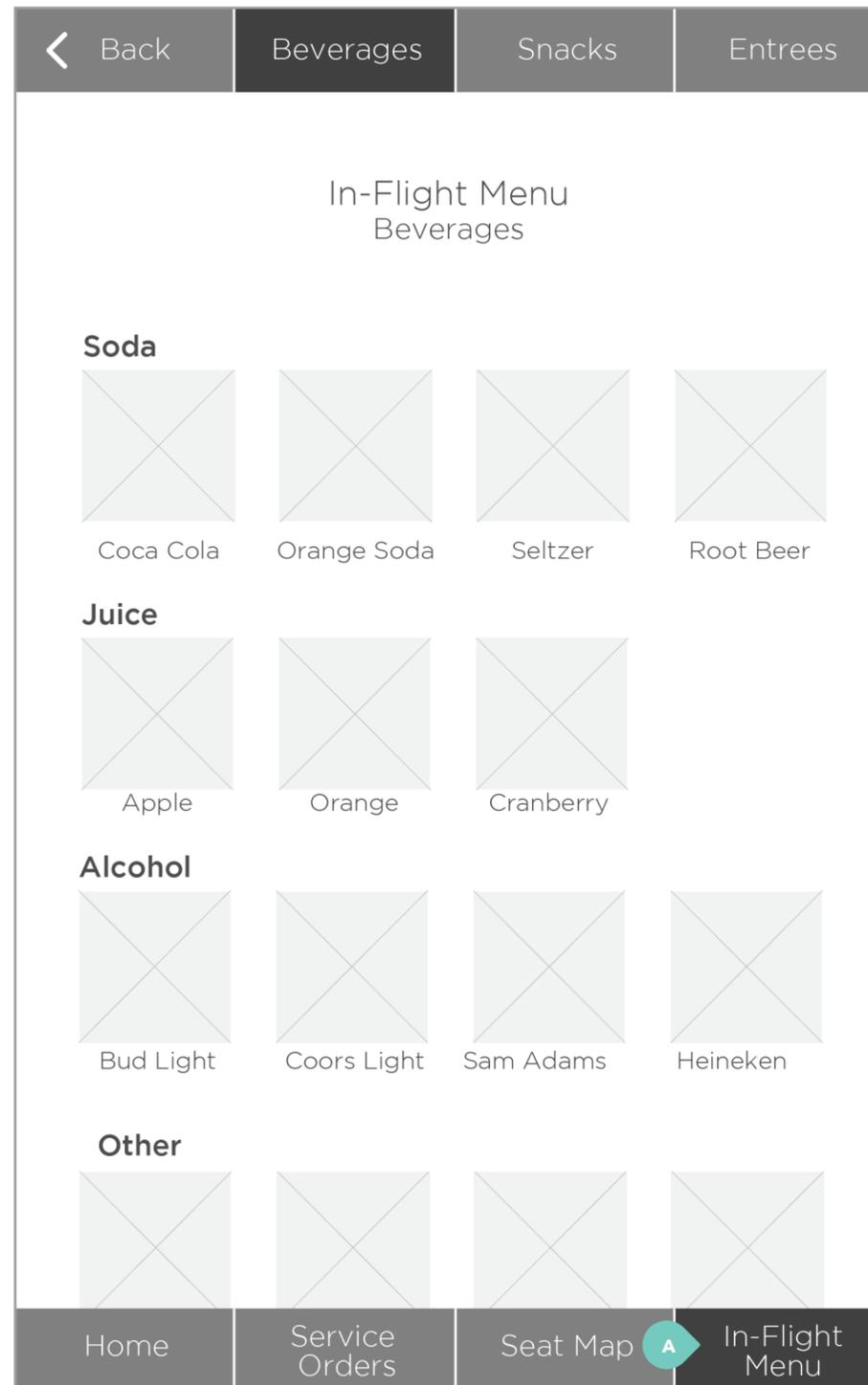
A. Pre-flight orders are made when passengers check in on Wally, which are displayed here.

B. In-flight orders are made on the passenger's Red seatback system, which are displayed here.

C. In-Flight team members check the box once they have prepared the items. The passenger's order then disappears, and the next pending order moves up.

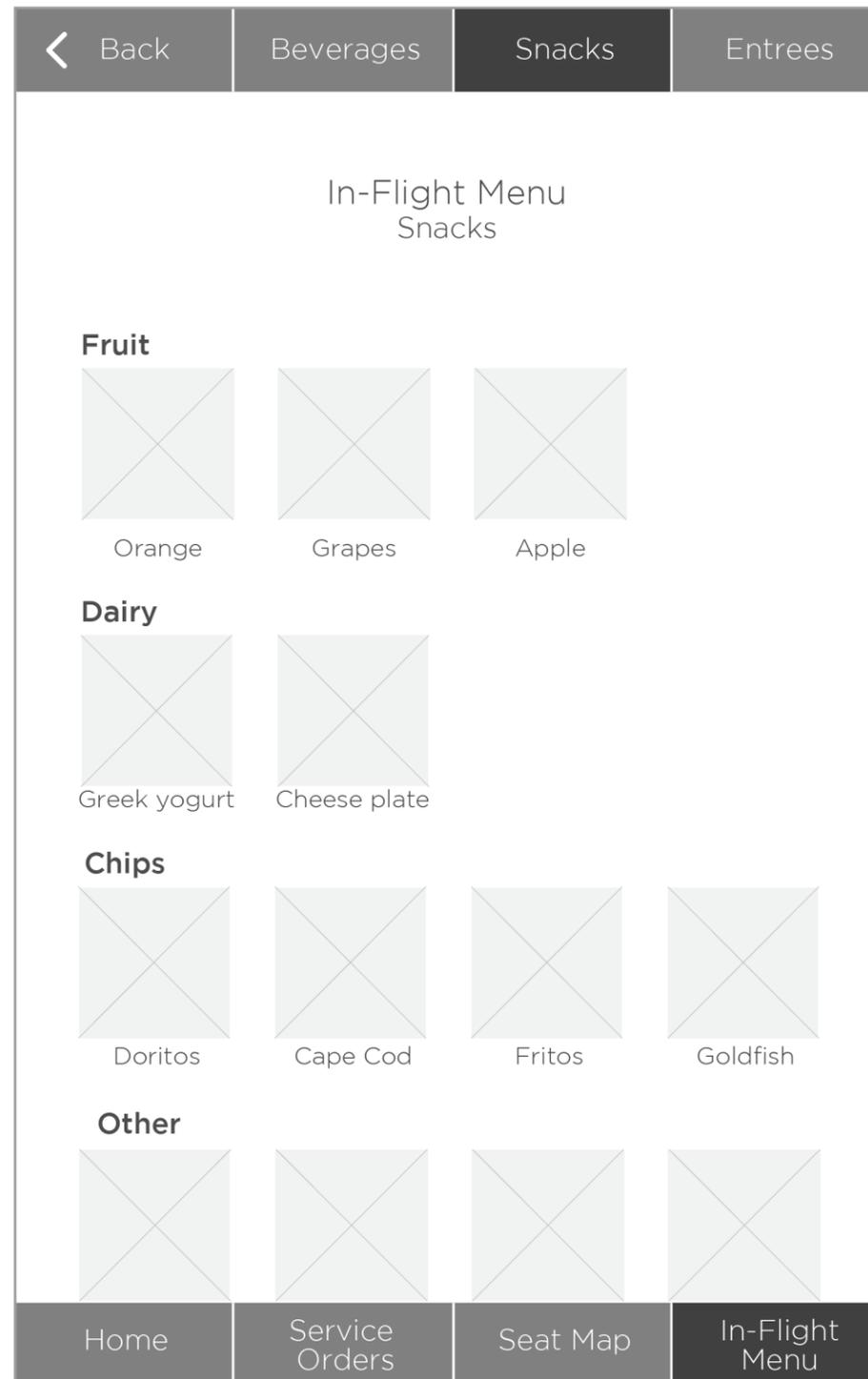
<a href="#">← Back</a>	<a href="#">Economy</a>	<b>Premium Economy</b>	<a href="#">Upper Class</a>
Service Orders Premium Economy			
<b>Pre-Flight Orders:</b>			
<b>38C</b>	<input type="checkbox"/> Pretzels	<input type="checkbox"/> Trail Mix	<input type="checkbox"/> OJ
<hr/>			
<b>39C:</b>	<input type="checkbox"/> Pretzels	<input type="checkbox"/> Trail Mix	<input type="checkbox"/> OJ
<hr/>			
<b>In-Flight Orders</b>			
<b>29A</b>	<input type="checkbox"/> Water	<input type="checkbox"/> Yogurt	<input type="checkbox"/>
<hr/>			
<b>33B:</b>	<input type="checkbox"/> Gold Fish		<input type="checkbox"/>
<hr/>			
<b>36C:</b>	<input type="checkbox"/> Trail Mix	<input type="checkbox"/> Sprite	<input type="checkbox"/>
<hr/>			
<b>37B:</b>	<input type="checkbox"/> Pretzels	<input type="checkbox"/> OJ	<input type="checkbox"/>
<hr/>			
<b>35B:</b>	<input type="checkbox"/>		<input type="checkbox"/>
<a href="#">Home</a>	<a href="#">Service Orders</a>	<a href="#">Seat Map</a>	<a href="#">In-Flight Menu</a>

2.0 – Order completed

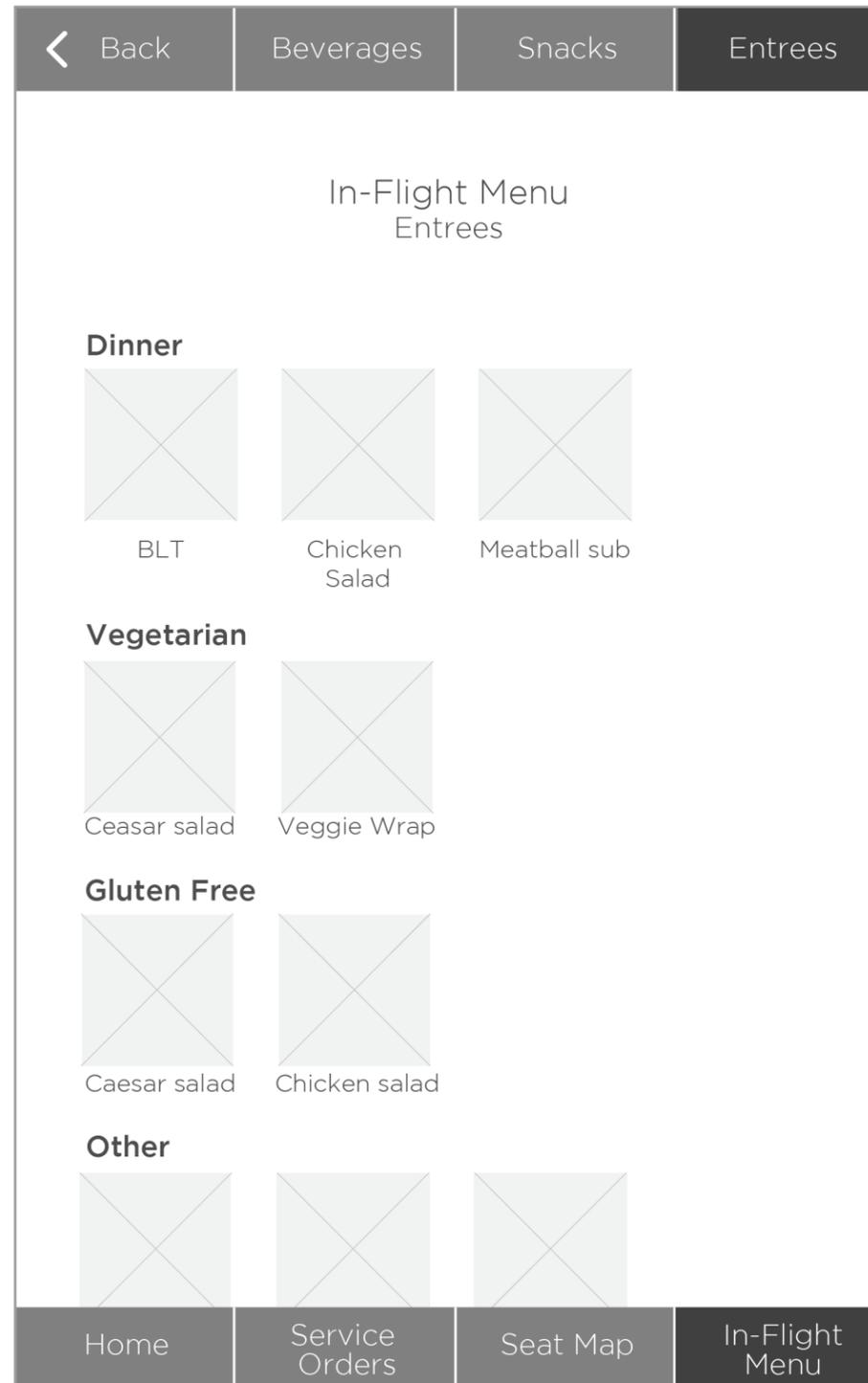


#### 4.0 – In-flight menu (Beverages)

A. “In Flight Menu” button is linked to the “Beverages” section of the flight menu. Top-level navigation allows the user to toggle between menu sections.

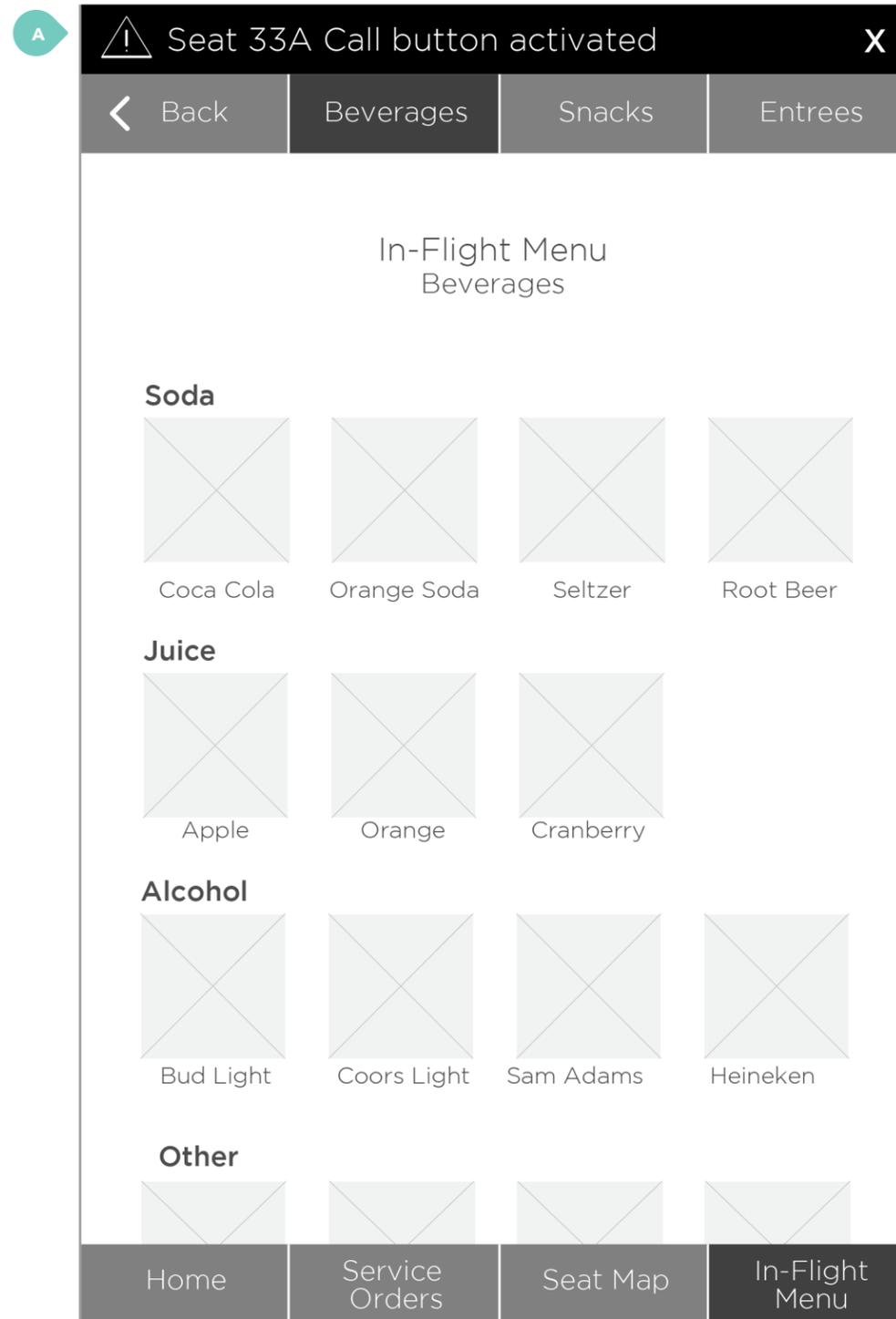


4.0 – In-flight menu (snacks)



4.0 – In-flight menu (entrees)

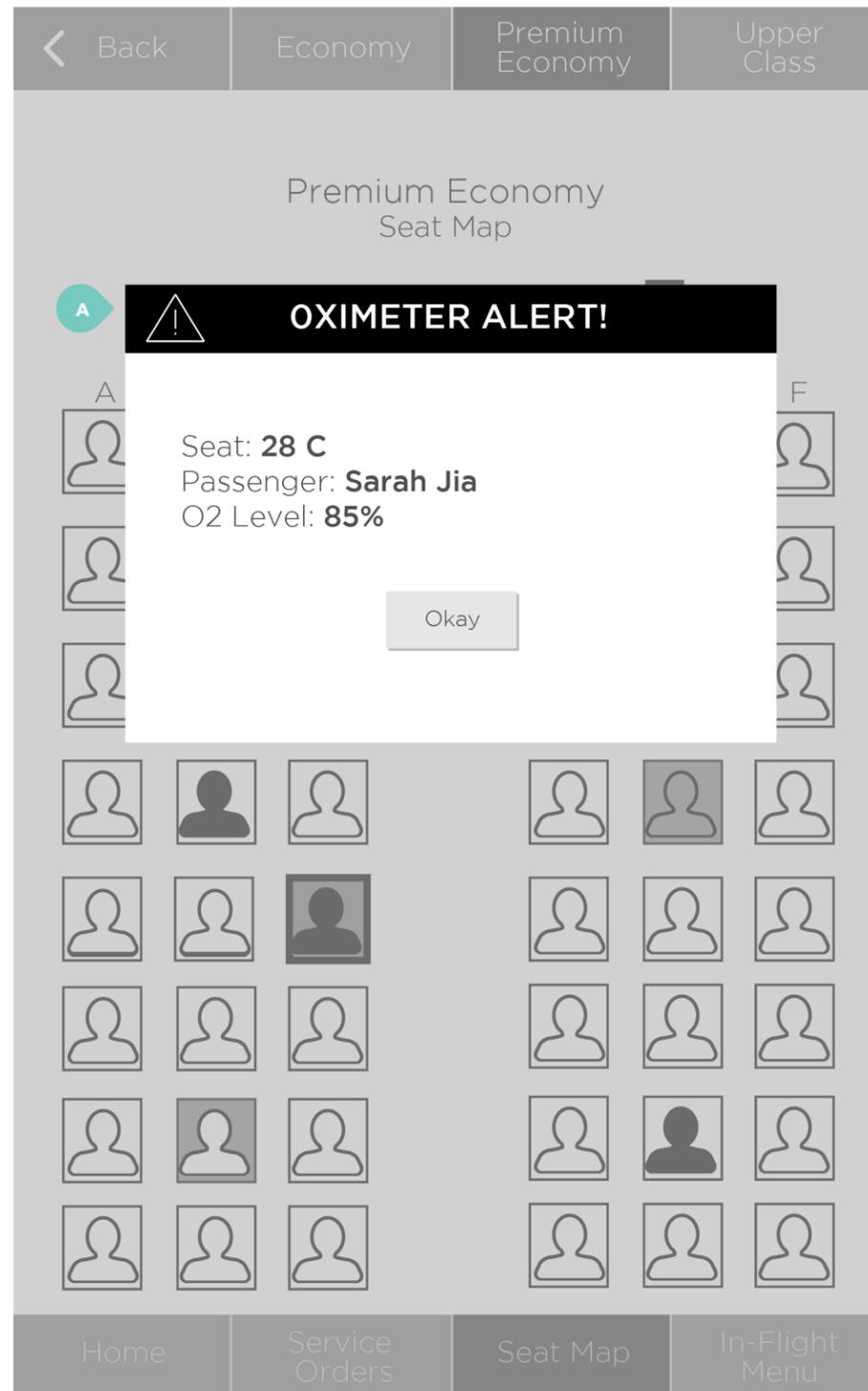
# TABLET / wireframes (14 of 15)



## Call button alert

A. Alert will appear at the top when a passenger activates call button.

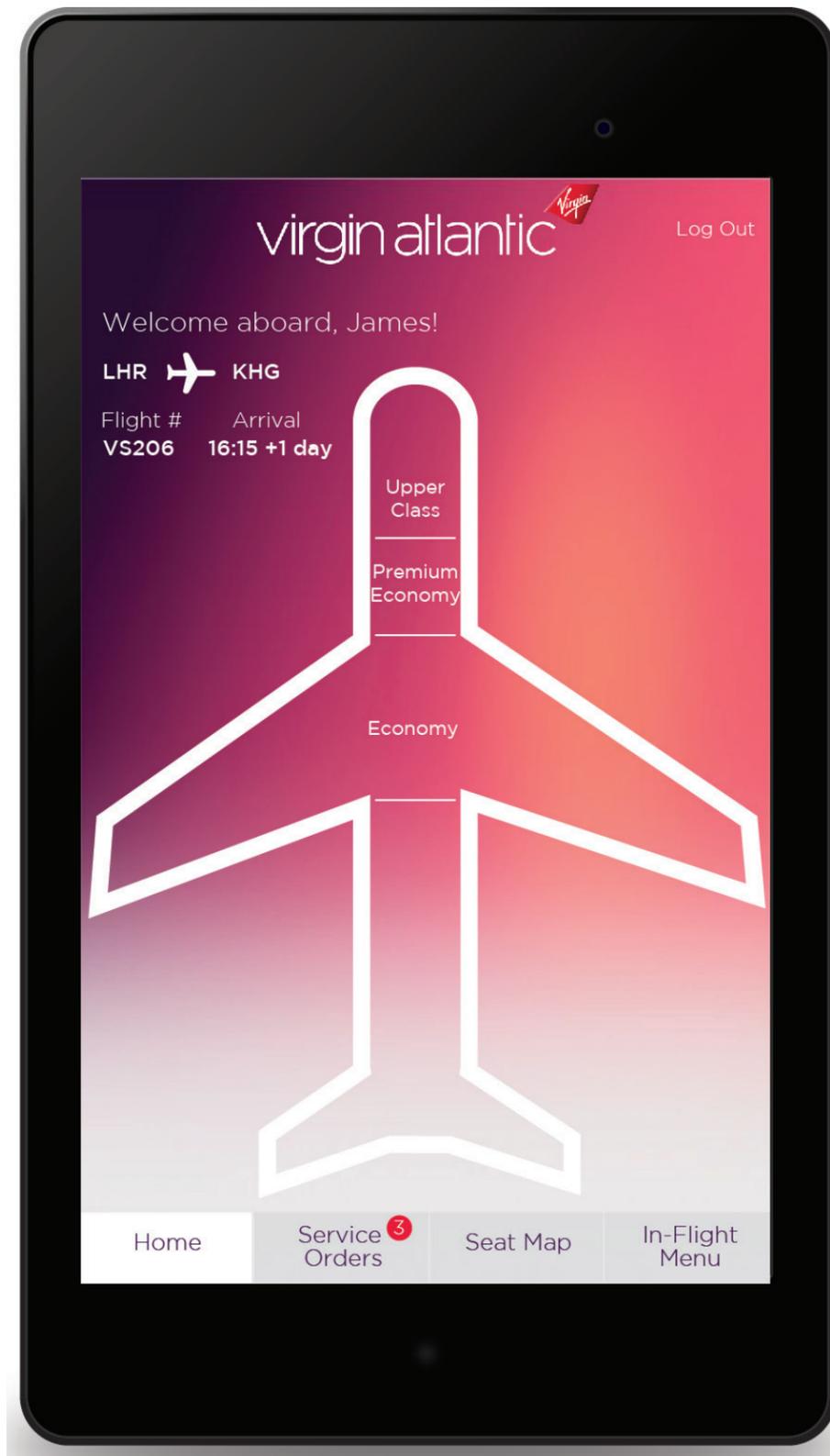
# TABLET / wireframes (15 of 15)



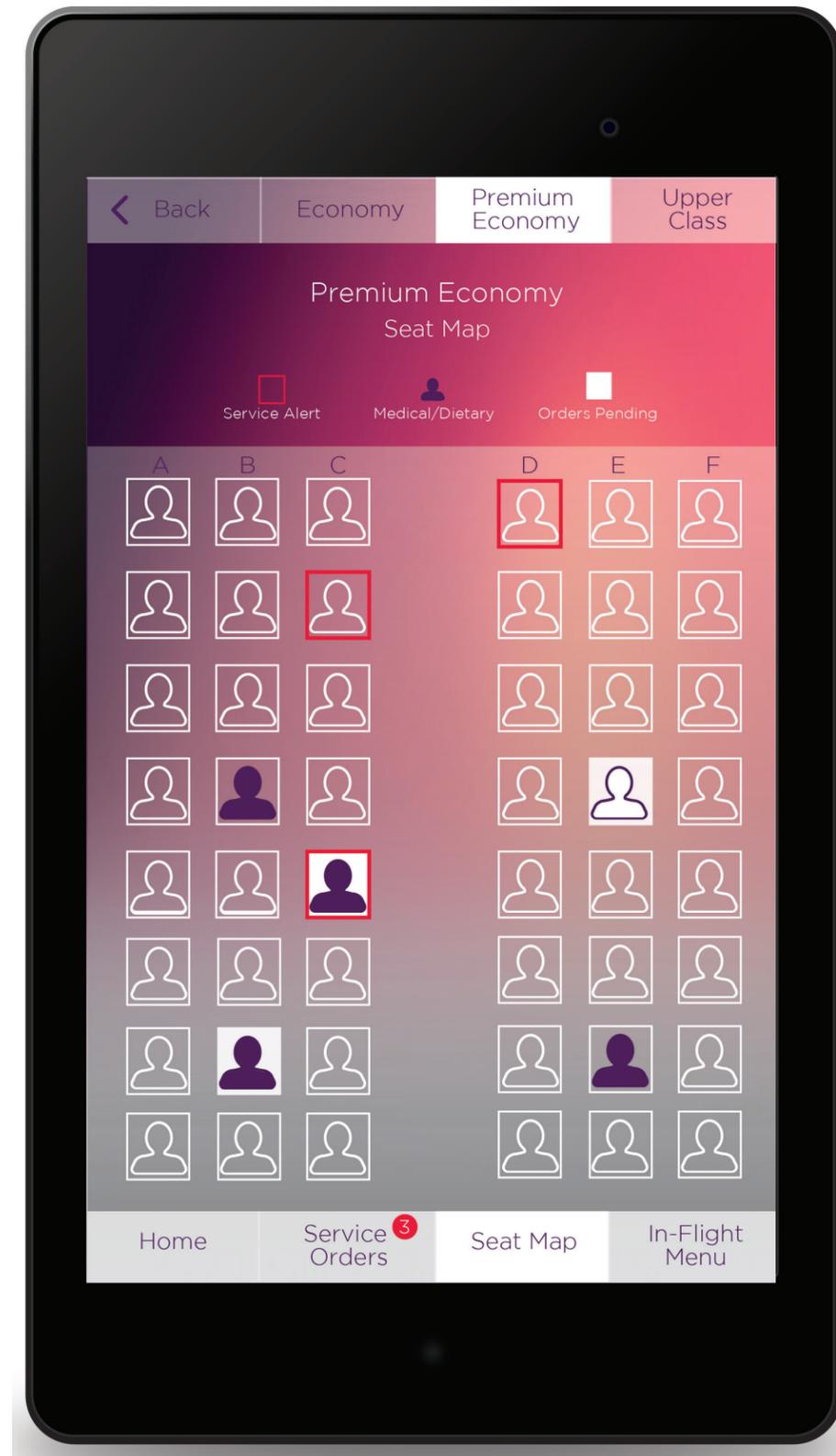
## Oximeter alert

A. If a passenger measures their oxygen level using Red, and oxygen level is below 90 percent, an alert appears as a modal.

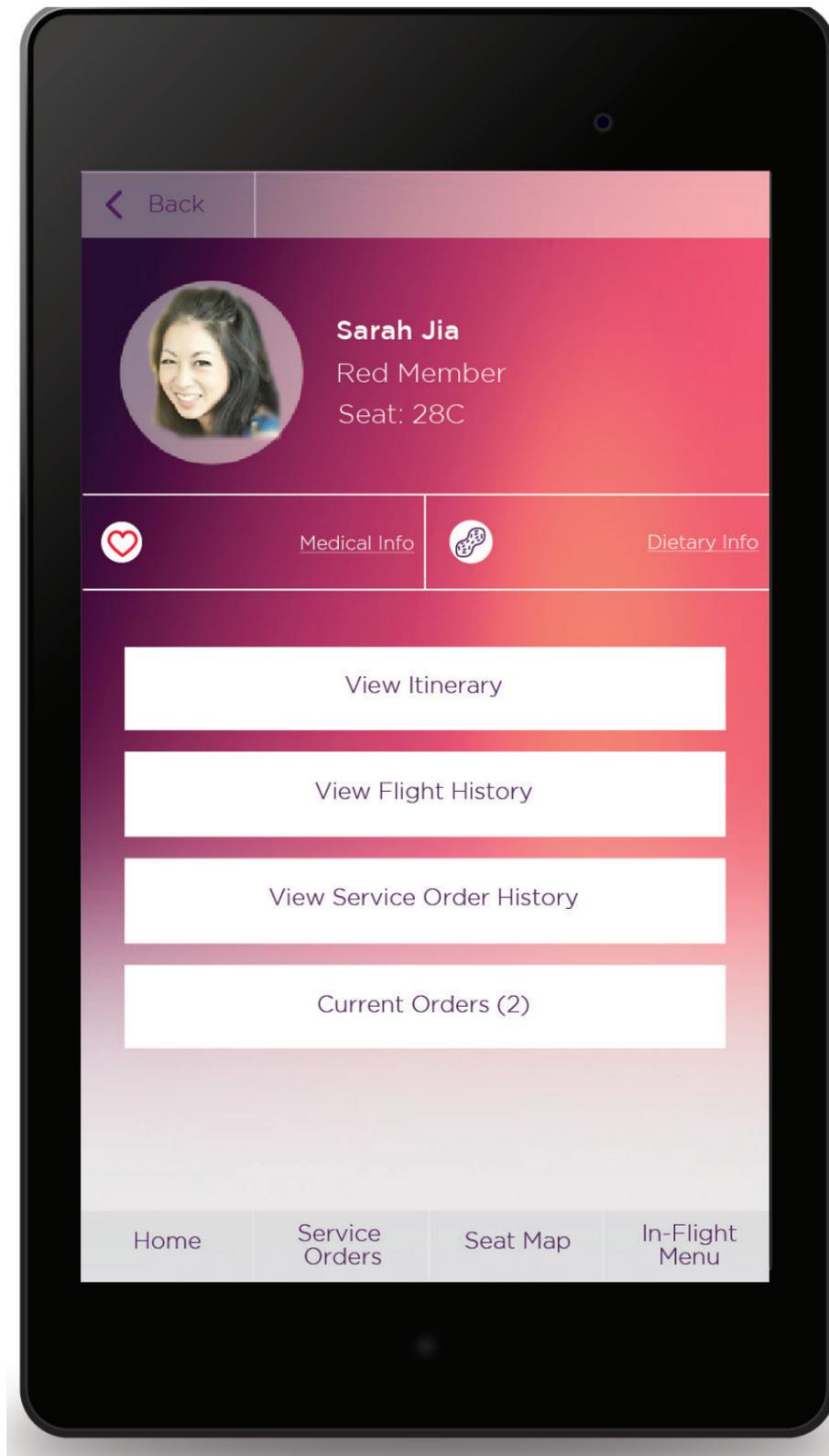
**TABLET** / graphic overlays (1 of 5)



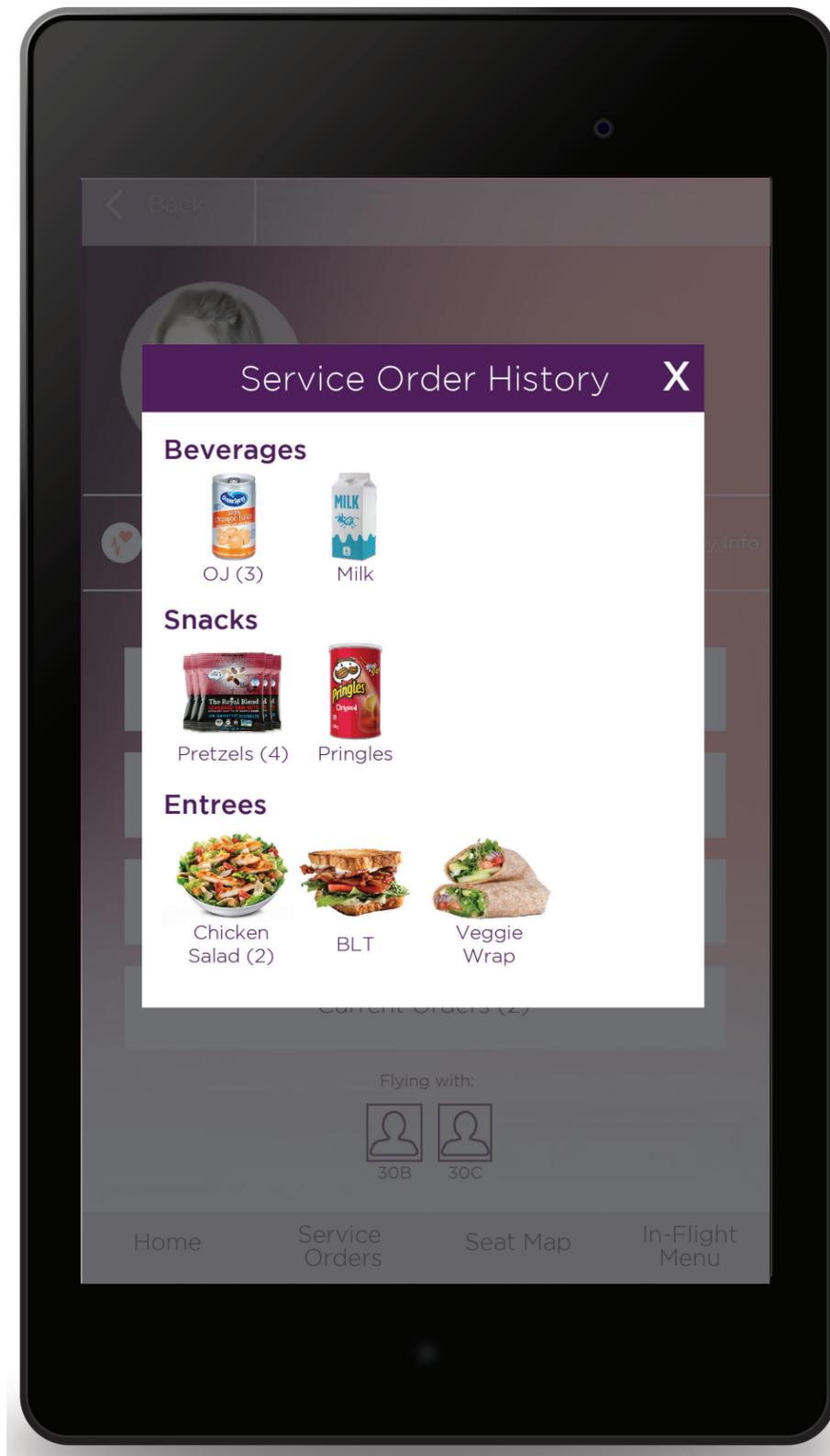
## TABLET / graphic overlays (2 of 5)



**TABLET** / graphic overlays (3 of 5)



# TABLET / graphic overlays (4 of 5)



**TABLET** / graphic overlays (5 of 5)



## SOLUTION 4: OXYGEN BAR

virgin atlantic 	BOARDING PASS
SOLUTION NAME: OXYGEN BAR  An innovative and trendy service to provide extra health benefits.	4

# OXYGEN BAR / business analysis

## Problem

One in four people suffer from anxiety; airports and flying are often common contributors to this **anxiety**. Passengers may be experiencing lack of sleep due to jetlag and general **unease** of being in the air. Currently, airports do not offer many options to help passengers reduce stress and anxiety.

## Solution

Oxygen bars have been proven to reduce anxiety, improve cell metabolism, heighten concentration and memory, promote healing, and decrease fatigue. To help reduce passenger anxiety, oxygen bars will be implemented at Virgin Clubhouses at 10 airports, as part of the initial rollout.

No other airline currently offers the luxury of recreational oxygen services, so this allows Virgin to raise the bar. Oxygen bars are trendy and innovative and adhere to Virgin's brand proposition.

Virgin will charge \$20 for a 20 minute session at the bar, and the service will only be offered in the Upper Class Clubhouse lounges. This is esimated to bring in at least \$800,000 in revenue, annually. As more passengers get to know the service, the demand will grow.

## In-Flight Team Tablet solves

- Health

## Hardware

- Oxygen tanks
- Cannulas



The oxygen bar will be located in the Virgin Clubhouse. A passenger can use the tank for a maximum of 20 minutes.

During busy times, there will be a waitlist, and passengers can sign up for text alerts when a station opens up. An attendant will supervise activity at the bar.

## SOLUTION 5: AMENITY KIT

virgin atlantic 	BOARDING PASS
SOLUTION NAME: AMENITY KIT  An addition of items to boost passenger health and comfort.	5

## AMENITY KIT / business analysis

### Problem

Airplanes are often breeding grounds for bacteria because of enclosed spaces, recirculated air, and millions of many travelers passing through. According to Travelmath.com, there are over 2,000 colony-forming units (CFUs) per square inch on plane tray tables. Since passengers are drinking and eating fairly frequently on planes, it becomes even easier to get sick. If every passenger went to wash their hands in the lavatory before meals, the aisles would be extremely crowded.

### Solution

The simple solution is to add hand sanitizer, Airborne tablets, lip balm, and gum to the amenity kits all passengers receive. Though this is a small improvement, it will have a large impact.

### Amenity Kit solves:

- Health

### Components:

- Existing amenity kit
- Hand sanitizer
- Airborne tablets
- Lip Balm
- Gum



### Additional items:

1. Gum
2. Hand Sanitizer
3. Lip Balm
4. Airborne Tablets

**THE END.**