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Reservation System  
Fit/Gap Analysis FINAL

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# 1. Introduction

Kitsap Transit (KT) began fast passenger-only ferry service from Bremerton to Seattle in July 2017. In conjunction with the launch of service, KT rolled out an online reservation system, allowing for the advance reservation of up to 88 seats per sailing, with the remaining 30 available seats held for walk-up passengers. Though the reservation system provides certainty for some passengers, it has also been the subject of customer and agency complaints. Four Nines is conducting an evaluation of KT's current fast ferry reservation system to determine where it could be improved to provide a convenient, fast, intuitive customer experience or whether a reservation system is needed.

Four Nines and Kitsap Transit staff have defined three major goals for this project:

- Maximize passenger satisfaction
- Operate the ferry as efficiently as possible
- Relieve pain quickly

This document, the Fit/Gap Analysis, evaluates the reservation system and identifies the needs that the current system meets and which have gaps or need additional functionality to meet the requirements of the system. This analysis highlights the variances between the system KT is using today and the needs of the future system. First, we describe the approach taken to develop the Fit/Gap Analysis. We then present the desired system functionality, categorized according to the customer experience, and related analysis. Lastly, we present some initial conclusions and outline the next steps in our review of the reservation system.

Our objectives in this document are to:

- Identify misalignments with customer needs
- Uncover any low-hanging fruit - short term solutions that could be implemented quickly
- Begin the process of collecting and revising system requirements for a future alternatives analysis

## 2. Approach

To develop this Fit/Gap Analysis, we took the following steps:

- Reviewed background documentation provided by Kitsap Transit, including details on prior work and previously drafted requirements;
- Conducted unstructured in-person rider intercepts on Tuesday, July 24 2018 and in conjunction provided an online form to capture comments from additional riders;
- Drew upon our own experience using the reservation system;
- Reviewed historical customer feedback provided to Kitsap Transit Customer Service; and
- Interviewed KT staff from numerous departments about their experience with the current system and their unmet needs that need to be addressed in a future system.

Using this information, we compiled a list of desired functionalities, or potential future requirements, that would address each of the issues uncovered in our review of the current system. We categorized all desired functionality into the steps of the customer experience and then identified to what degree each potential future

requirement is being met by the current system. Some potential future requirements are not met or not fully met due to agency policy and design decisions, as opposed to technical limitations of the existing system.

In this analysis we did not compare KT's current system or future potential requirements to similar systems - a formal peer analysis will follow in the next stage of this project. This analysis also did not include a full customer survey, which will be conducted this fall.

### 3. Fit/Gap Analysis

In this section, we explore basic system desired functionality within each area of the customer experience and identify to what degree, if any, the current system meets the need. Areas of customer experience include Account Setup/Login, Booking a Reservation, Order Fulfillment, Post Order, Check-in/Validation, and Global Issues. To indicate the degree to which the current system meets a given need, we used Harvey Balls ranging from empty circles to indicate no fit (gap) to full circles to indicate a perfect fit.









The source of the desired functionality comes either from KT staff (indicated by KT) as derived from interviews, background documentation, and the preliminary system requirements or from customer voiced issues (CUS) as derived from in-person and online rider intercepts and earlier customer feedback.

#### Account Setup/Login

This section discusses the desired functionality relating to customer account setup and login prior to a customer booking a reservation.












Desired Functionality	Current State	Degree of Fit	Source	Notes
Each user of the system will have a unique ID	While user IDs are currently unique, multiple IDs can be created which leads to reporting challenges. Current use of last name plus last five digits of ORCA card number is unvalidated		KT	
The system will register a unique account by user creating a login and password, followed by a one-time user authentication wherein user clicks on verification link sent to email address they provided at registration	Currently, all user accounts are linked to Google, Facebook, Microsoft, or Twitter accounts. Users do not receive a verification link and users can create multiple accounts using each sign-on service		KT	
The system will recognize return users through use of an account	This is the current state		KT	








Desired Functionality	Current State	Degree of Fit	Source	Notes
The system will allow users to self-manage their accounts including reservations, cancellations, ticket retrieval, password resets, etc. to limit the need for customer service assistance	Users cannot currently regenerate an email confirmation or download their reservation, requiring additional support from agency's customer service staff		KT	
Riders will be able to easily access the reservation system through personal computers and mobile devices	The reservation system is easily accessible through personal computers; mobile device access is available through the desktop version of the website		KT	
The system will be optimized for access through mobile devices, but must also have responsive design for access on desktops and laptops	The reservation system is not optimized for access through mobile devices		KT	
The system will allow users to create an account and will not require users to sign-in using another account (e.g. Google, Facebook)	All user accounts must currently use a Google, Facebook, Microsoft, or Twitter log-in		CUS	
The system will require only a limited amount of personal information from users and will be barred from selling, marketing, or profiting from user's personal information in any way	The existing system's privacy policy has few limitations regarding use of users' personal data		CUS	
The system will include a mobile application	There is not currently a mobile application		CUS	



## Booking a Reservation

In some ways the Kitsap Fast Ferry system is unique among North American ferry systems. While some allocate scarce slots (Washington State Ferries and BC Ferries, along with all special event ferries) no others systems do that for regular commuting. The regular commute ferries have scaled to meet the demand or close to it and allocate all their seats through walk-up. This will be explored further in the Peer Review to follow.

Given the unique nature it is natural that there was not a commercially available 'off the shelf' system which met the Kitsap system needs well. While it is not surprising that there would therefore be some customer dissatisfaction with the chosen system, the level of dissatisfaction warrants further exploration. In this section we have documented the current state and desired functionality centered around the user experience making reservations.


Desired Functionality	Current State	Degree of Fit	Source	Notes
The system will allow riders who want to ride the ferry to reserve spots in advance	This is the current state		KT	
Customers will be able to book a boarding reservation between two hours and one month in advance	This is the current state		KT	
The preferred transaction time is less than one minute	The current transaction time is unknown		KT	
Customers will be able to book from a single screen a single day, or weekly increments for up to two months of reservations	System currently allows customers to book in weekly increments only from a single screen		KT	
The system will verify reservation availability in real time (not at end of transaction)	This is the current state - changed with recent upgrades to the system		KT	
The system will retain customers contact information for each reservation	This is the current state		KT	
The system will not charge fees or fares for a reservation in most instances; however, the system must be capable of allowing riders to reserve and purchase tickets for special events	This is the current state		KT	
The system will be able to limit the number of sailings for which a rider can book a reservation each day	Current KT policy limits the number of sailings to two sailings per customer per day		KT/CUS	
The system will block scripts, bots, and similar non-human users from placing reservations or otherwise accessing the system	There is no evidence at this time that scripts or bots are regularly obtaining reservations, however customers are still concerned about this issue		KT/CUS	
The system will show the status of available reservations (and open walk up) in real time	This is the current state - changed with recent upgrades to the system		KT/CUS	
The reservation window will open at the advertised time for each reservation sign-up period	This is the current state		CUS	

Desired Functionality	Current State	Degree of Fit	Source	Notes
The reservation window will open on a consistent date for each reservation sign-up period	Current KT policy opens reservations on the first business day of the month		CUS	
The system will provide an easy way to browse and search sailings with available reservations	It is currently difficult to find open/cancelled sailings later in the month; there is no easy way to search		CUS	
The system's reservation calendar will default to the first date of the current reservation period, or the current date, whichever is later	The calendar does not default to the open month for bookings, requiring customers to click through		CUS	Some customers want to book the current month
The system's reservation calendar will show the number of available reservation and total seats available (walk-ups plus available reservations) for each sailing	The calendar does not show the number of seats available		CUS	
If a customer's preferred sailing is full, customer will not need to manually deselect that sailing when making a reservation	The existing process for dealing with full sailings requires many clicks to unselect full sailings		CUS	
The reservation process will not be interrupted and restarted by requiring customers to log-in or create an account while a reservation is underway	Login/account creation currently occurs in the middle of the reservation process and then returns user to the beginning		CUS	
The system will display a loading icon when processing a request	There is currently no loading icon to show website is working on a request		CUS	








Desired Functionality	Current State	Degree of Fit	Source	Notes
The reservation window for each reservation sign-up period will not begin during traditional work hours	Currently, reservations open at 9am		CUS	Many customers don't like that reservations for the next month open during traditional work hours; they cannot take the time off work to make their reservations. This requirement may not be relevant to a system that has enough capacity. This could also be addressed by staggering reservation sign-ups in such a way that some became available outside traditional work hours
The system will be capable of a variety of fee and fare structures including accepting payment of fare, accepting a deposit that goes towards payment of fare if reservation is redeemed, and a reservation fee	The system is not currently capable of a full variety of fee and fare structures		CUS	Customers indicated preferences for a variety of fee and fare structures that would discourage abandoning reservations and help ensure availability of reservations. Options included: pay extra for reservation; pay in advance for ticket; put a deposit down towards ticket that is lost if reservation is not redeemed

## Order Fulfillment

This section captures the desired functionality related to the fulfilling of orders after reservations have been successfully booked.










Desired Functionality	Current State	Degree of Fit	Source	Notes
Riders will be able to look up and access stored reservations. Riders may have multiple reservations for multiple days	This is the current state		KT	







Desired Functionality	Current State	Degree of Fit	Source	Notes
KT customer service will be able to book a reservation for a rider	This is the current state		KT	
KT customer service will be able to override reservation limits (for example size of party)	This is the current state		KT	
Each reservation, regardless of order, will be represented individually in a customer's online account	Account history groups reservations by order rather than individually (e.g. whole week is presented together, cannot see individual sailings individually)		CUS	
The system will allow users to sort their reservations by various attributes including sailing date and time and order date and time	Reservations are not presented in date order in online account and cannot be sorted		CUS	
The system will remove past and cancelled reservations from a user's main reservation list. Past and cancelled reservations should still be viewable by a customer in their account history or similar for a specified amount of time	Reservations cannot be archived in online account		CUS	
Automatically generated emails to customers will be clear and will contain distinguishing information such as reservation date and time in the subject line	Automatically generated emails lack details about the reservations in the email body		CUS	
Customers who call in to make a reservation will receive an email with their order details	Currently KT customer service manually emails or mails reservation confirmations that are called in		CUS	

## Post Order




This section captures the desired functionality for all items following order fulfillment but prior to reservation redemption.







Desired Functionality	Current State	Degree of Fit	Source	Notes
KT customer service will be able to look-up a reservation for a rider	This is the current state		KT	
The system will be capable of issuing alerts to all riders on a specific sailing, group of sailings, or all sailings by email, text, and on the reservation screens	This functionality is not available in the current system		KT	
The system will allow riders to opt in for alerts	This functionality is not available in the current system		KT	
The system will allow for users to turn on auto-notifications/reminders (email/SMS alert 3 hours before their scheduled sailing for which they have reservation, giving them an opportunity to cancel it)	This functionality is not available in the current system		KT	
KT customer service will be able to cancel a reservation for a rider	This is the current state		KT	
Customers will be able to cancel a reservation up to two hours before the scheduled departure	Two hours is current KT policy. This parameter is changeable in the existing reservation system		KT	Conflicts with requirement below. Many customers noted that their plans changed within two hours of their reserved sailing
Customers will be able to cancel a reservation less than two hours before the scheduled departure	Two hours is current KT policy. This parameter is changeable in the existing reservation system		CUS	Conflicts with requirement above
Customers who call in to cancel a reservation will receive an email with their order details	Customer service does not provide confirmation for cancelled reservations		CUS	
Customers who cancel a reservation will receive an automated email with the cancellation details	Customers do not receive a confirmation if they cancel		CUS	

Desired Functionality	Current State	Degree of Fit	Source	Notes
Customers will be able to self-request resend of their confirmation email or otherwise retrieve their reservation confirmation details including ticket in the case of a lost original confirmation email	Customers cannot request that their confirmation email be resent or access their ticket from their online account		CUS	
Cancelled reservations will be made available again to interested riders by means of a waitlist, notification, or similar approach	Cancelled reservations are currently released back to the system, but customers must regularly check to see if reservations have become available		CUS	
The system will allow a customer to cancel any individual segment of a reservation including a single seat, date, or direction	This is the current state - changed with recent upgrades to the system		CUS	
The system will allow a customer to easily cancel a reservation from a mobile device	Customers who wish to make a cancellation from their mobile device must do so using the desktop version of the website		CUS	

## Check-in/Validation



This section captures the current and desired functionality surrounding reservation check-in and validation at the dock prior to sailing.










Desired Functionality	Current State	Degree of Fit	Source	Notes
KFF operations will use a handheld device on the dock	This is the current state		KT	
The process of checking in reservations will not add significant time to the boarding process	Checking in reservation holders adds time to the boarding process		KT	For scope of work, significant time will need to be defined.
KFF operations will be able to validate rider reservations through electronic means at a speed of no less than 100 reservation confirmations within 5 minutes	This is the current state		KT	


Desired Functionality	Current State	Degree of Fit	Source	Notes
KFF operations will be able to look up reservations from the handheld device during the validation process by name or reservation number	This is the current state		KT	
The system will provide a manual validation process as a backup for electronic system failure	This is the current state		KT	
Customers will show reservation confirmation from a printed document or mobile device	This is the current state		KT	
KFF operations will be able to mark as redeemed reservations that can't be read	MSAs cannot check-in reservation holders who show up without a barcode		KT/CUS	
Customers with reservations must check-in at least 10 minutes prior to sailing time or else will forfeit their reservation	While this is current policy, some customers have complained that this is not consistently enforced		CUS	
The reservation check-in cut-off will be less than 10 minutes prior to sailing	While this is current policy, some customers have complained that the 10-minute window is too long		CUS	

## Global Issues

This section captures the current state and desired functionality not covered in the above sections, including more overarching items that transcend a single category.

Desired Functionality	Current State	Degree of Fit	Source	Notes
The system will allow KT to add future schedules without making them active until a reservation window opens. These future schedules may include new or different sailing times.	This is the current state		KT	
The system will conform to ITS Architecture and Standards and follow provisions of FTA National ITS Architecture Policy on Transit projects	The system's conformance to ITS standards is unknown		KT	

Desired Functionality	Current State	Degree of Fit	Source	Notes
The system will not be housed on KT servers	This is the current state		KT	
The system will be capable of processing up to 20,000 reservations per month with 80% occurring on the first day of each month	This is the current state - changed with recent upgrades to the system		KT	
The system will provide the usual system security features including virus protection and system override reporting	This is the current state		KT	
The system will provide the capability to interface in the future with electronic fare payment systems	The existing regional fare collection system is not currently capable of interfacing with a reservation system		KT	
Kitsap Transit will be able to easily extract data from the system for reporting and manipulation	Currently available reports do not include metrics such as no-show rates by sailing and customer and average time to complete reservation process		KT	
The system will be able to create standard reports and will include a database accessible for ad hoc reporting using readily available platforms such as Microsoft Office suite	The system is not currently capable of supporting this requirement		KT	
The reservation system vendor will be responsible for maintaining an agreed upon percentage uptime	There is no service level agreement with the current system vendor		KT	
All changes to the reservation system will be thoroughly tested before delivery to the production system. Delivery of all system changes to the production system will occur during off-peak hours and at least three business days prior to the open of the next reservation window, unless otherwise mutually agreed to by KT and the system vendor	There is no existing testing protocol established by KT and the vendor		KT	
The system will be able to calculate repeat no shows and generate a reminder/warning email	The system is not currently capable of supporting this requirement		KT	

Desired Functionality	Current State	Degree of Fit	Source	Notes
The system will provide an interface for reservation and real time schedule adherence information displays at terminal locations and on computers or mobile devices including real time number of seats available on each sailing	The system is not currently capable of supporting this requirement		KT	
The user experience will be streamlined, minimizing the number of clicks required to complete a reservation	The current reservation system requires many clicks		CUS	
The system will be Americans with Disabilities Act compliant, particularly with regard to user experience	The system is not fully ADA compliant; alternatives are currently available through customer service		KT/CUS	
The system will allow for future reservation prioritization based on customer characteristics (e.g. monthly pass holders)	The system is not currently capable of supporting this requirement		KT/CUS	
The system will be convenient and intuitive for both regular and occasional riders	The existing system takes many clicks for occasional riders' reservations		KT/CUS	
The system display, instructions, and selection buttons will be easy to read, understand and use	Customers have asked for a cleaner interface		CUS	
Regular no-shows will be tracked and kept accountable through loss of reservation privileges, loss of reservation deposit, or other penalty	The system is not currently capable of supporting this requirement		CUS	
The system will support an equitable and fair distribution of reservations among interested customers	The current process is not currently perceived as equitable by many KFF customers		CUS	
The reservation system should be perceived as fair by the majority of KFF customers	The current process is not currently perceived as fair by many KFF customers		CUS	
Monthly passholders will be prioritized in such a way as to assure they receive sufficient reservations to justify the cost of the monthly pass	The current process and system do not prioritize monthly passholders		CUS	

## 4. Conclusion

### Short-Term Actions

We have identified several concrete actions that Kitsap Transit can take to improve the system in the short term. We have already delivered separate memos on implementing CAPTCHA on all reservation transactions and on agreeing on a definition of fairness for the system. As needed, we will deliver additional memos as we identify further short-term changes that will improve the system.

### Next Steps

The review of background documentation, stakeholder outreach, and discussions with Kitsap Transit staff to date have yielded feedback about the current system from an agency and an end-user perspective. The current system's degree of fit across all identified desired functionalities is approximately 50%. Of the 80 features described herein, the current system completely meets 29 or 36% of the articulated needs and fully fails to meet 31 or 39% of those needs. These scores do not take into account the relative importance of each need or functionality so they should not be taken to imply that the system only meets less than 40% of the need.

We have identified potential peers of interest and will begin interviewing them and looking at currently available systems to gain an understanding of how other agencies have solved similar problems related to reservation systems. This peer review will also include an exploration of systems that are not directly analogous, such as vehicle and special event ferry reservation systems.

In the coming weeks, we will also develop an alternatives analysis. Our alternatives analysis will evaluate the viable alternatives, along with the attributes that describe the potential for each solution. We will lay out an objective comparison of the capabilities, estimated costs (high-level), and time to implement. The analysis will be presented in a matrix that will allow the agency to compare and contrast the attributes of the solution and the expected benefits of each.

We will leverage both the peer review and the forthcoming alternatives analysis to develop a more detailed rider survey, and the customer feedback that is gathered will inform draft amended system requirements later this year.